



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-19 Depth: 444 Date: 10/23/98

Well Name: MW-19 Sampling Zone No.: 4 Starting Time: 1040 Finishing Time: 1150

Technicians: J. BRENNER B. DIMENSIC

Water Level Inside MP Casing (Beginning of Session) 63.19 P.S.I.A (End of Session) 62.14 P.S.I.A

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	<del>63.19</del>	✓	1051	1054	✓	63.21	1.0	1st Run, INITIAL PARAMETERS, NTU'S = 1.54
2	✓	✓	✓	✓	✓	✓	63.22	✓	1114	1118	✓	63.24	1.0	2nd Run, COLLECT MW-954-053, ZVDA: METALS, ANIONS, HEX C
3	✓	✓	✓	✓	✓	✓	62.97	✓	1141	1145	✓	62.14	0.5	3rd Run, PERCHLORATE, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 78.90 P.S.I.A

Total Volume: 2.5 <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-19 Depth: 498 Date: 10/23/98  
 Well Name: MW-19 Sampling Zone No.: 5 Starting Time: 0920 Finishing Time: 1030  
 Technicians: J. BRENNER, B. DIMENSIC  
 Water Level Inside MP Casing (Beginning of Session) 86.88 PSIA (End of Session) 85.71 PSIA

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks					Comments		
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time		Deactivate	Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	86.88	✓	0931	0934	✓	86.87	1.0	1ST RUN, INITIAL PARAMETERS; NTU's = 2.45
2	✓	✓	✓	✓	✓	✓	86.84	✓	0936	0939	✓	86.81	1.0	2ND RUN, COLLECT; MW-984-054; 2 VOLS METALS ANALYSIS 11/1/98
3	✓	✓	✓	✓	✓	✓	85.67	✓	1019	1021	✓	85.71	0.5	3RD RUN, PERMEATE; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 100.78 PSIA Total Volume: 2.5L<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-20 Depth: 230 Date: 11/2/98

Well Name: MW-20 Sampling Zone No.: 1 Starting Time: 1420 Finishing Time: 1515

Technicians J. BRENNER B. DUMESNIL

Water Level Inside MP Casing (Beginning of Session) 14.61 (PS.A) (End of Session) 14.32 (PS.A)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	14.61	✓	1425	1432	✓	14.35	1.0	1st run, initial parameters; NTUS = 1.32
2	✓	✓	✓	✓	✓	✓	14.46	✓	1446	1449	✓	14.44	1.0	2nd run; collect MW 954-055; 2000 METALS, ANIONS; <del>PH</del>
3	✓	✓	✓	✓	✓	✓	14.41	✓	1504	1509	✓	14.32	1.0	3rd run; 1/2 ANIONS, HEX. CR, ClO4; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 25.87 PSIA

Total Volume: 3.02<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-20 Depth: 392 Date: 11/2/93  
 Well Name: MW-20 Sampling Zone No.: 2 Starting Time: 1310 Finishing Time: 1415  
 Technicians: J. BRANNON, B. DUMESNIL  
 Water Level Inside MP Casing (Beginning of Session) 46.34 (P.S.I.A) (End of Session) 45.25 (P.S.I.A)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	46.34	✓	1321	1323	✓	46.30	1.0	1ST RUN, INITIAL PARAMETERS, NTU'S = 2.38
2	✓	✓	✓	✓	✓	✓	46.25	✓	1344	1346	✓	46.30	1.0	2ND RUN, COLLECT MW-20-056, ZVOCAS METALS ANALYSIS Hex C.
3	✓	✓	✓	✓	✓	✓	45.20	✓	1407	1409	✓	45.25	0.5	3RD RUN, PERCUTANATE, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 96.44 P.S.I.A Total Volume: 2.5L





# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-20 Depth: 562 Date: 11/2/98

Well Name: MW-20 Sampling Zone No.: 3 Starting Time: 1155 Finishing Time: 1305

Technicians J. BRUNER ; B. DIMESNIL

Water Level Inside MP Casing (Beginning of Session) 120.15 (P.S.A) (End of Session) 119.15 P.S.A

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	120.15	✓	1206	1208	✓	120.17	1.0	1ST RUN; INITIAL PARAMETERS; NTU'S = 2.71
2	✓	✓	✓	✓	✓	✓	120.12	✓	1231	1231	✓	120.10	1.0	2ND RUN; COLLECT MW-984-057; ZVDAS, METALS ANIONS HPLC
3	✓	✓	✓	✓	✓	✓	119.14	✓	1256	1257	✓	119.15	0.5	3RD RUN; RECALIBRATE; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 162.45 P.S.A

Total Volume: 2.5 <sup>l</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-20 Depth: 700 Date: 11/2/98

Well Name: MW-20 Sampling Zone No.: 4 Starting Time: 1025 Finishing Time: 1150

Technicians J. BRANNER, B. DUMESNIL

Water Level Inside MP Casing (Beginning of Session) 180.25 PSIA (End of Session) 179.20 (PSIA)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	180.25	✓	1039	1041	✓	180.23	1.0	1ST RUN, INITIAL PARAMETERS; NITJS = 263
2	✓	✓	✓	✓	✓	✓	180.24	✓	1107	1109	✓	180.23	1.0	2ND RUN, COLLECT MW 5824-058 2 VOA'S METALS ANALYSIS HXG
3	✓	✓	✓	✓	✓	✓	179.19	✓	1136	1137	✓	179.20	0.5	3RD RUN, PERMEABILITY; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 214.10 PSIA

Total Volume: 2.50<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-20 Depth: 900 Date: 11/2/95

Well Name: MW-20 Sampling Zone No.: 5 Starting Time: 0835 Finishing Time: 1020

Technicians: J. BRUNER, B. DUMAS, L.

Water Level Inside MP Casing (Beginning of Session) 267.31 (P.S.I.A) (End of Session) 266.21 (P.S.I.A)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	267.31	✓	0853	0855	✓	267.35	1.0	1ST RUN, INITIAL PARAMETERS, NTU'S = 1.57
2	✓	✓	✓	✓	✓	✓	267.20	✓	0929	0931	✓	267.30	1.0	2ND RUN, COLLECT MW 984-059, 2 V OAS, METALS AND IONS HEX. C
3	✓	✓	✓	✓	✓	✓	266.21	✓	1003	1004	✓	266.21	0.5	3RD RUN, PERCHLORATE, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 316.55 P.S.I.A

Total Volume: 2.5 L



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-21 Depth: 90 Date: 11/12/95  
 Well Name: MW-21 Sampling Zone No.: 1 Starting Time: 1245 Finishing Time: 1330  
 Technicians: J. BRENNER, B. D. MENIL  
 Water Level Inside MP Casing (Beginning of Session) 14.38 (P.S.A.) (End of Session) 14.35 (P.S.A.)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	14.38	✓	1252	1257	✓	14.23	1.0	1ST RUN TO SCREEN #1 INITIAL PARAMETERS NTU = 2.20
2	✓	✓	✓	✓	✓	✓	14.23	✓	1306	1311	✓	14.37	1.0	2ND RUN, COLLECT MW-954-060, 2 VOLS METALS ANALYSIS
3	✓	✓	✓	✓	✓	✓	14.37	✓	1323	1328	✓	14.35	1.0	3RD RUN HX. CR. CLOS. FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS OUTSIDE MP CASING = 25.67 P.S.A.

Total Volume: 3.0 <sup>liters</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-21 Depth: 161 Date: 11/12/98

Well Name: MW-21 Sampling Zone No.: 2 Starting Time: 1200 Finishing Time: 1240

Technicians: J. BRENNER; B. DIMENIC

Water Level Inside MP Casing (Beginning of Session) 41.93 (P.S.A) (End of Session) 40.97

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	41.93	✓	1207	1212	✓	41.92	1.0	1ST RIN: INITIAL PARAMETERS, NTU'S = 352
2	✓	✓	✓	✓	✓	✓	41.96	✓	1220	1235	✓	41.93	1.0	2ND RIN, COLLECT MW-984-061 2NDAS, METALS, ANIONS KEY-C
3	✓	✓	✓	✓	✓	✓	40.88	✓	1236	1239	✓	40.97	0.5	3RD RIN: RECALIBRATE; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PROB. OUTSIDE MP CASING = 56.59 P.S.A

Total Volume: 2.5 <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-21 Depth: 240 Date: 11/12/95  
 Well Name: MW-21 Sampling Zone No.: 3 Starting Time: 1100 Finishing Time: 1155  
 Technicians: J. BRANNAN, B. DIMESNILE  
 Water Level Inside MP Casing (Beginning of Session) 76.48 (PSIA) (End of Session) 75.26 (PSIA)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	76.48	✓	1111	1114	✓	76.43	1.0	1ST RUN, INITIAL PARAMETERS: NTU'S = 4.79
2	✓	✓	✓	✓	✓	✓	76.41	✓	1127	1130	✓	76.45	1.0	2ND RUN, COLLECT MW-9877-062 2 VOLS FILTERS AND 2.55 HLY. CC
3	✓	✓	✓	✓	✓	✓	75.5	✓	1150	1153	✓	75.26	0.5	3RD RUN, RECALIBRATE, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 90.65 PSIA

Total Volume: 2.54<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-21 Depth: 510 Date: 11/12/98

Well Name: MW-21 Sampling Zone No.: 4 Starting Time: 1000 Finishing Time: 1055

Technicians: J. BENNETT, B. DIMESNIL

Water Level Inside MP Casing (Beginning of Session) 106.73 (PSID) (End of Session) 106.59 (PSID)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	106.72	✓	1008	1011	✓	106.70	1.0	1ST RUN, INITIAL PARAMETERS, NUS = 7.51
2	✓	✓	✓	✓	✓	✓	106.71	✓	1024	1026	✓	106.73	1.0	2ND RUN, NUS = 4.36, COLLECT MW. 904-063-063MS-063MSD
3	✓	✓	✓	✓	✓	✓	106.54	✓	1048	1051	✓	106.59	1.0	3RD RUN, ANIONS, HEX. Cr. CLO4 FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 120.57 PSID

Total Volume: 3.04 <sup>F2</sup>

LOWAS METALS



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-21 Depth: 372 Date: 11/12/98  
 Well Name: MW-21 Sampling Zone No.: 5 Starting Time: 0910 Finishing Time: 1500  
 Technicians: J. BRENNER B. DOMAGNICH  
 Water Level Inside MP Casing (Beginning of Session) 133.99 (PSIA) (End of Session) 137.46 (PSIA)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate	Water Level in MP (ft) Remove Tape		Volume Retrieved (liters)
1	✓	✓	✓	✓	✓	✓	133.99	✓	0910	0920	✓	134.00	1.0	1ST RUN, INITIAL PARAMETERS, NTU'S = 16.1
2	✓	✓	✓	✓	✓	✓	133.84	✓	0933	0935	✓	133.84	1.0	2ND RUN, ATTEMPTING TO REDUCE TURBIDITY, NTU'S = 32.9
3														* WILL RETURN LATER
4	✓	✓	✓	✓	✓	✓	133.52	✓	1416	1419	✓	133.49	1.0	1ST RUN AFTER PURGING APPROX 10 GAL, NTU'S = 14.1
5	✓	✓	✓	✓	✓	✓	133.49	✓	1434	1437	✓	133.49	1.0	2ND RUN, COLLECT MW-984-064, ZVOCs, METALS, ANIONS, HEX. C.
6	✓	✓	✓	✓	✓	✓	137.48	✓	1448	1450	✓	137.46	0.5	3RD RUN, ClO4, FINAL PARAMETERS
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 147.58 PSIA Total Volume: 4.50<sup>F2</sup>





# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-22 Depth: 245 Date: 11/16/93

Well Name: MW-22 Sampling Zone No.: 1 Starting Time: 1420 Finishing Time: 1520

Technicians: J. BRENNER ; B. DUMENIL

Water Level Inside MP Casing (Beginning of Session) 17.19 (P.S.A) (End of Session) 17.16 (P.S.A)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	17.19	✓	1428	1433	✓	17.20	1.0	1ST RUN, INITIAL PARAMETERS, NTUS = 3.97
2	✓	✓	✓	✓	✓	✓	17.19	✓	1447	1452	✓	17.20	1.0	2ND RUN, COLLECT MW-484-065 2 VOLS METALS ANIONS
3	✓	✓	✓	✓	✓	✓	17.15	✓	1507	1514	✓	17.16	1.0	3RD RUN, HEX. CR. CHL, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 41.26 P.S.A

Total Volume: 3.00<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-22 Depth: 329 Date: 11/14/98  
 Well Name: MW-22 Sampling Zone No.: 2 Starting Time: 1250 Finishing Time: 1415  
 Technicians: J. BRENNAN, B. DOMENIC  
 Water Level Inside MP Casing (Beginning of Session) 55.40 P.S.I.A (End of Session) 53.00 P.S.I.A

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	55.40	✓	1300	1303	✓	55.50	1.0	1ST RUN INITIAL PARAMETERS, NTUS = 4.13
2	✓	✓	✓	✓	✓	✓	55.43	✓	1324	1328	✓	55.41	1.0	2ND RUN, COLLECT MW-954-066 ZN/CAS, METALS, ANIONS, H <sub>2</sub> O <sub>2</sub>
3	✓	✓	✓	✓	✓	✓	53.00	✓	1409	1411	✓	53.00	0.5	3RD RUN, CLOS. FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 76.97 P.S.I.A Total Volume: 2.5L<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW 22 Depth: 339 Date: 11/16/98

Well Name: MW 22 Sampling Zone No.: 3 Starting Time: 1140 Finishing Time: 1245

Technicians: J. BRYAN, B. DIMENIL

Water Level Inside MP Casing (Beginning of Session) 81.59 (PSIA) (End of Session) 81.51 (PSIA)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	81.59	✓	1150	1153	✓	81.56	1.0	1ST RUN: INITIAL PARAMETERS NTU's - 3.54
2	✓	✓	✓	✓	✓	✓	81.56	✓	1210	1214	✓	81.59	1.0	2ND RUN: COLLECT MW-104-027 6VUAS, METALS (MSMS) - 067MS, 067MS
3	✓	✓	✓	✓	✓	✓	81.56	✓	1233	1236	✓	81.51	1.0	3RD RUN: AMMONIUM, HEX. CR, ClO4 FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 103.11 PSIA

Total Volume: 3.00 <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: ~~AA~~ JPL Location: MW-22 Depth: 467 Date: 11/16/98  
 Well Name: MW-22 Sampling Zone No.: 4 Starting Time: 1005 Finishing Time: 1135  
 Technicians: J. BIENNAK, B. DOMESNIL  
 Water Level Inside MP Casing (Beginning of Session) 115.86 (PSIA) (End of Session) 114.46 (PSIA)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	115.86	✓	1030	1034	<del>1038</del>	115.90	1.0	1ST RUN; INITIAL PARAMETERS NTU'S = 4.34
2	✓	✓	✓	✓	✓	✓	115.48	✓	1104	1108	✓	115.51	1.0	2ND RUN; COLLECT MW 954-008 ZV049, METALS ANIONIC HEX.C.
3	✓	✓	✓	✓	✓	✓	114.43	✓	1127	1129	✓	114.46	0.5	3RD RUN; C104, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 128.80 PSIA

Total Volume: 2.50<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-22 Depth: 588 Date: 11/16/99

Well Name: MW-22 Sampling Zone No.: S Starting Time: 0840 Finishing Time: 1000

Technicians: J. BRENNER B. DIMESNIL

Water Level Inside MP Casing (Beginning of Session) 168.16 (PSIA) (End of Session) 167.

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	168.16	✓	0851	0853	✓	168.12	1.0	1ST RUN, INITIAL PARAMETERS NPS = 3.30
2	✓	✓	✓	✓	✓	✓	168.14	✓	0920	0922	✓	168.12	1.0	2ND, COLLECT MW-984-C69; 2 VOLS METALS ANALYSIS, HPLC
3	✓	✓	✓	✓	✓	✓	167.09	✓	0947	0948	✓	167.05	0.5	3RD RUN, C104; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 176.09 PSIA

Total Volume: 250 <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-23 Depth: 174 Date: 11/15/95  
 Well Name: MW-23 Sampling Zone No.: 1 Starting Time: 4:05 Finishing Time: 16:30  
 Technicians: J. BRENNER M. SCHNEIDER  
 Water Level Inside MP Casing (Beginning of Session) 29.99 (P.S.A.) (End of Session) 29.99 (P.S.A.)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	29.99	✓	1412	1416	✓	29.96	1.0	1ST RUN, INITIAL PARAMETERS, NTU'S = 6.34
2	✓	✓	✓	✓	✓	✓	29.96	✓	<del>1412</del>	<del>1416</del>	✓	29.99	1.0	2ND RUN, COLLECT MW-954-076 ZYDAS METALS ANION
3	✓	✓	✓	✓	✓	✓	29.96	✓	1615	1620	✓	29.99	1.0	3RD RUN, HEX. Cr, TLO4, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 39.53 P.S.A.

Total Volume: 3.0 <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-23 Depth: 254 Date: 11/19/98

Well Name: MW-23 Sampling Zone No.: 2 Starting Time: 1305 Finishing Time: 1400

Technicians: J. BRENNER, M. SCHNEIDER

Water Level Inside MP Casing (Beginning of Session) 64.66 (PS.A) (End of Session) 64.32 (PS.A)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	64.66	✓	1313	1316	✓	64.66	1.0	1ST RUN; INITIAL PARAMETERS, NTUS = 4.09
2	✓	✓	✓	✓	✓	✓	64.60	✓	1332	1335	✓	64.63	1.0	2ND RUN; COLLECT MW SECTION 2 VOCs METALS, ANIONS
3	✓	✓	✓	✓	✓	✓	64.34	✓	1350	1354	✓	64.32	0.5	3RD RUN; HEX. C, ClO4; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PISS OUTSIDE MP CAS, SG = 72.01 PS.A

Total Volume: 2.5 L



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-23 Depth: 319 Date: 11/18/95  
 Well Name: MW-23 Sampling Zone No.: 3 Starting Time: 1155 Finishing Time: 1300  
 Technicians: J. BRENNER, M. SCHNEIDER  
 Water Level Inside MP Casing (Beginning of Session) 92.85 (P.S.A.) (End of Session) 92.88 (P.S.A.)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	92.85	✓	1210	1213	✓	92.83	1.0	1 <sup>ST</sup> RUN; INITIAL PARAMETERS, NTU'S = 4.48
2	✓	✓	✓	✓	✓	✓	92.87	✓	1228	1231	✓	92.83	1.0	2 <sup>ND</sup> RUN; COLLECT MW-984-072 -072MS -072MSD; GNDAS, METALS
3	✓	✓	✓	✓	✓	✓	92.82	✓	1250	1254	✓	92.88	1.0	3 <sup>RD</sup> RUN; ANIONS, HEX. Cr, ClO <sub>4</sub> ; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 99.94 (P.S.A.)

Total Volume: 3.0<sup>F2</sup>





# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-23 Depth: 445 Date: 11/18/95

Well Name: MW-23 Sampling Zone No.: 4 Starting Time: 1045 Finishing Time: 1150

Technicians: S. BIZENER, M. SCHNIEDER

Water Level Inside MP Casing (Beginning of Session) 147.39 (PSIA) (End of Session) 147.00 (PSIA)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	147.39	✓	1053	1056	✓	147.39	1.0	1ST RUN, INITIAL PARAMETERS, NTU'S = 4.21
2	✓	✓	✓	✓	✓	✓	147.39	✓	1115	1117	✓	147.44	1.0	2ND RUN, COLLECT MW 989-073 2 VOLS METALS ANIONS HEXC
3	✓	✓	✓	✓	✓	✓	147.02	✓	1137	1139	✓	147.00	0.5	3RD RUN, C104, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 144.60 PSIA

Total Volume: 2.5L<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-23 Depth: 542 Date: 11/18/98

Well Name: MW-23 Sampling Zone No.: 5 Starting Time: 0915 Finishing Time: 1040

Technicians: J. BRUNER, M. SCHEINADER

Water Level Inside MP Casing (Beginning of Session) 189.48 (PSIA) (End of Session) 188.98 (PSIA)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	189.48	✓	0928	0930	✓	189.46	1.0	1ST RUN, INITIAL PARAMETERS NTUS = 2.48
2	✓	✓	✓	✓	✓	✓	189.47	✓	0959	1013	✓	189.45	1.0	2ND RUN, COLLECT MW-23-074, 2 VOCs, METALS, ANIONS, LEX-C
3	✓	✓	✓	✓	✓	✓	188.98	✓	1026	1028	✓	188.98	0.5	3RD RUN, C104, FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: Press. OUTSIDE MP CASING = 186.35 PSIA

Total Volume: 2.5L<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-24 Depth: 278 Date: 10/26/98

Well Name: MW-24 Sampling Zone No.: 1 Starting Time: 1205 Finishing Time: 1340

Technicians: B. DUMENSIL, J. BRENNER

Water Level Inside MP Casing (Beginning of Session) 15.96 (PSIA) (End of Session) 15.95 PSIA

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	15.94	✓	1205	1211	✓	15.95	1.0	1ST RUN, INITIAL PARAMETERS NTU'S = 3.32
2	✓	✓	✓	✓	✓	✓	15.94	✓	1226	1230	✓	15.96	1.0	2ND RUN, COLLECT MW-5184-075; 2 VOOLS, DIOXANE
3	✓	✓	✓	✓	✓	✓	15.97	✓	1248	1252	✓	15.99	1.0	3RD RUN, NDMA (3/4)
4	✓	✓	✓	✓	✓	✓	15.92	✓	1307	1310	✓	15.99	1.0	4TH RUN, 1/4 NDMA ANIONS 1/4 ANIONS METALS
5	✓	✓	✓	✓	✓	✓	15.90	✓	1325	1330	✓	15.95	1.0	5TH RUN, 3/4 ANIONS, HEX C, POLYCHLORATE, FINAL PARAMETERS WTEC
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 45.98 PSIA

Total Volume: 5.0L <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-24 Depth: 373 Date: 10/26/90  
 Well Name: MW-24 Sampling Zone No.: 2 Starting Time: 1055 Finishing Time: 16.10  
 Technicians: J. BRENNER, B. DIMENSIL  
 Water Level Inside MP Casing (Beginning of Session) 56.76 PSIA (End of Session) 69.39 PSIA (PRESS. OUTSIDE CASING)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	56.76	✓	1100	1103	✓	56.80	1.0	1ST RUN TO SCREEN # 2; INITIAL TRANSDUCERS NTU'S = 18.2
2	✓	✓	✓	✓	✓	✓	56.80	✓	1121	1124	✓	56.91	1.0	2ND RUN; RECORDING TURBIDITY NTU'S = 18.1
3	✓	✓	✓	✓	✓	✓	56.74	✓	1142	1145	✓	56.73	1.0	3RD RUN; ATTEMPTING TO REDUCE TURB; NTU'S = 27.1
4														
5	✓	✓	✓	✓	✓	✓	69.42	✓	1557	1559	✓	69.39	1.0	1ST RUN AFTER RIGGING; NTU'S = 18.2
6														* WILL RETURN ANOTHER DAY
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE M.P. CASING = 83.24 PSIA Total Volume: 4.0 <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-24 Depth: 373 Date: 10/29/95

Well Name: MW-24 Sampling Zone No.: 2 Starting Time: 1230 Finishing Time: 1330

Technicians J. BRENNER; B. DIMENSIC

Water Level Inside MP Casing (Beginning of Session) 55.26 (P.S.A) (End of Session) 54.22 (P.S.A)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	55.26	✓	1234	1238	✓	55.29	1.0	1ST RUN, INITIAL PARAMETERS, NTU'S =
2	✓	✓	✓	✓	✓	✓	55.22	✓	1256	1300	✓	55.29	1.0	2ND RUN, COLLECT MW-984-076; 2 VOLS MEMBRANE ANALYSIS
3	✓	✓	✓	✓	✓	✓	55.26	✓	1319	1321	✓	54.22	0.5	3RD; HEX. C, ClO <sub>4</sub> ; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 83.46 P.S.I.A

Total Volume: 2.5 <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-24 Depth: 435 Date: 10/26/98Well Name: MW-24 Sampling Zone No.: 3 Starting Time: 0900 Finishing Time: 1505Technicians: J. BRUNNER, B. DIMENSIWater Level Inside MP Casing (Beginning of Session) 84.13 PSID (End of Session) 92.90 (AFTER 2.1 GALS PULSED)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	84.13	✓	0905	0909	✓	84.00	1.0	1ST RUN, INITIAL PARAMETERS; NTU'S = 70.1
2	✓	✓	✓	✓	✓	✓	83.96	✓	0931	0935	✓	83.98	1.0	2ND RUN; ATTEMPTING TO REDUCE TURBIDITY; NTU'S = 33.4
3	✓	✓	✓	✓	✓	✓	83.93	✓	0955	0957	✓	83.93	1.0	3RD RUN; REDUCING TURBIDITY; NTU'S = 23.2
4	✓	✓	✓	✓	✓	✓	83.85	✓	1017	1020	✓	83.85	1.0	4TH RUN; REDUCING TURBIDITY; NTU'S = 13.4
5	✓	✓	✓	✓	✓	✓	83.70	✓	1037	1040	✓	83.80	1.0	5TH RUN, STILL ATTEMPTING TO REDUCE TURB; NTU'S = 26.7
6														* WILL RETURN LATER
7	✓	✓	✓	✓	✓	✓	92.90	✓	1450	1453	✓	92.90	1.0	1ST RUN AFTER PULSING 2.1 GALS FROM SCREEN #3; NTU'S = 20.0
8														* WILL RETURN ANOTHER
9														DAY
10														
11														
12														

Comments: PRESS OUTSIDE MP CASING = 108.90 PSIDTotal Volume: 6.0L<sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: 17C Location: MW-24 Depth: 435 Date: 10/27/98

Well Name: MW-24 Sampling Zone No.: 3 Starting Time: 1110 Finishing Time: 1225

Technicians: J. BRENNER; B. DIMENSIL

Water Level Inside MP Casing (Beginning of Session) 82.12 PS.A (End of Session) 82.19 PS.A

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	82.12	✓	1124	1126	✓	82.14	1.0	1ST RUN, INITIAL PARAMETERS, NTUS =
2	✓	✓	✓	✓	✓	✓	82.14	✓	1148	1151	✓	82.17	1.0	COLLECT MW 59A-077; 2YMS, METALS ANALYSIS, HX. G.
3	✓	✓	✓	✓	✓	✓	82.11	✓	1212	1214	✓	82.19	1.0	3RD RUN: RECALIBRATE; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 108.91 PS.A

Total Volume: 3.0L <sup>F2</sup>



# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-24 Depth: 554 Date: 10/29/98  
 Well Name: MW-24 Sampling Zone No.: 4 Starting Time: 1500 Finishing Time: 1610  
 Technicians: J. BRENNER, B. DJMENSIL  
 Water Level Inside MP Casing (Beginning of Session) 133.55 (P.S.I.A) (End of Session) 132.60 (P.S.A)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	133.55	✓	1513	1515	✓	133.63	1.0	1ST RUN, INITIAL PARAMETERS, NTL'S = 4.81
2	✓	✓	✓	✓	✓	✓	133.60	✓	1537	1539	✓	133.60	1.0	2ND RUN, COLLECT MW 554-078; ZVQAS, METALS, ANIONS, HPLC
3	✓	✓	✓	✓	✓	✓	132.62	✓	1600	1602	✓	132.60	0.5	3RD; PERCHLORATE; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: PRESS. OUTSIDE MP CASING = 149.08 PSIA

Total Volume: 2.5L<sup>F2</sup>





# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## Groundwater Sampling Field Data Sheet for Multi-Port Well

Project: JPL Location: MW-24 Depth: 670 Date: ~~10/27/98~~ 10/27/98

Well Name: MW-24 Sampling Zone No.: S Starting Time: 1335 Finishing Time: 1455

Technicians J. BRANNEN, B. DIMENSIONE

Water Level Inside MP Casing (Beginning of Session) 187.56 (PSIA) (End of Session) 186.53 (PSIA)

Run No.	Surface Function Checks					Position Sampler	Surface Collection Checks						Comments	
	Activate	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Deactivate Set Arm Locate Port	Water Level in MP (ft)	Activate	Valve Open Time	Valve Closed Time	Deactivate		Water Level in MP (ft) Remove Tape
1	✓	✓	✓	✓	✓	✓	187.56	✓	1348	1352	✓	187.56	1.0	1ST RUN; INITIAL PARAMETERS; NTU'S = 4.73
2	✓	✓	✓	✓	✓	✓	187.50	✓	1417	1419	✓	187.53	1.0	2ND RUN; COLLECT MW-98A-079 2 VOLS METALS, ANION'S H <sub>2</sub> O
3	✓	✓	✓	✓	✓	✓	186.52	✓	1444	1446	✓	186.53	0.5	3RD RUN; PERCOLAZAF; FINAL PARAMETERS
4														
5														
6														
7														
8														
9														
10														
11														
12														

Comments: Press. OUTSIDE MP CASING = 192.43

Total Volume: 2.5L<sup>F2</sup>

**APPENDIX C**  
**FIELD INSTRUMENT CALIBRATION FORMS**

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. BRENNER Date: 10/22/98  
Instrument Manufacturer: HE SCIENTIFIC Model: DRT-15LE  
Serial Number: 11079 Calibration Date: 10/22/98

## STANDARDIZATION

Time: 0830 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1550 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: B Dumesnil Date: 10/23/98  
Instrument Manufacturer: HE Scientific Model: DRT-15CE  
Serial Number: 11079 Calibration Date: 10/23/98

## STANDARDIZATION

Time: 0910 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1515 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. BANNER Date: 10/26/98  
Instrument Manufacturer: HF SCIENTIFIC Model: D25-1SCF  
Serial Number: 11079 Calibration Date: 10/26/98

## STANDARDIZATION

Time: 0800 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1600 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. BRONK Date: 10/27/99  
Instrument Manufacturer: HE SCIENTIFIC Model: DR-1SC  
Serial Number: 11079 Calibration Date: 10/27/99

## STANDARDIZATION

Time: 0755 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1530 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: B. Domesnil Date: 10/28/98  
Instrument Manufacturer: HF Scientific Model: DRT-15CE  
Serial Number: 11079 Calibration Date: 10/28/98

## STANDARDIZATION

Time: 1515 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1550 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: B Dumesnil Date: 10/29/98  
Instrument Manufacturer: HF Scientific Model: DRT-15CE  
Serial Number: 11079 Calibration Date: 10/29/98

## STANDARDIZATION

Time: 1045 Scale: 10 Zero: Yes Stray Light: N/A  
Standard NTU: 0.02 Reading: 0.02  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_

Time: 11010 Scale: 10 Zero: Yes Stray Light: N/A  
Standard NTU: 0.02 Reading: 0.02  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Scale: \_\_\_\_\_ Zero: \_\_\_\_\_ Stray Light: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Scale: \_\_\_\_\_ Zero: \_\_\_\_\_ Stray Light: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Scale: \_\_\_\_\_ Zero: \_\_\_\_\_ Stray Light: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Scale: \_\_\_\_\_ Zero: \_\_\_\_\_ Stray Light: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Scale: \_\_\_\_\_ Zero: \_\_\_\_\_ Stray Light: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_  
Standard NTU: \_\_\_\_\_ Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. BRUNER Date: 10/30/98  
Instrument Manufacturer: HE SCIENTIFIC Model: DR-1SC5  
Serial Number: 6082 Calibration Date: 10/30/98

## STANDARDIZATION

Time: 0800 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1305 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. Brennan Date: 11/2/98  
Instrument Manufacturer: HF SCIENTIAL Model: DNT-18E  
Serial Number: 6002 Calibration Date: 11/2/98

## STANDARDIZATION

Time: 0905 Selected Scale: 10 Instrument at Zero:  Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1515 Selected Scale: 10 Instrument at Zero:  Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. BRUNER Date: 11/3/98  
Instrument Manufacturer: HF SCIENTIFIC Model: DRT-15CE  
Serial Number: 6882 Calibration Date: 11/3/98

## STANDARDIZATION

Time: 0750 Selected Scale: 10 Instrument at Zero: Yes/No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 0140 Selected Scale: 10 Instrument at Zero: Yes/No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
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# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. BRONNER Date: 11/4/98  
Instrument Manufacturer: HF SCIENTIFIC Model: D12-1SC  
Serial Number: 6882 Calibration Date: 11/4/98

## STANDARDIZATION

Time: 0910 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1430 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: TPL  
Standardization by: Brett Dumesnil Date: 11/5/98  
Instrument Manufacturer: HF Scientific Model: DRT-15CE  
Serial Number: 6882 Calibration Date: 11/5/98

## STANDARDIZATION

Time: 0910 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: ~~0.02~~ 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1610 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: B. Dumesnil Date: 11/6/98  
Instrument Manufacturer: HFS scientific Model: DRT-15CE  
Serial Number: 6882 Calibration Date: 11/6/98

## STANDARDIZATION

Time: 0825 Selected Scale: 10 Instrument at Zero: Yes / No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

\*  
Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\* SAMPLING CANCELED FOR DAY, NO SAMPLES COLLECTED

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: B. Dumesnil Date: 11/9/98  
Instrument Manufacturer: HF Scientific Model: DBT-1502  
Serial Number: 6882 Calibration Date: 11/9/98

## STANDARDIZATION

Time: 0745 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: NA  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1925 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: NA  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: 17L  
Standardization by: J. BRENNER Date: 11/10/93  
Instrument Manufacturer: HE SCIENTIFIC Model: D12T-15CE  
Serial Number: 6882 Calibration Date: 11/10/93

## STANDARDIZATION

Time: 0805 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1435 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: B. Dumesnil Date: 11/12/98  
Instrument Manufacturer: HE Scientific Model: PRT-150E  
Serial Number: 6882 Calibration Date: 11/12/98

## STANDARDIZATION

Time: 0800 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1500 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: B. Dumesnil Date: 11/13/98  
Instrument Manufacturer: HF Scientific Model: DRT-15CE  
Serial Number: 6982 Calibration Date: 11/12/98

## STANDARDIZATION

Time: 0710 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: N/A Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. BRUNER Date: 11/16/98  
Instrument Manufacturer: HESSENTIAL Model: DZT-15CE  
Serial Number: 6882 Calibration Date: 11/16/98

## STANDARDIZATION

Time: 0820 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1525 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: IPL  
Standardization by: J. BRENNER Date: 11/18/95  
Instrument Manufacturer: H.F. SCIONA, INC. Model: DRT-15CE  
Serial Number: 6882 Calibration Date: 11/18/95

## STANDARDIZATION

Time: 0850 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1640 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero:  Yes /  No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# TURBIDIMETER FIELD STANDARDIZATION FORM

Project Name: JPL  
Standardization by: J. BRENNER Date: 11/19/98  
Instrument Manufacturer: HF SCIENTIFIC Model: D2T-15CE  
Serial Number: 6802 Calibration Date: 11/19/98

## STANDARDIZATION

Time: 0750 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: 1215 Selected Scale: 10 Instrument at Zero:  Yes /  No Stray Light Response: N/A  
NTU of Standard: 0.02 Instrument Reading: 0.02  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Time: \_\_\_\_\_ Selected Scale: \_\_\_\_\_ Instrument at Zero: Yes / No Stray Light Response: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_  
NTU of Standard: \_\_\_\_\_ Instrument Reading: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BRENNER Date: 10/22/99  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92142452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 90H 814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: \_\_\_\_\_  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 11/00

## INSTRUMENTATION CHECK-OUT

Time: 0830 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: 17.6 pH: 7.23 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0830 Slope: N/A Temperature: 14.4  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1515 Slope: N/A Temperature: 24.0  
Response to Low Buffer: 7.00 Response to High Buffer: \_\_\_\_\_  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: B. Dumesnil Date: 10/23/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H814002  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K54895  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/3/99 pH 10.01: 11/6/00

## INSTRUMENTATION CHECK-OUT

Time: 0910 Battery Condition: Good  
Instrument Readings with Shorting Plug in, mV: — Temperature: 20.1 pH: 7.18 ISO: —  
Reference Chamber Solution Changed?: —  
pH Probe Condition: Good

## FIELD CALIBRATION

Time: 0910 Slope: N/A Temperature: 17.0  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: 1515 Slope: N/A Temperature: 25.6  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: —  
—  
—

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

**pH/TEMPERATURE METER FIELD CALIBRATION FORM**

Project Name: JPL  
Calibration by: J. BRENNER Date: 10/26/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: -  
Buffer Solution Manufacturer: CALTECH  
Expiration Dates of Buffer Solutions pH 4.01: - pH 7.00: 6/99 pH 10.01: -

**INSTRUMENTATION CHECK-OUT**

Time: 0840 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: - Temperature: 16.1 pH: 7.14 ISO: -  
Reference Chamber Solution Changed?:   
pH Probe Condition: GOOD

**FIELD CALIBRATION**

Time: 0840 Slope: N/A Temperature: 11.9  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1100 Slope: N/A Temperature: 35.0  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%



# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J BRENNER Date: 10/27/95  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H 814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: —  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 11/2000

## INSTRUMENTATION CHECK-OUT

Time: 0755 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: 20.8 pH: 7.13 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0755 Slope: N/A Temperature: 15.1  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1530 Slope: N/A Temperature: 22.6  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: —  
—  
—

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

**pH/TEMPERATURE METER FIELD CALIBRATION FORM**

Project Name: JPL  
Calibration by: B. Damesnil Date: 10/28/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H014062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K4895  
Buffer Solution Manufacturer: \_\_\_\_\_  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 06/03/98 pH 10.01: 11/06/00

**INSTRUMENTATION CHECK-OUT**

Time: 0810 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: 7200 Temperature: 17.5 pH: 7.20 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: GOOD

**FIELD CALIBRATION**

Time: 0810 Slope: N/A Temperature: 13.2  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: 1550 Slope: N/A Temperature: 27.0  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: B. Dumesnil Date: 10/29/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92 J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98 H 814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92 K 54895  
Buffer Solution Manufacturer: Calitech  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 11/00

## INSTRUMENTATION CHECK-OUT

Time: 10.45 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: 20.5 pH: 7.25 ISO: —  
Reference Chamber Solution Changed?: YES  
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 1045 Slope: N/A Temperature: 16.5  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: 1010 Slope: N/A Temperature: 22.2  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BRENNER Date: 10/30/98  
Instrument Manufacturer: YSI 3500 Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H 814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: —  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 11/2000

## INSTRUMENTATION CHECK-OUT

Time: 0800 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: 12.3 pH: 7.13 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0800 Slope: N/A Temperature: 11.9  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1305 Slope: N/A Temperature: 22.6  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: —  
—  
—

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BRENNER Date: 11/21/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92342452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 904814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: —  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 11/2000

## INSTRUMENTATION CHECK-OUT

Time: 0805 Battery Condition: Good  
Instrument Readings with Shorting Plug in, mV: — Temperature: 13.1 pH: 7.01 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: Good

## FIELD CALIBRATION

Time: 0805 Slope: N/A Temperature: 10.9  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1515 Slope: N/A Temperature: 18.0  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BIZENNER Date: 11/31/99  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92342452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 9814814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: —  
Buffer Solution Manufacturer: CALIFERT  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 11/2000

## INSTRUMENTATION CHECK-OUT

Time: 0750 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: 9.3 pH: 7.15 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0750 Slope: N/A Temperature: 10.7  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1410 Slope: N/A Temperature: 18.5  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BRENNER Date: 11/4/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J 42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H 814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: —  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 11/2000

## INSTRUMENTATION CHECK-OUT

Time: 0810 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: 12.1 pH: 7.14 ISO: —  
Reference Chamber Solution Changed?: —  
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0810 Slope: N/A Temperature: 11.7  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1430 Slope: N/A Temperature: 26.0  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: —  
—  
—

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: B. Dumesnil Date: 11/5/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H814002  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K54895  
Buffer Solution Manufacturer: Calitech  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 6/00

## INSTRUMENTATION CHECK-OUT

Time: 0810 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: — pH: 7.16 ISO: —  
Reference Chamber Solution Changed?: —  
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0810 Slope: N/A Temperature: 11.4  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: 1010 Slope: N/A Temperature: 20.5  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: —  
—  
—

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%



# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: B. Domesnil Date: 11/6/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H814002  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K54895  
Buffer Solution Manufacturer: Calitech  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 6/00

## INSTRUMENTATION CHECK-OUT

Time: 0825 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: — pH: 7.98 ISO: —  
Reference Chamber Solution Changed?: —  
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0825 Slope: N/A Temperature: 10.0  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: \* Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: \* SAMPLING CANCELED; NO SAMPLES COLLECTED 11/6/98  
FOR DAY

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: B Dimeshi Date: 11/9/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K54895  
Buffer Solution Manufacturer: Oriontech  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 6/00

## INSTRUMENTATION CHECK-OUT

Time: 0745 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: — pH: 7.00 ISO: —  
Reference Chamber Solution Changed?: N/A  
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0745 Slope: N/A Temperature: 09.4  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: 1525 Slope: N/A Temperature: 21.4  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BRENNER Date: 11/10/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92042452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 921254895  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 6/2000

## INSTRUMENTATION CHECK-OUT

Time: 0805 Battery Condition: Good  
Instrument Readings with Shorting Plug in, mV: — Temperature: 9.5 pH: 7.04 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: Good

## FIELD CALIBRATION

Time: 0805 Slope: N/A Temperature: 7.4  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1435 Slope: N/A Temperature: 18.7  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: B. Dumesnil Date: 11/2/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J4 2452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H814002  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K54895  
Buffer Solution Manufacturer: calitech  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 6/00

## INSTRUMENTATION CHECK-OUT

Time: 0800 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: — pH: 6.82 ISO: —  
Reference Chamber Solution Changed?: N/A  
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0800 Slope: N/A Temperature: 07.6  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: 1500 Slope: N/A Temperature: 14.8  
Response to Low Buffer: ~~7.00~~ 7.00 Response to High Buffer: 10.00  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: B. Dimeshil Date: 11/13/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92J42452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K54895  
Buffer Solution Manufacturer: Calitech  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 6/00

## INSTRUMENTATION CHECK-OUT

Time: 0710 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: 11.6 pH: 7.02 ISO: —  
Reference Chamber Solution Changed?: N/A  
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0710 Slope: N/A Temperature: 10.9  
Response to Low Buffer: 7.00 Response to High Buffer: 10.00  
Time: 1045 Slope: N/A Temperature: 19.9  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: —  
—  
—

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BRENNER Date: 11/16/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92542452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 984814062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K540,95  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 6/2000

## INSTRUMENTATION CHECK-OUT

Time: 0820 Battery Condition: Good  
Instrument Readings with Shorting Plug in, mV: — Temperature: 10.1 pH: 7.01 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: Good

## FIELD CALIBRATION

Time: 0820 Slope: N/A Temperature: 8.2  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1525 Slope: N/A Temperature: 21.8  
Response to Low Buffer: 7.02 Response to High Buffer: 10.0  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BRENNER Date: 11/18/99  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92342452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 95H14062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K51895  
Buffer Solution Manufacturer: CALITECH  
Expiration Dates of Buffer Solutions pH 4.01: - pH 7.00: 6/99 pH 10.01: 11/2000

## INSTRUMENTATION CHECK-OUT

Time: 0850 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: - Temperature: 16.7 pH: 7.09 ISO: -  
Reference Chamber Solution Changed?:   
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0850 Slope: N/A Temperature: 8.5  
Response to Low Buffer: 7.00 Response to High Buffer: 12.0  
Time: 1640 Slope: N/A Temperature: 23.2  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: \_\_\_\_\_ Slope: \_\_\_\_\_ Temperature: \_\_\_\_\_  
Response to Low Buffer: \_\_\_\_\_ Response to High Buffer: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%

# pH/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
Calibration by: J. BRENNER Date: 7/19/98  
Instrument Manufacturer: YSI Model: 3500  
Serial Number: 92042452  
pH Probe Manufacturer: YSI Model: 3530  
Serial Number: 98H14062  
ATC Probe Manufacturer: YSI Model: 3510  
Serial Number: 92K54895  
Buffer Solution Manufacturer: CALTECH  
Expiration Dates of Buffer Solutions pH 4.01: — pH 7.00: 6/99 pH 10.01: 11/2000

## INSTRUMENTATION CHECK-OUT

Time: 0750 Battery Condition: GOOD  
Instrument Readings with Shorting Plug in, mV: — Temperature: 9.5 pH: 7.06 ISO: —  
Reference Chamber Solution Changed?:   
pH Probe Condition: GOOD

## FIELD CALIBRATION

Time: 0750 Slope: N/A Temperature: 7.5  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: 1215 Slope: N/A Temperature: 21.5  
Response to Low Buffer: 7.00 Response to High Buffer: 10.0  
Time: — Slope: — Temperature: —  
Response to Low Buffer: — Response to High Buffer: —

Comments: —  
—  
—

Calibrate to Accuracy of  $\pm 0.05$  pH Units  
Slope Must Be Between 80 - 110%



# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J BRENNER Date: 10/22/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92) 42452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97 0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 02/99

## FIELD CALIBRATION

Time: 0830 Temperature of Solution: 14.2  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 795  
 Instrument Response to Calibration Solution: 826  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1515 Temperature of Solution: 24.9  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 998  
 Instrument Response to Calibration Solution: 1025  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

- $\pm 6\%$  of calibration solution if reading is  $\leq 150 \mu\text{mhos/cm}$  on 500 scale;  $\leq 1500 \mu\text{mhos/cm}$  on 5000 scale; or  $\leq 15,000 \mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300 \mu\text{mhos/cm}$  on 500 scale;  $> 1500$  and  $< 3000 \mu\text{mhos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000 \mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  of calibration solution if reading is  $\geq 300 \mu\text{mhos/cm}$  on 500 scale;  $\geq 3000 \mu\text{mhos/cm}$  on 5000 scale; and  $\geq 30,000 \mu\text{mhos/cm}$  on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: B. Domesnil Date: 10/23/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92542452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 92140307  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1000 µS/cm Solution Expiration Date: 08/99

## FIELD CALIBRATION

Time: 0910 Temperature of Solution: 17.2  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 851  
 Instrument Response to Calibration Solution: 874  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1515 Temperature of Solution: 25.0  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* ~~1036~~ 1000  
 Instrument Response to Calibration Solution: 1036  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in °C

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\* Instrument is Calibrated if Response is:

- ±6% of calibration solution if reading is  $\leq 150$   $\mu$ hos/cm on 500 scale;  $\leq 1500$   $\mu$ hos/cm on 5000 scale; or  $\leq 15,000$   $\mu$ hos/cm on 50,000 scale.
- ±4.5% to 6% of calibration solution if reading is  $> 150$  and  $< 300$   $\mu$ hos/cm on 500 scale;  $> 1500$  and  $< 3000$   $\mu$ hos/cm and 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu$ hos/cm on 50,000 scale.
- ± 4.5% of calibration solution if reading is  $\geq 300$   $\mu$ hos/cm on 500 scale;  $\geq 3000$   $\mu$ hos/cm on 5000 scale; and  $\geq 30,000$   $\mu$ hos/cm on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J. BRENNER Date: 10/26/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92142452  
 Probe Manufacturer: YSI Model: 352  
 Serial Number: 97M 0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 3/99

## FIELD CALIBRATION

Time: 0840 Temperature of Solution: 12.0  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 754  
 Instrument Response to Calibration Solution: 790  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1600 Temperature of Solution: 34.7  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* ~~1255~~ 1193  
 Instrument Response to Calibration Solution: 1255  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

$\pm 6\%$  of calibration solution if reading is  $\leq 150$   $\mu$ hos/cm on 500 scale;  $\leq 1500$   $\mu$ hos/cm on 5000 scale; or  $\leq 15,000$   $\mu$ hos/cm on 50,000 scale.

$\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300$   $\mu$ hos/cm on 500 scale;  $> 1500$  and  $< 3000$   $\mu$ hos/cm on 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu$ hos/cm on 50,000 scale.

$\pm 4.5\%$  of calibration solution if reading is  $\geq 300$   $\mu$ hos/cm on 500 scale;  $\geq 3000$   $\mu$ hos/cm on 5000 scale; and  $\geq 30,000$   $\mu$ hos/cm on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J. BRENNER Date: 10/27/99  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92342452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 8/99

## FIELD CALIBRATION

Time: 0755 Temperature of Solution: 14.3  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 797  
 Instrument Response to Calibration Solution: 832  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1530 Temperature of Solution: 23.4  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 969  
 Instrument Response to Calibration Solution: 995  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25 $^\circ\text{C}$ ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

- +6% of calibration solution if reading is  $\leq 150$   $\mu$ mhos/cm on 500 scale;  $\leq 1500$   $\mu$ mhos/cm on 5000 scale; or  $\leq 15,000$   $\mu$ mhos/cm on 50,000 scale.
- +4.5% to 6% of calibration solution if reading is  $> 150$  and  $< 300$   $\mu$ mhos/cm on 500 scale;  $> 1500$  and  $< 3000$   $\mu$ mhos/cm on 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu$ mhos/cm on 50,000 scale.
- + 4.5% of calibration solution if reading is  $\geq 300$   $\mu$ mhos/cm on 500 scale;  $\geq 3000$   $\mu$ mhos/cm on 5000 scale; and  $\geq 30,000$   $\mu$ mhos/cm on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: IPL  
 Calibration by: B. Dumesnil Date: 10/28/99  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92J42452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000 ~~μ~~ S/cm Solution Expiration Date: 08/99

## FIELD CALIBRATION

Time: 0810 Temperature of Solution: 12.6  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 766  
 Instrument Response to Calibration Solution: 784  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1550 Temperature of Solution: 26.2  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 1023  
 Instrument Response to Calibration Solution: 1087  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:  

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$
 Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

**\*\* Instrument is Calibrated if Response is:**  
 $\pm 6\%$  of calibration solution if reading is  $\leq 150$   $\mu\text{mhos/cm}$  on 500 scale;  $\leq 1500$   $\mu\text{mhos/cm}$  on 5000 scale; or  $\leq 15,000$   $\mu\text{mhos/cm}$  on 50,000 scale.  
 $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300$   $\mu\text{mhos/cm}$  on 500 scale;  $> 1500$  and  $< 3000$   $\mu\text{mhos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu\text{mhos/cm}$  on 50,000 scale.  
 $\pm 4.5\%$  of calibration solution if reading is  $\geq 300$   $\mu\text{mhos/cm}$  on 500 scale;  $\geq 3000$   $\mu\text{mhos/cm}$  on 5000 scale; and  $\geq 30,000$   $\mu\text{mhos/cm}$  on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: B.D. MENIL Date 10/29/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 9242452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1000  $\mu$ S/cm Solution Expiration Date: 2/99

## FIELD CALIBRATION

Time: 1045 Temperature of Solution: 16.5  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 837  
 Instrument Response to Calibration Solution: 875  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1610 Temperature of Solution: 21.9  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 940  
 Instrument Response to Calibration Solution: 957  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\* Instrument is Calibrated if Response is:  
 $\pm 6\%$  of calibration solution if reading is  $\leq 150$   $\mu$ hos/cm on 500 scale;  $\leq 1500$   $\mu$ hos/cm on 5000 scale;  
 or  $\leq 15,000$   $\mu$ hos/cm on 50,000 scale.  
 $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300$   $\mu$ hos/cm on 500 scale;  $> 1500$  and  
 $< 3000$   $\mu$ hos/cm and 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu$ hos/cm on 50,000 scale.  
 $\pm 4.5\%$  of calibration solution if reading is  $\geq 300$   $\mu$ hos/cm on 500 scale;  $\geq 3000$   $\mu$ hos/cm on 5000  
 scale; and  $\geq 30,000$   $\mu$ hos/cm on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J. BRENNER Date: 10/30/95  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92342452  
 Probe Manufacturer: YSI Model: 3510  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 8/99

## FIELD CALIBRATION

Time: 0900 Temperature of Solution: 12.4  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 762  
 Instrument Response to Calibration Solution: 800  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1305 Temperature of Solution: 23.1  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 963  
 Instrument Response to Calibration Solution: 1011  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

- $\pm 6\%$  of calibration solution if reading is  $\leq 150 \mu\text{hos/cm}$  on 500 scale;  $\leq 1500 \mu\text{hos/cm}$  on 5000 scale; or  $\leq 15,000 \mu\text{hos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300 \mu\text{hos/cm}$  on 500 scale;  $> 1500$  and  $< 3000 \mu\text{hos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000 \mu\text{hos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  of calibration solution if reading is  $\geq 300 \mu\text{hos/cm}$  on 500 scale;  $\geq 3000 \mu\text{hos/cm}$  on 5000 scale; and  $\geq 30,000 \mu\text{hos/cm}$  on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J. BRENNER Date: 11/2/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92042452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 8/99

## FIELD CALIBRATION

Time: 0805 Temperature of Solution: 11.4  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 744  
 Instrument Response to Calibration Solution: 773  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1515 Temperature of Solution: 17.3  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 853  
 Instrument Response to Calibration Solution: 903  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes: \_\_\_\_\_ No: \_\_\_\_\_

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:  

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$
 Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25 $^\circ\text{C}$ ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\* **Instrument is Calibrated if Response is:**  
 $\pm 6\%$  of calibration solution if reading is  $\leq 150$   $\mu\text{hos/cm}$  on 500 scale;  $\leq 1500$   $\mu\text{hos/cm}$  on 5000 scale;  
 or  $\leq 15,000$   $\mu\text{hos/cm}$  on 50,000 scale.  
 $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300$   $\mu\text{hos/cm}$  on 500 scale;  $> 1500$  and  
 $< 3000$   $\mu\text{hos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu\text{hos/cm}$  on 50,000 scale.  
 $\pm 4.5\%$  of calibration solution if reading is  $\geq 300$   $\mu\text{hos/cm}$  on 500 scale;  $\geq 3000$   $\mu\text{hos/cm}$  on 5000  
 scale; and  $\geq 30,000$   $\mu\text{hos/cm}$  on 50,000 scale.



# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J. BRANNAN Date: 11/3/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92342452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 9770367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 8/99

## FIELD CALIBRATION

Time: 0750 Temperature of Solution: 11.3  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 742  
 Instrument Response to Calibration Solution: 735  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1410 Temperature of Solution: 17.8  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 862  
 Instrument Response to Calibration Solution: 918  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:  
 Conductivity ( $\mu$  S/cm) = (Conductivity at 25°C) (A + BT + CT<sup>2</sup>)  
 Where T = Temperature in °C

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\* Instrument is Calibrated if Response is:  
 ±6% of calibration solution if reading is ≤ 150  $\mu$ hos/cm on 500 scale; ≤ 1500  $\mu$ hos/cm on 5000 scale; or ≤ 15,000  $\mu$ hos/cm on 50,000 scale.  
 ±4.5% to 6% of calibration solution if reading is > 150 and < 300  $\mu$ hos/cm on 500 scale; > 1500 and < 3000  $\mu$ hos/cm on 5000 scale; and > 15,000 and < 30,000  $\mu$ hos/cm on 50,000 scale.  
 ± 4.5% of calibration solution if reading is ≥ 300  $\mu$ hos/cm on 500 scale; ≥ 3000  $\mu$ hos/cm on 5000 scale; and ≥ 30,000  $\mu$ hos/cm on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J BIZNICK Date: 11/4/95  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92J42452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0637  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 8/99

## FIELD CALIBRATION

Time: 0810 Temperature of Solution: 12.0  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 754  
 Instrument Response to Calibration Solution: 802  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1430 Temperature of Solution: 24.8  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 996  
 Instrument Response to Calibration Solution: 1,043  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:  
 $Conductivity (\mu S/cm) = (Conductivity at 25^{\circ}C) (A + BT + CT^2)$   
 Where T = Temperature in  $^{\circ}C$

And	Conductivity @ 25 $^{\circ}C$ ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\* Instrument is Calibrated if Response is:  
 $\pm 6\%$  of calibration solution if reading is  $\leq 150 \mu$ hos/cm on 500 scale;  $\leq 1500 \mu$ hos/cm on 5000 scale;  
 or  $\leq 15,000 \mu$ hos/cm on 50,000 scale.  
 $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300 \mu$ hos/cm on 500 scale;  $> 1500$  and  
 $< 3000 \mu$ hos/cm and 5000 scale; and  $> 15,000$  and  $< 30,000 \mu$ hos/cm on 50,000 scale.  
 $\pm 4.5\%$  of calibration solution if reading is  $\geq 300 \mu$ hos/cm on 500 scale;  $\geq 3000 \mu$ hos/cm on 5000  
 scale; and  $\geq 30,000 \mu$ hos/cm on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: B Dumesnil Date: 11/5/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92J42452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000 $\mu$ S Solution Expiration Date: 08/99

## FIELD CALIBRATION

Time: 0810 Temperature of Solution: 12.0  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 754  
 Instrument Response to Calibration Solution: 792  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1610 Temperature of Solution: 19.1  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 887  
 Instrument Response to Calibration Solution: 859  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25 $^\circ\text{C}$ ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

- $\pm 6\%$  of calibration solution if reading is  $\leq 150$   $\mu\text{mhos/cm}$  on 500 scale;  $\leq 1500$   $\mu\text{mhos/cm}$  on 5000 scale; or  $\leq 15,000$   $\mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300$   $\mu\text{mhos/cm}$  on 500 scale;  $> 1500$  and  $< 3000$   $\mu\text{mhos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  of calibration solution if reading is  $\geq 300$   $\mu\text{mhos/cm}$  on 500 scale;  $\geq 3000$   $\mu\text{mhos/cm}$  on 5000 scale; and  $\geq 30,000$   $\mu\text{mhos/cm}$  on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: B. Dumesnil Date: 11/10/98  
 Instrument Manufacturer: VSI Model: 3500  
 Serial Number: 92J42452  
 Probe Manufacturer: VSI Model: 3520  
 Serial Number: 97M0307  
 Calibration Solution Manufacturer: VSI  
 Solution Conductivity: 1,000 uS Solution Expiration Date: 08/99

## FIELD CALIBRATION

Time: 0825 Temperature of Solution: 10.2  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 721  
 Instrument Response to Calibration Solution: 750  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \* Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\* Instrument is Calibrated if Response is:  
 +6% of calibration solution if reading is  $\leq 150 \mu\text{hos/cm}$  on 500 scale;  $\leq 1500 \mu\text{hos/cm}$  on 5000 scale;  
 or  $\leq 15,000 \mu\text{hos/cm}$  on 50,000 scale.  
 +4.5% to 6% of calibration solution if reading is  $> 150$  and  $< 300 \mu\text{hos/cm}$  on 500 scale;  $> 1500$  and  
 $< 3000 \mu\text{hos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000 \mu\text{hos/cm}$  on 50,000 scale.  
 $\pm 4.5\%$  of calibration solution if reading is  $\geq 300 \mu\text{hos/cm}$  on 500 scale;  $\geq 3000 \mu\text{hos/cm}$  on 5000  
 scale; and  $\geq 30,000 \mu\text{hos/cm}$  on 50,000 scale.

\* SAMPLING CANCELLED FOR DAY; NO SAMPLES COLLECTED

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: B. DJMESNIC Date: 11/9/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 9242452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 9710367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 08/99

## FIELD CALIBRATION

Time: 0745 Temperature of Solution: 9.3  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 705  
 Instrument Response to Calibration Solution: 738  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:   
 Time: 1525 Temperature of Solution: 21.8  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 933  
 Instrument Response to Calibration Solution: 985  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:   
 Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

- $\pm 6\%$  of calibration solution if reading is  $\leq 150$   $\mu\text{mhos/cm}$  on 500 scale;  $\leq 1500$   $\mu\text{mhos/cm}$  on 5000 scale; or  $\leq 15,000$   $\mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300$   $\mu\text{mhos/cm}$  on 500 scale;  $> 1500$  and  $< 3000$   $\mu\text{mhos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  of calibration solution if reading is  $\geq 300$   $\mu\text{mhos/cm}$  on 500 scale;  $\geq 3000$   $\mu\text{mhos/cm}$  on 5000 scale; and  $\geq 30,000$   $\mu\text{mhos/cm}$  on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J BRUNNER Date: 11/10/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92342452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97MC367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 08/99

## FIELD CALIBRATION

Time: 0805 Temperature of Solution: 8.4  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 689  
 Instrument Response to Calibration Solution: 721  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1435 Temperature of Solution: 18.6  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 877  
 Instrument Response to Calibration Solution: 912  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:  

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$
 Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

**\*\* Instrument is Calibrated if Response is:**  
 $\pm 6\%$  of calibration solution if reading is  $\leq 150$   $\mu$ mhos/cm on 500 scale;  $\leq 1500$   $\mu$ mhos/cm on 5000 scale; or  $\leq 15,000$   $\mu$ mhos/cm on 50,000 scale.  
 $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300$   $\mu$ mhos/cm on 500 scale;  $> 1500$  and  $< 3000$   $\mu$ mhos/cm and 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu$ mhos/cm on 50,000 scale.  
 $\pm 4.5\%$  of calibration solution if reading is  $\geq 300$   $\mu$ mhos/cm on 500 scale;  $\geq 3000$   $\mu$ mhos/cm on 5000 scale; and  $\geq 30,000$   $\mu$ mhos/cm on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: B. Dumesnil Date: 11/12/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92J42452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0307  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000 uS Solution Expiration Date: 08/99

## FIELD CALIBRATION

Time: 0800 Temperature of Solution: 7.6  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 675  
 Instrument Response to Calibration Solution: 720  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1500 Temperature of Solution: 14.2  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 795  
 Instrument Response to Calibration Solution: 890  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

- $\pm 6\%$  of calibration solution if reading is  $\leq 150 \mu\text{mhos/cm}$  on 500 scale;  $\leq 1500 \mu\text{mhos/cm}$  on 5000 scale; or  $\leq 15,000 \mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300 \mu\text{mhos/cm}$  on 500 scale;  $> 1500$  and  $< 3000 \mu\text{mhos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000 \mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  of calibration solution if reading is  $\geq 300 \mu\text{mhos/cm}$  on 500 scale;  $\geq 3000 \mu\text{mhos/cm}$  on 5000 scale; and  $\geq 30,000 \mu\text{mhos/cm}$  on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: B Dumesnil Date 11/13/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92542452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000 uS Solution Expiration Date: 08/99

## FIELD CALIBRATION

Time: 0710 Temperature of Solution: 10.3  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 723  
 Instrument Response to Calibration Solution: 774  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 16:45 Temperature of Solution: 20.5  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 913  
 Instrument Response to Calibration Solution: 964  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25°C ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

- $\pm 6\%$  of calibration solution if reading is  $\leq 150 \mu\text{hos/cm}$  on 500 scale;  $\leq 1500 \mu\text{hos/cm}$  on 5000 scale; or  $\leq 15,000 \mu\text{hos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300 \mu\text{hos/cm}$  on 500 scale;  $> 1500$  and  $< 3000 \mu\text{hos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000 \mu\text{hos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  of calibration solution if reading is  $\geq 300 \mu\text{hos/cm}$  on 500 scale;  $\geq 3000 \mu\text{hos/cm}$  on 5000 scale; and  $\geq 30,000 \mu\text{hos/cm}$  on 50,000 scale.



# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J. BRENNER Date: 11/16/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 912-J42452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 8/99

## FIELD CALIBRATION

Time: 0520 Temperature of Solution: 8.5  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 691  
 Instrument Response to Calibration Solution: 731  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1525 Temperature of Solution: 22.2  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 946  
 Instrument Response to Calibration Solution: 1007  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes: \_\_\_\_\_ No: \_\_\_\_\_

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25 $^\circ\text{C}$ ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\*

**Instrument is Calibrated if Response is:**

- $\pm 6\%$  of calibration solution if reading is  $\leq 150$   $\mu\text{mhos/cm}$  on 500 scale;  $\leq 1500$   $\mu\text{mhos/cm}$  on 5000 scale; or  $\leq 15,000$   $\mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300$   $\mu\text{mhos/cm}$  on 500 scale;  $> 1500$  and  $< 3000$   $\mu\text{mhos/cm}$  on 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu\text{mhos/cm}$  on 50,000 scale.
- $\pm 4.5\%$  of calibration solution if reading is  $\geq 300$   $\mu\text{mhos/cm}$  on 500 scale;  $\geq 3000$   $\mu\text{mhos/cm}$  on 5000 scale; and  $\geq 30,000$   $\mu\text{mhos/cm}$  on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J. BRENNER Date: 11/18/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92J42452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 2/99

## FIELD CALIBRATION

Time: 0850 Temperature of Solution: 7.7  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 676  
 Instrument Response to Calibration Solution: 707  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1640 Temperature of Solution: 22.8  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 957  
 Instrument Response to Calibration Solution: 991  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:

$$\text{Conductivity } (\mu \text{ S/cm}) = (\text{Conductivity at } 25^\circ\text{C}) (A + BT + CT^2)$$

Where T = Temperature in  $^\circ\text{C}$

And	Conductivity @ 25 $^\circ\text{C}$ ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\* Instrument is Calibrated if Response is:  
 +6% of calibration solution if reading is  $\leq 150$   $\mu$ mhos/cm on 500 scale;  $\leq 1500$   $\mu$ mhos/cm on 5000 scale;  
 or  $\leq 15,000$   $\mu$ mhos/cm on 50,000 scale.  
 +4.5% to 6% of calibration solution if reading is  $> 150$  and  $< 300$   $\mu$ mhos/cm on 500 scale;  $> 1500$  and  
 $< 3000$   $\mu$ mhos/cm and 5000 scale; and  $> 15,000$  and  $< 30,000$   $\mu$ mhos/cm on 50,000 scale.  
 + 4.5% of calibration solution if reading is  $\geq 300$   $\mu$ mhos/cm on 500 scale;  $\geq 3000$   $\mu$ mhos/cm on 5000  
 scale; and  $\geq 30,000$   $\mu$ mhos/cm on 50,000 scale.

# CONDUCTIVITY/SALINITY/TEMPERATURE METER FIELD CALIBRATION FORM

Project Name: JPL  
 Calibration by: J. BRENNER Date: 11/19/98  
 Instrument Manufacturer: YSI Model: 3500  
 Serial Number: 92342452  
 Probe Manufacturer: YSI Model: 3520  
 Serial Number: 97M0367  
 Calibration Solution Manufacturer: YSI  
 Solution Conductivity: 1,000  $\mu$ S/cm Solution Expiration Date: 2/99

## FIELD CALIBRATION

Time: 0750 Temperature of Solution: 8.6  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 693  
 Instrument Response to Calibration Solution: 726  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: 1215 Temperature of Solution: 21.9  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* 938  
 Instrument Response to Calibration Solution: 987  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes:  No:

Time: \_\_\_\_\_ Temperature of Solution: \_\_\_\_\_  
 Temperature Compensated Solution Conductivity ( $\mu$  S/cm)\* \_\_\_\_\_  
 Instrument Response to Calibration Solution: \_\_\_\_\_  
 Instrument Response within Instrument and Probe Limits of Error: \*\* Yes: \_\_\_\_\_ No: \_\_\_\_\_

\*The Temperature Compensated Solution Conductivity May Be Computed Using Following Equation:  
 $Conductivity (\mu S/cm) = (Conductivity at 25^{\circ}C) (A + BT + CT^2)$   
 Where T = Temperature in  $^{\circ}C$

And	Conductivity @ 25 $^{\circ}C$ ( $\mu$ S/cm)	A	B	C
	1,000	0.5407	0.0173	0.000043
	10,000	0.5538	0.0168	0.000042
	100,000	0.5825	0.0157	0.000040

\*\* **Instrument is Calibrated if Response is:**  
 $\pm 6\%$  of calibration solution if reading is  $\leq 150 \mu$ hos/cm on 500 scale;  $\leq 1500 \mu$ hos/cm on 5000 scale; or  $\leq 15,000 \mu$ hos/cm on 50,000 scale.  
 $\pm 4.5\%$  to  $6\%$  of calibration solution if reading is  $> 150$  and  $< 300 \mu$ hos/cm on 500 scale;  $> 1500$  and  $< 3000 \mu$ hos/cm and 5000 scale; and  $> 15,000$  and  $< 30,000 \mu$ hos/cm on 50,000 scale.  
 $\pm 4.5\%$  of calibration solution if reading is  $\geq 300 \mu$ hos/cm on 500 scale;  $\geq 3000 \mu$ hos/cm on 5000 scale; and  $\geq 30,000 \mu$ hos/cm on 50,000 scale.

**APPENDIX D**  
**LABORATORY ANALYTICAL REPORTS**  
**AND**  
**CHAIN-OF-CUSTODY FORMS**

## ANALYTICAL RESULTS INDEX

### GROUNDWATER SAMPLES

Well Number	Report Number	Sample Number	Tab Number	Date Sampled
MW-1	49271	MW-984-001	18	11/13/98
MW-3-1	48855	MW-984-002	12	11/3/98
MW-3-2	48855	MW-984-003	12	11/3/98
MW-3-3	48855	MW-984-004	12	11/3/98
MW-3-4	48855	MW-984-005	12	11/3/98
MW-3-5	48855	MW-984-006	12	11/3/98
MW-4-1	48793	MW-984-007	10	10/30/98
MW-4-2	48664	MW-984-008	5	10/27/98
MW-4-2 Dup	48664	MW-984-009	5	10/27/98
MW-4-3	48793	MW-984-010	10	10/30/98
MW-4-4	48793	MW-984-011	10	10/30/98
MW-4-5	48793	MW-984-012	10	10/30/98
MW-5	49271	MW-984-013	18	11/13/98
MW-6	49271	MW-984-014	18	11/13/98
MW-7	48734	MW-984-015	7	10/28/98
MW-8	48734	MW-984-016	7	10/28/98
MW-9	49271	MW-984-017	18	11/13/98
MW-10	49271	MW-984-018	18	11/13/98
MW-10 Dup	49271	MW-984-019	18	11/13/98
MW-11-1	48664	MW-984-020	5	10/27/98
MW-11-2	48664	MW-984-021	5	10/27/98
MW-11-3	49474	MW-984-022	21	11/19/98
MW-11-4	49474	MW-984-023	21	11/19/98
MW-11-5	49474	MW-984-024	21	11/19/98
MW-12-1	49057	MW-984-025	15	11/9/98
MW-12-2	48988	MW-984-026	14	11/5/98
MW-12-2 Dup	48988	MW-984-027	14	11/5/98
MW-12-3	48988	MW-984-028	14	11/5/98
MW-12-4	49057	MW-984-029	15	11/9/98
MW-12-5	49057	MW-984-030	15	11/9/98
MW-13	48734	MW-984-031	7	10/28/98
MW-13 Dup	48734	MW-984-032	7	10/28/98
MW-14-1	49100	MW-984-033	16	11/10/98
MW-14-2	49100	MW-984-034	16	11/10/98
MW-14-3	49100	MW-984-035	16	11/10/98
MW-14-4	49100	MW-984-036	16	11/10/98
MW-14-5	49100	MW-984-037	16	11/10/98
MW-15	49271	MW-984-038	18	11/13/98
MW-16	48734	MW-984-039	7	10/28/98
MW-17-1	48931	MW-984-040	13	11/4/98
MW-17-2	48931	MW-984-041	13	11/4/98
MW-17-3	48664	MW-984-042	5	10/27/98
MW-17-4	48931	MW-984-043	13	11/4/98
MW-17-5	48931	MW-984-044	13	11/4/98

## ANALYTICAL RESULTS INDEX

### GROUNDWATER SAMPLES

Well Number	Report Number	Sample Number	Tab Number	Date Sampled
MW-18-1	48539	MW-984-045	1	10/22/98
MW-18-2	48539	MW-984-046	1	10/22/98
MW-18-3	48539	MW-984-047	1	10/22/98
MW-18-4	48539	MW-984-048	1	10/22/98
MW-18-5	48539	MW-984-049	1	10/22/98
MW-19-1	48578	MW-984-050	2	10/23/98
MW-19-2	48578	MW-984-051	2	10/23/98
MW-19-3	48578	MW-984-052	2	10/23/98
MW-19-4	48578	MW-984-053	2	10/23/98
MW-19-5	48578	MW-984-054	2	10/23/98
MW-20-1	48839	MW-984-055	11	11/2/98
MW-20-2	48839	MW-984-056	11	11/2/98
MW-20-3	48839	MW-984-057	11	11/2/98
MW-20-4	48839	MW-984-058	11	11/2/98
MW-20-5	48839	MW-984-059	11	11/2/98
MW-21-1	49213	MW-984-060	17	11/12/98
MW-21-2	49213	MW-984-061	17	11/12/98
MW-21-3	49213	MW-984-062	17	11/12/98
MW-21-4	49213	MW-984-063	17	11/12/98
MW-21-5	49213	MW-984-064	17	11/12/98
MW-22-1	49302	MW-984-065	19	11/16/98
MW-22-2	49302	MW-984-066	19	11/16/98
MW-22-3	49302	MW-984-067	19	11/16/98
MW-22-4	49302	MW-984-068	19	11/16/98
MW-22-5	49302	MW-984-069	19	11/16/98
MW-23-1	49425	MW-984-070	20	11/18/98
MW-23-2	49425	MW-984-071	20	11/18/98
MW-23-3	49425	MW-984-072	20	11/18/98
MW-23-4	49425	MW-984-073	20	11/18/98
MW-23-5	49425	MW-984-074	20	11/18/98
MW-24-1	48613	MW-984-075	3	10/26/98
MW-24-2	48770	MW-984-076	9	10/29/98
MW-24-3	48770	MW-984-077	9	10/29/98
MW-24-4	48770	MW-984-078	9	10/29/98
MW-24-5	48770	MW-984-079	9	10/29/98

## ANALYTICAL RESULTS INDEX

### QA/QC SAMPLE BLANKS

Sample Type	Report Number	Sample Number	Tab Number	Date Sampled
TB	48539	MW-984-080	1	10/22/98
EB	48539	MW-984-081	1	10/22/98
TB	48578	MW-984-082	2	10/23/98
EB	48578	MW-984-083	2	10/23/98
TB	48613	MW-984-084	3	10/26/98
EB	48613	MW-984-085	3	10/26/98
TB	48664	MW-984-086	5	10/27/98
EB	48664	MW-984-087	5	10/27/98
TB	48734	MW-984-088	7	10/28/98
EB	48770	MW-984-089	9	10/29/98
TB	48770	MW-984-090	9	10/29/98
EB	48793	MW-984-091	10	10/30/98
TB	48793	MW-984-092	10	10/30/98
EB	48839	MW-984-093	11	11/2/98
TB	48839	MW-984-094	11	11/2/98
EB	48855	MW-984-095	12	11/3/98
TB	48855	MW-984-096	12	11/3/98
EB	48931	MW-984-097	13	11/4/98
TB	48931	MW-984-098	13	11/4/98
EB	48988	MW-984-099	14	11/5/98
TB	48988	MW-984-100	14	11/5/98
EB	49057	MW-984-101	15	11/9/98
TB	49057	MW-984-102	15	11/9/98
EB	49100	MW-984-103	16	11/10/98
TB	49100	MW-984-104	16	11/10/98
TB	49213	MW-984-106	17	11/12/98
EB	49213	MW-984-107	17	11/12/98
TB	49271	MW-984-108	18	11/13/98
EB	49302	MW-984-109	19	11/16/98
TB	49302	MW-984-110	19	11/16/98
EB	49425	MW-984-111	20	11/18/98
TB	49425	MW-984-112	20	11/18/98
EB	49474	MW-984-113	21	11/19/98
TB	49474	MW-984-114	21	11/19/98
FB	48734	MW-984-200	7	10/28/98

## ANALYTICAL RESULTS INDEX

### 1,4 DIOXANE & NDMA RESULTS

Well Number	Report Number	Sample Number	Tab Number	Date Sampled
MW-4-2	48665	MW-984-008	6	10/27/98
MW-7	48735	MW-984-015	8	10/28/98
MW-13	48735	MW-984-031	8	10/28/98
MW-16	48735	MW-984-039	8	10/28/98
MW-17-3	48665	MW-984-042	6	10/27/98
MW-24-1	48614	MW-984-075	4	10/26/98





**MONTGOMERY WATSON LABORATORIES**

November 17, 1998

Foster Wheeler Environmental  
611 Anton Blvd Suite 800  
Costa Mesa, CA.92626

Attention: Mark Cutler

Re: Report # 48539 (MW-984-080, -081, -049, -048, -047, -046,  
-045)

Dear Mark,

Enclosed please find data deliverables for the recent JPL project. A detailed quality control (QC) summary follows:

**Non-conformance (LCS, MS/MSD, Surrogates, and Holding Times):**

None

**Samples requiring dilution (with increased MRL's):**

None

**Method blanks with compounds detected:**

None

**Other Comments:**

Carbon Tetrachloride was detected in sample ID: MW-984-048

Chloroform was detected in sample ID: MW-984-048, -047

Tetrachloroethylene was detected in sample ID: MW-984-048, -047

Trichloroethylene was detected in sample ID: MW-984-048, -047

Perchlorate is reported as ND for sample ID: MW-984-048

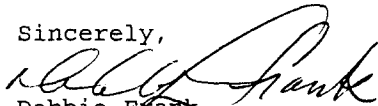
**TICS:**

None

**Method Variance:**

None

Sincerely,

  
Debbie Frank  
Project Manager

cc: Judy Novelly (JPL)

a Division of Montgomery Watson Americas, Inc.

555 East Walnut Street  
Pasadena, California 91101  
Tel: 626 568 6400  
Fax: 626 568 6324

4820 South Mill Avenue  
Suite 202  
Tempe, Arizona 85282  
Tel: 602 755 8201  
Fax: 602 755 8203

*Quality Environmental Analysis*

**Montgomery Watson Laboratories**  
 , LOS ANGELES, CA 90051-3508  
 PHONE: 626-568-6400/FAX: 626-568-6324

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Foster Wheeler Environmental, Inc  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa, CA 92626  
 Attn: Mark Cutler

Customer Code: ENSERCH  
 PO#: Sub PO#007618-0004  
 Group#: 48539  
 Project#: JPL  
 Proj Mgr: Debbie Frank  
 Phone: (714) 444-5526

The following samples were received from you on 10/22/98. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Montgomery Watson Laboratories.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
981022272	MW-984-080	@EBASVOA	Water	10/22/98
981022273	MW-984-081	@EBASVOA CR-EBAS AS-EBAS PB-EBAS CR-VI CLO4	Water	10/22/98
981022274	MW-984-049	@EBASVOA CR-EBAS AS-EBAS PB-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CR-VI CLO4	Water	10/22/98
981022275	MW-984-048	@EBASVOA PB-EBAS AS-EBAS CR-EBAS CLO4 CR-VI CA MG NA K FE-MS CL SO4 NO3 ALK CO3 HCO3 EC PH ANION1 CATION1 TDS	Water	10/22/98
981022276	MW-984-047	@EBASVOA PB-EBAS AS-EBAS CR-EBAS CLO4 CR-VI CA MG NA K FE-MS CL SO4 NO3 ALK CO3 HCO3 EC PH ANION1 CATION1 TDS	Water	10/22/98
981022277	MW-984-046	@EBASVOA AS-EBAS PB-EBAS CR-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CR-VI CLO4	Water	10/22/98
981022278	MW-984-045	@EBASVOA CR-EBAS AS-EBAS PB-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CR-VI CLO4	Water	10/22/98

Test Acronym Description

Test Acronym	Description
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*Handwritten initials*

Foster Wheeler Environmental, Inc  
611 Anton Boulevard  
Suite 800  
Costa Mesa, CA 92626  
Attn: Mark Cutler

Customer Code: ENSERCH  
PO#: Sub PO#007618-0004  
Group#: 48539  
Project#: JPL  
Proj Mgr: Debbie Frank  
Phone: (714) 444-5526

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Test Acronym Description

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Test Acronym	Description
@EBASVOA	Regulated VOCs plus Lists 1&3
ALK	Alkalinity
ANION1	Anion Sum
AS-EBAS	Arsenic, Total, GF
CA	Calcium, Total, ICAP
CATION1	Cation Sum
CL	Chloride
CLO4	Perchlorate
CO3	Carbonate as CO3, Calculated
CR-EBAS	Chromium, Total, ICAP/MS
CR-VI	Hexavalent chromium (Cr VI)
EC	Specific Conductance
FE-MS	Iron, Total, ICAP/MS
HCO3	Bicarbonate as HCO3,calculated
K	Potassium, Total, ICAP
MG	Magnesium, Total, ICAP
NA	Sodium, Total, ICAP
NO3	Nitrate-N by IC
PB-EBAS	Lead, Total, ICAP/MS
PH	Lab pH
SO4	Sulfate
TDS	Total Dissolved Solid (TDS)

4057 1



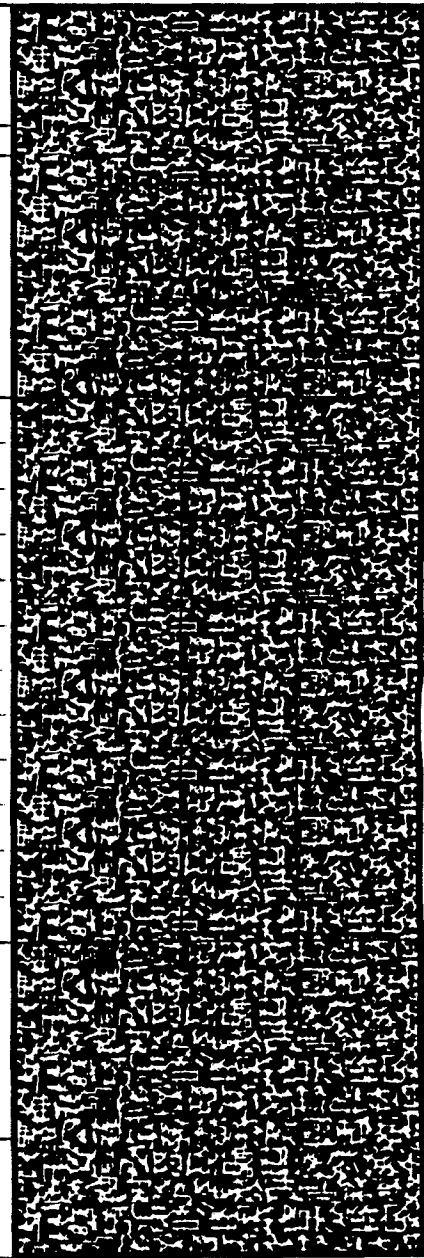
NUMBER 2034

FOSTER WHEELER ENVIRONMENTAL CORPORATION

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PAGE 1 OF 1

PROJECT: JPL		OFS NO.: 1572.0266		HAZARD IDENTIFICATION			TIME REQUIRED					
ADDRESS: 300 OAK GROVE DR., PASADENA, CA					Non Hazard <input checked="" type="checkbox"/>	Reactive <input type="checkbox"/>	NORMAL <input checked="" type="checkbox"/> DAYS					
SAMPLE NAME: B. DUMENSIL		SAMPLER (Signature):			Flammable <input type="checkbox"/>	Toxic <input type="checkbox"/>	RUSH <input type="checkbox"/> DAYS					
LABORATORY: MONTGOMERY WATSON LABS					ANALYSES REQUIRED							
REPORT TO BE SENT TO: MR. MARZIK CUTLER					VOCs (5242)	TOTAL AS, CR, PB (2010/7000)	MAJIC ANIONS ?TDS	HEX. CR	PERCHLORATE	MS FOR VOCs	MSD FOR VOCs	METALS MS/MSD
SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	SAMPLE MATERIAL							
					WATER	SOIL	OTHER (Describe)					
MW-04-080	0845	10/22/90	2	2x40ml	X			X				
MW-04-081	1000	↓	5	2x40ml 1x250ml 2x125ml	X			X	X			
MW-04-049	1015		6	2x40ml 1x250ml 2x125ml 1x50ml	X			X	X			
MW-04-046	1130		6		X			X	X			
MW-04-047	1300		6		X			X	X			
MW-04-046	1405		6		X			X	X			X
MW-04-046	1405		2	2x40ml	X					X		
MW-04-046	1405		2	2x40ml	X						X	
MW-04-045	1515		6	2x40ml 1x250ml 2x125ml 1x50ml	X			X	X			
LABORATORY INSTRUCTIONS/COMMENTS												
LEVEL IV QA/QC												
RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)	RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)							
COMPANY	TIME	COMPANY	COMPANY	TIME	COMPANY							



MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: Emerald Date Received: 10/22/08  
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 10/22/08  
by (print) Vyara Meppan (sign) Vyara Meppan

- 1. Did cooler come with shipping slip (air bill, etc.)? Yes  No  
If YES, attach & enter carrier and air bill # here: \_\_\_\_\_
- 2. Were custody seals on outside of cooler? Yes  No  
If YES, how many & where: \_\_\_\_\_  
If Yes, enter the following: seal date: \_\_\_\_\_, seal name: \_\_\_\_\_  
Notified T. Blaney 10/23/08
- 3. Were custody seals unbroken & intact at delivery? Yes No NA
- 4. Were custody papers sealed in bag & taped to lid? Yes  No
- 5. Were custody papers filled out properly (ink, etc.)  Yes No
- 6. Did you sign custody papers in appropriate place?  Yes No
- 7. Was project identifiable from custody papers?  Yes No
- 8. Have designated person(s) initial to acknowledge receipt: VKM (date) 10/22

B. LOG-IN PHASE: Date samples were logged-in: \_\_\_\_\_ by: \_\_\_\_\_  
(print) \_\_\_\_\_ (sign) \_\_\_\_\_

- 9. Describe packing: \_\_\_\_\_
- 10. If required, was enough ice used?  Yes No
- 11. Were all bottles sealed in separate plastic bags?  Yes No
- 12. Did all bottles arrive unbroken/in good condition?  Yes No
- 13. Were all bottle labels complete (ID,date,sign,pres)?  Yes No
- 14. Did all bottle labels agree with custody papers?  
If NO, indicate discrepancies on back.  Yes No
- 15. Were correct containers used for the analytes?  Yes No
- 16. Were correct preservatives used when required?  Yes No
- 17. Was sufficient amount of sample sent for tests?  Yes No
- 18. Bubbles absent in VOA vials?  
If NO, list by sample id on back.  Yes No
- 19. Was Client Services informed of problems? Yes No

			Result	MDL	UNITS
Analyzed	981022272	MW-984-080			
Analyzed	981022273	MW-984-081			
Analyzed	981022274	MW-984-049			
10/26/98	Alkalinity		134	2.000	MGL
10/29/98	Anion Sum		3.06	.001	MEQL
10/29/98	Bicarbonate as HCO3,calculated		158	.001	MGL
11/02/98	Calcium, Total, ICAP		7.73	1.000	MGL
10/29/98	Carbonate as CO3, Calculated		12.9	.001	MGL
11/09/98	Cation Sum		3.04	.001	MEQL
10/23/98	Chloride		10.1	1.000	MGL
10/26/98	Lab pH		9.1	.001	UNIT
11/02/98	Magnesium, Total, ICAP		4.55	.100	MGL
11/02/98	Potassium, Total, ICAP		1.47	1.000	MGL
11/02/98	Sodium, Total, ICAP		51.6	1.000	MGL
10/26/98	Specific Conductance		320	4.000	UMHO
10/23/98	Sulfate		4.57	2.000	MGL
10/28/98	Total Dissolved Solid (TDS)		190	10.000	MGL
Analyzed	981022275	MW-984-048			
10/26/98	Carbon Tetrachloride		3.4	.500	UGL
10/26/98	Chloroform (Trichloromethane)		0.7	.500	UGL
10/26/98	Tetrachloroethylene (PCE)		1.5	.500	UGL
10/26/98	Trichloroethylene (TCE)		0.8	.500	UGL
10/26/98	Alkalinity		161	2.000	MGL
10/29/98	Anion Sum		4.02	.001	MEQL
10/29/98	Bicarbonate as HCO3,calculated		196	.001	MGL
11/02/98	Calcium, Total, ICAP		37.5	1.000	MGL
10/29/98	Carbonate as CO3, Calculated		1.27	.001	MGL
11/09/98	Cation Sum		4.09	.001	MEQL
10/23/98	Chloride		8.96	1.000	MGL
11/02/98	Iron, Total, ICAP/MS		250	*****	UGL
10/26/98	Lab pH		8.0	.001	UNIT
11/02/98	Magnesium, Total, ICAP		10.1	.100	MGL
10/23/98	Nitrate-N by IC		0.96	.100	MGL
11/04/98	Perchlorate		18.9	4.000	UGL
11/02/98	Potassium, Total, ICAP		1.22	1.000	MGL
11/02/98	Sodium, Total, ICAP		31.0	1.000	MGL
10/26/98	Specific Conductance		415	4.000	UMHO
10/23/98	Sulfate		22.8	2.000	MGL
10/28/98	Total Dissolved Solid (TDS)		240	10.000	MGL
Analyzed	981022276	MW-984-047			
10/26/98	Chloroform (Trichloromethane)		4.2	.500	UGL
10/26/98	Tetrachloroethylene (PCE)		0.8	.500	UGL
10/26/98	Trichloroethylene (TCE)		1.4	.500	UGL
10/26/98	Alkalinity		193	2.000	MGL
10/29/98	Anion Sum		5.08	.001	MEQL
10/29/98	Bicarbonate as HCO3,calculated		235	.001	MGL
11/02/98	Calcium, Total, ICAP		51.4	1.000	MGL

10/09/98	Cation Sum	5.09	.001	MEQL
10/23/98	Chloride	14.1	1.000	MGL
10/26/98	Lab pH	8.0	.001	UNIT
11/02/98	Magnesium, Total, ICAP	18.6	.100	MGL
10/23/98	Nitrate-N by IC	0.77	.100	MGL
11/02/98	Potassium, Total, ICAP	2.78	1.000	MGL
11/02/98	Sodium, Total, ICAP	21.0	1.000	MGL
10/26/98	Specific Conductance	510	4.000	UMHO
10/23/98	Sulfate	36.9	2.000	MGL
10/28/98	Total Dissolved Solid (TDS)	320	10.000	MGL

Analyzed 981022277 MW-984-046

10/26/98	Alkalinity	167	2.000	MGL
10/29/98	Anion Sum	4.47	.001	MEQL
10/29/98	Bicarbonate as HCO3,calculated	204	.001	MGL
11/02/98	Calcium, Total, ICAP	47.1	1.000	MGL
10/29/98	Carbonate as CO3, Calculated	0.333	.001	MGL
11/09/98	Cation Sum	4.47	.001	MEQL
10/23/98	Chloride	11.3	1.000	MGL
11/02/98	Iron, Total, ICAP/MS	110	*****	UGL
10/26/98	Lab pH	7.4	.001	UNIT
11/02/98	Magnesium, Total, ICAP	15.6	.100	MGL
10/23/98	Nitrate-N by IC	1.04	.100	MGL
11/02/98	Potassium, Total, ICAP	2.40	1.000	MGL
11/02/98	Sodium, Total, ICAP	17.8	1.000	MGL
10/26/98	Specific Conductance	455	4.000	UMHO
10/23/98	Sulfate	35.6	2.000	MGL
10/28/98	Total Dissolved Solid (TDS)	260	10.000	MGL

Analyzed 981022278 MW-984-045

10/26/98	Alkalinity	134	2.000	MGL
10/29/98	Anion Sum	3.43	.001	MEQL
10/29/98	Bicarbonate as HCO3,calculated	163	.001	MGL
11/02/98	Calcium, Total, ICAP	36.2	1.000	MGL
10/29/98	Carbonate as CO3, Calculated	0.168	.001	MGL
11/09/98	Cation Sum	3.43	.001	MEQL
10/23/98	Chloride	5.62	1.000	MGL
10/26/98	Lab pH	7.2	.001	UNIT
11/02/98	Magnesium, Total, ICAP	12.0	.100	MGL
10/23/98	Nitrate-N by IC	0.73	.100	MGL
11/02/98	Potassium, Total, ICAP	2.09	1.000	MGL
11/02/98	Sodium, Total, ICAP	13.3	1.000	MGL
10/26/98	Specific Conductance	350	4.000	UMHO
10/23/98	Sulfate	25.8	2.000	MGL
10/28/98	Total Dissolved Solid (TDS)	210	10.000	MGL



**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**

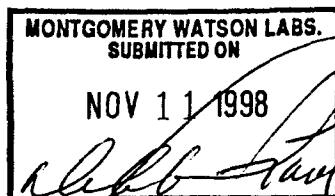
for

Foster Wheeler Environmental, Inc  
611 Anton Boulevard

Suite 800

Costa Mesa , CA 92626

Attention: Mark Cutler  
Fax: (714)444-5560



DEB\* ~~Debbie Frank~~

Report#: 48539  
JPL





**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  
 1 800 568 LABS (1 800 568 5227)

**Laboratory  
 Report  
 #48539**

Foster Wheeler Environmental, Inc  
 Mark Cutler  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa , CA 92626

Samples Received  
 22-oct-1998 17:01:53

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
MW-984-080 (981022272)				Sampled on 10/22/98				
<b>Regulated VOCs plus Lists 1&amp;3</b>								
10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1	
10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1	
10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1	

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**Laboratory****Report****#48539**Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	93	† Rec		
			( Surrogate )	4-Bromofluorobenzene	107	† Rec		
			( Surrogate )	Toluene-d8	101	† Rec		



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**Laboratory  
 Report  
 #48539**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-081 (981022273)</b>				<b>Sampled on 10/22/98</b>				
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/22/98	86198	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1



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**Laboratory  
 Report  
 #48539**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	105	µg Rec		
			( Surrogate )	4-Bromofluorobenzene	100	µg Rec		



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**Laboratory  
 Report  
 #48539**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
			( Surrogate )	Toluene-d8	101	† Rec		
<b>MW-984-049 (981022274)                      Sampled on 10/22/98</b>								
	10/26/98	86389	( ML/S2320B )	Alkalinity	134	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	3.06	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	7.73	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	3.04	meq/l	0.0010	1
	10/23/98	86319	( ML/EPA 300 )	Chloride	10.1	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	12.9	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/22/98	86198	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	320	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	ND	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	158	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	1.47	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	4.55	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	51.6	mg/l	1.0	1
	10/23/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	ND	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	9.1	Units	0.0010	1
	10/23/98	86324	( ML/EPA 300.0 )	Sulfate	4.57	mg/l	2.0	1
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	190	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1

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Laboratory  
 Report  
 #48539

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	103	‡ Rec		
			( Surrogate )	4-Bromofluorobenzene	97	‡ Rec		
			( Surrogate )	Toluene-d8	100	‡ Rec		

**MW-984-048 (981022275)                      Sampled on 10/22/98**

	10/26/98	86389	( ML/S2320B )	Alkalinity	161	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	4.02	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	37.5	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	4.09	meq/l	0.0010	1
	10/23/98	86319	( ML/EPA 300 )	Chloride	8.96	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	18.9	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	1.27	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/22/98	86198	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	415	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	250	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	196	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	1.22	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	10.1	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	31.0	mg/l	1.0	1



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**Laboratory  
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 #48539**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/23/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	0.96	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	8.0	Units	0.0010	1
	10/23/98	86324	( ML/EPA 300.0 )	Sulfate	22.8	mg/l	2.0	1
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	240	mg/l	10	1

**Regulated VOCs plus Lists 1&3**

10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	3.4	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1



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Laboratory  
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Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	0.7	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane(Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	1.5	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	0.8	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	106	† Rec		
			( Surrogate )	4-Bromofluorobenzene	101	† Rec		
			( Surrogate )	Toluene-d8	97	† Rec		



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**Laboratory  
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 #48539**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-047 (981022276)                      Sampled on 10/22/98</b>								
	10/26/98	86389	( ML/S2320B )	Alkalinity	193	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	5.08	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	51.4	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	5.09	meq/l	0.0010	1
	10/23/98	86319	( ML/EPA 300 )	Chloride	14.1	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	1.53	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/22/98	86198	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	510	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	ND	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	235	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	2.78	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	18.6	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	21.0	mg/l	1.0	1
	10/23/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	0.77	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	8.0	Units	0.0010	1
	10/23/98	86324	( ML/EPA 300.0 )	Sulfate	36.9	mg/l	2.0	1
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	320	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	4.2	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1



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**Laboratory  
 Report  
 #48539**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	0.8	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	1.4	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane(Freon)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	107	% Rec		
			( Surrogate )	4-Bromofluorobenzene	95	% Rec		
			( Surrogate )	Toluene-d8	102	% Rec		

**MW-984-046 (981022277) Sampled on 10/22/98**

	10/26/98	86389	( ML/S2320B )	Alkalinity	167	mg/l	2.0	1
	10/29/98		( ML/SW1040 )	Anion Sum	4.47	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	47.1	mg/l	1.0	1
	11/09/98		( ML/SW1040 )	Cation Sum	4.47	meq/l	0.0010	1
	10/23/98	86319	( ML/EPA 300 )	Chloride	11.3	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.333	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/22/98	86198	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	455	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	110	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	204	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	2.40	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	15.6	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	17.8	mg/l	1.0	1
	10/23/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	1.04	mg/l	0.10	1

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**Laboratory****Report****#48539**Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	7.4	Units	0.0010	1
	10/23/98	86324	( ML/EPA 300.0 )	Sulfate	35.6	mg/l	2.0	1
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	260	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1

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Laboratory  
 Report  
 #48539

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane(Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	105	† Rec		
			( Surrogate )	4-Bromofluorobenzene	98	† Rec		
			( Surrogate )	Toluene-d8	99	† Rec		

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Laboratory  
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 #48539

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-045 (981022278)                      Sampled on 10/22/98</b>								
	10/26/98	86389	( ML/S2320B )	Alkalinity	134	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	3.43	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	36.2	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	3.43	meq/l	0.0010	1
	10/23/98	86319	( ML/EPA 300 )	Chloride	5.62	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.168	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/22/98	86198	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	350	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	ND	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	163	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	2.09	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	12.0	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	13.3	mg/l	1.0	1
	10/23/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	0.73	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	7.2	Units	0.0010	1
	10/23/98	86324	( ML/EPA 300.0 )	Sulfate	25.8	mg/l	2.0	1
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	210	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1



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Laboratory  
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 #48539

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	109	† Rec		
			( Surrogate )	4-Bromofluorobenzene	95	† Rec		
			( Surrogate )	Toluene-d8	105	† Rec		



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**QC Batch #86198**

**Hexavalent chromium (Cr VI)**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Hexavalent chromium (Cr VI)	0.050	0.0506	101.2	( 78.00 - 118.00 )	
LCS2	Hexavalent chromium (Cr VI)	0.050	0.0506	101.2	( 78.00 - 118.00 )	0.00
MBLK	Hexavalent chromium (Cr VI)	ND				
MS	Hexavalent chromium (Cr VI)	0.050	0.0506	101.2	( 80.00 - 120.00 )	
MSD	Hexavalent chromium (Cr VI)	0.050	0.0500	100.0	( 80.00 - 120.00 )	1.2

**QC Batch #86310**

**Specific Conductance**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	Lab # 98	1023134		( 0.00 - 0.00 )	

**QC Batch #86319**

**Chloride**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Chloride	25	24.8	99.2	( 90.00 - 110.00 )	
LCS2	Chloride	25	24.8	99.2	( 90.00 - 110.00 )	0.00
MBLK	Chloride	ND				
MS	Chloride	25	26.8	107.2	( 80.00 - 120.00 )	
MSD	Chloride	25	26.7	106.8	( 80.00 - 120.00 )	0.37

**QC Batch #86323**

**Nitrate-N by IC**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Nitrate-N by IC	2.5	2.47	98.8	( 90.00 - 110.00 )	
LCS2	Nitrate-N by IC	2.5	2.46	98.4	( 90.00 - 110.00 )	0.41
MBLK	Nitrate-N by IC	ND				
MS	Nitrate-N by IC	2.5	2.64	105.6	( 80.00 - 120.00 )	
MSD	Nitrate-N by IC	2.5	2.63	105.2	( 80.00 - 120.00 )	0.38

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**QC Batch #86324**

**Sulfate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Sulfate	50	48.9	97.8	( 90.00 - 110.00 )	
LCS2	Sulfate	50	48.8	97.6	( 90.00 - 110.00 )	0.20
MBLK	Sulfate	ND				
MS	Sulfate	50	51.7	103.4	( 80.00 - 120.00 )	
MSD	Sulfate	50	51.7	103.4	( 80.00 - 120.00 )	0.00

**QC Batch #86327**

**Lab pH**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	lab # 98	1023134		( 0.00 - 0.00 )	

**QC Batch #86389**

**Alkalinity**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022259		( 0.00 - 0.00 )	
LCS1	Alkalinity	96.2	98.6	102.0	( 90.00 - 110.00 )	
LCS2	Alkalinity	96.2	98.5	101.6	( 90.00 - 110.00 )	0.10
MBLK	Alkalinity	ND				
MS	Alkalinity	96.2	92.7	95.6	( 80.00 - 120.00 )	
MSD	Alkalinity	96.2	94.3	98.0	( 80.00 - 120.00 )	1.7

**QC Batch #86478**

**Regulated VOCs plus Lists 1&3**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MBLK	1,1,1,2-Tetrachloroethane	ND				
LCS1	1,1,1-Trichloroethane	8	7.69	96.1	( 70.00 - 130.00 )	
MBLK	1,1,1-Trichloroethane	ND				
LCS1	1,1,2,2-Tetrachloroethane	8	8.41	105.1	( 70.00 - 130.00 )	

