NORTH CREEK ANALYTICAL
(Formerly Pacific Environmental Laboratory, Inc.)
9405 S.W. Nimbus Ave. • Beaverton, OR 97005 • (503) 643-9200 • FAX # (503) 644-2202

REQUEST FOR ADDITIONAL TESTING

DATE: 10/9/96

REQUESTED BY: JOY CHANG

CLIENT: WACKER SILTRONIC

CONTACT: DIANNE MULLAN per Kent Patton

JOB #: 61.64

ORIGINAL NCA #: P609383

DUE DATE REQUESTED: 5 DAY TAT RUSH? _____ NO ✓ YES

Adequate amount of sample remaining? _____NO _____YES

Updated chain of custody fax'd to us? _____NO _____YES

Samples re-numbered? _____NO _____YES

NCA #	Sample ID	TEST(S)
1	96-597	TCLP 8270
2	96-598	
3	96-599	
4	96-600	

870698

New NCA #: Same

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Correspondence to: 18939 - 120th Ave. NE, #101, Bothell, WA 98011

Wacker Siltronics Corporation	Project:	401528	Sampled:	11/4/96
7200 N.W. Front	Project Number:	Box-64	Received:	11/4/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	11/8/96 11:28

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
96-601	P611028-01	Soil	11/4/96

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7200 N.W. Front	Project Number:	Box-64	Received:	11/4/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	11/8/96 11:28

TCLP Volatile Organic Compounds per EPA Method 1311/8260
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-601			**P611028-01**				**Soil**	
Benzene	1160042	11/6/96	11/7/96		0.00200	ND	mg/l	
Carbon tetrachloride	"	"	"		0.00200	ND	"	
Chlorobenzene	"	"	"		0.00200	ND	"	
Chloroform	"	"	"		0.00200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.00200	ND	"	
1,2-Dichloroethane	"	"	"		0.00200	ND	"	
1,1-Dichloroethene	"	"	"		0.00200	ND	"	
Methyl Ethyl Ketone	"	"	"		0.0250	ND	"	
Tetrachloroethene	"	"	"		0.00200	ND	"	
Trichloroethene	"	"	"		0.00200	ND	"	
Vinyl chloride	"	"	"		0.00200	ND	"	
Surrogate: 4-BFB	"	"	"	*74.0-121*		*102*	*%*	
Surrogate: Dibromofluoromethane	"	"	"	*80.0-121*		*96.5*	"	
Surrogate: Toluene-d8	"	"	"	*81.0-117*		*100*	"	

**Refer to end of report for text of notes and definitions.*

Joy Chang, Project Manager

SCOEPA00019801

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Wacker Siltronics Corporation	Project:	401528	Sampled:	11/4/96
7200 N.W. Front	Project Number:	Box-64	Received:	11/4/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	11/8/96 11:28

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
96-601	P611028-01	Soil	0	%

North Creek Analytical, Inc.

Joy Chang, Project Manager

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Wacker Siltronics Corporation	Project:	401528		Sampled:	11/4/96
7200 N.W. Front	Project Number:	Box-64		Received:	11/4/96
Portland, OR 97210	Project Manager:	Dianne Mullan		Reported:	11/8/96 11:28

TCLP Volatile Organic Compounds per EPA Method 1311/8260/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1160042	**Date Prepared: 11/6/96**				**Extraction Method: TCLP/ZHE Extraction**					
Blank	**1160042-BLK1**									
Benzene	11/7/96			**ND**	mg/l	**0.00200**				
Carbon tetrachloride	"			**ND**	"	**0.00200**				
Chlorobenzene	"			**ND**	"	**0.00200**				
Chloroform	"			**ND**	"	**0.00200**				
1,4-Dichlorobenzene	"			**ND**	"	**0.00200**				
1,2-Dichloroethane	"			**ND**	"	**0.00200**				
1,1-Dichloroethene	"			**ND**	"	**0.00200**				
Methyl Ethyl Ketone	"			**ND**	"	**0.0250**				
Tetrachloroethene	"			**ND**	"	**0.00200**				
Trichloroethene	"			**ND**	"	**0.00200**				
Vinyl chloride	"			**ND**	"	**0.00200**				
Surrogate: 4-BFB	"	*0.0200*		*0.0201*	"	*74.0-121*	*100*			
Surrogate: Dibromofluoromethane	"	*0.0200*		*0.0188*	"	*80.0-121*	*94.0*			
Surrogate: Toluene-d8	"	*0.0200*		*0.0199*	"	*81.0-117*	*99.5*			
Blank Spike	**1160042-BS1**									
Benzene	11/7/96	0.0200		0.0198	mg/l	66.0-142	**99.0**			
Carbon tetrachloride	"	0.0200		0.0182	"	50.0-150	**91.0**			
Chlorobenzene	"	0.0200		0.0194	"	60.0-133	**97.0**			
Chloroform	"	0.0200		0.0194	"	50.0-150	**97.0**			
1,4-Dichlorobenzene	"	0.0200		0.0194	"	50.0-150	**97.0**			
1,2-Dichloroethane	"	0.0200		0.0220	"	50.0-150	**110**			
1,1-Dichloroethene	"	0.0200		0.0201	"	59.0-172	**100**			
Methyl Ethyl Ketone	"	0.0400		0.0465	"	40.0-180	**116**			
Tetrachloroethene	"	0.0200		0.0185	"	50.0-150	**92.5**			
Trichloroethene	"	0.0200		0.0197	"	62.0-137	**98.5**			
Vinyl chloride	"	0.0200		0.0254	"	40.0-180	**127**			
Surrogate: 4-BFB	"	*0.0200*		*0.0200*	"	*74.0-121*	*100*			
Surrogate: Dibromofluoromethane	"	*0.0200*		*0.0188*	"	*80.0-121*	*94.0*			
Surrogate: Toluene-d8	"	*0.0200*		*0.0198*	"	*81.0-117*	*99.0*			
Matrix Spike	**1160042-MS1**		**P611028-01**							
Benzene	11/7/96	0.0200	ND	0.0210	mg/l	66.0-142	**105**			
Carbon tetrachloride	"	0.0200	ND	0.0182	"	50.0-150	**91.0**			
Chlorobenzene	"	0.0200	ND	0.0198	"	60.0-133	**99.0**			
Chloroform	"	0.0200	ND	0.0206	"	50.0-150	**103**			
1,4-Dichlorobenzene	"	0.0200	ND	0.0195	"	50.0-150	**97.5**			

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**Refer to end of report for text of notes and definitions.*

Joy Chang, Project Manager

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Wacker Siltronics Corporation	Project:	401528	Sampled:	11/4/96
7200 N.W. Front	Project Number:	Box-64	Received:	11/4/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	11/8/96 11:28

TCLP Volatile Organic Compounds per EPA Method 1311/8260/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike (continued)	**1160042-MS1**		**P611028-01**							
1,2-Dichloroethane	11/7/96	0.0200	ND	0.0226	mg/l	50.0-150	**113**			
1,1-Dichloroethene	"	0.0200	ND	0.0217	"	59.0-172	**109**			
Methyl Ethyl Ketone	"	0.0400	ND	0.0434	"	40.0-180	**109**			
Tetrachloroethene	"	0.0200	ND	0.0186	"	50.0-150	**93.0**			
Trichloroethene	"	0.0200	ND	0.0195	"	62.0-137	**97.5**			
Vinyl chloride	"	0.0200	ND	0.0271	"	40.0-180	**136**			
Surrogate: 4-BFB	"	*0.0200*		*0.0205*	"	*74.0-121*	*103*			
Surrogate: Dibromofluoromethane	"	*0.0200*		*0.0193*	"	*80.0-121*	*96.5*			
Surrogate: Toluene-d8	"	*0.0200*		*0.0199*	"	*81.0-117*	*99.5*			
Matrix Spike Dup	**1160042-MSD1**		**P611028-01**							
Benzene	11/7/96	0.0200	ND	0.0198	mg/l	66.0-142	**99.0**	21.0	**5.88**	
Carbon tetrachloride	"	0.0200	ND	0.0177	"	50.0-150	**88.5**	40.0	**2.79**	
Chlorobenzene	"	0.0200	ND	0.0189	"	60.0-133	**94.5**	21.0	**4.65**	
Chloroform	"	0.0200	ND	0.0192	"	50.0-150	**96.0**	40.0	**7.04**	
1,4-Dichlorobenzene	"	0.0200	ND	0.0189	"	50.0-150	**94.5**	40.0	**3.13**	
1,2-Dichloroethane	"	0.0200	ND	0.0218	"	50.0-150	**109**	40.0	**3.60**	
1,1-Dichloroethene	"	0.0200	ND	0.0201	"	59.0-172	**100**	22.0	**8.61**	
Methyl Ethyl Ketone	"	0.0400	ND	0.0426	"	40.0-180	**106**	50.0	**2.79**	
Tetrachloroethene	"	0.0200	ND	0.0182	"	50.0-150	**91.0**	50.0	**2.17**	
Trichloroethene	"	0.0200	ND	0.0189	"	62.0-137	**94.5**	24.0	**3.13**	
Vinyl chloride	"	0.0200	ND	0.0252	"	40.0-180	**126**	50.0	**7.63**	
Surrogate: 4-BFB	"	*0.0200*		*0.0202*	"	*74.0-121*	*101*			
Surrogate: Dibromofluoromethane	"	*0.0200*		*0.0195*	"	*80.0-121*	*97.5*			
Surrogate: Toluene-d8	"	*0.0200*		*0.0201*	"	*81.0-117*	*100*			

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Wacker Siltronics Corporation	Project:	401528	Sampled:	11/4/96
7200 N.W. Front	Project Number:	Box-64	Received:	11/4/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	11/8/96 11:28

Notes and Definitions

#	Note
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

North Creek Analytical, Inc.

Joy Chang, Project Manager

SCOEPA00019805

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
96-602	P611241-01	Soil	11/15/96
96-603	P611241-02	Soil	11/15/96
96-604	P611241-03	Soil	11/15/96
96-605	P611241-04	Soil	11/15/96

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joy Chang, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

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PORTLAND ■ (503) 643-9200 ■ FAX 644-2202

Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

Polychlorinated Biphenyls per EPA Method 8081
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-602			**P611241-01**				**Soil**	
Aroclor 1016	1160226	11/18/96	11/19/96		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		400	ND	"	1
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		70.0	ND	"	1
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*61.3*	*%*	*2*
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*79.4*	"	
96-603			**P611241-02**				**Soil**	
Aroclor 1016	1160226	11/18/96	11/19/96		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		200	ND	"	1
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		60.0	ND	"	1
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*67.1*	*%*	*2*
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*87.4*	"	
96-604			**P611241-03**				**Soil**	
Aroclor 1016	1160226	11/18/96	11/19/96		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	**366**	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	3
Aroclor 1260	"	"	"		50.0	**384**	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*73.8*	*%*	*2*
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*96.7*	"	
96-605			**P611241-04**				**Soil**	
Aroclor 1016	1160226	11/18/96	11/19/96		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		50.0	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	**281**	"	
Aroclor 1248	"	"	"		50.0	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy Chang, Project Manager

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

Polychlorinated Biphenyls per EPA Method 8081
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-605 (continued)			**P611241-04**				**Soil**	
Aroclor 1254	1160226	11/18/96	11/19/96		50.0	ND	ug/kg dry	3
Aroclor 1260	"	"	"		50.0	**641**	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*74.2*	*%*	
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*97.9*	"	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-602			**P611241-01**				**Soil**	
1,1,1-Trichloroethane	"	"	"		0.500	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.500	ND	"	
1,1,2-Trichloroethane	"	"	"		0.500	ND	"	
1,1-Dichloroethane	"	"	"		0.500	ND	"	
1,2,3-Trichloropropane	"	"	"		0.500	ND	"	
1,2-Dichlorobenzene	"	"	"		0.500	ND	"	
1,2-Dichloropropane	"	"	"		0.500	ND	"	
1,3-Dichlorobenzene	"	"	"		0.500	ND	"	
1,4-Dichloro-2-butene	"	"	"		2.50	ND	"	
2-Butanone	"	"	"		6.25	ND	"	
2-Hexanone	"	"	"		1.25	ND	"	
4-Methyl-2-pentanone	"	"	"		1.25	ND	"	
Acetone	"	"	"		6.25	ND	"	
Acrolein	"	"	"		50.0	ND	"	
Acrylonitrile	"	"	"		2.50	ND	"	
Bromodichloromethane	"	"	"		0.500	ND	"	
Bromoform	"	"	"		0.500	ND	"	
Bromomethane	"	"	"		2.50	ND	"	
Carbon disulfide	"	"	"		0.500	ND	"	
Chloroethane	"	"	"		2.50	ND	"	
Chloromethane	"	"	"		2.50	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.500	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.500	ND	"	
Dibromochloromethane	"	"	"		0.500	ND	"	
Dibromomethane	"	"	"		0.500	ND	"	
Dichlorodifluoromethane	"	"	"		1.25	ND	"	
Ethyl methacrylate	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Iodomethane	"	"	"		0.500	ND	"	
Methylene chloride	1160343	11/18/96	11/21/96		1.25	ND	mg/l	
Styrene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.500	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.500	ND	"	
Trichlorofluoromethane	"	"	"		0.500	ND	"	
Vinyl acetate	"	"	"		1.25	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Benzene	"	"	"		0.500	ND	"	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Joy Chang, Project Manager

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-602 (continued)			**P611241-01**				**Soil**	
Carbon tetrachloride	1160343	11/18/96	11/21/96		0.500	ND	mg/l	
Chlorobenzene	"	"	"		0.500	ND	"	
Chloroform	"	"	"		0.500	ND	"	
1,4-Dichlorobenzene	"	"	"		0.500	ND	"	
1,2-Dichloroethane	"	"	"		0.500	ND	"	
1,1-Dichloroethene	"	"	"		0.500	ND	"	
Methyl ethyl ketone	"	"	"		6.25	ND	"	
Tetrachloroethene	"	"	"		0.500	ND	"	
Trichloroethene	"	"	"		0.500	ND	"	
Vinyl chloride	"	"	"		0.500	ND	"	
Surrogate: 4-BFB	"	"	"	*74.0-121*		*100*	*%*	
Surrogate: Dibromofluoromethane	"	"	"	*80.0-121*		*99.0*	"	
Surrogate: Toluene-d8	"	"	"	*81.0-117*		*100*	"	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-603			**P611241-02**				**Soil**	
1,1,1-Trichloroethane	"	"	"		0.0100	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.0100	ND	"	
1,1,2-Trichloroethane	"	"	"		0.0100	ND	"	
1,1-Dichloroethane	"	"	"		0.0100	ND	"	
1,2,3-Trichloropropane	"	"	"		0.0100	ND	"	
1,2-Dichlorobenzene	"	"	"		0.0100	ND	"	
1,2-Dichloropropane	"	"	"		0.0100	ND	"	
1,3-Dichlorobenzene	"	"	"		0.0100	ND	"	
1,4-Dichloro-2-butene	"	"	"		0.0500	ND	"	
2-Butanone	"	"	"		0.125	ND	"	
2-Hexanone	"	"	"		0.025	ND	"	
4-Methyl-2-pentanone	"	"	"		0.025	ND	"	
Acetone	"	"	"		0.125	ND	"	
Acrolein	"	"	"		1.00	ND	"	
Acrylonitrile	"	"	"		0.0500	ND	"	
Bromodichloromethane	"	"	"		0.0100	ND	"	
Bromoform	"	"	"		0.0100	ND	"	
Bromomethane	"	"	"		0.0500	ND	"	
Carbon disulfide	"	"	"		0.0100	ND	"	
Chloroethane	"	"	"		0.0500	ND	"	
Chloromethane	1160343	11/20/96	11/21/96		0.0500	ND	mg/l	
cis-1,2-Dichloroethene	"	"	"		0.0100	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.0100	ND	"	
Dibromochloromethane	"	"	"		0.0100	ND	"	
Dibromomethane	1160343	11/20/96	11/21/96		0.0100	ND	mg/l	
Dichlorodifluoromethane	"	"	"		0.025	ND	"	
Ethyl methacrylate	"	"	"		0.0100	ND	"	
Ethylbenzene	"	"	"		0.0100	ND	"	
Iodomethane	"	"	"		0.0100	ND	"	
Methylene chloride	"	"	"		0.025	ND	"	
Styrene	"	"	"		0.0100	ND	"	
Toluene	"	"	"		0.0100	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.0100	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.0100	ND	"	
Trichlorofluoromethane	"	"	"		0.0100	ND	"	
Vinyl acetate	"	"	"		0.025	ND	"	
Xylenes (total)	"	"	"		0.0100	ND	"	
Benzene	"	"	"		0.0100	ND	"	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-603 (continued)			**P611241-02**				**Soil**	
Carbon tetrachloride	1160343	11/20/96	11/21/96		0.0100	ND	mg/l	
Chlorobenzene	"	"	"		0.0100	ND	"	
Chloroform	"	"	"		0.0100	ND	"	
1,4-Dichlorobenzene	"	"	"		0.0100	ND	"	
1,2-Dichloroethane	"	"	"		0.0100	ND	"	
1,1-Dichloroethene	"	"	"		0.0100	ND	"	
Methyl ethyl ketone	"	"	"		0.125	ND	"	
Tetrachloroethene	"	"	"		0.0100	ND	"	
Trichloroethene	"	"	"		0.0100	ND	"	
Vinyl chloride	"	"	"		0.0100	ND	"	
Surrogate: 4-BFB	"	"	"	*74.0-121*		*99.5*	*%*	
Surrogate: Dibromofluoromethane	"	"	"	*80.0-121*		*101*	"	
Surrogate: Toluene-d8	"	"	"	*81.0-117*		*101*	"	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-604			**P611241-03**				**Soil**	
1,1,1-Trichloroethane	"	"	"		0.0200	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.0200	ND	"	
1,1,2-Trichloroethane	"	"	"		0.0200	ND	"	
1,1-Dichloroethane	"	"	"		0.0200	ND	"	
1,2,3-Trichloropropane	"	"	"		0.0200	ND	"	
1,2-Dichlorobenzene	"	"	"		0.0200	ND	"	
1,2-Dichloropropane	"	"	"		0.0200	ND	"	
1,3-Dichlorobenzene	"	"	"		0.0200	ND	"	
1,4-Dichloro-2-butene	1160343	11/20/96	11/21/96		0.100	ND	mg/l	
2-Butanone	"	"	"		0.250	ND	"	
2-Hexanone	"	"	"		0.0500	ND	"	
4-Methyl-2-pentanone	"	"	"		0.0500	ND	"	
Acetone	"	"	"		0.250	ND	"	
Acrolein	"	"	"		2.00	ND	"	
Acrylonitrile	"	"	"		0.100	ND	"	
Bromodichloromethane	"	"	"		0.0200	ND	"	
Bromoform	"	"	"		0.0200	ND	"	
Bromomethane	"	"	"		0.100	ND	"	
Carbon disulfide	"	"	"		0.0200	ND	"	
Chloroethane	"	"	"		0.100	ND	"	
Chloromethane	"	"	"		0.100	ND	"	
cis-1,2-Dichloroethene	1160343	11/20/96	11/21/96		0.0200	ND	mg/l	
cis-1,3-Dichloropropene	"	"	"		0.0200	ND	"	
Dibromochloromethane	"	"	"		0.0200	ND	"	
Dibromomethane	"	"	"		0.0200	ND	"	
Dichlorodifluoromethane	"	"	"		0.0500	ND	"	
Ethyl methacrylate	"	"	"		0.0200	ND	"	
Ethylbenzene	"	"	"		0.0200	ND	"	
Iodomethane	"	"	"		0.0200	ND	"	
Methylene chloride	"	"	"		0.0500	ND	"	
Styrene	"	"	"		0.0200	ND	"	
Toluene	"	"	"		0.0200	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.0200	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.0200	ND	"	
Trichlorofluoromethane	"	"	"		0.0200	ND	"	
Vinyl acetate	"	"	"		0.0500	ND	"	
Xylenes (total)	"	"	"		0.0200	ND	"	
Benzene	"	"	"		0.0200	ND	"	

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Joy Chang, Project Manager

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Wacker Siltronics Corporation	Project:	Soil		Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64		Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan		Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-604 (continued)			**P611241-03**				**Soil**	
Carbon tetrachloride	1160343	11/20/96	11/21/96		0.0200	ND	mg/l	
Chlorobenzene	"	"	"		0.0200	ND	"	
Chloroform	"	"	"		0.0200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.0200	ND	"	
1,2-Dichloroethane	"	"	"		0.0200	ND	"	
1,1-Dichloroethene	"	"	"		0.0200	ND	"	
Methyl ethyl ketone	"	"	"		0.250	ND	"	
Tetrachloroethene	"	"	"		0.0200	ND	"	
Trichloroethene	"	"	"		0.0200	ND	"	
Vinyl chloride	"	"	"		0.0200	ND	"	
Surrogate: 4-BFB	"	"	"	*74.0-121*		*99.5*	*%*	
Surrogate: Dibromofluoromethane	"	"	"	*80.0-121*		*104*	"	
Surrogate: Toluene-d8	"	"	"	*81.0-117*		*99.5*	"	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-605			**P611241-04**				**Soil**	
1,1,1-Trichloroethane	"	"	"		0.00200	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		0.00200	ND	"	
1,1,2-Trichloroethane	"	"	"		0.00200	ND	"	
1,1-Dichloroethane	"	"	"		0.00200	ND	"	
1,2,3-Trichloropropane	"	"	"		0.00200	ND	"	
1,2-Dichlorobenzene	"	"	"		0.00200	ND	"	
1,2-Dichloropropane	1160343	11/20/96	11/21/96		0.00200	ND	mg/l	
1,3-Dichlorobenzene	"	"	"		0.00200	ND	"	
1,4-Dichloro-2-butene	"	"	"		0.0100	ND	"	
2-Butanone	"	"	"		0.0250	ND	"	
2-Hexanone	1160343	11/20/96	11/21/96		0.00500	ND	mg/l	
4-Methyl-2-pentanone	"	"	"		0.00500	ND	"	
Acetone	"	"	"		0.040	ND	"	
Acrolein	"	"	"		0.200	ND	"	
Acrylonitrile	"	"	"		0.0100	ND	"	
Bromodichloromethane	"	"	"		0.00200	ND	"	
Bromoform	"	"	"		0.00200	ND	"	
Bromomethane	"	"	"		0.0100	ND	"	
Carbon disulfide	"	"	"		0.00200	ND	"	
Chloroethane	"	"	"		0.0100	ND	"	
Chloromethane	"	"	"		0.0100	ND	"	
cis-1,2-Dichloroethene	"	"	"		0.00200	ND	"	
cis-1,3-Dichloropropene	"	"	"		0.00200	ND	"	
Dibromochloromethane	"	"	"		0.00200	ND	"	
Dibromomethane	"	"	"		0.00200	ND	"	
Dichlorodifluoromethane	"	"	"		0.00500	ND	"	
Ethyl methacrylate	"	"	"		0.00200	ND	"	
Ethylbenzene	"	"	"		0.00200	ND	"	
Iodomethane	"	"	"		0.00200	ND	"	
Methylene chloride	"	"	"		0.00500	ND	"	
Styrene	"	"	"		0.00200	ND	"	
Toluene	"	"	"		0.00200	ND	"	
trans-1,2-Dichloroethene	"	"	"		0.00200	ND	"	
trans-1,3-Dichloropropene	"	"	"		0.00200	ND	"	
Trichlorofluoromethane	"	"	"		0.00200	ND	"	
Vinyl acetate	"	"	"		0.00500	ND	"	
Xylenes (total)	"	"	"		0.00200	ND	"	
Benzene	"	"	"		0.00200	ND	"	

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Joy Chang, Project Manager

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
96-605 (continued)			**P611241-04**				**Soil**	
Carbon tetrachloride	1160343	11/20/96	11/21/96		0.00200	ND	mg/l	
Chlorobenzene	"	"	"		0.00200	ND	"	
Chloroform	"	"	"		0.00200	ND	"	
1,4-Dichlorobenzene	"	"	"		0.00200	ND	"	
1,2-Dichloroethane	"	"	"		0.00200	ND	"	
1,1-Dichloroethene	"	"	"		0.00200	ND	"	
Methyl ethyl ketone	"	"	"		0.0250	ND	"	
Tetrachloroethene	"	"	"		0.00200	ND	"	
Trichloroethene	"	"	"		0.00200	ND	"	
Vinyl chloride	"	"	"		0.00200	ND	"	
Surrogate: 4-BFB	"	"	"	*74.0-121*		*100*	*%*	
Surrogate: Dibromofluoromethane	"	"	"	*80.0-121*		*103*	"	
Surrogate: Toluene-d8	"	"	"	*81.0-117*		*100*	"	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
96-602	P611241-01	Soil	91.7	%
96-603	P611241-02	Soil	91.3	%
96-604	P611241-03	Soil	91.1	%
96-605	P611241-04	Soil	86.9	%

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

Polychlorinated Biphenyls per EPA Method 8081/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1160226	**Date Prepared: 11/18/96**				**Extraction Method: EPA 3550**					
Blank	**1160226-BLK1**									
Aroclor 1016	11/19/96			**ND**	ug/kg dry	**50.0**				
Aroclor 1221	"			**ND**	"	**50.0**				
Aroclor 1232	"			**ND**	"	**50.0**				
Aroclor 1242	"			**ND**	"	**50.0**				
Aroclor 1248	"			**ND**	"	**50.0**				
Aroclor 1254	"			**ND**	"	**50.0**				
Aroclor 1260	"			**ND**	"	**50.0**				
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*33.3*		*24.1*	"	*74.0-129*	*72.4*			
Surrogate: Decachlorobiphenyl	"	*33.3*		*26.4*	"	*66.0-142*	*79.3*			
Blank Spike	**1160226-BS1**									
Aroclor 1016	11/19/96	333		281	ug/kg dry	60.0-135	**84.4**			
Aroclor 1260	"	333		309	"	62.0-147	**92.8**			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*33.3*		*32.2*	"	*74.0-129*	*96.7*			
Surrogate: Decachlorobiphenyl	"	*33.3*		*33.7*	"	*66.0-142*	*101*			
Matrix Spike	**1160226-MS1**		**P611236-01**							
Aroclor 1016	11/19/96	388	ND	334	ug/kg dry	60.0-149	**86.1**			
Aroclor 1260	"	388	ND	357	"	70.0-137	**92.0**			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*38.8*		*37.1*	"	*74.0-129*	*95.6*			
Surrogate: Decachlorobiphenyl	"	*38.8*		*40.0*	"	*66.0-142*	*103*			
Matrix Spike Dup	**1160226-MSD1**		**P611236-01**							
Aroclor 1016	11/19/96	388	ND	341	ug/kg dry	60.0-149	**87.9**	50.0	**2.07**	
Aroclor 1260	"	388	ND	369	"	70.0-137	**95.1**	50.0	**3.31**	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*38.8*		*38.0*	"	*74.0-129*	*97.9*			
Surrogate: Decachlorobiphenyl	"	*38.8*		*41.2*	"	*66.0-142*	*106*			

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Joy Chang, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 1160343	**Date Prepared: 11/20/96**				**Extraction Method: EPA 1311/5030**					
Blank	**1160343-BLK1**									
1,1,1-Trichloroethane	"			ND	"	0.00200				
1,1,2,2-Tetrachloroethane	"			ND	"	0.00200				
1,1,2-Trichloroethane	"			ND	"	0.00200				
1,1-Dichloroethane	"			ND	"	0.00200				
1,2,3-Trichloropropane	"			ND	"	0.00200				
1,2-Dichlorobenzene	"			ND	"	0.00200				
1,2-Dichloropropane	"			ND	"	0.00200				
1,3-Dichlorobenzene	"			ND	"	0.00200				
1,4-Dichloro-2-butene	"			ND	"	0.0100				
2-Butanone	"			ND	"	0.0250				
2-Hexanone	"			ND	"	0.00500				
4-Methyl-2-pentanone	"			ND	"	0.00500				
Acetone	"			ND	"	0.0250				
Acrolein	"			ND	"	0.200				
Acrylonitrile	"			ND	"	0.0100				
Bromodichloromethane	"			ND	"	0.00200				
Bromoform	"			ND	"	0.00200				
Bromomethane	"			ND	"	0.0100				
Carbon disulfide	"			ND	"	0.00200				
Chloroethane	"			ND	"	0.0100				
Chloromethane	"			ND	"	0.0100				
cis-1,2-Dichloroethene	11/21/96			ND	mg/l	0.00200				
cis-1,3-Dichloropropene	"			ND	"	0.00200				
Dibromochloromethane	"			ND	"	0.00200				
Dibromomethane	"			ND	"	0.00200				
Dichlorodifluoromethane	"			ND	"	0.00500				
Ethyl methacrylate	"			ND	"	0.00200				
Ethylbenzene	"			ND	"	0.00200				
Iodomethane	"			ND	"	0.00200				
Methylene chloride	"			ND	"	0.00500				
Styrene	"			ND	"	0.00200				
Toluene	"			ND	"	0.00200				
trans-1,2-Dichloroethene	"			ND	"	0.00200				
trans-1,3-Dichloropropene	"			ND	"	0.00200				
Trichlorofluoromethane	"			ND	"	0.00200				
Vinyl acetate	"			ND	"	0.00500				
Xylenes (total)	"			ND	"	0.00200				

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	**1160343-BLK1**									
Benzene	11/21/96			**ND**	mg/l	**0.00300**				
Carbon tetrachloride	"			**ND**	"	**0.00200**				
Chlorobenzene	"			**ND**	"	**0.00200**				
Chloroform	"			**ND**	"	**0.00200**				
1,4-Dichlorobenzene	"			**ND**	"	**0.00200**				
1,2-Dichloroethane	"			**ND**	"	**0.00200**				
1,1-Dichloroethene	"			**ND**	"	**0.00200**				
Methyl ethyl ketone	"			**ND**	"	**0.0250**				
Tetrachloroethene	"			**ND**	"	**0.00200**				
Trichloroethene	"			**ND**	"	**0.00200**				
Vinyl chloride	"			**ND**	"	**0.00200**				
Surrogate: 4-BFB	*"*	*0.0200*		*0.0199*	*"*	*74.0-121*	*99.5*			
Surrogate: Dibromofluoromethane	*"*	*0.0200*		*0.0205*	*"*	*80.0-121*	*103*			
Surrogate: Toluene-d8	*"*	*0.0200*		*0.0201*	*"*	*81.0-117*	*100*			
Blank	**1160343-BLK2**									
1,1,1-Trichloroethane	"			**ND**	"	**0.00200**				
1,1,2,2-Tetrachloroethane	"			**ND**	"	**0.00200**				
1,1,2-Trichloroethane	"			**ND**	"	**0.00200**				
1,1-Dichloroethane	"			**ND**	"	**0.00200**				
1,2,3-Trichloropropane	"			**ND**	"	**0.00200**				
1,2-Dichlorobenzene	"			**ND**	"	**0.00200**				
1,2-Dichloropropane	"			**ND**	"	**0.00200**				
1,3-Dichlorobenzene	"			**ND**	"	**0.00200**				
1,4-Dichloro-2-butene	"			**ND**	"	**0.0100**				
2-Butanone	"			**ND**	"	**0.0250**				
2-Hexanone	"			**ND**	"	**0.00500**				
4-Methyl-2-pentanone	11/21/96			**ND**	mg/l	**0.00500**				
Acetone	"			**ND**	"	**0.0250**				
Acrolein	"			**ND**	"	**0.200**				
Acrylonitrile	"			**ND**	"	**0.0100**				
Bromodichloromethane	"			**ND**	"	**0.00200**				
Bromoform	"			**ND**	"	**0.00200**				
Bromomethane	"			**ND**	"	**0.0100**				
Carbon disulfide	"			**ND**	"	**0.00200**				
Chloroethane	"			**ND**	"	**0.0100**				
Chloromethane	"			**ND**	"	**0.0100**				
cis-1,2-Dichloroethene	"			**ND**	"	**0.00200**				

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)	**1160343-BLK2**									
cis-1,3-Dichloropropene	"			**ND**	"	**0.00200**				
Dibromochloromethane	"			**ND**	"	**0.00200**				
Dibromomethane	"			**ND**	"	**0.00200**				
Dichlorodifluoromethane	"			**ND**	"	**0.00500**				
Ethyl methacrylate	11/21/96			**ND**	mg/l	**0.00200**				
Ethylbenzene	"			**ND**	"	**0.00200**				
Iodomethane	"			**ND**	"	**0.00200**				
Methylene chloride	"			**ND**	"	**0.00500**				
Styrene	"			**ND**	"	**0.00200**				
Toluene	"			**ND**	"	**0.00200**				
trans-1,2-Dichloroethene	"			**ND**	"	**0.00200**				
trans-1,3-Dichloropropene	"			**ND**	"	**0.00200**				
Trichlorofluoromethane	"			**ND**	"	**0.00200**				
Vinyl acetate	"			**ND**	"	**0.00500**				
Xylenes (total)	"			**ND**	"	**0.00200**				
Benzene	"			**ND**	"	**0.00200**				
Carbon tetrachloride	"			**ND**	"	**0.00200**				
Chlorobenzene	"			**ND**	"	**0.00200**				
Chloroform	"			**ND**	"	**0.00200**				
1,4-Dichlorobenzene	"			**ND**	"	**0.00200**				
1,2-Dichloroethane	"			**ND**	"	**0.00200**				
1,1-Dichloroethene	"			**ND**	"	**0.00200**				
Methyl ethyl ketone	"			**ND**	"	**0.0250**				
Tetrachloroethene	"			**ND**	"	**0.00200**				
Trichloroethene	"			**ND**	"	**0.00200**				
Vinyl chloride	"			**ND**	"	**0.00200**				
Surrogate: 4-BFB	"	*0.0200*		*0.0196*	"	*74.0-121*	*98.0*			
Surrogate: Dibromofluoromethane	"	*0.0200*		*0.0199*	"	*80.0-121*	*99.5*			
Surrogate: Toluene-d8	"	*0.0200*		*0.0199*	"	*81.0-117*	*99.5*			
Blank Spike	**1160343-BS1**									
Benzene	11/21/96	0.0200		0.0223	mg/l	66.0-142	**111**			
Carbon tetrachloride	"	0.0200		0.0233	"	50.0-150	**117**			
Chlorobenzene	"	0.0200		0.0208	"	60.0-133	**104**			
Chloroform	"	0.0200		0.0220	"	50.0-150	**110**			
1,4-Dichlorobenzene	"	0.0200		0.0198	"	50.0-150	**99.0**			
1,2-Dichloroethane	"	0.0200		0.0264	"	50.0-150	**132**			
1,1-Dichloroethene	"	0.0200		0.0224	"	59.0-172	**112**			

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**Refer to end of report for text of notes and definitions.*

Joy Chang, Project Manager

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank Spike (continued)	**1160343-BS1**									
Methyl ethyl ketone	11/21/96	0.0400		0.0531	mg/l	40.0-180	**133**			
Tetrachloroethene	"	0.0200		0.0189	"	50.0-150	**94.5**			
Trichloroethene	"	0.0200		0.0207	"	62.0-137	**104**			
Vinyl chloride	"	0.0200		0.0298	"	40.0-180	**149**			
Surrogate: 4-BFB	"	*0.0200*		*0.0195*	"	*74.0-121*	*97.5*			
Surrogate: Dibromofluoromethane	"	*0.0200*		*0.0199*	"	*80.0-121*	*99.5*			
Surrogate: Toluene-d8	"	*0.0200*		*0.0199*	"	*81.0-117*	*99.5*			
Matrix Spike	**1160343-MS1**		**P611241-04**							
Benzene	11/21/96	0.0200	ND	0.0210	mg/l	66.0-142	**105**			
Carbon tetrachloride	"	0.0200	ND	0.0233	"	50.0-150	**117**			
Chlorobenzene	"	0.0200	ND	0.0199	"	60.0-133	**99.5**			
Chloroform	"	0.0200	ND	0.0214	"	50.0-150	**107**			
1,4-Dichlorobenzene	"	0.0200	ND	0.0191	"	50.0-150	**95.5**			
1,2-Dichloroethane	"	0.0200	ND	0.0259	"	50.0-150	**130**			
1,1-Dichloroethene	"	0.0200	ND	0.0220	"	59.0-172	**110**			
Methyl ethyl ketone	"	0.0400	ND	0.0509	"	40.0-180	**127**			
Tetrachloroethene	"	0.0200	ND	0.0181	"	50.0-150	**90.5**			
Trichloroethene	"	0.0200	ND	0.0196	"	62.0-137	**98.0**			
Vinyl chloride	"	0.0200	ND	0.0287	"	40.0-180	**144**			
Surrogate: 4-BFB	"	*0.0200*		*0.0195*	"	*74.0-121*	*97.5*			
Surrogate: Dibromofluoromethane	"	*0.0200*		*0.0205*	"	*80.0-121*	*103*			
Surrogate: Toluene-d8	"	*0.0200*		*0.0201*	"	*81.0-117*	*100*			
Matrix Spike Dup	**1160343-MSD1**		**P611241-04**							
Benzene	11/21/96	0.0200	ND	0.0216	mg/l	66.0-142	**108**	21.0	**2.82**	
Carbon tetrachloride	"	0.0200	ND	0.0237	"	50.0-150	**119**	40.0	**1.69**	
Chlorobenzene	"	0.0200	ND	0.0202	"	60.0-133	**101**	21.0	**1.50**	
Chloroform	"	0.0200	ND	0.0218	"	50.0-150	**109**	40.0	**1.85**	
1,4-Dichlorobenzene	"	0.0200	ND	0.0193	"	50.0-150	**96.5**	40.0	**1.04**	
1,2-Dichloroethane	"	0.0200	ND	0.0260	"	50.0-150	**130**	40.0	**0**	
1,1-Dichloroethene	"	0.0200	ND	0.0226	"	59.0-172	**113**	22.0	**2.69**	
Methyl ethyl ketone	"	0.0400	ND	0.0494	"	40.0-180	**124**	50.0	**2.39**	
Tetrachloroethene	"	0.0200	ND	0.0186	"	50.0-150	**93.0**	50.0	**2.72**	
Trichloroethene	"	0.0200	ND	0.0204	"	62.0-137	**102**	24.0	**4.00**	
Vinyl chloride	"	0.0200	ND	0.0293	"	40.0-180	**147**	50.0	**2.06**	
Surrogate: 4-BFB	"	*0.0200*		*0.0194*	"	*74.0-121*	*97.0*			
Surrogate: Dibromofluoromethane	"	*0.0200*		*0.0205*	"	*80.0-121*	*103*			

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

TCLP Volatile Organic Compounds per EPA Method 1311/8240/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike Dup (continued)	**1160343-MSD1**		**P611241-04**							
Surrogate: Toluene-d8	*11/21/96*	*0.0200*		*0.0200*	*mg/l*	*81.0-117*	*100*			

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	11/15/96
7200 N.W. Front	Project Number:	Box-61-64	Received:	11/15/96
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	12/5/96 10:56

Notes and Definitions

#	Note
1	The reporting limit for this analyte was raised due to matrix interference.
2	Surrogate recovery is out of control limits. QA criteria are met when one surrogate is within control limits.
3	Aroclor 1254 may also be present, quantitated as Aroclor 1260.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

NORTH CREEK ANALYTICAL
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Rec'd 09/02/97 DL

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Wacker Siltronics Corporation	Project:	BOX-65	Sampled:	8/19/97
7200 N.W. Front	Project Number:	n/a	Received:	8/19/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	8/27/97 16:45

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
97-608	P708368-01	Soil	8/19/97

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Wacker Siltronics Corporation	Project:	BOX-65	Sampled:	8/19/97
7200 N.W. Front	Project Number:	n/a	Received:	8/19/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	8/27/97 16:45

TCLP Metals per EPA 1311/6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
97-608			**P708368-01**				**Soil**	
Arsenic	0870511	8/19/97	8/22/97	EPA 6010A	0.500	ND	mg/l	
Barium	"	"	"	EPA 6010A	0.500	**0.545**	"	
Cadmium	"	"	"	EPA 6010A	0.0100	ND	"	
Chromium	"	"	"	EPA 6010A	0.0100	ND	"	
Lead	"	"	"	EPA 6010A	0.200	ND	"	
Selenium	"	"	"	EPA 6010A	0.250	ND	"	
Silver	"	"	8/26/97	EPA 6010A	0.0100	ND	"	
Mercury	0870540	"	8/25/97	EPA 7470A	0.000200	ND	"	

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Wacker Siltronics Corporation	Project:	BOX-65	Sampled:	8/19/97
7200 N.W. Front	Project Number:	n/a	Received:	8/19/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	8/27/97 16:45

Polychlorinated Biphenyls per EPA Method 8081
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
97-608			**P708368-01**				**Soil**	
Aroclor 1016	0870403	8/18/97	8/21/97		50.0	ND	ug/kg dry	
Aroclor 1221	"	"	"		100	ND	"	
Aroclor 1232	"	"	"		50.0	ND	"	
Aroclor 1242	"	"	"		50.0	ND	"	
Aroclor 1248	"	"	"		50.0	ND	"	
Aroclor 1254	"	"	"		50.0	ND	"	
Aroclor 1260	"	"	"		50.0	ND	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*74.0-129*		*84.8*	*%*	
Surrogate: Decachlorobiphenyl	"	"	"	*66.0-142*		*93.3*	"	

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Wacker Siltronics Corporation	Project:	BOX-65	Sampled:	8/19/97
7200 N.W. Front	Project Number:	n/a	Received:	8/19/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	8/27/97 16:45

Dry Weight Determination
North Creek Analytical - Portland

Sample Name	Lab ID	Matrix	Result	Units
97-608	P708368-01	Soil	97.7	%

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Wacker Siltronics Corporation	Project:	BOX-65	Sampled:	8/19/97
7200 N.W. Front	Project Number:	n/a	Received:	8/19/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	8/27/97 16:45

TCLP Metals per EPA 1311/6000/7000 Series Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0870511	**Date Prepared: 8/19/97**				**Extraction Method: EPA 1311/3010**					
Blank	**0870511-BLK1**									
Arsenic	8/22/97			**ND**	mg/l	**0.500**				
Barium	"			**ND**	"	**0.500**				
Cadmium	"			**ND**	"	**0.0100**				
Chromium	"			**ND**	"	**0.0100**				
Lead	"			**ND**	"	**0.200**				
Selenium	"			**ND**	"	**0.250**				
Silver	8/26/97			**ND**	"	**0.0100**				
LCS	**0870511-BS1**									
Arsenic	8/22/97	5.00		5.21	mg/l	75.0-125	104			
Barium	"	10.0		9.10	"	75.0-125	91.0			
Cadmium	"	1.00		0.983	"	75.0-125	98.3			
Chromium	"	5.00		4.09	"	75.0-125	81.8			
Lead	"	5.00		4.85	"	75.0-125	97.0			
Selenium	"	1.00		0.990	"	75.0-125	99.0			
Silver	8/26/97	2.00		2.03	"	75.0-125	101			
Matrix Spike	**0870511-MS1**		**P708377-01**							
Arsenic	8/22/97	5.00	ND	5.31	mg/l	50.0-150	**106**			
Barium	"	10.0	ND	9.05	"	50.0-150	**90.5**			
Cadmium	"	1.00	ND	0.911	"	50.0-150	**91.1**			
Chromium	"	5.00	ND	4.12	"	50.0-150	**82.4**			
Lead	"	5.00	ND	4.66	"	50.0-150	**93.2**			
Selenium	"	1.00	ND	0.899	"	50.0-150	**89.9**			
Silver	8/26/97	2.00	ND	2.03	"	50.0-150	**101**			
Batch: 0870540	**Date Prepared: 8/19/97**				**Extraction Method: EPA 1311/3010**					
Blank	**0870540-BLK1**									
Mercury	8/25/97			**ND**	mg/l	**0.000200**				
LCS	**0870540-BS1**									
Mercury	8/25/97	0.00500		0.00530	mg/l	75.0-125	106			
Matrix Spike	**0870540-MS1**		**P708368-01**							
Mercury	8/25/97	0.00500	ND	0.00540	mg/l	50.0-150	**108**			

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Wacker Siltronics Corporation	Project:	BOX-65	Sampled:	8/19/97
7200 N.W. Front	Project Number:	n/a	Received:	8/19/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	8/27/97 16:45

Polychlorinated Biphenyls per EPA Method 8081/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0870403	**Date Prepared: 8/19/97**					**Extraction Method: EPA 3550**				
Blank	**0870403-BLK1**									
Aroclor 1016	8/21/97			**ND**	ug/kg dry	**50.0**				
Aroclor 1221	"			**ND**	"	**100**				
Aroclor 1232	"			**ND**	"	**50.0**				
Aroclor 1242	"			**ND**	"	**50.0**				
Aroclor 1248	"			**ND**	"	**50.0**				
Aroclor 1254	"			**ND**	"	**50.0**				
Aroclor 1260	"			**ND**	"	**50.0**				
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*33.3*		*30.4*	"	*74.0-129*	*91.3*			
Surrogate: Decachlorobiphenyl	"	*33.3*		*31.5*	"	*66.0-142*	*94.6*			
LCS	**0870403-BS1**									
Aroclor 1016	8/21/97	333		290	ug/kg dry	60.0-135	87.1			
Aroclor 1260	"	333		271	"	62.0-147	81.4			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*33.3*		*31.1*	"	*74.0-129*	*93.4*			
Surrogate: Decachlorobiphenyl	"	*33.3*		*28.8*	"	*66.0-142*	*86.5*			
Matrix Spike	**0870403-MS1**		**P708290-01**							
Aroclor 1016	8/21/97	384	ND	373	ug/kg dry	60.0-149	**97.1**			
Aroclor 1260	"	384	69.8	435	"	70.0-137	**95.1**			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*38.4*		*35.3*	"	*74.0-129*	*91.9*			
Surrogate: Decachlorobiphenyl	"	*38.4*		*36.1*	"	*66.0-142*	*94.0*			
Matrix Spike Dup	**0870403-MSD1**		**P708290-01**							
Aroclor 1016	8/21/97	384	ND	355	ug/kg dry	60.0-149	**92.4**	50.0	**4.96**	
Aroclor 1260	"	384	69.8	413	"	70.0-137	**89.4**	50.0	**6.18**	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*38.4*		*34.6*	"	*74.0-129*	*90.1*			
Surrogate: Decachlorobiphenyl	"	*38.4*		*35.2*	"	*66.0-142*	*91.7*			

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Wacker Siltronics Corporation	Project:	BOX-65	Sampled:	8/19/97
7200 N.W. Front	Project Number:	n/a	Received:	8/19/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	8/27/97 16:45

Notes and Definitions

#	Note
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

22.50

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # P708368

REPORT TO: Wacker Siltronic
ATTENTION: Dianne Mullan
ADDRESS: 7200 N.W. Front Ave
Portland, OR 97210
PHONE: 219-7274 FAX: 417-4144
PROJECT NAME: BOX - 65
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan

INVOICE TO: Wacker Siltronic
ATTENTION: Accts. Payable
ADDRESS: Same
P.O. NUMBER: 405748 NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | ~~3~~ | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request:

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TCLP Metals RCRA-8	PCB	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	97-608	8/19/97 0730		X	X	S	1	
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

RELINQUISHED BY (Signature): Dianne E Mullan DATE: 8/19/97
PRINT NAME: Dianne E Mullan FIRM: Wacker TIME: 0840

RECEIVED BY (Signature): Paul Conroy DATE: 8-19-97
PRINT NAME: PAUL CONROY FIRM: WCKR. TIME: 9:45

RELINQUISHED BY (Signature): Paul Conroy DATE: 8-19-97
PRINT NAME: PAUL CONROY FIRM: WCKR. TIME: 10:26

RECEIVED BY (Signature): Kari Cline DATE: 8/19/97
PRINT NAME: KARI CLINE FIRM: NCA TIME: 10:30

ADDITIONAL REMARKS:

PAGE OF

COC Rev 8, 1/96

SCOEPA00019832

Rec'd: July 11, 97 DM

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
97-606	P706017-01	Soil	6/2/97

This report is not complete without Attachment A. Attachment A contains results for TCLP Volatile (EPA 8240). The TCLP volatiles were analyzed by Sequoia Analytical (680 Chesapeake Drive, Redwood City, CA 96063), and affiliated laboratory. Data for sample 97-606 is reproduced in its entirety.