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MBLK	1,1,2,2-Tetrachloroethane	ND				
LCS1	1,1,2-Trichloroethane	8	8.11	101.4	( 70.00 - 130.00 )	
MBLK	1,1,2-Trichloroethane	ND				
LCS1	1,1-Dichloroethane	8	7.52	94.0	( 70.00 - 130.00 )	
MBLK	1,1-Dichloroethane	ND				
LCS1	1,1-Dichloroethylene	8	7.23	90.4	( 70.00 - 130.00 )	
MBLK	1,1-Dichloroethylene	ND				
MS	1,1-Dichloroethylene	8	7.62	95.2	( 70.00 - 130.00 )	
MSD	1,1-Dichloroethylene	8	6.97	87.1	( 70.00 - 130.00 )	8.9
MBLK	1,1-Dichloropropene	ND				
MBLK	1,2,3-Trichlorobenzene	ND				
MBLK	1,2,3-Trichloropropane	ND				
LCS1	1,2,4-Trichlorobenzene	8	8.52	106.5	( 70.00 - 130.00 )	
MBLK	1,2,4-Trichlorobenzene	ND				
MBLK	1,2,4-Trimethylbenzene	ND				
LCS1	1,2-Dichloroethane	8	7.81	97.6	( 70.00 - 130.00 )	
MBLK	1,2-Dichloroethane	ND				
LCS1	1,2-Dichloropropane	8	7.98	99.8	( 70.00 - 130.00 )	
MBLK	1,2-Dichloropropane	ND				
MBLK	1,3,5-Trimethylbenzene	ND				
LCS1	1,3-Dichloropropane	8	8.03	100.4	( 70.00 - 130.00 )	
MBLK	1,3-Dichloropropane	ND				
LCS1	p-Dichlorobenzene (1,4-DCB)	8	8.86	110.8	( 70.00 - 130.00 )	
MBLK	p-Dichlorobenzene (1,4-DCB)	ND				
MBLK	2,2-Dichloropropane	ND				
MBLK	2-Butanone (MEK)	ND				
MBLK	2-Chloroethylvinylether	ND				
MBLK	o-Chlorotoluene	ND				
MBLK	p-Chlorotoluene	ND				
MBLK	4-Methyl-2-Pentanone (MIBK)	ND				
MS	Spiked sample	Lab # 98	1022277		( 0.00 - 0.00 )	
LCS1	Benzene	8	8.01	100.1	( 70.00 - 130.00 )	
MBLK	Benzene	ND				
MS	Benzene	8	8.56	107.0	( 70.00 - 130.00 )	
MSD	Benzene	8	8.06	100.8	( 70.00 - 130.00 )	6.0
MBLK	Bromobenzene	ND				
MBLK	Bromomethane (Methyl Bromide)	ND				

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LCS1	cis-1,2-Dichloroethylene	8	7.81	97.6	( 70.00 - 130.00 )
MBLK	cis-1,2-Dichloroethylene	ND			
LCS1	Chlorobenzene	8	7.90	98.8	( 70.00 - 130.00 )
MBLK	Chlorobenzene	ND			
MS	Chlorobenzene	8	8.39	104.9	( 70.00 - 130.00 )
MSD	Chlorobenzene	8	7.92	99.0	( 70.00 - 130.00 ) 5.8
LCS1	Carbon Tetrachloride	8	7.47	93.4	( 70.00 - 130.00 )
MBLK	Carbon Tetrachloride	ND			
MBLK	cis-1,3-Dichloropropene	ND			
LCS1	Bromoform	8	7.58	94.8	( 70.00 - 130.00 )
MBLK	Bromoform	ND			
LCS1	Chloroform (Trichloromethane)	8	8.08	101.0	( 70.00 - 130.00 )
MBLK	Chloroform (Trichloromethane)	ND			
MBLK	Bromochloromethane	ND			
MBLK	Chloroethane	ND			
MBLK	Chloromethane (Methyl Chloride)	ND			
LCS1	Chlorodibromomethane	8	7.88	98.5	( 70.00 - 130.00 )
MBLK	Chlorodibromomethane	ND			
MBLK	Dibromomethane	ND			
LCS1	Bromodichloromethane	8	7.82	97.8	( 70.00 - 130.00 )
MBLK	Bromodichloromethane	ND			
LCS1	Dichloromethane	8	7.37	92.1	( 70.00 - 130.00 )
MBLK	Dichloromethane	ND			
LCS1	Ethyl benzene	8	8.00	100.0	( 70.00 - 130.00 )
MBLK	Ethyl benzene	ND			
MBLK	Dichlorodifluoromethane	ND			
LCS1	Fluorotrichloromethane-Freon11	4	4.36	109.0	( 70.00 - 130.00 )
MBLK	Fluorotrichloromethane-Freon11	ND			
MBLK	Hexachlorobutadiene	ND			
MBLK	Isopropylbenzene	ND			
MBLK	m-Dichlorobenzene (1,3-DCB)	ND			
LCS1	m,p-Xylenes	16	15.6	97.5	( 70.00 - 130.00 )
MBLK	m,p-Xylenes	ND			
MBLK	Naphthalene	ND			
MBLK	n-Butylbenzene	ND			
MBLK	n-Propylbenzene	ND			
LCS1	o-Xylene	8	8.38	104.8	( 70.00 - 130.00 )

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MBLK	<u>o-Xylene</u>	ND				
LCS1	<u>o-Dichlorobenzene (1,2-DCB)</u>	8	8.50	106.2	( 70.00 - 130.00 )	
MBLK	<u>o-Dichlorobenzene (1,2-DCB)</u>	ND				
LCS1	<u>Tetrachloroethylene (PCE)</u>	8	7.76	97.0	( 70.00 - 130.00 )	
MBLK	<u>Tetrachloroethylene (PCE)</u>	ND				
MBLK	<u>p-Isopropyltoluene</u>	ND				
MBLK	<u>sec-Butylbenzene</u>	ND				
LCS1	<u>Styrene</u>	8	8.14	101.8	( 70.00 - 130.00 )	
MBLK	<u>Styrene</u>	ND				
LCS1	<u>1,2-dichloroethane-d4</u>	100	97.6	97.6	( 80.00 - 120.00 )	
MBLK	<u>1,2-dichloroethane-d4</u>	100	93.2	93.2		
MS	<u>1,2-dichloroethane-d4</u>	100	97.8	97.8	( 80.00 - 120.00 )	
MSD	<u>1,2-dichloroethane-d4</u>	100	94.0	94.0	( 80.00 - 120.00 )	4.0
LCS1	<u>Toluene-d8</u>	100	97.4	97.4	( 80.00 - 120.00 )	
MBLK	<u>Toluene-d8</u>	100	101	101.0		
MS	<u>Toluene-d8</u>	100	96.6	96.6	( 80.00 - 120.00 )	
MSD	<u>Toluene-d8</u>	100	97.3	97.3	( 80.00 - 120.00 )	0.72
LCS1	<u>4-Bromofluorobenzene</u>	100	102	102.0	( 80.00 - 120.00 )	
MBLK	<u>4-Bromofluorobenzene</u>	100	109	109.0		
MS	<u>4-Bromofluorobenzene</u>	100	96.8	96.8	( 80.00 - 120.00 )	
MSD	<u>4-Bromofluorobenzene</u>	100	107	107.0	( 80.00 - 120.00 )	10
LCS1	<u>trans-1,2-Dichloroethylene</u>	8	7.44	93.0	( 70.00 - 130.00 )	
MBLK	<u>trans-1,2-Dichloroethylene</u>	ND				
MBLK	<u>tert-Butylbenzene</u>	ND				
LCS1	<u>Trichloroethylene (TCE)</u>	8	7.81	97.6	( 70.00 - 130.00 )	
MBLK	<u>Trichloroethylene (TCE)</u>	ND				
MS	<u>Trichloroethylene (TCE)</u>	8	8.42	105.2	( 70.00 - 130.00 )	
MSD	<u>Trichloroethylene (TCE)</u>	8	8.01	100.1	( 70.00 - 130.00 )	5.0
LCS1	<u>Trichlorotrifluoroethane(Freon</u>	4	3.73	93.2	( 70.00 - 130.00 )	
MBLK	<u>Trichlorotrifluoroethane(Freon</u>	ND				
MBLK	<u>trans-1,3-Dichloropropene</u>	ND				
LCS1	<u>Toluene</u>	8	7.66	95.8	( 70.00 - 130.00 )	
MBLK	<u>Toluene</u>	ND				
MS	<u>Toluene</u>	8	8.24	103.0	( 70.00 - 130.00 )	
MSD	<u>Toluene</u>	8	7.64	95.5	( 70.00 - 130.00 )	7.6
LCS1	<u>Vinyl chloride (VC)</u>	4	4.77	119.2	( 70.00 - 130.00 )	
MBLK	<u>Vinyl chloride (VC)</u>	ND				

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**QC Batch #86574**

**Total Dissolved Solid (TDS)**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Total Dissolved Solid (TDS)	175	170	97.1	( 85.00 - 115.00 )	
LCS2	Total Dissolved Solid (TDS)	700	646	92.3	( 85.00 - 115.00 )	
MBLK	Total Dissolved Solid (TDS)	ND				

**QC Batch #86685**

**Chromium, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab# 98	1023132		( 0.00 - 0.00 )	
LCS1	Chromium, Total, ICAP/MS	100	94	94.0	( 85.00 - 115.00 )	
LCS2	Chromium, Total, ICAP/MS	100	95	95.0	( 85.00 - 115.00 )	1.1
MBLK	Chromium, Total, ICAP/MS	ND				
MS	Chromium, Total, ICAP/MS	100	94	94.0	( 70.00 - 130.00 )	
MSD	Chromium, Total, ICAP/MS	100	93	93.0	( 70.00 - 130.00 )	1.1

**QC Batch #86686**

**Lead, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab #98	1023132		( 0.00 - 0.00 )	
LCS1	Lead, Total, ICAP/MS	20.0	19.4	97.0	( 85.00 - 115.00 )	
LCS2	Lead, Total, ICAP/MS	20.0	19.3	96.5	( 85.00 - 115.00 )	0.52
MBLK	Lead, Total, ICAP/MS	ND				
MS	Lead, Total, ICAP/MS	20.0	20.0	100.0	( 70.00 - 130.00 )	
MSD	Lead, Total, ICAP/MS	20.0	20.2	101.0	( 70.00 - 130.00 )	1.00

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QC Batch #86687

Iron, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1023132		( 0.00 - 0.00 )	
LCS1	Iron, Total, ICAP/MS	500	471	94.2	( 85.00 - 115.00 )	
LCS2	Iron, Total, ICAP/MS	500	472	94.4	( 85.00 - 115.00 )	0.21
MBLK	Iron, Total, ICAP/MS	ND				
MS	Iron, Total, ICAP/MS	500	437	87.4	( 70.00 - 130.00 )	
MSD	Iron, Total, ICAP/MS	500	447	89.4	( 70.00 - 130.00 )	2.3

QC Batch #86692

Calcium, Total, ICAP

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Calcium, Total, ICAP	50	48.3	96.6	( 85.00 - 115.00 )	
LCS2	Calcium, Total, ICAP	50	49.3	98.6	( 85.00 - 115.00 )	2.0
MBLK	Calcium, Total, ICAP	ND				
MS	Calcium, Total, ICAP	50	47.7	95.4	( 70.00 - 130.00 )	
MSD	Calcium, Total, ICAP	50	46.7	93.4	( 70.00 - 130.00 )	2.1

QC Batch #86694

Potassium, Total, ICAP

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Potassium, Total, ICAP	20	19.8	99.0	( 80.00 - 110.00 )	
LCS2	Potassium, Total, ICAP	20	20.2	101.0	( 80.00 - 110.00 )	2.0
MBLK	Potassium, Total, ICAP	ND				
MS	Potassium, Total, ICAP	20	19.7	98.5	( 80.00 - 120.00 )	
MSD	Potassium, Total, ICAP	20	18.9	94.5	( 80.00 - 120.00 )	4.1

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Foster Wheeler Environmental, Inc  
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QC Batch #86696

Magnesium, Total, ICAP

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Magnesium, Total, ICAP	20	20.3	101.5	( 85.00 - 115.00 )	
LCS2	Magnesium, Total, ICAP	20	20.6	103.0	( 85.00 - 115.00 )	1.5
MBLK	Magnesium, Total, ICAP	ND				
MS	Magnesium, Total, ICAP	20	19.8	99.0	( 70.00 - 130.00 )	
MSD	Magnesium, Total, ICAP	20	19.1	95.5	( 70.00 - 130.00 )	3.6

QC Batch #86698

Sodium, Total, ICAP

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Sodium, Total, ICAP	50	51.5	103.0	( 85.00 - 115.00 )	
LCS2	Sodium, Total, ICAP	50	52.3	104.6	( 85.00 - 115.00 )	1.5
MBLK	Sodium, Total, ICAP	ND				
MS	Sodium, Total, ICAP	50	49.4	98.8	( 70.00 - 130.00 )	
MSD	Sodium, Total, ICAP	50	47.4	94.8	( 70.00 - 130.00 )	4.1

QC Batch #86781

Arsenic, Total, GF

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab #98	1023132		( 0.00 - 0.00 )	
LCS1	Arsenic, Total, GF	0.020	0.0211	105.5	( 85.00 - 115.00 )	
LCS2	Arsenic, Total, GF	0.020	0.0222	111.0	( 85.00 - 115.00 )	5.1
MBLK	Arsenic, Total, GF	ND				
MS	Arsenic, Total, GF	0.020	0.0233	116.5	( 70.00 - 130.00 )	
MSD	Arsenic, Total, GF	0.020	0.0240	120.0	( 70.00 - 130.00 )	3.0

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
 Criteria for MS and DUP are advisory only and not applicable for ICR monitoring.



**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  
 QC Report  
 #48539

Foster Wheeler Environmental, Inc  
 (continued)

QC Batch #86831

Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Perchlorate	20.0	20.3	101.5	( 90.00 - 110.00 )	
LCS2	Perchlorate	20.0	20.6	103.0	( 90.00 - 110.00 )	1.5
MBLK	Perchlorate	ND				
MS	Perchlorate	20.0	20.8	104.0	( 75.00 - 125.00 )	
MSD	Perchlorate	20.0	22.0	110.0	( 75.00 - 125.00 )	5.6

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
 Criteria for MS and DUP are advisory only and not applicable for ICR monitoring.



**MONTGOMERY WATSON LABORATORIES**

November 17, 1998

Foster Wheeler Environmental  
611 Anton Blvd Suite 800  
Costa Mesa, CA.92626

Attention: Mark Cutler

Re: Report # 48578 (MW-984-082, -083, -054, -053, -052, -051,  
-050)

Dear Mark,

Enclosed please find data deliverables for the recent JPL project. A detailed quality control (QC) summary follows:

**Non-conformance (LCS, MS/MSD, Surrogates, and Holding Times):**

None

**Samples requiring dilution (with increased MRL's):**

Diluted for Anions: MW-983-052, -054

**Method blanks with compounds detected:**

None

**Other Comments:**

Methylene Chloride was detected in sample ID: MW-984-083

Chloroform was detected in sample ID: MW-984-053

Tetrachloroethylene was detected in sample ID: MW-984-054, -052

Perchlorate is reported as ND for sample ID: MW-984-052

**TICS:**

None

**Method Variance:**

None

Sincerely,

Debbie Frank  
Project Manager

cc: Judy Novelly (JPL)

a Division of Montgomery Watson Americas, Inc.

555 East Walnut Street  
Pasadena, California 91101  
Tel: 626 568 6400  
Fax: 626 568 6324

4820 South Mill Avenue  
Suite 202  
Tempe, Arizona 85282  
Tel: 602 755 8201  
Fax: 602 755 8203

*Quality Environmental Analysis*

**Montgomery Watson Laboratories**  
 , Los Angeles, CA 90051-3508  
 PHONE: 626-568-6400/FAX: 626-568-6324

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Foster Wheeler Environmental, Inc  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa, CA 92626  
 Attn: Mark Cutler

Customer Code: ENSERCH  
 PO#: Sub PO#007618-0004  
 Group#: 48578  
 Project#: JPL  
 Proj Mgr: Debbie Frank  
 Phone: (714) 444-5526

The following samples were received from you on 10/23/98. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Montgomery Watson Laboratories.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
981023128	MW-984-082	@EBASVOA	Water	10/23/98
981023129	MW-984-083	@EBASVOA AS-EBAS PB-EBAS CR-EBAS CR-VI CLO4	Water	10/23/98
981023130	MW-984-054	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/23/98
981023131	MW-984-053	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/23/98
981023132	MW-984-052	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/23/98
981023133	MW-984-051	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/23/98
981023134	MW-984-050	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/23/98

Test Acronym Description

Test Acronym	Description
--------------	-------------

Foster Wheeler Environmental, Inc  
611 Anton Boulevard  
Suite 800  
Costa Mesa, CA 92626  
Attn: Mark Cutler

Customer Code: ENSERCH  
PO#: Sub PO#007618-0004  
Group#: 48578  
Project#: JPL  
Proj Mgr: Debbie Frank  
Phone: (714) 444-5526

Test Acronym Description

Test Acronym	Description
@EBASVOA	Regulated VOCs plus Lists 1&3
ALK	Alkalinity
ANION1	Anion Sum
AS-EBAS	Arsenic, Total, GF
CA	Calcium, Total, ICAP
CATION1	Cation Sum
CL	Chloride
CLO4	Perchlorate
CO3	Carbonate as CO3, Calculated
CR-EBAS	Chromium, Total, ICAP/MS
CR-VI	Hexavalent chromium (Cr VI)
EC	Specific Conductance
FE-MS	Iron, Total, ICAP/MS
HCO3	Bicarbonate as HCO3, calculated
K	Potassium, Total, ICAP
MG	Magnesium, Total, ICAP
NA	Sodium, Total, ICAP
NO3	Nitrate-N by IC
PB-EBAS	Lead, Total, ICAP/MS
PH	Lab pH
SO4	Sulfate
TDS	Total Dissolved Solid (TDS)



48578

FOSTER WHEELER ENVIRONMENTAL CORPORATION

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PROJECT <b>JPL</b>	OFS NO. <b>1572.0260</b>	HAZARD IDENTIFICATION Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Toxic <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Infectious <input type="checkbox"/>	TIME REQUIRED 0 0 00 NORMAL <input checked="" type="checkbox"/> DAYS RUSH <input type="checkbox"/> DAYS
-----------------------	-----------------------------	--	--

PROJECT ADDRESS  
**4300 OAK GROVE DR PASADENA CA**

SAMPLER (Name)  
**J. BIZANZAL**

SAMPLER (Signature)  
*[Signature]*

LABORATORY  
**MONTGOMERY WATSON LABS**

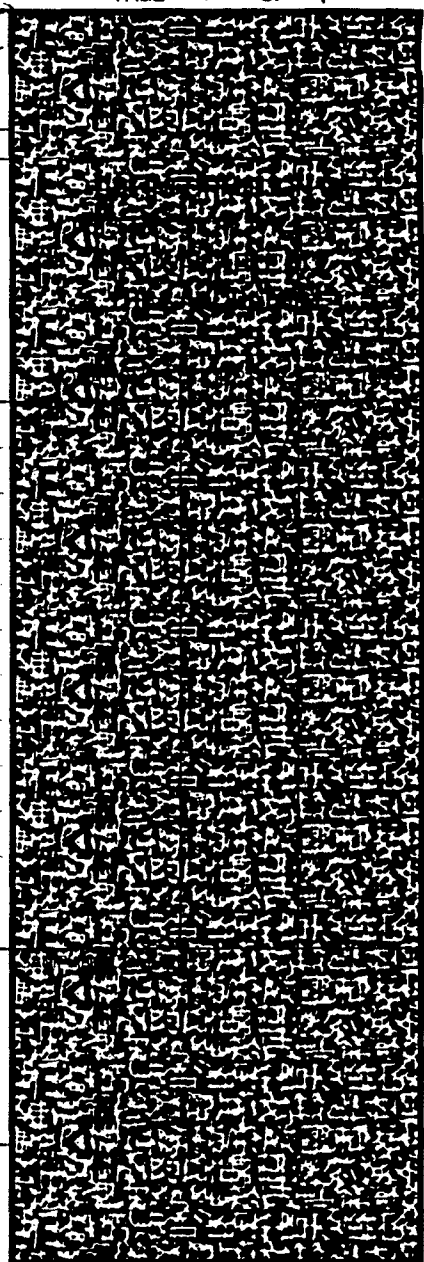
REPORTS TO BE SENT TO  
**MR. MARK CUTLER**

ANALYSES REQUIRED

SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	SAMPLE MATERIAL			VOCs (S242)	TOTAL AR PCB C (2013/2014)	MADOC ANALYSIS TDS	HEX C	C104	MS 522 VOCs	MS 526 VOCs	MS/MS 526 METALS	GC FUEL C6	
					WATER	SOIL	OTHER (Describe)										
MW-934-082	0900	10/23/02	2	2x40ml	X			X									
MW-934-083	0945	↓	5	2x40ml 1x250ml 2x125ml	X			X	X								
MW-934-084	1010		6	2x40ml 1x250ml 2x125ml 1x500ml	X			X	X	X							
MW-934-083	1130		6		X			X	X	X							
MW-934-082	1250		6	2x40ml 2x500ml 2x125ml	X			X	X	X					X		
MW-934-081MS	1250		2	2x40ml	X								X				
MW-934-081MS	1250		2	2x40ml	X									X			
MW-934-081	1350		6	2x40ml 1x250ml 2x125ml 1x500ml	X			X	X	X							
MW-934-080	1445		6		X			X	X	X						X	

LABORATORY INSTRUCTIONS/COMMENTS  
**LEVEL II QA/QC**

RELINQUISHED BY (Signature) <i>[Signature]</i>	DATE 10/23	RECEIVED BY (Signature) <i>[Signature]</i>	RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY FW-40	TIME 1:23 PM	COMPANY MONTGOMERY WATSON	COMPANY	TIME	COMPANY



MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: ENSERCH Date Received: 10-23-98  
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 10-23-98  
by (print Mike Whelan sign) [Signature]

1. Did cooler come with shipping slip (air bill, etc.)? Yes  No  
If YES, attach & enter carrier and air bill # here: \_\_\_\_\_

2. Were custody seals on outside of cooler?  Yes No  
If YES, how many & where: 2 openings lid  
If Yes, enter the following: seal date: 10-23-98 seal name: J. B.

3. Were custody seals unbroken & intact at delivery?  Yes No

4. Were custody papers sealed in bag & taped to lid? Yes  No

5. Were custody papers filled out properly (ink, etc.)  Yes No

6. Did you sign custody papers in appropriate place?  Yes No

7. Was project identifiable from custody papers?  Yes No

8. Have designated person(s) initial to acknowledge receipt: \_\_\_\_\_ (date) \_\_\_\_\_

B. LOG-IN PHASE: Date samples were logged-in: \_\_\_\_\_ by: \_\_\_\_\_  
(print) \_\_\_\_\_ (sign) \_\_\_\_\_

9. Describe packing:

10. If required, was enough ice used?  Yes No 2 big bags

11. Were all bottles sealed in separate plastic bags?  Yes No

12. Did all bottles arrive unbroken/in good condition?  Yes No

13. Were all bottle labels complete (ID, date, sign, pres)?  Yes No

14. Did all bottle labels agree with custody papers?  
If NO, indicate discrepancies on back.  Yes No

15. Were correct containers used for the analytes?  Yes No

16. Were correct preservatives used when required?  Yes No

17. Was sufficient amount of sample sent for tests?  Yes No

18. Bubbles absent in VOA vials?  
If NO, list by sample id on back.  Yes No

19. Was Client Services informed of problems? Yes  No

*No problems upon receipt.*

Report Summary of positive results, PR48578

			Result	MDL	UNITS
Analyzed	981023128	MW-984-082			
Analyzed	981023129	MW-984-083			
10/26/98	Dichloromethane		0.9	.500	UGL
Analyzed	981023130	MW-984-054			
10/26/98	Tetrachloroethylene (PCE)		1.5	.500	UGL
10/26/98	Alkalinity		223	2.000	MGL
10/29/98	Anion Sum		8.40	.001	MEQL
10/29/98	Bicarbonate as HCO <sub>3</sub> ,calculated		272	.001	MGL
11/02/98	Calcium, Total, ICAP		85.4	1.000	MGL
10/29/98	Carbonate as CO <sub>3</sub> , Calculated		0.704	.001	MGL
11/09/98	Cation Sum		8.25	.001	MEQL
10/23/98	Chloride		68.6	2.000	MGL
11/02/98	Iron, Total, ICAP/MS		460	*****	UGL
10/26/98	Lab pH		7.6	.001	UNIT
11/02/98	Magnesium, Total, ICAP		31.3	.100	MGL
10/23/98	Nitrate-N by IC		8.27	.200	MGL
11/02/98	Potassium, Total, ICAP		2.35	1.000	MGL
11/02/98	Sodium, Total, ICAP		31.0	1.000	MGL
10/26/98	Specific Conductance		840	4.000	UMHO
10/23/98	Sulfate		67.7	4.000	MGL
10/28/98	Total Dissolved Solid (TDS)		490	10.000	MGL
Analyzed	981023131	MW-984-053			
10/26/98	Chloroform (Trichloromethane)		2.2	.500	UGL
10/26/98	Alkalinity		174	2.000	MGL
10/29/98	Anion Sum		5.08	.001	MEQL
10/29/98	Bicarbonate as HCO <sub>3</sub> ,calculated		212	.001	MGL
11/02/98	Calcium, Total, ICAP		49.7	1.000	MGL
10/29/98	Carbonate as CO <sub>3</sub> , Calculated		0.436	.001	MGL
11/09/98	Cation Sum		4.99	.001	MEQL
10/23/98	Chloride		20.3	1.000	MGL
11/02/98	Iron, Total, ICAP/MS		200	*****	UGL
10/26/98	Lab pH		7.5	.001	UNIT
11/02/98	Magnesium, Total, ICAP		18.0	.100	MGL
10/23/98	Nitrate-N by IC		2.99	.100	MGL
11/02/98	Potassium, Total, ICAP		1.72	1.000	MGL
11/02/98	Sodium, Total, ICAP		22.5	1.000	MGL
10/26/98	Specific Conductance		505	4.000	UMHO
10/23/98	Sulfate		39.1	2.000	MGL
10/28/98	Total Dissolved Solid (TDS)		290	10.000	MGL
Analyzed	981023132	MW-984-052			
10/26/98	Tetrachloroethylene (PCE)		2.0	.500	UGL
10/26/98	Alkalinity		210	2.000	MGL
10/29/98	Anion Sum		9.20	.001	MEQL
10/29/98	Bicarbonate as HCO <sub>3</sub> ,calculated		256	.001	MGL
11/02/98	Calcium, Total, ICAP		93.7	1.000	MGL
10/29/98	Carbonate as CO <sub>3</sub> , Calculated		0.332	.001	MGL
11/09/98	Cation Sum		8.93	.001	MEQL



10/23/98	Chloride	89.7	2.000	MGL
11/02/98	Iron, Total, ICAP/MS	620	*****	UGL
10/26/98	Lab pH	7.3	.001	UNIT
11/02/98	Magnesium, Total, ICAP	34.4	.100	MGL
10/23/98	Nitrate-N by IC	10.3	.200	MGL
11/04/98	Perchlorate	4.22	4.000	UGL
11/02/98	Potassium, Total, ICAP	2.47	1.000	MGL
11/02/98	Sodium, Total, ICAP	31.0	1.000	MGL
10/26/98	Specific Conductance	925	4.000	UMHO
10/23/98	Sulfate	83.3	4.000	MGL
10/28/98	Total Dissolved Solid (TDS)	540	10.000	MGL

Analyzed 981023133 MW-984-051

10/26/98	Alkalinity	165	2.000	MGL
10/29/98	Anion Sum	5.34	.001	MEQL
10/29/98	Bicarbonate as HCO3,calculated	201	.001	MGL
11/02/98	Calcium, Total, ICAP	55.8	1.000	MGL
10/29/98	Carbonate as CO3, Calculated	0.131	.001	MGL
11/09/98	Cation Sum	5.32	.001	MEQL
10/24/98	Chloride	25.6	1.000	MGL
11/02/98	Iron, Total, ICAP/MS	460	*****	UGL
10/26/98	Lab pH	7.0	.001	UNIT
11/02/98	Magnesium, Total, ICAP	21.4	.100	MGL
10/24/98	Nitrate-N by IC	3.84	.100	MGL
11/02/98	Potassium, Total, ICAP	1.75	1.000	MGL
11/02/98	Sodium, Total, ICAP	16.6	1.000	MGL
10/26/98	Specific Conductance	545	4.000	UMHO
10/24/98	Sulfate	50.2	2.000	MGL
10/28/98	Total Dissolved Solid (TDS)	330	10.000	MGL

Analyzed 981023134 MW-984-050

10/26/98	Alkalinity	115	2.000	MGL
10/29/98	Anion Sum	2.79	.001	MEQL
10/29/98	Bicarbonate as HCO3,calculated	140	.001	MGL
11/02/98	Calcium, Total, ICAP	29.3	1.000	MGL
10/29/98	Carbonate as CO3, Calculated	0.362	.001	MGL
11/09/98	Cation Sum	2.79	.001	MEQL
10/24/98	Chloride	3.98	1.000	MGL
11/02/98	Iron, Total, ICAP/MS	950	*****	UGL
10/26/98	Lab pH	7.6	.001	UNIT
11/02/98	Magnesium, Total, ICAP	9.72	.100	MGL
10/24/98	Nitrate-N by IC	0.35	.100	MGL
11/02/98	Potassium, Total, ICAP	1.96	1.000	MGL
11/02/98	Sodium, Total, ICAP	11.0	1.000	MGL
10/26/98	Specific Conductance	285	4.000	UMHO
10/24/98	Sulfate	17.0	2.000	MGL
10/28/98	Total Dissolved Solid (TDS)	170	10.000	MGL



**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  
1 800 568 LABS (1 800 566 5227)

**Laboratory Report**

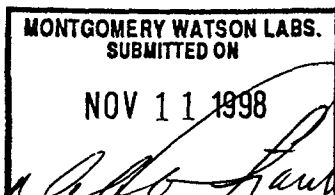
for

Foster Wheeler Environmental, Inc  
611 Anton Boulevard

Suite 800

Costa Mesa , CA 92626

Attention: Mark Cutler  
Fax: (714)444-5560



DEB\* Debbie Frank

Report#: 48578  
JPL

**MONTGOMERY WATSON LABORATORIES**

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 555 East Walnut Street  
 Pasadena, California 91101  
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Laboratory  
 Report  
 #48578

Foster Wheeler Environmental, Inc  
 Mark Cutler  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa , CA 92626

Samples Received  
 23-oct-1998 16:32:35

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
MW-984-082 (981023128)				Sampled on 10/23/98				
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1

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Laboratory  
 Report  
 #48578

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
10/26/98	86478		( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	104	† Rec		
			( Surrogate )	4-Bromofluorobenzene	110	† Rec		
			( Surrogate )	Toluene-d8	105	† Rec		

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Laboratory  
 Report  
 #48578

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-083 (981023129)</b>				<b>Sampled on 10/23/98</b>				
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/23/98	86269	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1



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**Laboratory  
 Report  
 #48578**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	0.9	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1	
		( EPA 524.2 )	None Detected	ND			1	
		( Surrogate )	1,2-Dichloroethane-d4	96	‡ Rec			
		( Surrogate )	4-Bromofluorobenzene	111	‡ Rec			



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Laboratory  
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#48578

Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
			( Surrogate )	Toluene-d8	100	† Rec		
<b>MW-984-054 (981023130)                      Sampled on 10/23/98</b>								
	10/26/98	86389	( ML/S2320B )	Alkalinity	223	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	8.40	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	85.4	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	8.25	meq/l	0.0010	1
	10/23/98	86319	( ML/EPA 300 )	Chloride	68.6	mg/l	2.0	2
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.704	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/23/98	86269	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	840	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	460	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	272	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	2.35	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	31.3	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	31.0	mg/l	1.0	1
	10/23/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	8.27	mg/l	0.20	2
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	7.6	Units	0.0010	1
	10/23/98	86324	( ML/EPA 300.0 )	Sulfate	67.7	mg/l	4.0	2
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	490	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1



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Laboratory  
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Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	1.5	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	107	‡ Rec		
			( Surrogate )	4-Bromofluorobenzene	99	‡ Rec		
			( Surrogate )	Toluene-d8	103	‡ Rec		

MW-984-053 (981023131)      Sampled on 10/23/98

	10/26/98	86389	( ML/S2320B )	Alkalinity	174	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	5.08	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	49.7	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	4.99	meq/l	0.0010	1
	10/23/98	86319	( ML/EPA 300 )	Chloride	20.3	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.436	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/23/98	86269	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	505	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	200	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	212	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	1.72	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	18.0	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	22.5	mg/l	1.0	1

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Laboratory  
 Report  
 #48578

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/23/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	2.99	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	7.5	Units	0.0010	1
	10/23/98	86324	( ML/EPA 300.0 )	Sulfate	39.1	mg/l	2.0	1
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	290	mg/l	10	1

**Regulated VOCs plus Lists 1&3**

10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	2.2	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane(Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	108	† Rec		
			( Surrogate )	4-Bromofluorobenzene	100	† Rec		
			( Surrogate )	Toluene-d8	102	† Rec		



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**Laboratory  
 Report  
 #48578**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-052 (981023132)</b>		<b>Sampled on 10/23/98</b>						
	10/26/98	86389	( ML/S2320B )	Alkalinity	210	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	9.20	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	93.7	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	8.93	meq/l	0.0010	1
	10/23/98	86319	( ML/EPA 300 )	Chloride	89.7	mg/l	2.0	2
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	4.22	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.332	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/23/98	86269	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	925	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	620	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	256	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	2.47	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	34.4	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	31.0	mg/l	1.0	1
	10/23/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	10.3	mg/l	0.20	2
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	7.3	Units	0.0010	1
	10/23/98	86324	( ML/EPA 300.0 )	Sulfate	83.3	mg/l	4.0	2
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	540	mg/l	10	1

**Regulated VOCs plus Lists 1&3**

10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1



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Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	2.0	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	107	‡ Rec		
			( Surrogate )	4-Bromofluorobenzene	99	‡ Rec		
			( Surrogate )	Toluene-d8	103	‡ Rec		

**MW-984-051 (981023133)                      Sampled on 10/23/98**

	10/26/98	86389	( ML/S2320B )	Alkalinity	165	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	5.34	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	55.8	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	5.32	meq/l	0.0010	1
	10/24/98	86319	( ML/EPA 300 )	Chloride	25.6	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.131	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/23/98	86269	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	545	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	460	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	201	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	1.75	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	21.4	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	16.6	mg/l	1.0	1
	10/24/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	3.84	mg/l	0.10	1

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Laboratory  
 Report  
 #48578

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	7.0	Units	0.0010	1
	10/24/98	86324	( ML/EPA 300.0 )	Sulfate	50.2	mg/l	2.0	1
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	330	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/26/98	86478	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1

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 #48578

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
10/26/98	86478	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1	
10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1	
		( EPA 524.2 )	None Detected	ND			1	
		( Surrogate )	1,2-Dichloroethane-d4	97		‡ Rec		
		( Surrogate )	4-Bromofluorobenzene	109		‡ Rec		
		( Surrogate )	Toluene-d8	100		‡ Rec		





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**Laboratory  
 Report  
 #48578**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-050 (981023134)                      Sampled on 10/23/98</b>								
	10/26/98	86389	( ML/S2320B )	Alkalinity	115	mg/l	2.0	1
	10/29/98		( ML/SM1040 )	Anion Sum	2.79	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	29.3	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	2.79	meq/l	0.0010	1
	10/24/98	86319	( ML/EPA 300 )	Chloride	3.98	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	10/29/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.362	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/23/98	86269	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/26/98	86310	( ML/S2510B )	Specific Conductance	285	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	950	ug/l	100	1
	10/29/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	140	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	1.96	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	9.72	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	11.0	mg/l	1.0	1
	10/24/98	86323	( ML/EPA 300.0 )	Nitrate-N by IC	0.35	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/26/98	86327	( ML/SM 4500H )	Lab pH	7.6	Units	0.0010	1
	10/24/98	86324	( ML/EPA 300.0 )	Sulfate	17.0	mg/l	2.0	1
	10/28/98	86574	( ML/S2540C )	Total Dissolved Solid (TDS)	170	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
10/26/98	86478		( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
10/26/98	86478		( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
10/26/98	86478		( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
10/26/98	86478		( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/26/98	86478	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/26/98	86478	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	99	† Rec		
			( Surrogate )	4-Bromofluorobenzene	100	† Rec		
			( Surrogate )	Toluene-d8	99	† Rec		



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(981023129)

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Sample reanalyzed on 12/28/98 and methylene chloride was confirmed.

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Laboratory  
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 #48578

Foster Wheeler Environmental, Inc

**QC Batch #86269****Hexavalent chromium (Cr VI)**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1023134		( 0.00 - 0.00 )	
LCS1	Hexavalent chromium (Cr VI)	0.050	0.0500	100.0	( 78.00 - 118.00 )	
LCS2	Hexavalent chromium (Cr VI)	0.050	0.0500	100.0	( 78.00 - 118.00 )	0.00
MBLK	Hexavalent chromium (Cr VI)	ND				
MS	Hexavalent chromium (Cr VI)	0.050	0.0500	100.0	( 80.00 - 120.00 )	
MSD	Hexavalent chromium (Cr VI)	0.050	0.0494	98.8	( 80.00 - 120.00 )	1.2

**QC Batch #86310****Specific Conductance**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	Lab # 98	1023134		( 0.00 - 0.00 )	

**QC Batch #86319****Chloride**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Chloride	25	24.8	99.2	( 90.00 - 110.00 )	
LCS2	Chloride	25	24.8	99.2	( 90.00 - 110.00 )	0.00
MBLK	Chloride	ND				
MS	Chloride	25	26.8	107.2	( 80.00 - 120.00 )	
MSD	Chloride	25	26.7	106.8	( 80.00 - 120.00 )	0.37

**QC Batch #86323****Nitrate-N by IC**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Nitrate-N by IC	2.5	2.47	98.8	( 90.00 - 110.00 )	
LCS2	Nitrate-N by IC	2.5	2.46	98.4	( 90.00 - 110.00 )	0.41
MBLK	Nitrate-N by IC	ND				
MS	Nitrate-N by IC	2.5	2.64	105.6	( 80.00 - 120.00 )	
MSD	Nitrate-N by IC	2.5	2.63	105.2	( 80.00 - 120.00 )	0.38

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 QC Report  
 #48578

Foster Wheeler Environmental, Inc  
 (continued)

**QC Batch #86324**

**Sulfate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Sulfate	50	48.9	97.8	( 90.00 - 110.00 )	
LCS2	Sulfate	50	48.8	97.6	( 90.00 - 110.00 )	0.20
MBLK	Sulfate	ND				
MS	Sulfate	50	51.7	103.4	( 80.00 - 120.00 )	
MSD	Sulfate	50	51.7	103.4	( 80.00 - 120.00 )	0.00

**QC Batch #86327**

**Lab pH**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	lab # 98	1023134		( 0.00 - 0.00 )	

**QC Batch #86389**

**Alkalinity**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022259		( 0.00 - 0.00 )	
LCS1	Alkalinity	96.2	98.6	102.0	( 90.00 - 110.00 )	
LCS2	Alkalinity	96.2	98.5	101.6	( 90.00 - 110.00 )	0.10
MBLK	Alkalinity	ND				
MS	Alkalinity	96.2	92.7	95.6	( 80.00 - 120.00 )	
MSD	Alkalinity	96.2	94.3	98.0	( 80.00 - 120.00 )	1.7

**QC Batch #86478**

**Regulated VOCs plus Lists 1&3**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MBLK	1,1,1,2-Tetrachloroethane	ND				
LCS1	1,1,1-Trichloroethane	8	7.69	96.1	( 70.00 - 130.00 )	
MBLK	1,1,1-Trichloroethane	ND				
LCS1	1,1,2,2-Tetrachloroethane	8	8.41	105.1	( 70.00 - 130.00 )	

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(continued)

MBLK	1,1,2,2-Tetrachloroethane	ND				
LCS1	1,1,2-Trichloroethane	8	8.11	101.4	( 70.00 - 130.00 )	
MBLK	1,1,2-Trichloroethane	ND				
LCS1	1,1-Dichloroethane	8	7.52	94.0	( 70.00 - 130.00 )	
MBLK	1,1-Dichloroethane	ND				
LCS1	1,1-Dichloroethylene	8	7.23	90.4	( 70.00 - 130.00 )	
MBLK	1,1-Dichloroethylene	ND				
MS	1,1-Dichloroethylene	8	7.62	95.2	( 70.00 - 130.00 )	
MSD	1,1-Dichloroethylene	8	6.97	87.1	( 70.00 - 130.00 )	8.9
MBLK	1,1-Dichloropropene	ND				
MBLK	1,2,3-Trichlorobenzene	ND				
MBLK	1,2,3-Trichloropropane	ND				
LCS1	1,2,4-Trichlorobenzene	8	8.52	106.5	( 70.00 - 130.00 )	
MBLK	1,2,4-Trichlorobenzene	ND				
MBLK	1,2,4-Trimethylbenzene	ND				
LCS1	1,2-Dichloroethane	8	7.81	97.6	( 70.00 - 130.00 )	
MBLK	1,2-Dichloroethane	ND				
LCS1	1,2-Dichloropropane	8	7.98	99.8	( 70.00 - 130.00 )	
MBLK	1,2-Dichloropropane	ND				
MBLK	1,3,5-Trimethylbenzene	ND				
LCS1	1,3-Dichloropropane	8	8.03	100.4	( 70.00 - 130.00 )	
MBLK	1,3-Dichloropropane	ND				
LCS1	p-Dichlorobenzene (1,4-DCB)	8	8.86	110.8	( 70.00 - 130.00 )	
MBLK	p-Dichlorobenzene (1,4-DCB)	ND				
MBLK	2,2-Dichloropropane	ND				
MBLK	2-Butanone (MEK)	ND				
MBLK	2-Chloroethylvinylether	ND				
MBLK	o-Chlorotoluene	ND				
MBLK	p-Chlorotoluene	ND				
MBLK	4-Methyl-2-Pentanone (MIBK)	ND				
MS	Spiked sample	Lab # 98	1022277		( 0.00 - 0.00 )	
LCS1	Benzene	8	8.01	100.1	( 70.00 - 130.00 )	
MBLK	Benzene	ND				
MS	Benzene	8	8.56	107.0	( 70.00 - 130.00 )	
MSD	Benzene	8	8.06	100.8	( 70.00 - 130.00 )	6.0
MBLK	Bromobenzene	ND				
MBLK	Bromomethane (Methyl Bromide)	ND				

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Foster Wheeler Environmental, Inc  
 (continued)

LCS1	cis-1,2-Dichloroethylene	8	7.81	97.6	( 70.00 - 130.00 )	
MBLK	cis-1,2-Dichloroethylene	ND				
LCS1	Chlorobenzene	8	7.90	98.8	( 70.00 - 130.00 )	
MBLK	Chlorobenzene	ND				
MS	Chlorobenzene	8	8.39	104.9	( 70.00 - 130.00 )	
MSD	Chlorobenzene	8	7.92	99.0	( 70.00 - 130.00 )	5.8
LCS1	Carbon Tetrachloride	8	7.47	93.4	( 70.00 - 130.00 )	
MBLK	Carbon Tetrachloride	ND				
MBLK	cis-1,3-Dichloropropene	ND				
LCS1	Bromoform	8	7.58	94.8	( 70.00 - 130.00 )	
MBLK	Bromoform	ND				
LCS1	Chloroform (Trichloromethane)	8	8.08	101.0	( 70.00 - 130.00 )	
MBLK	Chloroform (Trichloromethane)	ND				
MBLK	Bromochloromethane	ND				
MBLK	Chloroethane	ND				
MBLK	Chloromethane (Methyl Chloride)	ND				
LCS1	Chlorodibromomethane	8	7.88	98.5	( 70.00 - 130.00 )	
MBLK	Chlorodibromomethane	ND				
MBLK	Dibromomethane	ND				
LCS1	Bromodichloromethane	8	7.82	97.8	( 70.00 - 130.00 )	
MBLK	Bromodichloromethane	ND				
LCS1	Dichloromethane	8	7.37	92.1	( 70.00 - 130.00 )	
MBLK	Dichloromethane	ND				
LCS1	Ethyl benzene	8	8.00	100.0	( 70.00 - 130.00 )	
MBLK	Ethyl benzene	ND				
MBLK	Dichlorodifluoromethane	ND				
LCS1	Fluorotrichloromethane-Freon11	4	4.36	109.0	( 70.00 - 130.00 )	
MBLK	Fluorotrichloromethane-Freon11	ND				
MBLK	Hexachlorobutadiene	ND				
MBLK	Isopropylbenzene	ND				
MBLK	m-Dichlorobenzene (1,3-DCB)	ND				
LCS1	m,p-Xylenes	16	15.6	97.5	( 70.00 - 130.00 )	
MBLK	m,p-Xylenes	ND				
MBLK	Naphthalene	ND				
MBLK	n-Butylbenzene	ND				
MBLK	n-Propylbenzene	ND				
LCS1	o-Xylene	8	8.38	104.8	( 70.00 - 130.00 )	

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Foster Wheeler Environmental, Inc  
 (continued)

MBLK	o-Xylene	ND				
LCS1	o-Dichlorobenzene (1,2-DCB)	8	8.50	106.2	( 70.00 - 130.00 )	
MBLK	o-Dichlorobenzene (1,2-DCB)	ND				
LCS1	Tetrachloroethylene (PCE)	8	7.76	97.0	( 70.00 - 130.00 )	
MBLK	Tetrachloroethylene (PCE)	ND				
MBLK	p-Isopropyltoluene	ND				
MBLK	sec-Butylbenzene	ND				
LCS1	Styrene	8	8.14	101.8	( 70.00 - 130.00 )	
MBLK	Styrene	ND				
LCS1	1,2-dichloroethane-d4	100	97.6	97.6	( 80.00 - 120.00 )	
MBLK	1,2-dichloroethane-d4	100	93.2	93.2		
MS	1,2-dichloroethane-d4	100	97.8	97.8	( 80.00 - 120.00 )	
MSD	1,2-dichloroethane-d4	100	94.0	94.0	( 80.00 - 120.00 )	4.0
LCS1	Toluene-d8	100	97.4	97.4	( 80.00 - 120.00 )	
MBLK	Toluene-d8	100	101	101.0		
MS	Toluene-d8	100	96.6	96.6	( 80.00 - 120.00 )	
MSD	Toluene-d8	100	97.3	97.3	( 80.00 - 120.00 )	0.72
LCS1	4-Bromofluorobenzene	100	102	102.0	( 80.00 - 120.00 )	
MBLK	4-Bromofluorobenzene	100	109	109.0		
MS	4-Bromofluorobenzene	100	96.8	96.8	( 80.00 - 120.00 )	
MSD	4-Bromofluorobenzene	100	107	107.0	( 80.00 - 120.00 )	10
LCS1	trans-1,2-Dichloroethylene	8	7.44	93.0	( 70.00 - 130.00 )	
MBLK	trans-1,2-Dichloroethylene	ND				
MBLK	tert-Butylbenzene	ND				
LCS1	Trichloroethylene (TCE)	8	7.81	97.6	( 70.00 - 130.00 )	
MBLK	Trichloroethylene (TCE)	ND				
MS	Trichloroethylene (TCE)	8	8.42	105.2	( 70.00 - 130.00 )	
MSD	Trichloroethylene (TCE)	8	8.01	100.1	( 70.00 - 130.00 )	5.0
LCS1	Trichlorotrifluoroethane (Freon	4	3.73	93.2	( 70.00 - 130.00 )	
MBLK	Trichlorotrifluoroethane (Freon	ND				
MBLK	trans-1,3-Dichloropropene	ND				
LCS1	Toluene	8	7.66	95.8	( 70.00 - 130.00 )	
MBLK	Toluene	ND				
MS	Toluene	8	8.24	103.0	( 70.00 - 130.00 )	
MSD	Toluene	8	7.64	95.5	( 70.00 - 130.00 )	7.6
LCS1	Vinyl chloride (VC)	4	4.77	119.2	( 70.00 - 130.00 )	
MBLK	Vinyl chloride (VC)	ND				

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Foster Wheeler Environmental, Inc  
 (continued)

**QC Batch #86574****Total Dissolved Solid (TDS)**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Total Dissolved Solid (TDS)	175	170	97.1	( 85.00 - 115.00 )	
LCS2	Total Dissolved Solid (TDS)	700	646	92.3	( 85.00 - 115.00 )	
MBLK	Total Dissolved Solid (TDS)	ND				

**QC Batch #86685****Chromium, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab# 98	1023132		( 0.00 - 0.00 )	
LCS1	Chromium, Total, ICAP/MS	100	94	94.0	( 85.00 - 115.00 )	
LCS2	Chromium, Total, ICAP/MS	100	95	95.0	( 85.00 - 115.00 )	1.1
MBLK	Chromium, Total, ICAP/MS	ND				
MS	Chromium, Total, ICAP/MS	100	94	94.0	( 70.00 - 130.00 )	
MSD	Chromium, Total, ICAP/MS	100	93	93.0	( 70.00 - 130.00 )	1.1

**QC Batch #86686****Lead, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab #98	1023132		( 0.00 - 0.00 )	
LCS1	Lead, Total, ICAP/MS	20.0	19.4	97.0	( 85.00 - 115.00 )	
LCS2	Lead, Total, ICAP/MS	20.0	19.3	96.5	( 85.00 - 115.00 )	0.52
MBLK	Lead, Total, ICAP/MS	ND				
MS	Lead, Total, ICAP/MS	20.0	20.0	100.0	( 70.00 - 130.00 )	
MSD	Lead, Total, ICAP/MS	20.0	20.2	101.0	( 70.00 - 130.00 )	1.00

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Foster Wheeler Environmental, Inc  
 (continued)

**QC Batch #86687****Iron, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1023132		( 0.00 - 0.00 )	
LCS1	Iron, Total, ICAP/MS	500	471	94.2	( 85.00 - 115.00 )	
LCS2	Iron, Total, ICAP/MS	500	472	94.4	( 85.00 - 115.00 )	0.21
MBLK	Iron, Total, ICAP/MS	ND				
MS	Iron, Total, ICAP/MS	500	437	87.4	( 70.00 - 130.00 )	
MSD	Iron, Total, ICAP/MS	500	447	89.4	( 70.00 - 130.00 )	2.3

**QC Batch #86692****Calcium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Calcium, Total, ICAP	50	48.3	96.6	( 85.00 - 115.00 )	
LCS2	Calcium, Total, ICAP	50	49.3	98.6	( 85.00 - 115.00 )	2.0
MBLK	Calcium, Total, ICAP	ND				
MS	Calcium, Total, ICAP	50	47.7	95.4	( 70.00 - 130.00 )	
MSD	Calcium, Total, ICAP	50	46.7	93.4	( 70.00 - 130.00 )	2.1

**QC Batch #86694****Potassium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Potassium, Total, ICAP	20	19.8	99.0	( 80.00 - 110.00 )	
LCS2	Potassium, Total, ICAP	20	20.2	101.0	( 80.00 - 110.00 )	2.0
MBLK	Potassium, Total, ICAP	ND				
MS	Potassium, Total, ICAP	20	19.7	98.5	( 80.00 - 120.00 )	
MSD	Potassium, Total, ICAP	20	18.9	94.5	( 80.00 - 120.00 )	4.1

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Foster Wheeler Environmental, Inc  
 (continued)

**QC Batch #86696****Magnesium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Magnesium, Total, ICAP	20	20.3	101.5	( 85.00 - 115.00 )	
LCS2	Magnesium, Total, ICAP	20	20.6	103.0	( 85.00 - 115.00 )	1.5
MBLK	Magnesium, Total, ICAP	ND				
MS	Magnesium, Total, ICAP	20	19.8	99.0	( 70.00 - 130.00 )	
MSD	Magnesium, Total, ICAP	20	19.1	95.5	( 70.00 - 130.00 )	3.6

**QC Batch #86698****Sodium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Sodium, Total, ICAP	50	51.5	103.0	( 85.00 - 115.00 )	
LCS2	Sodium, Total, ICAP	50	52.3	104.6	( 85.00 - 115.00 )	1.5
MBLK	Sodium, Total, ICAP	ND				
MS	Sodium, Total, ICAP	50	49.4	98.8	( 70.00 - 130.00 )	
MSD	Sodium, Total, ICAP	50	47.4	94.8	( 70.00 - 130.00 )	4.1

**QC Batch #86781****Arsenic, Total, GF**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab #98	1023132		( 0.00 - 0.00 )	
LCS1	Arsenic, Total, GF	0.020	0.0211	105.5	( 85.00 - 115.00 )	
LCS2	Arsenic, Total, GF	0.020	0.0222	111.0	( 85.00 - 115.00 )	5.1
MBLK	Arsenic, Total, GF	ND				
MS	Arsenic, Total, GF	0.020	0.0233	116.5	( 70.00 - 130.00 )	
MSD	Arsenic, Total, GF	0.020	0.0240	120.0	( 70.00 - 130.00 )	3.0

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Foster Wheeler Environmental, Inc  
(continued)

**QC Batch #86831**

**Perchlorate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Perchlorate	20.0	20.3	101.5	( 90.00 - 110.00 )	
LCS2	Perchlorate	20.0	20.6	103.0	( 90.00 - 110.00 )	1.5
MBLK	Perchlorate	ND				
MS	Perchlorate	20.0	20.8	104.0	( 75.00 - 125.00 )	
MSD	Perchlorate	20.0	22.0	110.0	( 75.00 - 125.00 )	5.6

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**MONTGOMERY WATSON LABORATORIES**

November 17, 1998

Foster Wheeler Environmental  
611 Anton Blvd Suite 800  
Costa Mesa, CA.92626

Attention: Mark Cutler

Re: Report # 48613 (MW-984-084, -085, -075)

Dear Mark,

Enclosed please find data deliverables for the recent JPL project. A detailed quality control (QC) summary follows:

**Non-conformance (LCS, MS/MSD, Surrogates, and Holding Times):**

None

**Samples requiring dilution (with increased MRL's):**

None

**Method blanks with compounds detected:**

None

**Other Comments:**

Carbon Tetrachloride was detected in sample ID: MW-984-075

Chloroform was detected in sample ID: MW-984-075

Trichloroethylene was detected in sample ID: MW-984-075

Perchlorate is reported as ND for sample ID: MW-984-075

**TICS:**

None

**Method Variance:**

None

Sincerely,

Debbie Frank  
Project Manager

cc: Judy Novelly (JPL)

a Division of Montgomery Watson Americas, Inc.

555 East Walnut Street  
Pasadena, California 91101  
Tel: 626 568 6400  
Fax: 626 568 6324

4820 South Mill Avenue  
Suite 202  
Tempe, Arizona 85282  
Tel: 602 755 8201  
Fax: 602 755 8203

*Quality Environmental Analysis*

**Montgomery Watson Laboratories**

7000 Wilshire Blvd, Los Angeles, CA 90047-7000  
 PHONE: 626-568-6400/FAX: 626-568-6324

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Foster Wheeler Environmental, Inc  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa, CA 92626  
 Attn: Mark Cutler

Customer Code: ENSERCH  
 PO#: Sub PO#007618-0004  
 Group#: 48613  
 Project#: JPL  
 Proj Mgr: Debbie Frank  
 Phone: (714) 444-5526

The following samples were received from you on 10/26/98. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Montgomery Watson Laboratories.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
981026100	MW-984-084	@EBASVOA	Water	10/26/98
981026101	MW-984-085	@EBASVOA CR-EBAS AS-EBAS PB-EBAS CR-VI CLO4	Water	10/26/98
981026102	MW-984-075	@EBASVOA CR-EBAS AS-EBAS PB-EBAS TDS CO3 CATION1 ANION1 PH EC HCO3 K ALK NO3 SO4 CL FE-MS NA MG CA CR-VI CLO4	Water	10/26/98

Test Acronym Description

Test Acronym	Description
@EBASVOA	Regulated VOCs plus Lists 1&3
ALK	Alkalinity
ANION1	Anion Sum
AS-EBAS	Arsenic, Total, GF
CA	Calcium, Total, ICAP
CATION1	Cation Sum
CL	Chloride
CLO4	Perchlorate
CO3	Carbonate as CO3, Calculated
CR-EBAS	Chromium, Total, ICAP/MS
CR-VI	Hexavalent chromium (Cr VI)
EC	Specific Conductance
FE-MS	Iron, Total, ICAP/MS
HCO3	Bicarbonate as HCO3, calculated
K	Potassium, Total, ICAP
MG	Magnesium, Total, ICAP
NA	Sodium, Total, ICAP
NO3	Nitrate-N by IC

Foster Wheeler Environmental, Inc  
611 Anton Boulevard  
Suite 800  
Costa Mesa, CA 92626  
Attn: Mark Cutler

Customer Code: ENSERCH  
PO#: Sub PO#007618-0004  
Group#: 48613  
Project#: JPL  
Proj Mgr: Debbie Frank  
Phone: (714) 444-5526

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Test Acronym Description

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Test Acronym	Description
PB-EBAS	Lead, Total, ICAP/MS
PH	Lab pH
SO4	Sulfate
TDS	Total Dissolved Solid (TDS)





1 48613

NUMBER 2001

# FOSTER WHEELER ENVIRONMENTAL CORPORATION

## CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

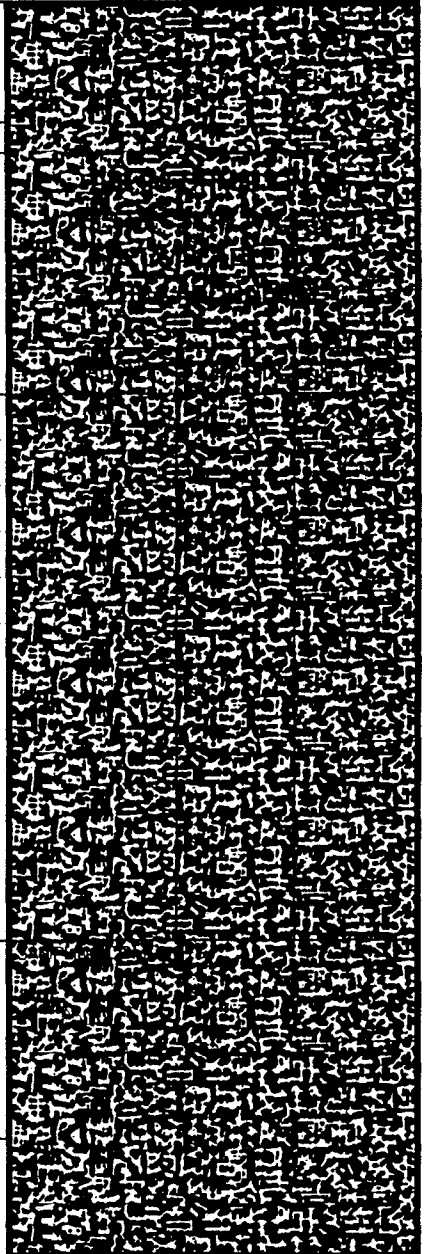
PAGE 1 OF 1

PROJECT: <b>JPL</b>	OFFS NO. <b>1572.0260</b>	HAZARD IDENTIFICATION Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Toxic <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Infectious <input type="checkbox"/>	TIME REQUIRED NORMAL <input checked="" type="checkbox"/> DAYS RUSH <input type="checkbox"/> DAYS
PROJECT ADDRESS <b>1300 OAK GLEN DR. PASADENA CA</b>		ANALYSES REQUIRED	
SAMPLE Name <b>BIRNBERG</b>	SAMPLER (Signature) <i>[Signature]</i>	VOCs (52+2) TOTAL AS, C, Pb (6010/1000) MAJOR ANIONS: TDS HEX Chromium PEROXISOME	
LABORATORY <b>MONTGOMERY WATSON LABS</b>			
REPORT TO BE SENT TO <b>MIZ. MARIE CUTLER</b>			

SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	SAMPLE MATERIAL			VOCs (52+2)	TOTAL AS, C, Pb (6010/1000)	MAJOR ANIONS: TDS	HEX Chromium	PEROXISOME							
					WATER	SOIL	OTHER (Describe)												
MW 4-084	9100	10/26/99	2	2 x 40ml	X			X											
MW 4-085	1230	↓	5	2 x 40ml 1 x 25ml 2 x 125ml	X			X	X		X	X							
MW 4-075	1240	↓	6	2 x 40ml 1 x 25ml 2 x 125ml 1 x 50ml	X			X	X	X	X	X							

LABORATORY INSTRUCTIONS/COMMENTS  
**LEVEL IV QA/QC**

RELINQUISHED BY (Signature) <i>[Signature]</i>	DATE 10/26/99	RECEIVED BY (Signature) <i>[Signature]</i>	RELINQUISHED BY (Signature)	DATE	RECEIVED BY (Signature)
COMPANY	TIME	COMPANY	COMPANY	TIME	COMPANY



MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: ENSEPCT Date Received: 10-26-98

Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 10-26-98  
by (print) Mike Chiu (sign) [Signature]

1. Did cooler come with shipping slip (air bill, etc.)? Yes  No   
If YES, attach & enter carrier and air bill # here: \_\_\_\_\_

2. Were custody seals on outside of cooler? Yes  No   
If YES, how many & where: 2 ~~inside~~ outside cooler  
If Yes, enter the following: seal date: 10-26-98, seal name: BD

3. Were custody seals unbroken & intact at delivery? Yes  No

4. Were custody papers sealed in bag & taped to lid? Yes  No

5. Were custody papers filled out properly (ink, etc.) Yes  No

6. Did you sign custody papers in appropriate place? Yes  No

7. Was project identifiable from custody papers? Yes  No

8. Have designated person(s) initial to acknowledge receipt: me (date) 10-26-98

B. LOG-IN PHASE: Date samples were logged-in: 10-26-98  
(print) Mike Chiu (sign) [Signature]

9. Describe packing:

10. If required, was enough ice used? Yes  No

11. Were all bottles sealed in separate plastic bags? Yes  No

12. Did all bottles arrive unbroken/in good condition? Yes  No

13. Were all bottle labels complete (ID,date,sign,pres)? Yes  No

14. Did all bottle labels agree with custody papers?  
If NO, indicate discrepancies on back. Yes  No

15. Were correct containers used for the analytes? Yes  No

16. Were correct preservatives used when required? Yes  No

17. Was sufficient amount of sample sent for tests? Yes  No

18. Bubbles absent in VOA vials?  
If NO, list by sample id on back. Yes  No

19. Was Client Services informed of problems? Yes  No

			Result	MDL	UNITS
Analyzed	981026100	MW-984-084			
Analyzed	981026101	MW-984-085			
Analyzed	981026102	MW-984-075			
10/28/98	Carbon Tetrachloride		1.0	.500	UGL
10/28/98	Chloroform (Trichloromethane)		0.8	.500	UGL
10/28/98	Trichloroethylene (TCE)		1.3	.500	UGL
10/28/98	Alkalinity		150	2.000	MGL
11/03/98	Anion Sum		4.04	.001	MEQL
11/03/98	Bicarbonate as HCO3,calculated		183	.001	MGL
11/02/98	Calcium, Total, ICAP		43.5	1.000	MGL
11/03/98	Carbonate as CO3, Calculated		0.596	.001	MGL
11/09/98	Cation Sum		4.15	.001	MEQL
10/28/98	Chloride		9.75	1.000	MGL
11/02/98	Iron, Total, ICAP/MS		290	*****	UGL
10/28/98	Lab pH		7.7	.001	UNIT
11/02/98	Magnesium, Total, ICAP		14.9	.100	MGL
10/28/98	Nitrate-N by IC		1.25	.100	MGL
11/04/98	Perchlorate		16.3	4.000	UGL
11/02/98	Potassium, Total, ICAP		2.21	1.000	MGL
11/02/98	Sodium, Total, ICAP		16.0	1.000	MGL
10/28/98	Specific Conductance		440	4.000	UMHO
10/28/98	Sulfate		32.2	2.000	MGL
11/02/98	Total Dissolved Solid (TDS)		250	10.000	MGL



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**Laboratory Report**

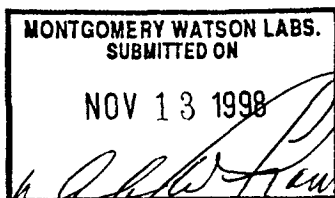
for

Foster Wheeler Environmental, Inc  
611 Anton Boulevard

Suite 800

Costa Mesa , CA 92626

Attention: Mark Cutler  
Fax: (714)444-5560



DEB\* Debbie Frank

Report#: 48613  
JPL

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Laboratory  
 Report  
 #48613

Foster Wheeler Environmental, Inc  
 Mark Cutler  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa , CA 92626

Samples Received  
 26-oct-1998 17:07:49

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
MW-984-084 (981026100)				Sampled on 10/26/98				
<b>Regulated VOCs plus Lists 1&amp;3</b>								
10/30/98	86935	( ML/EPA 524.2 )		1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,1,1-Trichloroethane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,1,2-Trichloroethane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,1-Dichloroethane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,1-Dichloroethylene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,1-Dichloropropene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,2,3-Trichloropropane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,2-Dichloroethane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,2-Dichloropropane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		1,3-Dichloropropane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		2,2-Dichloropropane	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		2-Butanone (MEK)	ND	ug/l	5.0	1
10/30/98	86935	( ML/EPA 524.2 )		o-Chlorotoluene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		p-Chlorotoluene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
10/30/98	86935	( ML/EPA 524.2 )		Benzene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		Bromobenzene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		Chlorobenzene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		Carbon Tetrachloride	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		cis-1,3-Dichloropropene	ND	ug/l	0.50	1
10/30/98	86935	( ML/EPA 524.2 )		Bromoform	ND	ug/l	0.50	1

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Laboratory  
 Report  
 #48613

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/30/98	86935	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/30/98	86935	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	103	† Rec		
			( Surrogate )	4-Bromofluorobenzene	102	† Rec		
			( Surrogate )	Toluene-d8	96	† Rec		



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**Laboratory  
 Report  
 #48613**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-085 (981026101)                      Sampled on 10/26/98</b>								
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/26/98	86369	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
10/28/98	86621	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1	
10/28/98	86621	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1	
10/28/98	86621	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1	
10/28/98	86621	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1	

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Laboratory  
 Report  
 #48613

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86621	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	97	‡ Rec		
			( Surrogate )	4-Bromofluorobenzene	108	‡ Rec		





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**Laboratory  
 Report  
 #48613**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
			( Surrogate )	Toluene-d8	98	% Rec		
<b>MW-984-075 (981026102)</b>			<b>Sampled on 10/26/98</b>					
	10/28/98	86630	( ML/S2320B )	Alkalinity	150	mg/l	2.0	1
	11/03/98		( ML/SM1040 )	Anion Sum	4.04	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	43.5	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	4.15	meq/l	0.0010	1
	10/28/98	86611	( ML/EPA 300 )	Chloride	9.75	mg/l	1.0	1
	11/04/98	86831	( MOD/EPA 300 )	Perchlorate	16.3	ug/l	4.0	1
	11/03/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.596	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/26/98	86369	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/28/98	86489	( ML/S2510B )	Specific Conductance	440	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	290	ug/l	100	1
	11/03/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	183	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	2.21	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	14.9	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	16.0	mg/l	1.0	1
	10/28/98	86613	( ML/EPA 300.0 )	Nitrate-N by IC	1.25	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/28/98	86463	( ML/SM 4500H )	Lab pH	7.7	Units	0.0010	1
	10/28/98	86615	( ML/EPA 300.0 )	Sulfate	32.2	mg/l	2.0	1
	11/02/98	86732	( ML/S2540C )	Total Dissolved Solid (TDS)	250	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/28/98	86621	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1

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Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86621	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/28/98	86621	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/28/98	86621	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Carbon Tetrachloride	1.0	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	0.8	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1

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Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86621	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Trichloroethylene (TCE)	1.3	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/28/98	86621	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	93	‡ Rec		
			( Surrogate )	4-Bromofluorobenzene	105	‡ Rec		
			( Surrogate )	Toluene-d8	101	‡ Rec		



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Foster Wheeler Environmental, Inc

**QC Batch #86369**

**Hexavalent chromium (Cr VI)**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1026102		( 0.00 - 0.00 )	
LCS1	Hexavalent chromium (Cr VI)	0.050	0.0504	100.8	( 78.00 - 118.00 )	
LCS2	Hexavalent chromium (Cr VI)	0.050	0.0497	99.4	( 78.00 - 118.00 )	1.4
MBLK	Hexavalent chromium (Cr VI)	ND				
MS	Hexavalent chromium (Cr VI)	0.050	0.0504	100.8	( 80.00 - 120.00 )	
MSD	Hexavalent chromium (Cr VI)	0.050	0.0497	99.4	( 80.00 - 120.00 )	1.4

**QC Batch #86463**

**Lab pH**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	lab # 98	1027215		( 0.00 - 0.00 )	

**QC Batch #86489**

**Specific Conductance**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	Lab # 98	1027211		( 0.00 - 0.00 )	

**QC Batch #86611**

**Chloride**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1026102		( 0.00 - 0.00 )	
LCS1	Chloride	25	24.9	99.6	( 90.00 - 110.00 )	
LCS2	Chloride	25	24.8	99.2	( 90.00 - 110.00 )	0.40
MBLK	Chloride	ND				
MS	Chloride	25	25.9	103.6	( 80.00 - 120.00 )	
MSD	Chloride	25	26.6	106.4	( 80.00 - 120.00 )	2.7

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**QC Batch #86613****Nitrate-N by IC**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1026102		( 0.00 - 0.00 )	
LCS1	Nitrate-N by IC	2.5	2.46	98.4	( 90.00 - 110.00 )	
LCS2	Nitrate-N by IC	2.5	2.45	98.0	( 90.00 - 110.00 )	0.41
MBLK	Nitrate-N by IC	ND				
MS	Nitrate-N by IC	2.5	2.54	101.6	( 80.00 - 120.00 )	
MSD	Nitrate-N by IC	2.5	2.60	104.0	( 80.00 - 120.00 )	2.3

**QC Batch #86615****Sulfate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1026102		( 0.00 - 0.00 )	
LCS1	Sulfate	50	49.1	98.2	( 90.00 - 110.00 )	
LCS2	Sulfate	50	49.1	98.2	( 90.00 - 110.00 )	0.00
MBLK	Sulfate	ND				
MS	Sulfate	50	52.2	104.4	( 80.00 - 120.00 )	
MSD	Sulfate	50	53.7	107.4	( 80.00 - 120.00 )	2.8

**QC Batch #86621****Regulated VOCs plus Lists 1&3**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MBLK	1,1,1,2-Tetrachloroethane	ND				
LCS1	1,1,1-Trichloroethane	8	8.17	102.1	( 70.00 - 130.00 )	
MBLK	1,1,1-Trichloroethane	ND				
LCS1	1,1,2,2-Tetrachloroethane	8	8.93	111.6	( 70.00 - 130.00 )	
MBLK	1,1,2,2-Tetrachloroethane	ND				
LCS1	1,1,2-Trichloroethane	8	8.37	104.6	( 70.00 - 130.00 )	
MBLK	1,1,2-Trichloroethane	ND				
LCS1	1,1-Dichloroethane	8	8.11	101.4	( 70.00 - 130.00 )	
MBLK	1,1-Dichloroethane	ND				
LCS1	1,1-Dichloroethylene	8	7.41	92.6	( 70.00 - 130.00 )	

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MBLK	1,1-Dichloroethylene	ND				
MS	1,1-Dichloroethylene	8	7.62	95.2	( 70.00 - 130.00 )	
MSD	1,1-Dichloroethylene	8	6.97	87.1	( 70.00 - 130.00 )	8.9
MBLK	1,1-Dichloropropene	ND				
MBLK	1,2,3-Trichlorobenzene	ND				
MBLK	1,2,3-Trichloropropane	ND				
LCS1	1,2,4-Trichlorobenzene	8	8.56	107.0	( 70.00 - 130.00 )	
MBLK	1,2,4-Trichlorobenzene	ND				
MBLK	1,2,4-Trimethylbenzene	ND				
LCS1	1,2-Dichloroethane	8	8.45	105.6	( 70.00 - 130.00 )	
MBLK	1,2-Dichloroethane	ND				
LCS1	1,2-Dichloropropane	8	8.37	104.6	( 70.00 - 130.00 )	
MBLK	1,2-Dichloropropane	ND				
MBLK	1,3,5-Trimethylbenzene	ND				
LCS1	1,3-Dichloropropane	8	8.33	104.1	( 70.00 - 130.00 )	
MBLK	1,3-Dichloropropane	ND				
LCS1	p-Dichlorobenzene (1,4-DCB)	8	9.26	115.8	( 70.00 - 130.00 )	
MBLK	p-Dichlorobenzene (1,4-DCB)	ND				
MBLK	2,2-Dichloropropane	ND				
MBLK	2-Butanone (MEK)	ND				
MBLK	2-Chloroethylvinylether	ND				
MBLK	o-Chlorotoluene	ND				
MBLK	p-Chlorotoluene	ND				
MBLK	4-Methyl-2-Pentanone (MIBK)	ND				
MS	Spiked sample	Lab # 98	1022277		( 0.00 - 0.00 )	
LCS1	Benzene	8	8.50	106.2	( 70.00 - 130.00 )	
MBLK	Benzene	ND				
MS	Benzene	8	8.56	107.0	( 70.00 - 130.00 )	
MSD	Benzene	8	8.06	100.8	( 70.00 - 130.00 )	6.0
MBLK	Bromobenzene	ND				
MBLK	Bromomethane (Methyl Bromide)	ND				
LCS1	cis-1,2-Dichloroethylene	8	8.46	105.8	( 70.00 - 130.00 )	
MBLK	cis-1,2-Dichloroethylene	ND				
LCS1	Chlorobenzene	8	8.42	105.2	( 70.00 - 130.00 )	
MBLK	Chlorobenzene	ND				
MS	Chlorobenzene	8	8.39	104.9	( 70.00 - 130.00 )	
MSD	Chlorobenzene	8	7.92	99.0	( 70.00 - 130.00 )	5.8

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LCS1	Carbon Tetrachloride	8	7.77	97.1	( 70.00 - 130.00 )
MBLK	Carbon Tetrachloride	ND			
MBLK	cis-1,3-Dichloropropene	ND			
LCS1	Bromoform	8	7.50	93.8	( 70.00 - 130.00 )
MBLK	Bromoform	ND			
LCS1	Chloroform (Trichloromethane)	8	8.47	105.9	( 70.00 - 130.00 )
MBLK	Chloroform (Trichloromethane)	ND			
MBLK	Bromochloromethane	ND			
MBLK	Chloroethane	ND			
MBLK	Chloromethane (Methyl Chloride)	ND			
LCS1	Chlorodibromomethane	8	7.62	95.2	( 70.00 - 130.00 )
MBLK	Chlorodibromomethane	ND			
MBLK	Dibromomethane	ND			
LCS1	Bromodichloromethane	8	8.21	102.6	( 70.00 - 130.00 )
MBLK	Bromodichloromethane	ND			
LCS1	Dichloromethane	8	7.60	95.0	( 70.00 - 130.00 )
MBLK	Dichloromethane	ND			
LCS1	Ethyl benzene	8	8.52	106.5	( 70.00 - 130.00 )
MBLK	Ethyl benzene	ND			
MBLK	Dichlorodifluoromethane	ND			
LCS1	Fluorotrichloromethane-Freon11	4	4.54	113.5	( 70.00 - 130.00 )
MBLK	Fluorotrichloromethane-Freon11	ND			
MBLK	Hexachlorobutadiene	ND			
MBLK	Isopropylbenzene	ND			
MBLK	m-Dichlorobenzene (1,3-DCB)	ND			
LCS1	m,p-Xylenes	16	17.2	107.5	( 70.00 - 130.00 )
MBLK	m,p-Xylenes	ND			
MBLK	Naphthalene	ND			
MBLK	n-Butylbenzene	ND			
MBLK	n-Propylbenzene	ND			
LCS1	o-Xylene	8	8.64	108.0	( 70.00 - 130.00 )
MBLK	o-Xylene	ND			
LCS1	o-Dichlorobenzene (1,2-DCB)	8	8.51	106.4	( 70.00 - 130.00 )
MBLK	o-Dichlorobenzene (1,2-DCB)	ND			
LCS1	Tetrachloroethylene (PCE)	8	8.15	101.9	( 70.00 - 130.00 )
MBLK	Tetrachloroethylene (PCE)	ND			
MBLK	p-Isopropyltoluene	ND			

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MBLK	sec-Butylbenzene	ND				
LCS1	Styrene	8	8.40	105.0	( 70.00 - 130.00 )	
MBLK	Styrene	ND				
LCS1	1,2-dichloroethane-d4	100	90	90.0	( 80.00 - 120.00 )	
MBLK	1,2-dichloroethane-d4	100	87.8	87.8		
MS	1,2-dichloroethane-d4	100	97.8	97.8	( 80.00 - 120.00 )	
MSD	1,2-dichloroethane-d4	100	94.0	94.0	( 80.00 - 120.00 )	4.0
LCS1	Toluene-d8	100	95	95.0	( 80.00 - 120.00 )	
MBLK	Toluene-d8	100	98.2	98.2		
MS	Toluene-d8	100	96.6	96.6	( 80.00 - 120.00 )	
MSD	Toluene-d8	100	97.3	97.3	( 80.00 - 120.00 )	0.72
LCS1	4-Bromofluorobenzene	100	104	104.0	( 80.00 - 120.00 )	
MBLK	4-Bromofluorobenzene	100	106	106.0		
MS	4-Bromofluorobenzene	100	96.8	96.8	( 80.00 - 120.00 )	
MSD	4-Bromofluorobenzene	100	107	107.0	( 80.00 - 120.00 )	10
LCS1	trans-1,2-Dichloroethylene	8	7.63	95.4	( 70.00 - 130.00 )	
MBLK	trans-1,2-Dichloroethylene	ND				
MBLK	tert-Butylbenzene	ND				
LCS1	Trichloroethylene (TCE)	8	8.11	101.4	( 70.00 - 130.00 )	
MBLK	Trichloroethylene (TCE)	ND				
MS	Trichloroethylene (TCE)	8	8.42	105.2	( 70.00 - 130.00 )	
MSD	Trichloroethylene (TCE)	8	8.01	100.1	( 70.00 - 130.00 )	5.0
LCS1	Trichlorotrifluoroethane (Freon	4	4.05	101.2	( 70.00 - 130.00 )	
MBLK	Trichlorotrifluoroethane (Freon	ND				
MBLK	trans-1,3-Dichloropropene	ND				
LCS1	Toluene	8	8.06	100.8	( 70.00 - 130.00 )	
MBLK	Toluene	ND				
MS	Toluene	8	8.24	103.0	( 70.00 - 130.00 )	
MSD	Toluene	8	7.64	95.5	( 70.00 - 130.00 )	7.6
LCS1	Vinyl chloride (VC)	4	4.76	119.0	( 70.00 - 130.00 )	
MBLK	Vinyl chloride (VC)	ND				

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Laboratory  
 QC Report  
 #48613

Foster Wheeler Environmental, Inc  
 (continued)

QC Batch #86630

Alkalinity

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1026102		( 0.00 - 0.00 )	
LCS1	Alkalinity	96.2	98.5	102.1	( 90.00 - 110.00 )	
LCS2	Alkalinity	96.2	97.8	102.0	( 90.00 - 110.00 )	0.71
MBLK	Alkalinity	ND				
MS	Alkalinity	96.2	94.0	97.7	( 80.00 - 120.00 )	
MSD	Alkalinity	96.2	94.0	98.0	( 80.00 - 120.00 )	0.00

QC Batch #86685

Chromium, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab# 98	1023132		( 0.00 - 0.00 )	
LCS1	Chromium, Total, ICAP/MS	100	94	94.0	( 85.00 - 115.00 )	
LCS2	Chromium, Total, ICAP/MS	100	95	95.0	( 85.00 - 115.00 )	1.1
MBLK	Chromium, Total, ICAP/MS	ND				
MS	Chromium, Total, ICAP/MS	100	94	94.0	( 70.00 - 130.00 )	
MSD	Chromium, Total, ICAP/MS	100	93	93.0	( 70.00 - 130.00 )	1.1

QC Batch #86686

Lead, Total, ICAP/MS

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab #98	1023132		( 0.00 - 0.00 )	
LCS1	Lead, Total, ICAP/MS	20.0	19.4	97.0	( 85.00 - 115.00 )	
LCS2	Lead, Total, ICAP/MS	20.0	19.3	96.5	( 85.00 - 115.00 )	0.52
MBLK	Lead, Total, ICAP/MS	ND				
MS	Lead, Total, ICAP/MS	20.0	20.0	100.0	( 70.00 - 130.00 )	
MSD	Lead, Total, ICAP/MS	20.0	20.2	101.0	( 70.00 - 130.00 )	1.00

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Foster Wheeler Environmental, Inc  
 (continued)

**QC Batch #86687****Iron, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1023132		( 0.00 - 0.00 )	
LCS1	Iron, Total, ICAP/MS	500	471	94.2	( 85.00 - 115.00 )	
LCS2	Iron, Total, ICAP/MS	500	472	94.4	( 85.00 - 115.00 )	0.21
MBLK	Iron, Total, ICAP/MS	ND				
MS	Iron, Total, ICAP/MS	500	437	87.4	( 70.00 - 130.00 )	
MSD	Iron, Total, ICAP/MS	500	447	89.4	( 70.00 - 130.00 )	2.3

**QC Batch #86692****Calcium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Calcium, Total, ICAP	50	48.3	96.6	( 85.00 - 115.00 )	
LCS2	Calcium, Total, ICAP	50	49.3	98.6	( 85.00 - 115.00 )	2.0
MBLK	Calcium, Total, ICAP	ND				
MS	Calcium, Total, ICAP	50	47.7	95.4	( 70.00 - 130.00 )	
MSD	Calcium, Total, ICAP	50	46.7	93.4	( 70.00 - 130.00 )	2.1

**QC Batch #86694****Potassium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Potassium, Total, ICAP	20	19.8	99.0	( 80.00 - 110.00 )	
LCS2	Potassium, Total, ICAP	20	20.2	101.0	( 80.00 - 110.00 )	2.0
MBLK	Potassium, Total, ICAP	ND				
MS	Potassium, Total, ICAP	20	19.7	98.5	( 80.00 - 120.00 )	
MSD	Potassium, Total, ICAP	20	18.9	94.5	( 80.00 - 120.00 )	4.1

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Foster Wheeler Environmental, Inc  
 (continued)

**QC Batch #86696****Magnesium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Magnesium, Total, ICAP	20	20.3	101.5	( 85.00 - 115.00 )	
LCS2	Magnesium, Total, ICAP	20	20.6	103.0	( 85.00 - 115.00 )	1.5
MBLK	Magnesium, Total, ICAP	ND				
MS	Magnesium, Total, ICAP	20	19.8	99.0	( 70.00 - 130.00 )	
MSD	Magnesium, Total, ICAP	20	19.1	95.5	( 70.00 - 130.00 )	3.6

**QC Batch #86698****Sodium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Sodium, Total, ICAP	50	51.5	103.0	( 85.00 - 115.00 )	
LCS2	Sodium, Total, ICAP	50	52.3	104.6	( 85.00 - 115.00 )	1.5
MBLK	Sodium, Total, ICAP	ND				
MS	Sodium, Total, ICAP	50	49.4	98.8	( 70.00 - 130.00 )	
MSD	Sodium, Total, ICAP	50	47.4	94.8	( 70.00 - 130.00 )	4.1

**QC Batch #86732****Total Dissolved Solid (TDS)**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	Lab # 98	1026102		( 0.00 - 0.00 )	
LCS1	Total Dissolved Solid (TDS)	175	176	100.6	( 85.00 - 115.00 )	
LCS2	Total Dissolved Solid (TDS)	700	672	96.0	( 85.00 - 115.00 )	
MBLK	Total Dissolved Solid (TDS)	ND				

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Laboratory  
 QC Report  
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Foster Wheeler Environmental, Inc  
 (continued)

QC Batch #86781

Arsenic, Total, GF

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab #98	1023132		( 0.00 - 0.00 )	
LCS1	Arsenic, Total, GF	0.020	0.0211	105.5	( 85.00 - 115.00 )	
LCS2	Arsenic, Total, GF	0.020	0.0222	111.0	( 85.00 - 115.00 )	5.1
MBLK	Arsenic, Total, GF	ND				
MS	Arsenic, Total, GF	0.020	0.0233	116.5	( 70.00 - 130.00 )	
MSD	Arsenic, Total, GF	0.020	0.0240	120.0	( 70.00 - 130.00 )	3.0

QC Batch #86831

Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022274		( 0.00 - 0.00 )	
LCS1	Perchlorate	20.0	20.3	101.5	( 90.00 - 110.00 )	
LCS2	Perchlorate	20.0	20.6	103.0	( 90.00 - 110.00 )	1.5
MBLK	Perchlorate	ND				
MS	Perchlorate	20.0	20.8	104.0	( 75.00 - 125.00 )	
MSD	Perchlorate	20.0	22.0	110.0	( 75.00 - 125.00 )	5.6

QC Batch #86935

Regulated VOCs plus Lists 1&3

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MBLK	1,1,1,2-Tetrachloroethane	ND				
LCS1	1,1,1-Trichloroethane	8	8.30	103.8	( 70.00 - 130.00 )	
MBLK	1,1,1-Trichloroethane	ND				
LCS1	1,1,2,2-Tetrachloroethane	8	8.20	102.5	( 70.00 - 130.00 )	
MBLK	1,1,2,2-Tetrachloroethane	ND				
LCS1	1,1,2-Trichloroethane	8	9.03	112.9	( 70.00 - 130.00 )	
MBLK	1,1,2-Trichloroethane	ND				
LCS1	1,1-Dichloroethane	8	8.16	102.0	( 70.00 - 130.00 )	
MBLK	1,1-Dichloroethane	ND				
LCS1	1,1-Dichloroethylene	8	7.39	92.4	( 70.00 - 130.00 )	

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MBLK	1,1-Dichloroethylene	ND				
MS	1,1-Dichloroethylene	8	9.17	114.6	( 70.00 - 130.00 )	
MSD	1,1-Dichloroethylene	8	8.95	111.9	( 70.00 - 130.00 )	2.4
MBLK	1,1-Dichloropropene	ND				
MBLK	1,2,3-Trichlorobenzene	ND				
MBLK	1,2,3-Trichloropropane	ND				
LCS1	1,2,4-Trichlorobenzene	8	8.30	103.8	( 70.00 - 130.00 )	
MBLK	1,2,4-Trichlorobenzene	ND				
MBLK	1,2,4-Trimethylbenzene	ND				
LCS1	1,2-Dichloroethane	8	8.06	100.8	( 70.00 - 130.00 )	
MBLK	1,2-Dichloroethane	ND				
LCS1	1,2-Dichloropropane	8	8.56	107.0	( 70.00 - 130.00 )	
MBLK	1,2-Dichloropropane	ND				
MBLK	1,3,5-Trimethylbenzene	ND				
LCS1	1,3-Dichloropropane	8	7.76	97.0	( 70.00 - 130.00 )	
MBLK	1,3-Dichloropropane	ND				
LCS1	p-Dichlorobenzene (1,4-DCB)	8	8.63	107.9	( 70.00 - 130.00 )	
MBLK	p-Dichlorobenzene (1,4-DCB)	ND				
MBLK	2,2-Dichloropropane	ND				
MBLK	2-Butanone (MEK)	ND				
MBLK	2-Chloroethylvinylether	ND				
MBLK	o-Chlorotoluene	ND				
MBLK	p-Chlorotoluene	ND				
MBLK	4-Methyl-2-Pentanone (MIBK)	ND				
MS	Spiked sample	Lab # 98	1028239		( 0.00 - 0.00 )	
LCS1	Benzene	8	8.61	107.6	( 70.00 - 130.00 )	
MBLK	Benzene	ND				
MS	Benzene	8	9.45	118.1	( 70.00 - 130.00 )	
MSD	Benzene	8	8.96	112.0	( 70.00 - 130.00 )	5.3
MBLK	Bromobenzene	ND				
MBLK	Bromomethane (Methyl Bromide)	ND				
LCS1	cis-1,2-Dichloroethylene	8	8.50	106.2	( 70.00 - 130.00 )	
MBLK	cis-1,2-Dichloroethylene	ND				
LCS1	Chlorobenzene	8	8.52	106.5	( 70.00 - 130.00 )	
MBLK	Chlorobenzene	ND				
MS	Chlorobenzene	8	9.20	115.0	( 70.00 - 130.00 )	
MSD	Chlorobenzene	8	9.10	113.8	( 70.00 - 130.00 )	1.1

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Foster Wheeler Environmental, Inc  
(continued)

LCS1	Carbon Tetrachloride	8	7.63	95.4	( 70.00 - 130.00 )
MBLK	Carbon Tetrachloride	ND			
MBLK	cis-1,3-Dichloropropene	ND			
LCS1	Bromoform	8	7.18	89.8	( 70.00 - 130.00 )
MBLK	Bromoform	ND			
LCS1	Chloroform (Trichloromethane)	8	8.75	109.4	( 70.00 - 130.00 )
MBLK	Chloroform (Trichloromethane)	ND			
MBLK	Bromochloromethane	ND			
MBLK	Chloroethane	ND			
MBLK	Chloromethane (Methyl Chloride)	ND			
LCS1	Chlorodibromomethane	8	7.79	97.4	( 70.00 - 130.00 )
MBLK	Chlorodibromomethane	ND			
MBLK	Dibromomethane	ND			
LCS1	Bromodichloromethane	8	8.40	105.0	( 70.00 - 130.00 )
MBLK	Bromodichloromethane	ND			
LCS1	Dichloromethane	8	7.74	96.8	( 70.00 - 130.00 )
MBLK	Dichloromethane	ND			
LCS1	Ethyl benzene	8	8.86	110.8	( 70.00 - 130.00 )
MBLK	Ethyl benzene	ND			
MBLK	Dichlorodifluoromethane	ND			
LCS1	Fluorotrichloromethane-Freon11	4	4.44	111.0	( 70.00 - 130.00 )
MBLK	Fluorotrichloromethane-Freon11	ND			
MBLK	Hexachlorobutadiene	ND			
MBLK	Isopropylbenzene	ND			
MBLK	m-Dichlorobenzene (1,3-DCB)	ND			
LCS1	m,p-Xylenes	16	17.7	110.6	( 70.00 - 130.00 )
MBLK	m,p-Xylenes	ND			
MBLK	Naphthalene	ND			
MBLK	n-Butylbenzene	ND			
MBLK	n-Propylbenzene	ND			
LCS1	o-Xylene	8	8.88	111.0	( 70.00 - 130.00 )
MBLK	o-Xylene	ND			
LCS1	o-Dichlorobenzene (1,2-DCB)	8	8.51	106.4	( 70.00 - 130.00 )
MBLK	o-Dichlorobenzene (1,2-DCB)	ND			
LCS1	Tetrachloroethylene (PCE)	8	8.47	105.9	( 70.00 - 130.00 )
MBLK	Tetrachloroethylene (PCE)	ND			
MBLK	p-Isopropyltoluene	ND			

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Foster Wheeler Environmental, Inc  
 (continued)

MBLK	sec-Butylbenzene	ND				
LCS1	Styrene	8	5.89	73.6	( 70.00 - 130.00 )	
MBLK	Styrene	ND				
LCS1	1,2-dichloroethane-d4	100	101	101.0	( 80.00 - 120.00 )	
MBLK	1,2-dichloroethane-d4	100	99	99.0		
MS	1,2-dichloroethane-d4	100	94.4	94.4	( 80.00 - 120.00 )	
MSD	1,2-dichloroethane-d4	100	97.0	97.0	( 80.00 - 120.00 )	2.7
LCS1	Toluene-d8	100	98.2	98.2	( 80.00 - 120.00 )	
MBLK	Toluene-d8	100	102	102.0		
MS	Toluene-d8	100	95.6	95.6	( 80.00 - 120.00 )	
MSD	Toluene-d8	100	98.0	98.0	( 80.00 - 120.00 )	2.5
LCS1	4-Bromofluorobenzene	100	95.8	95.8	( 80.00 - 120.00 )	
MBLK	4-Bromofluorobenzene	100	100	100.0		
MS	4-Bromofluorobenzene	100	96.3	96.3	( 80.00 - 120.00 )	
MSD	4-Bromofluorobenzene	100	103	103.0	( 80.00 - 120.00 )	6.7
LCS1	trans-1,2-Dichloroethylene	8	7.69	96.1	( 70.00 - 130.00 )	
MBLK	trans-1,2-Dichloroethylene	ND				
MBLK	tert-Butylbenzene	ND				
LCS1	Trichloroethylene (TCE)	8	8.39	104.9	( 70.00 - 130.00 )	
MBLK	Trichloroethylene (TCE)	ND				
MS	Trichloroethylene (TCE)	8	9.03	112.9	( 70.00 - 130.00 )	
MSD	Trichloroethylene (TCE)	8	8.67	108.4	( 70.00 - 130.00 )	4.1
LCS1	Trichlorotrifluoroethane (Freon	4	4.14	103.5	( 70.00 - 130.00 )	
MBLK	Trichlorotrifluoroethane (Freon	ND				
MBLK	trans-1,3-Dichloropropene	ND				
LCS1	Toluene	8	8.35	104.4	( 70.00 - 130.00 )	
MBLK	Toluene	ND				
MS	Toluene	8	8.94	111.8	( 70.00 - 130.00 )	
MSD	Toluene	8	8.89	111.1	( 70.00 - 130.00 )	0.56
LCS1	Vinyl chloride (VC)	4	4.58	114.5	( 70.00 - 130.00 )	
MBLK	Vinyl chloride (VC)	ND				

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**MONTGOMERY WATSON LABORATORIES**

November 17, 1998

Foster Wheeler Environmental  
611 Anton Blvd Suite 800  
Costa Mesa, CA.92626

Attention: Mark Cutler

Re: Report # 48614 (MW-984-075)

Dear Mark,

Enclosed please find data deliverables for the recent JPL project. A detailed quality control (QC) summary follows:

**Non-conformance (LCS, MS/MSD, Surrogates, and Holding Times):**

None

**Samples requiring dilution (with increased MRL's):**

None

**Method blanks with compounds detected:**

None

**Other Comments:**

Pacific Analytical, Inc, utilizing EPA method 1625C, analyzed n-Nitrosodimethylamine, NDMA. This is a Gas Chromatographic Mass Spectroscopic methodology utilizing Isotope dilution in Specific Ion Mode, GCMS-SIM. The Reporting limit is 0.03 ppb or 30 ppt. Any detects below the MRL, but above the MDL of 0.005 ppb, would show on the Quantitation Results page. Results below 0.030 ppb but above 0.005 are DNQ, Detect Not Quantifiable. 0.020 ug/ml (sample concentration, 0.020 ppb) is the lowest standard analyzed with the calibration. All samples are Non Detect, ND.

MS/MSD is not performed on the NDMA sample. MS/MSD is not required for Isotope dilution methods and is not required by the project QAPP for this analyte.

1,4-Dioxane is analyzed by EPA method 8270 in the standard operating mode. This is a Gas Chromatographic Mass Spectroscopic methodology. The Minimum Reporting Level is 3.0 ppb. All samples are ND.

**TICS:**

None

**Method Variance:**

None

Sincerely,

Debbie Frank  
Project Manager

cc: Judy Novelly (JPL)

a Division of Montgomery Watson Americas, Inc.

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*Quality Environmental Analysis*



Montgomery Watson Laboratories  
1200 Wilshire Blvd, Los Angeles, CA 90017-3300  
PHONE: 626-568-6400/FAX: 626-568-6324

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Foster Wheeler Environmental, Inc  
611 Anton Boulevard  
Suite 800  
Costa Mesa, CA 92626  
Attn: Mark Cutler

Customer Code: ENSERCH  
PO#: Sub PO#007618-0004  
Group#: 48614  
Project#: JPL  
Proj Mgr: Debbie Frank  
Phone: (714) 444-5526

The following samples were received from you on 10/26/98. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Montgomery Watson Laboratories.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
981026103	MW-984-075	@DIOXANE CUSTOMMS	Water	10/26/98

Test Acronym Description

Test Acronym	Description
@DIOXANE CUSTOMMS	1,4-Dioxane Custom GCMS Analysis



48614

## FOSTER WHEELER ENVIRONMENTAL CORPORATION

## CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PAGE 1 OF 1

PROJECT NAME JPL		OFS NO. 1572.0260		HAZARD IDENTIFICATION Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Toxic <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Infectious <input type="checkbox"/>			TIME REQUIRED NORMAL <input checked="" type="checkbox"/> DAYS RUSH <input type="checkbox"/> DAYS												
PROJECT ADDRESS 400 OAK GLEN DR, PASADENA, CA				SAMPLER (Signature) J. B.			ANALYSES REQUIRED												
SAMPLER NAME BRENNER		LABORATORY MONTGOMERY WATSON LABS		REPORTS TO BE SENT TO MR MARK CUTLER			14-DAY CUSTODY												
SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	SAMPLE MATERIAL			X	X										
					WATER	SOIL	OTHER (Describe)												
MW 34-075	1240	10/26/98	2	2x12	X			X	X										
LABORATORY INSTRUCTIONS/COMMENTS LEVEL IX 4A/6C																			
RELINQUISHED BY (Signature) [Signature]		DATE 10/26/98		RECEIVED BY (Signature) [Signature]		DATE		RECEIVED BY (Signature)											
COMPANY		TIME		COMPANY		TIME		COMPANY											

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: URGENT Date Received: 10-26-98  
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 10-26-98  
by (print) Mike Chiuang (sign) [Signature]

- 1. Did cooler come with shipping slip (air bill, etc.)? Yes  No   
If YES, attach & enter carrier and air bill # here: \_\_\_\_\_
- 2. Were custody seals on outside of cooler?  Yes  No  
If YES, how many & where: 2 outside cooler  
If Yes, enter the following: seal date: 10-20-98, seal name: BD
- 3. Were custody seals unbroken & intact at delivery?  Yes  No
- 4. Were custody papers sealed in bag & taped to lid? Yes  No
- 5. Were custody papers filled out properly (ink, etc.)  Yes  No
- 6. Did you sign custody papers in appropriate place?  Yes  No
- 7. Was project identifiable from custody papers?  Yes  No

8. Have designated person(s) initial to acknowledge receipt: [Signature] (date) 10-26-98

B. LOG-IN PHASE: Date samples were logged-in: 10-26-98  
(print) Mike Chiuang (sign) [Signature]

- 9. Describe packing: \_\_\_\_\_
- 10. If required, was enough ice used?  Yes  No
- 11. Were all bottles sealed in separate plastic bags?  Yes  No
- 12. Did all bottles arrive unbroken/in good condition?  Yes  No
- 13. Were all bottle labels complete (ID,date,sign,pres)?  Yes  No
- 14. Did all bottle labels agree with custody papers?  
If NO, indicate discrepancies on back.  Yes  No
- 15. Were correct containers used for the analytes?  Yes  No
- 16. Were correct preservatives used when required?  Yes  No
- 17. Was sufficient amount of sample sent for tests?  Yes  No
- 18. Bubbles absent in VOA vials?  
If NO, list by sample id on back.  Yes  No
- 19. Was Client Services informed of problems? Yes  No



Montgomery Watson Laboratories  
 555 East Walnut Street  
 Pasadena, CA 91101  
 Ph (626) 568-6400 Fax (626) 568-6324

Shipped To **Steve Parsons**  
**Pacific Analytical, Inc**  
**634 Paseo del Lago**  
**Carlsbad, CA 92009**

(760) 438-3100

**Submittal Form**

Date **10/27/98**

**48614**

**98-2561**

MWL Project # **48614**

SubPO# **98-2561**

*Please refer to the MWL Project Number on all reports and invoices*

Sub Lab Reference#

For prompt payment, send report & invoice to attention of: **Martha Frost**,  
 Sub-Contract Administrator, ext 6437

Report Due **11/11/98**

Format required: **FAX with QC+HARDCOPY**

*(California State requires Hard Copy report for California Clients)*

See attached for ALL QC INFORMATION THAT IS REQUESTED

1. BATCH QC DATA: Duplicate expected values & recoveries; Lab Control Samples) expected values & recoveries; method blank recoveries; Matrix Spike expected values & recoveries.
2. Sample extraction Date and Sample analysis Date.
4. Sample dilution factor.
5. Sample surrogate recovery & Sample Internal Standard recovery or IS area count in cover letter.
6. A cover letter explaining any missed criteria or discrepancies.

If you have any questions about the samples, please call MWL proj mgr Hillary Strayer 626-568-6412  
*Please notify us if the report due date will not be met so we may inform our client.*

**Special Requirements**

DEB

Q#	Test Code	Use MWL	Client Sample ID for reference only	Analysis Requested	Sample		Container
		Lab # for ID			Date	Matrix	
1	USTOMMS NDMA	981026103	MW-984-075	N-Nitrosodimethylamine	10/26/98	ww	2 1L amber glass / no preservative

Relinquished by: Martin DeMesa Sample Control 10/27/98

Received by: \_\_\_\_\_

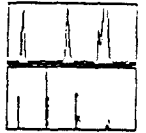
An Acknowledgement of Receipt is requested.

			Result	MDL	UNITS
Analyzed	981026103	MW-984-075			
11/03/98	Custom GCMS Analysis		see attchd		NONE

10017  
48665  
48735

PACIFIC

ANALYTICAL, INC.

6349 Paseo Del Lago • Carlsbad, CA 92009  
(760) 438-3100 • FAX (760) 931-9479NARRATIVE REPORT  
Method 1625C Semivolatiles

PA Reference: N50.

11/05/98

Samples:	981026103,	981027216,	981027217,
	981028243,	981028244,	981028245.

## Semivolatiles analysis:

The samples were extracted and analyzed by Method 1625C, modified for the lowest possible detection limits. A 1000 mL aliquot was spiked with 1.0 ug of deuterated N-Nitrosodimethylamine-d6 and extracted with liquid-liquid extractors for 24 hours. The sample extract was concentrated to a final volume of 1.0 mL and then spiked with 1.0 ug of 2,2'-Difluorobiphenyl as an internal recovery standard. The extract was analyzed by GC/MS with the mass spectrometer operating in the "Specific Ion Mode" for greater sensitivity and lower detection limits. The instrument was calibrated with five initial calibration standards ranging from 0.02 ug/mL to 1.00 ug/mL. A recent minimum detection limit study suggests that the instrument is capable of detecting N-Nitrosodimethylamine (NNDMA) at 0.005 ug/mL. However for reporting purposes, our detection limit is 0.03 ug/mL which translates to a sample concentration of 0.03 ug/L.

## On-Going Precision and Recovery

A laboratory blank (P&R) was spiked with 0.10 ug of NNDMA and its labeled analog, and extracted and analyzed like a sample for each analytical batch. Recoveries for NNDMA and its label were within method specified recovery limits.

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Blanks

A laboratory blank was extracted and analyzed like the sample with each extraction batch. NNDMA was not detected at or above our report limit of 0.03 ug/L.