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Gasoline Hydrocarbons (Benzene to Naphthalene) per Oregon DEQ Method TPH-G
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
97-606			**P706017-01**				**Soil**	
Gasoline Range Hydrocarbons	0670043	6/3/97	6/3/97		2.00	**2.16**	mg/kg	
Surrogate: a,a,a-TFT	"	"	"	*50.0-150*		*78.4*	*%*	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Diesel Hydrocarbons (C10-C28) per Oregon DEQ Method TPH-D
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
97-606			**P706017-01**				**Soil**	
Diesel Range Hydrocarbons	0670124	6/5/97	6/7/97		250	**1190**	mg/kg	1
Surrogate: 1-Chlorooctadecane	"	"	"	*50.0-150*		*NR*	*%*	*2*

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

Sandra K. Wright, Project Manager

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

SCOEPA00019835

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Heavy Oil Range Hydrocarbons per Oregon DEQ Method 418.1 (modified)
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
97-606			**P706017-01**				**Soil**	
Petroleum Oil Hydrocarbons	0670091	6/4/97	6/5/97	DEQ 418.1 M	100	**456**	mg/kg	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

TCLP Pesticides per EPA Method 1311/8081
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
97-606			**P706017-01**				**Soil**	
gamma-BHC (Lindane)	0670146		6/9/97		0.000400	ND	mg/l	
Chlordane (tech)	"	"	"		0.0200	ND	"	
Endrin	"	"	"		0.000400	ND	"	
Heptachlor	"	"	"		0.000400	ND	"	
Heptachlor epoxide	"	"	"		0.000400	ND	"	
Methoxychlor	"	"	"		0.000400	ND	"	
Toxaphene	"	"	"		0.0200	ND	"	
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	"	"	*65.0-130*		*84.0*	*%*	
Surrogate: Decachlorobiphenyl	"	"	"	*65.0-130*		*87.5*	"	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

TCLP Herbicides per EPA Method 1311/8151
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
97-606			**P706017-01**				**Soil**	
2,4-D	0670342	6/16/97	6/18/97		0.0100	ND	mg/l	
2,4,5-TP (Silvex)	"	"	"		0.00100	ND	"	
Surrogate: 2,4-DCAA	"	"	"	*24.0-135*		*111*	*%*	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

S Wright
Sandra K. Wright, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Conventional Chemistry Parameters per APHA/EPA Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
97-606			**P706017-01**				**Soil**	
pH	0670368	6/17/97	6/17/97	EPA 9045B		**8.01**	pH units	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Physical Parameters per APHA/ASTM/EPA Methods
North Creek Analytical - Portland

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
97-606			**P706017-01**				**Soil**	
Flashpoint	0670044	6/9/97	6/9/97	EPA 1010		**No Flash**	°F	3

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Gasoline Hydrocarbons (Benzene to Naphthalene) per Oregon DEQ Method TPH-G/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0670043	**Date Prepared: 6/3/97**				**Extraction Method: MeOH Extraction**					
Blank	**0670043-BLK1**									
Gasoline Range Hydrocarbons	6/3/97			**ND**	mg/kg	**2.00**				
Surrogate: a,a,a-TFT	"	*2.50*		*2.21*	"	*50.0-150*	*88.4*			
LCS	**0670043-BS1**									
Gasoline Range Hydrocarbons	6/3/97	31.3		23.4	mg/kg	50.0-150	74.8			
Surrogate: a,a,a-TFT	"	*2.50*		*2.29*	"	*50.0-150*	*91.6*			
Duplicate	**0670043-DUP1**		**P705464-05**							
Gasoline Range Hydrocarbons	6/3/97		33.8	26.5	mg/kg			50.0	**24.2**	
Surrogate: a,a,a-TFT	"	*2.50*		*1.74*	"	*50.0-150*	*69.6*			

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Diesel Hydrocarbons (C10-C28) per Oregon DEQ Method TPH-D/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0670124	**Date Prepared: 6/5/97**					**Extraction Method: TPH-D Extraction**				
Blank	**0670124-BLK1**									
Diesel Range Hydrocarbons	6/6/97			**ND**	mg/kg	**25.0**				
Surrogate: 1-Chlorooctadecane	"	*10.0*		*10.4*	"	*50.0-150*	*104*			
LCS	**0670124-BS1**									
Diesel Range Hydrocarbons	6/6/97	250		240	mg/kg	50.0-150	96.0			
Surrogate: 1-Chlorooctadecane	"	*10.0*		*11.6*	"	*50.0-150*	*116*			
Duplicate	**0670124-DUP1**		**P705390-01**							
Diesel Range Hydrocarbons	6/7/97		35.1	41.8	mg/kg			50.0	**17.4**	
Surrogate: 1-Chlorooctadecane	"	*10.0*		*8.50*	"	*50.0-150*	*85.0*			
Duplicate	**0670124-DUP2**		**P706060-01**							
Diesel Range Hydrocarbons	6/7/97		57.0	37.4	mg/kg			50.0	**41.5**	
Surrogate: 1-Chlorooctadecane	"	*10.0*		*5.60*	"	*50.0-150*	*56.0*			
Duplicate	**0670124-DUP3**		**P706018-01**							
Diesel Range Hydrocarbons	6/6/97		ND	ND	mg/kg			50.0		
Surrogate: 1-Chlorooctadecane	"	*10.0*		*7.95*	"	*50.0-150*	*79.5*			

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Heavy Oil Range Hydrocarbons per Oregon DEQ Method 418.1 (modified)/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0670091	**Date Prepared: 6/4/97**				**Extraction Method: TPH-418.1 (OR)**					
Blank	**0670091-BLK1**									
Petroleum Oil Hydrocarbons	6/5/97			**ND**	mg/kg	**20.0**				
LCS	**0670091-BS1**									
Petroleum Oil Hydrocarbons	6/5/97	125		89.0	mg/kg	50.0-150	71.2			
Duplicate	**0670091-DUP1**		**P705340-01**							
Petroleum Oil Hydrocarbons	6/5/97		94.6	148	mg/kg			50.0	**44.0**	

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

TCLP Pesticides per EPA Method 1311/8081/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0670146	**Date Prepared: 6/6/97**				**Extraction Method: EPA 1311/3510**					
Blank	**0670146-BLK1**									
gamma-BHC (Lindane)	6/9/97			**ND**	mg/l	**0.000400**				
Chlordane (tech)	"			**ND**	"	**0.0200**				
Endrin	"			**ND**	"	**0.000400**				
Heptachlor	"			**ND**	"	**0.000400**				
Heptachlor epoxide	"			**ND**	"	**0.000400**				
Methoxychlor	"			**ND**	"	**0.000400**				
Toxaphene	"			**ND**	"	**0.0200**				
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*0.00200*		*0.00169*	"	*65.0-130*	*84.5*			
Surrogate: Decachlorobiphenyl	"	*0.00200*		*0.00192*	"	*65.0-130*	*96.0*			
LCS	**0670146-BS1**									
gamma-BHC (Lindane)	6/9/97	0.00200		0.00218	mg/l	50.0-150	109			
Endrin	"	0.00200		0.00220	"	50.0-150	110			
Heptachlor	"	0.00200		0.00202	"	50.0-150	101			
Heptachlor epoxide	"	0.00200		0.00224	"	50.0-150	112			
Methoxychlor	"	0.00200		0.00210	"	50.0-150	105			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*0.00200*		*0.00180*	"	*65.0-130*	*90.0*			
Surrogate: Decachlorobiphenyl	"	*0.00200*		*0.00197*	"	*65.0-130*	*98.5*			
LCS	**0670146-BS2**									
Chlordane (tech)	6/10/97	0.0200		0.0204	mg/l	50.0-150	102			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*0.00200*		*0.00174*	"	*65.0-130*	*87.0*			
Surrogate: Decachlorobiphenyl	"	*0.00200*		*0.00220*	"	*65.0-130*	*110*			
Matrix Spike	**0670146-MS1**		**P706017-01**							
gamma-BHC (Lindane)	6/9/97	0.00200	ND	0.00218	mg/l	50.0-150	**109**			
Endrin	"	0.00200	ND	0.00224	"	50.0-150	**112**			
Heptachlor	"	0.00200	ND	0.00206	"	50.0-150	**103**			
Heptachlor epoxide	"	0.00200	ND	0.00228	"	50.0-150	**114**			
Methoxychlor	"	0.00200	ND	0.00220	"	50.0-150	**110**			
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	"	*0.00200*		*0.00168*	"	*65.0-130*	*84.0*			
Surrogate: Decachlorobiphenyl	"	*0.00200*		*0.00180*	"	*65.0-130*	*90.0*			

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Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

TCLP Herbicides per EPA Method 1311/8151/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0670342	**Date Prepared: 6/16/97**				**Extraction Method: EPA 1311/3520**					
Blank	**0670342-BLK1**									
2,4-D	6/18/97			**ND**	mg/l	**0.0100**				
2,4,5-TP (Silvex)	"			**ND**	"	**0.00100**				
Surrogate: 2,4-DCAA	*"*	*0.0200*		*0.0201*	*"*	*24.0-135*	*100*			
LCS	**0670342-BS1**									
2,4-D	6/18/97	0.0200		0.0197	mg/l	34.0-136	98.5			
2,4,5-TP (Silvex)	"	0.00200		0.00207	"	34.0-123	103			
Surrogate: 2,4-DCAA	*"*	*0.0200*		*0.0227*	*"*	*24.0-135*	*114*			
Duplicate	**0670342-DUP1**		**P706017-01**							
2,4-D	6/18/97		ND	ND	mg/l			20.0		
2,4,5-TP (Silvex)	"		ND	ND	"			20.0		
Surrogate: 2,4-DCAA	*"*	*0.0200*		*0.0241*	*"*	*24.0-135*	*121*			
Matrix Spike	**0670342-MS1**		**P706017-01**							
2,4-D	6/18/97	0.0200	ND	0.0215	mg/l	34.0-136	**108**			
2,4,5-TP (Silvex)	"	0.00200	ND	0.00227	"	34.0-123	**113**			
Surrogate: 2,4-DCAA	*"*	*0.0200*		*0.0232*	*"*	*24.0-135*	*116*			

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Conventional Chemistry Parameters per APHA/EPA Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0670368	**Date Prepared: 6/17/97**				**Extraction Method: Wet Chem**					
Duplicate	**0670368-DUP1**	**P706017-01**								
pH	6/17/97		8.01	8.04	pH units			10.0	**0.374**	

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

S Wright
Sandra K. Wright, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

SCOEPA00019846

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Physical Parameters per APHA/ASTM/EPA Methods/Quality Control
North Creek Analytical - Portland

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0670044	**Date Prepared: 5/29/97**					**Extraction Method: EPA 1010**				
Duplicate	**0670044-DUP1**	**P705277-04**								
Flashpoint	5/29/97		150	150	°F			50.0	**0**	3

North Creek Analytical, Inc.

**Refer to end of report for text of notes and definitions.*

S Wright

Sandra K. Wright, Project Manager

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508
East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

SCOEPA00019847

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

BOTHELL ▪ (425) 481-9200 ▪ FAX 485-2992
SPOKANE ▪ (509) 924-9200 ▪ FAX 924-9290
PORTLAND ▪ (503) 643-9200 ▪ FAX 644-2202

Wacker Siltronics Corporation	Project:	Soil	Sampled:	6/2/97
7200 N.W. Front	Project Number:	N/A	Received:	6/2/97
Portland, OR 97210	Project Manager:	Dianne Mullan	Reported:	7/9/97 14:51

Notes and Definitions

#	Note
1	Detected hydrocarbons in the diesel range do not have pattern consistent with diesel fuel or related petroleum product. The sample has a pattern similar to samples that contain PAHs.
2	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
3	No flash detected up to 150 °F
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

ATTACHMENT A

North Creek Analytical	Client Proj. ID: **97-606**	Sampled: 06/02/97
9405 S.W. Nimbus Ave.	Sample Descript: P706017-01	Received: 06/19/97
Beaverton, OR 97008	Matrix: SOLID	Extracted: 06/19/97
	Analysis Method: EPA 8240	Analyzed: 06/20/97
Attention: Sandra K. Wright	Lab Number: 9706A05-01	Reported: 06/23/97

QC Batch Number: MS0620978240F3A
Instrument ID: F3

TCLP Volatiles (EPA 8240)

Analyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
Benzene	0.5	0.020	N.D.
Carbon tetrachloride	0.5	0.020	N.D.
Chlorobenzene	100	0.020	N.D.
Chloroform	6.0	0.020	N.D.
1,2-Dichloroethane	0.5	0.020	N.D.
1,1-Dichloroethylene	0.7	0.020	N.D.
Methyl ethyl ketone	200	0.10	N.D.
Tetrachloroethylene	0.7	0.020	N.D.
Trichloroethylene	0.5	0.020	N.D.
Vinyl chloride	0.2	0.020	N.D.

Surrogates	Control Limits %		% Recovery
1,2-Dichloroethane-d4	76	114	98
Toluene-d8	88	110	101
4-Bromofluorobenzene	86	115	94

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager

SCOEPA00019849

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

ATTACHMENT A (CONTINUED)

North Creek Analytical	Client Proj. ID: 97-606	Sampled:
9405 S.W. Nimbus Ave.	Sample Descript: Method Blank	Received: 06/19/97
Beaverton, OR 97008	Matrix: SOLID	Extracted: 06/19/97
	Analysis Method: EPA 8240	Analyzed: 06/20/97
Attention: Sandra K. Wright	Lab Number: 9706A05-02	Reported: 06/23/97

QC Batch Number: MS0620978240F3A
Instrument ID: F3

TCLP Volatiles (EPA 8240)

Analyte	Max. Limit mg/L	Detection Limit mg/L	Sample Results mg/L
Benzene	0.5	0.020	N.D.
Carbon tetrachloride	0.5	0.020	N.D.
Chlorobenzene	100	0.020	N.D.
Chloroform	6.0	0.020	N.D.
1,2-Dichloroethane	0.5	0.020	N.D.
1,1-Dichloroethylene	0.7	0.020	N.D.
Methyl ethyl ketone	200	0.10	N.D.
Tetrachloroethylene	0.7	0.020	N.D.
Trichloroethylene	0.5	0.020	N.D.
Vinyl chloride	0.2	0.020	N.D.

Surrogates	Control Limits %		% Recovery
1,2-Dichloroethane-d4	76	114	98
Toluene-d8	88	110	98
4-Bromofluorobenzene	86	115	94

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

ATTACHMENT A (CONTINUED)

North Creek Analytical	Client Project ID:	-	
9405 S.W. Nimbus Ave.	Matrix:	Liquid	
Beaverton, OR 97008			
Attention: Sandra K. Wright	Work Order #:	9706A05 01, 02	Reported: Jun 24, 1997

QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene
QC Batch#:	MS0620978240F3A	MS0620978240F3A	MS0620978240F3A	MS0620978240F3A	MS0620978240F3A
Analy. Method:	EPA 8240	EPA 8240	EPA 8240	EPA 8240	EPA 8240
Prep. Method:					
Analyst:	L. Zhu	L. Zhu	L. Zhu	L. Zhu	L. Zhu
MS/MSD #:	9706A0501	9706A0501	9706A0501	9706A0501	9706A0501
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/19/97	6/19/97	6/19/97	6/19/97	6/19/97
Analyzed Date:	6/20/97	6/20/97	6/20/97	6/20/97	6/20/97
Instrument I.D.#:	F3	F3	F3	F3	F3
Conc. Spiked:	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L
Result:	48	46	46	46	45
MS % Recovery:	96	92	92	92	90
Dup. Result:	46	46	47	47	46
MSD % Recov.:	92	92	94	94	92
RPD:	4.3	0.0	2.2	2.2	2.2
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	VB062097	VB062097	VB062097	VB062097	VB062097
Prepared Date:	6/20/97	6/20/97	6/20/97	6/20/97	6/19/97
Analyzed Date:	6/20/97	6/20/97	6/20/97	6/20/97	6/20/97
Instrument I.D.#:	F3	F3	F3	F3	F3
Conc. Spiked:	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L
LCS Result:	42	42	43	44	43
LCS % Recov.:	82	82	86	88	86
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	65-135	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Tod Granicher
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

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NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # 97-06017

REPORT TO: Wacker Siltronic
ATTENTION: Dianne Mullan
ADDRESS: 7200 N.W. Front Ave
Portland, Or
PHONE: 219-7274 FAX: 417-4144

INVOICE TO: Wacker Siltronic
ATTENTION: Actts. Payable
ADDRESS: same
P.O. NUMBER: 54500 NCA QUOTE #:

PROJECT NAME:
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: X (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: TCLP-8081 | TCLP-8240 | TCLP-8150 | TPH-G | TPH-D | 418.1 Mod. | PH-9040 | Flash Point 1010 | TCLP metals RCRA-8 | PCB

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TCLP-8081	TCLP-8240	TCLP-8150	TPH-G	TPH-D	418.1 Mod.	PH-9040	Flash Point 1010	TCLP metals RCRA-8	PCB	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	97-606	6/2/97 0715		X	X	X	X	X	X	X	X	X	X	S	1	
2.																
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																

RELINQUISHED BY (Signature): Dianne Mullan		DATE: 6/2/97	RECEIVED BY (Signature): Larry Spangler		DATE: 6-2-97
PRINT NAME: Dianne Mullan	FIRM: Wacker	TIME: ~~0845~~ 1420	PRINT NAME: Larry Spangler	FIRM: NCA	TIME: 1420
RELINQUISHED BY (Signature): Larry Spangler		DATE: 6-2-97	RECEIVED BY (Signature): Clare Mull		DATE: 6/2/97
PRINT NAME: Larry Spangler	FIRM: NCA	TIME: 1525	PRINT NAME: Clare Mull	FIRM: NCA	TIME: 15:25

ADDITIONAL REMARKS:

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SCOEPA00019852

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NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order #

REPORT TO: Wacker Siltronic
ATTENTION: Dianne Mullan
ADDRESS: 7200 N.W. Front Ave
Rm Portland,
PHONE: 219-7274 FAX: 417-4144
PROJECT NAME:
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan

INVOICE TO: Wacker Siltronic
ATTENTION: Accts Payable
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: ~~3~~ (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	Analysis Request: PH-9040	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	97-606-A	6/10/97 0800		X	S	1	
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY (Signature): Dianne Mullan	DATE: 6/10/97	RECEIVED BY (Signature): Paul Conroy	DATE: 6-10-97
PRINT NAME: Dianne Mullan FIRM: Wacker	TIME: 0845	PRINT NAME: PAUL CONROY FIRM: WACKR.	TIME: 9:00
RELINQUISHED BY (Signature): Paul Conroy	DATE: 6-10-97	RECEIVED BY (Signature): Sara Mc Clurg	DATE: 6-10-97
PRINT NAME: PAUL CONROY FIRM: WACKR.	TIME: 9:50	PRINT NAME: Sara Mc Clurg FIRM: NCA	TIME: 09:50

ADDITIONAL REMARKS:

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SCOEPA00019853

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order #

REPORT TO: Wacker Siltronic
ATTENTION: Dianne Mullan
ADDRESS: 7200 N.W. Front Ave
Portland, OR 97210
PHONE: 219-7274 FAX: 417-4144
PROJECT NAME: BOX - 65
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan

INVOICE TO: Wacker Siltronic
ATTENTION: Accts. Payable
ADDRESS: Same
P.O. NUMBER: 405748 NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | ~~3~~ | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request:

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TCLP Metals & RCRA	PCB	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	97-608	8/19/97 0730		X	X	S	1	
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

RELINQUISHED BY (Signature): Dianne E Mullan	DATE: 8/19/97	RECEIVED BY (Signature): Paul Conroy	DATE: 8-19-97		
PRINT NAME: Dianne E Mullan	FIRM: Wacker	TIME: 0840	PRINT NAME: PAUL CONROY	FIRM: WCKR.	TIME: 9:45
RELINQUISHED BY (Signature): Paul Conroy	DATE: 8-19-97	RECEIVED BY (Signature): Kari Cline	DATE: 8/19/97		
PRINT NAME: PAUL CONROY	FIRM: WCKR.	TIME: 10:20	PRINT NAME: KARI CLINE	FIRM: NCA	TIME: 10:30

ADDITIONAL REMARKS:

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SCOEPA00019854

Soil

LOG SHEET

SAMPLES SENT TO OUTSIDE LABORATORY

1. Facilities Operations # (Year - #): 97-608

2. Date/Time of Sample: 8/19/97 / 0730

3. Name of Sampler: Dianne Mullan

4. Sample Description: Drop Box - 65 - soil back of WWTP
mike Sutton

5. Sent To: X North Creek Analytical
(formerly Pacific Environmental Laboratory, Inc.)
9405 SW Nimbus Avenue
Beaverton, Oregon 97005
643-9200

___ Wacker's Analytical Laboratory

___ Columbia Analytical Services, Incorporated
1152 3rd Avenue
Longview, Washington 98632
(206) 577-7222

___ _____

_____

_____

6. Analyses Required: TCLP - metals - RCRA - 8
PCB

7. Chain of Custody Submitted; Yes No

8. Purchase Order Number: 405748

9. Cost (or estimate): _____

10. Results Received On: FAX: _____ Final: _____

11. Additional Notes; _____

_____

_____

TJR 15 Nov 91
TJR 24 Jan 97 Revised

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order #

REPORT TO: Wacker Siltronic
ATTENTION: Dianne Mullan
ADDRESS: 7200 N.W. Front Ave.
Portland, Or
PHONE: 219-7274 FAX: 417-4144

INVOICE TO: Wacker Siltronic
ATTENTION: Actts. Payable
ADDRESS: same
P.O. NUMBER: 54500Dm NCA QUOTE #:

PROJECT NAME:
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day

Fuels & Hydrocarbon Analyses: X (Standard) | 3-4 | 2 | 1 | Same Day

OTHER Specify:

* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request:

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TCLP-8081	TCLP-8240	TCLP-8150	TPH-G	TPH-D	418.1 Mod.	PH-9040	Flash Point	TCLP metals RCRA-8	PCB	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	97.606	6/2/97 0715		X	X	X	X	X	X	X	X	X	X	S	1	
2.																
3.																
4.																
5.																
6.																
7.																
8.																
9.																
10.																

RELINQUISHED BY (Signature): Dianne Mullan	DATE: 6/2/97	RECEIVED BY (Signature): [signature]	DATE: 6-2-97
PRINT NAME: Dianne Mullan FIRM: Wacker	TIME: ~~0875~~ 1420	PRINT NAME: Larry Spangler FIRM: NCA	TIME: 1420
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature):	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS: SPOKE TO NCA - Need to eliminate of TCLP-metals - PCB - Mike Sutton

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SCOEPA00019856

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order #

REPORT TO: Wacker Siltronic
ATTENTION: Dianne Mullan
ADDRESS: 7200 N.W. Front Ave
Re. Portland.
PHONE: 219-7274 FAX: 417-4144
PROJECT NAME:
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan

INVOICE TO: Wacker Siltronic
ATTENTION: Accts Payable
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: PH-9040

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	PH-9040	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	97.606-A	6/10/97 0800		X	S	1	
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY (Signature): Dianne Mullan	DATE: 6/10/97	RECEIVED BY (Signature): Paul Conroy	DATE: 6-10-97
PRINT NAME: Dianne Mullan FIRM: Wacker	TIME: 0845	PRINT NAME: PAUL CONROY FIRM: WCKR.	TIME: 9:00
RELINQUISHED BY (Signature): Paul Conroy	DATE: 6-10-97	RECEIVED BY (Signature): Sara Mc Clurg	DATE: 6-10-97
PRINT NAME: PAUL CONROY FIRM: WCKR.	TIME: 9:50	PRINT NAME: Sara Mc Clurg FIRM: NCA	TIME: 09:50

ADDITIONAL REMARKS:

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SCOEPA00019857

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

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East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order #

REPORT TO: Wacker Siltronic
ATTENTION: Dianne Mullan
ADDRESS: 7200 N.W. Front Ave
Portland,
PHONE: 219-7274 FAX: 417-4144
PROJECT NAME:
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan

INVOICE TO: Wacker Siltronic
ATTENTION: Accts Payable
ADDRESS:
P.O. NUMBER: NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) | 7 | 5 | 4 | 3 | 2 | 1 | Same Day
Fuels & Hydrocarbon Analyses: 3 (Standard) | 3-4 | 2 | 1 | Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: PH-9040

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	PH-9040	MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1.	97-606-A	6/10/97 0800		X	S	1	
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY (Signature): Dianne Mullan DATE: 6/10/97
PRINT NAME: Dianne Mullan FIRM: Wacker TIME: 0845
RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

RELINQUISHED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY (Signature): DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE OF

COC Rev 8, 1/96

SCOEPA00019858

Drop Box - 65

LOG SHEET

SAMPLES SENT TO OUTSIDE LABORATORY

1. Facilities Operations # (Year - #): 97-606
2. Date/Time of Sample: 6/2/97 / 0715
3. Name of Sampler: Dianne Mullan
4. Sample Description: Soil Drop Box #65

5. Sent To: X North Creek Analytical
(formerly Pacific Environmental Laboratory, Inc.)
9405 SW Nimbus Avenue
Beaverton, Oregon 97005
643-9200

___ Wacker's Analytical Laboratory

___ Columbia Analytical Services, Incorporated
1152 3rd Avenue
Longview, Washington 98632
(206) 577-7222

___ _____

6. Analyses Required: TCLP: 8081, 8240 (complete), 8150, TPH-G
TPH-D, 418.1 mod, PH-9040, Flash Point 1010
TCLP metals RCRA-8, PCB
7. Chain of Custody Submitted; (Yes) No
8. Purchase Order Number: 54500
9. Cost (or estimate): _____
10. Results Received On: FAX: _____ Final: _____
11. Additional Notes; _____

TJR 15 Nov 91
TJR 24 Jan 97 Revised

LOG SHEET

SAMPLES SENT TO OUTSIDE LABORATORY

1. Facilities Operations # (Year - #): 94-79

2. Date/Time of Sample: 8 Dec 94 / 0915

3. Name of Sampler: George Stevens/T.J. Rothschild

4. Sample Description: Soil behind Nitrogen Tanks

5. Sent To: ✓ North Creek Analytical
(formerly Pacific Environmental Laboratory, Inc.)
9405 SW Nimbus Avenue
Beaverton, Oregon 97005
643-9200

___ Wacker's Analytical Laboratory

___ Columbia Analytical Services, Incorporated
1152 3rd Avenue
Longview, Washington 98632
(206) 577-7222

___

6. Analyses Required: TCLP Benzene (EPA 8240); TCLP 2,4-D; TPH-G; TPH-D (EPA 418.1)

7. Chain of Custody Submitted; (Yes) No

8. Purchase Order Number: 46998

9. Cost (or estimate): _____

10. Results Received On: 12-9, 12-14

11. Additional Notes; TCLP - Volatiles → Rcd 9 Dec 94
THP-D, -G FAX on 9 Dec 94
pH/TCLP Vol. Org. FAX on 15 Dec 94

TJR 15 Nov 91
TJR 1 Jul 94 Revised

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RECEIVED JAN 0 6 1995

December 19, 1994

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Thomas J. Rothschild

RE: JOB # 94-79
P.O.# 46998
PROJECT -

Enclosed are test results for your samples received in this lab on Dec. 08, 1994. For your reference, these analyses have been assigned our NCA # 94-3749.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

Please call if you have any questions.

Respectfully,

Howard Holmes
Project Manager

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pH per EPA 9045
Results In standard units

Client: Wacker Siltronic Corporation
Project:
Received: 12/08/1994

NCA Number: 94-3749
Matrix: soil

Sample Name	Analyte	Result	MRL	Date Prepped	Date Analyzed
94-79	pH	6.8	0-14	12/13/94	12/13/94

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019862

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Flashpoint (PMCC)
Results In degrees F

Client: Wacker Siltronic Corporation
Project:
Received: 12/08/1994

NCA Number: 94-3749
Matrix: soil

Sample Name	Analyte	Result	MRL	Date Prepped	Date Analyzed
94-79	No flash to	150		12/16/94	12/16/94

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019863

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TPH-G per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project:
Received: 12/08/1994

NCA Number: 94-3749
Matrix: soil

Sample Name	Analyte	Result	MRL	Date Prepped	Date Analyzed
94-79	Gasoline	200	40	12/08/94	12/08/94
Method Blank	Gasoline	ND	2.0		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019864

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TPH-D per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project:
Received: 12/08/1994

NCA Number: 94-3749
Matrix: soil

Sample Name	Analyte	Result	MRL	Date Prepped	Date Analyzed
94-79	Diesel/related	14,000	630	12/08/94	12/08/94
Method Blank	Diesel/related	ND	25		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019865

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TCLP VOC's per EPA 1311, 8240
Results In mg/L (ppm)

Client: Wacker Siltronic Corporation
Project:
Received: 12/08/1994

NCA Number: 94-3749
Matrix: soil

Sample Name	Analyte	Result	MRL
94-79	Benzene	0.30	0.010
	Carbon Tetrachloride	ND	0.010
	Chlorobenzene	ND	0.010
	Chloroform	ND	0.010
	1,4-Dichlorobenzene	ND	0.010
	1,2-Dichloroethane	ND	0.010
	1,1-Dichloroethene	ND	0.010
	Methyl Ethyl Ketone	ND	0.038
	Tetrachloroethene	ND	0.010
	Trichloroethene	ND	0.010
	Vinyl Chloride	ND	0.025
	Date Extracted	12/08/94	
	Date Prepped	12/09/94	
	Date Analyzed	12/09/94	
Method Blank	Benzene	ND	0.0020
	Carbon Tetrachloride	ND	0.0020
	Chlorobenzene	ND	0.0020
	Chloroform	ND	0.0020
	1,4-Dichlorobenzene	ND	0.0020
	1,2-Dichloroethane	ND	0.0020
	1,1-Dichloroethene	ND	0.0020
	Methyl Ethyl Ketone	ND	0.0075
	Tetrachloroethene	ND	0.0020
	Trichloroethene	ND	0.0020
	Vinyl Chloride	ND	0.0050

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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TCLP Herbicides per EPA 1311, 8150
Results In mg/L (ppm)

Client: Wacker Siltronic Corporation
Project:
Received: 12/08/1994

NCA Number: 94-3749
Matrix: soil

Sample Name	Analyte	Result	MRL
94-79	2,4-D	ND	0.040
	2,4,5-TP (Silvex)	ND	0.020
	Date Extracted	12/08/94	
	Date Prepped	12/12/94	
	Date Analyzed	12/14/94	
Method Blank	2,4-D	ND	0.040
	2,4,5-TP (Silvex)	ND	0.020

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019867

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project:

NCA Number: 94-3749
Received: 12/08/1994

Sample Name	Analyte	Result	Control Limits
TPH-G per Oregon DEQ			
94-79	4-Bromofluorobenzene	112	63-126
	Trifluorotoluene	-- *[1]	50-150
TPH-D per Oregon DEQ			
94-79	1-Chlorooctadecane	-- *[2]	50-150
TCLP VOC's per EPA 1311, 8240			
94-79	4-Bromofluorobenzene	101	74-121
	1,2-Dichloroethane-d4	91	70-121
	Toluene-d8	99	81-117
TCLP Herbicides per EPA 1311, 8150			
94-79	2,4-Dichlorophenyl acetic acid	78	50-150

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019868

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COMMENTS

Client: Wacker Siltronic Corporation
Project:

NCA Number: 94-3749
Received: 12/08/1994

1. Unable to calculate surrogate recovery due to dilution necessary for analysis.

2. Unable to calculate surrogate recovery due to matrix interference.

SCOEPA00019869

NORTH CREEK ANALYTICAL

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic Corporation

ADDRESS: 7200 N W Front Avenue
Portland, Oregon 97210

PHONE: 243-2020 FAX:

PROJECT NAME:

PROJECT NUMBER: 94-79

SAMPLED BY: Thomas J. Rothschild

REPORT TO: Thomas J. Rothschild

BILLING TO:

P.O. NUMBER:

NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | 1

** Turnaround Requests less than standard will incur Rush Charges*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	THP-G	THP-D	TCLP-Benzene	TCLP-2,4-D	Flash Point	pH				COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 94-79	8 Dec 1994 0915	Soil	1	X	X	X	X	X	X				X = 1day rush	94-3749
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														

Analysis Request:

RELINQUISHED BY: Thomas J. Rothschild	DATE: 8 Dec 94	RECEIVED BY: Dineen Voss	DATE: 12/7/94
PRINT NAME: Thomas J. Rothschild FIRM: Wacker	TIME: 1025	PRINT NAME: Dineen Voss FIRM: NCA	TIME: 1021
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

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SCOEPA00019870

NORTH CREEK ANALYTICAL

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic Corporation

ADDRESS: 7200 N.W. Front Avenue
Portland, Oregon 97210

PHONE: 243-2020 FAX:

REPORT TO: Thomas J. Rothschild

BILLING TO:

P.O. NUMBER:

NCA QUOTE #:

PROJECT NAME:

PROJECT NUMBER: 94-79

SAMPLED BY: Thomas J. Rothschild

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | 1

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

Analysis Request:

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	THP-G	THP-D	TCLP-Benzene	TCLP-2,4-D	Flash Point	pH			COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 94-79	8 Dec 1994 0915	Soil	1										94-3749
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.													

RELINQUISHED BY: Thomas J. Rothschild	DATE: 8 Dec 94	RECEIVED BY: Dineen Voss	DATE: 12/7/94
PRINT NAME: Thomas J. Rothschild FIRM: Wacker	TIME: 1025	PRINT NAME: Dineen Voss FIRM: NCA	TIME: 1021
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

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SCOEPA00019871

LOG SHEET

SAMPLES SENT TO OUTSIDE LABORATORY

1. Facilities Operations # (Year - #): ~~94-79~~ ~~94-7~~ 94-79.5

2. Date/Time of Sample: 9 Dec 94 / 1400

3. Name of Sampler: Thomas J. Rothschild

4. Sample Description: Soil south of Nitrogen Tanks

5. Sent To: ✓ North Creek Analytical
(formerly Pacific Environmental Laboratory, Inc.)
9405 SW Nimbus Avenue
Beaverton, Oregon 97005
643-9200

___ Wacker's Analytical Laboratory

___ Columbia Analytical Services, Incorporated
1152 3rd Avenue
Longview, Washington 98632
(206) 577-7222

6. Analyses Required: TCLP metals

7. Chain of Custody Submitted; (Yes) No

8. Purchase Order Number: 30381

9. Cost (or estimate): _____

10. Results Received On: Dec. 19, '94

11. Additional Notes; _____

TJR 15 Nov 91
TJR 1 Jul 94 Revised

NORTH CREEK ANALYTICAL

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RECEIVED DEC 3 0 1994

TCLP per EPA 1311, 6010, 7000 series
Results In mg/L (ppm)

Client: Wacker Siltronic Corporation
Project:
Received: 12/09/1994

NCA Number: 94-3802
Matrix: soil

Sample Name	Analyte	Result	MRL	Date Extracted	Date Prepped	Date Analyzed
94-79 5 ppm soil behind Nitrogen Tanks	Arsenic	ND	0.50	12/12/94	12/15/94	12/15/94
	Barium	ND	0.50			
	Cadmium	ND	0.020			
	Chromium	ND	0.020			
	Lead	ND	0.20			
	Mercury	ND	0.010			
	Selenium	ND	0.25			
	Silver	ND	0.020			
Method Blank	Arsenic	ND	0.50			
	Barium	ND	0.50			
	Cadmium	ND	0.020			
	Chromium	ND	0.020			
	Lead	ND	0.20			
	Mercury	ND	0.010			
	Selenium	ND	0.25			
	Silver	ND	0.020			

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

Soil Excavation Sample

1330 14 Dec94

pH: 7.0

Soil Excavation pH
1330
14 Dec94
JJB

14-DEC-94 13:38:40

001:
Net 0,0 g
002:
Net 0,0 g
003:
Net + 19,8 g

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January 23, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB #
P.O.# 31002
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on Jan. 16, 1995. For your reference, these analyses have been assigned our NCA # P501157.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

Please call if you have any questions.

Respectfully,

Howard Holmes
Project Manager

NORTH CREEK ANALYTICAL

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Volatile Organic Compounds per EPA 8240
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Matrix: soil
Received: 01/16/1995
Sampled: 01/16/1995
Prepared: 01/16/95
Analyzed: 01/16/95

Client ID	Lab ID	Analyte	Result	MRL
95-518-BOX	P501157-1	Acetone	ND	13
		Acrolein	ND	100
		Acrylonitrile	ND	5.0
		Benzene	17	1.0
		Bromodichloromethane	ND	1.0
		Bromoform	ND	1.0
		Bromomethane	ND	5.0
		2-Butanone	ND	13
		Carbon Disulfide	ND	1.0
		Carbon Tetrachloride	ND	1.0
		Chlorobenzene	ND	1.0
		Chloroethane	ND	5.0
		Chloroform	ND	1.0
		Chloromethane	ND	5.0
		Dibromochloromethane	ND	1.0
		Dibromomethane	ND	1.0
		1,4-Dichloro-2-butene	ND	5.0
		1,2-Dichlorobenzene	ND	1.0
		1,3-Dichlorobenzene	ND	1.0
		1,4-Dichlorobenzene	ND	1.0
		Dichlorodifluoromethane	ND	2.5
		1,1-Dichloroethane	ND	1.0
		1,2-Dichloroethane	ND	1.0
		1,1-Dichloroethene	ND	1.0
		cis-1,2-Dichloroethene	ND	1.0
		trans1,2Dichloroethene	ND	1.0
		1,2-Dichloropropane	ND	1.0
		cis-1,3-Dichloropropene	ND	1.0
		trans1,3Dichloropropene	ND	1.0
		Ethyl Methacrylate	ND	1.0
		Ethylbenzene	42	1.0
		2-Hexanone	ND	2.5
		Iodomethane	ND	1.0
		4-Methyl-2-pentanone	ND	2.5
		Methylene Chloride	ND	2.5
		Styrene	ND	1.0
		1,1,2,2-Tetrachloroethane	ND	1.0
		Tetrachloroethene	ND	1.0
		Toluene	5.5	1.0
		1,1,1-Trichloroethane	ND	1.0

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019876

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

Volatile Organic Compounds per EPA 8240
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Matrix: soil
Received: 01/16/1995
Sampled: 01/16/1995
Prepared: 01/16/95
Analyzed: 01/16/95

Client ID	Lab ID	Analyte	Result	MRL
95-518-BOX (continued)	P501157-1			
		1,1,2-Trichloroethane	ND	1.0
		Trichloroethene	ND	1.0
		Trichlorofluoromethane	ND	1.0
		1,2,3-Trichloropropane	ND	1.0
		Vinyl Acetate	ND	2.5
		Vinyl Chloride	ND	2.5
		Xylenes (total)	72	1.0

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019877

NORTH CREEK ANALYTICAL
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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

Volatile Organic Compounds per EPA 8240
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Matrix: soil
Received: 01/16/1995
Sampled: 01/16/1995
Prepared: 01/16/95
Analyzed: 01/16/95

Client ID	Lab ID	Analyte	Result	MRL
Method Blank		Acetone	ND	3.1
		Acrolein	ND	25
		Acrylonitrile	ND	1.3
		Benzene	ND	0.25
		Bromodichloromethane	ND	0.25
		Bromoform	ND	0.25
		Bromomethane	ND	1.3
		2-Butanone	ND	3.1
		Carbon Disulfide	ND	0.25
		Carbon Tetrachloride	ND	0.25
		Chlorobenzene	ND	0.25
		Chloroethane	ND	1.3
		Chloroform	ND	0.25
		Chloromethane	ND	1.3
		Dibromochloromethane	ND	0.25
		Dibromomethane	ND	0.25
		1,4-Dichloro-2-butene	ND	1.3
		1,2-Dichlorobenzene	ND	0.25
		1,3-Dichlorobenzene	ND	0.25
		1,4-Dichlorobenzene	ND	0.25
		Dichlorodifluoromethane	ND	0.63
		1,1-Dichloroethane	ND	0.25
		1,2-Dichloroethane	ND	0.25
		1,1-Dichloroethene	ND	0.25
		cis-1,2-Dichloroethene	ND	0.25
		trans1,2Dichloroethene	ND	0.25
		1,2-Dichloropropane	ND	0.25
		cis-1,3-Dichloropropene	ND	0.25
		trans1,3Dichloropropene	ND	0.25
		Ethyl Methacrylate	ND	0.25
		Ethylbenzene	ND	0.25
		2-Hexanone	ND	0.63
		Iodomethane	ND	0.25
		4-Methyl-2-pentanone	ND	0.63
		Methylene Chloride	ND	0.63
		Styrene	ND	0.25
		1,1,2,2-Tetrachloroethane	ND	0.25
		Tetrachloroethene	ND	0.25
		Toluene	ND	0.25
		1,1,1-Trichloroethane	ND	0.25

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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Volatile Organic Compounds per EPA 8240
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Matrix: soil
Received: 01/16/1995
Sampled: 01/16/1995
Prepared: 01/16/95
Analyzed: 01/16/95

Client ID	Lab ID	Analyte	Result	MRL
Method Blank (continued)		1,1,2-Trichloroethane	ND	0.25
		Trichloroethene	ND	0.25
		Trichlorofluoromethane	ND	0.25
		1,2,3-Trichloropropane	ND	0.25
		Vinyl Acetate	ND	0.63
		Vinyl Chloride	ND	0.63
		Xylenes (total)	ND	0.25

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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BNAs per EPA 8270 (Table II)
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Matrix: soil
Received: 01/16/1995
Sampled: 01/16/1995
Prepared: 01/16/95
Analyzed: 01/17/95

Client ID	Lab ID	Analyte	Result	MRL
95-518-BOX *[1]	P501157-1	Acenaphthene	1100	780
		Acenaphthylene	ND	780
		Anthracene	ND	780
		Benzidine	ND	1600
		Benzo(a)anthracene	ND	780
		Benzo(a)pyrene	ND	780
		Benzo(g,h,i)perylene	ND	780
		Benzo(k)fluoranthene	ND	780
		3,4-Benzofluoranthene	ND	780
		4-Bromophenyl Phenyl Ether	ND	780
		Butylbenzyl Phthalate	ND	780
		p-Chloro-m-cresol	ND	780
		bis(2-Chloroethoxy)methane	ND	780
		bis(2-Chloroethyl)ether	ND	780
		bis(2-Chloroisopropyl)ether	ND	780
		2-Chloronaphthalene	ND	780
		2-Chlorophenol	ND	780
		4-Chlorophenyl Phenyl Ether	ND	780
		Chrysene	ND	780
		Di-n-butylphthalate	ND	780
		Di-n-octylphthalate	ND	780
		Dibenzo(a,h)anthracene	ND	780
		1,2-Dichlorobenzene	ND	1600
		1,3-Dichlorobenzene	ND	1600
		1,4-Dichlorobenzene	ND	1600
		3,3'-Dichlorobenzidine	ND	1600
		2,4-Dichlorophenol	ND	780
		Diethylphthalate	ND	780
		2,4-Dimethylphenol	ND	1600
		Dimethylphthalate	ND	780
		4,6-Dinitro-o-cresol	ND	1600
		2,4-Dinitrophenol	ND	3100
		2,4-Dinitrotoluene	ND	780
		2,6-Dinitrotoluene	ND	780
		1,2-Diphenylhydrazine(as Azobenzene)	ND	1600
		bis(2-Ethylhexyl)phthalate	ND	3100
		Fluoranthene	1600	780
		Fluorene	ND	780
		Hexachlorobenzene	ND	780
		Hexachlorobutadiene	ND	1600

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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BNAs per EPA 8270 (Table II)
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Matrix: soil
Received: 01/16/1995
Sampled: 01/16/1995
Prepared: 01/16/95
Analyzed: 01/17/95

Client ID	Lab ID	Analyte	Result	MRL
95-518-BOX *[1] (continued)	P501157-1			
		Hexachlorocyclopentadiene	ND	1600
		Hexachloroethane	ND	1600
		Indeno(1,2,3-cd)pyrene	ND	780
		Isophorone	ND	780
		Naphthalene	5300	780
		Nitrobenzene	ND	780
		2-Nitrophenol	ND	780
		4-Nitrophenol	ND	1600
		N-Nitroso-di-n-propylamine	ND	780
		N-Nitrosodimethylamine	ND	1600
		N-Nitrosodiphenylamine	ND	780
		Pentachlorophenol	ND	1600
		Phenanthrene	3700	780
		Phenol	ND	780
		Pyrene	1700	780
		1,2,4-Trichlorobenzene	ND	780
		2,4,6-Trichlorophenol	ND	780

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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BNAs per EPA 8270 (Table II)
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Matrix: soil
Received: 01/16/1995
Sampled: 01/16/1995
Prepared: 01/16/95
Analyzed: 01/17/95

Client ID	Lab ID	Analyte	Result	MRL
Method Blank		Acenaphthene	ND	0.50
		Acenaphthylene	ND	0.50
		Anthracene	ND	0.50
		Benzidine	ND	1.0
		Benzo(a)anthracene	ND	0.50
		Benzo(a)pyrene	ND	0.50
		Benzo(g,h,i)perylene	ND	0.50
		Benzo(k)fluoranthene	ND	0.50
		3,4-Benzofluoranthene	ND	0.50
		4-Bromophenyl Phenyl Ether	ND	0.50
		Butylbenzyl Phthalate	ND	0.50
		p-Chloro-m-cresol	ND	0.50
		bis(2-Chloroethoxy)methane	ND	0.50
		bis(2-Chloroethyl)ether	ND	0.50
		bis(2-Chloroisopropyl)ether	ND	0.50
		2-Chloronaphthalene	ND	0.50
		2-Chlorophenol	ND	0.50
		4-Chlorophenyl Phenyl Ether	ND	0.50
		Chrysene	ND	0.50
		Di-n-butylphthalate	ND	0.50
		Di-n-octylphthalate	ND	0.50
		Dibenzo(a,h)anthracene	ND	0.50
		1,2-Dichlorobenzene	ND	1.0
		1,3-Dichlorobenzene	ND	1.0
		1,4-Dichlorobenzene	ND	1.0
		3,3'-Dichlorobenzidine	ND	1.0
		2,4-Dichlorophenol	ND	0.50
		Diethylphthalate	ND	0.50
		2,4-Dimethylphenol	ND	1.0
		Dimethylphthalate	ND	0.50
		4,6-Dinitro-o-cresol	ND	1.0
		2,4-Dinitrophenol	ND	2.0
		2,4-Dinitrotoluene	ND	0.50
		2,6-Dinitrotoluene	ND	0.50
		1,2-Diphenylhydrazine(as Azobenzene)	ND	1.0
		bis(2-Ethylhexyl)phthalate	ND	2.0
		Fluoranthene	ND	0.50
		Fluorene	ND	0.50
		Hexachlorobenzene	ND	0.50
		Hexachlorobutadiene	ND	1.0

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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BNAs per EPA 8270 (Table II)
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Matrix: soil
Received: 01/16/1995
Sampled: 01/16/1995
Prepared: 01/16/95
Analyzed: 01/17/95

Client ID	Lab ID	Analyte	Result	MRL
Method Blank (continued)		Hexachlorocyclopentadiene	ND	1.0
		Hexachloroethane	ND	1.0
		Indeno(1,2,3-cd)pyrene	ND	0.50
		Isophorone	ND	0.50
		Naphthalene	ND	0.50
		Nitrobenzene	ND	0.50
		2-Nitrophenol	ND	0.50
		4-Nitrophenol	ND	1.0
		N-Nitroso-di-n-propylamine	ND	0.50
		N-Nitrosodimethylamine	ND	1.0
		N-Nitrosodiphenylamine	ND	0.50
		Pentachlorophenol	ND	1.0
		Phenanthrene	ND	0.50
		Phenol	ND	0.50
		Pyrene	ND	0.50
		1,2,4-Trichlorobenzene	ND	0.50
		2,4,6-Trichlorophenol	ND	0.50

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P501157
Received: 01/16/1995

Sample Name	Analyte	Result	Control Limits
Volatile Organic Compounds per EPA 8240			
95-518-BOX	4-Bromofluorobenzene	95	74-121
	1,2-Dichloroethane-d4	82	70-121
	Toluene-d8	94	81-117
BNAs per EPA 8270 (Table II)			
95-518-BOX	2-Fluorobiphenyl	-- *2	30-115
	2-Fluorophenol	-- *2	25-121
	Nitrobenzene-d5	-- *2	23-120
	Phenol-d6	-- *2	24-113
	p-Terphenyl-d14	-- *2	18-137
	2,4,6-Tribromophenol	-- *2	19-122

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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COMMENTS

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P501157
Received: 01/16/1995

1. Detection limit is raised due to dilution necessary for analysis.

2. Unable to calculate surrogate recovery due to dilution necessary for analysis.

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January 23, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Requested Quality Control Data

Enclosed is the in-house quality control data you requested on NCA project number P501157.