Sample

The samples 981026103, 981027216, 981027217, 981028243, 981028244, and 981028245 are clean with no NNDMA detected at a concentration greater than or equal to our MDL of 0.005 ug/L.

The data package consists of a summary page followed by a chromatogram and a close up of the extracted ion current profile of NNDMA and its label. This is followed by the raw data printout with areas and scan numbers, and finally a "Quantitation Results" page which lists extract concentrations in ug/mL.

Please contact Mark Gregg or Steve Parsons at (706) 438-3100 if there are any questions concerning this data package.



Mark Gregg  
GC/MS Chemist

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SAMPLE IDENTIFICATION CROSS REFERENCE TABLE  
MONTGOMERY WATSON LAB

JOB N50

MWL Lab #	TAG #	MWL Project #	Client Sample ID	PA's Lab ID	Raw Data File Name
981026103	01490	48614	MW-984-075	N5001	6K03A15
981027216	01501	48665	MW-984-042	N5003	6K03A17
981027217	01509	48665	MW-984-008	N5002	6K03A16
981028243	01540	48735	MW-984-031	N5005	6K03A19
981028244	01553	48735	MW-984-039	N5006	6K03A20
981028245	01569	48735	MW-984-015	N5004	6K03A18



Pacific Analytical, Inc.

000002





Montgomery Watson Laboratories  
 555 East Walnut Street  
 Pasadena, CA 91101  
 Ph (626) 568-6400 Fax (626) 568-6324

**Submittal Form**

Date 10/27/98

48614

98-2561

MWL Project # **48614**

SubPO# **98-2561**

Please refer to the MWL Project Number on all reports and invoices

Sub Lab Reference#

For prompt payment, send report & invoice to attention of: Martha Frost,  
 Sub-Contract Administrator, ext 6437

Ship To **Steve Parsons**  
**Pacific Analytical, Inc**  
**6349 Paseo del Lago**  
**Carlsbad, CA 92009**

Report Due 11/11/98

Format required: **FAX with QC+HARDCOPY**  
 (California State requires Hard Copy report for California Clients)

See attached for ALL QC INFORMATION THAT IS REQUESTED

1. BATCH QC DATA: Duplicate expected values & recoveries; Lab Control Samples) expected values & recoveries; method blank recoveries; Matrix Spike expected values & recoveries.
2. Sample extraction Date and Sample analysis Date.
4. Sample dilution factor.
5. Sample surrogate recovery & Sample Internal Standard recovery or IS area count in cover letter.
6. A cover letter explaining any missed criteria or discrepancies.

If you have any questions about the samples, please call MWL proj mgr Hillary Strayer 626-568-6412  
 Please notify us if the report due date will not be met so we may inform our client.

(760) 438-3100

**Special Requirements**

DEB

Qty	Test Code	Use MWL Lab # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date	Matrix	Container
1	CUSTOMMS NDMA	981026103	MW-984-075	N-Nitrosodimethylamine	10/26/98	ww	2 1L amber glass / no preservative

00000

Relinquished by:

Martin DeMesa

Sample Control 10/27/98

Received by:

*M. P. L. A.*

*M. P. L. A.*

An Acknowledgement of Receipt is requested



Montgomery Watson Laboratories  
 555 East Walnut Street  
 Pasadena, CA 91101  
 Ph (626) 568-6400 Fax (626) 568-6324

Ship To **Steve Parsons**  
**Pacific Analytical, Inc**  
**6349 Paseo del Lago**  
**Carlsbad, CA 92009**

(760) 438-3100

**Submittal Form**

Date 10/28/98

48665

98-2566

MWL Project # **48665**

SubPO# **98-2566**

Please refer to the MWL Project Number on all reports and invoices

Sub Lab Reference#

For prompt payment, send report & invoice to attention of: **Martha Frost**,  
 Sub-Contract Administrator, ext 6437

Report Due **11/12/98**

Format required: **VERBAL+FAX with QC+HARDCOPY**  
 (California State requires Hard Copy report for California Clients)

**REPORT DUE XX**

1. BATCH QC DATA: Duplicate expected values & recoveries; Lab Control Samples) expected values & recoveries; method blank recoveries; Matrix Spike expected values & recoveries.
2. Sample extraction Date and Sample analysis Date.
4. Sample dilution factor.
5. Sample surrogate recovery & Sample Internal Standard recovery or IS area count in cover letter.
6. A cover letter explaining any missed criteria or discrepancies.

If you have any questions about the samples, please call MWL proj mgr Hillary Strayer 626-568-6412  
 Please notify us if the report due date will not be met so we may inform our client.

**Special Requirements**

**DEB**

Qty	Test Code	Use MWL		Analysis Requested	Sample		Container
		Lab # for ID	Client Sample ID for reference only		Date	Matrix	
1	CUSTOMMS	981027216	MW-984-042	NDMA	10/27/98	dw	1 1L AMB GLASS
1	CUSTOMMS	981027217	MW-984-008	NDMA	10/27/98	dw	1 1L AMB GLASS

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Relinquished by: Martin DeMesa Sample Control 10/28/98

Received by: Don P. Hilton 10/28/98

An Acknowledgement of Receipt is requested



Montgomery Watson Laboratories  
 555 East Walnut Street  
 Pasadena, CA 91101  
 Ph (626) 568-6400 Fax (626) 568-6324

**Submittal Form**

Date 10/29/98

48735

98-2573

MWL Project # **48735**

SubPO# **98-2573**

Please refer to the MWL Project Number on all reports and invoices

Sub Lab Reference#

For prompt payment, send report & invoice to attention of: **Martha Frost**,  
 Sub-Contract Administrator, ext 6437

Ship To **Steve Parsons**  
**Pacific Analytical, Inc**  
**6349 Paseo del Lago**  
**Carlsbad, CA 92009**

(760) 438-3100

Report Due 11/13/98

Format required: **VERBAL+FAX with QC+HARDCOPY**

(California State requires Hard Copy report for California Clients)

1. BATCH QC DATA: Duplicate expected values & recoveries; Lab Control Samples) expected values & recoveries; method blank recoveries; Matrix Spike expected values & recoveries.
2. Sample extraction Date and Sample analysis Date.
4. Sample dilution factor.
5. Sample surrogate recovery & Sample Internal Standard recovery or IS area count in cover letter.
6. A cover letter explaining any missed criteria or discrepancies.

If you have any questions about the samples, please call MWL proj mgr Hillary Strayer 626-568-6412  
 Please notify us if the report due date will not be met so we may inform our client.

**Special Requirements**

DEB

Qty	Test Code	Use MWL Lab # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date Matrix	Container
1	CUSTOMMS	981028243	MW-984-031	NDMA	10/28/98 dw	1 1L AM GLASS
1	CUSTOMMS	981028244	MW-984-039	NDMA	10/28/98 dw	1 1L AM GLASS
1	CUSTOMMS	981028245	MW-984-015	NDMA	10/28/98 dw	1 1L AM GLASS

00000

Relinquished by:

Martin DeMesa

Sample Control 10/29/98

Received by:

*[Handwritten signature]*

*[Handwritten initials]*

An Acknowledgment of Receipt is required

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

981026103

Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: N5001
Matrix: WATER	Lab File ID: 6K03A15
Sample wt/vol: 1000 ml	Date Sampled: 10/26/98
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 2012
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.03	U	120 %

U = Undetected      J = Estimated Concentration      B = Found in Blank  
D = Dilution Results      E = Result Exceeds Calibration Curve

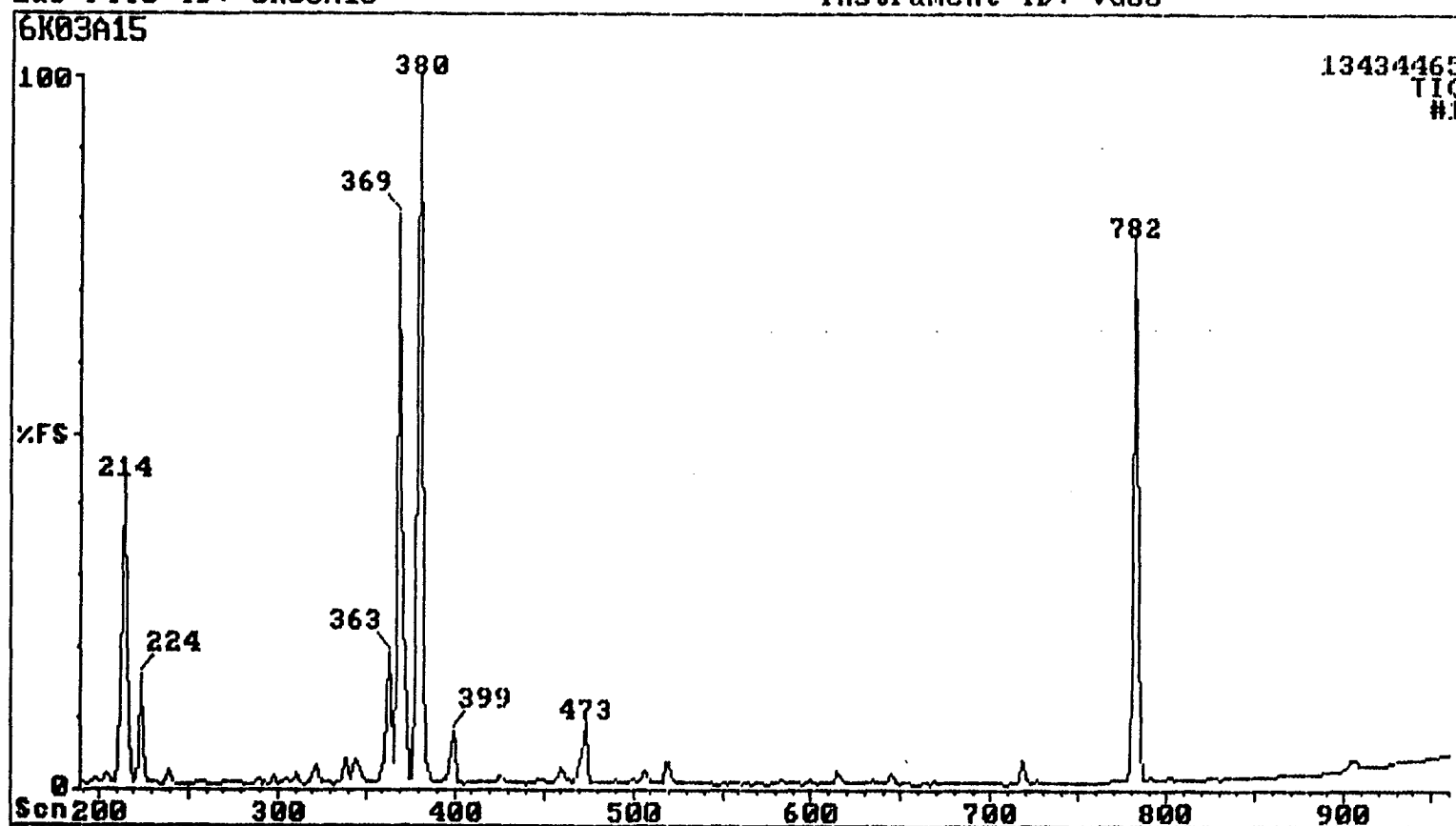
MDL = 0.005 ug/L

PQL = 0.03 ug/L

000006

Sample No.: 981026103  
Lab File ID: 6K03A15

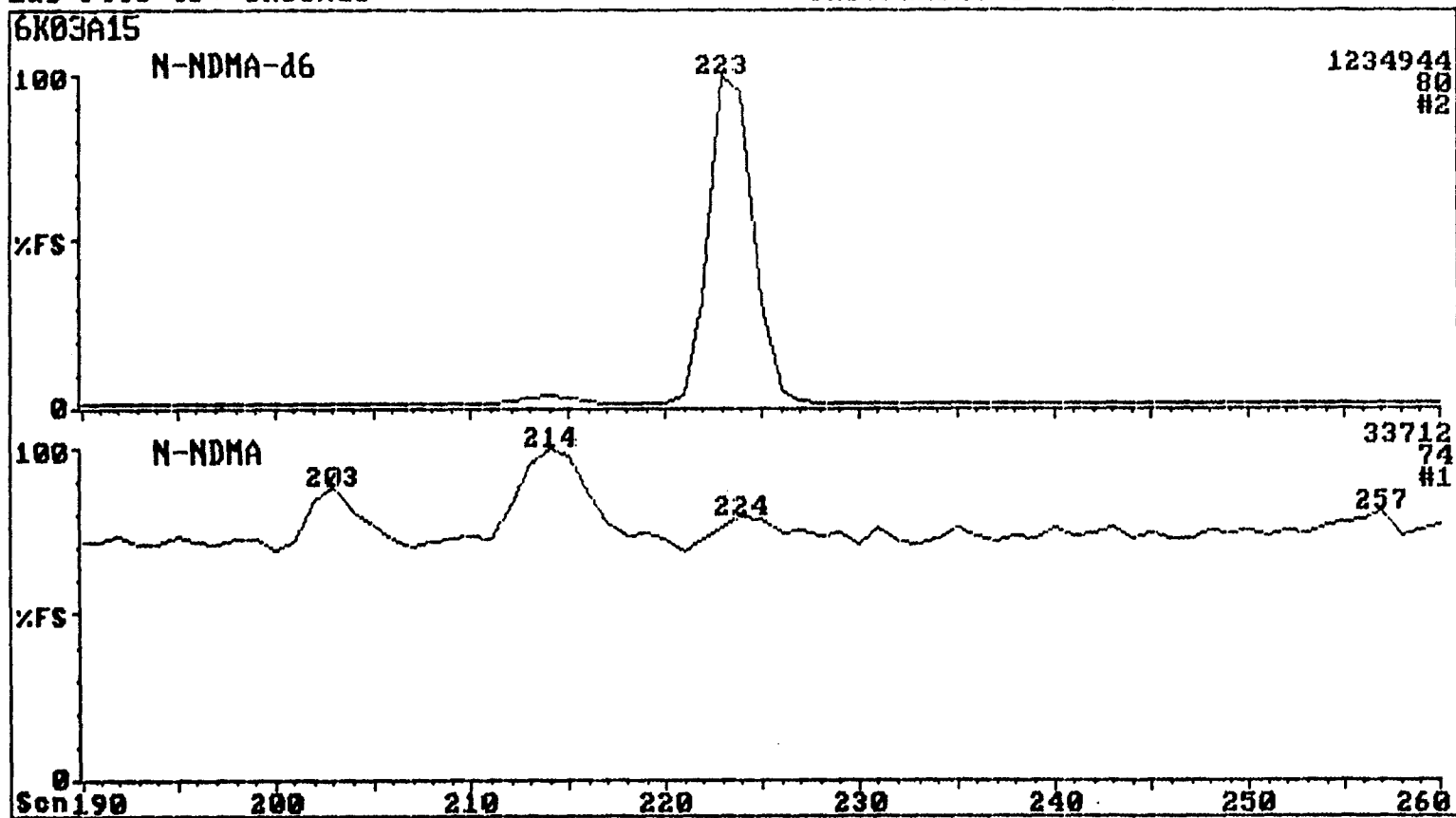
Analyzed: 11/03/98 2012  
Instrument ID: VG06



000007

Sample No.: 981026103  
Lab File ID: 6K03A15

Analyzed: 11/03/98 2012  
Instrument ID: VG06



80000

Sample: 981026103  
Lab File: 6K03A15

N5001

Analyzed: 11/03/98 2012  
Instrument ID: 06

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Interim Report	LAB-BASE FIND	11/04/98	0832
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Raw Datafile : 6K03A15  
Find DB : NNDMA

Quan DB : 6K03A15  
Scan DB : NONE

No.	Spectrum Scan				Peak		Scan		QM	Compound Name
	MAT	FOR	REV	Diff	Area	Flgs	Found	Pred		
1	100	94	100	0	29297143	?v	782	782	190	2,2'-Difluorobiphenyl
2	100	94	100	0	3214186	b?	223	223	80	N-Nitrosodimethylamine-d6
3	85	63	84	1	634	!!	228	227	74	N-Nitrosodimethylamine
	66	65	89	8	2638	!!	235			

000009

Quantitation Results

=====

EPA Name: 981026103	Lab ID: N5001	Lab File: 6K03A15
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Instr: 06 ICAL: 6K03 Acquisition Date: 11/03/98 Acquisition Time: 2012

=====

Compound	Target Conc.	Sample Conc.	Label Rec.	Limits
N-Nitrosodimethylamine	0.00	0.00	119.6	25 - 175

=====

000010



ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

981027217
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Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: N5002
Matrix: WATER	Lab File ID: 6K03A16
Sample wt/vol: 1000 ml	Date Sampled: 10/27/98
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 2039
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.03	U	112 %

U = Undetected      J = Estimated Concentration      B = Found in Blank  
D = Dilution Results      E = Result Exceeds Calibration Curve

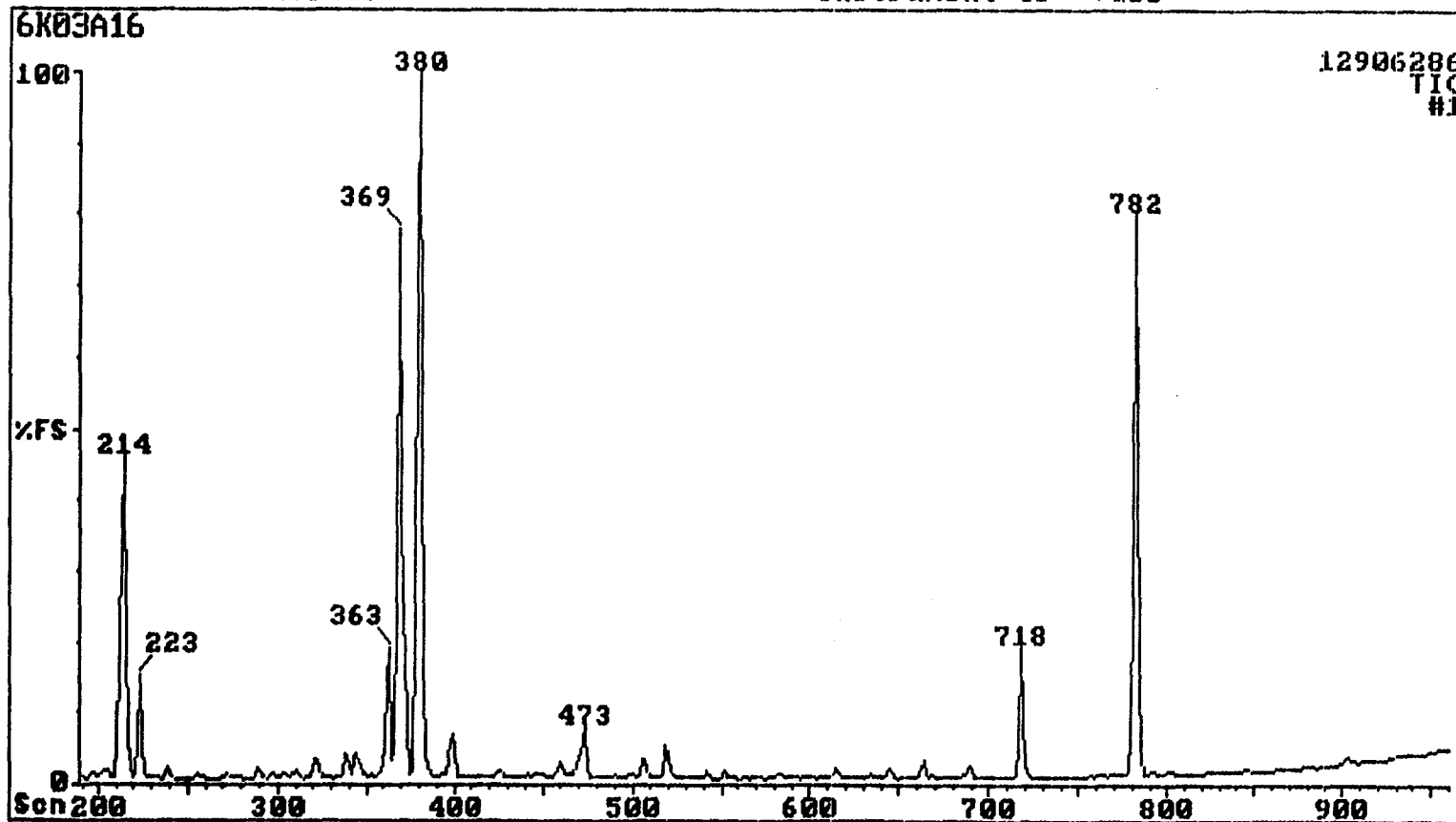
MDL = 0.005 ug/L

PQL = 0.03 ug/L

000011

Sample No.: 981027217  
Lab File ID: 6K03A16

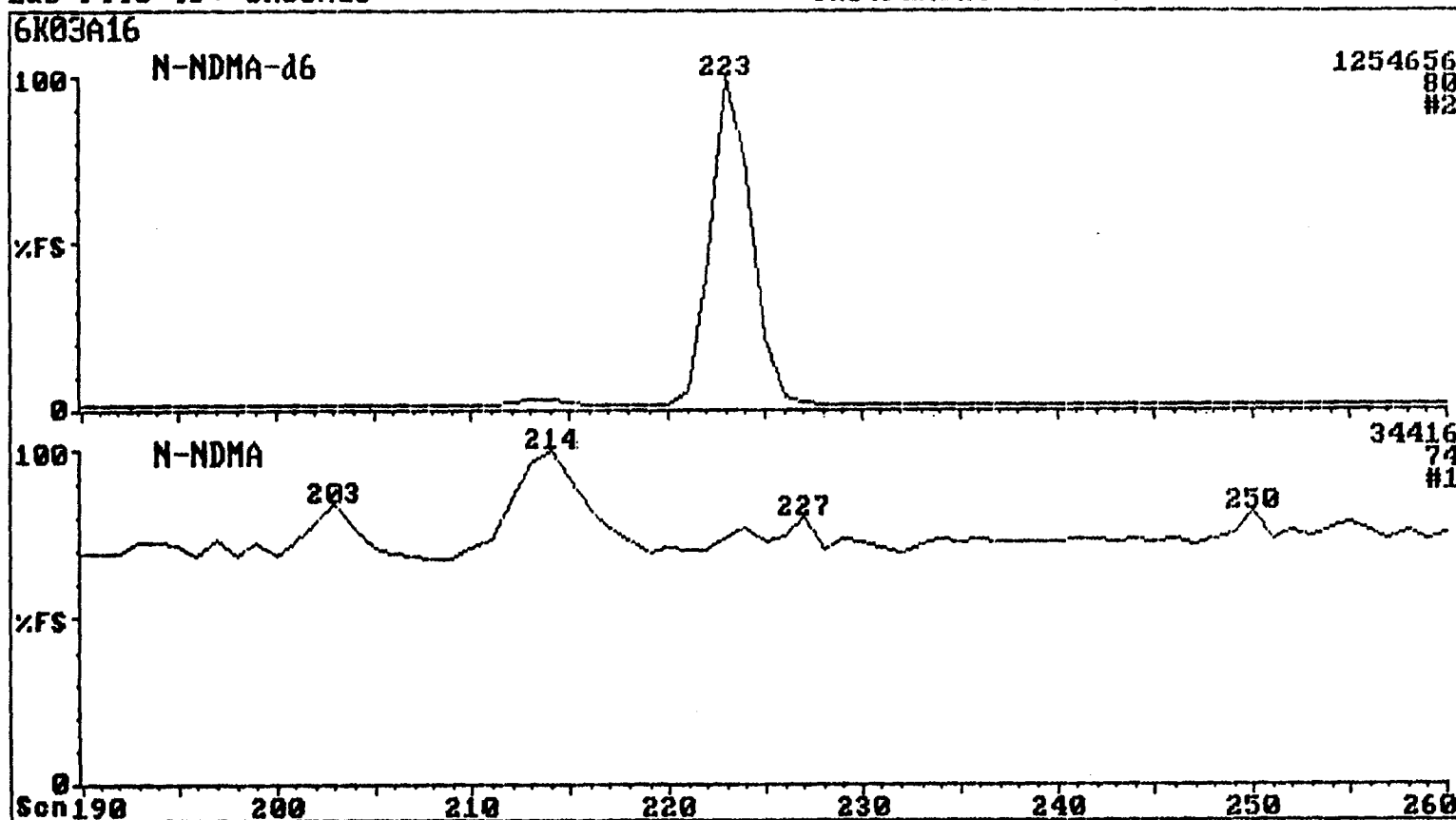
Analyzed: 11/03/98 2039  
Instrument ID: VG06



00012

Sample No.: 981027217  
Lab File ID: 6K03A16

Analyzed: 11/03/98 2039  
Instrument ID: VG06



000013

Sample: 981027217  
Lab File: 6K03A16

N5002

Analyzed: 11/03/98 2039  
Instrument ID: 06

=====  
Interim Report                      LAB-BASE FIND                      11/04/98                      0833  
=====

Raw Datafile : 6K03A16  
Find DB : NNDMA

Quan DB : 6K03A16  
Scan DB : NONE

No.	Spectrum Scan				Peak Area	Flgs	Scan		QM	Compound Name
	MAT	FOR	REV	Diff			Found	Pred		
1	100	93	100	0	29180250	?v	782	782	190	2,2'-Difluorobiphenyl
2	100	94	99	0	2992472	b?	223	223	80	N-Nitrosodimethylamine-d6
3	93	60	88	0	3720	!!	227	227	74	N-Nitrosodimethylamine
	66	65	89	7	2111	!!	234			

000014

Quantitation Results

=====

EPA Name: 981027217	Lab ID: N5002	Lab File: 6K03A16
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Instr: 06 ICAL: 6K03 Acquisition Date: 11/03/98 Acquisition Time: 2039

=====

Compound	Target Conc.	Sample Conc.	Label Rec.	Limits
N-Nitrosodimethylamine	0.00	0.00	111.8	25 - 175

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

981027216

Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: N5003
Matrix: WATER	Lab File ID: 6K03A17
Sample wt/vol: 1000 ml	Date Sampled: 10/27/98
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 2105
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.03	U	121 %

U = Undetected    J = Estimated Concentration    B = Found in Blank  
D = Dilution Results    E = Result Exceeds Calibration Curve

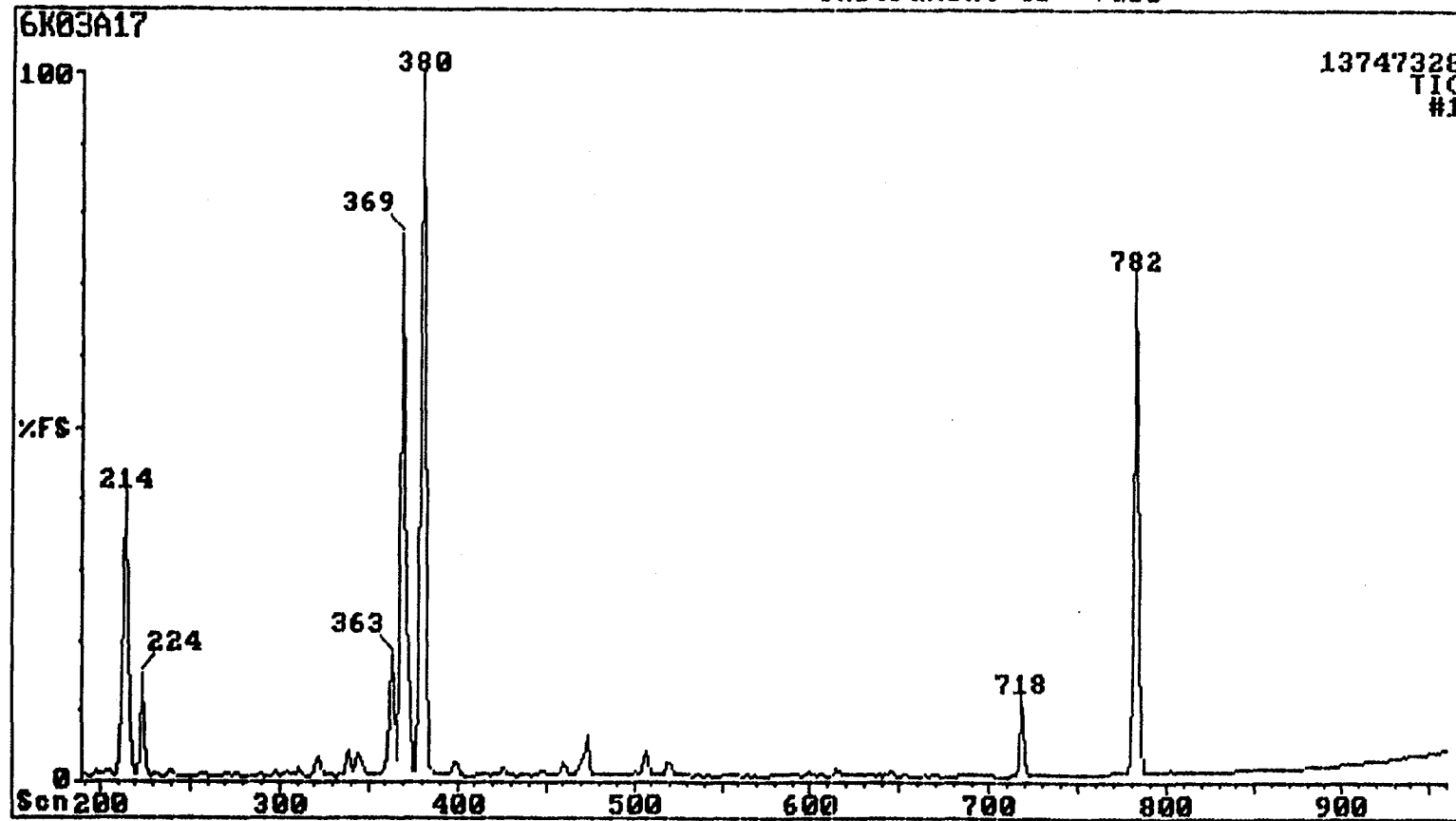
MDL = 0.005 ug/L

PQL = 0.03 ug/L

000016

Sample No.: 981027216  
Lab File ID: 6K03A17

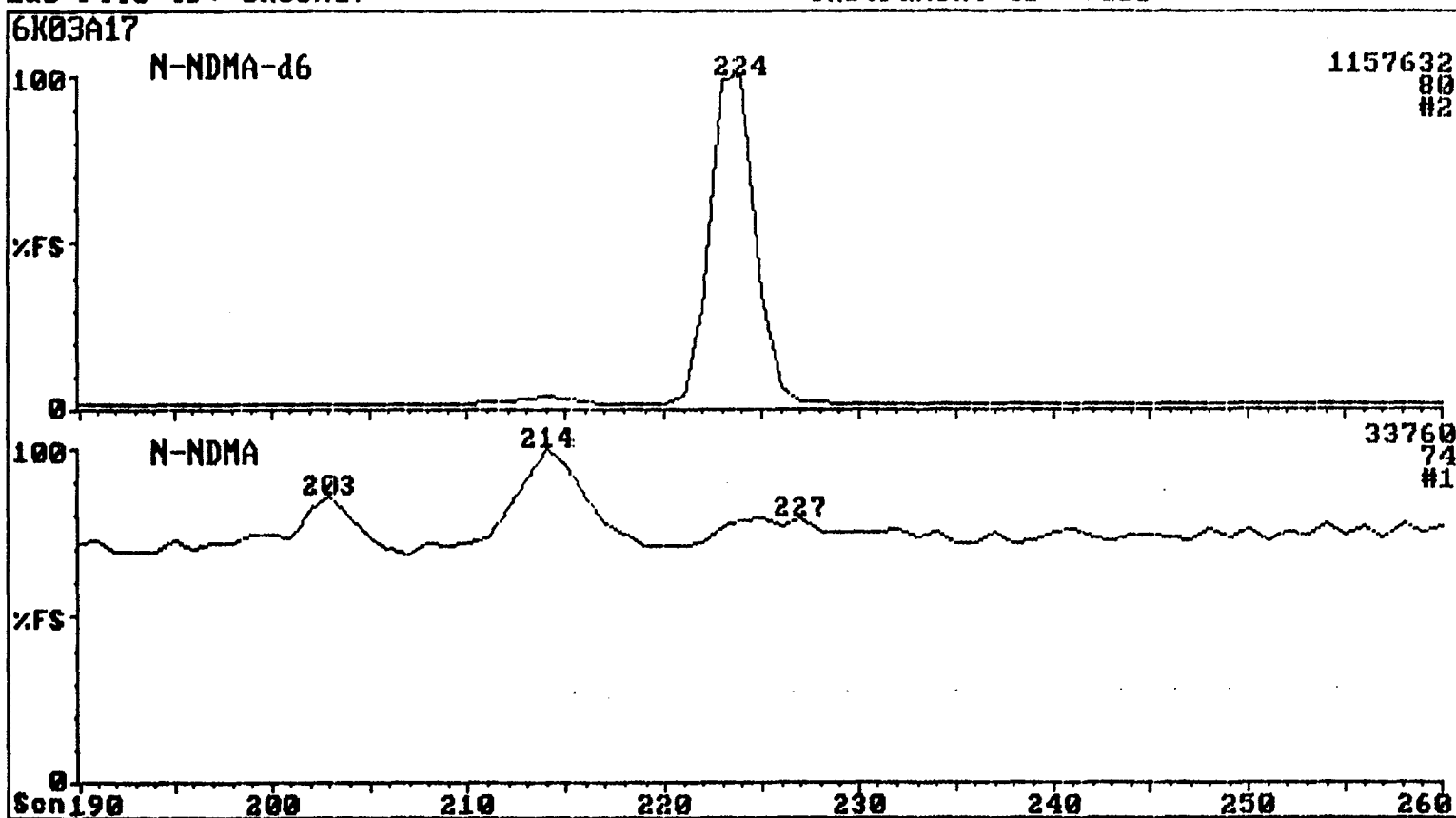
Analyzed: 11/03/98 2105  
Instrument ID: VG06



000017

Sample No.: 981027216  
Lab File ID: 6K03A17

Analyzed: 11/03/98 2105  
Instrument ID: VG06



810.0J  
00018



Sample: 981027216  
Lab File: 6K03A17

N5003

Analyzed: 11/03/98 2105  
Instrument ID: 06

=====

Interim Report                      LAB-BASE FIND                      11/04/98                      0834

Raw Datafile : 6K03A17  
Find DB : NNDMA

Quan DB : 6K03A17  
Scan DB : NONE

No.	Spectrum Scan				Peak Area Flgs	Scan		QM	Compound Name	
	MAT	FOR	REV	Diff		Found	Pred			
1	100	93	100	0	27455593	?v	782	782	190	2,2'-Difluorobiphenyl
2	100	94	100	1	3058944	bb	224	223	80	N-Nitrosodimethylamine-d6
3	73	65	88	5	1029	!!	233	228	74	N-Nitrosodimethylamine
	62	65	87	9	1124	!!	237			
	44	65	90	13	2600	!!	241			

000019

Quantitation Results

=====  
EPA Name: 981027216

Lab ID: N5003

Lab File: 6K03A1  
=====

Instr: 06

ICAL: 6K03

Acquisition Date: 11/03/98

Acquisition Time: 2105  
=====

Compound	Target Conc.	Sample Conc.	Label Rec.	Limits
N-Nitrosodimethylamine	0.00	0.00	121.5	25 - 175

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

981028245

Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: N5004
Matrix: WATER	Lab File ID: 6K03A18
Sample wt/vol: 1000 ml	Date Sampled: 10/28/98
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 2132
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.03	U	142 %

U = Undetected    J = Estimated Concentration    B = Found in Blank  
D = Dilution Results    E = Result Exceeds Calibration Curve

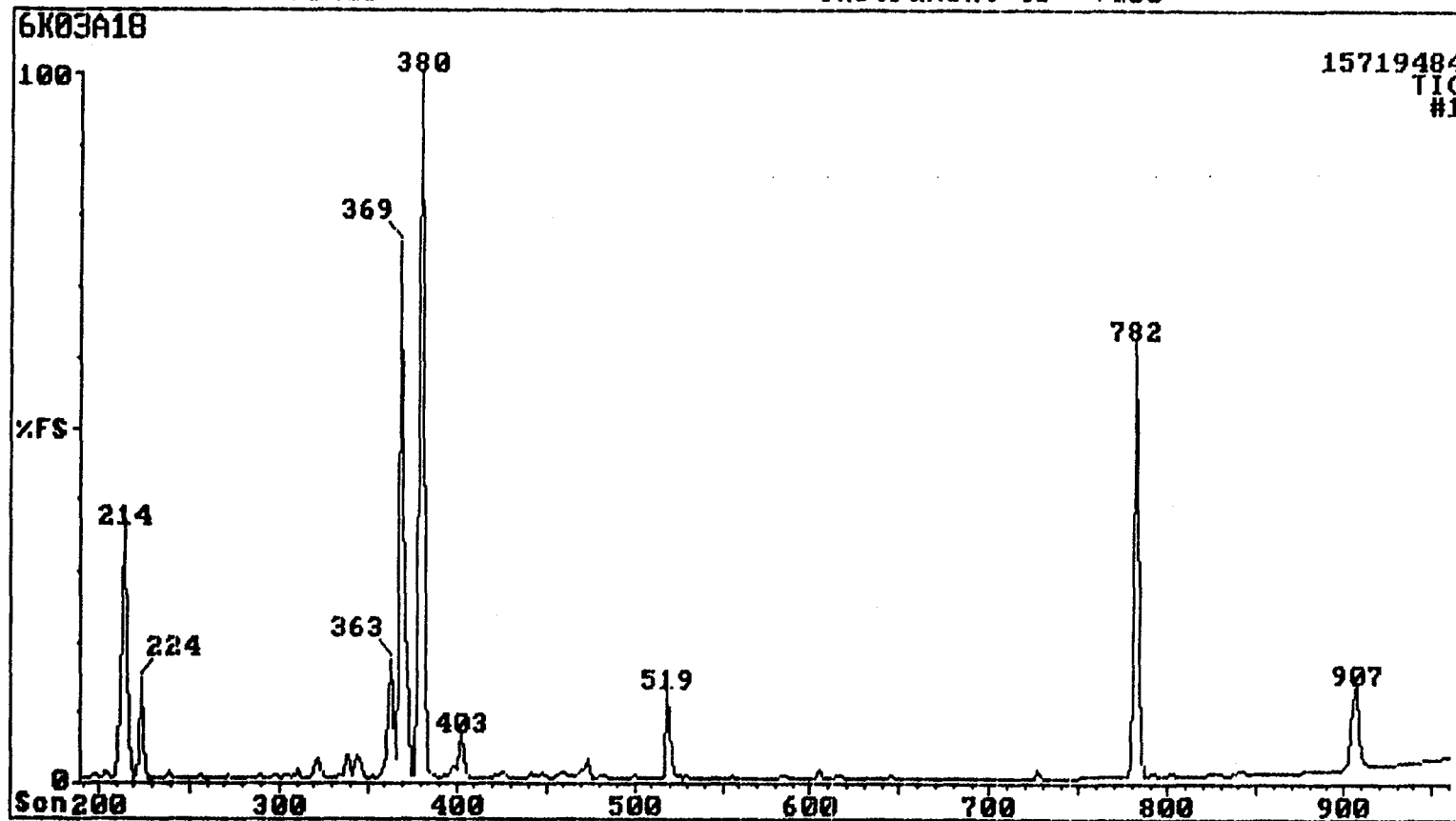
MDL = 0.005 ug/L

PQL = 0.03 ug/L

000021

Sample No.: 981028245  
Lab File ID: 6K03A18

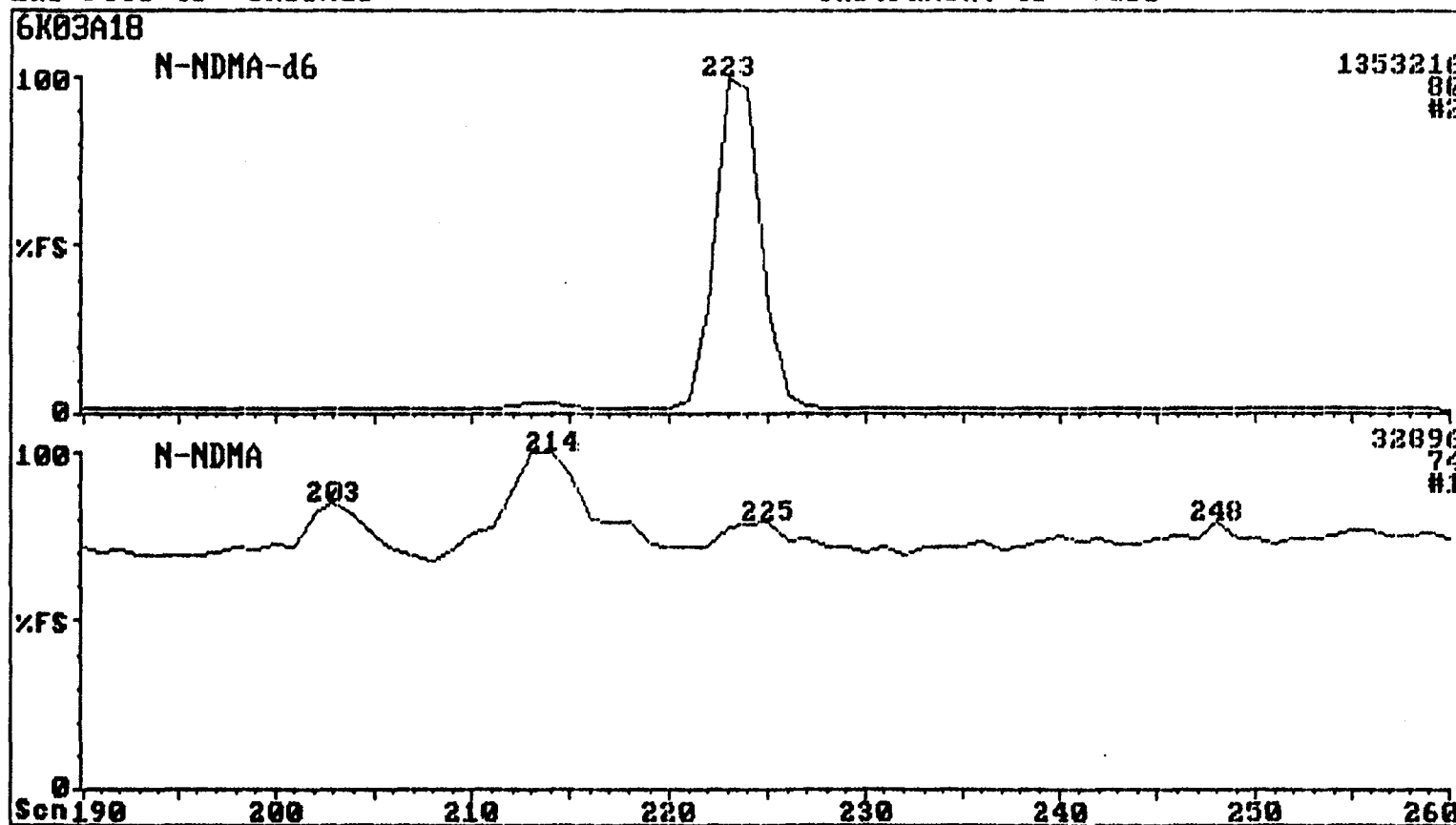
Analyzed: 11/03/98 2132  
Instrument ID: VG06



000022

Sample No.: 981028245  
Lab File ID: 6K03A18

Analyzed: 11/03/98 2132  
Instrument ID: VG06



000023

Sample: 981028245  
Lab File: 6K03A18

N5004

Analyzed: 11/03/98 2132  
Instrument ID: 06

=====

Interim Report	LAB-BASE FIND	11/04/98	0835
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=====

Raw Datafile : 6K03A18  
Find DB : NNDMA

Quan DB : 6K03A18  
Scan DB : NONE

No.	Spectrum Scan				Peak Area Flgs	Scan		QM	Compound Name
	MAT	FOR	REV	Diff		Found	Pred		
1	100	93	100	0	27152167 ?v	782	782	190	2,2'-Difluorobiphenyl
2	100	95	100	0	3530314 b?	223	223	80	N-Nitrosodimethylamine-d6
3	90	61	89	0	768 !!	227	227	74	N-Nitrosodimethylamine
	63	64	90	9	1641 !!	236			

000024

Quantitation Results

=====

EPA Name: 981028245	Lab ID: N5004	Lab File: 6K03A1
---------------------	---------------	------------------

Instr: 06 ICAL: 6K03 Acquisition Date: 11/03/98 Acquisition Time: 2132

=====

Compound	Target Conc.	Sample Conc.	Label Rec.	Limits
N-Nitrosodimethylamine	0.00	0.00	141.8	25 - 175

000025

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

981028243

Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: N5005
Matrix: WATER	Lab File ID: 6K03A19.
Sample wt/vol: 1000 ml	Date Sampled: 10/28/98
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 2158
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.03	U	130 %

U = Undetected    J = Estimated Concentration    B = Found in Blank  
D = Dilution Results    E = Result Exceeds Calibration Curve

MDL = 0.005 ug/L

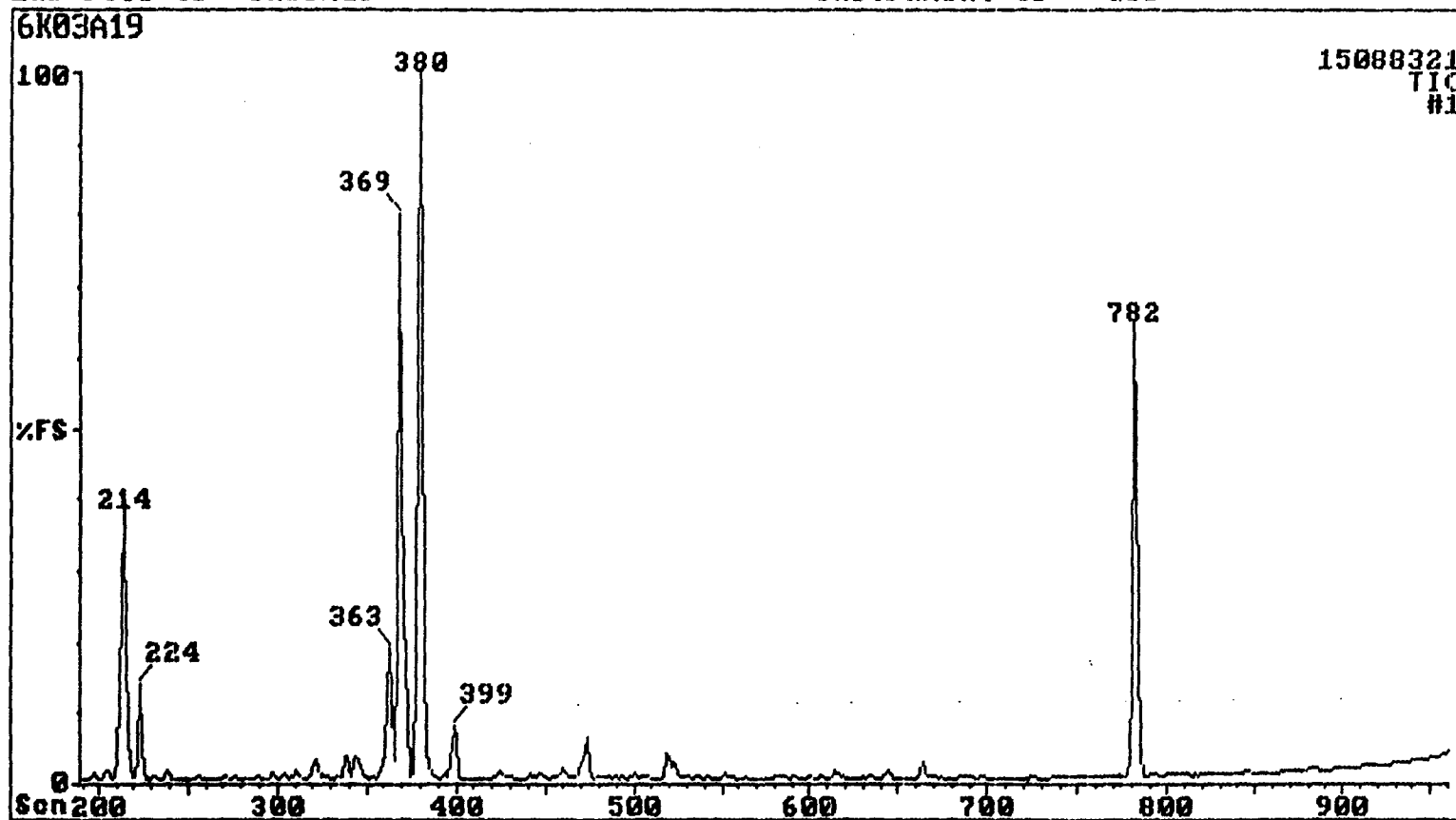
PWL = 0.03 ug/L

000026



Sample No.: 981028243  
Lab File ID: 6K03A19

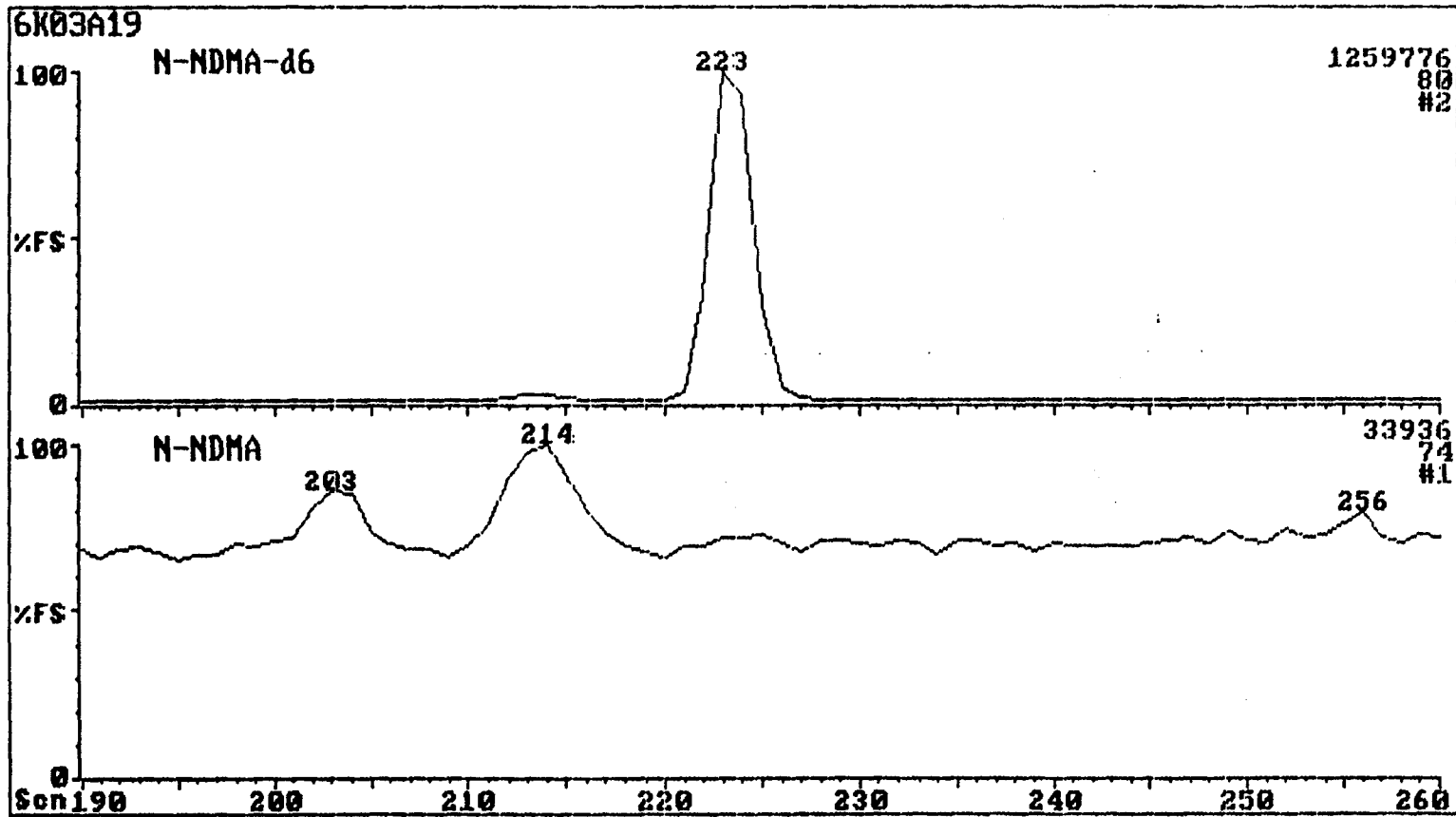
Analyzed: 11/03/98 2158  
Instrument ID: UG06



000027

Sample No.: 981028243  
Lab File ID: 6K03A19

Analyzed: 11/03/98 2158  
Instrument ID: VG06



000028

Sample: 981028243  
Lab File: 6K03A19

N5005

Analyzed: 11/03/98 2158  
Instrument ID: 06

=====  
Interim Report                      LAB-BASE FIND                      11/04/98                      0836  
=====

Raw Datafile : 6K03A19  
Find DB : NNDMA

Quan DB : 6K03A19  
Scan DB : NONE

No.	MAT	FDR	REV	Diff	Peak Area	Flgs	Scan Found	Pred	QM	Compound Name
1	100	93	100	0	27178133	?v	782	782	190	2,2'-Difluorobiphenyl
2	100	94	100	0	3244074	b?	223	223	80	N-Nitrosodimethylamine-d6
3	72	64	86	5	1476	!!	232	227	74	N-Nitrosodimethylamine
	63	65	89	8	3204	!!	235			

000029

Quantitation Results

=====  
EPA Name: 981028243

Lab ID: N5005

Lab File: 6K03A19  
=====

Instr: 06

ICAL: 6K03

Acquisition Date: 11/03/98

Acquisition Time: 2158  
=====

Compound	Target Conc.	Sample Conc.	Label Rec.	Limits
N-Nitrosodimethylamine	0.00	0.00	130.1	25 - 175

000030

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

981028244

Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: N5006
Matrix: WATER	Lab File ID: 6K03A20
Sample wt/vol: 1000 ml	Date Sampled: 10/28/98
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 2224
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.03	U	152 %

U = Undetected      J = Estimated Concentration      B = Found in Blank  
D = Dilution Results      E = Result Exceeds Calibration Curve

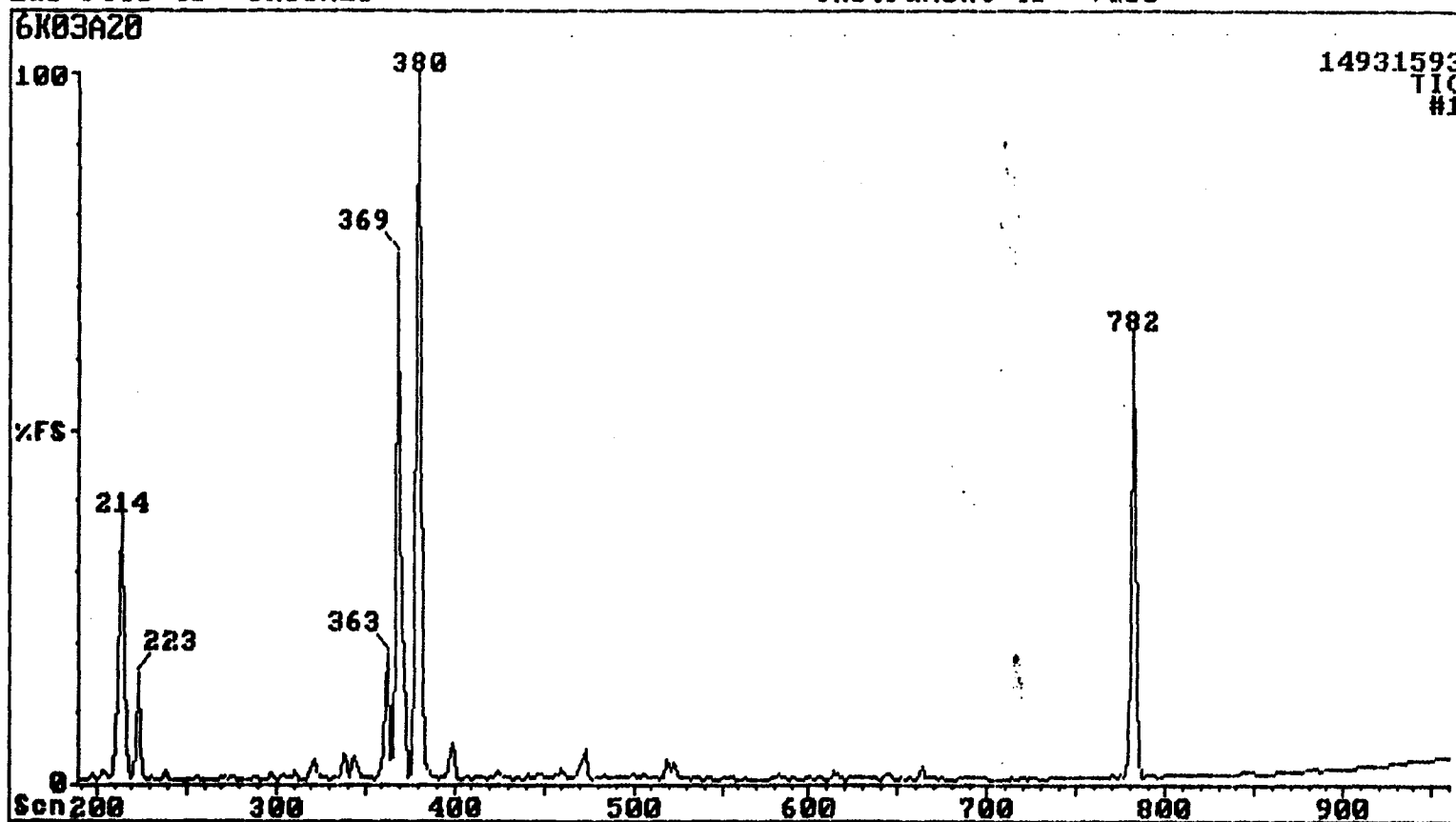
MDL = 0.005 ug/L

PQL = 0.03 ug/L

000031

Sample No.: 981028244  
Lab File ID: 6K03A20

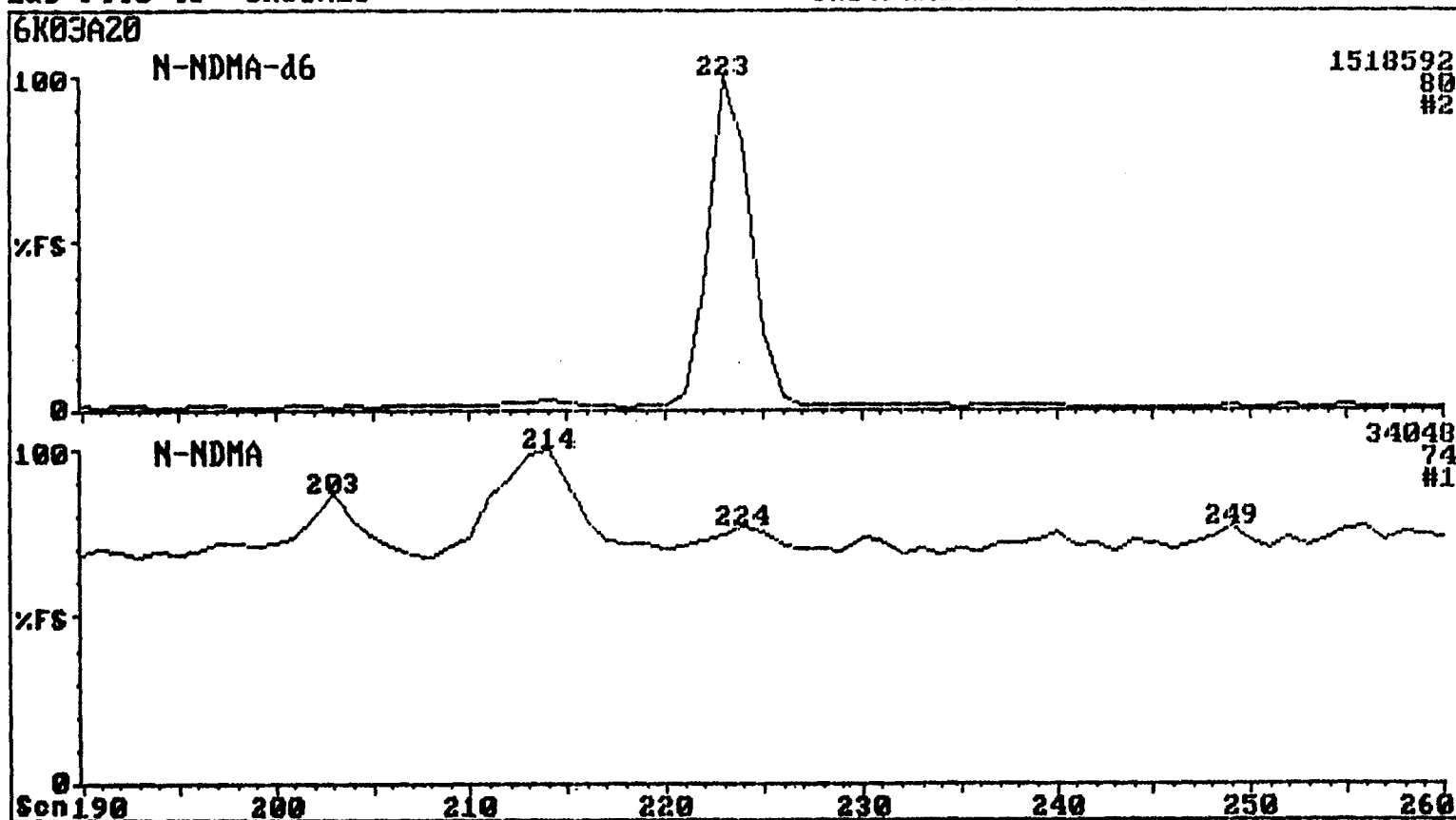
Analyzed: 11/03/98 2224  
Instrument ID: UG06



000032

Sample No.: 981028244  
Lab File ID: 6K03A20

Analyzed: 11/03/98 2224  
Instrument ID: VG06



000033

Sample: 981028244  
Lab File: 6K03A20

N5006

Analyzed: 11/03/98 2224  
Instrument ID: 06

=====  
Interim Report

LAB-BASE FIND

11/04/98

0837  
=====

Raw Datafile : 6K03A20  
Find DB : NNDMA

Quan DB : 6K03A20  
Scan DB : NONE

No.	Spectrum Scan				Area	Flgs	Scan		QM	Compound Name
	MAT	FOR	REV	Diff			Found	Pred		
1	100	93	100	0	26480698	?v	782	782	190	2,2'-Difluorobiphenyl
2	100	95	99	0	3680316	b?	223	223	80	N-Nitrosodimethylamine-d6
3	71	63	86	6	488	!!	233	227	74	N-Nitrosodimethylamine
	65	64	87	8	442	!!	235			

000034



Quantitation Results

=====  
EPA Name: 981028244

Lab ID: N5006

Lab File: 6K03A20

Instr: 06 ICAL: 6K03 Acquisition Date: 11/03/98 Acquisition Time: 2224  
=====

Compound	Target Conc.	Sample Conc.	Label Rec.	Limits
N-Nitrosodimethylamine	0.00	0.00	151.5	25 - 175

000035

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA  
LABELED COMPOUNDS

Lab Name: PACIFIC ANALYTICAL

Instr. ID: VG06

Calibration Date: 11/03/98

LAB FILE IDs:

RF 0.02 = 6K03A06  
RF 0.05 = 6K03A07  
RF 0.10 = 6K03A08  
RF 0.50 = 6K03A09  
RF 1.00 = 6K03A10

COMPOUND	RF 0.02	RF 0.05	RF 0.10	RF 0.50	RF 1.00	RF MEAN	% RSD
2 N-Nitrosodimethylamine-	0.079	0.091	0.093	0.093	0.103	0.092	9.0

Internal Standard = 1 ug/mL

Pollutant Compounds = 0.02, 0.05, 0.10, 0.50, 1.00 ug/mL

000036

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA  
COMPOUNDS HAVING A LABELED REFERENCE

Lab Name: PACIFIC ANALYTICAL

Instr. ID: VG06

Calibration Date: 11/03/98

LAB FILE IDs:

RF 0.02 = 6K03A06

RF 0.05 = 6K03A07

RF 0.10 = 6K03A08

RF 0.50 = 6K03A09

RF 1.00 = 6K03A10

COMPOUND	RR 0.02	RR 0.05	RR 0.10	RR 0.50	RR 1.00	SLOPE	INTCP
3 N-Nitrosodimethylamine	0.019	0.047	0.091	0.476	0.967	1.033	0.003

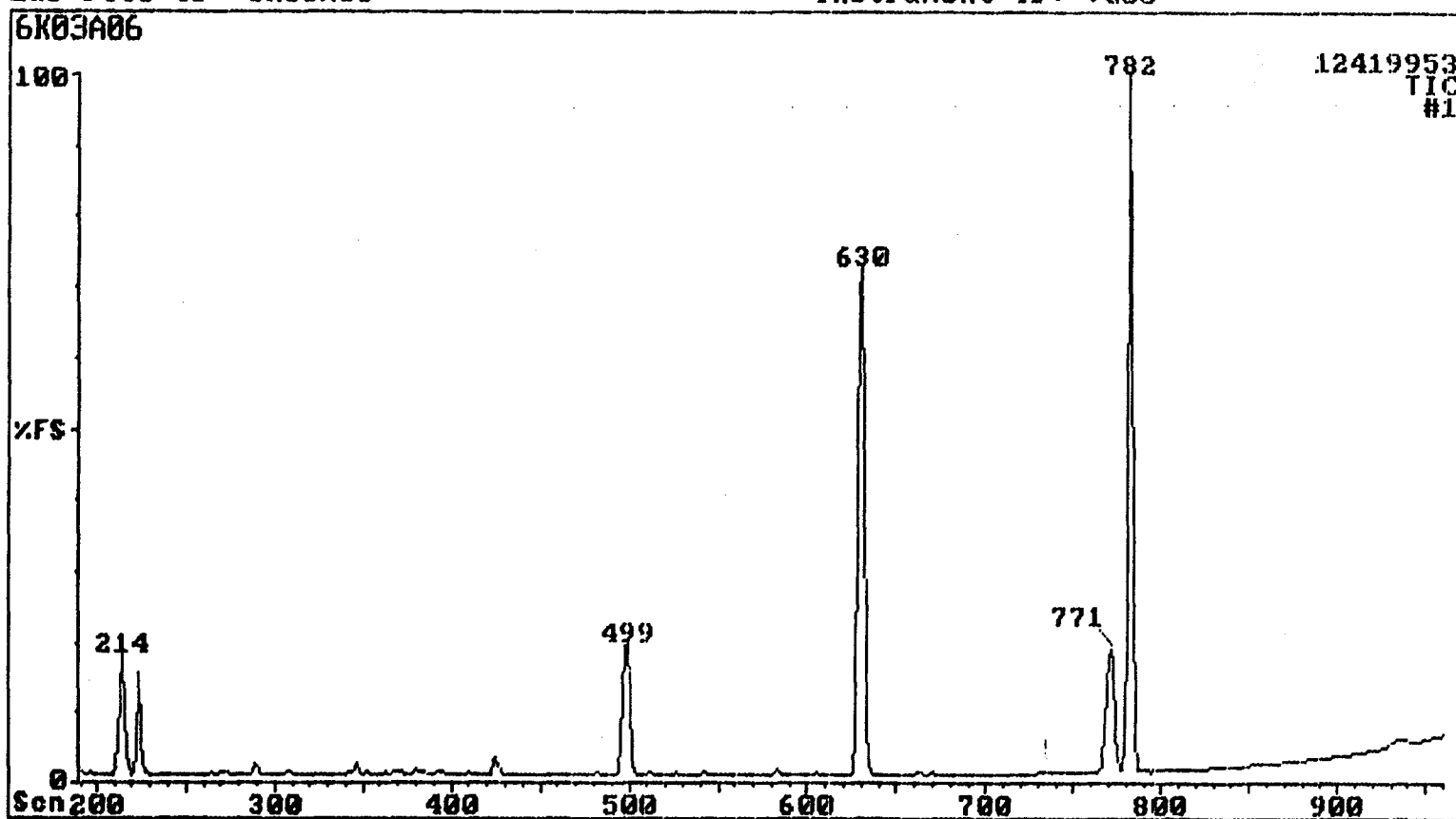
Internal Standard = 1 ug/mL

Pollutant Compounds = 0.02, 0.05, 0.10, 0.50, 1.00 ug/mL

000037

Sample No.: NNDMA 0.02  
Lab File ID: 6K03A06

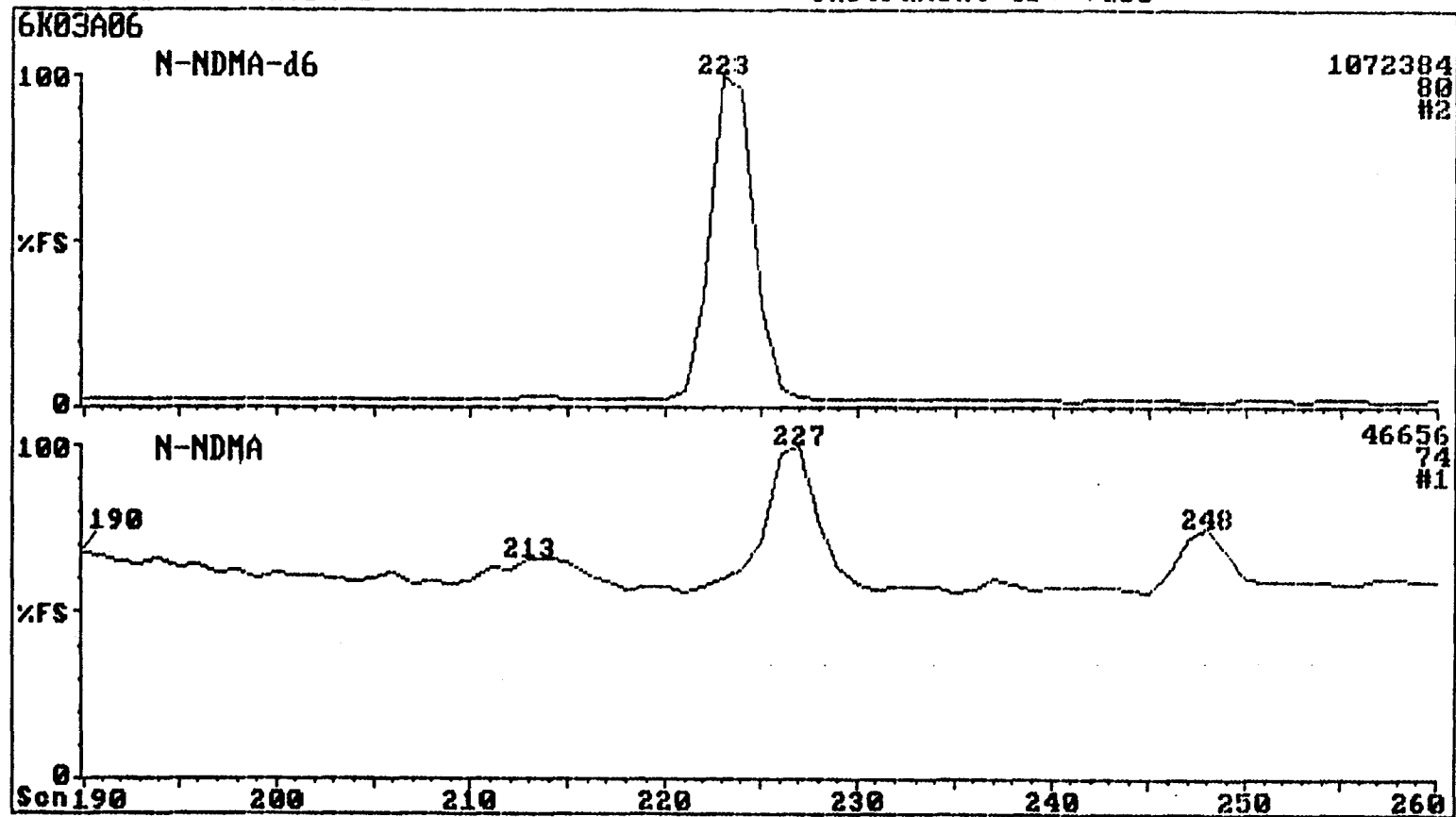
Analyzed: 11/03/98 1614  
Instrument ID: VG06



000038

Sample No.: NNDMA 0.02  
Lab File ID: 6K03A06

Analyzed: 11/03/98 1614  
Instrument ID: VG06



000039

Sample: NNDMA 0.02  
Lab File: 6K03A06

NSTDO.02

Analyzed: 11/03/98 1614  
Instrument ID: 06

-----  
Interim Report

LAB-BASE FIND

11/04/98 0821  
-----

Raw Datafile : 6K03A06  
Find DB : NNDMA

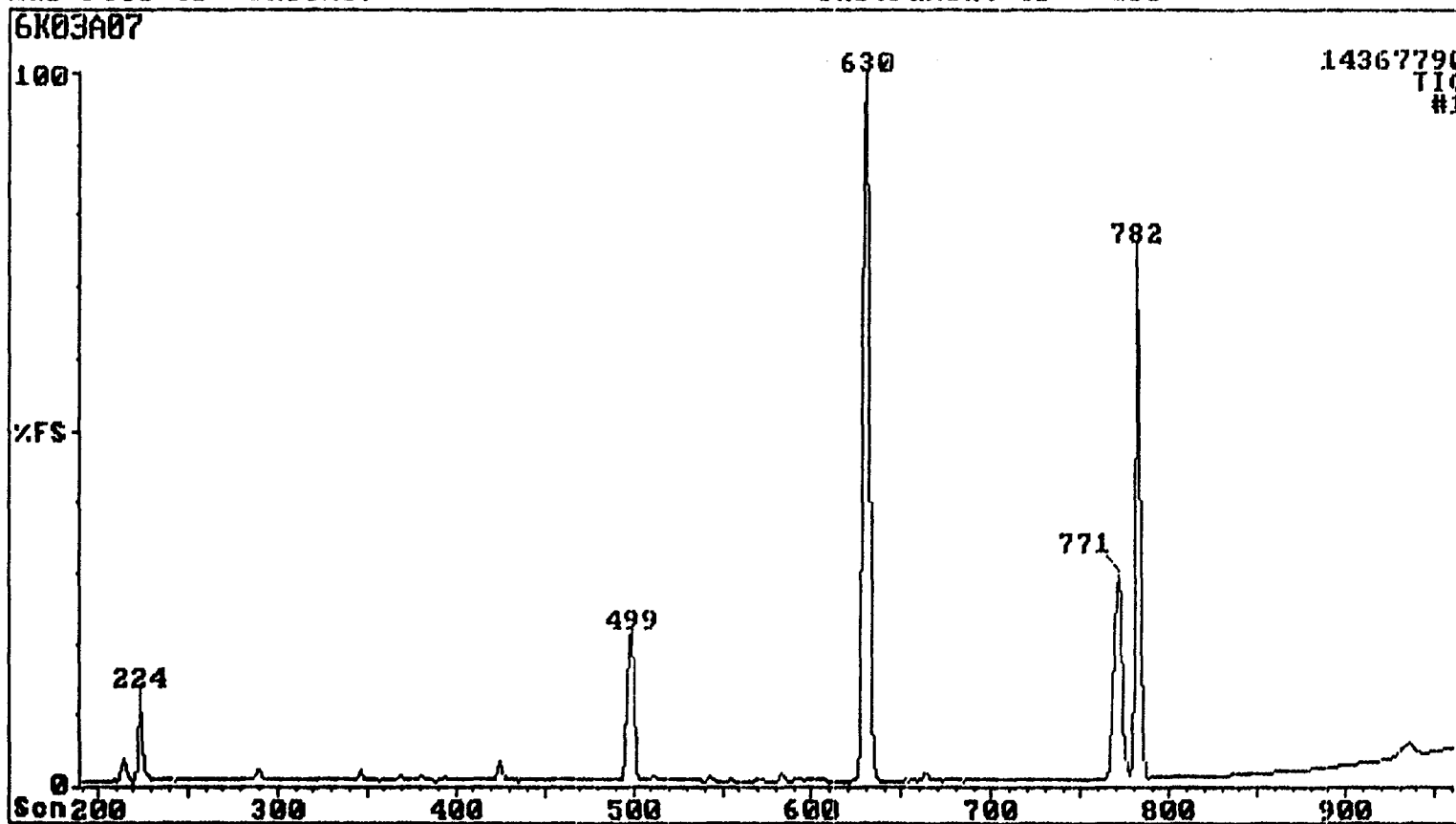
Quan DB : 6K03A06  
Scan DB : NONE

No.	MAT	FOR	REV	Diff	Peak Area Flgs	Scan Found	Pred	QM	Compound Name
1	100	94	100	0	34720464	bv 782	782	190	2,2'-Difluorobiphenyl
2	100	91	99	0	2758994	b? 223	223	80	N-Nitrosodimethylamine-d6
3	98	68	88	0	53052	!! 227	227	74	N-Nitrosodimethylamine

000040

Sample No.: NNDMA 0.05  
Lab File ID: 6K03A07

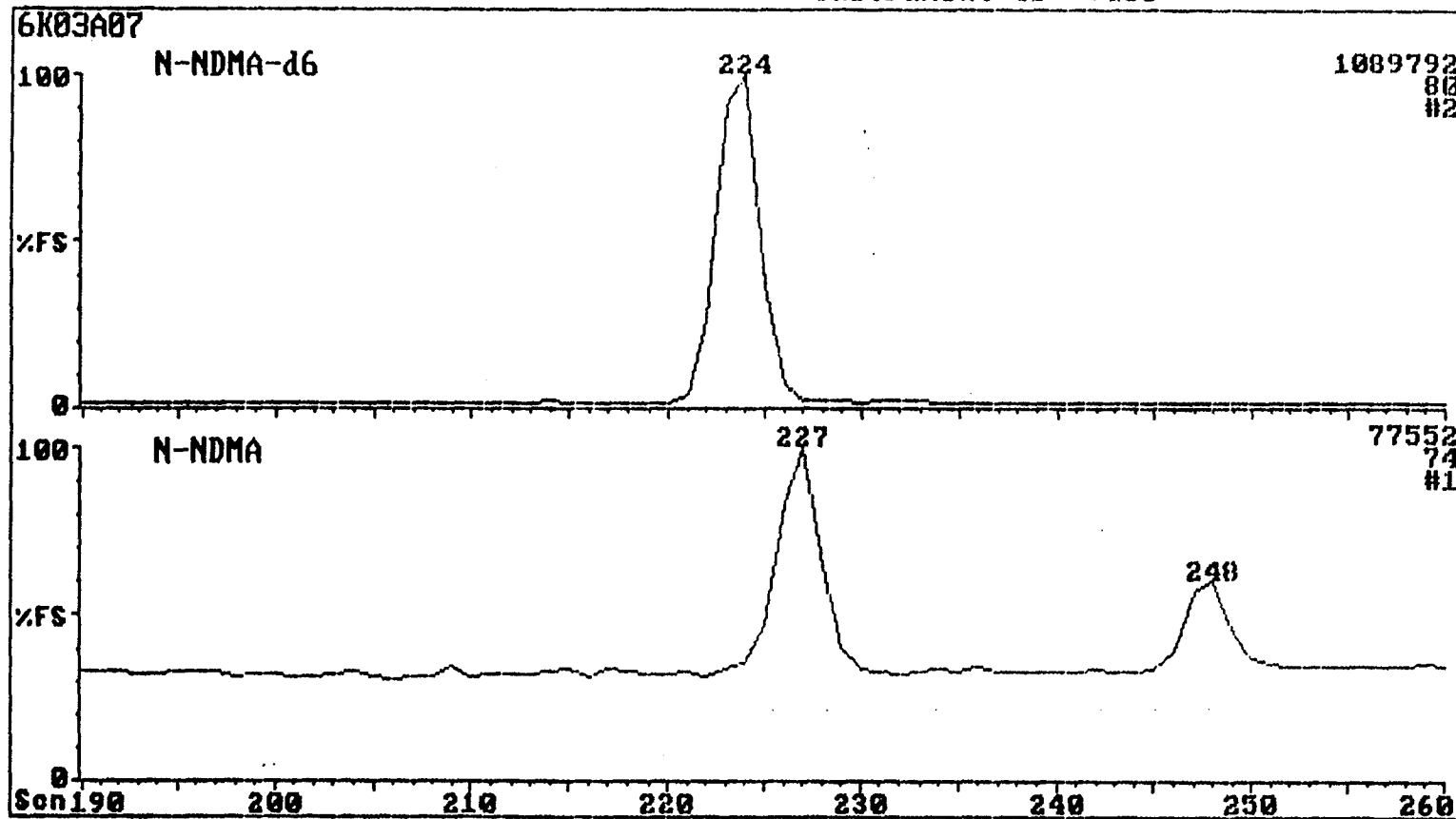
Analyzed: 11/03/98 1640  
Instrument ID: VG06



000041

Sample No.: NNDMA 0.05  
Lab File ID: 6K03A07

Analyzed: 11/03/98 1640  
Instrument ID: VG06



000042



Sample: NNDMA 0.05  
Lab File: 6K03A07

NSTDO.05

Analyzed: 11/03/98 1640  
Instrument ID: 06

-----  
Interim Report

LAB-BASE FIND

11/04/98

0822  
-----

Raw Datafile : 6K03A07  
Find DB : NNDMA

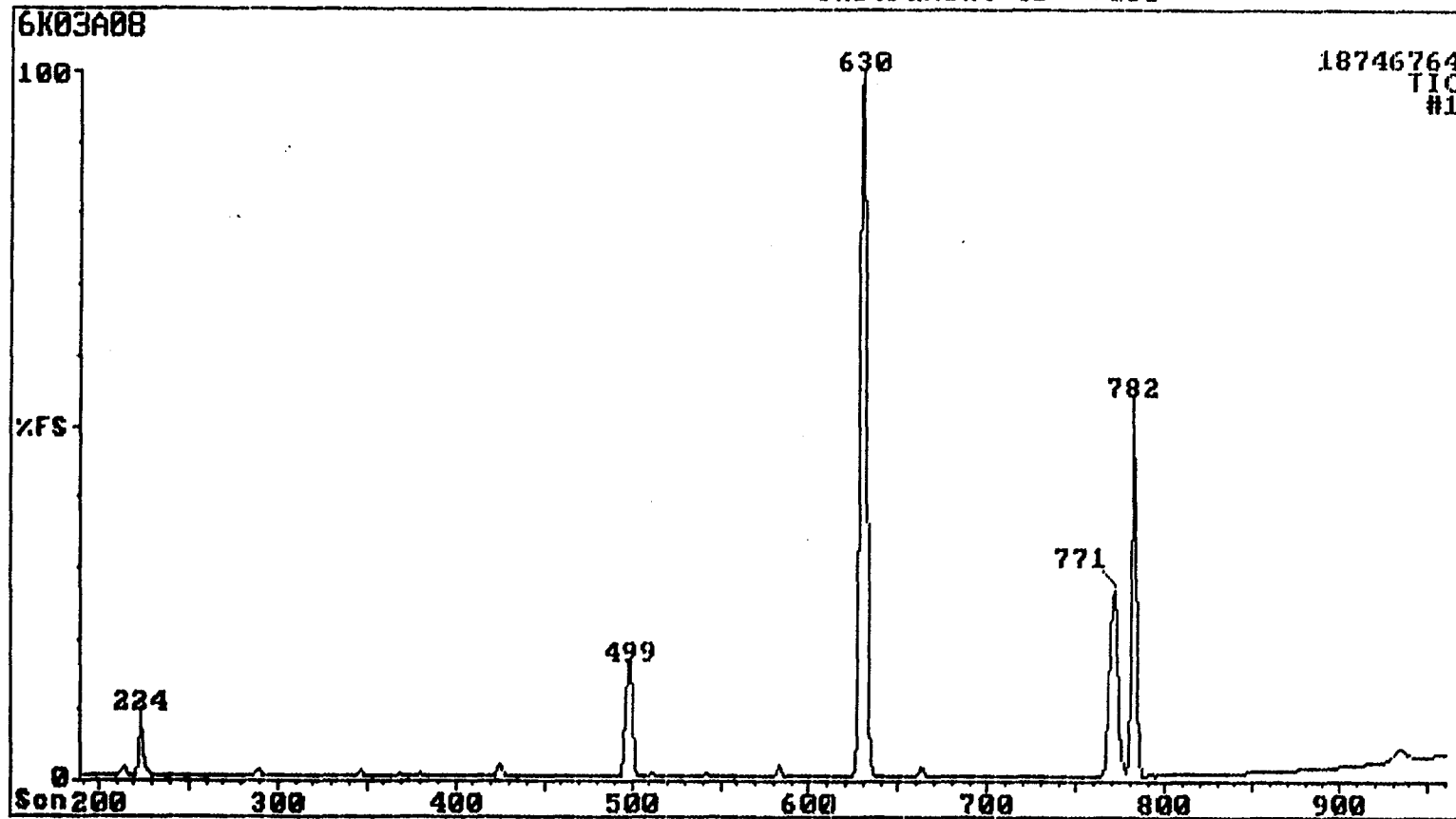
Quan DB : 6K03A07  
Scan DB : NONE

No.	Spectrum Scan				Peak Area	Flgs	Scan		QM	Compound Name
	MAT	FOR	REV	Diff			Found	Pred		
1	100	94	100	0	30412232	bv	782	782	190	2,2'-Difluorobiphenyl
2	100	90	97	1	2775588	v?	224	223	80	N-Nitrosodimethylamine-d6
3	100	76	92	-1	129676	??	227	228	74	N-Nitrosodimethylamine
	72	65	85	6	924	!!	234			

000043

Sample No.: NNDMA 0.10  
Lab File ID: 6K03A08

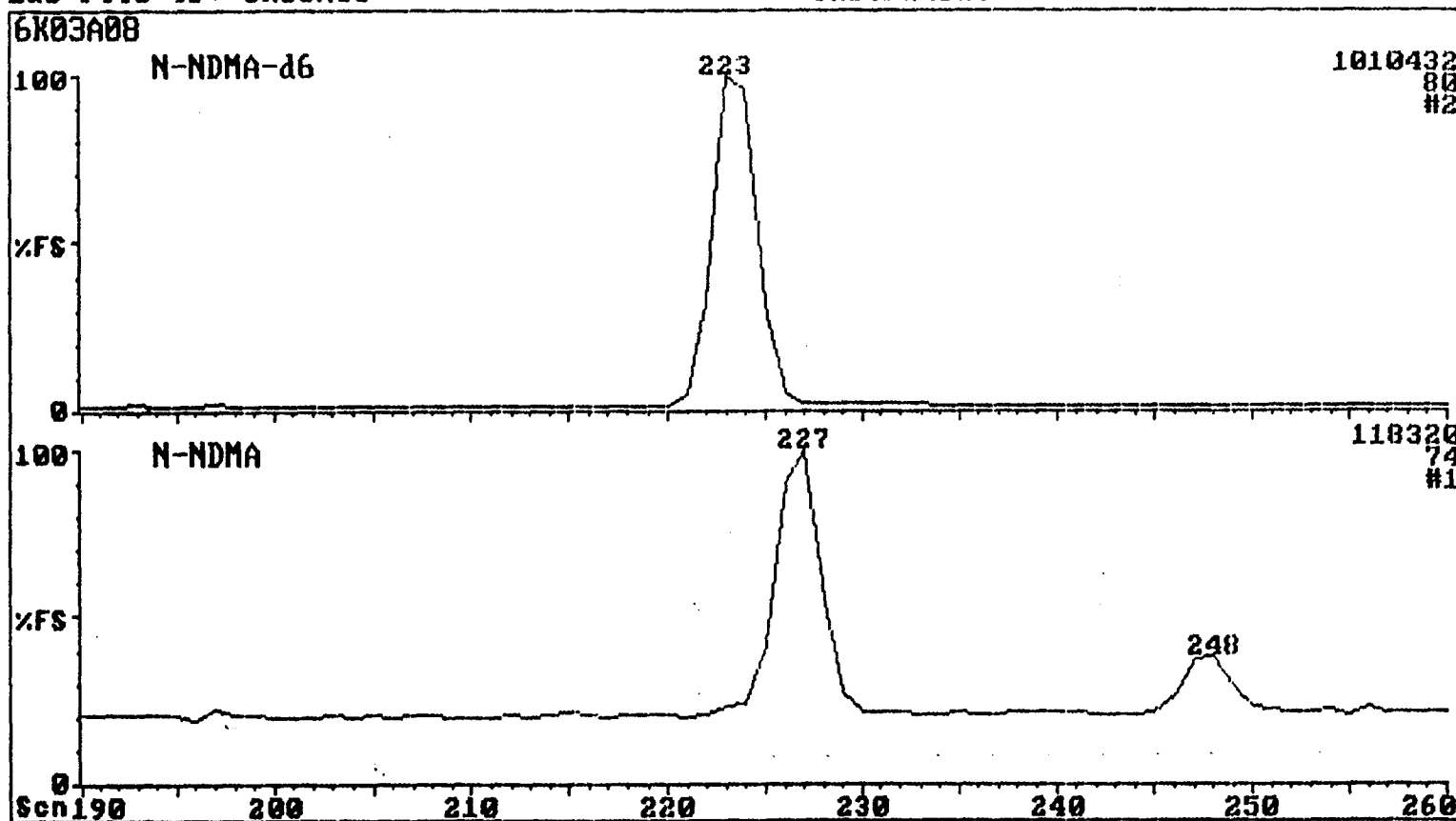
Analyzed: 11/03/98 1707  
Instrument ID: VG06



000044

Sample No.: NNDMA 0.10  
Lab File ID: 6K03A08

Analyzed: 11/03/98 1707  
Instrument ID: VG06



000045

Sample: NNDMA 0.10  
Lab File: 6K03A08

NSTDO.10

Analyzed: 11/03/98 1707  
Instrument ID: 06

-----  
Interim Report

LAB-BASE FIND

11/04/98

0823  
-----

Raw Datafile : 6K03A08  
Find DB : NNDMA

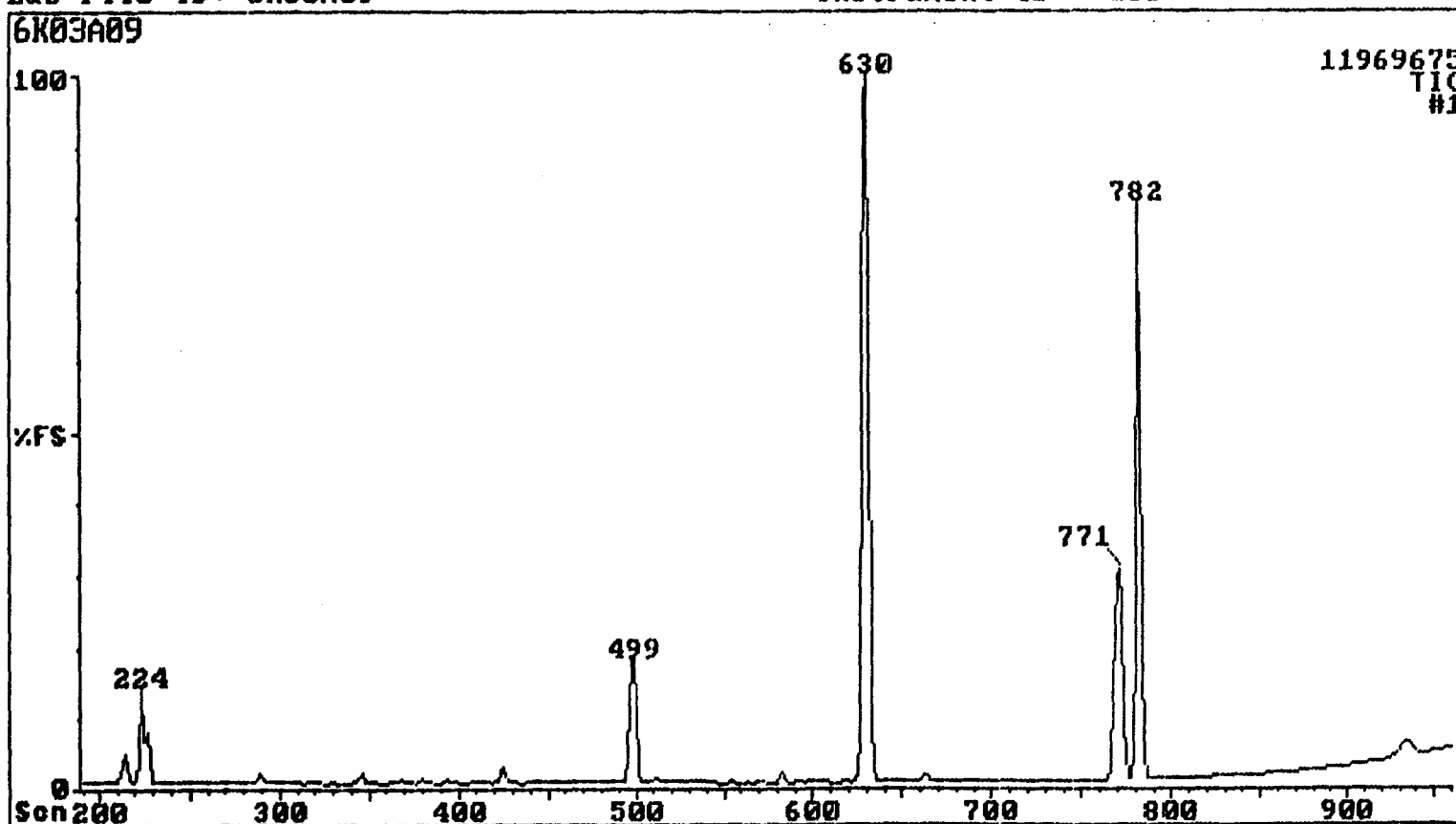
Quan DB : 6K03A08  
Scan DB : NONE

No.	Spectrum Scan				Peak		Scan		QM	Compound Name
	MAT	FOR	REV	Diff	Area	Flgs	Found	Pred		
1	100	94	100	0	28195457	bv	782	782	190	2,2'-Difluorobiphenyl
2	100	93	99	0	2608858	b?	223	223	80	N-Nitrosodimethylamine-d6
3	100	83	95	0	238636	??	227	227	74	N-Nitrosodimethylamine
	76	63	88	4	990	!!	231			

000046

Sample No.: NNDMA 0.50  
Lab File ID: 6K03A09

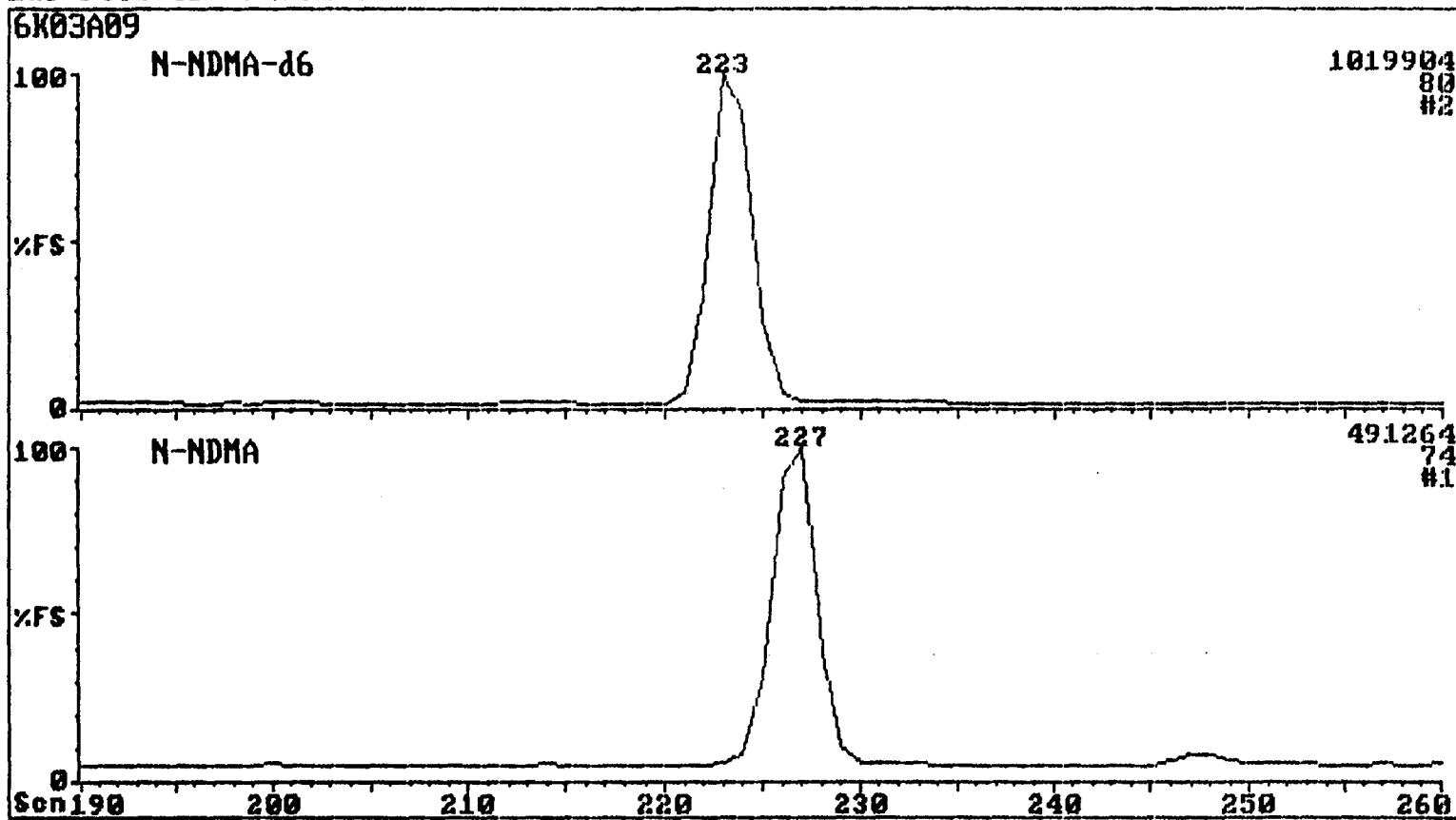
Analyzed: 11/03/98 1734  
Instrument ID: VG06



000047

Sample No.: NNDMA 0.50  
Lab File ID: 6K03A09

Analyzed: 11/03/98 1734  
Instrument ID: VG06



000048

Sample: NNDMA 0.50  
Lab File: 6K03A09

NSTD0.50

Analyzed: 11/03/98 1734  
Instrument ID: 06

Interim Report

LAB-BASE FIND

11/04/98 0824

Raw Datafile : 6K03A09  
Find DB : NNDMA

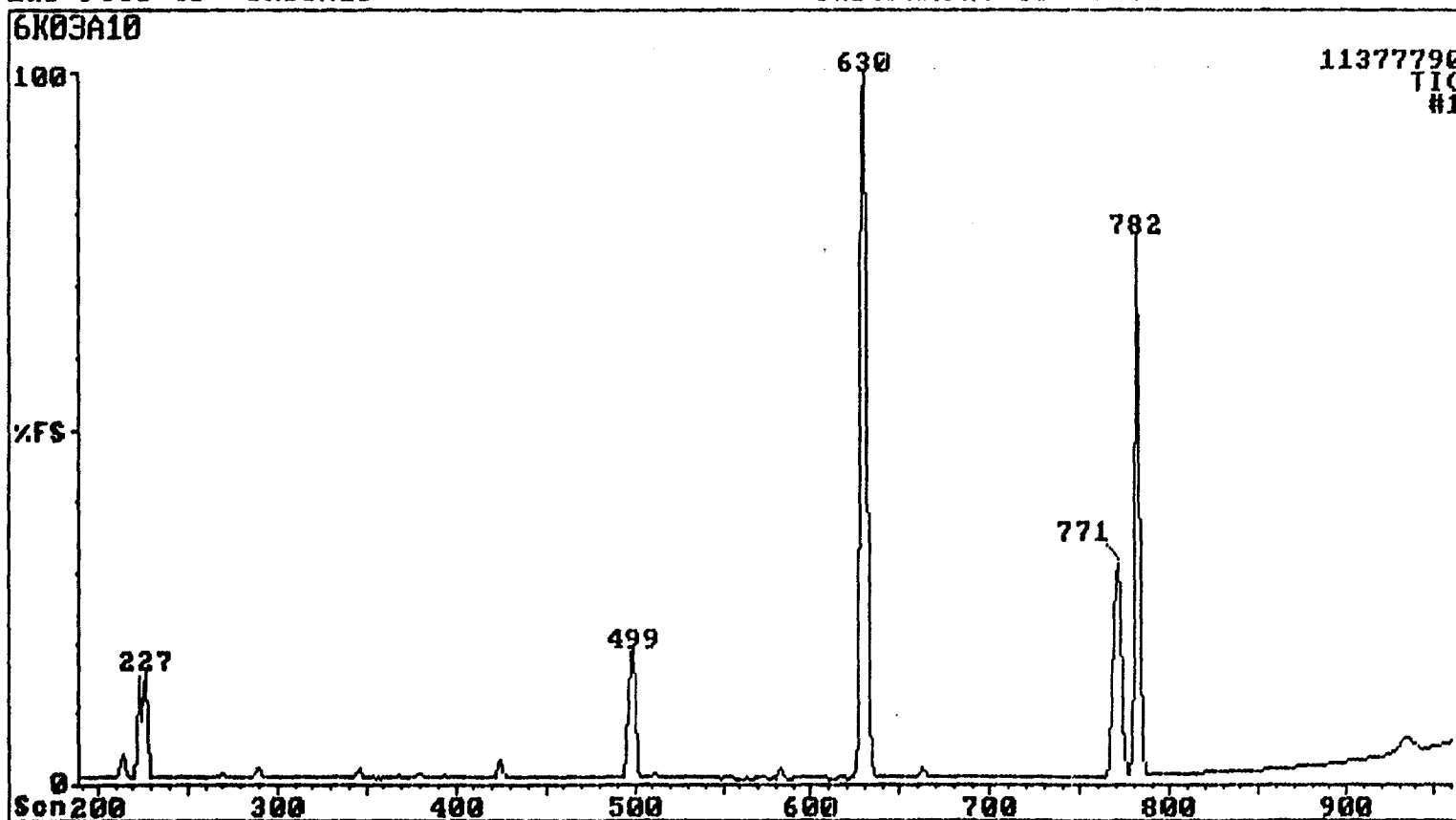
Quan DB : 6K03A09  
Scan DB : NONE

No.	Spectrum Scan				Peak Area	Flgs	Scan		QM	Compound Name
	MAT	FOR	REV	Diff			Found	Pred		
1	100	94	100	0	27312212	bv	782	782	190	2,2'-Difluorobiphenyl
2	100	93	99	0	2530028	v?	223	223	80	N-Nitrosodimethylamine-d6
3	100	93	97	0	1204208	??	227	227	74	N-Nitrosodimethylamine