Note: Method blank results and Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

A Method Blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your sample.

No target parameters were detected in the method blank associated with your sample at the reporting limit levels noted on the data sheets in the final report.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Howard Holmes
Project Manager

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BATCH QUALITY CONTROL RESULTS
Volatile Organic Compounds per EPA 8240

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P501157
Received: 01/16/1995

METHOD BLANK
Batch # VE95002a
Results In mg/kg (ppm)

Compound	Result	MRL
Acetone	ND	3.1
Acrolein	ND	25
Acrylonitrile	ND	1.3
Benzene	ND	0.25
Bromodichloromethane	ND	0.25
Bromoform	ND	0.25
Bromomethane	ND	1.3
2-Butanone	ND	3.1
Carbon Disulfide	ND	0.25
Carbon Tetrachloride	ND	0.25
Chlorobenzene	ND	0.25
Chloroethane	ND	1.3
Chloroform	ND	0.25
Chloromethane	ND	1.3
Dibromochloromethane	ND	0.25
Dibromomethane	ND	0.25
1,4-Dichloro-2-butene	ND	1.3
1,2-Dichlorobenzene	ND	0.25
1,3-Dichlorobenzene	ND	0.25
1,4-Dichlorobenzene	ND	0.25
Dichlorodifluoromethane	ND	0.63
1,1-Dichloroethane	ND	0.25
1,2-Dichloroethane	ND	0.25
1,1-Dichloroethene	ND	0.25
cis-1,2-Dichloroethene	ND	0.25
trans1,2Dichloroethene	ND	0.25
1,2-Dichloropropane	ND	0.25
cis-1,3-Dichloropropene	ND	0.25
trans1,3Dichloropropene	ND	0.25
Ethyl Methacrylate	ND	0.25
Ethylbenzene	ND	0.25
2-Hexanone	ND	0.63
Iodomethane	ND	0.25
4-Methyl-2-pentanone	ND	0.63
Methylene Chloride	ND	0.63
Styrene	ND	0.25
1,1,2,2-Tetrachloroethane	ND	0.25
Tetrachloroethene	ND	0.25
Toluene	ND	0.25
1,1,1-Trichloroethane	ND	0.25
1,1,2-Trichloroethane	ND	0.25
Trichloroethene	ND	0.25
Trichlorofluoromethane	ND	0.25
1,2,3-Trichloropropane	ND	0.25
Vinyl Acetate	ND	0.63

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BATCH QUALITY CONTROL RESULTS
Volatile Organic Compounds per EPA 8240

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P501157
Received: 01/16/1995

Vinyl Chloride	ND	0.63
Xylenes (total)	ND	0.25
Date Prepared	01/16/1995	
Date Analyzed	01/16/1995	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	99	74-121
1,2-Dichloroethane-d4	84	70-121
Toluene-d8	97	81-117

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BATCH QUALITY CONTROL RESULTS
Volatile Organic Compounds per EPA 8240

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P501157
Received: 01/16/1995

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # VE95002a **Spike ID P501093-1**
Results In mg/kg (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Benzene	2.50	ND	2.36	94
Chlorobenzene	2.50	ND	2.43	97
1,1-Dichloroethene	2.50	ND	2.16	86
Toluene	2.50	ND	2.40	96
Trichloroethene	2.50	ND	2.30	92

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Benzene	2.50	2.42	97	3.1	21	66-142
Chlorobenzene	2.50	2.48	99	2.0	21	60-133
1,1-Dichloroethene	2.50	2.18	87	1.2	22	59-172
Toluene	2.50	2.44	98	2.1	21	59-139
Trichloroethene	2.50	2.35	94	2.2	24	62-137

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BATCH QUALITY CONTROL RESULTS
BNAs per EPA 8270 (Table II)

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P501157
Received: 01/16/1995

METHOD BLANK
Batch # SN95002c
Results In mg/kg (ppm)

Compound	Result	MRL
Acenaphthene	ND	0.50
Acenaphthylene	ND	0.50
Anthracene	ND	0.50
Benzidine	ND	1.0
Benzo(a)anthracene	ND	0.50
Benzo(a)pyrene	ND	0.50
Benzo(g,h,i)perylene	ND	0.50
Benzo(k)fluoranthene	ND	0.50
3,4-Benzofluoranthene	ND	0.50
4-Bromophenyl Phenyl Ether	ND	0.50
Butylbenzyl Phthalate	ND	0.50
p-Chloro-m-cresol	ND	0.50
bis(2-Chloroethoxy)methane	ND	0.50
bis(2-Chloroethyl)ether	ND	0.50
bis(2-Chloroisopropyl)ether	ND	0.50
2-Chloronaphthalene	ND	0.50
2-Chlorophenol	ND	0.50
4-Chlorophenyl Phenyl Ether	ND	0.50
Chrysene	ND	0.50
Di-n-butylphthalate	ND	1.0
Di-n-octylphthalate	ND	0.50
Dibenzo(a,h)anthracene	ND	0.50
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
3,3'-Dichlorobenzidine	ND	1.0
2,4-Dichlorophenol	ND	0.50
Diethylphthalate	ND	0.50
2,4-Dimethylphenol	ND	1.0
Dimethylphthalate	ND	0.50
4,6-Dinitro-o-cresol	ND	1.0
2,4-Dinitrophenol	ND	2.0
2,4-Dinitrotoluene	ND	0.50
2,6-Dinitrotoluene	ND	0.50
1,2-Diphenylhydrazine (as Azobenzene)	ND	1.0
bis(2-Ethylhexyl)phthalate	ND	2.0
Fluoranthene	ND	0.50
Fluorene	ND	0.50
Hexachlorobenzene	ND	0.50
Hexachlorobutadiene	ND	1.0
Hexachlorocyclopentadiene	ND	1.0
Hexachloroethane	ND	1.0
Indeno(1,2,3-cd)pyrene	ND	0.50
Isophorone	ND	0.50
Naphthalene	ND	0.50

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BATCH QUALITY CONTROL RESULTS
BNAs per EPA 8270 (Table II)

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P501157
Received: 01/16/1995

Nitrobenzene	ND	0.50
2-Nitrophenol	ND	0.50
4-Nitrophenol	ND	1.0
N-Nitroso-di-n-propylamine	ND	0.50
N-Nitrosodimethylamine	ND	1.0
N-Nitrosodiphenylamine	ND	0.50
Pentachlorophenol	ND	1.0
Phenanthrene	ND	0.50
Phenol	ND	0.50
Pyrene	ND	0.50
1,2,4-Trichlorobenzene	ND	0.50
2,4,6-Trichlorophenol	ND	0.50
Date Prepared	01/16/1995	
Date Analyzed	01/19/1995	

Surrogate Recovery (%)	Result	Control Limit
2-Fluorobiphenyl	80	30-115
2-Fluorophenol	83	25-121
Nitrobenzene-d5	73	23-120
Phenol-d6	81	24-113
p-Terphenyl-d14	95	18-137
2,4,6-Tribromophenol	78	19-122

SCOEPA00019892

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

BATCH QUALITY CONTROL RESULTS
BNAs per EPA 8270 (Table II)

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P501157
Received: 01/16/1995

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # SN95002a **Spike ID P501079-02**
Results In mg/kg (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Acenaphthene (s)	3.3	ND	--	0
4-Chloro-3-Methylphenol (s)	5.0	ND	--	0
2-Chlorophenol (s)	5.0	ND	--	0
1,4-Dichlorobenzene (s)	3.3	ND	--	0
2,4-Dinitrotoluene (s)	3.3	ND	--	0
4-Nitrophenol (s)	5.0	ND	--	0
n-Nitroso-di-n-propylamine (s)	3.3	ND	--	0
Pentachlorophenol (s)	5.0	ND	--	0
Phenol (s)	5.0	ND	--	0
Pyrene (s)	3.3	ND	--	0
1,2,4-Trichlorobenzene (s)	3.3	ND	--	0

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Acenaphthene (s)	3.3	--	0	0	60	47-145
4-Chloro-3-Methylphenol (s)	5.0	--	0	0	60	22-147
2-Chlorophenol (s)	5.0	--	0	0	60	23-134
1,4-Dichlorobenzene (s)	3.3	--	0	0	60	20-124
2,4-Dinitrotoluene (s)	3.3	--	0	0	60	39-139
4-Nitrophenol (s)	5.0	--	0	0	60	D-132
n-Nitroso-di-n-propylamine (s)	3.3	--	0	0	60	D-230
Pentachlorophenol (s)	5.0	--	0	0	60	14-176
Phenol (s)	5.0	--	0	0	60	5-112
Pyrene (s)	3.3	--	0	0	60	52-115
1,2,4-Trichlorobenzene (s)	3.3	--	0	0	60	44-142

(s) Unable to calculate spike recovery due to dilution.

SCOEPA00019893

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BATCH QUALITY CONTROL RESULTS
BNAs per EPA 8270 (Table II)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P501157
Received: 01/16/1995

LABORATORY CONTROL SAMPLE
Batch # SN95002c
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Acenaphthene	3.3	2.8	85	47-145
4-Chloro-3-Methylphenol	5.0	4.4	88	22-147
2-Chlorophenol	5.0	4.1	82	23-134
1,4-Dichlorobenzene	3.3	2.5	76	20-124
2,4-Dinitrotoluene	3.3	2.5	76	39-139
4-Nitrophenol	5.0	3.8	76	D-123
Nitroso-di-n-propylamine	3.3	2.5	76	D-230
Pentachlorophenol	5.0	4.0	80	14-176
Phenol	5.0	4.3	86	5-112
Pyrene	3.3	2.3	70	52-115
1,2,4-Trichlorobenzene	3.3	2.6	79	44-142

SCOEPA00019894

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CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave Portland, OR
PHONE: 243-2020 X-374 FAX:

REPORT TO: Dianne Mullen
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Box-
SAMPLED BY: Dianne Mullen, Aron Ruddick

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | X

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | 1

** Turnaround Requests less than standard will incur Rush Charg*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	Analysis Request: 8240	8270	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-518-Box-	1/16/94/1000	S	2	X	X	chilled on ice	P501157
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY: Dianne Mullen	DATE: 1/16/94	RECEIVED BY: JC Pedersen	DATE: 1/16/95
PRINT NAME: Dianne Mullen FIRM: Wacker Siltronic	TIME: 1100	PRINT NAME: FIRM: NCA	TIME: 1100
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

PAGE OF

COC Rev 6, 10/94

SCOEPA00019895

NORTH CREEK ANALYTICAL

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave Portland, OR
PHONE: 243-2020 X-374 FAX: 241-7599

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Box - FT/CTR
SAMPLED BY: Dianne Mullan, Aron Ruddick

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | X

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | 1

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	Analysis Request: 8240	8270								COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-518-Box-	1/16/95/1000	S	2	X	X								chilled on ice	P501157
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														

RELINQUISHED BY: Dianne Mullan	DATE: 1/16/~~95~~95	RECEIVED BY: JC Pedersen	DATE: 1/16/95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic	TIME: 1100	PRINT NAME: FIRM: NCA	TIME: 1100
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

PAGE OF

COC Rev 6, 10/94

SCOEPA00019896

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95-533

2. Date/Time of Sample: 1-27-95 / 1020

3. Name of Sampler: Dianne Mullan

4. Sample Discription: Drop Box____ ID# Drop Box 23

Other Test Hole ~~Drop Box 23~~

5. Sent To: X North Creek Analytical
(formerly Pacific Environmental Laboratory, Inc.)
9405 SW Nimbus Avenue
Beaverton, Oregon 97005
643-9200

6. Analyses Required: TCLP: 8240, 8270, Pest., Herb, (8)
TPH-D

7. Chain of Custody Submitted; Yes No

8. Purchase Order Number: 31002

9. Final Results Received On: 02/06/95

10. Additional Notes; Phoned in request for BTEX test to be run on sample. DM

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

NORTH CREEK ANALYTICAL

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RECEIVED FEB 10 1995

INVOICE FOR ANALYTICAL SERVICES

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Accounts Payable

Project Manager: Dianne Mullan

Project: FAB-2, BOX ~~23~~ Dr

Invoice Number: 25020031

Invoice Date: 02/08/95

P.O. #31002

Soil, Received 1/27/95

NCA Sample #: P502059

QTY	ANALYSES PERFORMED	T.A.T.	UNIT PRICE	NET AMOUNT
1	BTEX Distinction	1 Day	119.00	119.00

COPY

Invoice Total $ 119.00

```
*****************************************
*                                       *
* Remit To: North Creek Analytical, Inc. *
*           18939 - 120th Ave. NE  #101 *
*           Bothell, WA      98011-9508 *
*                                       *
*****************************************
```

TERMS: NET 30 DAYS
PAST DUE INVOICES ARE SUBJECT TO A 1.5% PER MONTH SERVICE CHARGE

NORTH CREEK ANALYTICAL

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RECEIVED FEB 1 0 1995

February 8, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB # BOX ~~23~~ DM
P.O.# 31002
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on Jan. 27, 1995. For your reference, these analyses have been assigned our NCA # P502059.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

Please call if you have any questions.

Respectfully,

Howard B Holmes

Howard Holmes
Project Manager

NORTH CREEK ANALYTICAL

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BTEX per EPA 8020
Results In ug/kg (ppb)

RECEIVED FEB 1 0 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P502059
Matrix: soil
Sampled: 01/27/1995
Received: 01/27/1995

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-533	P502059-1	Benzene	200000	1300	02/06/95	02/07/95
		Ethylbenzene	48000	1300		
		Toluene	120000	1300		
		Xylenes (total)	99000	1300		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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SURROGATE RECOVERIES (%)

RECEIVED FEB 1 0 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P502059
Received: 01/27/1995

Sample Name	Analyte	Result	Control Limits
BTEX per EPA 8020			
95-533	4-Bromofluorobenzene	96	63-126

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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RECEIVED FEB 1 0 1995

February 8, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Quality Control Data

NCA project number P502059.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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RECEIVED FEB 1 0 1995

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{(\text{Measured Concentration})}{(\text{Actual Concentration})} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{(\text{Result of Test 1} - \text{Result of Test 2})}{(\text{Result of Test 1} + \text{Result of Test 2})/2} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Howard Holmes
Project Manager

SCOEPA00019903

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BATCH QUALITY CONTROL RESULTS
BTEX per EPA 8020

RECEIVED FEB 1 0 1995

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P502059
Received: 01/27/1995

METHOD BLANK
Batch # BS95003c
Results In ug/kg (ppb)

Compound	Result	MRL
Benzene	ND	13
Ethylbenzene	ND	13
Toluene	ND	13
Xylenes (total)	ND	13
Date Prepared	02/06/1995	
Date Analyzed	02/06/1995	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	103	63-126

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # BS95003a **Spike ID P501311-2**
Results In ug/kg (ppb)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Benzene	20	ND	17.2	86
Chlorobenzene	20	ND	17.4	87
Ethylbenzene	20	ND	17.2	86
Toluene	20	0.53	16.2	78
o-Xylene	20	0.61	18.4	89

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Benzene	20	18.7	94	8.9	17	56-123
Chlorobenzene	20	18.2	91	4.5	16	53-124
Ethylbenzene	20	18.3	92	6.7	20	45-130
Toluene	20	18.2	88	13	24	54-123
o-Xylene	20	18.2	88	1.1	20	50-127

SCOEPA00019904

NORTH CREEK ANALYTICAL
(Formerly Pacific Environmental Laboratory, Inc.)
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REQUEST FOR ADDITIONAL TESTING

RECEIVED FEB 10 1995

DATE: 2-6-95

REQUESTED BY: Sara McClurg

CLIENT: Wacker Siltronics

CONTACT: Dianne Mullan and Chip Bloomer

JOB #: Fab-2

ORIGINAL NCA #: P501283, P501262, P501263

DUE DATE REQUESTED: 2-7-95 RUSH? _____ NO X YES

Adequate amount of sample remaining? _____NO _____YES

Updated chain of custody fax'd to us? _____NO _____YES

Samples re-numbered? _____NO _____YES

Rush! 1 day

NCA #	Sample ID	TEST(S)
P501283-1	95-533	BTEX
P501263-1	95-531-BOX-26	↓
P501262-1	95-530-BOX-25	

New NCA #: _____

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CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave Portland, OR
PHONE: 243-2020 x-374 FAX:

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Box-23
SAMPLED BY: Dianne Mullan

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | ~~3~~ | 2 | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | ~~3~~ | 2 | 1

** Turnaround Requests less than standard will incur Rush Charg*

FAX RESULTS BY :

	SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	JCLP 8270	JCLP 8240	TPH-D	JCLP-Pest.	JCLP-Herb	JCLP (8)				COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1	1. *95-533	1-27-95/1020	S	2	X	X	X	X	X	X				held on ice	P501283-1
	2.														
	3. 95-534-Box-23	1-27-95/1020	S	2	X	X	X	X	X	X				held on ice	P501284
	4.														
	5.														
	6.														
	7.														
	8.														
	9.														
	10.														

RECEIVED FEB 10 1995

RELINQUISHED BY: Dianne E Mullan		DATE: 1-27-95	RECEIVED BY: Sara McClurg		DATE: 1-27-95
PRINT NAME: Dianne Mullan	FIRM: Wacker Siltronic	TIME: 1145	PRINT NAME: Sara McClurg	FIRM: NCA	TIME: 1145
RELINQUISHED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS: JCLP-8240, 8270 & TPH-D sample 95-533 - 1 day turnaround

PAGE OF

COC Rev 6, 10/94

SCOEPA00019906

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95-567

2. Date/Time of Sample: 4-11-95 / 1330

3. Name of Sampler: Dianne Mullan, Sandra Archer

4. Sample Discription: Drop Box____ ID#_____

   Other Soil composition of Stock Pile area

5. Sent To: ✓ North Creek Analytical
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200

6. Analyses Required: TPHH CID, TCLP 8240, TPH-D

7. Chain of Custody Submitted: (Yes) No

8. Purchase Order Number: 31002

9. Final Results Received On: _____

10. Additional Notes; _____

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

NORTH CREEK ANALYTICAL

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April 25, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB # SOIL COMPOSITES
P.O.# 31002
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on Apr. 12, 1995. For your reference, these analyses have been assigned our NCA # P504151.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Howard Holmes
Project Manager

NORTH CREEK ANALYTICAL
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TPH-HCID per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P504151
Matrix: soil
Sampled: 04/11/95
Received: 04/12/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-567	P504151-1	Gasoline	ND	20	04/13/95	04/13/95
		Diesel	ND	50		
		Heavy/Oil	ND	100		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019909

NORTH CREEK ANALYTICAL

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TPH-G per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P504151
Matrix: soil
Sampled: 04/11/95
Received: 04/12/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-567	P504151-1	Gasoline	ND	2.0	04/17/95	04/18/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019910

NORTH CREEK ANALYTICAL

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TPH-D per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P504151
Matrix: soil
Sampled: 04/11/95
Received: 04/12/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-567	P504151-1	Diesel/related	ND	25	04/14/95	04/17/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019911

NORTH CREEK ANALYTICAL

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TCLP VOC's per EPA 8240
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P504151
Matrix: soil
Received: 04/12/95
Sampled: 04/11/95
Prepared: 04/14/95
Analyzed: 04/14/95

Client ID	Lab ID	Analyte	Result	MRL
95-567	P504151-1	Benzene	ND	0.0040
		Carbon Tetrachloride	ND	0.0040
		Chlorobenzene	ND	0.0040
		Chloroform	ND	0.0040
		1,4-Dichlorobenzene	ND	0.0040
		1,2-Dichloroethane	ND	0.0040
		1,1-Dichloroethene	ND	0.0040
		Methyl Ethyl Ketone	ND	0.050
		Tetrachloroethene	ND	0.0040
		Trichloroethene	ND	0.0040
		Vinyl Chloride	ND	0.010

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019912

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SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P504151
Received: 04/12/1995

Sample Name	Analyte	Result	Control Limits
TPH-HCID per Oregon DEQ			
95-567	1-Chlorooctadecane	116	50-150
TPH-G per Oregon DEQ			
95-567	4-Bromofluorobenzene	102	63-126
	Trifluorotoluene	84	50-150
TPH-D per Oregon DEQ			
95-567	1-Chlorooctadecane	87	50-150
TCLP VOC's per EPA 1311, 8240			
95-567	4-Bromofluorobenzene	96	74-121
	1,2-Dichloroethane-d4	100	70-121
	Toluene-d8	98	81-117

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019913

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April 25, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Quality Control Data
JOB # SOIL COMPOSITES
P.O.# 31002
PROJECT - FAB-2

NCA project number P504151.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Howard Holmes
Project Manager

SCOEPA00019915

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BATCH QUALITY CONTROL RESULTS
TPH-HCID per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P504151
Received: 04/12/95

METHOD BLANK
Batch # FA95022c
Results In mg/kg (ppm)

Compound	Result	MRL
Gasoline	ND	20
Diesel	ND	50
Heavy/Oil	ND	100
Date Prepared	04/13/95	
Date Analyzed	04/13/95	

Surrogate Recovery (%)	Result	Control Limit
1-Chlorooctadecane	118	50-150

SCOEPA00019916

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BATCH QUALITY CONTROL RESULTS
TPH-G per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P504151
Received: 04/12/95

METHOD BLANK
Batch # BT95022b
Results In mg/kg (ppm)

Compound	Result	MRL
Gasoline	ND	2.0
Date Prepared	04/17/95	
Date Analyzed	04/18/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	104	63-126
Trifluorotoluene	100	50-150

DUPLICATE
Batch # BT95022a **Duplicate ID P504145-1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Gasoline	ND	ND	0	50

LABORATORY CONTROL SAMPLE
Batch # BT95022b
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Gasoline	31	31	100	50-150

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BATCH QUALITY CONTROL RESULTS
TPH-D per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P504151
Received: 04/12/95

METHOD BLANK
Batch # FC95010a
Results In mg/kg (ppm)

Compound	Result	MRL
Diesel/related	ND	25
Date Prepared	04/14/95	
Date Analyzed	04/17/95	

Surrogate Recovery (%)	Result	Control Limit
1-Chlorooctadecane	88	50-150

DUPLICATE
Batch # FC95010a **Duplicate ID P504140-1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Diesel/related	ND	ND	0	50

LABORATORY CONTROL SAMPLE
Batch # FC95010a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Diesel/related	120	120	100	50-150

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 8240

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P504151
Received: 04/12/95

METHOD BLANK
Batch # VS95013a
Results In mg/kg (ppm)

Compound	Result	MRL
Benzene	ND	0.0020
Carbon Tetrachloride	ND	0.0020
Chlorobenzene	ND	0.0020
Chloroform	ND	0.0020
1,4-Dichlorobenzene	ND	0.0020
1,2-Dichloroethane	ND	0.0020
1,1-Dichloroethene	ND	0.0020
Methyl Ethyl Ketone	ND	0.025
Tetrachloroethene	ND	0.0020
Trichloroethene	ND	0.0020
Vinyl Chloride	ND	0.0050
Date Prepared	04/14/95	
Date Analyzed	04/14/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	94	74-121
1,2-Dichloroethane-d4	102	70-121
Toluene-d8	100	81-117

SCOEPA00019919

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 8240

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P504151
Received: 04/12/95

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # VS95013a **Spike ID P504125-17**
Results In mg/kg (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Benzene	0.020	ND	0.0199	100
Chlorobenzene	0.020	ND	0.0196	98
1,1-Dichloroethene	0.020	ND	0.0214	107
Toluene	0.020	ND	0.0201	101
Trichloroethene	0.020	ND	0.0193	97

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Benzene	0.020	0.0195	98	2.0	21	66-142
Chlorobenzene	0.020	0.0191	96	2.1	21	60-133
1,1-Dichloroethene	0.020	0.0204	102	4.8	22	59-172
Toluene	0.020	0.0197	99	2.0	21	59-139
Trichloroethene	0.020	0.0186	93	4.2	24	62-137

LABORATORY CONTROL SAMPLE
Batch # VS95013a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Benzene	0.020	0.0204	102	66-142
Chlorobenzene	0.020	0.0196	98	60-133
1,1-Dichloroethene	0.020	0.0206	103	59-172
Toluene	0.020	0.0204	102	59-139
Trichloroethene	0.020	0.0191	96	62-137

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave
Portland, OR
PHONE: 243-2020 x 7374 FAX: 241-7599
PROJECT NAME: FAB-2
PROJECT NUMBER: Soil Composition
SAMPLED BY: Dianne Mullan, Sandra Archer

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: ~~10~~ 5 3 2 1
(Please Select One)
Fuels & Hydrocarbon Analyses: ~~5~~ 3 2 1
* Turnaround Requests less than standard will incur Rush Charg.
FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	VPHHCID	TCLP 8240	TPH-D	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-567	4-11-95/1330	S	① 3	X	X	X	Sheldon Lee	P504151
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

RELINQUISHED BY: Dianne E Mullan DATE: 4-12-95
PRINT NAME: Dianne E Mullan FIRM: Wacker Siltronic TIME: 1005
RECEIVED BY: Sara McClurg DATE: 4/12/95
PRINT NAME: Sara McClurg FIRM: NCA TIME: 1005

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS: ① Please mix all 3 containers together for a composite sample -

PAGE 1 OF 1

COC Rev 6, 10/94

SCOEPA00019921

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic

ADDRESS: 7200 N.W. Front Ave
Portland, OR

PHONE: 243-2020 x 7374 FAX: 241-7599

REPORT TO: Dianne Mullan

BILLING TO:

P.O. NUMBER: 31002

NCA QUOTE #:

PROJECT NAME: FAB-2

PROJECT NUMBER: Soil Composition

SAMPLED BY: Dianne Mullan, Sandra Archer

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ~~10~~ 5 3 2 1

(Please Select One)

Fuels & Hydrocarbon Analyses: ~~5~~ 3 2 1

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	Analysis Request: TPHHCID	TCLP 8240	TPH-D						COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-567	4-11-95/1330	S	①3	X	X	X						held on ice	P504151
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.													

RELINQUISHED BY: Dianne E Mullan	DATE: 4-12-95	RECEIVED BY: Sara McClurg	DATE: 4/12/95
PRINT NAME: Dianne E Mullan FIRM: Wacker Siltronic	TIME: 1005	PRINT NAME: Sara McClurg FIRM: NCA	TIME: 1005
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS: ① Please mix all 3 containers together for a composite sample -
4-12-95: adding ~~Form~~ DM TPH-G

PAGE 1 OF 1

COC Rev 6, 10/94

SCOEPA00019922

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95- 568

2. Date/Time of Sample: 5-10-95 / 0850

3. Name of Sampler: Sandra Archer

4. Sample Discription: Drop Box ____ ID# _____

   Other Stockpile - mid section

5. Sent To: X North Creek Analytical
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200

6. Analyses Required: TCLP-8240, TPH-G, TPH-D
   418.1 mod., HCID

7. Chain of Custody Submitted; (Yes) No

8. Purchase Order Number: 31002

9. Final Results Received On: _____

10. Additional Notes; ~~Rush~~ 2 day -

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95- 569

2. Date/Time of Sample: 5-10-95 / 0850

3. Name of Sampler: Dianne Mullan

4. Sample Discription: Drop Box ____ ID# _____

   Other Stock Pile - NW side of pile

5. Sent To: X North Creek Analytical
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200

6. Analyses Required: TCLP-8240, TPH-D, TPH-G
   418.1 mod., HCID

7. Chain of Custody Submitted; (Yes) No

8. Purchase Order Number: 31002

9. Final Results Received On: _____

10. Additional Notes; 2day Rush -

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

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May 16, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB # SOIL-5-10-95
P.O.# 31002
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on May. 10, 1995. For your reference, these analyses have been assigned our NCA # P505123.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Cindy Hetrick

Cindy Hetrick
Project Manager

NORTH CREEK ANALYTICAL
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TPH-HCID per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Matrix: soil
Sampled: 05/10/95
Received: 05/10/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-568	P505123-1	Gasoline	ND	200	05/10/95	05/10/95
		Diesel	DET	500		
		Heavy/Oil	DET	1000		
95-569	P505123-2	Gasoline	ND	2000	05/10/95	05/10/95
		Diesel	DET	5000		
		Heavy/Oil	DET	10000		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019926

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TPH-G per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Matrix: soil
Sampled: 05/10/95
Received: 05/10/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-568	P505123-1	Gasoline	230	20	05/12/95	05/12/95
95-569	P505123-2	Gasoline	1900	200	05/12/95	05/12/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019927

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TPH-D per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Matrix: soil
Sampled: 05/10/95
Received: 05/10/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-568	P505123-1	Diesel/related	6,800	1000	05/10/95	05/10/95
95-569	P505123-2	Diesel/related	40,000	500	05/10/95	05/10/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019928

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TPH-418.1M per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Matrix: soil
Sampled: 05/10/95
Received: 05/10/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-568	P505123-1	TPH	1,300	80	05/10/95	05/10/95
95-569	P505123-2	TPH	4,600	400	05/10/95	05/10/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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TCLP VOC's per EPA 8240
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Matrix: soil
Received: 05/10/95
Sampled: 05/10/95
Prepared: 05/10/95
Analyzed: 05/10/95

Client ID	Lab ID	Analyte	Result	MRL
95-568	P505123-1	Benzene	ND	0.25
		Carbon Tetrachloride	ND	0.25
		Chlorobenzene	ND	0.25
		Chloroform	ND	0.25
		1,4-Dichlorobenzene	ND	0.25
		1,2-Dichloroethane	ND	0.25
		1,1-Dichloroethene	ND	0.25
		Methyl Ethyl Ketone	ND	3.1
		Tetrachloroethene	ND	0.25
		Trichloroethene	ND	0.25
		Vinyl Chloride	ND	0.63

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019930

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TCLP VOC's per EPA 1311, 8240

Results In mg/L (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Matrix: soil
Received: 05/10/95
Sampled: 05/10/95
Extracted: 05/10/95
Prepared: 05/11/95
Analyzed: 05/11/95

Client ID	Lab ID	Analyte	Result	MRL
95-569	P505123-2	Benzene	0.82	0.020
		Carbon Tetrachloride	ND	0.020
		Chlorobenzene	ND	0.020
		Chloroform	ND	0.020
		1,4-Dichlorobenzene	ND	0.020
		1,2-Dichloroethane	ND	0.020
		1,1-Dichloroethene	ND	0.020
		Methyl Ethyl Ketone	ND	0.25
		Tetrachloroethene	ND	0.020
		Trichloroethene	ND	0.020
		Vinyl Chloride	ND	0.050

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019931

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SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P505123
Received: 05/10/1995

Sample Name	Analyte	Result	Control Limits
TPH-HCID per Oregon DEQ			
95-568	1-Chlorooctadecane	– *[1]	50-150
95-569	1-Chlorooctadecane	– *[1]	50-150
TPH-G per Oregon DEQ			
95-568	4-Bromofluorobenzene	96	63-126
	Trifluorotoluene	90	50-150
95-569	4-Bromofluorobenzene	95	63-126
	Trifluorotoluene	– *[1]	50-150
TPH-D per Oregon DEQ			
95-568	1-Chlorooctadecane	– *[1]	50-150
95-569	1-Chlorooctadecane	– *[1]	50-150
TCLP VOC's per EPA 8240			
95-568	4-Bromofluorobenzene	102	74-121
	1,2-Dichloroethane-d4	116	70-121
	Toluene-d8	103	81-117
TCLP VOC's per EPA 1311, 8240			
95-569	4-Bromofluorobenzene	102	74-121
	1,2-Dichloroethane-d4	106	70-121
	Toluene-d8	100	81-117

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019932

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

COMMENTS

Client:	Wacker Siltronic Corporation	NCA Number:	P505123
Project:	FAB-2	**Received:**	05/10/1995

1. Unable to calculate surrogate recovery due to high analyte concentration.

SCOEPA00019933

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May 16, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Quality Control Data
JOB # SOIL-5-10-95
P.O.# 31002
PROJECT - FAB-2

NCA project number P505123.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Cindy Hetrick

Cindy Hetrick
Project Manager

SCOEPA00019935

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BATCH QUALITY CONTROL RESULTS
TPH-HCID per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Received: 05/10/95

METHOD BLANK
Batch # FA95032a
Results In mg/kg (ppm)

Compound	Result	MRL
Gasoline	ND	20
Diesel	ND	50
Heavy/Oil	ND	100
Date Prepared	05/10/95	
Date Analyzed	05/10/95	

Surrogate Recovery (%)	Result	Control Limit
1-Chlorooctadecane	102	50-150

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BATCH QUALITY CONTROL RESULTS
TPH-G per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505123
Received: 05/10/95

METHOD BLANK
Batch # BT95027c
Results In mg/kg (ppm)

Compound	Result	MRL
Gasoline	ND	5.0
Date Prepared	05/12/95	
Date Analyzed	05/12/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	96	63-126
Trifluorotoluene	96	50-150

DUPLICATE
Batch # BT95027c **Duplicate ID P505123-1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Gasoline	230	200	14	50

LABORATORY CONTROL SAMPLE
Batch # BT95027c
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Gasoline	31	29	94	50-150

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BATCH QUALITY CONTROL RESULTS
TPH-D per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505123
Received: 05/10/95

METHOD BLANK
Batch # FC95012c
Results In mg/kg (ppm)

Compound	Result	MRL
Diesel/related	ND	25
Date Prepared	05/10/95	
Date Analyzed	05/10/95	

Surrogate Recovery (%)	Result	Control Limit
1-Chlorooctadecane	96	50-150

DUPLICATE
Batch # FC95012a
Results In mg/kg (ppm)
Duplicate ID P505046-7

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Diesel/related	ND	ND	0	50

LABORATORY CONTROL SAMPLE
Batch # FC95012a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Diesel/related	120	130	108	50-150

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BATCH QUALITY CONTROL RESULTS
TPH-418.1M per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505123
Received: 05/10/95

METHOD BLANK
Batch # FB95025b
Results In mg/kg (ppm)

Compound	Result	MRL
TPH	ND	20
Date Prepared	05/10/95	
Date Analyzed	05/10/95	

DUPLICATE
Batch # FB95025b **Duplicate ID P505120 -1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
TPH	1400	2000	36	50

LABORATORY CONTROL SAMPLE
Batch # FB95025a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
TPH	125	120	96	50-150

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 8240

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Received: 05/10/95

METHOD BLANK
Batch # VE95016a
Results In mg/kg (ppm)

Compound	Result	MRL
Benzene	ND	0.0020
Carbon Tetrachloride	ND	0.0020
Chlorobenzene	ND	0.0020
Chloroform	ND	0.0020
1,4-Dichlorobenzene	ND	0.0020
1,2-Dichloroethane	ND	0.0020
1,1-Dichloroethene	ND	0.0020
Methyl Ethyl Ketone	ND	0.025
Tetrachloroethene	ND	0.0020
Trichloroethene	ND	0.0020
Vinyl Chloride	ND	0.0050
Date Prepared	05/10/95	
Date Analyzed	05/10/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	103	74-121
1,2-Dichloroethane-d4	119	70-121
Toluene-d8	107	81-117

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 1311, 8240

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505123
Received: 05/10/95

METHOD BLANK
Batch # VZ95005a
Results In mg/L (ppm)

Compound	Result	MRL
Benzene	ND	0.0020
Carbon Tetrachloride	ND	0.0020
Chlorobenzene	ND	0.0020
Chloroform	ND	0.0020
1,4-Dichlorobenzene	ND	0.0020
1,2-Dichloroethane	ND	0.0020
1,1-Dichloroethene	ND	0.0020
Methyl Ethyl Ketone	ND	0.025
Tetrachloroethene	ND	0.0020
Trichloroethene	ND	0.0020
Vinyl Chloride	ND	0.0050
Date Extracted	05/10/95	
Date Prepared	05/11/95	
Date Analyzed	05/11/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	100	74-121
1,2-Dichloroethane-d4	104	70-121
Toluene-d8	99	81-117

SCOEPA00019941

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 8240

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505123
Received: 05/10/95

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # VE95016a **Spike ID P504076-1a**
Results In mg/kg (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Benzene	2.50	ND	3.03	121
Chlorobenzene	2.50	ND	2.67	107
1,1-Dichloroethene	2.50	ND	3.24	130
Toluene	2.50	ND	2.90	116
Trichloroethene	2.50	ND	2.90	116

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Benzene	2.50	3.18	127	4.8	21	66-142
Chlorobenzene	2.50	2.80	112	4.6	21	60-133
1,1-Dichloroethene	2.50	3.39	136	4.5	22	59-172
Toluene	2.50	3.06	122	5.0	21	59-139
Trichloroethene	2.50	3.01	120	3.4	24	62-137

LABORATORY CONTROL SAMPLE
Batch # VE95016a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Benzene	2.50	2.89	116	66-142
Chlorobenzene	2.50	2.53	101	60-133
1,1-Dichloroethene	2.50	2.96	118	59-172
Toluene	2.50	2.76	110	59-139
Trichloroethene	2.50	2.70	108	62-137

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 1311, 8240

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505123
Received: 05/10/95

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # VZ95005a **Spike ID P505116-1a**
Results In mg/L (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Benzene	0.020	ND	0.0233	117
Chlorobenzene	0.020	ND	0.0209	105
1,1-Dichloroethene	0.020	ND	0.0264	132
Toluene	0.020	ND	0.0224	112
Trichloroethene	0.020	ND	0.0224	112

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Benzene	0.020	0.0246	123	5.0	21	66-142
Chlorobenzene	0.020	0.0219	110	4.7	21	60-133
1,1-Dichloroethene	0.020	0.0273	137	3.7	22	59-172
Toluene	0.020	0.0237	119	6.1	21	59-139
Trichloroethene	0.020	0.0235	118	5.2	24	62-137

SCOEPA00019943

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 1311, 8240

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505123
Received: 05/10/95

LABORATORY CONTROL SAMPLE
Batch # VZ95005a
Results In mg/L (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Benzene	0.020	0.0235	118	66-142
Chlorobenzene	0.020	0.0206	103	60-133
1,1-Dichloroethene	0.020	0.0248	124	59-172
Toluene	0.020	0.0226	113	59-139
Trichloroethene	0.020	0.0224	112	62-137

SCOEPA00019944

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N. W. Front Ave
Portland, OR
PHONE: 243-2020 X 7374 FAX: 241-7599

REPORT TO: Dianne Mullen
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Soil-5-10-95
SAMPLED BY:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | X | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | X | 1

** Turnaround Requests less than standard will incur Rush Charg.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TCLP-8240	TPH-D	TPH-G	418.1 mod.	HCID					COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-568	5/10/95 0850	S	1	X	X	X	X	X					Samples held	P505123-1
2. 95-569	5/10/95 0850	S	1	X	X	X	X	X					on Ice	2
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														

RELINQUISHED BY: Dianne E Mullen		DATE: 5-10-95	RECEIVED BY: Sara McClurg		DATE: 5-10-95
PRINT NAME: Dianne E Mullen	FIRM: Wacker Siltronic	TIME: 1010	PRINT NAME: Sara McClurg	FIRM: NCA	TIME: 1010
RELINQUISHED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS:

PAGE OF

COC Rev 6, 10/94

SCOEPA00019945

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CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N. W. Front Ave
Portland, OR
PHONE: 243-2020 X 7374 FAX: 241-7599

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Soil-5-10-95
SAMPLED BY:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: ~~10~~ 5 3 X 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 3 X 1

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: *(NUMBER OR DESCRIPTION)*	SAMPLING DATE / TIME	MATRIX *(W,S,O)*	# OF CONT.	TCLP-8240	TPH-D	TPH-G	418.1 mod.	HCID						COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-568	5/10/95 0850	S	1	X	X	X	X	X						Samples held	P505123-1
2. 95-569	5/10/95 0850	S	1	X	X	X	X	X						on Ice	2
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															

RELINQUISHED BY: Dianne E Mullan		DATE: 5-10-95	RECEIVED BY: Sara McClurg		DATE: 5-10-95
PRINT NAME: Dianne E Mulla	FIRM: Wacker Siltronic	TIME: 1010	PRINT NAME: Sara McClurg	FIRM: NCA	TIME: 1010
RELINQUISHED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS:

PAGE OF

COC Rev 6, 10/94

SCOEPA00019946

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95- 570, 571

2. Date/Time of Sample: 5-19-95 / 1400

3. Name of Sampler: Dianne Mullan, Sandra Archer

4. Sample Discription: Drop Box____ ID#_____

   Other STOCK Pile 5-19-95

5. Sent To: X North Creek Analytical
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200

6. Analyses Required: TCLP 8240, TPH-D
   TPH-G 418.1, HCID

7. Chain of Custody Submitted; (Yes) No

8. Purchase Order Number: 31002

9. Final Results Received On: _____

10. Additional Notes; _____

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

NORTH CREEK ANALYTICAL

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May 30, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB # STOCKPILE 5-19
P.O.# 31002
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on May. 19, 1995. For your reference, these analyses have been assigned our NCA # P505247.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Cindy Hetrick

Cindy Hetrick
Project Manager

NORTH CREEK ANALYTICAL

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RECEIVED JUN 0 6 1995

TPH-HCID per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Matrix: soil
Sampled: 05/19/95
Received: 05/19/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-570	P505247-1	Gasoline	DET	800	05/23/95	05/23/95
		Diesel	DET	2000		
		Heavy/Oil	DET	4000		
95-571	P505247-2	Gasoline	DET	800	05/23/95	05/23/95
		Diesel	DET	2000		
		Heavy/Oil	DET	4000		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019949

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TPH-G per Oregon DEQ
Results In mg/kg (ppm)

RECEI JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Matrix: soil
Sampled: 05/19/95
Received: 05/19/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-570	P505247-1	Gasoline/Related (C6-C10)	1400	200	05/23/95	05/25/95
95-571	P505247-2	Gasoline/Related (C6-C10)	900	100	05/23/95	05/25/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019950

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RECEIVED JUN 0 6 1995

TPH-D per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Matrix: soil
Sampled: 05/19/95
Received: 05/19/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-570	P505247-1	Diesel/related	46,000	1300	05/22/95	05/22/95
95-571	P505247-2	Diesel/related	45,000	1300	05/22/95	05/22/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019951

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TPH-418.1M per Oregon DEQ

Results In mg/kg (ppm)

RECEIVED JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Matrix: soil
Sampled: 05/19/95
Received: 05/19/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-570	P505247-1	TPH	1,900	20	05/22/95	05/22/95
95-571	P505247-2	TPH	1,700	20	05/22/95	05/22/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019952

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TCLP VOC's per EPA 1311, 8240

RECEIVED JUN 0 6 1995

Results In mg/L (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Matrix: soil
Received: 05/19/95
Sampled: 05/19/95
Extracted: 05/23/95
Prepared: 05/26/95
Analyzed: 05/26/95

Client ID	Lab ID	Analyte	Result	MRL
95-570	P505247-1	Benzene	5.0	0.020
		Carbon Tetrachloride	ND	0.020
		Chlorobenzene	ND	0.020
		Chloroform	ND	0.020
		1,4-Dichlorobenzene	ND	0.020
		1,2-Dichloroethane	ND	0.020
		1,1-Dichloroethene	ND	0.020
		Methyl Ethyl Ketone	ND	0.25
		Tetrachloroethene	ND	0.020
		Trichloroethene	ND	0.020
		Vinyl Chloride	ND	0.050

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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TCLP VOC's per EPA 1311, 8240

Results In mg/L (ppm)

RECEIVED JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Matrix: soil
Received: 05/19/95
Sampled: 05/19/95
Extracted: 05/23/95
Prepared: 05/26/95
Analyzed: 05/26/95

Client ID	Lab ID	Analyte	Result	MRL
95-571	P505247-2	Benzene	3.1	0.020
		Carbon Tetrachloride	ND	0.020
		Chlorobenzene	ND	0.020
		Chloroform	ND	0.020
		1,4-Dichlorobenzene	ND	0.020
		1,2-Dichloroethane	ND	0.020
		1,1-Dichloroethene	ND	0.020
		Methyl Ethyl Ketone	ND	0.25
		Tetrachloroethene	ND	0.020
		Trichloroethene	ND	0.020
		Vinyl Chloride	ND	0.050

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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SURROGATE RECOVERIES (%)

RECEIVED JUN 0 6 199

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P505247
Received: 05/19/1995

Sample Name	Analyte	Result	Control Limits
TPH-HCID per Oregon DEQ			
95-570	1-Chlorooctadecane	-- *[1]	50-150
95-571	1-Chlorooctadecane	-- *[1]	50-150
TPH-G per Oregon DEQ			
95-570	4-Bromofluorobenzene	99	63-126
	Trifluorotoluene	-- *[1]	50-150
95-571	4-Bromofluorobenzene	96	63-126
	Trifluorotoluene	-- *[1]	50-150
TPH-D per Oregon DEQ			
95-570	1-Chlorooctadecane	-- *[1]	50-150
95-571	1-Chlorooctadecane	-- *[1]	50-150
TCLP VOC's per EPA 1311, 8240			
95-570	4-Bromofluorobenzene	99	74-121
	1,2-Dichloroethane-d4	100	70-121
	Toluene-d8	99	81-117
95-571	4-Bromofluorobenzene	99	74-121
	1,2-Dichloroethane-d4	98	70-121
	Toluene-d8	101	81-117

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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COMMENTS

RECEIVED JUN 0 6 1995

5
5

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P505247
Received: 05/19/1995

1. Unable to calculate surrogate recovery due to high analyte concentration.

SCOEPA00019956

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RECEIVED JUN 0 6 1995

May 30, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Quality Control Data
JOB # STOCKPILE 5-19
P.O.# 31002
PROJECT - FAB-2

NCA project number P505247.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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RECEIVED JUN 0 6 1995

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Cindy Hetrick

Cindy Hetrick
Project Manager

SCOEPA00019958

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BATCH QUALITY CONTROL RESULTS
TPH-HCID per Oregon DEQ

RECEIVED JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Received: 05/19/95

METHOD BLANK
Batch # FA95034b
Results In mg/kg (ppm)

Compound	Result	MRL
Gasoline	ND	20
Diesel	ND	50
Heavy/Oil	ND	100
Date Prepared	05/23/95	
Date Analyzed	05/23/95	

Surrogate Recovery (%)	Result	Control Limit
1-Chlorooctadecane (au)	177	50-150

(au) Surrogate recovery is above control limits. Since no analytes were detected in the sample, the quality of the data has not been affected.