000049

Sample No.: NNDMA 1.00  
Lab File ID: 6K03A10

Analyzed: 11/03/98 1800  
Instrument ID: VG06

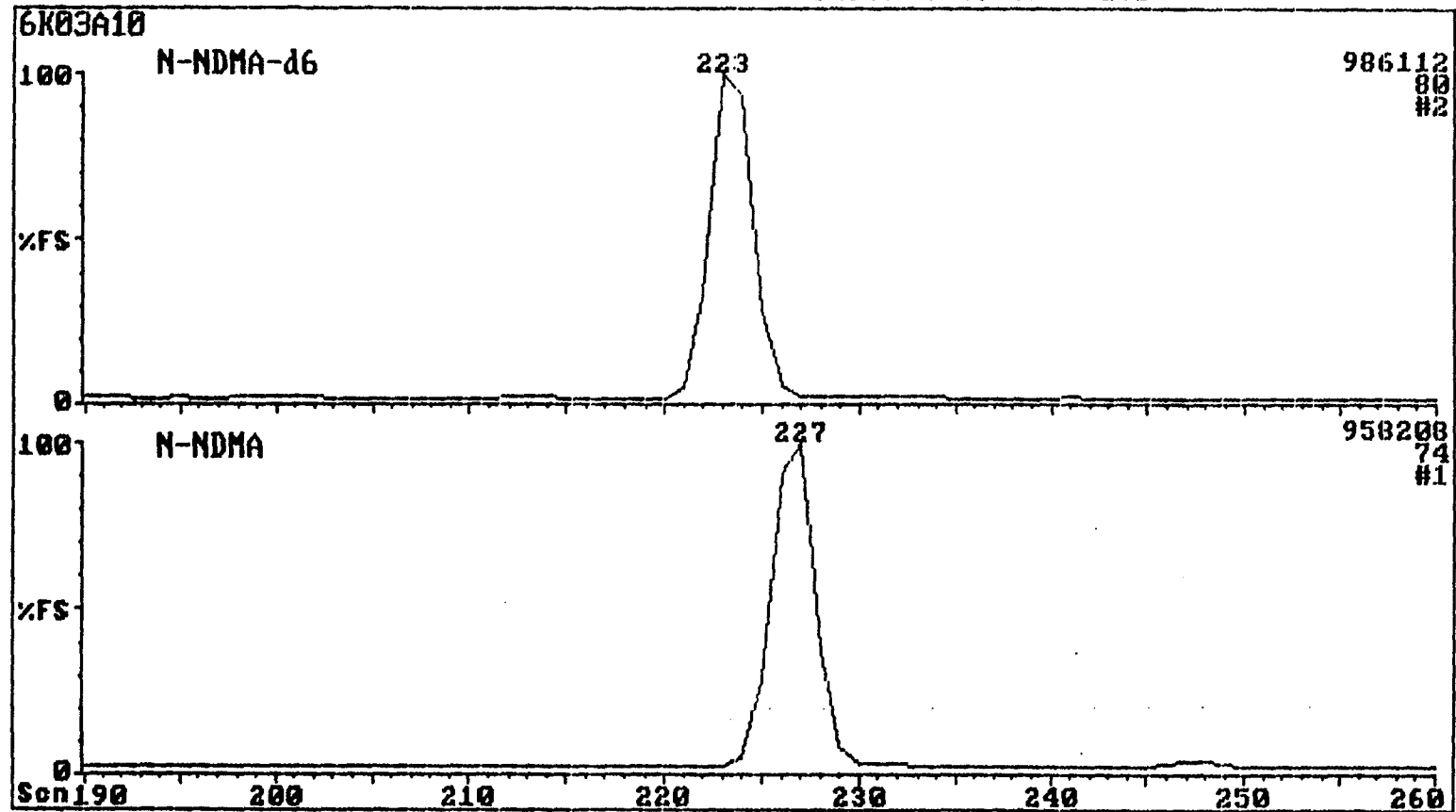


000050



Sample No.: NNDMA 1.00  
Lab File ID: 6K03A10

Analyzed: 11/03/98 1800  
Instrument ID: VG06



000051

Sample: NNDMA 1.00                          NSTD1.00                          Analyzed: 11/03/98          1800  
Lab File: 6K03A10    Instrument ID: 06

-----  
Interim Report    LAB-BASE FIND    11/04/98          0824  
-----

Raw Datafile : 6K03A10    Quan DB : 6K03A10  
Find DB : NNDMA    Scan DB : NONE

No.	Spectrum Scan				Peak Area	Flgs	Scan		QM Compound Name	
	MAT	FOR	REV	Diff			Found	Pred		
1	100	94	100	0	24387599	bb	782	782	190	2,2'-Difluorobiphenyl
2	100	93	99	0	2503996	v?	223	223	80	N-Nitrosodimethylamine-d6
3	100	95	97	0	2421116	??	227	227	74	N-Nitrosodimethylamine
	70	66	88	-6	492	!!	221			

000052

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

LAB BLANK

Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: 8861
Matrix: WATER	Lab File ID: 6K03A13
Sample wt/vol: 1000 ml	Date Sampled:
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 1920
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.03	U	120 %

U = Undetected      J = Estimated Concentration      B = Found in Blank  
D = Dilution Results      E = Result Exceeds Calibration Curve

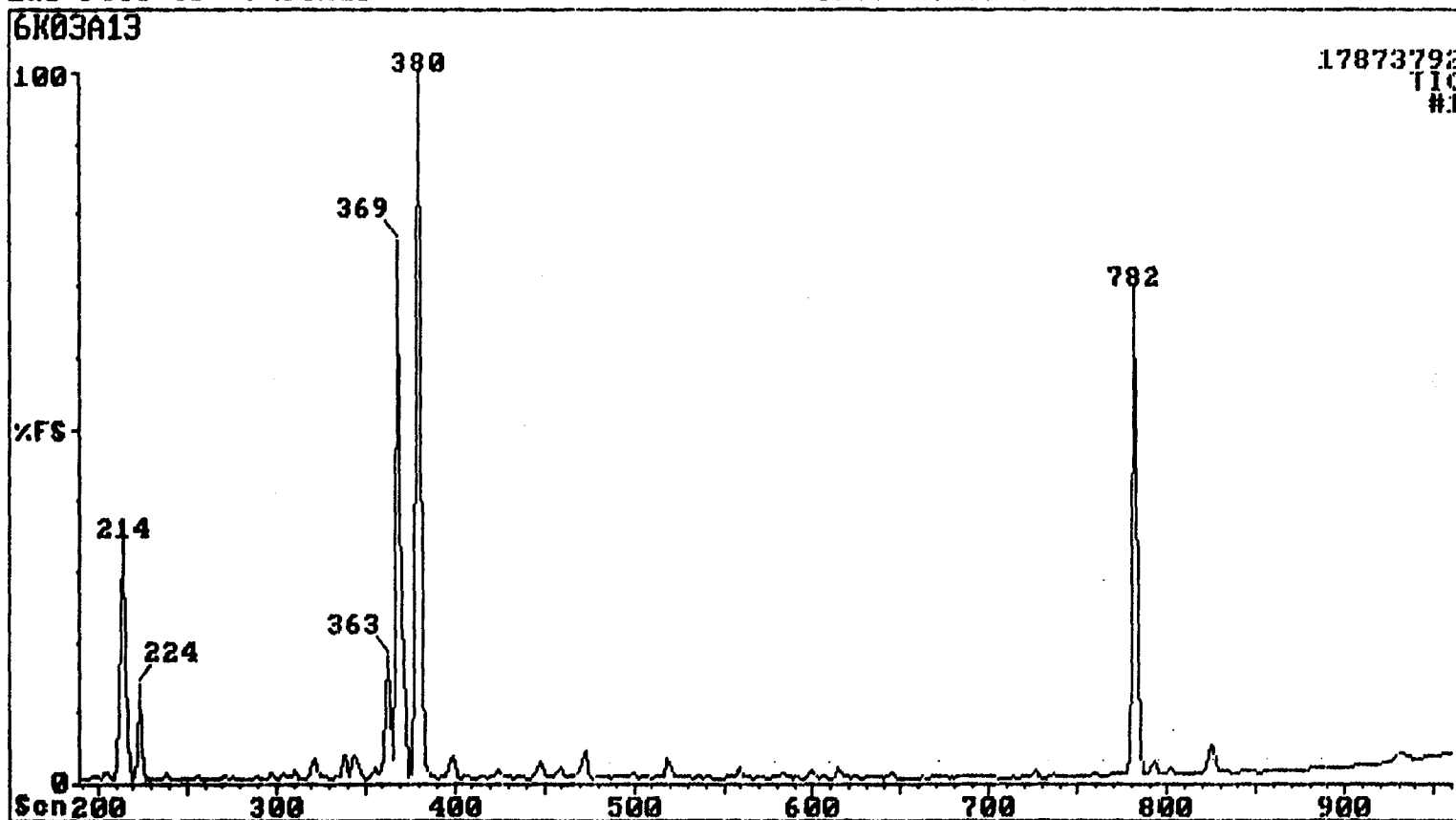
MDL = 0.005 ug/L

PQL = 0.03 ug/L

000053

Sample No.: LAB BLANK  
Lab File ID: 6K03A13

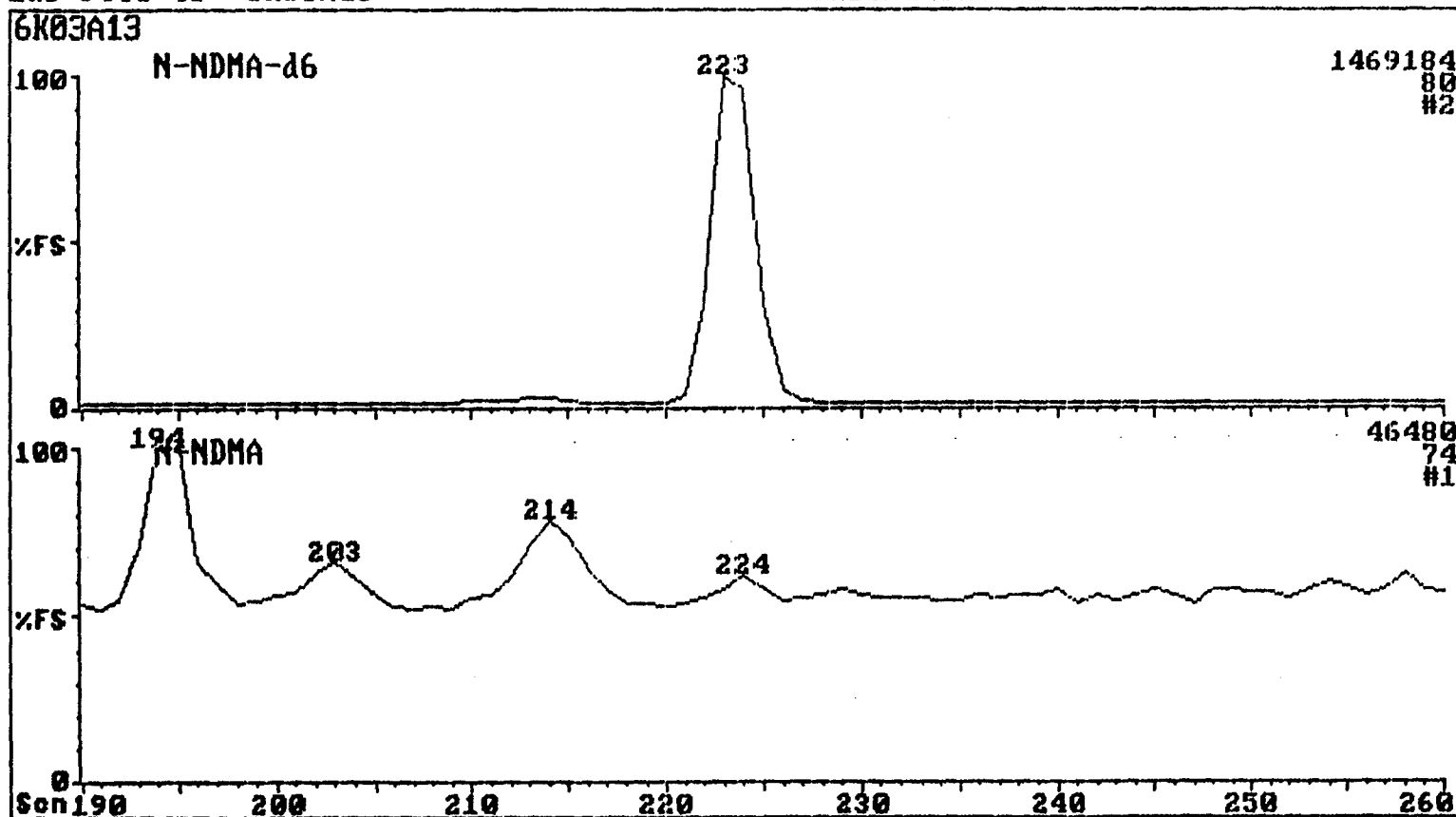
Analyzed: 11/03/98 1920  
Instrument ID: VG06



000054

Sample No.: LAB BLANK  
Lab File ID: 6K03A13

Analyzed: 11/03/98 1920  
Instrument ID: VG06



Sample: LAB BLANK  
Lab File: 6K03A13

8861

Analyzed: 11/03/98 1920  
Instrument ID: 06

=====

Interim Report	LAB-BASE FIND	11/04/98	0830
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Raw Datafile : 6K03A13  
Find DB : NNDMA

Quan DB : 6K03A13  
Scan DB : NONE

No.	Spectrum Scan				Peak		Scan		QM	Compound Name
	MAT	FOR	REV	Diff	Area	Flgs	Found	Pred		
1	100	93	100	0	34723612	?v	782	782	190	2,2'-Difluorobiphenyl
2	100	94	100	0	3817552	b?	223	223	80	N-Nitrosodimethylamine-d6
3	83	62	82	2	3290	!!	229	227	74	N-Nitrosodimethylamine
	61	64	85	9	426	!!	236			

000056

Quantitation Results

=====

EPA Name: LAB BLANK	Lab ID: 8861	Lab File: 6K03A10
---------------------	--------------	-------------------

Instr: 06 ICAL: 6K03 Acquisition Date: 11/03/98 Acquisition Time: 1920  
 =====

Compound	Target Conc.	Sample Conc.	Label Rec.	Limits
N-Nitrosodimethylamine	0.00	0.00	119.9	25 - 175

000057

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

00.10

Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: P&R C24
Matrix: WATER	Lab File ID: 6K03A11
Sample wt/vol: 1000 ml	Date Sampled:
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 1827
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.08		122 %

U = Undetected    J = Estimated Concentration    B = Found in Blank  
D = Dilution Results    E = Result Exceeds Calibration Curve

MDL = 0.005 ug/L

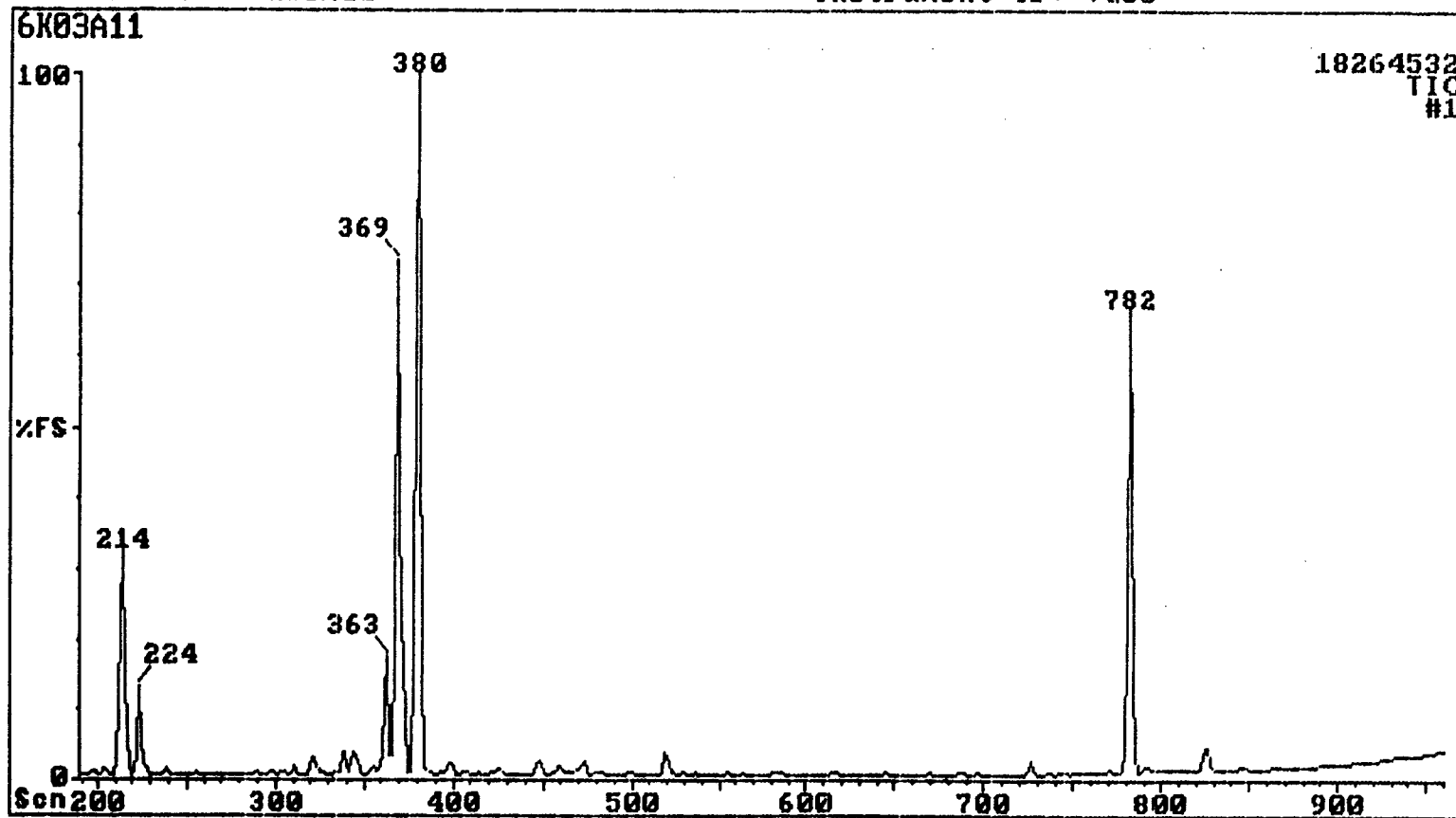
PQL = 0.03 ug/L

000058



Sample No.: 00.10  
Lab File ID: 6K03A11

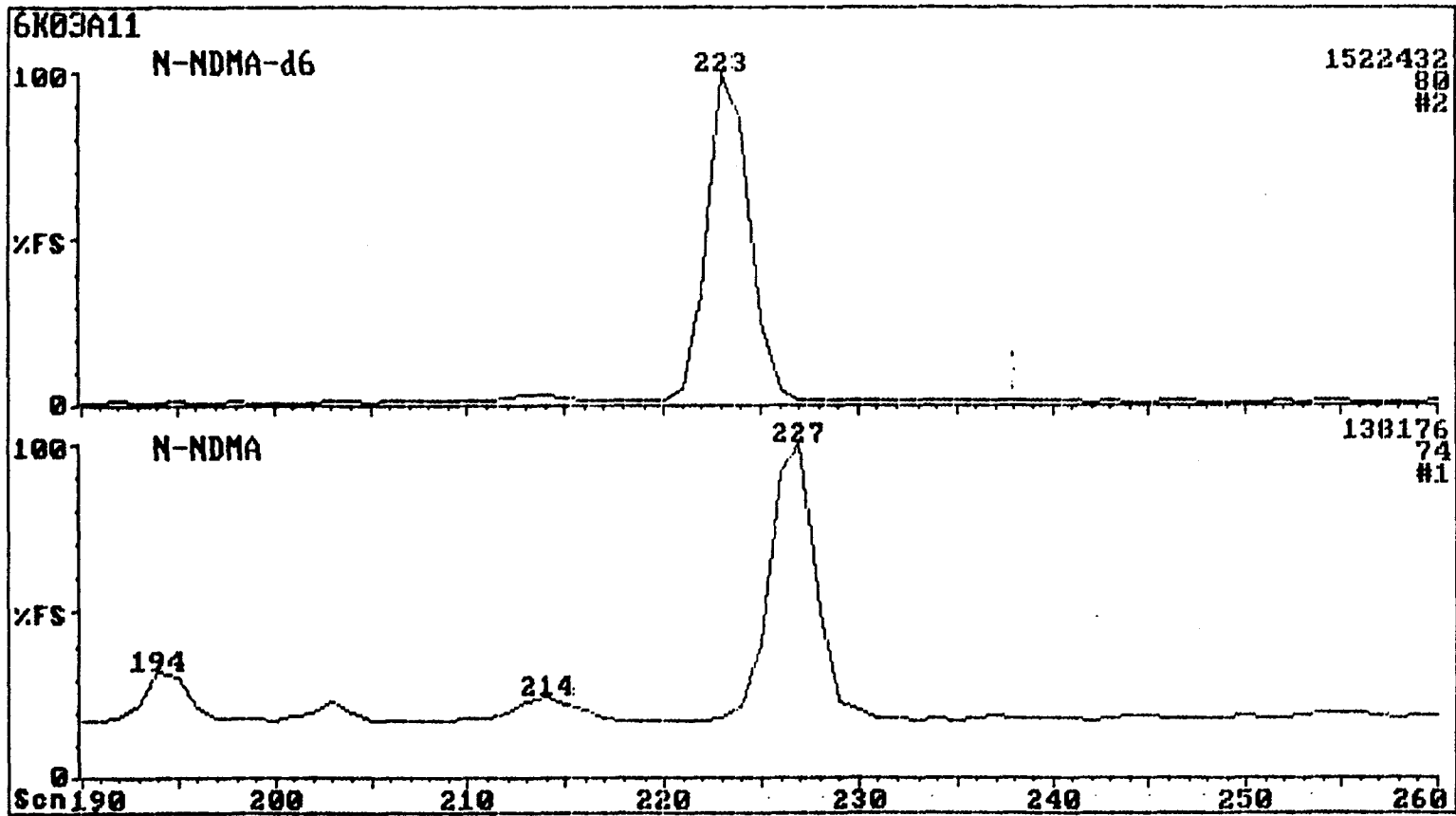
Analyzed: 11/03/98 1827  
Instrument ID: VG06



000059

Sample No.: 00.10  
Lab File ID: 6K03A11

Analyzed: 11/03/98 1827  
Instrument ID: VG06



090000

Sample: 00.10  
Lab File: 6K03A11

P&R C24

Analyzed: 11/03/98 1827  
Instrument ID: 06

-----  
Interim Report

LAB-BASE FIND

11/04/98 0829  
-----

Raw Datafile : 6K03A11  
Find DB : NNDMA

Quan DB : 6K03A11  
Scan DB : NONE

No.	MAT	FOR	REV	Diff	Peak Area Flgs	Scan Found	Pred	QM	Compound Name
1	100	93	100	0	33828079 ?b	782	782 190	2,2'-Difluorobiphenyl	
2	100	94	99	0	3780758 b?	223	223 80	N-Nitrosodimethylamine-d6	
3	100	84	94	0	291140 ??	227	227 74	N-Nitrosodimethylamine	
	73	60	84	5	758 !!	232			

000061

On-going Accuracy (P&R) Check

=====

EPA Name: 00.10

Lab ID: P&R C24

Lab File: 6K03A1

Instr: 06

ICAL: 6K03

Acquisition Date: 11/03/98

Acquisition Time: 1827

=====

Compound	Target Conc.	Rec.	Label Rec.	Limits
N-Nitrosodimethylamine	0.08	83.84	121.9	25 - 175

000062

ISOTOPE DILUTION  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
FORWARD SEARCH LIST  
Page 1 of 1

CLIENT SAMPLE NO.

00.10
-------

Lab Name: PACIFIC ANALYTICAL, INC.	Lab Sample ID: P&R C24 DUP
Matrix: WATER	Lab File ID: 6K03A12
Sample wt/vol: 1000 ml	Date Sampled:
Concentrated Extract Volume: 1000 ul	Date Extracted: 10/30/98
Injection Volume: 1 ul	Date Analyzed: 11/03/98
GPC Cleanup: N/A	Time Analyzed: 1853
Fraction: Base/Neutral	

Compound	Concentration (ug/L)	Flags	Labelled Cpd. Recovery
N-Nitrosodimethylamine	0.09		124 %

U = Undetected      J = Estimated Concentration      B = Found in Blank  
D = Dilution Results      E = Result Exceeds Calibration Curve

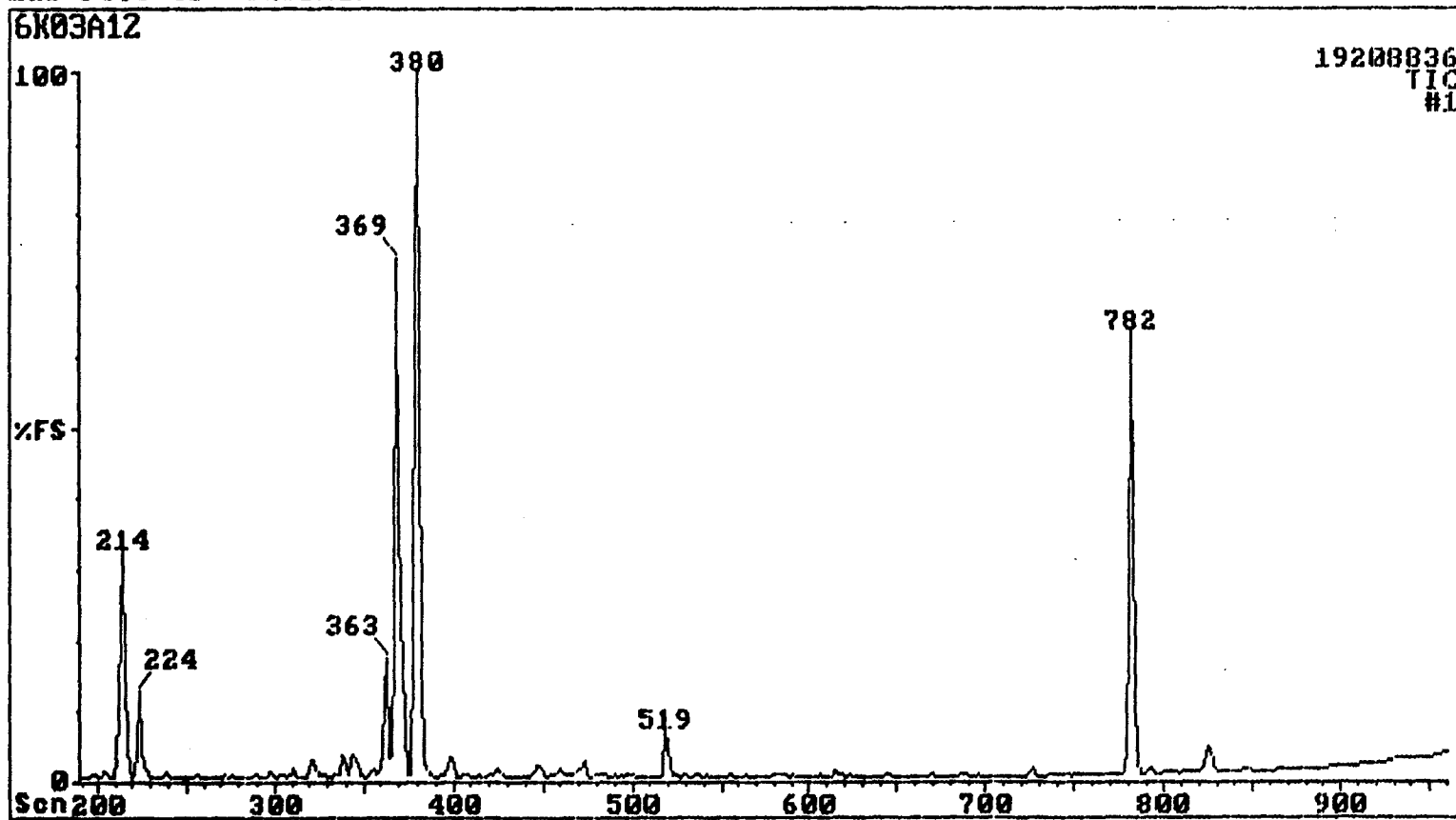
MDL = 0.005 ug/L

PQL = 0.03 ug/L

000063

Sample No.: 00.10  
Lab File ID: 6K03A12

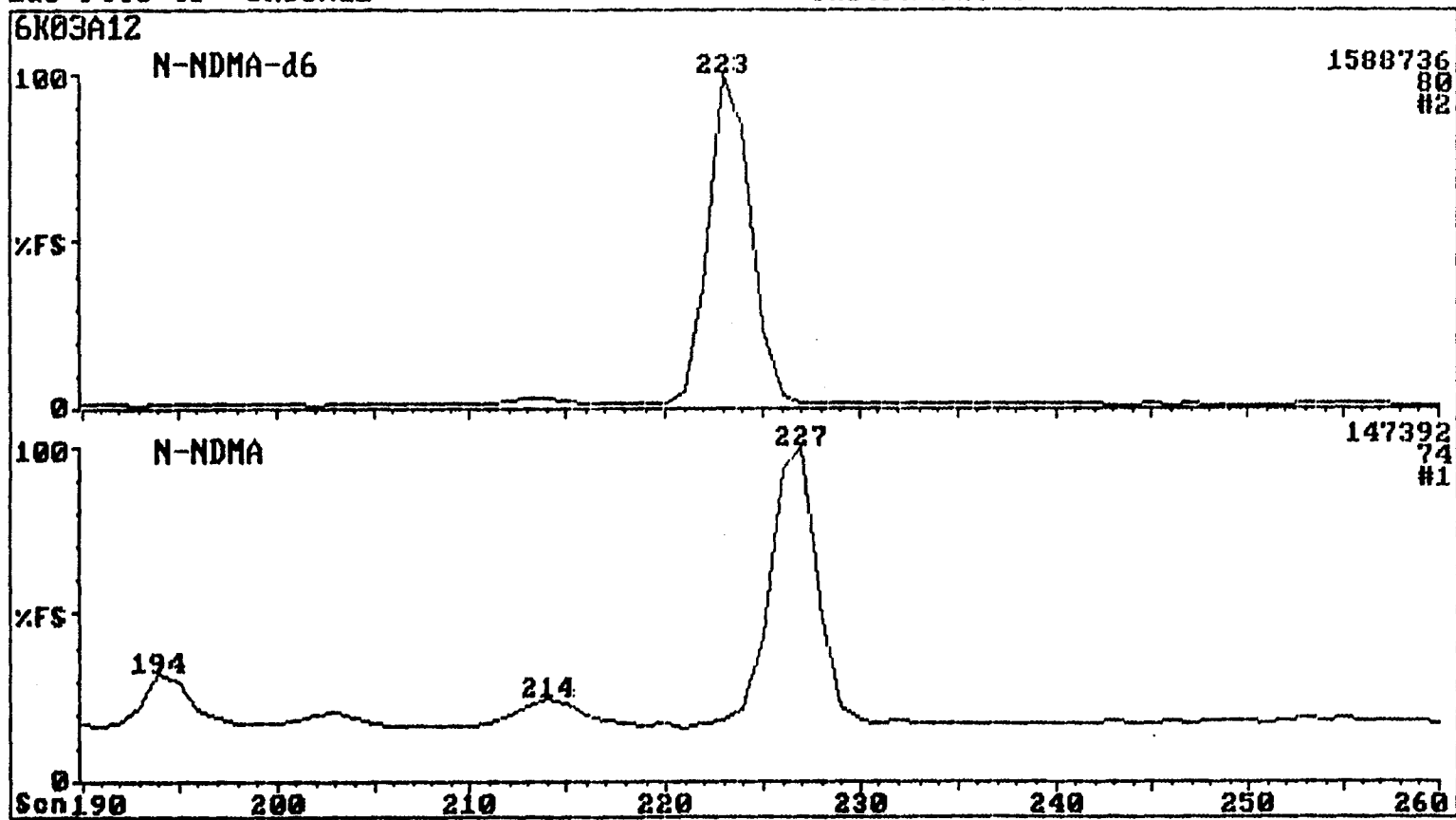
Analyzed: 11/03/98 1853  
Instrument ID: VG06



000064

Sample No.: 00.10  
Lab File ID: 6K03A12

Analyzed: 11/03/98 1853  
Instrument ID: VG06



000065

Sample: 00.10  
Lab File: 6K03A12

P&R C24 DUP

Analyzed: 11/03/98 1853  
Instrument ID: 06

-----  
Interim Report                      LAB-BASE FIND                      11/04/98                      0830  
-----

Raw Datafile : 6K03A12  
Find DB : NNDMA

Quan DB : 6K03A12  
Scan DB : NONE

No.	Spectrum Scan				Peak Area	Flgs	Scan		QM	Compound Name
	MAT	FOR	REV	Diff			Found	Pred		
1	100	93	100	0	34484759	?v	782	782	190	2,2'-Difluorobiphenyl
2	100	94	99	0	3918476	b?	223	223	80	N-Nitrosodimethylamine-d6
3	100	84	94	0	322704	??	227	227	74	N-Nitrosodimethylamine

000066



On-going Accuracy (P&R) Check

=====

EPA Name: 00.10

Lab ID: P&R C24 DUP

Lab File: 6K03A1

Instr: 06

ICAL: 6K03

Acquisition Date: 11/03/98

Acquisition Time: 1853

=====

Compound	Target		Label	Limits
	Conc.	Rec.	Rec.	
N-Nitrosodimethylamine	0.09	89.82	123.9	25 - 175

000067

PACIFIC ANALYTICAL, INC.

\*\*\* SAMPLE RECEIPT LOG \*\*\*

PA JOB NUMBER: N50  
 (Sample Tracking Information)

JOB \_\_\_\_\_ TASK \_\_\_\_\_  
 (Invoice Information Only)

CUSTOMER: MONTGOMERY WATSON

RECEIVED BY: JLT *JLT*

REVISION DATE: 11/02/96

REVISION TIME: 14:43

CHAIN OF CUSTODY RECEIVED: Y

SHIPPER: FED EX  
 SHIPPER CODE: 414782631035

LAB SAMPLE NUMBER OF FIRST SAMPLE TO BE LOGGED IN: N5001

=====

LAB SAMPLE NUMBER	CUSTOMER SAMPLE ID	DATE SAMPLED	DATE OF RECEIPT	DESCRIPTION (soil, water, tissue, etc.)	CONDITION
N5001	MW-984075	10/26/98	10/28/98	WATER, 1 x 1 L BOTTLE, <i>2 WK TAT</i>	OK
N5002	MW-984-008	10/27/98	10/29/98	WATER, 1 x 1 L BOTTLE	OK
N5003	MW-984-042	10/27/98	10/29/98	WATER, 1 x 1 L BOTTLE	OK
N5004	MW-984-015	10/28/98	10/30/98	WATER, 1 x 1 L BOTTLE	OK
N5005	MW-984-031	10/28/98	10/30/98	WATER, 1 x 1 L BOTTLE	OK
N5006	MW-984-039	10/26/98	10/30/98	WATER, 1 x 1 L BOTTLE	OK
		/ /	/ /		
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COMMENTS: 3 MEDIUM COOLERS

SAMPLE LOG-IN SHEET - TEMPORARY

N50

LAB NAME: PACIFIC ANALYTICAL, INC.

Received By (Print Name): Jose L. Toledo

Log-in Date: 10/28/98

Received By (Signature): [Signature]

Client <u>Martgomery Watson Labs</u>		REMARKS	
		# CONTAINERS ; CONDITION	
LAB ID	SAMPLE NO		
REMARKS:			
1. Custody Seal(s)	Present/ <del>Absent</del> Intact/Broken	N5001	MW-984-075 WATER, 1X1 L BOTTLE, TAG # 01490
2. Custody Seal Nos.:		N5002	MW-984-008 WATER, 1X1 L BOTTLE, TAG # 01509
3. Chain of Custody Records:	Present/Absent	N5003	MW-984-042 ↓ ↓ TAG # 01501
4. Traffic Reports or Packing List	Present/Absent	N5004	MW-984-015 WATER, 1X1 L BOTTLE, TAG # 01569
5. Airbill	Airbill/ <del>Sticker</del> Present/Absent	N5005	MW-984-031 ↓ ↓ TAG # 01540
6. Airbill No.:		N5006	MW-984-039 ↓ ↓ TAG # 01553
7. Sample Tags	<del>Present</del> / <del>Absent</del>		
Sample Tag Numbers	Listed/ <del>Not Listed</del> on Chain of Custody		
8. Sample Condition	<del>Intact</del> /Broken/Leaking <u>Cold</u>		
9. Does informatin on Custody Records, Traffic Reports and sample tags agree?	Yes/No		
10. Date Received at Lab:	<u>10/28/98, 10/29/98</u>		
11. Time Received at Lab:	<u>11:30 AM 10/28</u>		

Chemist JLT

# SEMI-VOA/BNA

JOB # N50

Extraction Date 10-30-98

1625M-NDMA  
(analysis)

Client Montgomery-W

Extraction Method 1625M(N-NDMA)

Extraction Solvent MeCl<sub>2</sub> Lot #         

Matrix Water Fraction(s) Extracted         

Extracts concentrated to 10 mL using K-D apparatus. Extracts then transferred to nitrogen evaporator and concentrated to final volumes listed below. If clean-up is required, reference clean-up method for procedure. Base/neutral and acid fractions combined for Blank and P and R samples only.

SURROGATE: N-NDMA LAB#2 Date Made 2-2-98 Volume 50mL Conc. 2049/ML Init. JT

MATRIX SPIKE: N-NDMA WK9 STD Date Made 8-13-98 Volume 100mL Conc. 1.029/ML Init. JG

INTERNAL STANDARD:

BN N-NDMA IS Vol. 10 mL Date Made 10-12-98 Date Spiked 11-3-98 Conc. 100<sup>ug</sup>/mL Init. M.G

ACID          Vol.          Date Made          Date Spiked          Conc.          Init.         

Sample #	Amount Extracted	% Moisture/Solids	pH at 1st Extraction	Final Vol 1st Extract	pH at 2nd Extraction	Final Vol 2nd Extract	Clean-Up	Comments
8861	1000mL	N/A	>12	1.0 mL	NA	NA	NONE	
8862								
PARC24								
PARC2404								
N5001								
N5002								
N5003								
N5004								
N5005	↓	↓	↓	↓	↓	↓	↓	
N5006	↓	↓	↓	↓	↓	↓	↓	

Pacific Analytical  
GC/MS SEMI-VOLATILES  
RUN LOG

Instrument: VG06

Page: 320

Cal File: 6K03

Date: 11/03/98

Notes: JOBS N50, MONTGOMERY WATSON / NNDMA MWL Proc #'s: 48614, 48665, 48735.  
N52, WEST BASIN MWD / NNDMA  
TUNE PAR: SIR=5.0; SEC=100; SFI=14; SF3=210; QL=6.0; QH=10.9; DM=750  
SEE=70; SF2=21.0; SF4=21; QIE=1.5; QIR=1.0 STD'S PREP. 5/19/98, M.G.  
GC PAR: 40° hold 2.5 min, 15°/min to 280°, hold 0.5 min; 2 µL INT; HP=10 psi

Taped	Sample ID	File Name	OK	Description	OP
	M <sub>2</sub> C12	6K03A01	✓	WARM UP	M.G.
		6K03A02	✓		
		03	✓		
		04	✓		
	↓	05	✓	↓	
	NSTD0.02	06	✓	NNDMA STD. 0.02 µg/mL	
	NSTD0.05	07	✓	0.05	
	NSTD0.10	08	✓	0.10	
	NSTD0.50	09	✓	0.50	
	NSTD1.00	10	✓	↓ ↓ 1.00 ↓	
	PERC24	11	✓	00.10	
	PERC24dup	12	✓	00.10	
	8861	13	✓	LAB BLANK	
	8862	14	✓	LAB BLANK	
	N5001	15	✓	981026103 (MW-984-075)	
	N5002	16	✓	981027217 (MW-984-008)	
	N5003	17	✓	981027216 (MW-984-042)	
	N5004	18	✓	981028245 (MW-984-015)	
	N5005	19	✓	981028243 (MW-984-031)	
	N5006	20	✓	981028244 (MW-984-039)	
	1/10 N5201	21	✓	1/10 PLANT INFLUENT	
	N5201	22	✓	PLANT INFLUENT	↓

000071

JOB # NSC

SAMPLE TRACKING FORM

Pacific Analytical



CLIENT Munitzberg - WATSON

LOCATION #7

SAMPLE NUMBER	IN By Date	OUT By Date	IN By Date	OUT By Date	IN By Date	OUT By Date	IN By Date	OUT By Date	IN By Date
NS001	JAN 10/28/18	JAN 10/30/18	ONE (4/30/18)						
NS002	JAN 10/29/18								
NS003	↓ ↓								
NS004	SAT 10/28/18								
NS005									
NS006	↓	↓	↓						
	↓								

LINE OUT REMAINING ENTRIES IF CONTAINER WILL NOT BE RETURNED.

JOB  
NSC  
000072

# EXTRACTS

SAMPLE NUMBER	IN		OUT		IN		OUT		IN		OUT		IN	
	By	Date	By	Date	By	Date	By	Date	By	Date	By	Date	By	Date
8861	MA	11/3/88	MA	11/3/88	MA	11/4/88								
8862														
PERC24														
PERC24dup														
N5001														
N5002														
N5003														
N5004														
N5005														
N5006	✓		✓		✓									

JOB # N50  
 CLIENT MOUTSEMERLY WATSON  
 SAMPLE TRACKING FORM  
 EXTRACTS  
 LOCATION # 2  
 Pacific Analytical

LINE OUT REMAINING ENTRIES IF CONTAINER WILL NOT BE RETURNED.

JOB  
 N50  
 073



S.24.94us

Chlorinated phenol Surrogate 2.25ppm

2  
3g  
7  
lot  
4g

(S.24.94) 2 fluorophenol @ 1000ppm  
(S.24.94) 2,4,6 tribromophenol @ 1000ppm

225g/l  
225g/l

up to 100ml in Acetone  
lot 33349

S.24.94us

Chlorinated phenol Matrix 2.25ppm

(S.24.94) ~~2 fluorophenol~~ Penta chlorophenol

2000ppm 225g/l

- Phenol
- 2,4,6 Trichlorophenol
- 2,4,5 Trichlorophenol
- 4 chloro 3 methyl phenol
- 2 chloro phenol
- 2,4 Dichlorophenol
- 2,6 Dichlorophenol
- ortho phenyl phenol

up to 100ml in Acetone

24 May 94 use

Trifluralin Riedel/De Haen lot # 7230  
0.010g / 10ml Hexane

1000ul/ml 24th 94

Prometon Riedel/De Haen lot # 7251  
0.010g / 10ml Hexane

1000ul/ml 24th 94

Metolachlor Chem Serv lot # 31-93A  
0.010g / 10ml Hexane

1000ul/ml 27th 94

3349

us. 25.94

NDMA<sub>d6</sub> @ 1000ppm

MSD lot 3414P NDMA<sub>d6</sub>

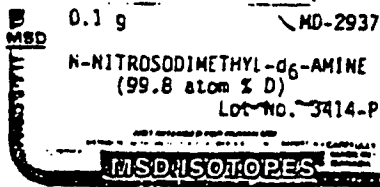
0.1g from sealed vial mixed  
into 100ml in M<sub>2</sub>Cl<sub>2</sub> lot 33316

us. 25.94

NDMA<sub>d6</sub> @ 1000ppm

(S.25.94) NDMA<sub>d6</sub>

200g/l  
up to 10ml in M<sub>2</sub>Cl<sub>2</sub> lot 33316



WARNING CAS 62-75-6  
HIGHLY TOXIC LD50 = 28 mg/kg  
CANCER SUSPECT  
COMBUSTIBLE  
Reacts with oxidizing/reducing agents



MSD ISOTOPES MSDS No. 9220

000074

Handwritten notes: 'Spray 5/26/94'



5/27/97

Parent	Parent Conc	aliquot	F. vol.	F. Conc
Arochlor	10000 µg/ml	100 µl	10 ml	1000 µg/ml

088pt 97 RB Surrogate Spike @ 0.2 µg/ml con  
2.5 ml 8080 Sur (4/14/97) into 25 ml Benzene

088pt 97 Benomyf lot # 81830 con  
0.010 gram / 10 ml Methanol.

(1625 I.S.)

SEPT. 10, 1997 2,2'-Difluorobiphenyl 10,000 ppm

M.G. 0.2501 g 2,2'-Difluorobiphenyl (PFALTZ+BAUER  
LOT # 042605)

DISOLVED IN BENZENE (E.M. Sci. Lot # 35114)

THEN BROUGHT TO 25.0 ml IN A VOLUMETRIC

FLASK WITH 2,2,4-Trimethylpentane (E.M. Sci. lot 32365)  
(~50:50)

FINAL VOL = 25.0 ml FINAL CONC = 10000  $\frac{\mu\text{g}}{\text{ml}}$

000075

1/21/98 1625 I CAL STD'S

CONC ( $\mu\text{g}/\text{mL}$ )	( $\mu\text{L}$ ) LABEL	( $\mu\text{L}$ ) UNLABEL	( $\mu\text{L}$ ) I.S.	( $\mu\text{L}$ ) DFTPP
200	250	250	5	1
100	250	125	5	1
50	250	62.5	5	1
20	250	25.0	5	1
10	250	12.5	5	1

DILUTED TO A FINAL VOL. OF 0.5 mL WITH  $\text{MeCl}_2$   
(E.M. Sci LOT 37254)

Where:

LABEL = 200  $\mu\text{g}/\text{mL}$  SCC LABELS, 1/19/98, M.G.

UNLABEL = 400  $\mu\text{g}/\text{mL}$  UNLABELED, 1/20/98, M.G.

I.S. = 10000  $\mu\text{g}/\text{mL}$  1625 I.S., 9/10/97, M.G.

DFTPP = SUPELCO LOT LA18741, 25000  $\mu\text{g}/\text{mL}$

1/21/98

1/21/98 N-Nitrosodimethylamine - d6 20  $\mu\text{g}/\text{mL}$

1.000 mL OF 1000  $\mu\text{g}/\text{mL}$  N-Nitrosodimethylamine-d6  
(G.S. 5/25/94, 1000  $\mu\text{g}/\text{mL}$ ) DILUTED  
TO 50.0 mL IN A VOLUMETRIC FLASK W/ ACETONE  
(EM SCI LOT # 37197)

FINAL CONC = 20  $\mu\text{g}/\text{mL}$  F.V. = 50.0 mL

2/2/98

N-Nitrosodimethylamine Stock 1000  $\mu\text{g}/\text{mL}$

0.100 g N-Nitrosodimethylamine (ALDRICH LOT # 06522TT)

DILUTED TO 100.0 mL IN A VOLUMETRIC FLASK  
W/ ACETONE (EM SCI LOT 37197)

000076

FINAL CONC = 1000  $\mu\text{g}/\text{mL}$  FV = 100.0 mL

05/05/98 1625 ICAL STD'S

Om. #	CONC ( $\mu\text{g/L}$ )	( $\mu\text{L}$ ) LABEL	( $\mu\text{L}$ ) UNLABEL	( $\mu\text{L}$ ) I.S.	( $\mu\text{L}$ ) DFTAP
	200	250	250	5	1
	100	250	125	5	1
	50	250	62.5	5	1
	20	250	25.0	5	1
	10	250	12.5	5	1

Where LABEL = 200  $\mu\text{g/mL}$  SCC LABELS, 4/6/98, M.G.  
 UNLABEL = 400  $\mu\text{g/mL}$  UNLABELED, 4/6/98, M.G.  
 I.S. = 10000  $\mu\text{g/mL}$  1625 I.S., 9/10/97, M.G.  
 DFTAP = SUPELCO LOT LA18741, 25000  $\mu\text{g/mL}$   
 DILUTED TO A FINAL VOLUME OF 0.5 mL WITH  
 $\text{MeCl}_2$  (EM SCI. LOT 38071)

05/12/98 NNDMA STD'S goes with set on 2-9-98

Om. #	CONC ( $\mu\text{g/mL}$ )	( $\mu\text{L}$ ) NATIVE	( $\mu\text{L}$ ) LABEL	( $\mu\text{L}$ ) I.S.
	1.00	1	50	10
	10.00	5	50	10
	0.02	* 20	50	10

where NATIVE = NNDMA 1000  $\mu\text{g/mL}$ , 2/2/98, M.G.  
 \* NATIVE = NNDMA WORKING STD 1.0  $\mu\text{g/mL}$ , 2/9/98, M.G.  
 LABEL = NNDMA-d<sub>6</sub> 20  $\mu\text{g/mL}$ , 2/2/98, M.G.  
 I.S. = MILK INT. STD. 100  $\mu\text{g/mL}$ , 1/8/98, M.G.

5/18/98 NNDMA INT. STD. 100  $\mu\text{g/mL}$

Om. # 0.100 mL 1625 I.S. (10000  $\mu\text{g/mL}$ , 9/10/97, M.G.)

DILUTED IN A VOLUMETRIC FLASK WITH BENZENE  
 (BAKER LOT C51712) TO 10.0 mL

FV = 10.0 mL FINAL CONC = 100  $\mu\text{g/mL}$

000077

5/18/98 NNDMA WORKING STD 1.0  $\mu\text{g}/\text{mL}$

Om. G.

~~0.100 mL of~~

0.010 mL OF N-Nitrosodimethylamine STOCK  
(1000  $\mu\text{g}/\text{mL}$ , 2/2/98, M.G.)

DILUTED TO 10.0 mL IN A VOLUMETRIC FLASK  
WITH  $\text{MeCl}_2$  (EM Sci Lot 38090)

$\text{FU} = 10.0 \text{ mL} \text{ --- FINAL CONC} = 1.0 \mu\text{g}/\text{mL}$

5/18/98 NNDMA ICAL STD'S

Om. G.