SCOEPA00019959

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BATCH QUALITY CONTROL RESULTS
TPH-G per Oregon DEQ

RECEIVED JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Received: 05/19/95

METHOD BLANK
Batch # BT95031b
Results In mg/kg (ppm)

Compound	Result	MRL
Gasoline/Related (C6-C10)	ND	2.0
Date Prepared	05/23/95	
Date Analyzed	05/24/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	121	63-126
Trifluorotoluene	132	50-150

DUPLICATE
Batch # BT95031b **Duplicate ID P505247-1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Gasoline	1400	1100	24	50

LABORATORY CONTROL SAMPLE
Batch # BT95031b
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Gasoline	31	29	94	50-150

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BATCH QUALITY CONTROL RESULTS
TPH-D per Oregon DEQ

RECEIVED JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505247
Received: 05/19/95

METHOD BLANK
Batch # FC95013b
Results In mg/kg (ppm)

Compound	Result	MRL
Diesel/related	ND	25
Date Prepared	05/22/95	
Date Analyzed	05/22/95	

Surrogate Recovery (%)	Result	Control Limit
1-Chlorooctadecane	86	50-150

DUPLICATE
Batch # FC95013a
Results In mg/kg (ppm)
Duplicate ID 505156B-15

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Diesel/related	300	400	29	50

LABORATORY CONTROL SAMPLE
Batch # FC95013a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Diesel/related	120	120	100	50-150

SCOEPA00019961

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BATCH QUALITY CONTROL RESULTS
TPH-418.1M per Oregon DEQ

RECEIVED JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Received: 05/19/95

METHOD BLANK
Batch # FB95026c
Results In mg/kg (ppm)

Compound	Result	MRL
TPH	ND	20
Date Prepared	05/22/95	
Date Analyzed	05/22/95	

DUPLICATE
Batch # FB95026y **Duplicate ID P505258-13**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
TPH	540	490	9.7	50

LABORATORY CONTROL SAMPLE
Batch # FB95026a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
TPH	125	140	112	50-150

SCOEPA00019962

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 1311, 8240

RECEIVED JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505247
Received: 05/19/95

METHOD BLANK
Batch # VZ95005d
Results In mg/L (ppm)

Compound	Result	MRL
Benzene	ND	0.0020
Carbon Tetrachloride	ND	0.0020
Chlorobenzene	ND	0.0020
Chloroform	ND	0.0020
1,4-Dichlorobenzene	ND	0.0020
1,2-Dichloroethane	ND	0.0020
1,1-Dichloroethene	ND	0.0020
Methyl Ethyl Ketone	ND	0.025
Tetrachloroethene	ND	0.0020
Trichloroethene	ND	0.0020
Vinyl Chloride	ND	0.0050
Date Extracted	05/23/95	
Date Prepared	05/24/95	
Date Analyzed	05/24/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	99	74-121
1,2-Dichloroethane-d4	106	70-121
Toluene-d8	100	81-117

SCOEPA00019963

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 1311, 8240

RECEIVED JUN 0 6 1995

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505247
Received: 05/19/95

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # VZ95005a **Spike ID P505116-1a**
Results In mg/L (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Benzene	0.020	ND	0.0233	117
Chlorobenzene	0.020	ND	0.0209	105
1,1-Dichloroethene	0.020	ND	0.0264	132
Toluene	0.020	ND	0.0224	112
Trichloroethene	0.020	ND	0.0224	112

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Benzene	0.020	0.0246	123	5.0	21	66-142
Chlorobenzene	0.020	0.0219	110	4.7	21	60-133
1,1-Dichloroethene	0.020	0.0273	137	3.7	22	59-172
Toluene	0.020	0.0237	119	6.1	21	59-139
Trichloroethene	0.020	0.0235	118	5.2	24	62-137

LABORATORY CONTROL SAMPLE
Batch # VZ95005d
Results In mg/L (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Benzene	0.020	0.0192	96	66-142
Chlorobenzene	0.020	0.0200	100	60-133
1,1-Dichloroethene	0.020	0.0184	92	59-172
Toluene	0.020	0.0198	99	59-139
Trichloroethene	0.020	0.0184	92	62-137

SCOEPA00019964

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RECEIVED JUN 0 6 1995

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic

ADDRESS: 7200 NW Front Ave
Portland, OR
97210

PHONE: 243-2020 x-374 FAX: 241-7599

PROJECT NAME: FAB-2

PROJECT NUMBER: STOCKPile 5-19

SAMPLED BY: Dianne Mullan, Sandra Archer

REPORT TO: Dianne E. Mullan

BILLING TO:

P.O. NUMBER: 31002

NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | ~~5~~ | 3 | 2 | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: ~~5~~ | 3 | 2 | 1

** Turnaround Requests less than standard will incur Rush Charge*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TCLP 8240	TPH-D	TPH-G	418.1 (mod.)	HCID					COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-570	5-19-95/1400	S	1	X	X	X	X	X					samples held on ice	P505247
2. 95-571	5-19-95/1400	S	1	X	X	X	X	X						
3.							X	X						
4.														
5.														
6.														
7.														
8.														
9.														
10.														

RELINQUISHED BY: Dianne Mullan	DATE: 5-19-95	RECEIVED BY: Sandra Archer	DATE: 5-19-95
PRINT NAME: Dianne Mullan FIRM: WACKER Siltronic	TIME: 1400	PRINT NAME: Sandra Archer FIRM:	TIME: 1400
RELINQUISHED BY: Sandra Archer	DATE: 1420 5/19/95	RECEIVED BY: Sara McClurg	DATE: 5/19/95
PRINT NAME: Sandra Archer FIRM:	TIME:	PRINT NAME: Sara McClurg FIRM: NCA	TIME: 1420

ADDITIONAL REMARKS:

PAGE OF

COC Rev 6, 10/94

SCOEPA00019965

NORTH CREEK ANALYTICAL

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 NW Front Ave
Portland, OR 97210
PHONE: 243-2020 x-374 FAX: 241-7599

REPORT TO: Dianne E. Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: STOCKPile 5-19
SAMPLED BY: Dianne Mullan, Sandra Archer

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | ~~5~~ | 3 | 2 | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: ~~5~~ | 3 | 2 | 1

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TCLP 8240	TPH-D	TPH-G	418.1 (mod.)	HCID					COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-570	5-19-95/1400	S	1	X	X	X	X	X					samples held on ice	P505247
2. 95-571	5-19-95/1400	S	1	X	X	X	X	X						
3.							X	X						
4.														
5.														
6.														
7.														
8.														
9.														
10.														

RELINQUISHED BY	PRINT NAME	FIRM	DATE	TIME	RECEIVED BY	PRINT NAME	FIRM	DATE	TIME
Dianne Mullan	Dianne Mullan	WACKER Siltronic	5-19-95	1400	[illegible]	Sandra Archer		5-19-95	1400
[illegible]	Sandra Archer		5/19/95	1420	Sara McClurg	Sara McClurg	NCA	5/19/95	1420

ADDITIONAL REMARKS:

PAGE OF

COC Rev 6, 10/94

SCOEPA00019966

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95-~~571, 572, 573~~ Dm 573, -574-575

2. Date/Time of Sample: 5-31-95 / 0810

3. Name of Sampler: Dianne Mullan, Sandra Archer

4. Sample Discription: Drop Box____ ID#_____

Other stock Pile composites

5. Sent To: X North Creek Analytical
(formerly Pacific Environmental Laboratory, Inc.)
9405 SW Nimbus Avenue
Beaverton, Oregon 97005
643-9200

6. Analyses Required: TPH - D, 418.1 modified

7. Chain of Custody Submitted; (Yes) No

8. Purchase Order Number: 31002

9. Final Results Received On: _____

10. Additional Notes; Day Rush, 6-1-95 - Contacted Sara @ NCA to change ID # to 573, 574, 575 and to get a verbal -

	418.1	TPH-D
95-573	~~2,300~~ 2,300	6,800
95-574	~~2,300~~ 1,000	3,500
95-575	950	24,000

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

NORTH CREEK ANALYTICAL

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May 31, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Quality Control Data
JOB # 95-573, 574, 575
P.O.# 31002
PROJECT - FAB-2

NCA project number P505347.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Cindy Hetrick

Cindy Hetrick
Project Manager

SCOEPA00019969

NORTH CREEK ANALYTICAL
18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-9508 (206) 481-9200 • FAX 485-2992
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BATCH QUALITY CONTROL RESULTS
TPH-D per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505347
Received: 05/31/95

METHOD BLANK
Batch # FC95014a
Results In mg/kg (ppm)

Compound	Result	MRL
Diesel/related	ND	25
Date Prepared	05/31/95	
Date Analyzed	06/01/95	

Surrogate Recovery (%)	Result	Control Limit
1-Chlorooctadecane	94	50-150

DUPLICATE
Batch # FC95014a
Results In mg/kg (ppm)
Duplicate ID P505314A-1

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Diesel/related	580	550	5.3	50

LABORATORY CONTROL SAMPLE
Batch # FC95014a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Diesel/related	120	130	108	50-150

SCOEPA00019970

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BATCH QUALITY CONTROL RESULTS
TPH-418.1M per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P505347
Received: 05/31/95

METHOD BLANK
Batch # FB95028a
Results In mg/kg (ppm)

Compound	Result	MRL
TPH	ND	20
Date Prepared	05/31/95	
Date Analyzed	06/01/95	

DUPLICATE
Batch # FB95028a **Duplicate ID P505340-1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
TPH	200	200	0	50

LABORATORY CONTROL SAMPLE
Batch # FB95028a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
TPH	125	72	58	50-150

SCOEPA00019971

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May 31, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB # 95-573, 574, 575
P.O.# 31002
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on May. 31, 1995. For your reference, these analyses have been assigned our NCA # P505347.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Cindy Hetrick

Cindy Hetrick
Project Manager

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TPH-D per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505347
Matrix: soil
Sampled: 05/31/95
Received: 05/31/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-573	P505347-1	Diesel/related	6,800	1000	05/31/95	05/31/95
95-574	P505347-2	Diesel/related	3,500	500	05/31/95	05/31/95
95-575	P505347-3	Diesel/related	24,000	1000	05/31/95	05/31/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019973

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TPH-418.1M per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P505347
Matrix: soil
Sampled: 05/31/95
Received: 05/31/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-573	P505347-1	TPH	2300	1000	05/31/95	06/01/95
95-574	P505347-2	TPH	1000	20	05/31/95	06/01/95
95-575	P505347-3	TPH	950	20	05/31/95	06/01/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019974

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SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P505347
Received: 05/31/1995

Sample Name	Analyte	Result	Control Limits
TPH-D per Oregon DEQ			
95-573	1-Chlorooctadecane	– *[1]	50-150
95-574	1-Chlorooctadecane	– *[1]	50-150
95-575	1-Chlorooctadecane	– *[1]	50-150

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019975

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COMMENTS

Client:	Wacker Siltronic Corporation	NCA Number:	P505347
Project:	FAB-2	**Received:**	05/31/1995

1. Unable to calculate surrogate recovery due to high analyte concentration.

SCOEPA00019976

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CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic

ADDRESS: 7200 N. W. Front Ave
Portland, OR

PHONE: 243-2020 x-7374 FAX: 241-7599

REPORT TO: Dianne Mullan

BILLING TO:

P.O. NUMBER: 31002

NCA QUOTE #:

PROJECT NAME: FAB-2

PROJECT NUMBER: 95-5713, 5714, 5715

SAMPLED BY: Dianne E Mullan, Sandra Archer

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | ~~1~~

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | ~~1~~

** Turnaround Requests less than standard will incur Rush Charg.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TPH-D	418.1 mod	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-5713	5-31-95/0810	S	1	X	X	field on ice	P505347
2. 95-5714	5-31-95/0810	S	1	X	X	"	
3. 95-5715	5-31-95/0810	S	1	X	X	"	
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY: Dianne E Mullan	DATE: 5-31-95	RECEIVED BY: Sara McCluey	DATE: 5/31/95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic	TIME: 1330	PRINT NAME: Sara McCluey FIRM: NCA	TIME: 1330
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS: Sample I.D.'s changed per Dianne Mullan's request - 6/1/95 S. McCluey
Project no. changed per Dianne Mullan's request 6/5/95 Cindy Hetrick

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SCOEPA00019977

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CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave
Portland, OR
PHONE: 243-2020 x-7374 FAX: 241-7599

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: 95-571, 572, 573
SAMPLED BY: Dianne E Mullan, Sandra Archer

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | ~~1~~

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | ~~1~~

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TPH-D	418.1 mod.	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-~~571~~ 573*	5-31-95/0810	S	1	X	X	hold on ice	P505347
2. 95-~~572~~ 574*	5-31-95/0810	S	1	X	X	"	
3. 95-~~573~~ 575*	5-31-95/0810	S	1	X	X	"	
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY: Dianne E Mullan		DATE: 5-31-95	RECEIVED BY: Sara McClurg		DATE: 5/31/95
PRINT NAME: Dianne Mullan	FIRM: Wacker Siltronic	TIME: 1330	PRINT NAME: Sara McClurg	FIRM: NCA	TIME: 1330
RELINQUISHED BY:		DATE:	RECEIVED BY:		DATE:
PRINT NAME:	FIRM:	TIME:	PRINT NAME:	FIRM:	TIME:

ADDITIONAL REMARKS: * 6-1-95 - NCA contacted to correct sample # ID.

PAGE OF

COC Rev 6, 10/94

SCOEPA00019978

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. **WSC#: 95-**576, 577, 578, 579

2. **Date/Time of Sample:** 6-23-95 / 1250, 1300, 1305, 1310

3. **Name of Sampler:** Dianne Mullan

4. **Sample Discription: Drop Box____ ID#_____**

   Other Stockpile area after incenterator off site

5. **Sent To:** X **North Creek Analytical**
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200

6. **Analyses Required:** TCLP-8240, TPH-D, TPH-G, 418.1 mod.

7. **Chain of Custody Submitted;** (Yes) No

8. **Purchase Order Number:** 31002

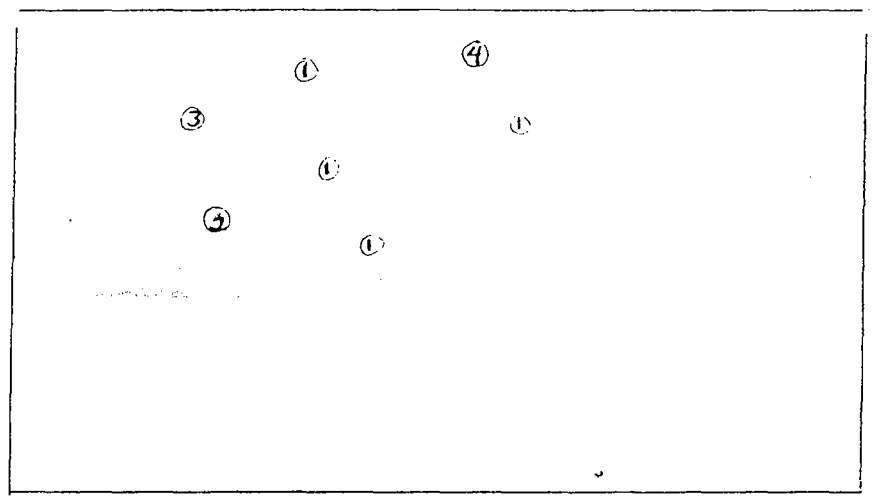
9. **Final Results Received On:** _____

10. **Additional Notes;** Called at 1315 on 6-27-95 for results of 95

	TPH-G	TPH-D	[illegible]	418.1
95-576	6.9	1200	N/D	290
95-577	7.2	* 340	N/D	950
95-578	N/D	* 97	N/D	180
95-579	N/D	300	N/D	670

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

Soil Sample index; after Pemco moved off site
June 23, 1995



→ W

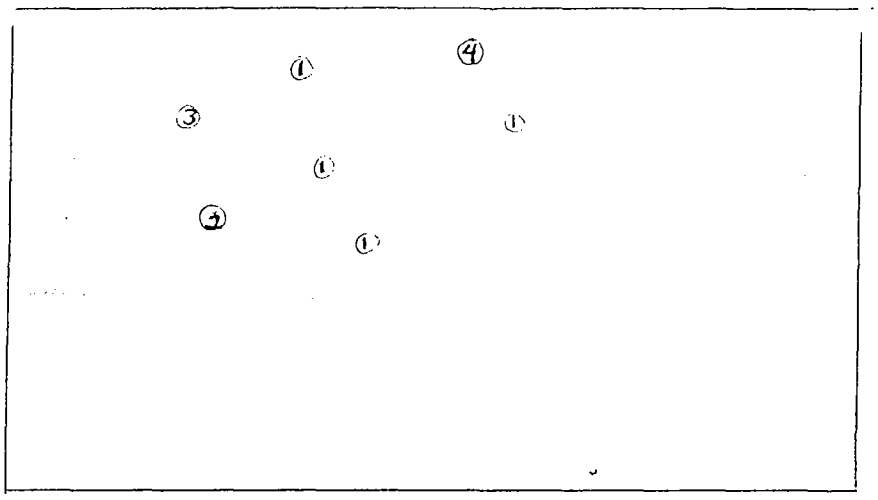
①: Composite sample site of 400 mis from each site #95-576

②: grab sample #95-577

③: grab sample #95-578

④: grab sample #95-579

Soil Sample index; after Pemco moved off site
June 23, 1995 - sample 95-576, 577, 578, 579



→ W

1: Composite sample site of 400 mis from each site #95-576

2: grab sample #95-577

3: grab sample #95-578

4: grab sample #95-579

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June 29, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB #
P.O.# 31002
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on Jun. 23, 1995. For your reference, these analyses have been assigned our NCA # P506332.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Cindy Hetrick

Cindy Hetrick
Project Manager

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TPH-G per Oregon DEQ (C6-C10)

Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506332
Matrix: soil
Sampled: 06/23/95
Received: 06/23/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-576-Composite	P506332-1	Gasoline/Related	6.9	2.0	06/26/95	06/26/95
95-577-grab	P506332-2	Gasoline/Related	7.2	2.0	06/26/95	06/26/95
95-578-grab	P506332-3	Gasoline/Related	ND	2.0	06/26/95	06/26/95
95-579-grab	P506332-4	Gasoline/Related	ND	2.0	06/26/95	06/26/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019983

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RECEIVED JUN 3 0 1995

TPH-D per Oregon DEQ (C10-C28)

Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506332
Matrix: soil
Sampled: 06/23/95
Received: 06/23/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-576-Composite	P506332-1	Diesel/Related	1,200	25	06/26/95	06/27/95
95-577-grab	P506332-2	Diesel/Related	350 *[1]	25	06/26/95	06/27/95
95-578-grab	P506332-3	Diesel/Related	100	25	06/26/95	06/27/95
95-579-grab	P506332-4	Diesel/Related	300	25	06/26/95	06/27/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019984

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RECEIVED JUN 3 0 1995

TPH-418.1M per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506332
Matrix: soil
Sampled: 06/23/95
Received: 06/23/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-576-Composite	P506332-1	TPH	290	100	06/26/95	06/27/95
95-577-grab	P506332-2	TPH	950	500	06/26/95	06/27/95
95-578-grab	P506332-3	TPH	180	100	06/26/95	06/27/95
95-579-grab	P506332-4	TPH	670	100	06/26/95	06/27/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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RECEIVED JUN 30 1995

TCLP VOC's per EPA 8240
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506332
Matrix: soil
Sampled: 06/23/95
Received: 06/23/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-576-Composite	P506332-1	Benzene	ND	0.010	06/26/95	06/26/95
		Carbon Tetrachloride	ND	0.010		
		Chlorobenzene	ND	0.010		
		Chloroform	ND	0.010		
		1,4-Dichlorobenzene	ND	0.010		
		1,2-Dichloroethane	ND	0.010		
		1,1-Dichloroethene	ND	0.010		
		Methyl Ethyl Ketone	ND	0.13		
		Tetrachloroethene	ND	0.010		
		Trichloroethene	ND	0.010		
		Vinyl Chloride	ND	0.025		
95-577-grab	P506332-2	Benzene	ND	0.010	06/26/95	06/26/95
		Carbon Tetrachloride	ND	0.010		
		Chlorobenzene	ND	0.010		
		Chloroform	ND	0.010		
		1,4-Dichlorobenzene	ND	0.010		
		1,2-Dichloroethane	ND	0.010		
		1,1-Dichloroethene	ND	0.010		
		Methyl Ethyl Ketone	ND	0.13		
		Tetrachloroethene	ND	0.010		
		Trichloroethene	ND	0.010		
		Vinyl Chloride	ND	0.025		
95-578-grab	P506332-3	Benzene	ND	0.010	06/26/95	06/26/95
		Carbon Tetrachloride	ND	0.010		
		Chlorobenzene	ND	0.010		
		Chloroform	ND	0.010		
		1,4-Dichlorobenzene	ND	0.010		
		1,2-Dichloroethane	ND	0.010		
		1,1-Dichloroethene	ND	0.010		
		Methyl Ethyl Ketone	ND	0.13		
		Tetrachloroethene	ND	0.010		
		Trichloroethene	ND	0.010		
		Vinyl Chloride	ND	0.025		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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RECEIVED JUN 30 1995

TCLP VOC's per EPA 8240
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506332
Matrix: soil
Sampled: 06/23/95
Received: 06/23/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-579-grab	P506332-4	Benzene	ND	0.010	06/26/95	06/26/95
		Carbon Tetrachloride	ND	0.010		
		Chlorobenzene	ND	0.010		
		Chloroform	ND	0.010		
		1,4-Dichlorobenzene	ND	0.010		
		1,2-Dichloroethane	ND	0.010		
		1,1-Dichloroethene	ND	0.010		
		Methyl Ethyl Ketone	ND	0.13		
		Tetrachloroethene	ND	0.010		
		Trichloroethene	ND	0.010		
		Vinyl Chloride	ND	0.025		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019987

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SURROGATE RECOVERIES (%)

RECEIVED JUN 30 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P506332
Received: 06/23/1995

Sample Name	Analyte	Result	Control Limits
TPH-G per Oregon DEQ (C6-C10)			
95-576-Composite	4-Bromofluorobenzene	98	63-126
	Trifluorotoluene	89	50-150
95-577-grab	4-Bromofluorobenzene	97	63-126
	Trifluorotoluene	58	50-150
95-578-grab	4-Bromofluorobenzene	96	63-126
	Trifluorotoluene	94	50-150
95-579-grab	4-Bromofluorobenzene	76	63-126
	Trifluorotoluene	79	50-150
TPH-D per Oregon DEQ (C10-C28)			
95-576-Composite	1-Chlorooctadecane	– *2	50-150
95-577-grab	1-Chlorooctadecane	89	50-150
95-578-grab	1-Chlorooctadecane	70	50-150
95-579-grab	1-Chlorooctadecane	95	50-150

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019988

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SURROGATE RECOVERIES (%)

RECEIVED JUN 30 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P506332
Received: 06/23/1995

Sample Name	Analyte	Result	Control Limits
TCLP VOC's per EPA 1311, 8240			
95-576-Composite	4-Bromofluorobenzene	93	74-121
	1,2-Dichloroethane-d4	107	70-121
	Toluene-d8	99	81-117
95-577-grab	4-Bromofluorobenzene	83	74-121
	1,2-Dichloroethane-d4	105	70-121
	Toluene-d8	90	81-117
95-578-grab	4-Bromofluorobenzene	97	74-121
	1,2-Dichloroethane-d4	100	70-121
	Toluene-d8	99	81-117
95-579-grab	4-Bromofluorobenzene	97	74-121
	1,2-Dichloroethane-d4	103	70-121
	Toluene-d8	98	81-117

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00019989

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COMMENTS

RECEIVED JUN 3 0 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P506332
Received: 06/23/1995

1. Detected hydrocarbons in the diesel range appear to be due to overlap of heavy/oil range hydrocarbons.

2. Unable to calculate surrogate recovery due to high analyte concentration.

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RECEIVED JUN 30 1995

June 29, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Quality Control Data
JOB #
P.O.# 31002
PROJECT - FAB-2

NCA project number P506332.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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RECEIVED JUN 3 0 1995

Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Cindy Hetrick

Cindy Hetrick
Project Manager

SCOEPA00019992

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BATCH QUALITY CONTROL RESULTS
TPH-G per Oregon DEQ (C6-C10)

RECEIVED JUN 30 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506332
Received: 06/23/95

METHOD BLANK
Batch # BT95039b
Results In mg/kg (ppm)

Compound	Result	MRL
Gasoline/Related	ND	2.0
Date Prepared	06/26/95	
Date Analyzed	06/26/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	103	63-126
Trifluorotoluene	111	50-150

DUPLICATE
Batch # BT95039b **Duplicate ID P506332-2**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Gasoline	7.2	5.0	37	50

LABORATORY CONTROL SAMPLE
Batch # BT95039a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Gasoline	31	31	100	50-150

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BATCH QUALITY CONTROL RESULTS
TPH-D per Oregon DEQ (C10-C28)

RECEIVED JUN 30 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506332
Received: 06/23/95

METHOD BLANK
Batch # FC95017c
Results In mg/kg (ppm)

Compound	Result	MRL
Diesel/Related	ND	25
Date Prepared	06/26/95	
Date Analyzed	06/27/95	

Surrogate Recovery (%)	Result	Control Limit
1-Chlorooctadecane	103	50-150

DUPLICATE
Batch # FC95017c
Results In mg/kg (ppm)

Duplicate ID P506332-1

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Diesel/related	1,200	1,100	8.7	50

LABORATORY CONTROL SAMPLE
Batch # FC95017a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Diesel/related	120	120	100	50-150

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BATCH QUALITY CONTROL RESULTS
TPH-418.1M per Oregon DEQ

RECEIVED JUN 30 1995

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P506332
Received: 06/23/95

METHOD BLANK
Batch # FB95038a
Results In mg/kg (ppm)

Compound	Result	MRL
TPH	ND	20
Date Prepared	06/26/95	
Date Analyzed	06/27/95	

DUPLICATE
Batch # FB95038a **Duplicate ID P506332-1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
TPH	290	450	44	50

LABORATORY CONTROL SAMPLE
Batch # FB95038a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
TPH	125	56	45	30-134

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 8240

RECEIVED JUN 30 1995

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506332
Received: 06/23/95

METHOD BLANK
Batch # VS95021d
Results In mg/kg (ppm)

Compound	Result	MRL
Benzene	ND	0.0020
Carbon Tetrachloride	ND	0.0020
Chlorobenzene	ND	0.0020
Chloroform	ND	0.0020
1,4-Dichlorobenzene	ND	0.0020
1,2-Dichloroethane	ND	0.0020
1,1-Dichloroethene	ND	0.0020
Methyl Ethyl Ketone	ND	0.025
Tetrachloroethene	ND	0.0020
Trichloroethene	ND	0.0020
Vinyl Chloride	ND	0.0050
Date Prepared	06/26/95	
Date Analyzed	06/26/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	101	74-121
1,2-Dichloroethane-d4	102	70-121
Toluene-d8	99	81-117

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BATCH QUALITY CONTROL RESULTS
TCLP VOC's per EPA 8240

RECEIVED JUN 30 1995

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P506332
Received: 06/23/95

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # VS95021a **Spike ID P506211-21**
Results In mg/kg (ppm)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Benzene	0.020	ND	0.0190	95
Chlorobenzene	0.020	ND	0.0204	102
1,1-Dichloroethene	0.020	ND	0.0218	109
Toluene	0.020	ND	0.0192	96
Trichloroethene	0.020	ND	0.0190	95

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Benzene	0.020	0.0188	94	1.1	21	66-142
Chlorobenzene	0.020	0.0204	102	0	21	60-133
1,1-Dichloroethene	0.020	0.0211	106	2.8	22	59-172
Toluene	0.020	0.0194	97	1.0	21	59-139
Trichloroethene	0.020	0.0190	95	0	24	62-137

LABORATORY CONTROL SAMPLE
Batch # VS95021d
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Benzene	0.020	0.0184	92	66-142
Chlorobenzene	0.020	0.0202	101	60-133
1,1-Dichloroethene	0.020	0.0174	87	59-172
Toluene	0.020	0.0200	100	59-139
Trichloroethene	0.020	0.0188	94	62-137

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CHAIN OF CUSTODY REPORT

RECEIVED JUN 30 1995

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave
Portland, OR
PHONE: 243-2020 X-7374 FAX: 241-7599

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Soil area Profile (Post)
SAMPLED BY: Dianne Mullan

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 | 5 | ~~3~~ | 2 | 1
(Please Select One)
Fuels & Hydrocarbon Analyses: 5 | ~~3~~ | 2 | 1
* Turnaround Requests less than standard will incur Rush Charg.
FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TCLP-5244	TPH-D	TPH-G	413.1 mod	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-576-Composite	6-23-95/1250	S	1	X	X	X	X	17.0°	P506332
2. 95-577-grab	6-23-95/1300	S	1	X	X	X	X		
3. 95-578-grab	6-23-95/1305	S	1	X	X	X	X		
4. 95-579-grab	6-23-95/1310	S	1	X	X	X	X		
5.									
6.									
7.									
8.									
9.									
10.									

All samples

RELINQUISHED BY: Dianne E Mullan	DATE: 6-23-95	RECEIVED BY: Sara McClurg	DATE: 6/23/95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic	TIME: 1540	PRINT NAME: Sara McClurg FIRM: NCA	TIME: 1520
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

PAGE OF

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave
Portland, OR
PHONE: 243-2020 X-7374 FAX: 241-7599

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Soil area Profile (Post)
SAMPLED BY: Dianne Mullan

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | X | 2 | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | X | 2 | 1

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TCLP-8240	TPH-D	TPH-G	418.1 mod						COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-576-Composite	6-23-95/1250	S	1	X	X	X	X						All samples	P506332
2. 95-577-grab	6-23-95/1300	S	1	X	X	X	X							
3. 95-578-grab	6-23-95/1305	S	1	X	X	X	X							
4. 95-579-grab	6-23-95/1310	S	1	X	X	X	X							
5.														
6.														
7.														
8.														
9.														
10.														

RELINQUISHED BY: Dianne E Mullan DATE: 6-23-95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic TIME: 1540

RECEIVED BY: Sara McClurg DATE: 6/23/95
PRINT NAME: Sara McClurg FIRM: NCA TIME: 1520

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:
6-26-95 - Called NCA to change turn around time ~~until~~ to 2 days. DM

PAGE 1 OF 1

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SCOEPA00019999

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95-580, 581, 582, 583, 584, 585, 586, 587, 588
2. Date/Time of Sample: 6-29-95 / 1430, → 1453 (on Chain of Cust.)
3. Name of Sampler: Dianne Mullan, Chip Bloomer
4. Sample Discription: Drop Box ____ ID# ____

   Other Soil Stock Pile Area (after final scrape)
5. Sent To: X North Creek Analytical
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200
6. Analyses Required: TPH-G, TPH 418.1 mod.
7. Chain of Custody Submitted; (Yes) No
8. Purchase Order Number: 31002
9. Final Results Received On: ____
10. Additional Notes; 2 day Rush.

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95-589, ~~58~~590, 591, 592, 593, 594, 595, 596
2. Date/Time of Sample: 6-29-95 / 1458 → 1534
3. Name of Sampler: Dianne Mullan, Chris Bloomer
4. Sample Discription: Drop Box ___ ID# ___

   Other Soil Stock Pile Area (after final scrape)
5. Sent To: X North Creek Analytical
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200
6. Analyses Required: TPH-G, TPH 418.1 (mod.)
7. Chain of Custody Submitted; (Yes) No
8. Purchase Order Number: 31002
9. Final Results Received On: ___
10. Additional Notes; 2 day turn around.

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

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CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front AVE
Portland, OR
PHONE: 243-2020 X-7374 FAX: 241-7599

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Soil Profile
SAMPLED BY: Dianne Mullan, Chip Bloomer

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | 2 | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | 2 | 1

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TPH-G	~~TPH-D~~	TPH-418.1(mod)	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-580	6-29-95/1430	S	1	X		X		
2. 95-581	/1432	S	1	X		X		
3. 95-582	/1434	S	1	X		X		
4. 95-583	/1435	S	1	X		X		
5. 95-584	/1436	S	1	X		X		
6. 95-585	/1437	S	1	X		X		
7. 95-586	/1444	S	1	X		X		
8. 95-587	/1449	S	1	X		X		
9. 95-588	/1453	S	1	X		X		
10. 95-589	/1458	S	1	X		X		

All samples field filtered.

RELINQUISHED BY: Dianne Mullan	DATE: 6-30-95	RECEIVED BY: Sara McClurg	DATE: 6/30/95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic	TIME: 0945	PRINT NAME: Sara McClurg FIRM: NCA	TIME: 0945
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

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SCOEPA0002002

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July 6, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB # SOIL PROFILE
P.O.# 31002
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on Jun. 30, 1995. For your reference, these analyses have been assigned our NCA # P506392.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Philip Neuenberg/for
Cindy Hetrick
Project Manager

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TPH-G per Oregon DEQ (C6-C10)
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506392
Matrix: soil
Sampled: 06/29/95
Received: 06/30/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-580	P506392-1	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-581	P506392-2	Gasoline/Related	ND	2.0	07/03/95	07/03/95
95-582	P506392-3	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-583	P506392-4	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-584	P506392-5	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-585	P506392-6	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-586	P506392-7	Gasoline/Related	2.8	2.0	06/30/95	06/30/95
95-587	P506392-8	Gasoline/Related	6.9	2.0	06/30/95	06/30/95
95-588	P506392-9	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-589	P506392-10	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-590	P506392-11	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-591	P506392-12	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-592	P506392-13	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-593	P506392-14	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-594	P506392-15	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-595	P506392-16	Gasoline/Related	ND	2.0	06/30/95	06/30/95
95-596	P506392-17	Gasoline/Related	ND	2.0	06/30/95	06/30/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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TPH-418.1M per Oregon DEQ
Results In mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506392
Matrix: soil
Sampled: 06/29/95
Received: 06/30/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-580	P506392-1	TPH	ND	20	06/30/95	07/05/95
95-581	P506392-2	TPH	360	20	06/30/95	07/05/95
95-582	P506392-3	TPH	43	20	06/30/95	07/05/95
95-583	P506392-4	TPH	ND	20	06/30/95	07/05/95
95-584	P506392-5	TPH	ND	20	06/30/95	07/05/95
95-585	P506392-6	TPH	ND	20	06/30/95	07/05/95
95-586	P506392-7	TPH	140	20	06/30/95	07/05/95
95-587	P506392-8	TPH	430	20	06/30/95	07/05/95
95-588	P506392-9	TPH	ND	20	06/30/95	07/05/95
95-589	P506392-10	TPH	ND	20	06/30/95	07/05/95
95-590	P506392-11	TPH	ND	20	06/30/95	07/05/95
95-591	P506392-12	TPH	22	20	06/30/95	07/05/95
95-592	P506392-13	TPH	ND	20	06/30/95	07/05/95
95-593	P506392-14	TPH	ND	20	06/30/95	07/05/95
95-594	P506392-15	TPH	29	20	06/30/95	07/05/95
95-595	P506392-16	TPH	ND	20	06/30/95	07/05/95
95-596	P506392-17	TPH	ND	20	06/30/95	07/05/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P506392
Received: 06/30/1995

Sample Name	Analyte	Result	Control Limits
TPH-G per Oregon DEQ (C6-C10)			
95-580	4-Bromofluorobenzene	113	63-126
	Trifluorotoluene	106	50-150
95-581	4-Bromofluorobenzene	110	63-126
	Trifluorotoluene	115	50-150
95-582	4-Bromofluorobenzene	111	63-126
	Trifluorotoluene	109	50-150
95-583	4-Bromofluorobenzene	108	63-126
	Trifluorotoluene	106	50-150
95-584	4-Bromofluorobenzene	102	63-126
	Trifluorotoluene	106	50-150
95-585	4-Bromofluorobenzene	107	63-126
	Trifluorotoluene	104	50-150
95-586	4-Bromofluorobenzene	106	63-126
	Trifluorotoluene	111	50-150
95-587	4-Bromofluorobenzene	92	63-126
	Trifluorotoluene	79	50-150
95-588	4-Bromofluorobenzene	97	63-126
	Trifluorotoluene	72	50-150
95-589	4-Bromofluorobenzene	96	63-126
	Trifluorotoluene	77	50-150
95-590	4-Bromofluorobenzene	94	63-126
	Trifluorotoluene	71	50-150
95-591	4-Bromofluorobenzene	94	63-126
	Trifluorotoluene	75	50-150
95-592	4-Bromofluorobenzene	92	63-126
	Trifluorotoluene	82	50-150
95-593	4-Bromofluorobenzene	90	63-126
	Trifluorotoluene	75	50-150

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

SCOEPA00020006

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SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P506392
Received: 06/30/1995

Sample Name	Analyte	Result	Control Limits
95-594	4-Bromofluorobenzene	88	63-126
	Trifluorotoluene	74	50-150
95-595	4-Bromofluorobenzene	90	63-126
	Trifluorotoluene	71	50-150
95-596	4-Bromofluorobenzene	88	63-126
	Trifluorotoluene	69	50-150

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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July 6, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Quality Control Data
JOB # SOIL PROFILE
P.O.# 31002
PROJECT - FAB-2

NCA project number P506392.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Philip Rennberg/for
Cindy Hetrick
Project Manager

SCOEPA00020009

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BATCH QUALITY CONTROL RESULTS
TPH-G per Oregon DEQ (C6-C10)

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P506392
Received: 06/30/95

METHOD BLANK
Batch # BT95041a
Results In mg/kg (ppm)

Compound	Result	MRL
Gasoline/Related	ND	2.0
Date Prepared	06/30/95	
Date Analyzed	06/30/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	110	63-126
Trifluorotoluene	118	50-150

DUPLICATE
Batch # BT95041a **Duplicate ID P506392-1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Gasoline	ND	ND	0	50

DUPLICATE
Batch # BT95041y **Duplicate ID P506392-8**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Gasoline	6.9	7.1	2.9	50

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BATCH QUALITY CONTROL RESULTS
TPH-G per Oregon DEQ (C6-C10)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P506392
Received: 06/30/95

DUPLICATE
Batch # BT95041z
Results In mg/kg (ppm)

Duplicate ID P506392-15

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
Gasoline	ND	ND	0	50

LABORATORY CONTROL SAMPLE
Batch # BT95041a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
Gasoline	31	35	113	50-150

SCOEPA00020011

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BATCH QUALITY CONTROL RESULTS
TPH-418.1M per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P506392
Received: 06/30/95

METHOD BLANK
Batch # FB95040a
Results In mg/kg (ppm)

Compound	Result	MRL
TPH	ND	20
Date Prepared	06/30/95	
Date Analyzed	07/03/95	

DUPLICATE
Batch # FB95040a **Duplicate ID P506388-1**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
TPH	ND	ND	0	50

DUPLICATE
Batch # FB95040y **Duplicate ID P506392-7**
Results In mg/kg (ppm)

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
TPH (z)	140	82	53	50

(z) Sample appears to be non-homogeneous.

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

BATCH QUALITY CONTROL RESULTS
TPH-418.1M per Oregon DEQ

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P506392
Received: 06/30/95

DUPLICATE
Batch # FB95040z
Results In mg/kg (ppm)

Duplicate ID P506392-15

Compound	Sample Conc	Dup Conc	RPD	QC Limit RPD
TPH	29	30	3.4	50

LABORATORY CONTROL SAMPLE
Batch # FB95040a
Results In mg/kg (ppm)

Compound	True	Found	% Rec	QC Limit % Rec
TPH	125	93	74	30-134

SCOEPA00020013

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95-597

2. Date/Time of Sample: 7-10-95 / 0820

3. Name of Sampler: Dianne Mallan

4. Sample Discription: Drop Box____ ID#_____

   Other Soil area spill - composite

5. Sent To: X North Creek Analytical
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200

6. Analyses Required: 8240 screen

7. Chain of Custody Submitted; (Yes) No

8. Purchase Order Number: 31002

9. Final Results Received On: _____

10. Additional Notes; 2 day turnaround. Composite consisted of 5 grab sample of equal volume.

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

NORTH CREEK ANALYTICAL

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July 18, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB # SOIL AREA PILE-COMP.
P.O.# 60068
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on Jul. 10, 1995. For your reference, these analyses have been assigned our NCA # P507082.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Cindy Hetrick

Cindy Hetrick
Project Manager

NORTH CREEK ANALYTICAL

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BTEX per EPA 8020
Results In ug/kg (ppb)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P507082
Matrix: soil
Sampled: 07/10/95
Received: 07/10/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-597	P507082-1	Benzene	55	13	07/11/95	07/11/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P507082
Received: 07/10/1995

Sample Name	Analyte	Result	Control Limits
BTEX per EPA 8020			
95-597	4-Bromofluorobenzene	102	63-126

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

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July 18, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

Re: Quality Control Data
JOB # SOIL AREA PILE-COMP.
P.O.# 60068
PROJECT - FAB-2

NCA project number P507082.

Note: Surrogate Recoveries are included in the final report.

QUALITY CONTROL DEFINITIONS

METHOD BLANK RESULTS

The method blank is an analyte-free matrix which is carried through the same analytical process as the samples. It is used to document contamination that may result from the analytical process.

SURROGATE STANDARD

A surrogate standard (i.e., a chemical compound not expected to occur in an environmental sample) is added to each sample, blank, and matrix spike sample just prior to extraction or processing. The recovery of the surrogate standard is used to monitor for unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within accepted limits.

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Accuracy is measured by percent recovery as in:

$$\% \text{ Recovery} = \frac{\text{(Measured Concentration)}}{\text{(Actual Concentration)}} \times 100$$

Precision is measured using duplicate tests by relative percent difference.

$$\text{RPD} = \frac{\text{(Result of Test 1 - Result of Test 2)}}{\text{(Result of Test 1 + Result of Test 2)/2}} \times 100$$

If you should have any questions concerning this report, please contact me.

Sincerely,

Cindy Hetrick

Cindy Hetrick
Project Manager

SCOEPA00020019

NORTH CREEK ANALYTICAL
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BATCH QUALITY CONTROL RESULTS
BTEX per EPA 8020

Client: Wacker Siltronic Corporation
Project: FAB-2
NCA Project #: P507082
Received: 07/10/95

METHOD BLANK
Batch # BS95019b
Results In ug/kg (ppb)

Compound	Result	MRL
Benzene	ND	13
Toluene	ND	13
Ethylbenzene	ND	13
Xylenes (total)	ND	13
Date Prepared	07/11/09	
Date Analyzed	07/11/95	

Surrogate Recovery (%)	Result	Control Limit
4-Bromofluorobenzene	104	63-126

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE
Batch # BS95019a **Spike ID P507040-7**
Results In ug/kg (ppb)

Compound	Spike Added	Sample Conc	MS Conc	MS %Rec
Benzene	20	0.710	14.0	66
Chlorobenzene	20	ND	12.2	61
Ethylbenzene	20	ND	13.0	65
Toluene	20	1.87	14.0	61
o-Xylene	20	ND	12.2	61

Compound	Spike Added	MSD Conc	MSD % Rec	RPD	QC Limit RPD	QC Limit % Rec
Benzene	20	14.2	67	1.5	17	56-123
Chlorobenzene	20	12.3	62	1.6	16	53-124
Ethylbenzene	20	13.3	67	3.0	20	45-130
Toluene	20	14.2	62	1.6	24	54-123
o-Xylene	20	12.3	62	1.6	20	50-127

SCOEPA00020020

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

BATCH QUALITY CONTROL RESULTS
BTEX per EPA 8020

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P507082
Received: 07/10/95

LABORATORY CONTROL SAMPLE
Batch # BS95019a
Results In ug/kg (ppb)

Compound	True	Found	% Rec	QC Limit % Rec
Benzene	20	16.0	80	69-138
Chlorobenzene	20	17.2	86	72-137
Ethylbenzene	20	17.3	87	61-141
Toluene	20	16.7	84	53-151
o-Xylene	20	17.8	89	62-144

SCOEPA00020021

NORTH CREEK ANALYTICAL

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave
Portland, OR
PHONE: 243-2020 x 7374 FAX: 241-7599

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER: Soil area-pile-composite
SAMPLED BY: Dianne Mullan

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | ~~2~~ | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | ~~2~~ | 1

** Turnaround Requests less than standard will incur Rush Charg.*

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	Analysis Request: BTEX	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-597	7-10-95/0520	S	1	X	held on ice. 144°	P507082-1
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						

RELINQUISHED BY: Dianne E Mullan DATE: 7-10-95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic TIME: 1245

RECEIVED BY: [signature] DATE: 7/10/95
PRINT NAME: Karin Stanley FIRM: NCA TIME: 1245

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE 1 OF 1

COC Rev 6, 10/94

SCOEPA00020022

NORTH CREEK ANALYTICAL

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9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave
Portland, OR
PHONE: 243-2020X7374 FAX: 241-7599
PROJECT NAME: FAB-2
PROJECT NUMBER: soil area-pile-composite
SAMPLED BY: Dianne Mullan

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | 3 | X 2 | 1
(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | 3 | X 2 | 1

** Turnaround Requests less than standard will incur Rush Charges.*

FAX RESULTS BY :

Analysis Request:

	SAMPLE IDENTIFICATION: *(NUMBER OR DESCRIPTION)*	SAMPLING DATE / TIME	MATRIX *(W,S,O)*	# OF CONT.	BTEX									COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1.	95-597	7-10-95/0820	S	1	X									held on ice.	PS07082-1
2.															
3.															
4.															
5.															
6.															
7.															
8.															
9.															
10.															

RELINQUISHED BY: Dianne E Mullan DATE: 7-10-95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic TIME: 1245

RECEIVED BY: [signature] DATE: 7/10/95
PRINT NAME: Karin Stanley FIRM: NCA TIME: 1245

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE 1 OF 1

COC Rev 6, 10/94

SCOEPA00020023

SAMPLES SENT TO OUTSIDE LABORATORY
FAB-2

1. WSC#: 95-598-610
2. Date/Time of Sample: 7-12-95 / see back of page
3. Name of Sampler: Chip Bloomer, Deanne Mullen
4. Sample Discription: Drop Box____ ID#_____

   Other Stockpile soil area

5. Sent To: X North Creek Analytical
   (formerly Pacific Environmental Laboratory, Inc.)
   9405 SW Nimbus Avenue
   Beaverton, Oregon 97005
   643-9200

6. Analyses Required: TPH-D, 418.1 (mod.)
7. Chain of Custody Submitted; (Yes) No
8. Purchase Order Number: 31002
9. Final Results Received On: _____
10. Additional Notes; 3 day turn around.

TJR 15 Nov 91
TJR 01 Nov 91
DEM 05 Jan 95

NORTH CREEK ANALYTICAL

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9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

July 17, 1995

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Dianne Mullan

RE: JOB #
P.O.# 60068
PROJECT - FAB-2

Enclosed are test results for your samples received in this lab on Jul. 12, 1995. For your reference, these analyses have been assigned our NCA # P507126.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

This report will be accompanied by a separate Quality Control Data Report, unless omitted by client request.

Please call if you have any questions.

Respectfully,

Cindy Hetrick

Cindy Hetrick
Project Manager

NORTH CREEK ANALYTICAL
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TPH-D per Oregon DEQ (C10-C28)
Results in mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P507126
Matrix: soil
Sampled: 07/12/95
Received: 07/12/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-598	P507126-1	Diesel/Related	38	25	07/13/95	07/14/95
95-599	P507126-2	Diesel/Related	ND	25	07/13/95	07/14/95
95-600	P507126-3	Diesel/Related	29	25	07/13/95	07/14/95
95-601	P507126-4	Diesel/Related	52	25	07/13/95	07/14/95
95-602	P507126-5	Diesel/Related	28	25	07/13/95	07/14/95
95-603	P507126-6	Diesel/Related	47	25	07/13/95	07/13/95
95-604	P507126-7	Diesel/Related	120	25	07/13/95	07/13/95
95-605	P507126-8	Diesel/Related	39	25	07/13/95	07/13/95
95-606	P507126-9	Diesel/Related	ND	25	07/13/95	07/14/95
95-607	P507126-10	Diesel/Related	ND	25	07/13/95	07/14/95
95-608	P507126-11	Diesel/Related	ND	25	07/13/95	07/14/95
95-609	P507126-12	Diesel/Related	ND	25	07/13/95	07/14/95
95-610	P507126-13	Diesel/Related	ND	25	07/13/95	07/13/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH CREEK ANALYTICAL
18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-9508 (206) 481-9200 • FAX 485-2992
East 11115 Montgomery, Suite B • Spokane, WA 99206-4776 (509) 924-9200 • FAX 924-9290
9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

TPH-418.1M per Oregon DEQ
Results in mg/kg (ppm)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Project #: P507126
Matrix: soil
Sampled: 07/12/95
Received: 07/12/95

Client ID	Lab ID	Analyte	Results	MRL	Date Prepared	Date Analyzed
95-598	P507126-1	TPH	47	20	07/13/95	07/13/95
95-599	P507126-2	TPH	ND	20	07/13/95	07/13/95
95-600	P507126-3	TPH	41	20	07/13/95	07/13/95
95-601	P507126-4	TPH	23	20	07/13/95	07/13/95
95-602	P507126-5	TPH	28	20	07/13/95	07/13/95
95-603	P507126-6	TPH	40	20	07/13/95	07/13/95
95-604	P507126-7	TPH	53	20	07/13/95	07/13/95
95-605	P507126-8	TPH	28	20	07/13/95	07/13/95
95-606	P507126-9	TPH	ND	20	07/13/95	07/13/95
95-607	P507126-10	TPH	ND	20	07/13/95	07/13/95
95-608	P507126-11	TPH	ND	20	07/13/95	07/13/95
95-609	P507126-12	TPH	ND	20	07/13/95	07/13/95
95-610	P507126-13	TPH	ND	20	07/13/95	07/13/95

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH CREEK ANALYTICAL
18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-9508 (206) 481-9200 • FAX 485 2992
East 11115 Montgomery, Suite B • Spokane, WA 99206-4776 (509) 924-9200 • FAX 924-9290
8405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644 2202

SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project: FAB-2

NCA Number: P507126
Received: 07/12/1995

Sample Name	Analyte	Result	Control Limits
TPH-D per Oregon DEQ (C10-C28)			
95-598	1-Chlorooctadecane	76	50-150
95-599	1-Chlorooctadecane	74	50-150
95-600	1-Chlorooctadecane	64	50-150
95-601	1-Chlorooctadecane	82	50-150
95-602	1-Chlorooctadecane	76	50-150
95-603	1-Chlorooctadecane	83	50-150
95-604	1-Chlorooctadecane	104	50-150
95-605	1-Chlorooctadecane	93	50-150
95-606	1-Chlorooctadecane	94	50-150
95-607	1-Chlorooctadecane	88	50-150
95-608	1-Chlorooctadecane	92	50-150
95-609	1-Chlorooctadecane	90	50-150
95-610	1-Chlorooctadecane	71	50-150

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N. W. Front Ave
Portland, OR
PHONE: 243-2020 X-7374 FAX: 241-7599

REPORT TO: Dianne E Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 | 5 | X | 2 | 1
(Please Select One)
Fuels & Hydrocarbon Analyses: 5 | X | 2 | 1
* Turnaround Requests less than standard will incur Rush Charge
FAX RESULTS BY :

PROJECT NAME: FAB-2
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan, Chip Bloomer

	SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TPH-D	418.1 (mod.)	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1.	95-598	7-12-95/1000	S	1	X	X	21.3°	P507126-
2.	95-599	1003	S	1	X	X		
3.	95-600	1007	S	1	X	X		
4.	95-601	1010	S	1	X	X		
5.	95-602	1012	S	1	X	X		
6.	95-603	1014	S	1	X	X		
7.	95-604	1025	S	1	X	X		
8.	95-605	1028	S	1	X	X		
9.	95-606	1030	S	1	X	X		
10.	95-607	1032	S	1	X	X		

All samples held on ice

RELINQUISHED BY: Dianne E Mullan	DATE: 7-12-95	RECEIVED BY: Sara McClurg	DATE: 7-12-95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic	TIME: 1150	PRINT NAME: Sara McClurg FIRM: NCA	TIME: 1150
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

PAGE 1 OF 2

COC Rev 6, 10/94

FROM : NORTH CREEK ANALYTICAL TO : 503 241 7599 1995,07-17 01:34PM #207 P.02/06

SCOEPA00020029

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic

ADDRESS: 7200 N.W. Front Ave
Portland, OR

PHONE: 243-2020 x-7374 FAX: 241-7599

REPORT TO: Diane Mullan

BILLING TO:

P.O. NUMBER: 31002

NCA QUOTE #:

PROJECT NAME: F#B-2

PROJECT NUMBER:

SAMPLED BY: Dianne Mullan, Chip Bloomer

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | X | 2 | 1

(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | X | 2 | 1

* Turnaround Requests less than standard will incur Rush Charge

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TPH-D	418.1 (mod.)	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-608	7-12-95/1034	S	1	X	X	held on ice	P507126-11
2. 95-609	7-12-95/1038	S	1	X	X	"	12
3. 95-610	7-12-95/1040	S	1	X	X	"	13
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY: Dianne Mullan DATE: 7-12-95 RECEIVED BY: Sara McClurg DATE: 7-12-95

PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic TIME: 1150 PRINT NAME: Sara McClurg FIRM: NCA TIME: 115[illegible]

RELINQUISHED BY: DATE: RECEIVED BY: DATE:

PRINT NAME: FIRM: TIME: PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE 2 OF 2

COC Rev 6, 10/94

FROM : NORTH CREEK ANALYTICAL TO : 503 241 7599 1995,07-17 01:35PM #207 P.03/06

SCOEPA00020030

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N. W. Front Ave
Portland, OR
PHONE: 243-2020 X-7374 FAX: 241-7599

REPORT TO: Dianne E Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan, Chip Bloomer

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | ~~3~~ | 2 | ~~X~~
(Please Select One)
Fuels & Hydrocarbon Analyses: 5 | ~~X~~ | 2 | ~~X~~

* Turnaround Requests less than standard will incur Rush Charges.

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TPH-D	418.1 (mod.)	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-598	7-12-95/1000	S	1	X	X		P507126
2. 95-599	1003	S	1	X	X		
3. 95-600	1007	S	1	X	X		
4. 95-601	1010	S	1	X	X		
5. 95-602	1012	S	1	X	X		
6. 95-603	1014	S	1	X	X		
7. 95-604	1025	S	1	X	X		
8. 95-605	1028	S	1	X	X		
9. 95-606	1030	S	1	X	X		
10. 95-607	1032	S	1	X	X		

All samples held on ice.

RELINQUISHED BY: Dianne E Mullan	DATE: 7-12-95	RECEIVED BY: Sara McClurg	DATE: 7-12-95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic	TIME: 1150	PRINT NAME: Sara McClurg FIRM: NCA	TIME: 1150
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME: FIRM:	TIME:	PRINT NAME: FIRM:	TIME:

ADDITIONAL REMARKS:

COC Rev 6, 10/94

SCOEPA0002031

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

CLIENT: Wacker Siltronic
ADDRESS: 7200 N.W. Front Ave
Portland, OR
PHONE: 243-2020 x-7374 FAX: 241-7599

REPORT TO: Dianne Mullan
BILLING TO:
P.O. NUMBER: 31002
NCA QUOTE #:

PROJECT NAME: FAB-2
PROJECT NUMBER:
SAMPLED BY: Dianne Mullan, Chip Bloomer

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses: 10 | 5 | X | 2 | X
(Please Select One)

Fuels & Hydrocarbon Analyses: 5 | X | 2 | X

* Turnaround Requests less than standard will incur Rush Charges.

FAX RESULTS BY :

SAMPLE IDENTIFICATION: (NUMBER OR DESCRIPTION)	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	TPH-D	418.1 (mod.)	COMMENTS & PRESERVATIVES USED	NCA SAMPLE NUMBER
1. 95-608	7-12-95/1034	S	1	X	X	held on ice	P507126
2. 95-609	7-12-95/1038	S	1	X	X	"	
3. 95-610	7-12-95/1040	S	1	X	X		
4.							
5.							
6.							
7.							
8.							
9.							
10.							

RELINQUISHED BY: Dianne Mullan DATE: 7-12-95
PRINT NAME: Dianne Mullan FIRM: Wacker Siltronic TIME: 1150

RECEIVED BY: Sara McClurg DATE: 7-12-95
PRINT NAME: Sara McClurg FIRM: NCA TIME: 1150

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

PAGE 2 OF 2

COC Rev 6, 10/94

SCOEPA00020032

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

February 13, 1995 SER 003:CB

Mr. John R. Ruscigno
Department of Environmental Quality
Air Quality Division
811 S.W. 6th Avenue
Portland, OR 97204-1390

Subject: Annual Air Report Submittal
Air Permit No. 26-3002

Dear Mr. Ruscigno:

Please find attached the original and a copy of the 1994 Annual Report, Report of Excess Emissions, and Emission Statement for Wacker Siltronic Corporation, Air Contaminant Discharge Permit No. 26-3002. Should you have any questions regarding the submittal or require any further data, please contact Chip Bloomer 243-2020, Ext. 132.

Sincerely,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental and Saftey Manager

Attachments

1994 Annual Report
Air Contaminant Discharge Permit No. 26-3002
Wacker Siltronic Corporation

The following information is submitted in compliance with Condition 12, reporting requirements of Air Permit No. 26-3002:

12 (a) Quantities and types of fuel used on a monthly basis.

	Natural Gas (million CF)	Propane (gallons)	Kerosene (gallons)
January	10.4	33	4.5
February	9.5	33	4.5
March	8.5	33	4.5
April	8.1	33	4.5
May	7.9	33	4.5
June	7.1	33	4.5
July	6.6	33	4.5
August	7.0	33	4.5
September	7.0	33	4.5
October	7.4	33	4.5
November	9.5	33	4.5
December	9.8	33	4.5

12 (b) Amount (tons) of VOC emitted on an annual basis: 18 tons

12 (c) Quantities and types of all solvents (VOCs) discharged to the City of Portland WWTP if the discharge amount is excluded from the air emission calculation. Solvent estimates in waste waters discharged to POTW:

	Evaporative Emission	Discharge to POTW
Acetone	3,218	360
Isopropyl Alcohol	24,120	4,940

12 (d) Total number of hours (estimate) the following scrubbers were in operation on a monthly basis:

All scrubbers operated 24 hours per day, 720 hours per month during the entire year except occasional downtime for maintenance activities.

12 (e) Quantities (lbs) of the following non-criteria air pollutants emitted on a monthly basis:

The following acids and caustic were used from bulk tanks, barrels, glass bottles and in one case from gas cylinders. The use records kept at this facility track the number of containers used by production operations and do not reflect actual usage by month. The emission calculations listed below are average values for each month.

	Annual Use (pounds)	Emissions (lbs/yr)	(lbs/mo.)
Hydrofluoric Acid	96,000	106	9
Hydrochloric Acid	108,200	784	65
Nitric Acid	312,600	406	34
Sulfuric Acid	260,300	483	40
Ammonium Hydroxide	31,400	16,270	1,360

12 (f) The results of an investigation of the feasibility of monitoring the amount of VOCs emitted on a daily or monthly basis:

Wacker's current VOC tracking system is based on inventory record keeping. This system can accurately reflect usage by production operations over an extended amount of time, but because of lab time from disposition of material to production and actual use of the material (1 hour to several days), it cannot be used for daily tracking. It can be used for monthly tracking, but is most accurate when used on an annual basis. Feasible monitoring equipment has yet to be found which will improve upon the accuracy of our current method.

EXCESS EMISSIONS REPORT
AIR PERMIT NO. 26-3002
WACKER SILTRONIC CORPORATION

No Excess Emissions as defined in OAR 340-20-350 occurred from any pollution control device during 1994. Wacker did experience minor unplanned releases of air contaminants as a result of spills or production upset conditions. However, of these unplanned releases, none constituted an excess emission which exceeded our air permit, nor did any of these releases exceed any applicable air quality rule.

AIR94.WPW

Department of Environmental Quality

EMISSION STATEMENT FORM

(Pursuant to OAR 340-28-1500 to -1520)

(1) FACILITY NAME: Wacker Siltronic Corporation

(2) MAILING ADDRESS: P.O. Box 83180

Portland, OR 97283-0180

(3) ACDP #: 26-3002

(4) CONTACT PERSON: Chip Bloomer

TELEPHONE: (503) 243-2020 ext. 132

(5) SOURCE LOCATION: 7200 NW Front Ave., Portland, Oregon 97210-3676

(6) EMISSIONS INFORMATION FOR PREVIOUS OZONE SEASON (Continue responses on a separate sheet if needed, indicating the ACDP# and item number):

(a) ESTIMATED ACTUAL WEEKDAY VOC EMISSIONS, POUNDS: 98 lbs/day

(b) ESTIMATED ACTUAL WEEKDAY NO_x EMISSIONS, POUNDS: 39 lbs/day

(c) CALENDAR YEAR FOR OZONE SEASON: 1994

(d) DESCRIBE EMISSION FACTOR USED AND REFERENCE SOURCE FOR EMISSION FACTOR, IF APPLICABLE: Emmission Factor: Industrial boilers AP-42

(e) DESCRIBE OTHER PROCEDURE USED TO CALCULATE EMISSIONS, IF APPLICABLE (e.g. MATERIAL BALANCE, SOURCE TEST, OR CONTINUOUS MONITORING): Emmission based on material balance, continuous monitoring and production data

(Note: A record shall be kept at the plant site indicating how the above emissions calculations were made.)

(7) THE EMISSIONS DATA PRESENTED HEREIN REPRESENTS THE BEST AVAILABLE INFORMATION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

Wacker Siltronic Corporation

Tom C. McCue

(Print Name of Certifying Individual, pursuant to OAR 340-28-110)

Environmental & Safety Mgr. — Thomas C. McCue — 2/14/95

(Print Full Title) (Signature) (Date)

Return Form To: Department of Environmental Quality, Northwest Region, 2020 SW 4th Ave. #400, Portland, Oregon, 97201-5884

Revised: 12/13/94

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

February 13, 1995

SER 003:CB

Mr. John R. Ruscigno
Department of Environmental Quality
Air Quality Division
811 S.W. 6th Avenue
Portland, OR 97204-1390

Subject: Annual Air Report Submittal
Air Permit No. 26-3002

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Sincerely,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental and Saftey Manager

Attachments

1994 Annual Report
Air Contaminant Discharge Permit No. 26-3002
Wacker Siltronic Corporation

The following information is submitted in compliance with Condition 12, reporting requirements of Air Permit No. 26-3002:

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	Natural Gas (million CF)	Propane (gallons)	Kerosene (gallons)
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February	9.5	33	4.5
March	8.5	33	4.5
April	8.1	33	4.5
May	7.9	33	4.5
June	7.1	33	4.5
July	6.6	33	4.5
August	7.0	33	4.5
September	7.0	33	4.5
October	7.4	33	4.5
November	9.5	33	4.5
December	9.8	33	4.5

12 (b) Amount (tons) of VOC emitted on an annual basis: 18 tons

12 (c) Quantities and types of all solvents (VOCs) discharged to the City of Portland WWTP if the discharge amount is excluded from the air emission calculation. Solvent estimates in waste waters discharged to POTW:

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EXCESS EMISSIONS REPORT
AIR PERMIT NO. 26-3002
WACKER SILTRONIC CORPORATION

No Excess Emissions as defined in OAR 340-20-350 occurred from any pollution control device during 1994. Wacker did experience minor unplanned releases of air contaminants as a result of spills or production upset conditions. However, of these unplanned releases, none constituted an excess emission which exceeded our air permit, nor did any of these releases exceed any applicable air quality rule.

AIR94.WPW

Department of Environmental Quality

EMISSION STATEMENT FORM

(Pursuant to OAR 340-28-1500 to -1520)

(1) FACILITY NAME: Wacker Siltronic Corporation

(2) MAILING ADDRESS: P.O. Box 83180

Portland, OR 97283-0180

(3) ACDP #: 26-3002

(4) CONTACT PERSON: Chip Bloomer

TELEPHONE: (503) 243-2020 ext. 132

(5) SOURCE LOCATION: 7200 NW Front Ave., Portland, Oregon 97210-3676

(6) EMISSIONS INFORMATION FOR PREVIOUS OZONE SEASON (Continue responses on a separate sheet if needed, indicating the ACDP# and item number):

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(b) ESTIMATED ACTUAL WEEKDAY NO_x EMISSIONS, POUNDS: 39 lbs/day

(c) CALENDAR YEAR FOR OZONE SEASON: 1994

(d) DESCRIBE EMISSION FACTOR USED AND REFERENCE SOURCE FOR EMISSION FACTOR, IF APPLICABLE: Emmission Factor: Industrial boilers AP-42

(e) DESCRIBE OTHER PROCEDURE USED TO CALCULATE EMISSIONS, IF APPLICABLE (e.g. MATERIAL BALANCE, SOURCE TEST, OR CONTINUOUS MONITORING): Emmission based on material balance, continuous monitoring and production data

(Note: A record shall be kept at the plant site indicating how the above emissions calculations were made.)

(7) THE EMISSIONS DATA PRESENTED HEREIN REPRESENTS THE BEST AVAILABLE INFORMATION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

Wacker Siltronic Corporation

Tom C. McCue

(Print Name of Certifying Individual, pursuant to OAR 340-28-110)

Environmental & Safety Mgr. — Thomas C. McCue — 2/14/95

(Print Full Title) (Signature) (Date)

Return Form To: Department of Environmental Quality, Northwest Region, 2020 SW 4th Ave. #400, Portland, Oregon, 97201-5884

Revised: 12/13/94

LISA BLANCHARD

P 699 796 640

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PS Form **3800**, June 1990

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1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

☆U.S.G.P.O. 1990-270-153

PS Form **3800**, June 1990 *(Reverse)*

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 89180
PORTLAND, OR 97283-0180

Attn - Lisa Blanchard -

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
MARK COPELAND
DEQ - AIR QUALITY DIV
811 S.W. 6th. AVE.
PORTLAND, OR. 97204-1390

4a. Article Number
P699-796-640

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
6/8/92

5. Signature (Addressee)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature (Agent)

PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

SCOEPA00020046

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

June 7, 1994 SER 21:CB

Mr. Mark Copeland
Department of Environmental Quality
Air Quality Division
811 S.W. 6th Avenue
Portland, Oregon 97204-1390

Dear Mr. Copeland:

This letter is to inform you of a correction to our 1993 annual air report. The correction is for the reported hydrochloric acid emissions as required by section 12 (e) of our Air Contaminant Discharge Permit Number 26-3002. The correct hydrochloric acid emissions for 1993 are 784 lbs/yr. and 65 lbs/mo. The correction is due to an administrative error when preparing the report.

If you have any questions, please contact Chip Bloomer at (503) 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

NATURAL GAS USAGE
INC. 2.7 X DUE
TO SUPPLY PRESSURE.

WELL WITHIN PERMIT
LIMITS

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

February 8, 1994

SER 003:CB

Mr. Mark Copeland
Department of Environmental Quality
Air Quality Division
811 S. W. 6th Avenue
Portland, Oregon 97204-1390

Dear Mr. Copeland:

Subject: Annual Air Report Submittal
Air Permit No. 26-3002

Please find attached the original and a copy of the 1993 Annual Report, Report of Excess Emissions, and Emission Statement for Wacker Siltronic Corporation, air Contaminant Discharge Permit No. 26-3002. Should you have any questions regarding the submittal or require any further data, please contact Tom McCue at 241-7532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental and Safety Manager

TCMcC:ll

Attachments

Tom McCue

P 699 796 571

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to AIR QUALITY DIV - DEQ MARK COPELAND	
Street & No. 811 S.W. 6th. AVE.	
P.O., State & ZIP Code PORTLAND, OR. 97204	
Postage	$ .98
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$2.98
Postmark or Date	

PS Form **3800**, June 1990

SCOEPA00020050

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

☆ U.S.G.P.O. 1990-270-153

PS Form **3800**, June 1990 *(Reverse)*

ATES POSTAL SERVICE

Official Business

PORTLAND, OR
FEB 16
PM
1994

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn - Tom McCue

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
DEQ-AIR QUALITY DIV.
811 S.W. 6th. AVE.
PORTLAND, OR 97204-1390

4a. Article Number
P 699-796-571

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
2/16/94

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Ser

SCOEPA00020053

1993 Annual Report
Air Contaminant Discharge Permit No. 26-3002
Wacker Siltronic Corporation

The following information is submitted in compliance with Condition 12, reporting requirements of Air Permit No. 26-3002

12 (a) Quantities and types of fuel used on a monthly basis.

	Natural Gas (million CF)	Propane (gallons)	Kerosene (gallons)
January	11.2	35	4.5
February	9.5	35	4.5
March	9.1		4.5
April	8.8		4.5
May	8.4		4.5
June	7.6		4.5
July	7.9		4.5
August	7.7		4.5
September	7.8		4.5
October	9.0		4.5
November	9.1	35	4.5
December	9.3		

12 (b) Amount (tons) of VOC emitted on an annual basis.

16.1 tons

12 (c) Quantities and types of all solvents (VOCs) discharged to the city of Portland WWTP if the discharge amount is excluded from the air emission calculation.

See attached
Sheet for
Calcs

Solvent estimates in waste waters discharged to POTW:

	Evaporative Emission	Discharge to POTW
Acetone	3,600	400
n-Butyl Alcohol	105	10,430
Isopropyl Alcohol	22,457	4,600

12 (d) Total number of hours (estimate) the following scrubbers were in operation on a monthly basis.

All scrubbers operated 24 hours per day, 720 hours per month during the entire year except occasional down time for maintenance activities.

12 (e) Quantities (lbs) of the following non-criteria air pollutants emitted on a monthly basis.

The following acids and caustic were used from bulk tanks, barrels, glass bottles and in one case from gas cylinders. The use records kept at this facility track the number of containers used by production operations and do not reflect actual usage by month. The emission calculations listed below are average values for each month.

	Annual Use (pounds)	Emissions (lbs/yr.)	(lbs/mo.)
Hydrofluoric Acid	56,812	63	5
Hydrochloric Acid	94,822	261	22
Nitric Acid	246,140	315	26
Sulfuric Acid	254,600	508	42
Ammonium Hydroxide	29,800	14,764	1,230

12 (f) The results of an investigation of the feasibility if monitoring the amount of VOCs emitted on a daily or monthly basis.

Wacker's current VOC tracking system is based on inventory record keeping. This system can accurately reflect usage by production operations over an extended amount of time, but because of lag time from disposition of material to production and actual use of the material (1 hour to several days) it can not be used for daily tracking. It can be used to for monthly tracking, but is most accurate when used on an annual basis. Feasible monitoring equipment has yet to be found which will improve upon the accuracy of our current method.

Department of Environmental Quality

EMISSION STATEMENT FORM

(Pursuant to OAR 340-28-1500 to -1520)

(1) FACILITY NAME: Wacker Siltronic Corporation

(2) MAILING ADDRESS: P.O. Box 83180
Portland, Oregon 97283-0180

(3) ACDP #: 26-3002

(4) CONTACT PERSON: Tom McCue

TELEPHONE: (503) 241-7532

(5) SOURCE LOCATION: 7200 NW Front Avenue, Portland, Oregon 97210-3676

(6) EMISSIONS INFORMATION FOR PREVIOUS OZONE SEASON (Continue responses on a separate sheet if needed, indicating the ACDP# and item number):

(a) ESTIMATED ACTUAL WEEKDAY VOC EMISSIONS, POUNDS: 92 lbs/day

(b) ESTIMATED ACTUAL WEEKDAY NO_x EMISSIONS, POUNDS: 134 lbs/day

(c) CALENDAR YEAR FOR OZONE SEASON: 1993

(d) DESCRIBE EMISSION FACTOR USED AND REFERENCE SOURCE FOR EMISSION FACTOR, IF APPLICABLE: Emission Factor: Industrial boilers AP-42

(e) DESCRIBE OTHER PROCEDURE USED TO CALCULATE EMISSIONS, IF APPLICABLE (e.g. MATERIAL BALANCE, SOURCE TEST, OR CONTINUOUS MONITORING): Emissions based on material balance, source test, and production data.

(Note: A record shall be kept at the plant site indicating how the above emissions calculations were made.)

(7) THE EMISSIONS DATA PRESENTED HEREIN REPRESENTS THE BEST AVAILABLE INFORMATION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

Wacker Siltronic Corporation
Thomas C. McCue
(Print Name of Certifying Individual, pursuant to OAR 340-28-110)

Environmental & Safety Mgr. — Thomas C. McCue — 2/14/94
(Print Full Title) (Signature) (Date)

Return Form To: Department of Environmental Quality, Air Quality Division, 811 SW 6th Ave., Portland, Oregon, 97204-1390

Revised: 12/13/93

EXCESS EMISSIONS REPORT
AIR PERMIT NO. 26-3002
WACKER SILTRONIC CORPORATION

No Excess Emissions as defined in OAR 340-20-350 occurred from any pollution control device during 1993. Wacker did experience minor unplanned releases of air contaminants as a result of spills or production upset conditions. Of these unplanned releases, none constituted an excess emission which exceeded our air permit nor did any of these releases exceed any applicable air quality rule.

Monday, February 14, 1994

Data for 12(b) and 12(c)

Material	Description	93 LBS	93 net lb	92 net lb	% voc	Lbs voc	% evap	Voc evap	Note
Acetone	DIMETHYL KETONE	4718	4000	7259	100	4000	90	3600	400 lbs to POTW
Acid Acetic	GLACIAL, REAGENT GRADE	485		375	100	485	100	485	|
Adhesive	All Purpose KAR #77160	5		8	88	5		5	|
Adhesive	Silicone, SEALENT CLR.RTV #7968	49			8	4	100	4	
Adhesive	TOUCHDOWN #1 CONTACT CEM	71		284	65	56	100	56	|
Adhesive Catalyst	VALTRON B--#AD1211 FOR INGO	186		143	40	74	50	37	|
Aerosol Lubricant	SILICONE LUBE, KAR "GOLD" #84	6		0	85	5	85	5	|
Alcohol (Ethanol)	Vanazol A-1 200 Proof Denaturated	3630		4035	100	3630	100	3630	|
Alcohol (Isopropyl)	MICROPROCESS" ISOPROPANOL	29684	27057	20286	100	27057	83	22457	4600 lbs to POTW
Alcohol (butyl)	ELECTRONIC GRADE	11968	10535	22656	100	10535	1	105	10430 lbs to POTW
Boiler emissions (Natural Gas)	Millions cf. AP-42 used	105			6			611	5.8 lbs/million cf
Caviclean #2		4333		3852	12	520	74	385	|
Cleaner	CONTACT CLEANER, CRC #3070	92		132	96	88	100	88	|
Cleaner	ELECTRIC MOTOR CLEANER, KA	5		0	85	4	85	4	|
Defluxer	Enviro-tech	47		34	5	2	100	2	|
Dust off	AIR-CLEAN SPRAY	112		58	100	112	100	112	|
Grease	WHITE, KAR "GOLD" # 84451, airo	2		0	85	2	85	2	|
Lubricant	Aerosol C R C 3-36, 3004/3005/300	148		95	70	104	70	73	|
Lubricant	Bulk C R C 3-36, 3006/3009/3011	123		123	70	86	70	60	|
Lubricant	TEFLON LUBE, KAR # 79417	5		5	82	3	85	3	|
Neoprene	NEOPRENE F-1 ADHSVE, CARBO	3		4	88	3	83	2	|
Oil Lubricant	OPEN CHAIN & SPROCKET LUBE,	4		1	13	1	85	0	|
Paint Stripper	GASK REMOVER/PNT STRPR, KA	17		6	31	6	85	5	|
Paints general	Maintenance							100	Estimated POs and invent
RTV Gasket Maker	AEROSOL	11		17	8	1		0	|
Racon 11	CFC REFRIGERANT; FREON	1200		0	100	1200	100	0	Exempt from DEQ reportin
Racon 22	CFC REFRIGERANT; FREON	1230		810	100	1230	100	0	Exempt from DEQ reprotin
Spraypaints (general)	Warehouse + varios maintenance	444	547	0	85	377	85	321	|
Teflon Lube	Dry, KAR # 79418	3		3	85	2	100	2	|
Wax	SUPERLATIVE B,Q-077	31		31	95	29	100	29	|
Lubricat spray	MOLYKOTE 321R BONDED LUBRI	1		1	37	0	90	0	|

Net lbs VOC : 32184

Notes

1. 93 net lb equals material distributed minus HW shipped.
   5452 lbs alcohol waste shipped 1993
   - 675 lbs Drum weight (15 x 45 lbs)
   2627 lbs IPA
   1433 lbs butyl alcohol
   717 lbs acetone

2. 100% reduction in Butyl acetate and reportable freons

SCOEPA00020059

Department of Environmental Quality

EMISSION STATEMENT FORM

(Pursuant to OAR 340-28-1500 to -1520)

(1) FACILITY NAME: Wacker Siltronic Corporation

(2) MAILING ADDRESS: P.O. Box 83180
Portland, Oregon 97283-0180

(3) ACDP #: 26-3002

(4) CONTACT PERSON: Tom McCue

TELEPHONE: (503) 241-7532

(5) SOURCE LOCATION: 7200 NW Front Avenue, Portland, Oregon 97210-3676

(6) EMISSIONS INFORMATION FOR PREVIOUS OZONE SEASON (Continue responses on a separate sheet if needed, indicating the ACDP# and item number):

(a) ESTIMATED ACTUAL WEEKDAY VOC EMISSIONS, POUNDS: 92 lbs/day

(b) ESTIMATED ACTUAL WEEKDAY NO_x EMISSIONS, POUNDS: 134 lbs/day

(c) CALENDAR YEAR FOR OZONE SEASON: 1993

(d) DESCRIBE EMISSION FACTOR USED AND REFERENCE SOURCE FOR EMISSION FACTOR, IF APPLICABLE: Emission Factor: Industrial boilers AP-42

(e) DESCRIBE OTHER PROCEDURE USED TO CALCULATE EMISSIONS, IF APPLICABLE (e.g. MATERIAL BALANCE, SOURCE TEST, OR CONTINUOUS MONITORING): Emissions based on material balance, source test, and production data.

(Note: A record shall be kept at the plant site indicating how the above emissions calculations were made.)

(7) THE EMISSIONS DATA PRESENTED HEREIN REPRESENTS THE BEST AVAILABLE INFORMATION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

Wacker Siltronic Corporation
Thomas C. McCue
(Print Name of Certifying Individual, pursuant to OAR 340-28-110)

Environmental & Safety Mgr. — Thomas C. McCue — 2/14/94
(Print Full Title) (Signature) (Date)

Return Form To: Department of Environmental Quality, Air Quality Division, 811 SW 6th Ave., Portland, Oregon, 97204-1390

Revised: 12/13/93

EXCESS EMISSIONS REPORT
AIR PERMIT NO. 26-3002
WACKER SILTRONIC CORPORATION

No Excess Emissions as defined in OAR 340-20-350 occurred from any pollution control device during 1993. Wacker did experience minor unplanned releases of air contaminants as a result of spills or production upset conditions. Of these unplanned releases, none constituted an excess emission which exceeded our air permit nor did any of these releases exceed any applicable air quality rule.

Monday, February 14, 1994

Data for 12(b) and 12(c)

Material	Description	93 LBS	93 net lb	92 net lb	% voc	Lbs voc	% evap	Voc evap	Note
Acetone	DIMETHYL KETONE	4718	4000	7259	100	4000	90	3600	400 lbs to POTW
Acid Acetic	GLACIAL, REAGENT GRADE	485		375	100	485	100	485	|
Adhesive	All Purpose KAR #77160	5		8	88	5		5	|
Adhesive	Silicone, SEALENT CLR.RTV #7968	49			8	4	100	4	
Adhesive	TOUCHDOWN #1 CONTACT CEM	71		284	65	56	100	56	|
Adhesive Catalyst	VALTRON B--#AD1211 FOR INGO	186		143	40	74	50	37	|
Aerosol Lubricant	SILICONE LUBE, KAR "GOLD" #84	6		0	85	5	85	5	|
Alcohol (Ethanol)	Vanazol A-1 200 Proof Denaturated	3630		4035	100	3630	100	3630	|
Alcohol (Isopropyl)	MICROPROCESS" ISOPROPANOL	29684	27057	20286	100	27057	83	22457	4600 lbs to POTW
Alcohol (butyl)	ELECTRONIC GRADE	11968	10535	22656	100	10535	1	105	10430 lbs to POTW
Boiler emissions (Natural Gas)	Millions cf. AP 42 used	105			6			611	5.8 lbs/million cf
Caviclean #2		4333		3852	12	520	74	385	|
Cleaner	CONTACT CLEANER, CRC #3070	92		132	96	88	100	88	|
Cleaner	ELECTRIC MOTOR CLEANER, KA	5		0	85	4	85	4	|
Defluxer	Enviro-tech	47		34	5	2	100	2	|
Dust off	AIR-CLEAN SPRAY	112		58	100	112	100	112	|
Grease	WHITE, KAR "GOLD" # 84451, airo	2		0	85	2	85	2	|
Lubricant	Aerosol C R C 3-36, 3004/3005/300	148		95	70	104	70	73	|
Lubricant	Bulk C R C 3-36, 3006/3009/3011	123		123	70	86	70	60	|
Lubricant	TEFLON LUBE, KAR # 79417	5		5	82	3	85	3	|
Neoprene	NEOPRENE F-1 ADHSVE, CARBO	3		4	88	3	83	2	|
Oil Lubricant	OPEN CHAIN & SPROCKET LUBE,	4		1	13	1	85	0	|
Paint Stripper	GASK REMOVER/PNT STRPR, KA	17		6	31	6	85	5	|
Paints general	Maintenance							100	Estimated POs and invent
RTV Gasket Maker	AEROSOL	11		17	8	1		0	|
Racon 11	CFC REFRIGERANT; FREON	1200		0	100	1200	100	0	Exempt from DEQ reportin
Racon 22	CFC REFRIGERANT; FREON	1230		810	100	1230	100	0	Exempt from DEQ reprotin
Spraypaints (general)	Warehouse + varios maintenance	444	547	0	85	377	85	321	|
Teflon Lube	Dry, KAR # 79418	3		3	85	2	100	2	|
Wax	SUPERLATIVE B,Q-077	31		31	95	29	100	29	|
Lubricat spray	MOLYKOTE 321R BONDED LUBRI	1		1	37	0	90	0	|

Net lbs VOC : 32184

Notes

1. 93 net lb equals material distributed minus HW shipped.
   5452 lbs alcohol waste shipped 1993
   - 675 lbs Drum weight (15 x 45 lbs)
   2627 lbs IPA
   1433 lbs butyl alcohol
   717 lbs acetone

2. 100% reduction in Butyl acetate and reportable freons

SCOEPA00020062

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

February 12, 1993

Ms. Kathy Amidon
Permit Coordinator
Department of Environmental Quality
Air Quality Division
811 SW 6th Avenue
Portland, OR 97204-1390

RE: Annual Air Report Submittals
Air Permit No. 26-3002

Dear Ms. Amidon:

Please find attached the original and a copy of the 1992 Annual Report, Report of Excess Emissions, and Emission Statement for Wacker Siltronic Corporation, Air Contaminant Discharge Permit No. 26-3002. Should you have any questions regarding the submittals or require any further data, please contact Tom McCue at 241-7532.

Respectfully,

WACKER SILTRONIC CORPORATION

BY: Thomas C. McCue

Thomas C. McCue
Environmental and Safety Manager

attachments

1992 Annual Report
Air Contaminant Discharge Permit No. 26-3002
Wacker Siltronic Corporation

The following information is submitted in compliance with Condition 12, reporting requirements of Air Permit No. 26-3002

12 (a) Quantities and types of fuel used on a monthly basis.

	Natural Gas (million CF)	Propane (gallons)	Kerosene (gallons)
January	3.006		4.5
February	2.802		4.5
March	3.095		4.5
April	3.000		4.5
May	2.914		4.5
June	2.907		4.5
July	2.807		4.5
August	2.700		4.5
September	2.717		4.5
October	2.757	75	4.5
November	2.830	75	4.5
December	3.294	75	4.5

12 (b) Amount (tons) of VOC emitted on an annual basis.

15.2 tons (see attach list)

12 (c) Quantities and types of all solvents (VOCs) discharged to the city of Portland WWTP if the discharge amount is excluded from the air emission calculation.

Solvent estimates in waste waters discharged to POTW:

	Evaporative Emission	Discharge to POTW
Acetone	6036.3	670
Butyl Acetate	1498.6	264
n-Butyl Alcohol	1665.0	14,985
Isopropyl Alcohol	15,862.1	3,249

12 (d) Total number of hours (estimate) the following scrubbers were in operation on a monthly basis.

All scrubbers operated 24 hours per day, 720 hours per month during the entire year except as noted below. No down time was recorded for any of the EPI Reactor Scrubbers or the LPCVD Scrubber. The EPI Horizontal Scrubber and the Quartz Clean Scrubber are the same scrubber which operated the entire year except for one weekend shut down for duct replacement.

The main NOx scrubber is not listed in this section of the permit, however it also operated without shutdown for the entire year except for one weekend shut down for duct work changes.

12 (e) Quantities (lbs) of the following non-criteria air pollutants emitted on a monthly basis.

The following acids and caustic were used from bulk tanks, barrels, glass bottles and in one case from gas cylinders. The use records kept at this facility track the number of containers used by production operations and do not reflect actual usage by month. The emission calculations listed below are average values for each month.

	Annual Use (pounds)	Emissions (lbs./yr.)	(lbs./mo.)
Hydrofluoric Acid	88,799	84.8	7.1
Hydrochloric Acid	81,607	81.6	6.8
Nitric Acid	323,113	323.1	26.9
Sulfuric Acid	140,867	104.9	8.74
Ammonium Hydroxide	203,112	201.1	16.9

12 (f) Investigation of the feasibility of monitoring and amount of VOCs emitted on a daily or monthly basis.

During 1992 Wacker has improved data collection capabilities for inventory tracking, reduced both waste and use of solvents, modified procedures for handling waste solvents, and increased sampling of waste water discharged to improve tracking VOC materials. As reported last year, Wacker's current VOC tracking system consists of mass balance calculations and inventory record keeping activities. Wacker,s current thrust is to reduce the use of solvents and other chemical as much as possible which further reduces both VOC emissions and solvent wastes. No monitoring equipment has yet been found that is economically feasible which will improve upon the accuracy provided by the mass balance method we currently use. We are continuing to investigate computer systems to ease the environmental reporting burden.

Excess Emissions Report
Air Permit No. 26-3002
Wacker Siltronic Corporation

No Excess Emissions as defined in OAR 340-20-375 occurred from any pollution control device during 1992. Wacker did experience minor unplanned releases of air contaminants as a result of spills or production upset conditions. Of these unplanned releases, none constituted an excess emission which exceeded our air permit nor did any of these releases exceed the significant emission rates published by the DEQ for use in the Hazardous Air Pollutant Interim Program. Attached are two Incident Reports submitted to Oregon Emergency Management Division which contain information about releases to the air.

The first report was Incident No. 92-216, February 11, 1992. This incident involved a spill inside the building of 3 to 5 gallons of 29% ammonium hydroxide (11 pounds) which drained into our treatment system. The work area was evacuated and the room was exhausted to the atmosphere which was an unplanned release.

The second report was Incident No. 92-540, April 17, 1992. This incident involved 2 to 3 gallons of a solution containing 98% nitric acid and 2% hydrofluoric acid. Like the previous incident, all spilled material was contained inside the building and further treated at our on site waste water treatment plant. The fumes from this spill were exhausted to the atmosphere. In both spill incidents, a report was filed for community right to know compliance.

From a review of OAR 340-20-375, it does not appear that either of these incidents were or are reportable as excess emissions, however we are reporting them and will continue to report until we have a better understanding of excess emission reporting requirements. Should you have any questions about these releases please contact Tom McCue at 241-7532.

Emission Statement
Air Permit No. 26-3002
Wacker Siltronic Corporation

This report contains estimates of oxides of nitrogen (NOx) and volatile organic compounds (VOCs) emitted during the months of June July and August of 1992 in compliance with the November 10, 1992 Environmental Quality Commission rule on Emission Statements.

Wacker Siltronic Corporation has an Air Contaminant Discharge Permit which contains Plant Site Emission Limits (PSEL) above 25 tons per year for both NOx and VOC emissions. The data shown below represents our best calculated estimate of the amount of NOx and VOCs emitted during this time period. Data is not available which would quantify exactly what the emissions are.

The emissions for VOCs are calculated by inventory mass balance on a monthly basis and averaged weekly. The NOx emissions are calculated from annual emission estimates averaged weekly. In the future, we will look at methods which may be able to quantify emissions more precisely. As an example, we are upgrading the main NOx scrubber system during 1993. The upgrade will include improved data collection capability. VOC measurements have proven to be more difficult to measure directly.

VOC Estimates (major uses only in lbs.)
Formula: Amount Used * % VOC * % not recovered = VOC Emission

COMPOUND	JUNE	JULY	AUGUST
Acetic Acid	11	0	27
Acetone	980	327	980
Butyl Acetate	344	344	344
Butyl Alcohol	334	186	222
Contact Cleaner	9	11	17
Ethanol	0	344	344
Freon TE (ethanol)	64	44	55
Isopropyl Alcohol	1194	1194	1791
Turco Claviclean	46	0	46
TOTAL/MO.	2982	2450	3826
AVERAGE/WK	746	613	957

NOx Emission Estimates (lbs)

Annual emissions based on average operating hours / 52 weeks (Formulas attached)

	JUNE	JULY	AUGUST
Boilers	407	393	378
Ingot etch	186	186	186
Slug etch	1318	1318	1318
Wafer etch	86	86	86
Misc. Sources	400	400	400
LPVCD Scrubber	406	406	406
EPI Scrubber	406	406	406
TOTAL/MO	3,209	3,195	3,180
AVERAGE/WK	802	799	795

All emission information contained in this Emission Statement have been based on actual chemical inventory information, material safety data sheets, laboratory analysis, EPA emission factors (AP-42), estimated operating hours, and mathematical calculations. Wacker Siltronic Corporation certifies that all information contained in this report is true and accurate to the extent data was available using generally accepted estimation methods for air emissions found in EPA guidance AP-42.

WACKER SILTRONIC CORPORATION

BY: Thomas C. McCue

Thomas C. McCue
Environmental and Safety Manager

February 12, 1993

1992 VOC CHEMICALS	PART NO.	UNIT SIZE	LB/GAL	LB/UNT	92 UNITS		92 NET LBS	%VOC	LBS VOC	% EVAP	=VOC EVAP
ACETIC ACID	4419009	2.5 L BT	8.75	5.51	65		358.15	100	358	50	179.1
ACETONE	4439001	55 GAL DM	6.57	363	20	~	6707.00	100	6707	90	6036.3
APPLESCENT, N1-712 FAMILY	-	16oz SP CAN	6.48	0.81	18		14.58	100	15	100	14.6
BELT DRESSING, KAR #65380	4404007	16oz Sp Can	5.84	0.73	0		0.00		0		0.0
BUTYL ACETATE	4436503	55 GAL DM	7.36	405.00	5	~	1763.00	100	1763	85	1498.6
BUTYL-N ALCOHOL (BUTANOL)	4436501	55 GAL DM	6.75	371.00	61	~	16650.00	100	16650	10	1665.0
CLEAN ALL	-	2.5 Gal Pl Bt	8.42	21.05	28		589.40	7	41	94	38.8
CONTACT CLEANER; CRC #2016	4404002	15oz Sp Can	13.08	1.53	86		131.58	96	126	100	126.3
CRC 3-36 LUBRICANT	4459712	16oz SP CAN	6.81	1.00	112		112.00	70	78	70	54.9
CRC 3-36 LUBRICANT	4459715	1 G PL BTL	6.81	6.81	18		122.58	70	86	70	60.1
DUST OFF	4404004	15oz Sp Can	9.95	1.16	50		58.00	100	58	100	58.0
ELECTRIC MOTOR CLEANER, KAR #65390	4404006	16oz Sp Can	12.51	1.56	0		0.00		0		0.0
EPOXY HARDNER (VALTRON-B)	5465003	16oz(.47L)BTL	9.17	1.00	125		125.00	40	50	50	25.0
ETHANOL (VANZOL V-1 200)	4436101	55 GAL DM	6.58	362.00	11	~	3574.00	100	3574	95	3395.3
FREON TE (TF+4% ETHANOL)	4406003	BULK = LBS	12.56	1.00	21369	*	17281.00	4	691	60	414.7
FREON TMS (TF+5%Me/N.M.ANE)	4489007	16oz SP CAN	12.4	1.00	22		297.00	5	15	100	14.9
GASK REMOVER/PNT STRPR, KAR #68823	4404008	16oz Sp Can	7.5	0.94	6		5.64	100	6	100	5.6
GEL ENGINE DEGREASER, KAR #80937	4404005	16oz Sp Can	6.67	0.83	0		0.00		0		0.0
ISOPROPYL ALCOHOL (IPA)	4439201	55 GAL DM	6.54	360.00	56	~	19111.00	100	19111	83	15862.1
KEROSENE (KEROSINE)	-	55 GAL DM	6.67	367.00	1		367.00	100	367	1	3.7
MOLD CLEANER - WIZ 9	5466017	1 GAL CAN	8.84	8.84	0		0.00	70	0	13	0.0
MOLD RELEASE - WIZ F-57	5466016	1 GAL CAN	7.92	7.92	9		71.28	64	46	100	45.6
MOLYKOTE 321R LUB. SPRAY	4459300	11oz SP CAN	8.34	5.73	1		5.73	37	2	100	2.1
NEVERSEEZ	4459713	16oz Sp Can	11.19	1.40	2		2.80	57	2	100	1.6
PAINT--TOTALS FROM SEPARATE LIST					16.75		116.53				79.6
PLASTI-DIP	-	1 Gal Can	7.56	7.56	2		15.12	55	8	55	4.6
PRECISION BLUE LAYOUT FLUID	-	12.5oz Sp Can	7.17	0.70	24		16.80	92	15	94	14.5
PRECISION RED LAYOUT FLUID	-	12.5oz Sp Can	7.17	0.70	24		16.80	92	15	94	14.5
RED INSULATING VARNISH, KAR #67956	4106023	16oz Sp Can	6.67	0.84	2		1.68	85	1	100	1.4
RUST INHIBITOR; VOITLANDER; #404T	5455103	50KG Dm/liq	9.4	110.23	33		3637.59	0	0	0	0.0
RUST PENETRANT; KAR #78607	5455105	20oz Sp Can	5.84	0.91	3		2.73	91	2	100	2.5
SIMPLE GREEN	4404009	32oz Btl	8.55	2.14	27		57.78	0.8	0	100	0.5
SPRAY CLEAN	4404001	1 G PL BTL	8.6	8.60	1		8.60	4	0	100	0.3
SPRAYPAINT--TOTALS FROM SEPARATE LIST					738.67		547.35				400.7
SUPERL-A-TIVE (WAX)	4489012	1 G PL BTL	7.67	7.67	4		30.68	95	29	100	29.1
TOUCHDOWN CONTACT CEMENT	4467305	5 GAL PAIL	7.1	35.50	8		284.00	6	17	100	17.0
TURCO CAVICLEAN #2	5405005	55 GAL DM	8.66	476.00	8		3808.00	12	457	80	365.6
WYPE	-	18oz SP CAN	8.42	1.18	72		84.96	24	20	100	20.4
TOTAL LBS VOC EMITTED TO ENVIRONMENT											30453.0

** Waste shipped 12/92: 4088 lb--Romic
~~ Adjusted for waste shipped--Romic

SCOEPA00020069

1992 VOC CHEMICALS	PART NO.	UNIT SIZE	LB/GAL	LB/UNT	92 UNITS	92 NET LBS	%VOC	LBS VOC	% EVAP	=VOC EVAP
PAINT										
IMPERIAL, PAINT--ENAMEL SFTY RED, #2084		1 Gal Can	8.34	8.34	0.25	2.08	45	1	60 ~	0.6
IMPERIAL, PAINT--ENAMEL WHITE, #2002		1 Gal Can	9.17	9.17	0.50	4.59	42	2	60 ~	1.2
IMPERIAL, STAIN--OIL AMER WLNT, #1601		1 Qt Can	6.67	1.67	1.00	1.67	85	1	84	0.8
IMPERIAL, THINNER, #7300		1 Gal Can	6.67	6.67	6.00	40.02	98	39	100	39.2
IMPERIAL, THINNER--LACQUER, #1902		1 Gal Can	6.67	6.67	1.00 ~	6.67	98	7	100 ~	6.5
MILLER, PAINT--ENAMEL, #J151		1 Gal Can	10.80 ~	10.80	1.00 ~	10.80	45 ~	5	60 ~	2.9
MILLER, THINNER--VM&P, #1299		1 Gal Can	6.67 ~	6.67	1.00 ~	6.67	98 ~	7	100 ~	6.5
PPG, PAINT--ENAMEL VS GRN, #97606		1 Gal Can	8.11	8.11	1.00 ~	8.11	42 ~	3	65.4	2.2
RUSTOLEUM, PAINT, #935		1 Gal Can	9.25	9.25	1.00 ~	9.25	45 ~	4	58	2.3
SHERWIN WILLIAMS, REDUCER, #54		1 Gal Can	7.50 ~	7.50	1.50	11.25	96 ~	11	100 ~	10.8
SPECTRUM, ACTIVATOR--LECTRO COAT		1 Gal Can	8.34 ~	8.34	0.50	4.17	50 ~	2	52 ~	1.0
SPECTRUM, PAINT--LECTRO COAT SPR WH		1 Gal Can	11.67 ~	11.67	0.50	5.84	32 ~	2	30 ~	0.6
SUNBELT, REDUCER--URETHANE, #135		1 Gal Can	7.50 ~	7.50	0.50	3.75	96 ~	4	100 ~	3.6
WATCO-DENNIS, DANISH OIL FNSH--GLDN OAK,		1 Qt Can	6.67 ~	1.67	0.50	0.84	85 ~	1	85 ~	0.6
WATCO-DENNIS, DANISH OIL FNSH--NATRL,		1 Qt Can	6.67 ~	1.67	0.50	0.84	85 ~	1	85 ~	0.6
					16.75	116.53				79.6
SPRAYPAINTS										
AERVOC-PACIFIC, SPRAYPAINT--IVORY, #110		13oz Sp Can	7 ~	0.71	15	10.65	85 ~	9	85 ~	7.7
B.I.C., SPRAYPAINT--SUPERCOAT, #316L	4106022	12oz Sp Can	7 ~	0.66	7	4.62	85 ~	4	85 ~	3.3
BORDEN/KRYL, SPRAYPAINT--ALMOND, 31506		12oz Sp Can	7 ~	0.66	10	6.60	85 ~	6	85 ~	4.8
BORDEN/KRYL, SPRAYPAINT--BRNT ORG, #2406		12oz Sp Can	7 ~	0.66	10	6.60	85 ~	6	85 ~	4.8
BORDEN/KRYL, SPRAYPAINT--PSL AQUA, #2002		12oz Sp Can	7 ~	0.66	5	3.30	85 ~	3	85 ~	2.4
BORDEN/KRYL, SPRAYPAINT--WH, #1501	4106020	12oz Sp Can	7 ~	0.66	9	5.94	85 ~	5	85 ~	4.3
DAP, SPRAYPAINT--BBQ/STOVE ENAMEL, #760		12oz Sp Can	7 ~	0.66	4	2.42	85 ~	2	85 ~	1.8
DAYTON, SPRAYPAINT--FED HWY YEL, #2W009B		12oz Sp Can	7 ~	0.66	11	7.26	85	6	85 ~	5.2
DAYTON, SPRAYPAINT--FL BLK, #2X717B		12oz Sp Can	7 ~	0.66	27	17.82	89	16	85 ~	13.5
DAYTON, SPRAYPAINT--FL BLK, #2X717B		12oz Sp Can	7 ~	0.66	33	21.78	89	19	85 ~	16.5
DAYTON, SPRAYPAINT--GL BLK, #2X711B		12oz Sp Can	7 ~	0.66	14	9.24	87	8	85 ~	6.8
DAYTON, SPRAYPAINT--GL WH, #2X712B		12oz Sp Can	7 ~	0.66	34	22.44	87	20	85 ~	16.6
DAYTON, SPRAYPAINT--GY PRMR, #2X982B		16oz Sp Can	7 ~	0.88	235	205.63	85	175	85 ~	148.6
DAYTON, SPRAYPAINT--GY PRMR, #2X982B	4106021	16oz Sp Can	7 ~	0.88	25	21.88	85	19	85 ~	15.8
DAYTON, SPRAYPAINT--MACH GRY, #2X710B		12oz Sp Can	7 ~	0.66	152	100.32	88	88	85 ~	75.0
DAYTON, SPRAYPAINT--MED BLUE, #2X731B		12oz Sp Can	7 ~	0.66	19	12.54	86	11	85 ~	9.2
KAR, SPRAYPAINT--CHRY BL ENG, #69982	4106028	12oz Sp Can	7 ~	0.66	15	9.90	85 ~	8	85 ~	7.2
KAR, SPRAYPAINT--CHV OR ENG, #66563	4106025	12oz Sp Can	7 ~	0.66	7	4.62	85 ~	4	85 ~	3.3
KAR, SPRAYPAINT--FD RD ENG, #66561	4106026	12oz Sp Can	7 ~	0.66	7	4.62	85 ~	4	85 ~	3.3
KAR, SPRAYPAINT--JD GRN, #66566	4106024	12oz Sp Can	7 ~	0.66	0	0.00	85 ~	0	85 ~	0.0
PAC COAST, SPRAYPAINT--WH, #5207		13oz Sp Can	7 ~	0.71	4 ~	2.84	85 ~	2	85 ~	2.1
PAC COAST, SPRAYPAINT--BLUE, --		12oz Sp Can	7 ~	0.66	4 ~	2.64	85 ~	2	85 ~	1.9
PAC COAST, SPRAYPAINT--DURO GRAY		12.75oz Sp Can	7 ~	0.70	5	3.50	85 ~	3	85 ~	2.5
PAC COAST, SPRAYPAINT--SHU BLUE, #11		12.75oz Sp Can	7 ~	0.70	4	2.80	85 ~	2	85 ~	2.0
PPG, SPRAYPAINT--HI HT BLK, #2176	4106027	12oz Sp Can	7 ~	0.66	7	4.62	85 ~	4	85 ~	3.3
PPG, SPRAYPAINT--TAN, #---	4106029	12oz Sp Can	7 ~	0.66	2	1.32	85 ~	1	85 ~	1.0
PPG, SPRAYPAINT--VS GRN, 55-306		12oz Sp Can	6.25	0.59	29	17.11	85 ~	15	90	13.1
RUSTOLEUM, SPRAYPAINT--EQUIP ORG, #2156		16oz Sp Can	7 ~	0.88	14	12.25	85 ~	10	85 ~	8.9
RUSTOLEUM, SPRAYPAINT--EQUIP YLW, #2148		15oz Sp Can	7 ~	0.82	9	7.38	85 ~	6	85 ~	5.3
RUSTOLEUM, SPRAYPAINT--MTL PRIMER, --		13oz Sp Can	7 ~	0.71	4 ~	2.84	85 ~	2	85 ~	2.1
ZYNOLYTE, SPRAYPAINT--LCQR CL GLS, #0917		12oz Sp Can	7 ~	0.66	18	11.88	85 ~	10	85 ~	8.6
					739	547.35		0		400.7

~ ESTIMATED WHERE DATA UNAVAILABLE

SCOEPA00020070

Tom - F.Y.I.