	( $\mu\text{g}/\text{mL}$ ) CONC	( $\mu\text{L}$ ) NATIVE	( $\mu\text{L}$ ) LABEL	( $\mu\text{L}$ ) I.S.
5/19/98	0.01	10	50	10
	0.02	20	50	10
	0.05	50	50	10
	0.10	100	50	10
	0.50	500	50	10
	1:00	1000	50	10

Where: NATIVE = NNDMA WORKING STD (1.0  $\mu\text{g}/\text{mL}$   
5/18/98, M.G.)

LABEL = N-NDMA-d<sub>6</sub> (20  $\mu\text{g}/\text{mL}$ , 2/2/98, M.G.)

I.S. = NNDMA INT STD (100  $\mu\text{g}/\text{mL}$ , 5/12/98, M.G.)

DILUTED (OR BLOWN DOWN) TO 1.0 mL W/  $\text{MeCl}_2$   
(EM Sci Lot: 38090)

000078

35)  
34)

8/6/98 8080 Surrogate (0.2  $\mu\text{g}/\text{mL}$ )  
5 mL 8080 Surrogate (2  $\mu\text{g}/\text{mL}$ , 1/3/97)  
in 50 mL of acetone. JLT  
Aceton Lot #: 37/97

1/mL  
1  
5  
5  
5

8/13/98  
N-NDMA LABEL (20  $\mu\text{g}/\text{mL}$ )  
100 mL N-NDMA LABEL (1000 ppm, 5-25-94) in  
50 mL of acetone (Lot #: 37/97) JLT

5  
5

8/13/98 N-NDMA working STD (1.0  $\mu\text{g}/\text{mL}$ )  
10 mL of N-NDMA UNLABEL (1000  $\mu\text{g}/\text{mL}$ , 2-2-98)  
in 10 mL of acetone (Lot #: 37/97) JLT

8/13/98 1625 I.S. (1000  $\mu\text{g}/\text{mL}$ )  
1 mL 1625 I.S. (10,000  $\mu\text{g}/\text{mL}$ , 9-10-97) in 10 mL  
MeCl<sub>2</sub> (Lot #: <sup>37/97</sup>~~37/97~~) JLT

10

08 Sept 98 Stearic Acid <sup>Mallinckrodt</sup>  
1000  $\mu\text{g}/\text{mL}$  0.010g / 10 mL benzene. <sup>lot # 2246 K11C CAP</sup>

000079

1656 indiv stock solutions

10/6/98 ~~Accephate~~ ~~95% pure~~ ~~0.0~~ ~~in 10 ml benzene~~  
 (Riedel-Haën) ~~lot # 8078~~ (EM lot)

name	supplier	lot #	purity	weight (g)	Final Vol (ml)	Final Conc (ug/ml)
1) Accephat	Riedel-Haën	8078	95%	0.0500	10**	5000
2) Perthane	Chem Service	23-31C	99.4%	0.0503	10*	5000
3) 1,2-dibromo-3-chloro propane	Pfaltz & Bauer	DC920	97%	0.0110	10*	1000

\*\* brought up to vol in acetone (Omni Solo lot 37197) <sup>2.8</sup> du 10/7/98  
 \* brought up to vol in benzene (Omni solo lot 35114) du

10/7/98 1625 INT. STD. 10000 ug/ml  
 M.G. 0.2503 g 2,2'-Difluorobiphenyl  
 (PFALTZ & BAUER LOT 042605) DILUTED  
 IN A VOLUMETRIC FLASK W/ BENZENE  
 (EM Sci LOT 35114) UNTIL DISSOLVED PLUS  
 2,2,4-Trimethylpentane (EM Sci LOT 32365)  
 (~ 1:1) TO 25.0 ml

10/7/98 ~~1656 ms spike (10x mid)~~  
~~VOL~~

T'D

10/7/98  
M.G.

JOB N33 HOLDING TIME STUDY CONT'D  
SOL'N (mL) USED

ULTRA SCIENTIFIC 250 Smith St., North Kingstown, RI 02852 401-294-9400 Phenols Mixture US-107N 2200 ug/mL each in Methylene Chloride Lot No. M-1148 Exp. Date 08/1999	1 mL	0.050
ULTRA SCIENTIFIC 250 Smith St., North Kingstown, RI 02852 401-294-9400 CUSTOM PESTICIDE STANDARD CUS-2818 500 ug/mL in METHYLENE CHLORIDE Lot No. M-1148 Exp. Date 08/1999	1 mL	0.200
ULTRA SCIENTIFIC 250 Smith St., North Kingstown, RI 02852 401-294-9400 CUSTOM STANDARD CUS-2815 2200 ug/mL in METHYLENE CHLORIDE Lot No. M-1149 Exp. Date 08/1999	1 mL	0.050
ULTRA SCIENTIFIC 250 Smith St., North Kingstown, RI 02852 401-294-9400 Base/Neutral Extractables Mixture SVM-101A 500 ug/mL each in Methylene Chloride Lot No. M-501A Exp. Date 03/99	1 mL	0.200

END

10/9/98  
da  
8080 Surr. Std. 0.2 ug/ml  
2.5 ml 8080 surrogate (2.0 ug/ml) mc. 1/3/97  
dil. to 25 ml in volumetric w/  
acetone (Omisolv 37197)

10/12/98  
M.G.  
NNDMA INT. STD. @ 100 ug/mL (2,2'-DFB)  
0.100 mL OF 1625 INT. STD. (10/7/98, MG, 10000 ug/mL)  
DILUTED IN A VOLUMETRIC FLASK TO 10.0 mL WITH  
MeCl<sub>2</sub> (EM Sci Lot 38217)

000081



**MONTGOMERY WATSON LABORATORIES**

a Division of Montgomery Watson Americas, Inc.

555 East Walnut Street

Pasadena, California 91101

Te l: 626 568 6400 Fax: 626 568 6324

1 800 566 LABS (1 800 566 5227)

**Laboratory Report**

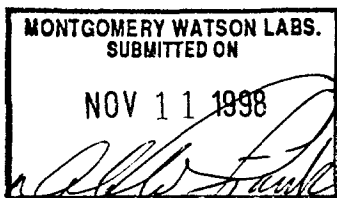
for

Foster Wheeler Environmental, Inc  
611 Anton Boulevard

Suite 800

Costa Mesa , CA 92626

Attention: Mark Cutler  
Fax: (714)444-5560



DEB\* Debbie Frank

Report#: 48614  
JPL





**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)

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Report  
Comments  
#48614

(981026103)

**CUSTOMMS**

Analytical results for CUSTOMMS N-NDMA were submitted by  
Pacific Analytical, Inc.



**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  
 #48614

Foster Wheeler Environmental, Inc  
 Mark Cutler  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa , CA 92626

Samples Received  
 26-oct-1998 17:15:09

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-075 (981026103)</b>				<b>Sampled on 10/26/98</b>				
	11/03/98		( )	Custom GCMS Analysis	see attchd	None	0.0000	1
				<b>1,4-Dioxane</b>				
11/02/98	11/05/98	86944	( ML/SW 8270 )	1,4-Dioxane	ND	ug/l	3.0	1
			( Surrogate )	2-Flurobiphenyl	65	µ Rec		
			( Surrogate )	Nitrobenzene-d5	59	µ Rec		
			( Surrogate )	Terphenyl-d14	50	µ Rec		



**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  
1 800 568 LABS (1 800 566 5227)

Laboratory  
QC Report  
#48614

Foster Wheeler Environmental, Inc

**QC Batch #86944**

**1,4-Dioxane**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	1,4-Dioxane	10	8.16	81.6	( 70.00 - 130.00 )	
MBLK	1,4-Dioxane	ND				
MS	1,4-Dioxane	10	8.00	80.0	( 70.00 - 130.00 )	
MSD	1,4-Dioxane	20	17.4	87.0	( 70.00 - 130.00 )	
MS	Spiked sample	Lab # 98	1028244		( 0.00 - 0.00 )	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
Criteria for MS and DUP are advisory only and not applicable for ICR monitoring.



**MONTGOMERY WATSON LABORATORIES**

December 4, 1998

Foster Wheeler Environmental  
611 Anton Blvd Suite 800  
Costa Mesa, CA.92626

Attention: Mark Cutler

Re: Report # 48664 (MW-984-086, -087, -042, -008, -009, -021,  
-020)

Dear Mark,

Enclosed please find data deliverables for the recent JPL project. A detailed quality control (QC) summary follows:

**Non-conformance (LCS, MS/MSD, Surrogates, and Holding Times):**

None

**Samples requiring dilution (with increased MRL's):**

Diluted for Anions: MW-984-008

**Method blanks with compounds detected:**

None

**Other Comments:**

The ion balance exceeds QC criteria for sample ID: MW-984-008

1,1-Dichloroethane was detected in sample ID: MW-984-009

Dichloromethane was detected in sample ID: MW-984-087

Carbon Tetrachloride was detected in sample ID: MW-984-008, -009,  
-021, -020

Chloroform was detected in sample ID: MW-984-042, -008, -009, -021

Tetrachloroethylene was detected in sample ID: MW-984-008, -009

Trichloroethylene was detected in sample ID: MW-984-042, -008, -  
009

Chromium was detected in sample ID: MW-984-008

Perchlorate was detected in sample ID: MW-984-042, -008, -009

**TICS:**

None

**Method Variance:**

None

Sincerely,

Debbie Frank  
Project Manager

cc: Judy Novelly (JPL)

a Division of Montgomery Watson Americas, Inc.

555 East Walnut Street  
Pasadena, California 91101  
Tel: 626 568 6400  
Fax: 626 568 6324

4820 South Mill Avenue  
Suite 202  
Tempe, Arizona 85282  
Tel: 602 755 8201  
Fax: 602 755 8203

*Quality Environmental Analysis*

**Montgomery Watson Laboratories**  
 , Los Angeles, CA 90051-3508  
 PHONE: 626-568-6400/FAX: 626-568-6324

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Foster Wheeler Environmental, Inc  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa, CA 92626  
 Attn: Mark Cutler

Customer Code: ENSERCH  
 PO#: Sub PO#007618-0004  
 Group#: 48664  
 Project#: JPL  
 Proj Mgr: Debbie Frank  
 Phone: (714) 444-5526

The following samples were received from you on 10/27/98. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Montgomery Watson Laboratories.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
981027209	MW-984-086	@EBASVOA	Water	10/27/98
981027210	MW-984-087	@EBASVOA AS-EBAS CR-EBAS PB-EBAS CR-VI CLO4	Water	10/27/98
981027211	MW-984-042	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/27/98
981027212	MW-984-008	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/27/98
981027213	MW-984-009	@EBASVOA AS-EBAS CR-EBAS PB-EBAS CR-VI CLO4	Water	10/27/98
981027214	MW-984-021	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/27/98
981027215	MW-984-020	@EBASVOA CR-VI PB-EBAS CR-EBAS AS-EBAS TDS CATION1 ANION1 PH EC HCO3 CO3 ALK NO3 SO4 CL FE-MS K NA MG CA CLO4	Water	10/27/98

Test Acronym Description

Test Acronym	Description
--------------	-------------

Foster Wheeler Environmental, Inc  
611 Anton Boulevard  
Suite 800  
Costa Mesa, CA 92626  
Attn: Mark Cutler

Customer Code: ENSERCH  
PO#: Sub PO#007618-0004  
Group#: 48664  
Project#: JPL  
Proj Mgr: Debbie Frank  
Phone: (714) 444-5526

Test Acronym Description

Test Acronym	Description
@EBASVOA	Regulated VOCs plus Lists 1&3
ALK	Alkalinity
ANION1	Anion Sum
AS-EBAS	Arsenic, Total, GF
CA	Calcium, Total, ICAP
CATION1	Cation Sum
CL	Chloride
CLO4	Perchlorate
CO3	Carbonate as CO3, Calculated
CR-EBAS	Chromium, Total, ICAP/MS
CR-VI	Hexavalent chromium (Cr VI)
EC	Specific Conductance
FE-MS	Iron, Total, ICAP/MS
HCO3	Bicarbonate as HCO3,calculated
K	Potassium, Total, ICAP
MG	Magnesium, Total, ICAP
NA	Sodium, Total, ICAP
NO3	Nitrate-N by IC
PB-EBAS	Lead, Total, ICAP/MS
PH	Lab pH
SO4	Sulfate
TDS	Total Dissolved Solid (TDS)



4864

FOSTER WHEELER ENVIRONMENTAL CORPORATION

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PROJECT <b>JPL</b>		OFS NO. <b>1572.0260</b>		HAZARD IDENTIFICATION Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Toxic <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Infectious <input type="checkbox"/>			TIME REQUIRED NORMAL <input checked="" type="checkbox"/> DAYS RUSH <input type="checkbox"/> DAYS									
PROJECT ADDRESS <b>4500 ORANGE GROVE DR PASADENA CA</b>				SAMPLER (Name) <b>J. BIZONNE</b>					SAMPLER (Signature) <i>[Signature]</i>							
LABORATORY <b>MONTGOMERY WATSON LABS</b>				ANALYSES REQUIRED												
REPORTS TO BE SENT TO <b>MIZ. COTRAC</b>				VOCs (5242)	TOTAL AS C. PD (6210/7300)	MASS TDS ANALYSIS	HEX C	PERMUTANT	MS. MS2 VOCs	MS. MS2 VOCs	MS/MS-152 METALS	OC				
SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	SAMPLE MATERIAL			VOCs (5242)	TOTAL AS C. PD (6210/7300)	MASS TDS ANALYSIS	HEX C	PERMUTANT	MS. MS2 VOCs	MS. MS2 VOCs	MS/MS-152 METALS	OC
					WATER	SOIL	OTHER (Describe)									
MW 934-086	0530	10/27/90	2	2x40ml	X			X								
MW 934-087	0915	↓	5	2x40ml 1x25ml 2x125ml	X			X	X		X	X				
MW 934-042	0925	10/27/90	6	2x40ml 1x25ml 2x125ml 1x50ml	X			X	X	X	X	X				
MW 934-080	1145	↓	6	↓	X			X	X	X	X	X			X	
MW 934-009	1200	↓	5	2x40ml 1x25ml 2x125ml	X			X	X		X	X				
MW 934-021	1400	↓	6	2x40ml 2x50ml 2x125ml	X			X	X	X	X	X		X		
MW 934-020	1500	↓	6	2x40ml 1x25ml 2x125ml 1x50ml	X			X	X		X	X		X		
MW 934-015	1:10	↓	2	2x40ml	X								X			
MW 934-014	1:14	↓	2	2x40ml	X									X		
LABORATORY INSTRUCTIONS/COMMENTS <b>LEVEL IV CWA/OC</b>																
RELINQUISHED BY (Signature)			DATE	RECEIVED BY (Signature)			DATE	RELINQUISHED BY (Signature)			DATE	RECEIVED BY (Signature)				
COMPANY			TIME	COMPANY			TIME	COMPANY			TIME	COMPANY				

MONTGOMERY LABORATORIES COOLER RECEIPT FORM

PROJECT: ENSEPCH Date Received: 10-27-98  
Use other side of this form to note further details concerning check-in problems and to describe any action(s) regarding the resolution(s) of problems.

A. PRELIMINARY EXAMINATION: Date cooler opened: 10-27-98  
by (print) Mike Conway (sign) [Signature]

1. Did cooler come with shipping slip (air bill, etc.)? Yes  No   
If YES, attach & enter carrier and air bill # here: \_\_\_\_\_

2. Were custody seals on outside of cooler? Yes  No   
If YES, how many & where: 2 cut-side cooler  
If Yes, enter the following: seal date: 10-27-98 seal name: BP

3. Were custody seals unbroken & intact at delivery? Yes  No

4. Were custody papers sealed in bag & taped to lid? Yes  No

5. Were custody papers filled out properly (ink, etc.)? Yes  No

6. Did you sign custody papers in appropriate place? Yes  No

7. Was project identifiable from custody papers? Yes  No

8. Have designated person(s) initial to acknowledge receipt: \_\_\_\_\_ (date) \_\_\_\_\_

B. LOG-IN PHASE: Date samples were logged-in: \_\_\_\_\_ by: \_\_\_\_\_  
(print) \_\_\_\_\_ (sign) \_\_\_\_\_

9. Describe packing: \_\_\_\_\_

10. If required, was enough ice used? Yes  No

11. Were all bottles sealed in separate plastic bags? Yes  No

12. Did all bottles arrive unbroken/in good condition? Yes  No

13. Were all bottle labels complete (ID, date, sign, pres)? Yes  No

14. Did all bottle labels agree with custody papers?  
If NO, indicate discrepancies on back. Yes  No

15. Were correct containers used for the analytes? Yes  No

16. Were correct preservatives used when required? Yes  No

17. Was sufficient amount of sample sent for tests? Yes  No

18. Bubbles absent in VOA vials?  
If NO, list by sample id on back. Yes  No

19. Was Client Services informed of problems? Yes  No



Report Summary of positive results, PR48664

			Result	MDL	UNITS
Analyzed	981027209	MW-984-086			
Analyzed	981027210	MW-984-087			
10/28/98	Dichloromethane		5.1	.500	UGL
Analyzed	981027211	MW-984-042			
10/28/98	Chloroform (Trichloromethane)		4.1	.500	UGL
10/28/98	Trichloroethylene (TCE)		1.9	.500	UGL
10/28/98	Alkalinity		157	2.000	MGL
11/03/98	Anion Sum		4.24	.001	MEQL
11/03/98	Bicarbonate as HCO3,calculated		191	.001	MGL
11/02/98	Calcium, Total, ICAP		40.9	1.000	MGL
11/03/98	Carbonate as CO3, Calculated		0.622	.001	MGL
11/09/98	Cation Sum		4.18	.001	MEQL
10/29/98	Chloride		11.2	1.000	MGL
11/02/98	Iron, Total, ICAP/MS		510	*****	UGL
10/28/98	Lab pH		7.7	.001	UNIT
11/02/98	Magnesium, Total, ICAP		15.9	.100	MGL
10/29/98	Nitrate-N by IC		1.17	.100	MGL
11/05/98	Perchlorate		5.08	4.000	UGL
11/02/98	Potassium, Total, ICAP		1.76	1.000	MGL
11/02/98	Sodium, Total, ICAP		18.0	1.000	MGL
10/28/98	Specific Conductance		450	4.000	UMHO
10/29/98	Sulfate		33.8	2.000	MGL
11/02/98	Total Dissolved Solid (TDS)		270	10.000	MGL
Analyzed	981027212	MW-984-008			
10/28/98	Carbon Tetrachloride		0.9	.500	UGL
10/28/98	Chloroform (Trichloromethane)		1.6	.500	UGL
10/28/98	Tetrachloroethylene (PCE)		0.7	.500	UGL
10/28/98	Trichloroethylene (TCE)		2.4	.500	UGL
10/28/98	Alkalinity		164	2.000	MGL
11/03/98	Anion Sum		7.89	.001	MEQL
11/03/98	Bicarbonate as HCO3,calculated		200	.001	MGL
11/02/98	Calcium, Total, ICAP		77.4	1.000	MGL
11/03/98	Carbonate as CO3, Calculated		0.206	.001	MGL
11/25/98	Cation Sum		7.37	.001	MEQL
10/29/98	Chloride		75.4	2.000	MGL
11/02/98	Chromium, Total, ICAP/MS		10	10.000	UGL
11/02/98	Iron, Total, ICAP/MS		590	*****	UGL
10/28/98	Lab pH		7.2	.001	UNIT
11/02/98	Magnesium, Total, ICAP		27.3	.100	MGL
10/29/98	Nitrate-N by IC		8.23	.200	MGL
11/05/98	Perchlorate		25.2	4.000	UGL
11/02/98	Potassium, Total, ICAP		2.31	1.000	MGL
11/02/98	Sodium, Total, ICAP		27.5	1.000	MGL
10/28/98	Specific Conductance		795	4.000	UMHO
10/29/98	Sulfate		91.2	4.000	MGL
11/02/98	Total Dissolved Solid (TDS)		470	10.000	MGL
Analyzed	981027213	MW-984-009			

10/28/98	1,1-Dichloroethane	0.6	.500	UGL
10/28/98	Carbon Tetrachloride	1.2	.500	UGL
10/28/98	Chloroform (Trichloromethane)	2.0	.500	UGL
10/28/98	Tetrachloroethylene (PCE)	0.8	.500	UGL
10/28/98	Trichloroethylene (TCE)	3.1	.500	UGL
11/05/98	Perchlorate	25.0	4.000	UGL

Analyzed 981027214 MW-984-021

10/28/98	Carbon Tetrachloride	0.6	.500	UGL
10/28/98	Chloroform (Trichloromethane)	0.7	.500	UGL
10/28/98	Alkalinity	171	2.000	MGL
11/03/98	Anion Sum	4.71	.001	MEQL
11/03/98	Bicarbonate as HCO3,calculated	208	.001	MGL
11/02/98	Calcium, Total, ICAP	43.3	1.000	MGL
11/03/98	Carbonate as CO3, Calculated	1.35	.001	MGL
11/09/98	Cation Sum	4.54	.001	MEQL
10/29/98	Chloride	16.1	1.000	MGL
11/02/98	Iron, Total, ICAP/MS	180	*****	UGL
10/28/98	Lab pH	8.0	.001	UNIT
11/02/98	Magnesium, Total, ICAP	16.7	.100	MGL
10/29/98	Nitrate-N by IC	0.41	.100	MGL
11/02/98	Potassium, Total, ICAP	2.72	1.000	MGL
11/02/98	Sodium, Total, ICAP	21.4	1.000	MGL
10/28/98	Specific Conductance	470	4.000	UMHO
10/29/98	Sulfate	38.6	2.000	MGL
11/02/98	Total Dissolved Solid (TDS)	280	10.000	MGL

Analyzed 981027215 MW-984-020

10/28/98	Carbon Tetrachloride	1.4	.500	UGL
10/28/98	Alkalinity	210	2.000	MGL
11/03/98	Anion Sum	5.77	.001	MEQL
11/03/98	Bicarbonate as HCO3,calculated	256	.001	MGL
11/02/98	Calcium, Total, ICAP	56.1	1.000	MGL
11/03/98	Carbonate as CO3, Calculated	0.834	.001	MGL
11/09/98	Cation Sum	5.65	.001	MEQL
10/29/98	Chloride	17.3	1.000	MGL
10/28/98	Lab pH	7.7	.001	UNIT
11/02/98	Magnesium, Total, ICAP	20.5	.100	MGL
10/29/98	Nitrate-N by IC	0.92	.100	MGL
11/02/98	Potassium, Total, ICAP	3.06	1.000	MGL
11/02/98	Sodium, Total, ICAP	24.8	1.000	MGL
10/28/98	Specific Conductance	580	4.000	UMHO
10/29/98	Sulfate	49.0	2.000	MGL
11/02/98	Total Dissolved Solid (TDS)	320	10.000	MGL



**MONTGOMERY WATSON LABORATORIES**

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1 800 566 LABS (1 800 566 5227)

**Laboratory Report**

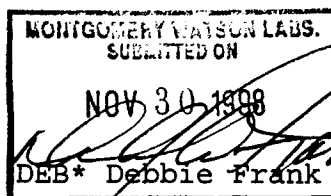
for

Foster Wheeler Environmental, Inc  
611 Anton Boulevard

Suite 800

Costa Mesa , CA 92626

Attention: Mark Cutler  
Fax: (714) 444-5560



Report#: 48664  
JPL

**MONTGOMERY WATSON LABORATORIES**

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 555 East Walnut Street  
 Pasadena, California 91101  
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Laboratory  
 Report  
 #48664

Foster Wheeler Environmental, Inc  
 Mark Cutler  
 611 Anton Boulevard  
 Suite 800  
 Costa Mesa , CA 92626

Samples Received  
 27-oct-1998 17:13:57

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-086 (981027209)</b>				<b>Sampled on 10/27/98</b>				
<b>Regulated VOCs plus Lists 1&amp;3</b>								
10/28/98	86622	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1	
10/28/98	86622	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1	
10/28/98	86622	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1	

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**Laboratory  
 Report  
 #48664**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86622	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloromethane(Methyl Chloride)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichlorotrifluoroethane(Freon	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate	) 1,2-Dichloroethane-d4	95	† Rec		
			( Surrogate	) 4-Bromofluorobenzene	101	† Rec		
			( Surrogate	) Toluene-d8	96	† Rec		



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**Laboratory  
 Report  
 #48664**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-087 (981027210)</b>				<b>Sampled on 10/27/98</b>				
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
	11/05/98	86832	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/27/98	86405	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1



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**Laboratory  
 Report  
 #48664**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
10/28/98	86622	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Dichloromethane	5.1	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1	
10/28/98	86622	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1	
		( EPA 524.2 )	None Detected	ND			1	
		( Surrogate )	1,2-Dichloroethane-d4	102	† Rec			
		( Surrogate )	4-Bromofluorobenzene	99	† Rec			

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Laboratory  
 Report  
 #48664

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
			( Surrogate )	Toluene-d8	96	† Rec		
<b>MW-984-042 (981027211)</b>				<b>Sampled on 10/27/98</b>				
	10/28/98	86630	( ML/S2320B )	Alkalinity	157	mg/l	2.0	1
	11/03/98		( ML/SM1040 )	Anion Sum	4.24	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	40.9	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	4.18	meq/l	0.0010	1
	10/29/98	86670	( ML/EPA 300 )	Chloride	11.2	mg/l	1.0	1
	11/05/98	86832	( MOD/EPA 300 )	Perchlorate	5.08	ug/l	4.0	1
	11/03/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.622	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/27/98	86405	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/28/98	86490	( ML/S2510B )	Specific Conductance	450	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	510	ug/l	100	1
	11/03/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	191	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	1.76	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	15.9	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	18.0	mg/l	1.0	1
	10/29/98	86672	( ML/EPA 300.0 )	Nitrate-N by IC	1.17	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/28/98	86463	( ML/SM 4500H )	Lab pH	7.7	Units	0.0010	1
	10/29/98	86674	( ML/EPA 300.0 )	Sulfate	33.8	mg/l	2.0	1
	11/02/98	86732	( ML/S2540C )	Total Dissolved Solid (TDS)	270	mg/l	10	1
				<b>Regulated VOCs plus Lists 1&amp;3</b>				
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1



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Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Carbon Tetrachloride	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	4.1	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1

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Laboratory  
 Report  
 #48664

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86622	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichloroethylene (TCB)	1.9	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	101	µ Rec		
			( Surrogate )	4-Bromofluorobenzene	104	µ Rec		
			( Surrogate )	Toluene-d8	96	µ Rec		

**MW-984-008 (981027212)      Sampled on 10/27/98**

	10/28/98	86630	( ML/S2320B )	Alkalinity	164	mg/l	2.0	1
	11/03/98		( ML/SM1040 )	Anion Sum	7.89	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	77.4	mg/l	1.0	1
	11/25/98		( ML/SM1040 )	Cation Sum	7.37	meq/l	0.0010	1
	10/29/98	86670	( ML/EPA 300 )	Chloride	75.4	mg/l	2.0	2
	11/05/98	86832	( MOD/EPA 300 )	Perchlorate	25.2	ug/l	4.0	1
	11/03/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.206	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	10	ug/l	10	1
	10/27/98	86405	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/28/98	86490	( ML/S2510B )	Specific Conductance	795	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	590	ug/l	100	1
	11/03/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	200	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	2.31	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	27.3	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	27.5	mg/l	1.0	1

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Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/29/98	86672	( ML/EPA 300.0 )	Nitrate-N by IC	8.23	mg/l	0.20	2
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/28/98	86463	( ML/SM 4500H )	Lab pH	7.2	Units	0.0010	1
	10/29/98	86674	( ML/EPA 300.0 )	Sulfate	91.2	mg/l	4.0	2
	11/02/98	86732	( ML/S2540C )	Total Dissolved Solid (TDS)	470	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Carbon Tetrachloride	0.9	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1

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Laboratory  
 Report  
 #48664

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86622	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	1.6	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	0.7	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichloroethylene (TCE)	2.4	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	93	† Rec		
			( Surrogate )	4-Bromofluorobenzene	100	† Rec		
			( Surrogate )	Toluene-d8	100	† Rec		

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Laboratory  
 Report  
 #48664

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
<b>MW-984-009 (981027213)</b>				<b>Sampled on 10/27/98</b>				
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
	11/05/98	86832	( MOD/EPA 300 )	Perchlorate	25.0	ug/l	4.0	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/27/98	86405	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethane	0.6	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Carbon Tetrachloride	1.2	ug/l	0.50	1



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**Laboratory  
 Report  
 #48664**

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	2.0	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	0.8	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichloroethylene (TCE)	3.1	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	102	† Rec		
			( Surrogate )	4-Bromofluorobenzene	107	† Rec		

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Laboratory  
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 #48664

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
			( Surrogate )	Toluene-d8	100	µ Rec		
<b>MW-984-021 (981027214)</b>			<b>Sampled on 10/27/98</b>					
	10/28/98	86630	( ML/S2320B )	Alkalinity	171	mg/l	2.0	1
	11/03/98		( ML/SM1040 )	Anion Sum	4.71	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	43.3	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	4.54	meq/l	0.0010	1
	10/29/98	86670	( ML/EPA 300 )	Chloride	16.1	mg/l	1.0	1
	11/05/98	86832	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	11/03/98		( ML/S2320-B )	Carbonate as CO3, Calculated	1.35	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/27/98	86405	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/28/98	86490	( ML/S2510B )	Specific Conductance	470	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	180	ug/l	100	1
	11/03/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	208	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	2.72	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	16.7	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	21.4	mg/l	1.0	1
	10/29/98	86672	( ML/EPA 300.0 )	Nitrate-N by IC	0.41	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/28/98	86463	( ML/SM 4500H )	Lab pH	8.0	Units	0.0010	1
	10/29/98	86674	( ML/EPA 300.0 )	Sulfate	38.6	mg/l	2.0	1
	11/02/98	86732	( ML/S2540C )	Total Dissolved Solid (TDS)	280	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Carbon Tetrachloride	0.6	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	0.7	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1



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Laboratory  
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 #48664

Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86622	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	96	µ Rec		
			( Surrogate )	4-Bromofluorobenzene	107	µ Rec		
			( Surrogate )	Toluene-d8	100	µ Rec		

MW-984-020 (981027215)      Sampled on 10/27/98

	10/28/98	86630	( ML/S2320B )	Alkalinity	210	mg/l	2.0	1
	11/03/98		( ML/SM1040 )	Anion Sum	5.77	meq/l	0.0010	1
10/29/98	11/04/98	86781	( S3113B/E200.9 )	Arsenic, Total, GF	ND	mg/l	0.005	1
11/02/98	11/02/98	86692	( EPA/ML 200.7 )	Calcium, Total, ICAP	56.1	mg/l	1.0	1
	11/09/98		( ML/SM1040 )	Cation Sum	5.65	meq/l	0.0010	1
	10/29/98	86670	( ML/EPA 300 )	Chloride	17.3	mg/l	1.0	1
	11/05/98	86832	( MOD/EPA 300 )	Perchlorate	ND	ug/l	4.0	1
	11/03/98		( ML/S2320-B )	Carbonate as CO3, Calculated	0.834	mg/l	0.0010	1
10/29/98	11/02/98	86685	( EPA/ML 200.8 )	Chromium, Total, ICAP/MS	ND	ug/l	10	1
	10/27/98	86405	( ML/SW 7196 )	Hexavalent chromium (Cr VI)	ND	mg/l	0.005	1
	10/28/98	86490	( ML/S2510B )	Specific Conductance	580	umho/cm	4.0	1
10/29/98	11/02/98	86687	( EPA/ML 200.8 )	Iron, Total, ICAP/MS	ND	ug/l	100	1
	11/03/98		( ML/S2330B )	Bicarbonate as HCO3,calculated	256	mg/l	0.0010	1
11/02/98	11/02/98	86694	( ML/EPA 200.7 )	Potassium, Total, ICAP	3.06	mg/l	1.0	1
11/02/98	11/02/98	86696	( ML/EPA 200.7 )	Magnesium, Total, ICAP	20.5	mg/l	0.10	1
11/02/98	11/02/98	86698	( ML/EPA 200.7 )	Sodium, Total, ICAP	24.8	mg/l	1.0	1

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Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/29/98	86672	( ML/EPA 300.0 )	Nitrate-N by IC	0.92	mg/l	0.10	1
10/29/98	11/02/98	86686	( EPA/ML 200.8 )	Lead, Total, ICAP/MS	ND	ug/l	2.0	1
	10/28/98	86463	( ML/SM 4500H )	Lab pH	7.7	Units	0.0010	1
	10/29/98	86674	( ML/EPA 300.0 )	Sulfate	49.0	mg/l	2.0	1
	11/02/98	86732	( ML/S2540C )	Total Dissolved Solid (TDS)	320	mg/l	10	1
<b>Regulated VOCs plus Lists 1&amp;3</b>								
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,1-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2,2-Tetrachloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1,2-Trichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,1-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,3-Trichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trichlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2,4-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3,5-Trimethylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	1,3-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Dichlorobenzene (1,4-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2,2-Dichloropropane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	2-Butanone (MEK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Chlorotoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	4-Methyl-2-Pentanone (MIBK)	ND	ug/l	5.0	1
	10/28/98	86622	( ML/EPA 524.2 )	Benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromomethane (Methyl Bromide)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorobenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Carbon Tetrachloride	1.4	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	cis-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromoform	ND	ug/l	0.50	1

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Foster Wheeler Environmental, Inc  
 (continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilution
	10/28/98	86622	( ML/EPA 524.2 )	Chloroform (Trichloromethane)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromochloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloroethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chloromethane (Methyl Chloride)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Chlorodibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dibromomethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Bromodichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichloromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Ethyl benzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Dichlorodifluoromethane	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Fluorotrichloromethane-Freon11	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Hexachlorobutadiene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Isopropylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m-Dichlorobenzene (1,3-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	m,p-Xylenes	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Naphthalene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	n-Propylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Xylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	o-Dichlorobenzene (1,2-DCB)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Tetrachloroethylene (PCE)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	p-Isopropyltoluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	sec-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Styrene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,2-Dichloroethylene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	tert-Butylbenzene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichloroethylene (TCE)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Trichlorotrifluoroethane (Freon)	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	trans-1,3-Dichloropropene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Toluene	ND	ug/l	0.50	1
	10/28/98	86622	( ML/EPA 524.2 )	Vinyl chloride (VC)	ND	ug/l	0.30	1
			( EPA 524.2 )	None Detected	ND			1
			( Surrogate )	1,2-Dichloroethane-d4	88	† Rec		
			( Surrogate )	4-Bromofluorobenzene	106	† Rec		
			( Surrogate )	Toluene-d8	97	† Rec		



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**Group Comments**

(Balance)The anion and cation sum percent difference exceeds the limit. Sample was re-analyzed for low bias cation and got about the same result. Matrix effect is suspected for sample MW-984-008.

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Laboratory  
 QC Report  
 #48664

Foster Wheeler Environmental, Inc

**QC Batch #86405****Hexavalent chromium (Cr VI)**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1027212		( 0.00 - 0.00 )	
LCS1	Hexavalent chromium (Cr VI)	0.050	0.0504	100.8	( 78.00 - 118.00 )	
LCS2	Hexavalent chromium (Cr VI)	0.050	0.0504	100.8	( 78.00 - 118.00 )	0.00
MBLK	Hexavalent chromium (Cr VI)	ND				
MS	Hexavalent chromium (Cr VI)	0.050	0.0510	102.0	( 80.00 - 120.00 )	
MSD	Hexavalent chromium (Cr VI)	0.050	0.0504	100.8	( 80.00 - 120.00 )	1.2

**QC Batch #86463****Lab pH**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	lab # 98	1027215		( 0.00 - 0.00 )	

**QC Batch #86490****Specific Conductance**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	Lab # 98	1027215		( 0.00 - 0.00 )	

**QC Batch #86622****Regulated VOCs plus Lists 1&3**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MBLK	1,1,1,2-Tetrachloroethane	ND				
LCS1	1,1,1-Trichloroethane	8	8.17	102.1	( 70.00 - 130.00 )	
MBLK	1,1,1-Trichloroethane	ND				
LCS1	1,1,2,2-Tetrachloroethane	8	8.93	111.6	( 70.00 - 130.00 )	
MBLK	1,1,2,2-Tetrachloroethane	ND				
LCS1	1,1,2-Trichloroethane	8	8.37	104.6	( 70.00 - 130.00 )	
MBLK	1,1,2-Trichloroethane	ND				
LCS1	1,1-Dichloroethane	8	8.11	101.4	( 70.00 - 130.00 )	
MBLK	1,1-Dichloroethane	ND				
LCS1	1,1-Dichloroethylene	8	7.41	92.6	( 70.00 - 130.00 )	
MBLK	1,1-Dichloroethylene	ND				
MS	1,1-Dichloroethylene	8	7.48	93.5	( 70.00 - 130.00 )	
MSD	1,1-Dichloroethylene	8	7.44	93.0	( 70.00 - 130.00 )	0.54

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.  
 Criteria for MS and DUP are advisory only and not applicable for ICR monitoring.



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MBLK	1,1-Dichloropropene	ND				
MBLK	1,2,3-Trichlorobenzene	ND				
MBLK	1,2,3-Trichloropropane	ND				
LCS1	1,2,4-Trichlorobenzene	8	8.56	107.0	( 70.00 - 130.00 )	
MBLK	1,2,4-Trichlorobenzene	ND				
MBLK	1,2,4-Trimethylbenzene	ND				
LCS1	1,2-Dichloroethane	8	8.45	105.6	( 70.00 - 130.00 )	
MBLK	1,2-Dichloroethane	ND				
LCS1	1,2-Dichloropropane	8	8.37	104.6	( 70.00 - 130.00 )	
MBLK	1,2-Dichloropropane	ND				
MBLK	1,3,5-Trimethylbenzene	ND				
LCS1	1,3-Dichloropropane	8	8.33	104.1	( 70.00 - 130.00 )	
MBLK	1,3-Dichloropropane	ND				
LCS1	p-Dichlorobenzene (1,4-DCB)	8	9.26	115.8	( 70.00 - 130.00 )	
MBLK	p-Dichlorobenzene (1,4-DCB)	ND				
MBLK	2,2-Dichloropropane	ND				
MBLK	2-Butanone (MEK)	ND				
MBLK	2-Chloroethylvinylether	ND				
MBLK	o-Chlorotoluene	ND				
MBLK	p-Chlorotoluene	ND				
MBLK	4-Methyl-2-Pentanone (MIBK)	ND				
MS	Spiked sample	Lab # 98	1027214		( 0.00 - 0.00 )	
LCS1	Benzene	8	8.50	106.2	( 70.00 - 130.00 )	
MBLK	Benzene	ND				
MS	Benzene	8	8.96	112.0	( 70.00 - 130.00 )	
MSD	Benzene	8	8.54	106.7	( 70.00 - 130.00 )	4.8
MBLK	Bromobenzene	ND				
MBLK	Bromomethane (Methyl Bromide)	ND				
LCS1	cis-1,2-Dichloroethylene	8	8.46	105.8	( 70.00 - 130.00 )	
MBLK	cis-1,2-Dichloroethylene	ND				
LCS1	Chlorobenzene	8	8.42	105.2	( 70.00 - 130.00 )	
MBLK	Chlorobenzene	ND				
MS	Chlorobenzene	8	8.68	108.5	( 70.00 - 130.00 )	
MSD	Chlorobenzene	8	8.61	107.6	( 70.00 - 130.00 )	0.81
LCS1	Carbon Tetrachloride	8	7.77	97.1	( 70.00 - 130.00 )	
MBLK	Carbon Tetrachloride	ND				
MBLK	cis-1,3-Dichloropropene	ND				

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LCS1	Bromoform	8	7.50	93.8	( 70.00 - 130.00 )
MBLK	Bromoform	ND			
LCS1	Chloroform (Trichloromethane)	8	8.47	105.9	( 70.00 - 130.00 )
MBLK	Chloroform (Trichloromethane)	ND			
MBLK	Bromochloromethane	ND			
MBLK	Chloroethane	ND			
MBLK	Chloromethane (Methyl Chloride)	ND			
LCS1	Chlorodibromomethane	8	7.62	95.2	( 70.00 - 130.00 )
MBLK	Chlorodibromomethane	ND			
MBLK	Dibromomethane	ND			
LCS1	Bromodichloromethane	8	8.21	102.6	( 70.00 - 130.00 )
MBLK	Bromodichloromethane	ND			
LCS1	Dichloromethane	8	7.60	95.0	( 70.00 - 130.00 )
MBLK	Dichloromethane	ND			
LCS1	Ethyl benzene	8	8.52	106.5	( 70.00 - 130.00 )
MBLK	Ethyl benzene	ND			
MBLK	Dichlorodifluoromethane	ND			
LCS1	Fluorotrichloromethane-Preon11	4	4.54	113.5	( 70.00 - 130.00 )
MBLK	Fluorotrichloromethane-Preon11	ND			
MBLK	Hexachlorobutadiene	ND			
MBLK	Isopropylbenzene	ND			
MBLK	m-Dichlorobenzene (1,3-DCB)	ND			
LCS1	m,p-Xylenes	16	17.2	107.5	( 70.00 - 130.00 )
MBLK	m,p-Xylenes	ND			
MBLK	Naphthalene	ND			
MBLK	n-Butylbenzene	ND			
MBLK	n-Propylbenzene	ND			
LCS1	o-Xylene	8	8.64	108.0	( 70.00 - 130.00 )
MBLK	o-Xylene	ND			
LCS1	o-Dichlorobenzene (1,2-DCB)	8	8.51	106.4	( 70.00 - 130.00 )
MBLK	o-Dichlorobenzene (1,2-DCB)	ND			
LCS1	Tetrachloroethylene (PCE)	8	8.15	101.9	( 70.00 - 130.00 )
MBLK	Tetrachloroethylene (PCE)	ND			
MBLK	p-Isopropyltoluene	ND			
MBLK	sec-Butylbenzene	ND			
LCS1	Styrene	8	8.40	105.0	( 70.00 - 130.00 )
MBLK	Styrene	ND			

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LCS1	1,2-dichloroethane-d4	100	90	90.0	( 80.00 - 120.00 )	
MBLK	1,2-dichloroethane-d4	100	87.8	87.8		
MS	1,2-dichloroethane-d4	100	94.0	94.0	( 80.00 - 120.00 )	
MSD	1,2-dichloroethane-d4	100	97.0	97.0	( 80.00 - 120.00 )	3.1
LCS1	Toluene-d8	100	95	95.0	( 80.00 - 120.00 )	
MBLK	Toluene-d8	100	98.2	98.2		
MS	Toluene-d8	100	98.2	98.2	( 80.00 - 120.00 )	
MSD	Toluene-d8	100	98.0	98.0	( 80.00 - 120.00 )	0.20
LCS1	4-Bromofluorobenzene	100	104	104.0	( 80.00 - 120.00 )	
MBLK	4-Bromofluorobenzene	100	106	106.0		
MS	4-Bromofluorobenzene	100	102	102.0	( 80.00 - 120.00 )	
MSD	4-Bromofluorobenzene	100	101	101.0	( 80.00 - 120.00 )	0.99
LCS1	trans-1,2-Dichloroethylene	8	7.63	95.4	( 70.00 - 130.00 )	
MBLK	trans-1,2-Dichloroethylene	ND				
MBLK	tert-Butylbenzene	ND				
LCS1	Trichloroethylene (TCE)	8	8.11	101.4	( 70.00 - 130.00 )	
MBLK	Trichloroethylene (TCE)	ND				
MS	Trichloroethylene (TCE)	8	8.53	106.6	( 70.00 - 130.00 )	
MSD	Trichloroethylene (TCE)	8	8.38	104.8	( 70.00 - 130.00 )	1.8
LCS1	Trichlorotrifluoroethane (Freon)	4	4.05	101.2	( 70.00 - 130.00 )	
MBLK	Trichlorotrifluoroethane (Freon)	ND				
MBLK	trans-1,3-Dichloropropene	ND				
LCS1	Toluene	8	8.06	100.8	( 70.00 - 130.00 )	
MBLK	Toluene	ND				
MS	Toluene	8	8.40	105.0	( 70.00 - 130.00 )	
MSD	Toluene	8	8.48	106.0	( 70.00 - 130.00 )	0.95
LCS1	Vinyl chloride (VC)	4	4.76	119.0	( 70.00 - 130.00 )	
MBLK	Vinyl chloride (VC)	ND				

QC Batch #86630

Alkalinity

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1026102		( 0.00 - 0.00 )	
LCS1	Alkalinity	96.2	98.5	102.1	( 90.00 - 110.00 )	
LCS2	Alkalinity	96.2	97.8	102.0	( 90.00 - 110.00 )	0.71
MBLK	Alkalinity	ND				

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MS	Alkalinity	96.2	94.0	97.7	( 80.00 - 120.00 )	
MSD	Alkalinity	96.2	94.0	98.0	( 80.00 - 120.00 )	0.00

**QC Batch #86670****Chloride**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1027211		( 0.00 - 0.00 )	
LCS1	Chloride	25	26.0	104.0	( 90.00 - 110.00 )	
LCS2	Chloride	25	25.6	102.4	( 90.00 - 110.00 )	1.6
MBLK	Chloride	ND				
MS	Chloride	25	27.0	108.0	( 80.00 - 120.00 )	
MSD	Chloride	25	27.1	108.4	( 80.00 - 120.00 )	0.37

**QC Batch #86672****Nitrate-N by IC**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1027211		( 0.00 - 0.00 )	
LCS1	Nitrate-N by IC	2.5	2.57	102.8	( 90.00 - 110.00 )	
LCS2	Nitrate-N by IC	2.5	2.52	100.8	( 90.00 - 110.00 )	2.0
MBLK	Nitrate-N by IC	ND				
MS	Nitrate-N by IC	2.5	2.66	106.4	( 80.00 - 120.00 )	
MSD	Nitrate-N by IC	2.5	2.67	106.8	( 80.00 - 120.00 )	0.38

**QC Batch #86674****Sulfate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1027211		( 0.00 - 0.00 )	
LCS1	Sulfate	50	51.6	103.2	( 90.00 - 110.00 )	
LCS2	Sulfate	50	50.6	101.2	( 90.00 - 110.00 )	2.0
MBLK	Sulfate	ND				
MS	Sulfate	50	54.8	109.6	( 80.00 - 120.00 )	
MSD	Sulfate	50	55.0	110.0	( 80.00 - 120.00 )	0.36

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**QC Batch #86685****Chromium, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab# 98	1023132		( 0.00 - 0.00 )	
LCS1	Chromium, Total, ICAP/MS	100	94	94.0	( 85.00 - 115.00 )	
LCS2	Chromium, Total, ICAP/MS	100	95	95.0	( 85.00 - 115.00 )	1.1
MBLK	Chromium, Total, ICAP/MS	ND				
MS	Chromium, Total, ICAP/MS	100	94	94.0	( 70.00 - 130.00 )	
MSD	Chromium, Total, ICAP/MS	100	93	93.0	( 70.00 - 130.00 )	1.1

**QC Batch #86686****Lead, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab #98	1023132		( 0.00 - 0.00 )	
LCS1	Lead, Total, ICAP/MS	20.0	19.4	97.0	( 85.00 - 115.00 )	
LCS2	Lead, Total, ICAP/MS	20.0	19.3	96.5	( 85.00 - 115.00 )	0.52
MBLK	Lead, Total, ICAP/MS	ND				
MS	Lead, Total, ICAP/MS	20.0	20.0	100.0	( 70.00 - 130.00 )	
MSD	Lead, Total, ICAP/MS	20.0	20.2	101.0	( 70.00 - 130.00 )	1.00

**QC Batch #86687****Iron, Total, ICAP/MS**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1023132		( 0.00 - 0.00 )	
LCS1	Iron, Total, ICAP/MS	500	471	94.2	( 85.00 - 115.00 )	
LCS2	Iron, Total, ICAP/MS	500	472	94.4	( 85.00 - 115.00 )	0.21
MBLK	Iron, Total, ICAP/MS	ND				
MS	Iron, Total, ICAP/MS	500	437	87.4	( 70.00 - 130.00 )	
MSD	Iron, Total, ICAP/MS	500	447	89.4	( 70.00 - 130.00 )	2.3

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**QC Batch #86692****Calcium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Calcium, Total, ICAP	50	48.3	96.6	( 85.00 - 115.00 )	
LCS2	Calcium, Total, ICAP	50	49.3	98.6	( 85.00 - 115.00 )	2.0
MBLK	Calcium, Total, ICAP	ND				
MS	Calcium, Total, ICAP	50	47.7	95.4	( 70.00 - 130.00 )	
MSD	Calcium, Total, ICAP	50	46.7	93.4	( 70.00 - 130.00 )	2.1

**QC Batch #86694****Potassium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Potassium, Total, ICAP	20	19.8	99.0	( 80.00 - 110.00 )	
LCS2	Potassium, Total, ICAP	20	20.2	101.0	( 80.00 - 110.00 )	2.0
MBLK	Potassium, Total, ICAP	ND				
MS	Potassium, Total, ICAP	20	19.7	98.5	( 80.00 - 120.00 )	
MSD	Potassium, Total, ICAP	20	18.9	94.5	( 80.00 - 120.00 )	4.1

**QC Batch #86696****Magnesium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Magnesium, Total, ICAP	20	20.3	101.5	( 85.00 - 115.00 )	
LCS2	Magnesium, Total, ICAP	20	20.6	103.0	( 85.00 - 115.00 )	1.5
MBLK	Magnesium, Total, ICAP	ND				
MS	Magnesium, Total, ICAP	20	19.8	99.0	( 70.00 - 130.00 )	
MSD	Magnesium, Total, ICAP	20	19.1	95.5	( 70.00 - 130.00 )	3.6

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**QC Batch #86698****Sodium, Total, ICAP**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	1022275		( 0.00 - 0.00 )	
LCS1	Sodium, Total, ICAP	50	51.5	103.0	( 85.00 - 115.00 )	
LCS2	Sodium, Total, ICAP	50	52.3	104.6	( 85.00 - 115.00 )	1.5
MBLK	Sodium, Total, ICAP	ND				
MS	Sodium, Total, ICAP	50	49.4	98.8	( 70.00 - 130.00 )	
MSD	Sodium, Total, ICAP	50	47.4	94.8	( 70.00 - 130.00 )	4.1

**QC Batch #86732****Total Dissolved Solid (TDS)**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
DUP	Spiked sample	Lab # 98	1026102		( 0.00 - 0.00 )	
LCS1	Total Dissolved Solid (TDS)	175	176	100.6	( 85.00 - 115.00 )	
LCS2	Total Dissolved Solid (TDS)	700	672	96.0	( 85.00 - 115.00 )	
MBLK	Total Dissolved Solid (TDS)	ND				

**QC Batch #86781****Arsenic, Total, GF**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab #98	1023132		( 0.00 - 0.00 )	
LCS1	Arsenic, Total, GF	0.020	0.0211	105.5	( 85.00 - 115.00 )	
LCS2	Arsenic, Total, GF	0.020	0.0222	111.0	( 85.00 - 115.00 )	5.1
MBLK	Arsenic, Total, GF	ND				
MS	Arsenic, Total, GF	0.020	0.0233	116.5	( 70.00 - 130.00 )	
MSD	Arsenic, Total, GF	0.020	0.0240	120.0	( 70.00 - 130.00 )	3.0

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