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

April 17, 1992

Oregon Emergency Management Division
Attn: Tony Busam
595 Cottage Street, N.E.
Salem, OR 97310

Re: Incident No. 92-540

Dear Mr. Busam,

This report is intended to fulfill the written notification requirements, following our verbal notification, under section 304 of the Superfund Amendments and Reauthorization Act (SARA) of 1986. On Wednesday, April 15 at 4:06 p.m., Wacker Siltronic had a release to air of fumes containing oxides of nitrogen (NOx) and a trace amount of hydrofluoric (HF) compounds.

The release originated at an acid-etch bath, containing a solution of 98% nitric acid and 2% hydrofluoric acid. The bath was overflowed and 2 to 3 gallons spilled onto the floor, where it went to a floor-drain and was treated at our wastewater treatment plant. While the spilled material traveled to the drain, it was fuming and the room was evacuated. The emergency exhaust system in the room was activated, causing the release. All pollution control equipment was operating as designed at the time of the incident. Our Emergency Response (ERT) Team responded at 4:12 p.m.

The concentration of NOx compounds in the fumes released was small because nitric acid has low evaporation rate, a low vapor pressure, and a high vapor density. Because the solution contained only 2% HF, the amount of HF released was incidental. When this small amount of NOx was exhausted at 6,035 cubic feet per minute (cfm) through the emergency fan and dispersed into the atmosphere, we believe it was non-detectable at our property boundaries. The Reportable Quantity (RQ) for nitric acid is 1,000 pounds, and 100 pounds for hydrofluoric acid. No R.Q. was exceeded.

Two employees received medical examinations after the incident and were released by the physician. Operations resumed at 4:24 p.m. If you have any questions, please call me at 243-2020, ext. 132.

Sincerely,

WACKER SILTRONIC CORPORATION

Kent C. Mayer

Kent C. Mayer
Environmental Engineer

cc: Oregon State Fire Marshal

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

February 11, 1992

Allan Coil
Oregon Emergency Management Division
595 Cottage Street, N.E.
Salem, Ore 97305-1760

Subject: Incident No. 92-216

Dear Mr. Coil,

Wacker Siltronic is filing this written report as follow-up to our telephone notification made to the Oregon Emergency Response System (OERS) regarding an incident which occurred on Tuesday, February 11, 1992. This complies with the requirements under section 304 of the Emergency Planning and Community Right-To-know Act, to notify the State's Local Emergency Planning Committee (LEPC) and State Emergency Response Commission (SERC) of a potential release.

On Tuesday February 11, 1992, at 12:02 p.m., a fitting for a pipe-valve broke in the "final cleaning" room. Three (3) to 5 gallons of 29% ammonium hydroxide (11 Lbs ammonium hydroxide) leaked into our wastewater trench system. The "RQ" for ammonium hydroxide is 1,000 Lbs. Our Emergency Response Team responded and the leak was stopped at 12:05 p.m. Employees in final cleaning and adjoining areas were evacuated. As a precaution OERS was called at 12:15 p.m.

Repairs were completed by 12:40 p.m. The work area was monitored for residual vapors and employees returned to work at 12:50 p.m. on the same day. No employees required medical attention. All of the ammonium hydroxide was treated in our wastewater treatment system. There were no permit excursions or treatment system upsets. We are not sure what caused the valve to fail, however, to prevent this from recurring, we will look at changing to different fittings.

If you have any questions, please call me at 243-2020, ext. 132.

Sincerely,

WACKER SILTRONIC CORPORATION

Kent C. Mayer

Kent C. Mayer
Environmental Engineer

cc: Mike Rodia (Fire Marshall's office)
Mark Hamlin (DEQ)
John Pittman (WSC)
Tom McCue (WSC)

BOILERS

DESCRIPTION	FUEL	FUEL CONSUMPTION	
2 - 250 HP JOHNSON FIRETUBE BOILER	NAT. GAS	10,500 CF/hr	MAX 11.025×10^6 BTU/hr MEAN 8.362×10^6 BTU/hr
1 - 300 HP IND. COMBUSTION FIRE TUBE BOILER	NG	12,600 CF/hr	MAX 13.230×10^6 BTU/hr $\bar{x}$ 10.034×10^6 BTU/hr
2 - HVAC BURNHAM-AMERICA WATER TUBE		580 CF/hr	MAX 0.609×10^6 BTU/hr —

BOILER HP $\times$ 3.3446×10^4 = BTU(MEAN)/hr

FAB 2

3 - 300 HP FIRETUBE BOILERS	EST	12,600 CF/hr	MAX 13.230×10^6 MEAN 10.034×10^6

EMISSION FACTORS AP-42

INDUSTRIAL BOILERS	N.G.	RESIDUAL OIL
PARTICULATE	1-5 lbs/10^6 ft^3	10 lbs/10^3 GAL
CO	35 lbs/10^6 ft^3	5 lbs/10^3 GAL
NO_x	140 lbs/10^6 ft^3	55 lbs/10^3 GAL
SO_x	0.6 lbs/10^6 ft^3	2 x % S
VOC	5.8 lbs/10^6 ft^3	1.28 lbs/10^3 GAL

NAT. GAS 1050 BTU/SCF

RESIDUAL OIL 150,000 BTU/GAL. 0.5 - 4.0% S 0.05 - 0.1% ASH

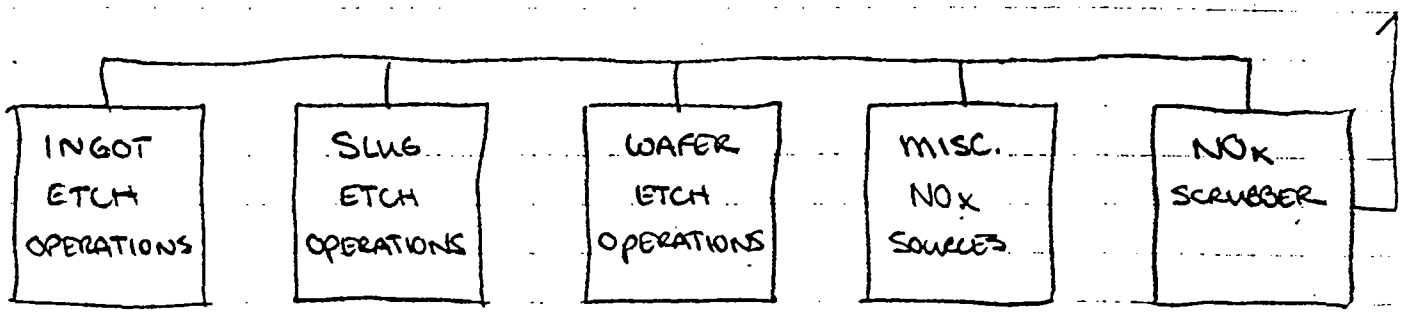
7.88 lbs/GAL

BOILERS

No.	SIZE	DESCRIPION	LOCATION	FUEL TYPE	OPERATING PRESSURE	CAPACITY
1	250 hp	Johnston Dry Back Fire-tube boiler Serial # 5-4470	Process Bldg. Room D	Nat. Gas or #2 oil	120 psig	8600 lb/hr
2	250 hp	Johnston Dry back Fire-tube Serial # 5-4469	Process Bldg.	Nat. Gas or #2 oil	120 psig	8600 lb/hr
3	300 hp	Cleaver-Brooks Wet back Fire-tube Serial # 1308	Facilities Bldg.	Nat. Gas or #2 oil	120 psig	10000 lb/hr
		Burnham America Model # 808 B-W Serial # 7603531	Headquarters Bldg.	Nat. Gas	50 psig water	369,600 BTUH output
		Burnham America Model # 808 B-W Serial # 7611510	Headquarters Bldg.	Nat. Gas	50 psig water	369,600 BTUH output

NOx SCRUBBER (REVISED 5-3-91)

SOURCE TEST DATA BY TRI-MER CORP MEASURED INDIVIDUAL AND COMBINED LOADING FROM ALL NOx SOURCES CONNECTED TO THE SCRUBBER. SINCE THE QUARTZ CLEANING OPERATION HAS BEEN REMOVED, CALCULATIONS ARE SHOWN FOR ALL REMAINING SOURCES. CALCULATIONS ARE BASED ON ACTUAL OPERATING HOURS.



(1) 492 ppmv @ 790 SCFM (2) 2900 ppmv @ 790 SCFM (3) 636 ppmv @ 790 SCFM (4) 200 ppmv @ 2319 SCFM

$$\frac{\text{PPMV NOx}}{10^6\,(\text{AIR})} \cdot \text{CFM} \cdot \frac{\text{WT. NOx}}{\text{CF}} \cdot \text{EFFICIENCY} \cdot \frac{60\text{ min}}{\text{hr}} \cdot \frac{\text{hrs.}}{\text{DAY}} \cdot \frac{365}{\text{yr}} \cdot \frac{\text{T}}{2000\text{ lbs}}$$

(1) INGOT ETCH 13.3 hrs./DAY OPERATION

$$\frac{492\text{ ppmv}}{10^6} \cdot \frac{790\text{ CF}}{\text{M}} \cdot \frac{0.197\text{ lbs}}{\text{CF}} \cdot (1-0.9) \cdot \frac{60\text{ m}}{\text{hr}} \cdot \frac{13.3\text{ hr}}{\text{DAY}} \cdot \frac{365\text{ DAY}}{\text{yr}} \cdot \frac{\text{T}}{2000\text{ lb}}$$

$= 1.12$ TPY NOx

(2) SLUG ETCH 16 hrs/DAY OPERATION

$$\frac{2900\text{ ppmv}}{10^6} \cdot \frac{790\text{ CF}}{\text{m}} \cdot \frac{0.197\text{ lbs}}{\text{CF}} \cdot (1-0.9) \cdot \frac{60\text{ m}}{\text{hr}} \cdot \frac{16\text{ hr}}{\text{DAY}} \cdot \frac{365\text{ DAY}}{\text{yr}} \cdot \frac{\text{T}}{2000\text{ lbs}}$$

$= 7.91$ TPY NOx

(NOx SCRUBBER CALC. CONT.)

(3) WAFER ETCH 4.8 hr/DAY OPERATION

$$\frac{636\ ppmv}{10^6} \cdot \frac{790\ CF}{M} \cdot \frac{0.197\ lbs}{CF} \cdot (1-0.9) \cdot \frac{60\ m}{hr} \cdot \frac{4.8\ hr}{DAY} \cdot \frac{365\ DAY}{yr} \cdot \frac{T}{2000\ lbs}$$

$= 0.52$ Tpy NOx

(4) MISC SOURCES INCLUDING OXIDATION LAB, REMELT, TRANSFER AND MIX STATIONS

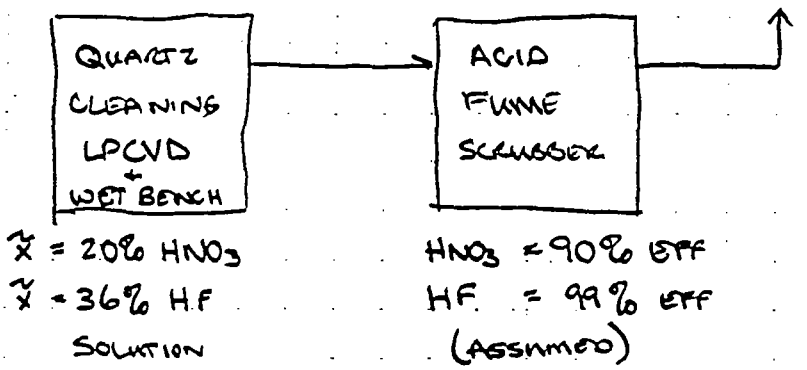
$$\frac{200\ ppmv}{10^6} \cdot \frac{2319\ CF}{M} \cdot \frac{0.197\ lbs}{CF} \cdot (1-0.9) \cdot \frac{60\ m}{hr} \cdot \frac{24\ hr}{DAY} \cdot \frac{365\ DAY}{yr} \cdot \frac{T}{2000\ lbs}$$

$= 2.40$ Tpy NOx

TOTAL = 11.95 Tpy OR **12 Tpy** NOx

LPCVD SCRUBBER

NEW SCRUBBER OPERATING AT 2500 CFM. NO CHANGE IN LOADING. SOURCE TEST BASED ON FLOW TO MAIN NO_x SCRUBBER BEFORE INSTALLATION OF NEW LPCVD SCRUBBER



FACTORS NO_x = 0.197 lbs/CF

HF = 0.052 lbs/cf

HNO_3 ($NO + NO_2$) $\frac{2269 \text{ ppmv} \cdot 483 \text{ CFM}}{2500 \text{ CFM}}$ = 438 ppmv AT 2500 CFM

$$\frac{438 \text{ ppmv}}{10^6} \cdot \frac{2500 \text{ CF}}{\text{m}} \cdot \frac{0.197 \text{ lb } NO_x}{\text{CF}} \cdot \frac{(1-0.9)}{\text{EFF}} \cdot \frac{60 \text{ min}}{\text{hr}} \cdot \frac{72 \text{ hr}}{\text{wk}} \cdot \frac{52 \text{ wk}}{\text{yr}}$$

= 4,850 lbs/yr or **2.43 Tpy** NO_x

HF

$$\frac{438 \text{ ppmv}}{10^6} \cdot \frac{(0.36 \text{ HF})}{\text{SOLUTION}} \cdot \frac{2500 \text{ CF}}{\text{m}} \cdot \frac{0.052 \text{ lbs HF}}{\text{CF}} \cdot \frac{(1-0.99)}{\text{EFF}} \cdot \frac{60 \text{ min}}{\text{hr}} \cdot \frac{72 \text{ hr}}{\text{wk}} \cdot \frac{52}{\text{yr}}$$

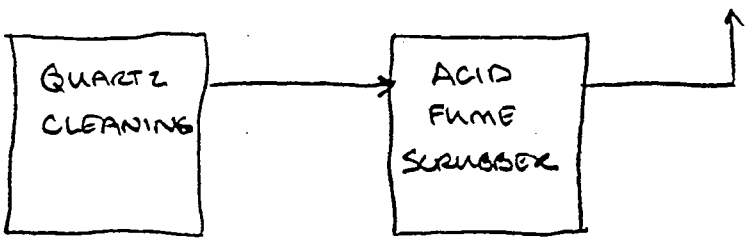
= **46 lbs/yr** HF

EP1 HORIZONTAL SCRUBBER 2000 SCFM

ESTIMATE EMISSIONS BASED ON TRI-MER TEST OF EMISSIONS FOR LPCVD QUARTZ CLEANING OPERATION

$NO_x = NO + NO_2 = \frac{GMWT}{385.1} = \frac{76 gm}{385.1} = 0.197$ lb

$HF = \frac{GMWT}{385.1} = \frac{20 gm}{385.1} = 0.052$ lbs/CF



90% HNO_3
10% HF
SOLUTION

HNO_3 = 90% EFF
HF = 99% EFF.
(ASSUMED)

(MANUFACTURE ESTIMATES
97% EFF FOR NO_x &
99.9% EFF FOR HF)

HNO_3 (NO_x)

$$\frac{2269 \text{ ppmv} \cdot 483 \text{ SCFM}}{2000 \text{ SCFM}} = 548 \text{ ppmv AT } 2000 \text{ SCFM}$$

$$\frac{548 \text{ ppmv}}{10^6} \cdot \frac{2000 \text{ CF}}{m} \cdot \frac{0.197 \text{ lbs}}{CF} \cdot (1-0.9)_{EFF} \cdot \frac{60 \text{ min}}{hr} \cdot \frac{72 \text{ hr}}{wk} \cdot \frac{52 \text{ wk}}{yr}$$

$$= 4{,}850 \text{ lbs/yr or } \underline{\underline{2.43 \text{ TPY}}} \quad NO_x$$

HF

$$\frac{548 \text{ ppmv}}{10^6} \cdot (0.36 \text{ HF})_{SOLUTION} \cdot \frac{2000 \text{ CF}}{m} \cdot \frac{0.052 \text{ lbs}}{CF} \cdot (1-0.99)_{EFF} \cdot \frac{60 \text{ min}}{hr} \cdot \frac{72 \text{ hr}}{wk} \cdot \frac{52 \text{ w}}{yr}$$

$$= \underline{\underline{46 \text{ lbs/yr}}} \quad HF$$

Air Report 1991

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

January 15, 1992

Kathy Amidon
Permit Coordinator
Air Quality Division
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204-1390

Subject: 1991 Annual Air Report - Permit No. 26-3002

Dear Ms. Amidon,

Attached is the 1991 Annual Air Report for Wacker Siltronic Corporation, under Air Contaminant Discharge Permit Number 36-3002, dated 12-27-91. The information presented in this report fulfills the Monitoring and Reporting requirements of item 12 (a-f) in the permit, for the period January 1 through December 31, 1991.

The VOC data submitted as required is accurate to a 97% confidence level. Several chemicals were identified during a physical inventory, which have an undetermined usage and insufficient Material Safety Data Sheet (MSDS) information. The total uncertainty is 1,010 lbs out of a total of 29,465 pounds. We have included all 1,010 lbs as VOC emissions for a conservative number.

If you have any further questions or comments concerning this report, please feel free to contact me at 243-2020, ext. 132.

Very truly yours,

Wacker Siltronic Corporation

Thomas C. McCue

Thomas C. McCue
Environmental Manager

attachment

cc: John Pittman (WSC)
Kent Mayer (WSC)

ANNUAL AIR REPORT - 1991 SUMMARY

(a.) FUEL USAGE

Month	Natural Gas Used (Million Cu.Ft.)	Propane Gallons	Kerosene Gallons
January	4.1480	125	2
February	2.8537	110	2
March	3.2021	80	2
April	2.8491	77	2
May	2.6584	58	2
June	2.4412	75	2
July	2.1388	10	2
August	2.3791	66	2
September	2.3058	100	2
October	2.6929	89	2
November	2.7804	100	2
December	3.0342	138	2

(b.) TOTAL VOC EMISSIONS

Tons of VOCs emitted in 1991 = 14.7 *

* The VOC calculation is an estimate of the VOCs in all of the products we used during the past year. Due to the time element involved, we were able to accurately account for 97% of all chemical products used. A potential error exists in the remaining 3%. Not all of the data required to make accurate determinations of VOC content was available from the product Material Safety Data Sheets. Spray paints were grouped for volatile content averaging.

(c.) SOLVENT DISCHARGES TO WWTP

Chemical	Discharges To City WWTP
Acetone	7,544 Lbs
Butyl Acetate	231 Lbs
Butyl Alcohol	15,317 Lbs
IsoPropyl Alcohol	2,769 Lbs
Dichlorobenzene(s) (Deodorant Blocks)	183 Lbs

(d.) HOURS OF SCRUBBER OPERATION

The EPI Horizontal Scrubber, LPCVD Scrubber, Quartz Clean Scrubber, and the EPI Reactor Scrubber all operated for approximately 666 hours for each month during 1991, including 7.5% scheduled downtime for each scrubber for preventative maintenance.

(e.) NON-CRITERIA AIR POLLUTANTS

Pounds Emitted Monthly. Emission Factor =0.1% ** (Lbs x.001)

Month	HF	HCL	HNO3	NH3	H2SO4
Jan.	9.5	4.5	21.9	2.6	15.3
Feb.	8.9	5.3	18.4	2.3	13.1
Mar.	8.3	6.3	21.3	2.9	10.7
Apr.	9.3	5.5	23.7	2.9	6.6
May	8.5	5.9	20.9	2.7	6.9
Jun.	.5	6.3	21.4	3.0	7.5
Jul.	16.1	6.6	21.4	2.3	13.9
Aug.	1.1	4.7	22.2	2.6	12.8
Sep.	16.1	6.0	22.2	3.0	11.3
Oct.	7.4	2.9	13.8	2.4	11.7
Nov.	5.5	4.6	11.6	3.2	11.3
Dec.	.5	3.4	0	3.7	18.3

** From the California Air Resources Board, San Francisco Bay Region, for estimating acid-compound emissions to air.

(f.) INVESTIGATION OF VOC MONITORING FEASIBILITY

During the past year, we have investigated the feasibility of monitoring Volatile Organic Compounds from our manufacturing operations. To date, we have not found a system that would meet the minimum requirements necessary for adequate VOC monitoring.

The most promising system was a systematic monitoring service which would include marking all equipment and components which emit VOC's with barcode tags, manually reading VOC concentrations with a portable VOC analyzer. The VOC readings and the barcode information is fed into a proprietary computer program which produces a fugitive emission report.

The problems found with this program were:

-Monitoring was conducted on a specified frequency and was not continuous,

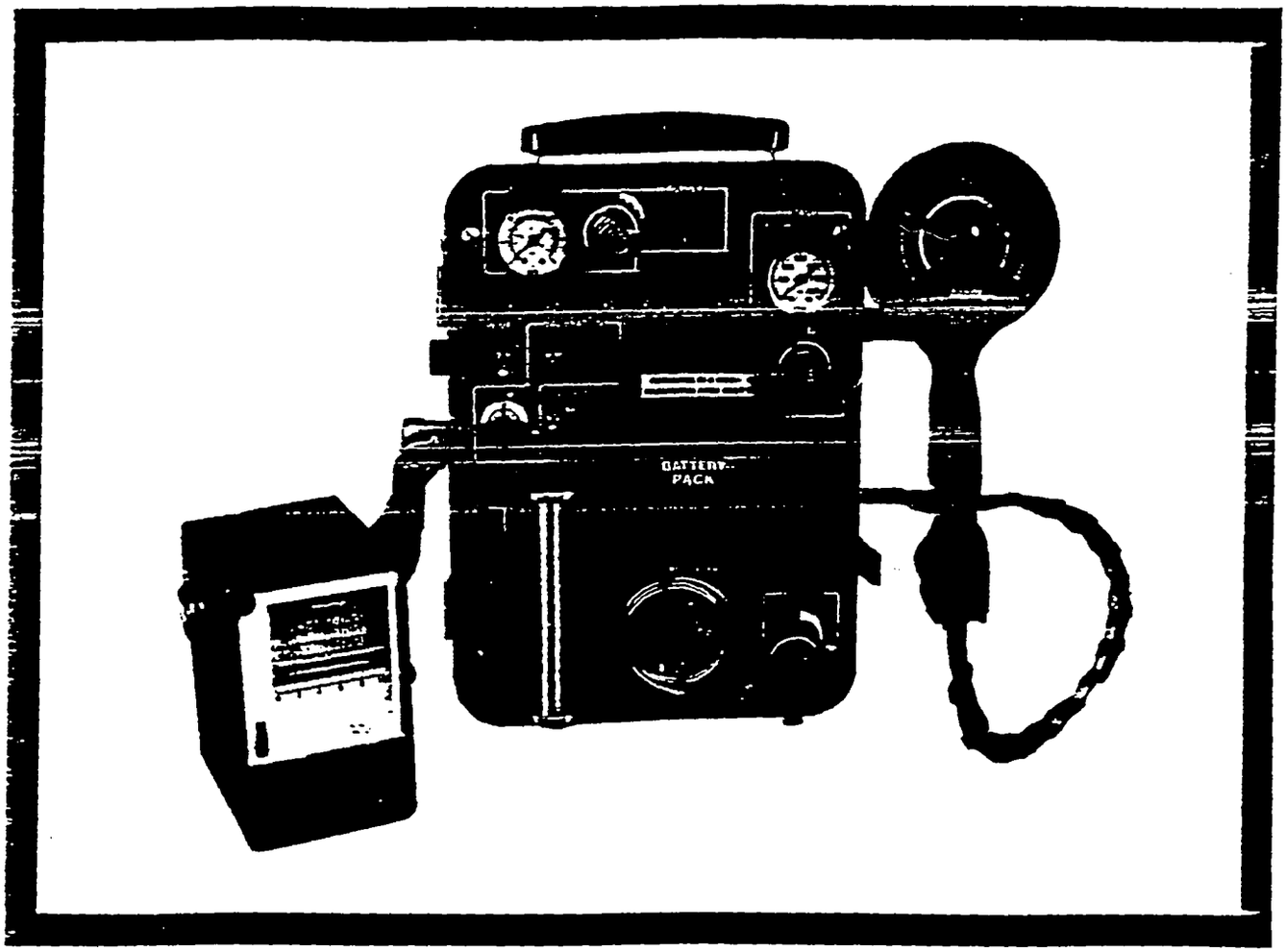
-Monitoring was ambient and did not account for emissions from neighboring industrial operations,

-The programming and system were proprietary and could not be performed by ourselves therefore did not offer continuity of information. (If the budget is reduced, outside service contracts are likely to get cut.)

These limitations did not improve upon our existing method of VOC determination. Our current method is a mass balance using inventory records, use records, waste records and analysis. Correlating this data allows for calculation of the amount of VOC chemicals used and recovered on site. All materials not accounted for by this method are assumed to be fugitive emissions.

The mass balance method is time consuming and is limited by the extrapolation of chemical analysis data. The accuracy of the method is affected by the amount of dilution which occurs in the waste water system when we try to account for the amount of alcohols used in the process. We can measure the alcohols in the waste water and we know the flow rates. This system appears to us to be much more accurate than several manual ambient measurements extrapolated over an entire year.

We are interested in finding a system for continual or periodic measurement of VOC emissions at trace levels. We have not found any equipment or system capable of providing this type of data with acceptable detection limits and accuracy at this time.



CENTURY OVA 108 PORTABLE ORGANIC VAPOR ANALYZER

The requirement for accurate and reliable environmental monitoring and leak detection is a high priority for industry. With the increased scope of environmental regulation, industry has a requirement for instrumentation that is application-oriented, and sufficiently flexible to meet changing needs. The dual mode CENTURY OVA 108 Portable Organic Vapor Analyzer is designed to meet these needs.

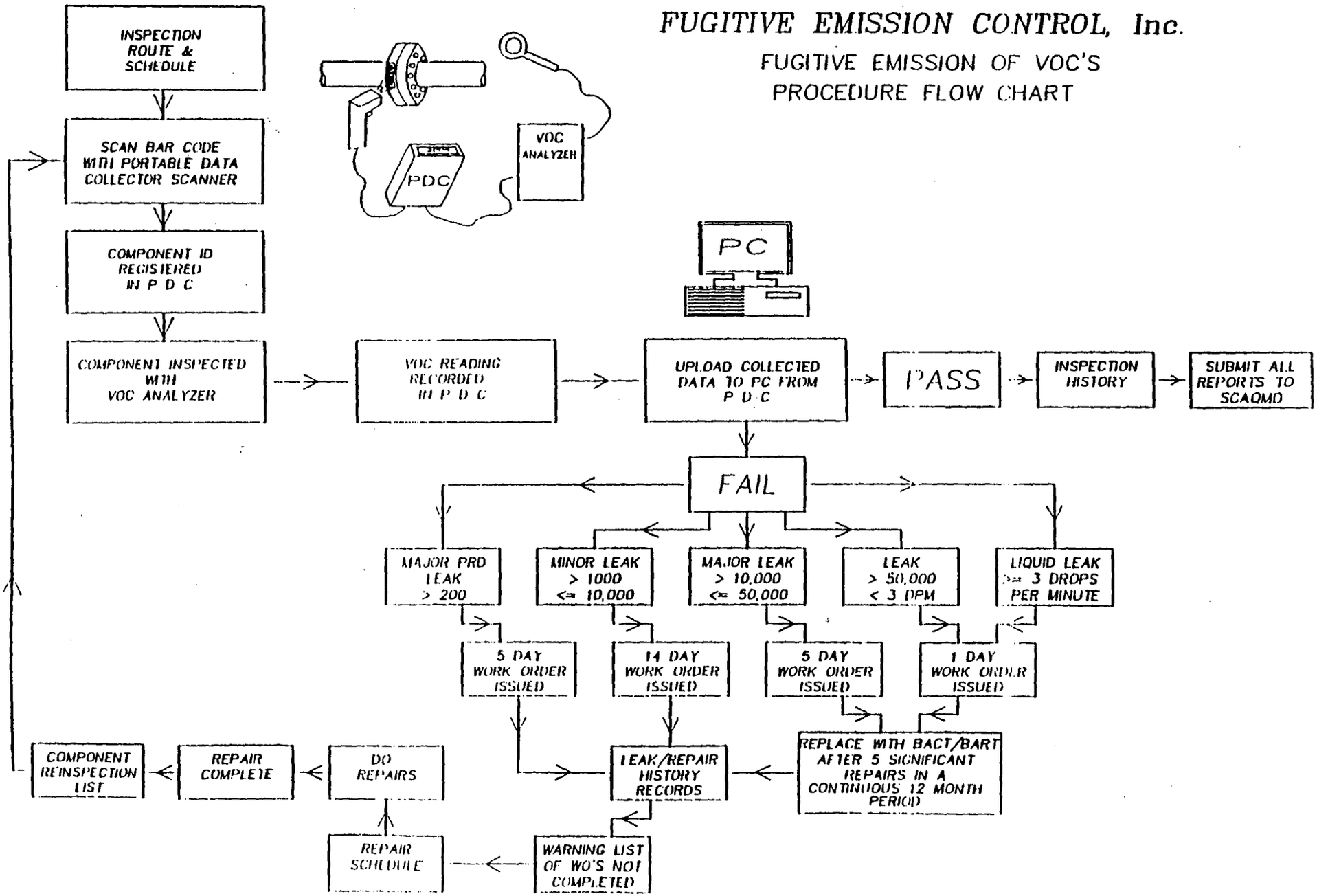
Several of the many OVA 108 features are:

- Provides continuous, direct readout of total organic vapor concentrations for survey purposes (Mode 1).
- Allows qualitative and quantitative analyses using the gas chromatographic mode (Mode 2).
- It is a light-weight, completely field-portable instrument weighing approximately 5.5 kg (12 lb), that provides eight hours of continuous operation per battery charge.
- Attenuation of ranges is not required.
- FM and BASEEFA certified intrinsically safe for use in Class I, Groups A, B, C, and D, Division 1 hazardous locations.
- Many hundreds of successful field-proven applications have demonstrated the exceptional reliability and ruggedness of this analyzer.
- Uses a flame ionization detector, which does not respond to ambient gases, such as CO and CO_2, and exhibits no sensitivity changes due to variations in relative humidity.

FOXBORO®

FUGITIVE EMISSION CONTROL, Inc.

FUGITIVE EMISSION OF VOC'S PROCEDURE FLOW CHART



SCOEPA00020084

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

January 17, 1991

David J. Olsen
Emission Inventory Coordinator
Technical Services Section
Air Quality Division
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204-1390

Subject: Air Contaminant Discharge Permit Number 26-3002 1990 Annual Report

Dear Mr. Olsen:

The attached tables show the reporting requirements of Item 14 of the Air Contaminant Discharge permit, Number 26-3302. This letter covers the period from January 1, 1990 through December 31, 1990. During this period, two steam boilers, two small HVAC boilers and two nitrous oxide scrubbers were operated. The itemized emissions from the boilers are attached.

If you have any questions or comments concerning this report, please contact Tom McCue, Environmental Manager, at the above number.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

RG:md

attachments

cc: Jerry Schaeffer
John Pittman
George Yun (DEQ NW Region)

Source Emission Summary

		NOx		VOC	
		Ton/yr	Max lb/hr	Ton/yr	Max lb/hr
1.	NOx Scrubbers	1.65	60		
2.	Plant			19.2	5.6

Calculations

1. Data was accumulated for the NOx Scrubber by taking the average NOX concentration for each emission and applying the following formula:

$$\frac{X \text{ CF NOx}}{10^6 \text{ CF}} * \frac{5732 \text{ CF}}{\text{min}} * \frac{0.193 \text{ lb}}{\text{CF}} * \frac{60 \text{ min}}{\text{hr}} * Y \text{ hr}$$

The totals for each emission was then added to obtain the total Tons/yr. The maximum concentration over one hour was approximately 60 ppm.

Emissions for the Epi NOx scrubber were estimated using the engineering design criteria and a production schedule of 12 hrs/day and 4 days/wk.

2. Data for the plant VOC emissions was accumulated using mass balance data for the plant.

Source Emission Summary

(all units are in lbs.)

Boilers

Product Emmission = (Natural gas used) X (Product Factor)

lb = Million Ft^3 X $lb/10^6$ Ft^3

Month	10^6 FT^3 Used	Part	SOx	CO	HC	NOx
1	4.1060	61.6	2.5	82.1	32.8	493
2	3.5784	53.7	2.1	71.6	28.6	429
3	3.8214	57.3	2.3	76.4	30.6	459
4	3.3611	50.4	2.0	67.2	26.9	403
5	3.7801	56.7	2.3	75.6	30.2	454
6	3.1848	47.8	1.9	63.7	25.5	382
7	2.9516	44.3	1.8	59.0	23.6	354
8	2.7936	41.9	1.7	55.9	22.3	335
9	2.3665	35.5	1.4	47.3	18.9	284
10	2.9341	44.0	1.8	58.7	23.5	352
11	3.0637	46.0	1.8	61.3	24.5	368
12	3.5705	53.6	2.1	71.4	28.6	428
NOx Scrubber	39.5118 Total				T.= 316	3,309
Epi NOx Scrubber						21
Plant VOC					38,440	
Totals		592.8	23.7	790	38,756	8,071
Product* Factor (lbs/10^6 FT^3)		5-15	0.6	20	8	120
Permit Limit (lbs.)		30,400	187,400	---	28,000	97,000

* - Production Factors taken from:

EPA Publication 999-AP-42
Compilation of Air Pollution Factors
Section 1.4
Dated 5/74

Rick

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

February 2, 1990

David J. Olsen
Emission Inventory Coordinator
Technical Services Section
Air Quality Division
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, Oregon 97204-1390

Subject: Air Contaminant Discharge Permit Number 26-3002
1989 Annual Report

Dear Mr. Olsen:

The attached tables show the reporting requirements of Item 14 of the Air Contaminant Discharge Permit, Number 26-3302. This letter covers the period from January 1, 1989 through December 31, 1989. During this period, two steam boilers, two small HVAC boilers, two nitrous oxide scrubbers, and the solvent handling equipment were operated. The itemized emissions from the boilers and the nitrous oxide system are attached.

As of January, 1989, the use of TCE has been permanently discontinued, and the Carbon Adsorption Unit was permanently shut down (air contaminant concentrations to the unit were reduced to zero when the TCE process was discontinued).

As I discussed with you in our phone conversation of December 27, and in my letter also dated December 27, I was not able to meet the reporting deadline of January 15 due to a knee operation I had on January 2, 1990. As we agreed, I am submitting this report within the time frame agreed upon.

If you have any questions or comments concerning this report, please contact me at 243-2020, extension 132

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Attachments

cc: Jerry Schaeffer
John Pittman
Bill Fuller (DEQ - Air Quality Division)

#/yr or #/hr ?

Source Emission Summary

	NOx		VOC	
	Ton/yr	max lb/yr	Ton/yr	max lb/yr
1. NOx Scrubbers	1.27	5.7		
2. Carbon Adsorption Unit			0.05	11
3. Plant			28.2	11.1

Calculations

1. Data was accumulated for the NOx Scrubber by taking the average NOx concentration for each emission and applying the following formula:

$$\frac{X\ CF\ NOx}{10^6\ CF} * \frac{5732\ CF}{min} * \frac{0.193\ lb}{CF} * \frac{60\ min}{hr} * Y\ hr$$

The totals for each emission was then added to obtain the total Tons/yr. The maximum concentration over one hour was approximately 86 ppm.

Emissions for the Epi NOx scrubber were estimated using the engineering design criteria and a production schedule of 12 hrs/day and 4 days/wk.

2. Calculations for the Carbon Adsorption Unit were based upon past operational data.

   a. Air flow rate 3410 CFM
   b. Discharge level average 40 ppm VOC for 31 days and 0 ppm for the rest of 1989.
   c. 0.42 # VOC/CF VOC.
   d. Maximum emissions of 130 ppm for a rate of 11 lbs. per hour.

3. Data for the plant VOC emissions was accumulated using mass balance data for the plant.

Source Emission Summary
(all units are in lbs.)

Boilers

Product Emission = (Natural gas used) x (Product Factor)
lb = Million FT^3 x $lb/10^6$ FT^3

Month	10^6 FT^3 Used	Part	SOx	CO	HC	NOx
1	3.5070	52.6	2.1	70.1	28.1	421
2	3.8830	58.2	2.3	77.7	31.1	466
3	3.5764	53.6	2.1	71.5	28.6	429
4	2.9815	44.7	1.8	59.6	23.9	358
5	2.7910	41.9	1.7	55.8	22.3	335
6	2.9425	44.1	1.8	58.9	23.5	353
7	2.5168	37.8	1.5	50.3	20.1	302
8	2.9175	43.8	1.8	58.4	23.3	350
9	2.7538	41.3	1.7	55.1	22.0	330
10	3.1708	47.6	1.9	63.4	25.4	380
11	3.4365	51.5	2.1	68.7	27.5	412
12	3.7978	57.0	2.3	76.0	30.4	456
NOx Scrubber						2,516
Epi NOx Scrubber						21
Carbon Adsorption Unit (VOC)					107	
Plant VOC					56,000	
Totals (lbs)		574.1	23.0	765	56,413	7,130
Product* Factor ($lbs/10^6$ FT^3)		5-15	0.6	20	8	120
Permit Limit (lbs.)		30,400	187,400	---	28,000	97,000

* - Production Factors taken from:

EPA Publication 999-AP-42
Compilation of Air Pollution Factors
Section 1.4
Dated 5/74

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

April 27, 1989

David J. Olsen
Emission Inventory Coordinator
Technical Services Section
Air Quality Division
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, Oregon 97204-1390

Subject: Air Contaminant Discharge Permit Number 26-3002
1988 Annual Report

Dear Mr. Olsen:

The attached tables show the reporting requirements of Item 14 of the Air Contaminant Discharge Permit Number 26-3002. This letter covers the period from January 1, 1988 through December 31, 1988. During this period, two steam boiler, two small HVAC boilers, the nitrous oxide scrubber, and the solvent handling equipment were operated. The itemized emissions from the boilers and the nitrous oxide system are attached.

As of January, 1989, the use of TCE has been permanently discontinued. As part of the decommissioning process associated with the removal of the old TCE process, the Carbon Adsorption Unit has also been permanently shut down (air contaminant concentrations to the unit were reduced to zero when the TCE process was discontinued).

If you have any questions or comments concerning this report, please contact me at 243-2020, extension 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Attachments

cc: Jerry Schaeffer
John Pittman

Source Emission Summary

	NOx		VOC	
	Ton/yr	lb/hr	Ton/yr	lb/hr
1. NOx Scrubber	5.68	8		
2. Carbon Adsorption Unit			9.7	11
3. Plant (non-TCE)			28.5	6.5
4. Plant (TCE only)			30.8	8.5

Calculations

1. Data was accumulated for the NOx Scrubber by taking the average NOx concentration per month (X) and applying the following formula:

$$\frac{X\ CF\ Nox}{10^6\ CF} * \frac{4600\ CF}{min} * \frac{0.193\ lb}{CF} * \frac{1440\ min}{day} * \frac{Y\ day}{mon}$$

The monthly totals were then added to obtain the total Tons/yr. The maximum concentration over one hour was approximately 150 ppm.

2. Calculations for the Carbon Adsorption Unit were based upon past operational data.

   a. Air flow rate 3410 CFM
   b. Discharge level average 30ppm VOC
   c. 0.42 VOC/CF VOC
   d. Discharge rate 62 lbs. per operating day
   e. Maximum emissions of 130 ppm for a rate of 11 lbs. per hour.

3. Data for the plant VOC emissions (non-TCE) was accumulated using mass balance data for the plant.

4. Data for the TCE plant emissions was accumulated using mass balance data for the plant.

100 ppm 23.3 Tons
200 ppm 46.6 Tons

Air\89YRRPT.LTR

Mr. David J. Olsen
Department of Environmental Quality
April 27, 1989
Page 3

Source Emission Summary
(all units are in lbs.)

Boilers

Product Emission = (Natural gas used) x (Product Factor)
lb = FT^3 x $lb/10^6\ FT^3$

Month	10^6 FT^3 Used	Part	SOx	CO	HC	NOx
1	5.08	76	3.0	102	41	610
2	4.46	67	2.7	89	36	535
3	4.67	70	2.8	93	37	560
4	4.23	63	2.5	85	34	508
5	5.03	75	3.0	101	40	604
6	5.01	75	3.0	100	40	601
7	5.34	80	3.2	107	43	641
8	3.35	50	2.0	67	27	402
9	2.72	41	1.6	54	22	326
10	2.75	41	1.6	55	22	330
11	3.16	47	1.9	63	25	379
12	3.32	50	2.0	66	27	398
NOx Scrubber						11,360
Carbon Adsorption Unit					19,400	
Plant (non-TCE)					57,000	
Plant (TCE only)					61,600	
Totals		735	29.3	982	138,394	17,254
Product* Factor ($lbs/10^6\ FT^3$)		5-15	0.6	20	8	120
Permit Limit (lbs.)		30,400	187,400	---	28,000	97,000

* - Production Factors taken from:

EPA Publication 999-AP-42
Compilation of Air Pollution Factors
Section 1.4
Dated 5/74

Annual Air
Report
1987

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

March 1, 1988

Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, Oregon 97204

Attention: Mr. George Davis

Your Reference: Permit Number 26-3002

Fuels Usage and Contaminant Discharge

The attached tables show the reporting requirements of Item 14 of the Air contaminant discharge Permit Number 26-3002. This letter covers the period from January 1, 1987 to January 1, 1988. During this period, two (2) steam boilers, two (2) small HVAC boilers, the nitrous oxide scrubber, and the solvent handling equipment were operated. The itemized emissions from the boilers and the nitrous oxide system are attached. All emissions were well below the allowable discharge limitations.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.,
Environmental Manager

MMT:dj

Attachments

cc: Greg Carr
John Pittman

Source Emission Summary

Nitrous Oxide Scrubber

Month	Lbs. NOx
1	600 *
2	600 *
3	600 *
4	600 *
5	600 *
6	600 *
7	242
8	742
9	701
10	608
11	627
12	674
Total	7200

Basis

1. Air flow rate 4600 CFM
2. Discharge Level Average 18 ppm NOx
3. .192 NOx cubic foot NOx

Maximum emissions rate was 80 ppm for 1 hour or 1# NOx.

* Totalizer readings taken on last 6 months of the year. Extrapolated to first 6 months of the year.

Carbon Adsorption Unit

Month	Lbs. VOC
1	1650
2	1490
3	1650
4	1600
5	1650
6	1600
7	1650
8	1650
9	1600
10	1650
11	1600
12	1650
Total	19,440

Basis

1. Air flow rate 3410 CFM
2. Discharge level average 30 ppm VOC
3. .42 VOC/cubic foot VOC
4. Discharge rate 62 lbs. per operating day.

Maximum emissions were about 130 ppm for a rate of 11# per hour.

Source Emission Summary

Boilers

Product Emission = (Natural gas used) x (Product Factor)

LB = FT^3 x LB./10^6 FT^3

Month	10^6 FT^3 Used	Part	SOx	CO	HC	NOx	Units
1	7.39	110	4.4	148	59	887	Lbs.
2	6.38	96	3.8	128	51	766	Lbs.
3	6.80	102	4.1	136	54	816	Lbs.
4	5.97	90	3.6	119	48	716	Lbs.
5	5.51	83	3.3	110	44	661	Lbs.
6	4.78	72	2.9	96	38	573	Lbs.
7	6.00	90	3.6	120	48	720	Lbs.
8	4.99	75	3.0	100	40	600	Lbs.
9	5.90	89	3.5	118	47	708	Lbs.
10	6.64	100	4.0	133	53	797	Lbs.
11	7.39	111	4.4	148	59	887	Lbs.
12	7.20	108	4.3	144	58	864	Lbs.
Nitrous Oxide Scrubber						7200	Lbs.
Carbon Adsorption Unit		1124	45	1499	19,440 20,040	16,194	Lbs.
Product* Factor	-	5-15	0.6	20	8	120	Lbs/10 FT
Limit	-	30,400	187,400	___	28,000	97,000	Lbs.

* - Product Factors taken from EPA Publication 999-AP-4Z
Compilation of Air Pollution Factors
Section 1.4
Dates 5/74

Stock # 251-7
20 vol 1 055-000-00
Sap 1 A 21 055-000-00 265-7
Sap 1 B 8 278-9

MMT:dj

Annual Air
Report
1986

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

February 11, 1987

Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, Oregon 97204

Attention: Mr. George Davis

Your Reference: Permit Number 26-3002

Fuels Usage and Contaminant Discharge

The attached tables show the reporting requirements of Item 14 of the Air Contaminant Discharge Permit Number 26-3002. This letter covers the period from January 1, 1986 to January 1, 1987. During this period, two (2) steam boilers, two (2) small HVAC boilers, the nitrous oxide scrubber, and the solvent handling equipment were operated. The itemized emissions from the boilers and the nitrous oxide system are attached. All emissions were well below the allowable discharge limitations.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.,
Environmental Manager

MMT:ll

Attachments

cc: Greg Carr
John Pittman

Source Emission Summary

Nitrous Oxide Scrubber

Month	Lbs. NOx
1	53
2	56
3	45
4	62
5	62
6	59
7	62
8	59
9	59
10	64
11	50
12	59
Total	690 lbs

Basis

1. Air flow rate 4600 CFM
2. Discharge Level Average 15 ppm NOx
3. .192 NOx cubic foot NOx
4. Discharge rate 6.3 lbs per operating day.

Maximum emissions rate was 100 ppm for 1 hour or 2.8 NOx

Carbon Adsorption Unit

Month	LBS. VOC
1	800
2	840
3	670
4	920
5	920
6	880
7	920
8	880
9	880
10	970
11	760
12	880
Total	10,330

Basis

1. Air flow rate 3410 CFM 25
2. Discharge level average 25 ppm VOC
3. .42 VOC/cubic foot VOC
4. Discharge rate 42 lbs. per operating day.

Maximum emissions were about 130 ppm for a rate of 9.5#/hours.

Source Emission Summary

Boilers

Product Emission = (Natural gas used) x (Product Factor)

LB = FT^3 x $LB./10^6FT^3$

Month	10^6FT^3 Used	Part	SOx	CO	HC	NOx	Units
1	4.03	60	2.4	81	32	484	LBS
2	3.75	56	2.3	75	30	450	LBS
3	4.01	60	2.4	80	32	481	LBS
4	4.49	67	2.7	90	36	539	LBS
5	4.21	63	2.5	184	34	505	LBS
6	5.01	75	3.0	100	40	601	LBS
7	6.61	99	4.0	132	53	793	LBS
8	5.96	89	3.6	119	48	715	LBS
9	5.99	90	3.6	120	48	719	LBS
10	5.35	80	3.2	107	43	642	LBS
11	6.67	100	4.0	133	53	800	LBS
12	7.39	111	4.4	148	59	887	LBS

Nitrous Oxide Scrubber					690	LBS
Carbon Adsorption Unit	____	____	_____	10,330	_____	LBS
Total	950	38.1	1,269	10,838	8,306	LBS
Product* Factor	- 5-15	0.6	20	8	120 $LBS/10^6FT^3$	
Limit	- 30,400	187,400	---	28,000	97,000 LBS	

* - Product Factors taken from EPA Publication 999-AP-4Z
Compilation of Air Pollution Factors
Section 1.4
Dates 5/74

MMT:11

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

January 16, 1986

Department of Environmental Quality
Post Office Box 1760
Portland, Oregon 97207

RECEIVED
ENGINEERING
JAN 17 1986

John L. Pittman
Wacker Siltronic

Attention: Mr. Renee Dulay:

Your Reference: Permit Number 26-3002

Fuels Usage and Contaminant Discharge

The attached tables show the reporting requirements of Item 14 of the Air Contaminant Discharge Permit Number 26-3002. The period covered by this letter is from January 1, 1985 to January 1, 1986. During this period two steam boilers, two small HVAC boilers, the nitrous oxide scrubber and solvent handling equipment were operated. The itemized emissions from the boilers and the nitrous oxide system are attached. All emissions were well below the allowable discharge limitations.

Sincerely,

WACKER SILTRONIC CORPORATION

Greg Carr
Facilities Engineer

GC/md

Attachments

cc: Jim Harper
John Pittman
Jerry Schaeffer
Murray Tilson
File

SOURCE EMISSION SUMMARY
January 14, 1986
Page -2-

NITROUS OXIDE SCRUBBER

Month	Lbs. NOX
1	130
2	120
3	75
4	85
5	64
6	89
7	93
8	72
9	85
10	98
11	68
12	64
TOTAL	1043 LBS

BASIS

1) Air Flow rate 4600 CFM
2) Discharge Level Average 10ppm NOX
3) .128# NOX cubic foot NOX
4) Discharge rate 4.2 lbs per operating day.

Maximum emissions rate was 80ppm for 1 hour or 2.2# NOX

Carbon Adsorption Unit

Month	Lbs. VOC
1	1030
2	940
3	600
4	670
5	500
6	700
7	730
8	570
9	670
10	770
11	530
12	500
TOTAL	8210 LBS

BASIS

1) Air flow rate 3410 CFM
2) Discharge level average 20ppm VOC
3) .339# VOC/cubic foot VOC
4) Discharge rate 33.3 lbs. per operating day.

Maximum emissions were about 130ppm for a rate of 9.5#/hour.

January 13, 1986

SOURCE EMISSION SUMMARY

BOILERS

Product Emission = (Natural Gas Used) x (Product Factor)

LB. = FT^3 x LB./10^6FT^3

Month	10^6FT^3Used	Part	SOx	CO	HC	NOX	Units
1	4.15	62	2.5	83	33	498	LBS
2	3.04	46	1.8	61	24	364	LBS
3	2.28	34	1.4	46	18	274	LBS
4	3.21	48	1.9	64	26	385	LBS
5	2.57	39	1.5	51	21	308	LBS
6	3.61	54	2.2	72	29	433	LBS
7	4.02	60	2.4	80	32	483	LBS
8	3.23	48	1.9	65	26	387	LBS
9	3.21	48	1.9	64	26	386	LBS
10	3.58	54	2.2	72	29	430	LBS
11	3.92	59	2.4	78	31	470	LBS
12	4.32	65	2.6	86	35	518	LBS
NITROUS OXIDE SCRUBBER						1043	LBS
CARBON ADSORPTION UNIT					8210		LBS
TOTAL		617	24.7	812	8540	5979	LBS
Product* Factor	-	5-15	0.6	20	8	120	LBS/10^6FT^3
Limit	-	30,400	187,400	---	28,000	97,000	LBS

*- Product Factors taken from EPA Publication 999-AP-4Z
Compilation of Air Pollution Factors
Section 1.4
Dates 5/74

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

February 22, 1985

Department of Environmental Quality
Post Office Box 1760
(Air Quality Division)
Portland, Oregon 97207

Your Reference: Permit Number 26-3002

Dear Sirs:

Fuels Usage and Contaminant Discharge

The attached tables show the reporting requirements of Item 16 of the Air Contaminant Discharge Permit Number 26-3002. The period covered by this letter is from January 1, 1984 to January 1, 1985. During this period two steam boilers, two small HVAC boilers, the nitrous oxide scrubber and solvent handling equipment were operated. The itemized emissions from the boilers and the nitrous oxide system are attached.

Sincerely,

WACKER SILTRONIC CORPORATION

Gregory E. Carr

Greg Carr
Facilities Engineer

GC:jm

Attachments

cc: Jim Harper
John Pittman
Mal Russ
Murray Tilson
File

February 19, 1985

SOURCE EMISSION SUMMARY

BOILERS

Product Emission = (Natural Gas Used) x (Product Factor)

LB. = FT^3 x LB./10^6FT^3

Month	10^6FT^3 Used	Part	SOx	CO	HC	NOX	Units
1	4.38	66	2.6	88	35	526	LBS
2	3.93	59	2.4	79	31	471	LBS
3	5.40	81	3.2	108	43	649	LBS
4	5.06	76	3.0	101	40	607	LBS
5	3.62	54	2.2	72	29	435	LBS
6	3.77	57	2.3	75	30	452	LBS
7	3.83	57	2.3	77	31	460	LBS
8	4.07	61	2.4	81	33	489	LBS
9	4.10	61	2.4	81	33	492	LBS
10	4.23	63	2.5	85	34	508	LBS
11	6.14	92	3.7	123	49	737	LBS
12	5.84	88	3.5	117	47	701	LBS
	54.4	815	33.0	1090	436	6590	LBS
NITROUS OXIDE SCRUBBER						5760	LBS
CARBON ADSORPTION UNIT					6200		LBS
TOTAL		815	33.0	1,090	6,635	12,350	LBS
Product* Factor	-	5-15	0.6	20	8	120	LBS/10^6FT^3
Limit	-	30,400	187,400	---	28,000	97,000	LBS

* - Product Factors taken from EPA Publication 999-AP-4Z
Compilation of Air Pollution Factors
Section 1.4
Dated 5/74

SOURCE EMISSION SUMMARY
February 19, 1985

NITROUS OXIDE SCRUBBER

Month	Lbs. NOX
1	483
2	442
3	448
4	455
5	529
6	524
7	504
8	524
9	497
10	484
11	439
12	433
TOTAL	5760 Lbs

Basis 1) Air flow rate 4600 CFM operations Jan. 1 - July 1 24hours/day 5 days/week, 35ppm NOx July 2 - Dec. 31 12 hours/day, 7 days/week, 50ppm NOx
(35ppm NOx) x (.128#/Ft^3NOx) x (4600 CFM) x (1440 min/day) = 22.8#/day NOx
Maximum emissions rate was 80ppm for 1 hour or 2.2# NOx

Carbon Adsorption Unit

Month	Lbs. VOC
1	420
2	420
3	440
4	420
5	461
6	420
7	560
8	621
9	601
10	621
11	601
12	621
TOTAL	6200 Lbs

Basis 1) Air flow 3410 CFM
2) Average 12ppm TCE
(3410 CFM) x (1440 min/day) x (12ppm) x (.339lbs TCE/CFT
20.01bs TCE/day
Jan 1 - July 1 5 days/week operation
July 2 - Dec. 31 7 days/week operation
Maximum emissions were about 130 ppm for a rate of 9.5#/hour.

Annual Air
Report
1982

WACKER

WACKER SILTRONIC CORPORATION

P.O. BOX 03180 • PORTLAND, OREGON 97203
7200 N.W. FRONT AVENUE • PORTLAND, OREGON 97229 (503) 243-2020

January 31, 1983

Department of Environmental Quality
P.O. Box 1760
(Air Quality Division)
Portland, Oregon 97207

Subject: Fuels Usage & Contaminant Discharge

Your Ref: Permit No. 26-3002

Dear Sirs:

This letter is intended to meet the reporting requirements of item 16 of the Air Contaminant Discharge Permit No. 26-3002. The period covered by this letter is from January 1, 1982 to January 1, 1983. During this period two steam boilers, two small HVAC boilers, the nitrous oxide scrubber and solvent handling equipment were operated. The ferro-silicon handling system has not been constructed as yet. VOC emissions are estimated to be at the levels indicated in the permit application, as no change has been made from this. The itemized emissions from the boilers and nitrous oxide system are attached.

Sincerely,

WACKER SILTRONIC CORPORATION

Greg Carr

Greg Carr
Facilities Engineer

GC/kk

Attachment

cc: J. Ellis
G. Pendleton
J. Pittman
1-31-83 File

WACKER

1/24/83

SOURCE EMISSION SUMMARY

BOILERS

Product Emissions = (Natural Gas used) x (Product Factor)
Lb. = FT^3 x Lb./10^6FT^3

Month	10^6FT^3 Used	Part.	SOx	CO	HC	NOX	Units
1	2.95	44	1.8	59	24	354	lbs
2	2.93	44	1.8	59	23	352	lbs
3	3.81	57	2.3	76	31	457	lbs
4	3.77	57	2.3	75	30	452	lbs
5	3.01	45	1.8	60	24	361	lbs
6	3.09	46	1.9	62	25	371	lbs
7	3.14	47	1.9	63	25	377	lbs
8	3.37	51	2.0	67	27	404	lbs
9	2.73	41	1.6	55	22	328	lbs
10	2.69	40	1.6	54	22	323	lbs
11	3.11	47	1.9	62	25	373	lbs
12	3.46	52	2.1	69	28	415	lbs
Total	38.06	659	23	761	304	4567	lbs
Product* Factor	-	5-15	0.6	20	8	120	Lbs./10^6FT^3
Limit	-	5000	68000	12000	2400	25000	Lbs.

* - Product Factors taken from EPA Publication 999-AP-4Z
Compilation of Air Pollution Factors
Section 1.4
Dated 5/74

WACKER

NITROUS OXIDE SCRUBBER

Month	Lbs. NOX
1	143
2	136
3	165
4	158
5	143
6	158
7	150
8	158
9	150
10	150
11	122
12	115
TOTAL	1748

Basis: 1) Median average 20 VPPM NOX in scrubber exhaust.

2) 5820 SCFM Flow

3) 8 hrs/day, 5 days/week, 50 weeks/year.

$(20 \times 10^{-6}$ PPM NOX) x (0.128 LBS/FT^3 NOX) x (5820 SCFM x 60 MIN/HR x 8 HR/DAY) =

7.16 LBS NOX/Operating day.

Limit: 6.4 TONS/YR.

WACKER

WACKER SILTRONIC CORPORATION

P.O. BOX 03180 • PORTLAND, OREGON 97203
7200 N.W. FRONT AVENUE • PORTLAND, OREGON 97229 (503) 243-2020

January 15, 1982

Department of Environmental Quality
P.O. Box 1760
(Air Quality Division)
Portland, Oregon 97207

Subject: Fuels Usage & Contaminant Discharge

Your Ref: Permit No. 26-3002

Dear Sirs:

This letter is intended to meet the reporting requirements of item 16 of the Air Contaminant Discharge Permit No. 26-3002. The period covered by this letter is from January 1, 1981 to January 1, 1982. During this period two steam boilers, two small HVAC boilers, the nitrous oxide scrubber and solvent handling equipment were operated. The ferro-silicon handling system has not been constructed as yet. VOC emissions are estimated to be at the levels indicated in the permit application, as no change has been made from this. The itemized emissions from the boilers and nitrous oxide system are attached.

Sincerely,

WACKER SILTRONIC CORPORATION

James R. Ellis

James R. Ellis
Facilities Manager

DD/kk

Attachment

cc: Dirk Dunning
Dr. Herrmann
John Pittman
Mal Russ

WACKER

1/15/1982

SOURCE EMISSION SUMMARY

BOILERS:

Product Emissions = (Natural Gas used) x (Product Factor)
Lb. = FT^3 . x $Lb./10^6FT^3$

Month	10^6FT^3used	Particulate	SOx	CO	HC	NOx	Units
1	4.27	42.7	2.56	85.4	34.2	512	Lbs.
2	3.60	36.0	2.16	72.0	28.8	432	Lbs.
3	3.13	31.3	1.88	62.6	25.0	376	Lbs.
4	3.24	32.4	1.94	64.8	25.9	389	Lbs.
5	3.45	34.5	2.07	69.0	27.6	414	Lbs.
6	3.46	34.6	2.08	69.2	27.7	415	Lbs.
7	3.46	34.6	2.08	69.2	27.7	415	Lbs.
8	3.19	31.9	1.91	63.8	25.5	383	Lbs.
9	2.93	29.3	1.76	58.6	23.4	352	Lbs.
10	2.57	25.7	1.54	51.4	20.6	308	Lbs.
11	3.51	35.1	2.11	70.2	28.1	421	Lbs.
12	4.56	45.6	2.74	91.2	36.5	547	Lbs.
Total	41.36	413.6	24.82	827.2	330.9	4963	Lbs.
Product* Factor	-	5-15	0.6	20	8	120	$Lbs./10^6FT^3$
Limit	-	5000	68000	12000	2400	52000	Lbs.

* - Product Factors taken from E.P.A. Publication 999-AP-4Z
Compilation of Air Pollution Factors
Section 1.4
Dated 5/74

DD/kk

NITROUS OXIDE SCRUBBER

Month	Lbs. NOx
1	150
2	136
3	158
4	158
5	143
6	158
7	158
8	150
9	150
10	122
11	100
12	150
TOTAL	1733

Basis:
1) Median average of approximately 20VPPM NOx in scrubber exhaust
2) 5820 SCFM Flow
3) 8 HRS/DAY, 5 DAYS/WEEK, 50 WEEKS/YR; operations

$(20 \times 10^{-6}$ VPPM NOx) x (0.128 Lbs./FT^3 NOx) x (5820 SCFM) x (60 MIN/HR) x (8HR/DAY) = 7.16 Lbs. NOX/operating day.

Limit: 6.4 TONS/YR
(12,800 Lbs./YR)

DD/kk

WACKER

1/14/81

SOURCE EMISSION SUMMARY

BOILERS

Product Emissions = (Natural Gas used) x Product Factor)
Lb. = FT^3 x Lb./10^6FT^3

Month	10^6FT^3 used	Part.	SOx	CO	HC	NOX	Units
1	1.53	15.3	0.92	30.6	12.2	183	Lbs.
2	1.53	15.3	0.92	30.6	12.2	183	Lbs.
3	1.71	17.1	1.03	34.2	13.7	205	Lbs.
4	2.32	23.2	1.39	46.4	18.6	278	Lbs.
5	2.31	23.1	1.39	46.2	18.5	277	Lbs.
6	2.31	23.1	1.39	46.2	18.5	277	Lbs.
7	2.46	24.6	1.48	49.2	19.7	295	Lbs.
8	2.69	26.9	1.61	53.8	21.5	323	Lbs.
9	2.25	22.5	1.35	45.0	18.0	270	Lbs.
10	2.25	22.5	1.35	45.0	18.0	270	Lbs.
11	2.25	22.5	1.35	45.0	18.0	270	Lbs.
12	2.79	27.9	1.67	55.8	22.3	335	Lbs.
Total	26.4	264	15.8	528	211	3168	Lbs.
Product* Factor	-	5-15	0.6	20	8	120	Lbs./10^6FT^3
Limit	-	5000	68000	12000	2400	52000	Lbs.

* - Product Factors taken from E.P.A. Publication 999-AP-4Z
Compilation of Air Pollution Factors
Section 1.4
Dated 5/74

WACKER

SOURCE EMISSION SUMMARY
January 14, 1981
Page 2

NITROUS OXIDE SCRUBBER

Month	Lbs. NOX
1	0
2	0
3	151
4	151
5	158
6	151
7	158
8	151
9	158
10	165
11	143
12	158
TOTAL	1544

Basis:
1) Median average 20 VPPM NOX in scrubber exhaust.
2) 5820 SCFM Flow
3) 8 HRS/DAY, 5 DAYS/WEEK, 50 WEEKS/YR.

$(20 \times 10^{-6}$ PPM NOX) x (0.128 LBS/FT^3 NOX) x (5820 SCFM x 60 MIN/HR x 8 HR/DAY) = 7.16 LBS NOX/Operating day.

Limit: 6.4 TONS/YR.

be available at the plant site at all times for inspection by the authorized representatives of the Department. At least the following parameters shall be monitored and recorded at the indicated interval.

Parameter	Minimum Monitoring Frequency
a. A description of any maintenance to the air contaminant control system	As performed
b. Nitrogen Oxides	Continuous

16. The permittee shall report to the Department by January 15 of each year this permit is in effect the following information for the preceding calendar year:

    a. Quantities and types of fuels used on a monthly basis.

    b. Tons per year of each contaminant emitted from each emission point in tabular form including the calculations.

Fee Schedule

17. The Annual Compliance Determination Fee for this permit is due on August 1 of each year this permit is in effect. An invoice indicating the amount, as determined by Department regulations, will be mailed prior to the above date.

12/21

GREG —
PLS. CHECK DIRK'S OLD FILES
FOR PAST REPORTS SO THAT
MAKE NEXT MONTH'S REPORT
CONSISTENT.
Jim G

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

January 12, 1995

SER 003:CB

Steve Anderson
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Mr. Anderson

Enclosed is the December Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson
Director Manufacturing Support

enclosure:
(1) Industrial Discharge Report
(2) Bench Sheet Data
(3) North Creek Analytical Data

cc: Tom Rothschild

Diane Owens Z 777 067 417

Receipt for Certified Mail

No Insurance Coverage Provided
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UNITED STATES POSTAL SERVICE

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JAN 13 1995
USPS

PS Form 3800, March 1993

SCOEPA00020119

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

102595-93-Z-0478

PS Form **3800**, March 1993 *(Reverse)*

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
STEVE ANDERSON - INDUS. WASTE MGMT.
CITY OF PORTLAND
BUR. ENVIRONMENTAL SERV.
1120 S.W. 5th. AVE. Rm 400
PORTLAND, OR. 97204.

4a. Article Number
2777.067.417

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 17 JAN 1995

5. Signature (Addressee)

6. Signature (Agent) Richard E. Moody

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

SCOEPA00020121

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn - Diane Owens

CITY OF PORTLAND
INDUSTRIAL CONTINUOUSLY MONITORED
pH REPORT FORM 13-1C

INDUSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: 15 January 1995

SAMPLING PERIOD: December 1994

TODAY'S DATE: 9 January 1995

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ SPECIAL COMPLIANCE

* * * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * * *

SAMPLE LOCATION>	OWW Parshall Flume	METER BRAND	Foxboro	METER MODEL	761	pH LIMIT: 5.5--11.5

pH CODE 843

#	DATE	STARTING TIME (Use Military time)	MOST EXTREME pH EXCURSION VALUE	DURATION in Minutes	CLAIMED NON-VIOLATION	VIOLATION LEVEL	COMMENTS
		:	SU		y n		Within Limits
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		-

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: [signature] Date: 1/12/95

* *

INSTRUCTIONS: Source Control must be notified of all discharge violations within 24 hours of your knowledge of violation. Report all apparent pH violations on this form even if you claim they represent a non-violation.

VIOLATIONS:
1. pH excursions outside your permit range for a total duration of more than 15 minutes in any 24 hour period.
2. pH excursions outside the range 5.0-12.5 regardless of duration.

CLAIMED NON-VIOLATIONS:
The pH recorder chart shows an apparent violation but the industry claims this did not represent a discharge pH violation. List in this report all claimed non-violations and circle the "y" in the claimed non-violation column. State in the comments column why you claim this does not represent a pH discharge. Attach a detailed explanation with supporting documentation to this report. When the claimed non-violation was due to equipment failure or human error, describe the corrective measures taken and when pH monitoring returned to normal. Failure to properly claim and document a non-violation may result in citation for a pH violation.

form 13-1C
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

JSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: **January 15, 1995**

SAMPLING PERIOD: December 1994

TODAY'S DATE: January 9, 1995

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * *

SAMPLE DATE >	See Comments	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	7 Dec '94	DATE OF SAMPLE ANAL. >	7 Dec '94

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Arsenic (Total)	710	<0.008	0.3		NO	7 Dec 1994
Cadmium (Total)	736	<0.0002	0.7		NO	" " "
Chromium (Total)	748	<0.02	3.8		NO	" " "
Zinc (Total)	874	<0.05	4.0		NO	" " "
Fluoride	797	1.5 ~~Attach summary.~~	30.0		NO	" " "
Total Suspended Solids	857	374 ~~Attach summary.~~	350.0		NA	" " "

SAMPLE DATE >		SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	__ COMPOSITE XX GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL.>	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Total Toxic Organics (No analysis required)	858	---	1.37		---	TTO CERTIFICATION (See Statement Below)
pH	843	Within Limits	5.5-11.5		NO	Attach Form 13-1C

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

"Based on my inquiry of the person or persons responsible for managing compliance with the permit limitation (or pretreatment standard) for Total Toxic Organics (TTO), I certify that, to the best of my knowledge and belief, no discharge of toxic organics into the wastewaters in excess of the TTO limit has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan submitted to the permitting (or control) authority."

WA[illegible]R SILTRONIC CORPORATION BY:

Si[illegible]ure: [signature] Date: 1/12/95

form 13-1A.fil
rev. 6/24/94

SCOEPA00020124

NORTH CREEK ANALYTICAL

18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-9508 (206) 481-9200 • FAX 485-2992
East 11115 Montgomery, Suite B • Spokane, WA 99206-4776 (509) 924-9200 • FAX 924-9290
9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

RECEIVED DEC 23 1994
JJR

December 21, 1994

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Thomas J. Rothschild

RE: JOB #
P.O.# 46998
PROJECT -

Enclosed are test results for your samples received in this lab on Dec. 08, 1994. For your reference, these analyses have been assigned our NCA # 94-3750.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

Please call if you have any questions.

Respectfully,

Howard Holmes
Project Manager

NORTH CREEK ANALYTICAL
18939 120th Avenue N.E., Suite 101 • Bothell, WA 98011-9508 (206) 481-9200 • FAX 485-2992
East 11115 Montgomery, Suite B • Spokane, WA 99206-4776 (509) 924-9200 • FAX 924-9290
9405 S.W. Nimbus Avenue • Beaverton, OR 97008-7132 (503) 643-9200 • FAX 644-2202

Total Metals per EPA 200 series
Results In mg/L (ppm)

Client: Wacker Siltronic Corporation
Project:
Received: 12/08/1994
NCA Number: 94-3750
Matrix: water

Sample Name	Analyte	Result	MRL	Date Prepped	Date Analyzed
94-77	Arsenic	ND	0.0080	12/12/94	12/16/94
	Cadmium	ND	0.00025		
	Chromium	ND	0.020		
	Zinc	ND	0.050		
Method Blank	Arsenic	ND	0.0040		
	Cadmium	ND	0.00025		
	Chromium	ND	0.020		
	Zinc	ND	0.050		

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

PACIFIC ENVIRONMENTAL LABORATORY, INC.
9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644-0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

PEL. # 94.3.0
Page 1 of 1

Company: Wacker Siltronic Corp.
Project Manager: Thomas J. Rothschild
Project Name: —
Project Number: —

Final Report and faxes to: (if other than Project Manager)

Invoice to: (If other than Project Manager)

P.O. Number: 46998
RUSH: ☐ YES ☒ NO

COMMENTS:

Sample Requirements:
SDWA (drinking water) ☐ NPDES (storm water) ☒ RCRA ☐
Other City of Portland

IF SAMPLE IS LIQUID & HAS SEDIMENT OR PARTICULATE, SHALL WE:
___ Test Filtrate Only?
X Mix Sample by Shaking?
___ Test Particulate Only?

IF SAMPLE IS MULTI-LAYER, SHALL WE:
___ Test Each Layer separately?
___ Test only ONE Layer? Which Layer?
X Mix All Layers by Shaking?

QC Information (check one)
☐ Level 1 ☐ Level 2 ☐ Level 3 (10% Surcharge)

Please print clearly to ensure accurate report.

PEL NO.	SAMPLE I.D.	DATE	TIME	PRESERV.	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID STATE:	QUANT. IF DETECTED (✓)	TPH-Gasoline STATE:	TPH - Diesel STATE:	TPH - 418.1 Modified STATE:	8015M - Gas	8015M - Diesel	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles (circle one) 624/8240/8260/524.2	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	As, Cd, Cr, Zn	REMARKS
1	94-77	7 Dec 1994	0800	HNO3		X		1																X	Arsenic (As)
																									Cadmium (Cd)
																									Chromium (Cr)
																									Zinc (Zn)
2	94-78	8 Dec 1994	0740	4°C		X		2											X						

COLLECTED BY:	RELINQUISHED BY:	COMPANY:	DATE/TIME	RECEIVED BY:	COMPANY:
Thomas J. Rothschild	Thomas J. Rothschild	Wacker Siltronic	8 Dec 94/0845	T. Omey	WACKER
COOLER #	RELINQUISHED BY:	COMPANY:	DATE/TIME	RECEIVED BY:	COMPANY:
	T. Omey	WACKER	12-8-94/10:30	Dineen Voss 12/7/94	NCA 1032
SEAL #	RELINQUISHED BY:	COMPANY:	DATE/TIME	RECEIVED BY:	COMPANY:

NOTE: Samples are disposed of 30 days after report is mailed unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 7 Dec94 Oven Temp: 107 C Analyst: TJR

Date In: 7 Dec94 Time In/Out: 0843 / 1016

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0868	0.0868	-
2. CE	200	0.0910	0.0894	8.0
3. CE	200	0.0892	0.0877	7.5
			Average CE TSS	7.8
4. OWW	50	0.1073	0.0886	374
5. OWW	50	0.1073	0.0888	370
			Average OWW TSS	372
6.				
7.				
			Average TSS	
8.				
9.				
			Average TSS	

Notes: OWW Semi-annual analysis.

Calculation: TSS, mg/L = $\frac{(\text{Gross Wt, mg} - \text{Tare Wt, mg}) \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 87
TJR 27 May 94 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7 Dec94 Sample Date: 7 Dec94 Analyst: TJR

Slope: -57.0 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 490523 Date Opened: 30 Jun94

10.0 mg/L: Lot #: 490610 Date Opened: 30 Jun94

Data:

Sample	Fluoride, mg/L
CE (composite)	7.7
OWW (composite)	1.5

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	9.8 mg/L	3.5 mg/L
% Recovery:	105 %	100 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

STEVE ANDERSON
CITY PORTLAND
BUREAU ENVIRONMENTAL SERV.
1120 S.W. 5th. AVE - Rm 400
PORTLAND, OR. 97204-1972

4a. Article Number

Z 777-067-838

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

15 DEC 1994

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1994 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

SCOEPA00020130

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Tom McCUE

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

December 13, 1994

SER 046:CB

Steve Anderson
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Mr. Anderson

Enclosed is the November Industrial Discharge Report and split sample results for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson
Director Manufacturing Support

enclosure:
(1) Industrial Discharge Report
(2) Bench sheet data

cc: Tom McCue
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: December 15, 1994

SAMPLING PERIOD: November 1994

TODAY'S DATE: 12 December 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * * *

SAMPLE DATE >		SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL. >	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Fluoride	797	**Attach summary.**	30.0		NO	
18 Nov 94 Split with City of Portland - SEE ATTACHED SUMMARY						

SAMPLE DATE >	Nov 1994	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	__ COMPOSITE XX GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL.>	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Total Toxic Organics (No analysis required)	858		1.37			TTO CERTIFICATION (See Statement Below)
pH	843	Within Limits	5.5-11.5			Attach Form 13-1C

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

"Based on my inquiry of the person or persons responsible for managing compliance with the permit limitation (or pretreatment standard) for Total Toxic Organics (TTO), I certify that, to the best of my knowledge and belief, no discharge of toxic organics into the wastewaters in excess of the TTO limit has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan su ted to the permitting (or control) authority."

WACKER SILTRONIC CORPORATION BY:

Signature: Chip Bloomer

Date: 12/13/94

form 13-1A.fil
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL CONTINUOUSLY MONITORED
pH REPORT FORM 13-1C

INDUSTRY NAME: Wacker Siltronic Corporation
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 December 1994
SAMPLING PERIOD: November 1994
TODAY'S DATE: 12 December 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
X PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE LOCATION>	OWW Parshall Flume	METER BRAND	Foxboro	METER MODEL	761	pH LIMIT: 5.5--11.5

NO EXCURSIONS

pH CODE 843

#	DATE	STARTING TIME (Use Military time)	MOST EXTREME pH EXCURSION VALUE	DURATION in Minutes	CLAIMED NON-VIOLATION	VIOLATION LEVEL	COMMENTS
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Chip Bloomer Date: 12/13/94

* *

INSTRUCTIONS: Source Control must be notified of all discharge violations within 24 hours of your knowledge of violation. Report all apparent pH violations on this form even if you claim they represent a non-violation.

VIOLATIONS:
1. pH excursions outside your permit range for a total duration of more than 15 minutes in any 24 hour period.
2. pH excursions outside the range 5.0-12.5 regardless of duration.

CLAIMED NON-VIOLATIONS:
The pH recorder chart shows an apparent violation but the industry claims this did not represent a discharge pH violation. List in this report all claimed non-violations and circle the "y" in the claimed non-violation column. State in the comments column why you claim this does not represent a pH discharge. Attach a detailed explanation with supporting documentation to this report. When the claimed non-violation was due to equipment failure or human error, describe the corrective measures taken and when pH monitoring returned to normal. Failure to properly claim and document a non-violation may result in citation for a pH violation.

form 13-1C
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: Wacker Siltronic Corporation
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 December 1994
SAMPLING PERIOD: November 1994
TODAY'S DATE: 12 December 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
X PERIODIC COMPLIANCE
☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	November 1994	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	See Below	DATE OF SAMPLE ANAL. >	See Below

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES or NO	COMMENTS
Fluoride	797	1.5	30.0		NO	DATE: 23 Nov 94
(1) Fluoride (2)	797	0.4	30.0		NO	DATE: 18 Nov 94
(1) Fluoride (3)	797	0.4	30.0		NO	DATE: 18 Nov 94
						DATE:
(1) TSS (2)	857	226	350		NA	DATE: 18 Nov 94
(1) TSS (3)	857	388	350		NA	DATE: 18 Nov 94
						DATE:
(1) Sulfate (2)	854	96.5	500		NO	DATE: 18 Nov 94
Sulfate (3)	854	98.0	500		NO	DATE: 18 Nov 94
						DATE:
(1) Arsenic	710	0.004	0.3		NO	DATE: 18 Nov 94
(1) Cadmium	736	0.00025	0.7		NO	DATE: 18 Nov 94
(1) Chromium	748	0.02	3.8		NO	DATE: 18 Nov 94
(1) Zinc	874	0.05	4.0		NO	DATE: 18 Nov 94
						DATE:
(1) Oil and Grease		22	100		NO	DATE: 18 Nov 94
						DATE:
(1) TTO	858	0.2	1.37		NO	DATE: 18 Nov 94
						DATE:
						DATE:
						DATE:
						DATE:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Chip Bloomer Date: 12/13/94

(1) Split with City of Portland
(2) City Sampler
(3) Wacker Sampler

form 13-1A.fil
rev. 6/24/94

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

November 10, 1994 SER 045:CB

Steve Anderson
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Mr. Anderson

Enclosed is the ~~September~~ October Industrial Discharge Report and split sample results for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL CONTINUOUSLY MONITORED
pH REPORT FORM 13-1C

INDUSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: 15 November 1994

SAMPLING PERIOD: October 1994

TODAY'S DATE: 10 November 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
x PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE

* * * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * * *

SAMPLE LOCATION>	OWW Parshall Flume	METER BRAND	Foxboro	METER MODEL	761	pH LIMIT: 5.5--11.5

NO EXCURSIONS

pH CODE 843

#	DATE	STARTING TIME (Use Military time)	MOST EXTREME pH EXCURSION VALUE	DURATION in Minutes	CLAIMED NON-VIOLATION	VIOLATION LEVEL	COMMENTS
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas C. McCune Date: 11/10/94

* *

INSTRUCTIONS: Source Control must be notified of all discharge violations within 24 hours of your knowledge of violation. Report all apparent pH violations on this form even if you claim they represent a non-violation.

VIOLATIONS:
1. pH excursions outside your permit range for a total duration of more than 15 minutes in any 24 hour period.
2. pH excursions outside the range 5.0-12.5 regardless of duration.

CLAIMED NON-VIOLATIONS:
The pH recorder chart shows an apparent violation but the industry claims this did not represent a discharge pH violation. List in this report all claimed non-violations and circle the "y" in the claimed non-violation column. State in the comments column why you claim this does not represent a pH discharge. Attach a detailed explanation with supporting documentation to this report. When the claimed non-violation was due to equipment failure or human error, describe the corrective measures taken and when pH monitoring returned to normal. Failure to properly claim and document a non-violation may result in citation for a pH violation.

form 13-1C
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

I[illegible]TRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: November 15, 1994

SAMPLING PERIOD: October 1994

TODAY'S DATE: 10 November 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	Oceober 1994	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	19 Oct. '94	DATE OF SAMPLE ANAL. >	19 Oct. '94

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Fluoride	797	1.9 ~~[illegible]~~	30.0		NO	

SAMPLE DATE >		SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	__ COMPOSITE XX GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL.>	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Total Toxic Organics (No analysis required)	858		1.37			TTO CERTIFICATION (See Statement Below)
pH	843	Within Limits	5.5-11.5		NO	Attach Form 13-1C

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

"Based on my inquiry of the person or persons responsible for managing compliance with the permit limitation (or pretreatment standard) for Total Toxic Organics (TTO), I certify that, to the best of my knowledge and belief, no discharge of toxic organics into the wastewaters in excess of the TTO limit has occurred since filing of the last d[illegible]arge monitoring report. I further certify that this facility is implementing the toxic organic management plan s[illegible]tted to the permitting (or control) authority."

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas C McCue

Date: 11/10/94

form 13-1A.fil
rev. 6/24/94

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 10-19-94 Sample Date: 10-19-94 Analyst: Dh

Slope: 57.3 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 04ED Date Opened: 8-11-94

10.0 mg/L: Lot #: 13E4 Date Opened: 10-17-94

Data:

Sample	Fluoride, mg/L
CE (composite)	~~8.7~~ 6.6
OWW (composite)	1.9

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	8.7 mg/L	3.9 mg/L
% Recovery:	105 %	100 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

STEVE ANDERSON
CITY PORT. BUR. ENV. SERV
1120 S.W. 5th. AVE - Rm 400
PORTLAND, OR. 97204-1972

4a. Article Number

Z 777 067 800

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

17 OCT 1994

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

SCOEPA00020140

UNITED STATES POSTAL SERVICE

Official Business

PORTLAND OR 97 PM 17 OCT 1994

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn Lisa Blanchard.

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

October 11, 1994

SER 043:CB

Steve Anderson
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Mr. Anderson

Enclosed is the September Industrial Discharge Report and split sample results for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

I TRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: October 15, 1994

SAMPLING PERIOD: September 1994

TODAY'S DATE: 11 October 94

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * * * *

SAMPLE DATE >	9/94	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	21 Sept.	DATE OF SAMPLE ANAL. >	21 Sept '94

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Fluoride	797	0.2 ~~Attach summary.~~	30.0		NO	

SAMPLE DATE >	9/94	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	__ COMPOSITE XX GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL.>	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Total Toxic Organics (No analysis required)	858	---	1.37	---	---	TTO CERTIFICATION (See Statement Below)
pH	843	Within Limits	5.5-11.5		NO	Attach Form 13-1C

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

"Based on my inquiry of the person or persons responsible for managing compliance with the permit limitation (or pretreatment standard) for Total Toxic Organics (TTO), I certify that, to the best of my knowledge and belief, no discharge of toxic organics into the wastewaters in excess of the TTO limit has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan sub[illegible]ted to the permitting (or control) authority."

WA[illegible]ER SILTRONIC CORPORATION BY:

Signature: Thomas G. McCu[illegible] Date: 10/12/94

form 13-1A.fil
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL CONTINUOUSLY MONITORED
pH REPORT FORM 13-1C

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: 15 October 1994

SAMPLING PERIOD: September 1994

TODAY'S DATE: 11 October 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

x PERIODIC COMPLIANCE

☐ SPECIAL COMPLIANCE

* * * * * * * * * * * * * * * * *

SAMPLE LOCATION>	OWW Parshall Flume	METER BRAND	Foxboro	METER MODEL	761	pH LIMIT: 5.5--11.5

NO EXCURSIONS

pH CODE 843

#	DATE	STARTING TIME (Use Military time)	MOST EXTREME pH EXCURSION VALUE	DURATION in Minutes	CLAIMED NON-VIOLATION	VIOLATION LEVEL	COMMENTS
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas G. M'Ln Date: 10/12/94

* *

INSTRUCTIONS: Source Control must be notified of all discharge violations within 24 hours of your knowledge of violation. Report all apparent pH violations on this form even if you claim they represent a non-violation.

VIOLATIONS:
1. pH excursions outside your permit range for a total duration of more than 15 minutes in any 24 hour period.
2. pH excursions outside the range 5.0-12.5 regardless of duration.

CLAIMED NON-VIOLATIONS:
The pH recorder chart shows an apparent violation but the industry claims this did not represent a discharge pH violation. List in this report all claimed non-violations and circle the "y" in the claimed non-violation column. State in the comments column why you claim this does not represent a pH discharge. Attach a detailed explanation with supporting documentation to this report. When the claimed non-violation was due to equipment failure or human error, describe the corrective measures taken and when pH monitoring returned to normal. Failure to properly claim and document a non-violation may result in citation for a pH violation.

form 13-1C
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

JSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: October 15, 1994

SAMPLING PERIOD: Sept. 1994

TODAY'S DATE: Oct 11, 1994

REPORT TYPE (CHECK ONE):

- ☐ BASELINE MONITORING
- X PERIODIC COMPLIANCE
- ☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * *

SPLIT SAMPLE # 942444

SAMPLE DATE >	9/2/94	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL. >	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Arsenic (Total)	710	ND	0.3			
Cadmium (Total)	736	ND	0.7			
Chromium (Total)	748	.023	3.8			
Zinc (Total)	874	ND	4.0			
~~Fluoride~~	~~797~~	~~Attach summary.~~	~~30.0~~			
~~Total Suspended Solids~~	~~857~~	~~Attach summary.~~	~~350.0~~			
oil & grease	913	4.2				

SAMPLE DATE >		SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	__ COMPOSITE XX GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL.>	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Total Toxic Organics (No analysis required)	858		1.37			TTO CERTIFICATION (See Statement Below)
pH	843		5.5-11.5			Attach Form 13-1C

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

"Based on my inquiry of the person or persons responsible for managing compliance with the permit limitation (or pretreatment standard) for Total Toxic Organics (TTO), I certify that, to the best of my knowledge and belief, no discharge of toxic organics into the wastewaters in excess of the TTO limit has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan submitted to the permitting (or control) authority."

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas C. McGee Date: 10/12/94

form 13-1A.fil
rev. 6/24/94

Z 081 902 719

UNITED STATES POSTAL SERVICE

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to Steve Anderson	
Street and No. 1120 SW Fifth, Rm 400	
P.O., State and ZIP Code Portland OR 97204	
Postage	$ .52
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$ 2.52
Postmark or Date	

PS Form 3800, March 1993

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

105603-93-B-0218

PS Form **3800**, March 1993 *(Reverse)*

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Steve Anderson
Industrial Waste Man,
City of Portland
1120 SW Fifth Ave, Rm 400
Portland OR 97204

4a. Article Number

2 081 902 719

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

06 SEP 94

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN R**

you for using Return Receipt Service.

SCOEPA00020148

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S.MAIL

Print your name, address and ZIP Code here

Chip Bloomer
Wacker
PO Box 83180
Portland OR 97283-0180

SCOEPA00020149

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

September 8, 1994

SER 039:CB

Steve Anderson
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Mr. Anderson

Enclosed is the August Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

I[illegible]TRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: 15 September 1994

SAMPLING PERIOD: August 1994

TODAY'S DATE: 8 September 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	August 1994	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	14, 31 Aug94	DATE OF SAMPLE ANAL. >	24,31 Aug. 1994

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES or NO	COMMENTS
Fluoride	797	13.5 ~~Attach summary.~~	30.0		NO	Ave of 2

SAMPLE DATE >	August 1994	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	__ COMPOSITE XX GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL.>	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES or NO	COMMENTS
Total Toxic Organics (No analysis required)	858	Within Limits	1.37		NO	TTO CERTIFICATION (See Statement Below)
pH	843	Within Limits	5.5-11.5		NO	Attach Form 13-1C

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

"Based on my inquiry of the person or persons responsible for managing compliance with the permit limitation (or pretreatment standard) for Total Toxic Organics (TTO), I certify that, to the best of my knowledge and belief, no discharge of toxic organics into the wastewaters in excess of the TTO limit has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan su[illegible]ted to the permitting (or control) authority."

WA[illegible]ER SILTRONIC CORPORATION BY:

Signature: Thomas G. McCu[illegible]

Date: 9/12/94

form 13-1A.fil
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

IN RY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: 15 September 1994

SAMPLING PERIOD: August 1994

TODAY'S DATE: 8 September 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	August 1994	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	24,31 Aug 1994	DATE OF SAMPLE ANAL. >	24,31 Aug 1994

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	LIMIT mg/L Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Fluoride	797	18.0	30.0	---	NO	DATE: 24 Aug 94
						DATE:
Fluoride	797	8.9	30.0	---	NO	DATE: 31 Aug 94
						DATE:
						DATE:
						DATE:
						DATE:
						DATE:
						DATE:
						DATE:
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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Si ure: Thomas C. M'Cu

Date: 9/12/94

form 13-1A.fil
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL CONTINUOUSLY MONITORED
pH REPORT FORM 13-1C

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: Wacker Siltronic Corporation
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 September 94
SAMPLING PERIOD: August 1994
TODAY'S DATE: 8 September 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
x PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE

* * * * * * * * * * * * * * * * *

SAMPLE LOCATION>	OWW Parshall Flume	METER BRAND	Foxboro	METER MODEL	761	pH LIMIT: 5.5--11.5

pH CODE 843

#	DATE	STARTING TIME (Use Military time)	MOST EXTREME pH EXCURSION VALUE	DURATION in Minutes	CLAIMED NON-VIOLATION	VIOLATION LEVEL	COMMENTS
		:	SU		y n		No Excursions
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Thomas C. McCue Date: 9/12/94

* *

INSTRUCTIONS: Source Control must be notified of all discharge violations within 24 hours of your knowledge of violation. Report all apparent pH violations on this form even if you claim they represent a non-violation.

VIOLATIONS:
1. pH excursions outside your permit range for a total duration of more than 15 minutes in any 24 hour period.
2. pH excursions outside the range 5.0-12.5 regardless of duration.

CLAIMED NON-VIOLATIONS:
The pH recorder chart shows an apparent violation but the industry claims this did not represent a discharge pH violation. List in this report all claimed non-violations and circle the "y" in the claimed non-violation column. State in the comments column why you claim this does not represent a pH discharge. Attach a detailed explanation with supporting documentation to this report. When the claimed non-violation was due to equipment failure or human error, describe the corrective measures taken and when pH monitoring returned to normal. Failure to properly claim and document a non-violation may result in citation for a pH violation.

form 13-1C
rev. 6/24/94

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 31 Aug 94 Sample Date: 31 Aug 94 Analyst: TJR

Slope: -57.3 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 490523 Date Opened: 30 Jun 94

10.0 mg/L: Lot #: 490610 Date Opened: 30 Jun 94

Data:

Sample	Fluoride, mg/L
CE (composite)	1.04
OWW (composite)	8.86

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	3.04 mg/L	11.0 mg/L
% Recovery:	100 %	105 %

Comments: CAD effluent diverted to OWW.

References:
1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 24 Aug 94 Sample Date: 24 Aug 94 Analyst: TJR

Slope: -57.1 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 490523 Date Opened: 30 Jun 94

10.0 mg/L: Lot #: 490610 Date Opened: 30 Jun 94

Data:

Sample	Fluoride, mg/L
CE (composite)	8.1
OWW (composite)	18.0

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	10.2 mg/L	20.1 mg/L
% Recovery:	105 %	105 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

Lisa Blanchard - P 699 796 659

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to IND. WASTE MGMT CITY OF PORTLAND - BUR. ENV. SER	
Street & No. 1120 S.W. 5th. AVE - Rm 400	
P.O., State & ZIP Code PORTLAND, OR. 97204-1972	
Postage	$ .52
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$2.52
Postmark or Date	SAINT JOHNS PORTLAND, OR USPS AUG 1994

PS Form 3800, June 1990

SCOEPA00020156

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

☆U.S.G.P.O. 1990-270-153

PS Form **3800**, June 1990 *(Reverse)*

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Industrial Waste Mgmt.
City of Portland
Bureau of Environmental Serv.
1120 S.W. 5th AVE - Suite 400
Portland, Or. 97204-1972

4a. Article Number

P 699-796-659

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery 16 AUG 1994

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 ☆ U.S.G.P.O.: 1992-307-530 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S.MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn Lisa Blanchard

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

August 15, 1994

SER 036:CB

Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Enclosed is the July Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: Wacker Siltronic Corporation
PERMIT NUMBER: 469-001
REPORT DUE DATE: September 15, 1994
SAMPLING PERIOD: August 1994
TODAY'S DATE: 15 August 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
X PERIODIC COMPLIANCE
☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * *

SAMPLE DATE >	7/20	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	7/20	DATE OF SAMPLE ANAL. >	7/20

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Fluoride	797	0.3 ~~Attach summary~~	30.0		NO	1 sample

SAMPLE DATE >		SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	__ COMPOSITE XX GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL.>	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Total Toxic Organics (No analysis required)	858		1.37		No	TTO CERTIFICATION (See Statement Below)
pH	843	within limits	5.5-11.5		No	Attach Form 13-1C

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

"Based on my inquiry of the person or persons responsible for managing compliance with the permit limitation (or pretreatment standard) for Total Toxic Organics (TTO), I certify that, to the best of my knowledge and belief, no discharge of toxic organics into the wastewaters in excess of the TTO limit has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan submitted to the permitting (or control) authority."

Signature: Thomas G. McCue Date: 8/15/94

form 13-1A.fil
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL CONTINUOUSLY MONITORED
pH REPORT FORM 13-1C

INDUSTRY NAME:	Wacker Siltronic Corporation
PERMIT NUMBER:	469-001
REPORT DUE DATE:	15 August 1994
SAMPLING PERIOD:	July 1994
TODAY'S DATE:	15 August 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING
x PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

NO EXCURSIONS

SAMPLE LOCATION>	OWW Parshall Flume	METER BRAND	Foxboro	METER MODEL	761	pH LIMIT: 5.5--11.5

pH CODE 843

#	DATE	STARTING TIME (Use Military time)	MOST EXTREME pH EXCURSION VALUE	DURATION in Minutes	CLAIMED NON-VIOLATION	VIOLATION LEVEL	COMMENTS
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas G McClure Date: 8/15/94

* *

INSTRUCTIONS: Source Control must be notified of all discharge violations within 24 hours of your knowledge of violation. Report all apparent pH violations on this form even if you claim they represent a non-violation.

VIOLATIONS:
1. pH excursions outside your permit range for a total duration of more than 15 minutes in any 24 hour period.
2. pH excursions outside the range 5.0-12.5 regardless of duration.

CLAIMED NON-VIOLATIONS:
The pH recorder chart shows an apparent violation but the industry claims this did not represent a discharge pH violation. List in this report all claimed non-violations and circle the "y" in the claimed non-violation column. State in the comments column why you claim this does not represent a pH discharge. Attach a detailed explanation with supporting documentation to this report. When the claimed non-violation was due to equipment failure or human error, describe the corrective measures taken and when pH monitoring returned to normal. Failure to properly claim and document a non-violation may result in citation for a pH violation.

form 13-1C
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: 15 August 1994

SAMPLING PERIOD: July 1994

TODAY'S DATE: 15 August 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * *

SAMPLE DATE >		SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL. >	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	LIMIT mg/L Monthly	DISCHARGE VIOLATION ? YES or NO	COMMENTS
Sulfate	854	64.5				DATE: 7/20/94
Sulfate	854	22				DATE: 7/22/94
						DATE:
						DATE:
						DATE:
						DATE:
						DATE:
						DATE:
						DATE:
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						DATE:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas G. McCue

Date: 8/15/94

form 13-1A.fil
rev. 6/24/94

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7-20-94 Sample Date: 7-20-94 Analyst: DM

Slope: -58.1 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 17EA Date Opened: 6-3-94

10.0 mg/L: Lot #: 11ED Date Opened: 6-15-94

Data:

Sample	Fluoride, mg/L
CE (composite)	6.81
OWW (composite)	0.301

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	8.81 mg/L	2.21 mg/L
% Recovery:	100 %	95.6 %

Comments: Sulfates on OWW Composite = 64.5 mg/L
See Waste Stream Profiles, OWW Sulfates.

References:
1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET

SULFATE

Test Date: 7-20-94 Sample Date: 7-20-94 Analyst: DM

Sample	DR/3000 reading	x	Dilution Factor	=	Sulfate mg/L
OWW	25.7	x	1:2.5	=	64.5
		x		=	
		x		=	
		x		=	

Comments: OWW composite sampled at Partial Plume.

References: 1. HACH DR/3000, Procedure Code S.6, modification of the Barium Sulfate Turbidimetric Method. Approved for NPDES reporting purposes by the EPA.

DEM 12 AUG 94

BENCHSHEET

SULFATE

Test Date: 7-22-94 Sample Date: 7-22-94 Analyst: DM

Sample	DR/3000 reading	x	Dilution Factor	=	Sulfate mg/L
OWW	8.8	x	1:2.5	=	22
		x		=	
		x		=	
		x		=	

Comments: OWW composite sample at partial flume.

References: 1. HACH DR/3000, Procedure Code S.6, modification of the Barium Sulfate Turbidimetric Method. Approved for NPDES reporting purposes by the EPA.

DEM 12 AUG 94

LISA BLANCHARD

P 699 796 653

UNITED STATES POSTAL SERVICE

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to LINDA SCHEFFLER	
CITY PORTLAND-BUR ENV. SERV	
Street & No.	
1120 S.W. 5th. AVE - RM 400	
P.O., State & ZIP Code	
PORTLAND, OR. 97204	
Postage	$ .98
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$2.98
Postmark or Date	JUL 11 1994 USPS

PS Form **3800**, June 1990

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

☆U.S.G.P.O. 1990-270-153

PS Form **3800**, June 1990 *(Reverse)*

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
LINDA SCHEFFLER
CITY OF PORTLAND - BUR. ENV. SER,
1120 S.W. 5th. AVE - RM 400
PORTLAND, OR. 97204

4a. Article Number
P 699-796-653

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
12 JUL 1994

5. Signature (Addressee)

6. Signature (Agent)
Colleen E. Moody

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 ☆ U.S.G.P.O. : 1992-307-530 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

SCOEPA00020169

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn-Lisa Blanchard

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

July 11, 1994 SER 027:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the June Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: Wacker Siltronic Corporation

I IT NUMBER: 469-001

REPORT DUE DATE: July 15, 1994

SAMPLING PERIOD: June 1994

TODAY'S DATE: 11 July 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

X PERIODIC COMPLIANCE

☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	6/8	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	6/8	DATE OF SAMPLE ANAL. >	6/14

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Arsenic (Total)	710	<0.004	0.3		NO	24 Hour Composite
Cadmium (Total)	736	0.0004	0.7		NO	" " "
Chromium (Total)	748	<0.02	3.8		NO	" " "
Zinc (Total)	874	<0.05	4.0		NO	" " "
Fluoride	797	1.6 **Attach summary.**	30.0		NO	Average of 3
Total Suspended Solids	857	408 **Attach summary.**	350.0		NA	Average of 3

SAMPLE DATE >	6/6	SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	__ COMPOSITE XX GRAB	DATE RECEIVED AT LAB >	6/6	DATE OF SAMPLE ANAL.>	6/9

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES OR NO	COMMENTS
Total Toxic Organics (No analysis required)	858	<0.5	1.37		NO	TTO CERTIFICATION (See Statement Below)
pH	843	Within Limits	5.5-11.5		NO	Attach Form 13-1C

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

"Based on my inquiry of the person or persons responsible for managing compliance with the permit limitation (or pretreatment standard) for Total Toxic Organics (TTO), I certify that, to the best of my knowledge and belief, no discharge of toxic organics into the wastewaters in excess of the TTO limit has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan submitted to the permitting (or control) authority."

WACKER SILTRONIC CORPORATION BY:

nature: Thomas G. McCu Date: July 11, 1994

Form 13-1A.fil
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL CONTINUOUSLY MONITORED
pH REPORT FORM 13-1C

* * * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: July 15, 1994

SAMPLING PERIOD: June 1994

TODAY'S DATE: 11 July 1994

REPORT TYPE (CHECK ONE):

☐ BASELINE MONITORING

x PERIODIC COMPLIANCE

☐ SPECIAL COMPLIANCE

* * * * * * * * * * * * * * * * * *

NO EXCURSIONS

SAMPLE LOCATION>	OWW Parshall Flume	METER BRAND	Foxboro	METER MODEL	761	pH LIMIT: 5.5--11.5

pH CODE 843

#	DATE	STARTING TIME (Use Military time)	MOST EXTREME pH EXCURSION VALUE	DURATION in Minutes	CLAIMED NON-VIOLATION	VIOLATION LEVEL	COMMENTS
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		
		:	SU		y n		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas C. McCu Date: July 11, 1994

* *

INSTRUCTIONS: Source Control must be notified of all discharge violations within 24 hours of your knowledge of violation. Report all apparent pH violations on this form even if you claim they represent a non-violation.

VIOLATIONS:
1. pH excursions outside your permit range for a total duration of more than 15 minutes in any 24 hour period.
2. pH excursions outside the range 5.0-12.5 regardless of duration.

CLAIMED NON-VIOLATIONS:
The pH recorder chart shows an apparent violation but the industry claims this did not represent a discharge pH violation. List in this report all claimed non-violations and circle the "y" in the claimed non-violation column. State in the comments column why you claim this does not represent a pH discharge. Attach a detailed explanation with supporting documentation to this report. When the claimed non-violation was due to equipment failure or human error, describe the corrective measures taken and when pH monitoring returned to normal. Failure to properly claim and document a non-violation may result in citation for a pH violation.

form 13-1C
rev. 6/24/94

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: Wacker Siltronic Corporation

PERMIT NUMBER: 469-001

REPORT DUE DATE: July 15, 1994

SAMPLING PERIOD: June 1994

TODAY'S DATE: 11 July 1994

REPORT TYPE (CHECK ONE):

- ☐ BASELINE MONITORING
- X PERIODIC COMPLIANCE
- ☐ FINAL COMPLIANCE

* * * * * * * * * * * * * * * * * *

SAMPLE DATE >		SAMPLE LOCATION>	OWW PARSHALL FLUME	SAMPLE TYPE >	XX COMPOSITE __ GRAB	DATE RECEIVED AT LAB >		DATE OF SAMPLE ANAL. >	

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	DISCHARGE VIOLATION ? YES or NO	COMMENTS
Fluoride	797	3.4	30		NO	DATE: 6/1
"	"	.3	30		NO	DATE: 6/8
"	"	1.2	30		NO	DATE: 6/15
						DATE:
TSS	857	381			NA	DATE: 6/1
"	"	392			"	DATE: 6/8
"	"	452			"	DATE: 6/15
						DATE:
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						DATE:
						DATE:
						DATE:
						DATE:
						DATE:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas C. McCue

Date: July 11, 1994

form 13-1A.fil
rev. 6/24/94

Lisa Blanchard
P 699 796 644

Certified Mail Receipt
No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to LINDA SHEDFFLER. CITY PORTLAND - BUR ENV. SERV	
Street & No. 1120 S.E. 5th AVE - RM 400	
P.O., State & ZIP Code PORTLAND, OR. 97204	
Postage	$1.44
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$3.44
Postmark or Date	

PORTLAND, OREG. 9 1994 PORTLAND, OREG. 9 1994 SAINT LOUIS

PS Form **3800**, June 1990

SCOEPA00020175

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

☆U.S.G.P.O. 1990-270-153

PS Form **3800**, June 1990 *(Reverse)*

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Linda Scheffler
City of Portland
Bureau of Environment Serv.
1120 SE 5th AVE - SUITE 400
Portland, Or 97204

4a. Article Number

P699-796-644

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

13 JUN 1994

5. Signature (Addressee)

6. Signature (Agent)

Allen E. Moody

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1991 ☆ U.S.G.P.O.: 1992-307-530 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

SCOEPA00020177

UNITED STATES POSTAL SERVICE

Official Business

PORTLAND OR 972
PM
13 JUN
1994

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn Lisa Blanchard

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

June 9, 1994 SER 023:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the May Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 June 94
SAMPLING PERIOD: May '94
SAMPLE CODE:
TODAY'S DATE: June 9, 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	See *	SAMPLE LOCATION>	OWW Parshal Flume	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		Within Limits
Cadmium	736		0.7		
Cyanide (Total)	878		1.2		
Chromium (Total)	748		3.8		
Copper (Total)	752		2.3		
Nickel (Total)	824		3.0		
Lead (Total)	811		0.7		
Zinc (Total)	874		4.0		
B.O.D.	729	103	>300=ESSC		Ave. of 4;high=124
T.S.S.	857	322	>350=ESSC		Ave of 5; high=382
FEM-T Oil & Grease (total)	913				
FEM-NP Oil & Grease (Non-Polar)	915		100		
FEM-P Oil & Grease (Polar)	914		500		
Arsenic	710		0.3		
Chlorinated Hydrocar	739	<0.1	0.5		Grab 3 May 94
Fluoride	797	1.1	30.0		Ave of 5; high =2.4*
Flash Pt. Closed Cup	916		>140 F		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas C. McLean Date: 6/9/94

form 13-1A.fil
rev. 3/20/92

*Sample Dates:	Fluoride:
May 3, 1994	.18
May 5, 1994	2.0
May 11, 1994	.25
May 18, 1994	2.4
May 26, 1994	.9

Lisa Blanchard.

P 699 796 630

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to LINDA SCHEFFLER CITY OF PORT.-BUR. ENV. SERV.	
Street & No. 1120 S.W. 5th AVE - Rm. 400	
P.O., State & ZIP Code PORTLAND, OR. 97204-	
Postage	$ 1.21
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$ 3.21
Postmark or Date	

PS Form **3800**, June 1990

Fold at line over top of envelope to the right of the return address.

SCOEPA00020181

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

☆U.S.G.P.O. 1990-270-153

PS Form **3800**, June 1990 *(Reverse)*

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
MS. LINDA SCHEFFLER
CITY of PORT. PUR. ENV. SERV.
1120 S.W. 5th. AVE - RM. 400
PORTLAND, OR. 97204-1972

4a. Article Number
P699.796.630

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
16 MAY 1994

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1991 ★ U.S.G.P.O. : 1992-307-530 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

UNITED STATES POSTAL SERVICE

Official Business

PORTLAND OR
PM
16 MAY
1994

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

ALWAYS
USE
U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

LISA BLANCHARD

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

May 12, 1994 SER 013:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the April Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 May 94
SAMPLING PERIOD: April 1994
SAMPLE CODE:
TODAY'S DATE: 12 May 94

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	See *	SAMPLE LOCATION>	OWW Parshall Flume	SAMPLE TYPE >	X COMPOSITE ___ GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		Within Limits
Cadmium	736		0.7		
Cyanide (Total)	878		1.2		
Chromium (Total)	748		3.8		
Copper (Total)	752		2.3		
Nickel (Total)	824		3.0		
Lead (Total)	811		0.7		
Zinc (Total)	874		4.0		
B.O.D.	729	115	>300=ESSC		Ave. of 4;High=130
T.S.S.	857	369	>350=ESSC		Ave. of 4;high=402
FEM-T Oil & Grease (total)	913				
FEM-NP Oil & Grease (Non-Polar)	915		100		
FEM-P Oil & Grease (Polar)	914		500		
Arsenic	710		0.3		
Chlorinated Hydrocar	739	0.05	0.5		Grab on 11 Apr 94
Fluoride	797	2.6	30.0		Ave. of 4;high=4.4*
Flash Pt. Closed Cup	916		>140 F		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Thomas C. McLure Date: May 13, 1994

form 13-1A.fil
rev. 3/20/92

*Sample Dates:	Fluoride:
4/6/94	2
4/13/94	4.4
4/20/94	3.2
4/27/94	.5

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

20 Apr 94
JJR

April 19, 1994

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attention: Thomas J. Rothschild

RE: JOB #
P.O.# 30381
PROJECT -

Enclosed are test results for your samples received in this lab on Apr. 11, 1994. For your reference, these analyses have been assigned our PEL # 94-0886.

Solid samples are reported on a dry weight basis except for Oregon DEQ Fuels Methods and where otherwise noted.

Please call if you have any questions.

Respectfully,

Howard Holmes
Project Manager

Howard Boorse
QA Manager

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

PACIFIC ENVIRONMENTAL LABORATORY INC.

Volatile Organic Compounds per EPA 8240
Results In ug/L (ppb)

Client: Wacker Siltronic Corporation
Project:
Received: 04/11/1994

PEL Number: 94-0886
Matrix: water

Sample Name	Analyte	Result	MRL
94-24 OWW	Acetone	740	50
	Acrolein	ND	1000
	Acrylonitrile	ND	50
	Benzene	ND	10
	Bromodichloromethane	ND	10
	Bromoform	ND	10
	Bromomethane	ND	50
	2-Butanone	ND	38
	Carbon Disulfide	ND	10
	Carbon Tetrachloride	ND	10
	Chlorobenzene	ND	10
	Chloroethane	ND	50
	Chloroform	ND	10
	Chloromethane	ND	50
	Dibromochloromethane	ND	10
	Dibromomethane	ND	10
	1,4-Dichloro-2-butene	ND	50
	1,2-Dichlorobenzene	ND	10
	1,3-Dichlorobenzene	ND	10
	1,4-Dichlorobenzene	ND	10
	Dichlorodifluoromethane	ND	25
	1,1-Dichloroethane	ND	10
	1,2-Dichloroethane	ND	10
	1,1-Dichloroethene	ND	10
	cis-1,2-Dichloroethene	ND	10
	trans1,2Dichloroethene	ND	10
	1,2-Dichloropropane	ND	10
	cis-1,3-Dichloropropene	ND	10
	trans1,3Dichloropropene	ND	10
	Ethyl Methacrylate	ND	10
	Ethylbenzene	ND	10
	2-Hexanone	ND	25
	Iodomethane	ND	10
	4-Methyl-2-pentanone	ND	25
	Methylene Chloride	ND	25
	Styrene	ND	10
	1,1,2,2-Tetrachloroethane	ND	10
	Tetrachloroethene	ND	10
	Toluene	ND	10
	1,1,1-Trichloroethane	ND	10
	1,1,2-Trichloroethane	ND	10
	Trichloroethene	ND	10

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

Volatile Organic Compounds per EPA 8240
Results In ug/L (ppb)

Client: Wacker Siltronic Corporation
Project:
Received: 04/11/1994

PEL Number: 94-0886
Matrix: water

Sample Name	Analyte	Result	MRL
94-24 (continued)	Trichlorofluoromethane	ND	10
	1,2,3-Trichloropropane	ND	10
	Vinyl Acetate	ND	25
	Vinyl Chloride	ND	25
	Xylenes (total)	ND	10
	Date Prepped	04/13/94	
	Date Analyzed	04/13/94	

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

Volatile Organic Compounds per EPA 8240
Results In ug/L (ppb)

Client: Wacker Siltronic Corporation
Project:
Received: 04/11/1994

PEL Number: 94-0886
Matrix: water

Sample Name	Analyte	Result	MRL
Method Blank	Acetone	ND	10
	Acrolein	ND	200
	Acrylonitrile	ND	10
	Benzene	ND	2.0
	Bromodichloromethane	ND	2.0
	Bromoform	ND	2.0
	Bromomethane	ND	10
	2-Butanone	ND	7.5
	Carbon Disulfide	ND	2.0
	Carbon Tetrachloride	ND	2.0
	Chlorobenzene	ND	2.0
	Chloroethane	ND	10
	Chloroform	ND	2.0
	Chloromethane	ND	10
	Dibromochloromethane	ND	2.0
	Dibromomethane	ND	2.0
	1,4-Dichloro-2-butene	ND	10
	1,2-Dichlorobenzene	ND	2.0
	1,3-Dichlorobenzene	ND	2.0
	1,4-Dichlorobenzene	ND	2.0
	Dichlorodifluoromethane	ND	5.0
	1,1-Dichloroethane	ND	2.0
	1,2-Dichloroethane	ND	2.0
	1,1-Dichloroethene	ND	2.0
	cis-1,2-Dichloroethene	ND	2.0
	trans1,2Dichloroethene	ND	2.0
	1,2-Dichloropropane	ND	2.0
	cis-1,3-Dichloropropene	ND	2.0
	trans1,3Dichloropropene	ND	2.0
	Ethyl Methacrylate	ND	2.0
	Ethylbenzene	ND	2.0
	2-Hexanone	ND	5.0
	Iodomethane	ND	2.0
	4-Methyl-2-pentanone	ND	5.0
	Methylene Chloride	ND	5.0
	Styrene	ND	2.0
	1,1,2,2-Tetrachloroethane	ND	2.0
	Tetrachloroethene	ND	2.0
	Toluene	ND	2.0
	1,1,1-Trichloroethane	ND	2.0
	1,1,2-Trichloroethane	ND	2.0
	Trichloroethene	ND	2.0

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

Volatile Organic Compounds per EPA 8240
Results In ug/L (ppb)

Client: Wacker Siltronic Corporation
Project:
Received: 04/11/1994

PEL Number: 94-0886
Matrix: water

Sample Name	Analyte	Result	MRL
Method Blank (continued)	Trichlorofluoromethane	ND	2.0
	1,2,3-Trichloropropane	ND	2.0
	Vinyl Acetate	ND	5.0
	Vinyl Chloride	ND	5.0
	Xylenes (total)	ND	2.0

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

SURROGATE RECOVERIES (%)

Client: Wacker Siltronic Corporation
Project:

PEL Number: 94-0886
Received: 04/11/1994

Sample Name	Analyte	Result	Control Limits
Volatile Organic Compounds per EPA 8240			
94-23	4-Bromofluorobenzene	100	86-115
	1,2-Dichloroethane-d4	99	76-114
	Toluene-d8	103	88-110
94-24	4-Bromofluorobenzene	101	86-115
	1,2-Dichloroethane-d4	103	76-114
	Toluene-d8	102	88-110

MRL Method Reporting Level
ND None Detected at or above the method reporting level
* See Comment Section at end of report

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S[illegible] Nimbus Ave.
Beav[illegible], OR 97005
[illegible]3) 644-0660
Fa[illegible]3) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY Wacker Siltronic Corporation PROJECT NAME — LAB PROJECT NUMBER 94-0886

PROJECT MANAGER — PROJECT NUMBER —

COLLECTED BY Thomas J. Rothschild P.O. NUMBER 30381 RUSH ☐ YES ☒ NO

COMMENTS Please send some chain of Custody forms.

IF SAMPLE IS LIQUID & HAS SEDIMENT OR PARTICULATE, SHALL WE:
- ___ Test Filtrate Only?
- ✓ Mix Sample by Shaking?
- ___ Test Particulate Only?

IF SAMPLE IS MULTI-PHASED, SHALL WE:
- ___ Test Each Phase separately?
- ___ Test only ONE Phase? Which Phase?
- ✓ Mix All Phases by Shaking?

PEL NO.	SAMPLE I.D.	DATE	TIME	[illegible]	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID OAR/DEQ	QUANT. IF DETECTED (✓)	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	8015M - Gas	8015M - Diesel	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals						REMARKS
	94-23	11 Apr 94	1100	None		X		2											X										
	94-24	11 Apr 94	1100	None		X		2											X										

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
Thomas J. Rothschild	Wacker Siltronic	11 Apr 94 / 1045	Dara McClurg	PEL 4-11-94 / 1430
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

Note: Samples are discarded 30 day[illegible] receipt unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

SCOEPA00020193

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 6 Apr 94 Incubator: 19.5C Analyst: TJR

Date/Time In: 6 Apr 94 / 1206 Date/Time Out: 11 Apr 94 / 1307

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	X	N/A	—		
✓N	1	N/A	8.8	8.62	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	—	3	—		
✓N	2	3	8.7	4.14	209

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3316 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 18th Edition, 1992, Section 5210, Paragraph 6.
3. Seed the QC bottles with 1 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.7 - 4.14) - (1.13)(1 / 3))(100)
= 418 / 2
= 209

0.38

4. Sodium Thiosulfate (Na2S2O3):
Manufacturer: Ricca Other D.O. Probe
Lot Number: —
Date Opened: —

Comments: New dilution H_2O tubing
Barometer → 29.89 inches x 25.4 mm/in = 759.2 mm
[illegible] 94 → 30.12 ↓ = 765 mm

BOD / QC
11 Apr 94
TJR

1.13 ÷
3. =
0.38 *
8.70 +
4.14 -
0.38 -
4.18 *
4.18 ×
100. =
418.00 *
418.00 ÷
2. =
209.00 *

TJR 13 Nov 91
TJR 5 May 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 6 Ap. 94 Incubator: 19.5 C Analyst: TJR

Date/Time In: 6 Ap. 94 / 1206 Date/Time Out: 11 Ap. 94 / 1307

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	—	8	—		
✓N	6	8	8.7	5.44	122
OWW	—	5	—		
✓N	7	5	8.7 8.6	6.80	114
OWW	—	3	—		
✓N	9	3	8.7	7.57	113
N					
N					

Average OWW BOD, mg/L: 116

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 20 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
11 Ap. 94
TJR

8.70 +
5.44 -
3.26 *

3.26 x
300. ÷
8. =
122.25 *

122.25 +M
8.70 +
6.80 -
1.90 *

1.90 x
60. =
114.00 *

114.00 +M
8.70 +
7.57 -
1.13 *

1.13 x
100. =
113.00 *

113.00 +M
349.25 ◊M

349.25 ÷
3. =
116.42 *

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 6 Apr 94 Sample Date: 6 Apr 94 Analyst: JJR

Slope: -57.8 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 0104 Date Opened: 23 Mar 94

10.0 mg/L: Lot #: 0104 Date Opened: 23 Mar 94

Data:

Sample	Fluoride, mg/L
CE (composite)	5.08
OWW (composite)	1.98

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	7.10 mg/L	3.98 mg/L
% Recovery:	101 %	100 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.

2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 6 Apr 94 Oven Temp: 107 C Analyst: JJR

Date In: 6 Apr 94 Time In/Out: 0852 / 1021

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0876	0.0877	-
2. CE	200	0.0938	0.0913	12.5
3. CE	200	0.0925	0.0898	13.5
			Average CE TSS	13.0
4. OWW	50	0.1099	0.0903	392
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

Notes: _____

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 87
TJR 21 Apr 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 13 Apr 94 Incubator: 20.0 C Analyst: TJR

Date/Time In: 13 Apr 94 / 1113 Date/Time Out: 18 Apr 94 / 1342

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank		N/A			
✓N	1	N/A	8.70	8.66	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC		3			
✓N	2	3	8.71	4.08	209.5

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3316 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 18th Edition, 1992, Section 5210, Paragraph 6.
3. Seed the QC bottles with 1 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.71 - 4.08) - (1.31)(1 / 3))(100)
= 419.0 / 2
= 209.5
0.44

4. Sodium Thiosulfate (Na2S2O3):
Manufacturer: Ricca Other D.C Probe
Lot Number: – B268
Date Opened: – 23 Feb 94 → For DCF.

Comments: 13 Apr 94 Barometric Pressure = 30.12 inches x 25.4 mm/inch = 765 mm.

Pressure = 29.95 inches x 25.4 mm/inch

BOD QC
18 Apr 94
TJR

1.31 ÷
3. =
0.44 *
8.71 +
4.08 -
0.44 -
4.19 *
4.19 x
100. =
419.00 *
419.00 ÷
2. =
209.50 *

TJR 13 Nov 91
TJR 5 May 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 13 Apr 94 Incubator: #20°C Analyst: TJR

Date/Time In: 13 Apr 94 / 1113 Date/Time Out: 18 Apr 94 / 1342

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW		8			
✓N	6	8	8.69	5.39	123.75
OWW		5			
✓N	7	5	8.73	6.80	115.80
OWW		3			
✓N	9	3	8.74	7.43	131.00
N					
N					

Average OWW BOD, mg/L: 123.52

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{\text{(DOI, mg/L - DOF, mg/L) X 300}}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 20 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
18 Apr 94
TJR

8.69 +
5.39 -
3.30 *
3.30 X
300. ÷
8. =
123.75 *
123.75 +M
8.73 +
6.80 -
1.93 *
1.93 X
60. =
115.80 *
115.80 +M
8.74 +
7.43 -
1.31 *
1.31 X
100. =
131.00 *
131.00 +M
370.55 ÷M
370.55 ÷
3. =
123.52 *

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 13 Apr 94 Oven Temp: 105 C Analyst: TJR

Date In: 13 Apr 94 Time In/Out: 0827 / 1003

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0870	0.0872	–
2. CE	200	0.0914	0.0895	9.5
3. CE	200	0.0912	0.0892	10.0
			Average CE TSS	9.8
4. OWW	50	0.1098	0.0897	402
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

Notes: _____

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 87
TJR 21 Apr 93 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 13 Apr 94 Sample Date: 13 Apr 94 Analyst: JJR

Slope: -56.1 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 0ND Y Date Opened: 11 Apr 94

10.0 mg/L: Lot #: C1DY Date Opened: 23 Apr 94

Data:

Sample	Fluoride, mg/L
CE (composite)	2.37
OWW (composite)	4.35

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	4.10 mg/L	6.16 mg/L
% Recovery:	86.5 %	90.5 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 4-27-94 Incubator: 20.0 C Analyst: DM

Date/Time In: 4-27-94 / 1430 Date/Time Out: 5-2-94 / 1310

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank ✓ N	6	N/A	8.45	8.50	
✓ N	37	N/A	8.31	8.30	

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC ✓ N	34	3	8.48	4.29	194.58	189.83
✓ N	23	3	8.45	4.45	185.08	

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3316 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 18th Edition, 1992, Section 5210, Paragraph 6.
3. Seed the QC bottles with 1 ml of OWW: ✓
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((_____ - _____) - (_____)(_____ / _____))(100)
= 379.66 / 2
= 189.83

0.2984

4. Sodium Thiosulfate (Na2S2O3):
Manufacturer: Ricca Other _____
Lot Number: _____
Date Opened: _____

Comments: calib. 7.64 - new membrane put on probe. Readout calibration: 7.65.

TJR 13 Nov 91
TJR 5 May 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 4-27-94 Incubator: 20.0 C. Analyst: DM

Date/Time In: 4-27-94 / 1430 Date/Time Out: 5-2-94 / 1310

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW ✓N	14	8	8.22	5.75	92.625
✓N	77	8	8.25	5.79	92.25
OWW ✓N	51	5	8.25	6.86	83.4
✓N	31	5	8.26	6.81	87
OWW ✓N	83	3	8.30	7.45	85
✓N	47	3	8.27	7.34	93
N					
N					

Average OWW BOD, mg/L: 88.88

COMMENTS: _____

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19.5 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 4-27-94 Sample Date: 4-27-94 Analyst: DM

Slope: 57.6 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 01DY Date Opened: 4-11-94

10.0 mg/L: Lot #: 24EA Date Opened: 4-19-94

Data:

Sample	Fluoride, mg/L
CE (composite)	8.0
OWW (composite)	0.5

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	10.0 mg/L	2.4 mg/L
% Recovery:	100 %	95 %

Comments: _____

References:
1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 4-27-94 Oven Temp: 105 C Analyst: DM

Date In: 4-27-94 Time In/Out: 1100 / 1250

Tin #	Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1	Blank		0.0900	0.0901	
6	WAD III	200	0.0906	0.0893	3.5
				WAD III AVG=	3.5
2	CE	200	0.0928	0.0892	18
3	CE	200	0.0916	0.0880	18
				CE AVG=	18
4	OWW	50	0.1042	0.0890	304
5	OWW	50	0.1025	0.0880	290
				OWW AVG=	297

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 87
TJR 21 Apr 93 Revised
DS 11 Aug 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 20 Apr 94 Incubator: _____ C Analyst: TJR/Andy

Date/Time In: 20 Apr 94/ 1128 Date/Time Out: 4-25-94/ 1:50

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	_____	N/A	_____		
✓N	1	N/A	8.67	8.87	_____

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	_____	3	_____		
✓N	2	3	8.61	3.93	~212.05

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3316 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 18th Edition, 1992, Section 5210, Paragraph 6.
3. Seed the QC bottles with (1 ml) of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((_____-_____) - (_____)(_____/_____)) (100)
= 424.1 / 2
= 212.05
0.439

4. Sodium Thiosulfate (Na2S2O3):
Manufacturer: Ricca Other D.O. Probe
Lot Number: _____
Date Opened: _____

Comments: Barometric Pressure = 761 mm

TJR 13 Nov 91
TJR 5 May 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 20 April 94 Incubator: 21 C Analyst: TJR/Andy

Date/Time In: 20 April 94/ 1128 Date/Time Out: 4-25-94/ 1:50

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW		8			
✓N	6	8	8.56	4.90	137.3
OWW		5			
✓N	7	5	8.54	6.42	127.2
OWW		3			
✓N	9	3	8.60	7.35	125.0
N					
N					~~129~~.

Average OWW BOD, mg/L: 129.8

COMMENTS: _____

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 20 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 20 Apr 94 Oven Temp: 106 C Analyst: JJR

Date In: 20 Apr 94 Time In/Out: 0839 / _____

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0882	0.0883	–
2. CE	200	0.0913	0.0891	11.0
3. CE	200	0.0907	0.0885	11.0
			Average CE TSS	11.0
4. OWW	50	0.1091	0.0898	386
5. OWW	50	0.1083	0.0891	384
6.		OWW	Average	385
7.				
8.				
9.				
10.				
11.				
12.				

Notes: _____

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 87
TJR 21 Apr 93 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 20 Apr 94 Sample Date: 20 Apr 94 Analyst: TJR

Slope: -56.1 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 01 DY Date Opened: 11 Apr 94

10.0 mg/L: Lot #: 24 EA Date Opened: 19 Apr 94

Data:

Sample	Fluoride, mg/L
CE (composite)	2.81
OWW (composite)	3.27

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	4.80 mg/L	5.34 mg/L
% Recovery:	99.5 %	103.5 %

Comments: _____

References:
1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

Tom McCue

P 699 796 594

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PS Form 3800, June 1990

SCOEPA00020210

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4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

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Ms Linda Scheffler
City of Portland
Bureau Environmental Serv.
1120 S.W. 5th Ave - Rm 400
Portland, Or. 97204

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☐ Express Mail ☐ Return Receipt for Merchandise

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15 APR 1994

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6. Signature (Agent)

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WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn- Tom McCue.

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

April 11, 1994

SER 013:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the March Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 April 1994
SAMPLING PERIOD: March 1994
SAMPLE CODE:
TODAY'S DATE: 8 April 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	March 1994	SAMPLE LOCATION>	OWW Parshall Flume	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		Within Limits
Cadmium	736		0.7		
Cyanide (Total)	878		1.2		
Chromium (Total)	748		3.8		
Copper (Total)	752		2.3		
Nickel (Total)	824		3.0		
Lead (Total)	811		0.7		
Zinc (Total)	874		4.0		
B.O.D.	729	176	>300=ESSC		Ave. of 5; high=242
T.S.S.	857	409	>350=ESSC		Ave. of 6; high=658
FEM-T Oil & Grease (total)	913				
FEM-NP Oil & Grease (Non-Polar)	915		100		
FEM-P Oil & Grease (Polar)	914		500		
Arsenic	710		0.3		
Chlorinated Hydrocar	739	0.05	0.5		Grab on 8 Mar 94
Fluoride	797	2.4	30.0		Ave. of 5;high=5.7
Flash Pt. Closed Cup	916		>140 F		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas C. McCue Date: April 13/94

*Dates of Samples:	Fluoride:
3/2	5.7
3/9	.4
3/16	2.4
3/23	1.4
3/30	2.05

13-1A.fil
Rev. 3/20/92

Tom McCue

P 699 796 580

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to MS LINDA SCHEFFLER CITY OF PORTLAND - BUR. ENV. SERV	
Street & No. 1120 S.W. 5th. AVE - Rm. 400	
P.O., State & ZIP Code PORTLAND, OR 97204-1972	
Postage	$1.21
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$3.21
Postmark or Date	

PORTLAND, OR SAINT JOHNS STA. MAR 15 1994

PS Form **3800**, June 1990

SCOEPA00020216

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

☆U.S.G.P.O. 1990-270-153

PS Form **3800**, June 1990 *(Reverse)*

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

MS LINDA SCHEFFLER
CITY of PORTLAND - BUR. ENV. SERV.
1120 S.W. 5th. AVE. - Rm 400
PORTLAND, OR, 97204-1972

4a. Article Number

P699-796-580

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

16 MAR 92

5. Signature (Addressee)

6. Signature (Agent)

JHM

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

PS Form **3811**, December 1991 ☆ U.S.G.P.O.: 1992-307-530 **DOMESTIC RETURN RECEIPT**

SCOEPA00020218

UNITED STATES POSTAL SERVICE

PORTLAND, OR 97
MAR 16
PM
1994

Official Business

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

ATTN-Tom McCUE.

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

March 14, 1994 SER 010:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the February Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 March 1994
SAMPLING PERIOD: February 1994
SAMPLE CODE:
TODAY'S DATE: 10 March 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	February 1994	SAMPLE LOCATION>	OWW Parshall Flume	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				Within Limits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	182	>300=ESSC				Ave of 4; High=254
T.S.S.	857	309	>350=ESSC				Ave of 4; High=369
FEM-T Oil & Grease (total)	913						
FEM-NP Oil & Grease (Non-Polar)	915		100				
FEM-P Oil & Grease (Polar)	914		500				
Arsenic	710		0.3				
Chlorinated Hydrocar	739	< 0.05	0.5				Grab on
Fluoride	797	1.0	30.0				Ave. of 4; High=2.0
Flash Pt. Closed Cup	916		>140 F				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas G. McCue Date: 3/14/94

Dates of sample analysis:

			Fluoride:
February	2	1994	.5
February	9	1994	1.05
February	17	1994	2.0
February	23	1994	.7

13-1A.fil
3/20/92

TOM McCUE.

P 699 796 573

Certified Mail Receipt

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to LINDA SCHEFELER. CITY PORT. - BUR. ENVIR. SERV	
Street & No. 1120 S.W. 5th. AVE - Rm 400	
P.O., State & ZIP Code PORTLAND, OR 97204.	
Postage	$1.21
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, & Address of Delivery	
TOTAL Postage & Fees	$3.21
Postmark or Date	FEB 15 1994 PORTLAND, OREGON

PS Form 3800, June 1990

SCOEPA00020222

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to the back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

☆U.S.G.P.O. 1990-270-153

PS Form **3800**, June 1990 *(Reverse)*

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

MS LINDA SCHEFFLER.
CITY of PORTLAND-BUR. ENVIR. SERV
1120 S.W. 5TH AVE.-RM. 400
PORTLAND, OR. 97204

4a. Article Number

P699-796-573

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

16 FEB 1994

5. Signature (Addressee)

6. Signature (Agent)

Calvin E. Moody

8. Addressee's Address (Only if request and fee is paid)

PS Form **3811**, December 1991 ☆ U.S.G.P.O.: 1992-307-530 **DOMESTIC RETURN RECEIP**

SCOEPA00020224

UNITED STATES POSTAL SERVICE

Official Business

PENALTY FOR PRIVATE
USE TO AVOID PAYMENT
OF POSTAGE, $300

U.S. MAIL

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn - Tom McCue

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

February 11, 1994

SER 005:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the January Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

NDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 February '94
SAMPLING PERIOD: January, 1994
SAMPLE CODE:
TODAY'S DATE: 9 February '94

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☐ PERIODIC COMPLIANCE
☐ SPECIAL COMPIIANCE
☐

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	January 1994	SAMPLE LOCATION>	OWW Parshal Flume	SAMPLE TYPE >	X COMPOSITE ___ GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				Within Limits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	138	>300=ESSC				Ave. of 4; high=179
T.S.S.	857	303	>350=ESSC				Ave. of 4; high=426
FEM-T Oil & Grease (total)	913						
FEM-NP Oil & Grease (Non-Polar)	915		100				
FEM-P Oil & Grease (Polar)	914		500				
Arsenic	710		0.3				
Chlorinated Hydrocar	739	<0.25	0.5				Grab on 10 Jan'94
Fluoride	797	2.6	30.0				Ave of 4; high=8.5
Flash Pt. Closed Cup	916	-	>140 F				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas G. McCu Date: 2/11/94

13-1A.fil
Rev. 3/20/92

* Sample Dates: Fluoride:
1/5/94 8.5
1/12/94 1.1
1/20/94 .38
1/26/94 .48

Lorraine

P 431 369 967

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

UNITED STATES POSTAL SERVICE

Sent to LINDA SCHEFFLER CITY OF PORTLAND-BUR. ENVIR. SERV	
Street and No. 1120 S.W. 5th. AVE-Rm 400	
P.O., State and ZIP Code PORTLAND, OR. 97204-1972	
Postage	$1.90
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$3.90
Postmark or Date	JAN 14 1994 PORTLAND, OREGON

PS Form 3800, June 1991

SCOEPA00020228

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

105603-92-B-0226

PS Form **3800**, June 1991 *(Reverse)*

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

MS. LINDA SCHEFFLER
CITY OF PORTLAND,
BUREAU OF ENVIRONMENTAL SERV
1120 S.W. 5th. AVE - ROOM 400
PORTLAND, OR. 97204-1972

4a. Article Number

P431-369-969

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

DEPARTMENT OF ENVIRONMENTAL SERVICES
RECEIVED
JAN 19 1994
SOURCE CONTROL MANAGEMENT

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, November 1990 ☆U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

UNITED STATES POSTAL SERVICE

Official Business

U.S. MAIL

PENALTY FOR PRIVATE USE, $300

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N. W. FRONT AVENUE
P. O. BOX 83180
PORTLAND, OR. 97283-0180

Attn - Louanne Lynn

Wacker Siltronic Corporation **WACKER**

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

January 12, 1994

SER 001:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the December Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 January 1994
SAMPLING PERIOD: December 1993
SAMPLE CODE:
TODAY'S DATE: 12 January 1994

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	Dec. '93	SAMPLE LOCATION>	OWW Parshall Flume	SAMPLE TYPE >	X COMPOSITE — GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				Within Limits
Cadmium	736	0.0004	0.7				Composite 15 Dec'93
Cyanide (Total)	878		1.2				
Chromium (Total)	748	0.02	3.8				Composite 15 Dec'93
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874	0.1	4.0				Composite 15 Dec'93
B.O.D.	729	194	>300=ESSC				Ave. of 4; high=270
T.S.S.	857	347	>350=ESSC				Ave. of 5; high=672
FEM-T Oil & Grease (total)	913						
FEM-NP Oil & Grease (Non-Polar)	915		100				
FEM-P Oil & Grease (Polar)	914		500				
Arsenic	710	0.008	0.3				Composite 15 Dec'93
Chlorinated Hydrocar	739	0.25	0.5				Grab 7 Dec'93
Fluoride	797	4.9	30.0				**Ave.of 5;high=11.5
Flash Pt. Closed Cup	916		>140 F				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Thomas C. McGee Date: 1/14/94

* December 1, 9, 15, 22, 29 1993

** 12/1 = 0.16
12/9 = 0.23
12/15= 11.5
12/22= 8.2
12/29= 4.58

13-IR.fil
Rev. 5/20/92

TOM McCUE P 431 369 863

UNITED STATES POSTAL SERVICE

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to MS LINDA SCHEFFLER CITY PORTLAND - ENVIRON. SERV	
Street and No. 1120 S.W. 5th. AVE-Rm 400	
P.O., State and ZIP Code PORTLAND, OR. 97204	
Postage	$1.44
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$3.44
Postmark or Date	

PORTLAND, OREG. ST. JOHNS SAINT DEC 15 1993

PS Form 3800, June 1991

SCOEPA00020234

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry. 105603-92-B-0226

PS Form **3800**, June 1991 *(Reverse)*

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

MS LINDA SCHEFFLER
CITY of PORTLAND - BUR. ENVIRON. SERV.
1120 S.W. 5th. AVE - Rm 400
PORTLAND, OR. 97204

4a. Article Number

P431 269 863

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

16 DEC 1993

5. Signature (Addressee)

6. Signature (Agent)

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, November 1990 ☆ U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

UNITED STATES POSTAL SERVICE

Official Business

U.S. MAIL

PENALTY FOR PRIVATE USE, $300

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn - Tom McCUE

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 241-7598
TDD (503) 241-7519

December 14, 1993

SER 034:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the ~~December~~ November Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 December 93
SAMPLING PERIOD: November 1993
SAMPLE CODE:
TODAY'S DATE: 10 December 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
XX PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	Nov. 1993	SAMPLE LOCATION>	OWW Parshall Flume	SAMPLE TYPE >	_X COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	See*	DATE OF SAMPLE ANAYSIS >	See*

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		With Limits
Cadmium	736		0.7		
Cyanide (Total)	878		1.2		
Chromium (Total)	748		3.8		
Copper (Total)	752		2.3		
Nickel (Total)	824		3.0		
Lead (Total)	811		0.7		
Zinc (Total)	874		4.0		
B.O.D.	729	139	>300=ESSC		Ave. of 4; High=211
T.S.S.	857	299	>350=ESSC		Ave. of 4; High=400
FEM-T Oil & Grease (total)	913				
FEM-NP Oil & Grease (Non-Polar)	915		100		
FEM-P Oil & Grease (Polar)	914		500		
Arsenic	710		0.3		
Chlorinated Hydrocar	739	ND	0.5		
Fluoride	797	1.6	30.0		Ave. of 4; High=4.9
Flash Pt. Closed Cup	916		>140 F		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Thomas G. McGinn Date: 12/14/93

* November 3, 10, 17, 24, 1993.

Fluoride: 11/03 4.9
11/10 .77
11/17 .2
11/24 .5

.4 13-1A.fil
rev. 3/20/92

Sent 11/15/93 Chip

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

November 12, 1993

SER 031:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the October Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 November 93
SAMPLING PERIOD: October 93
SAMPLE CODE:
TODAY'S DATE: November 10, 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	October 1993	SAMPLE LOCATION>	OWW Parshal Flume	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		Within Limits
Cadmium	736		0.7		
Cyanide (Total)	878		1.2		
Chromium (Total)	748		3.8		
Copper (Total)	752		2.3		
Nickel (Total)	824		3.0		
Lead (Total)	811		0.7		
Zinc (Total)	874		4.0		
B.O.D.	729	147	>300=ESSC		Ave. of 5;high=189
T.S.S.	857	270	>350=ESSC		Ave. of 5;high=346
FEM-T Oil & Grease (total)	913				
FEM-NP Oil & Grease (Non-Polar)	915		100		
FEM-P Oil & Grease (Polar)	914		500		
Arsenic	710		0.3		
Chlorinated Hydrocar	739	ND	0.5		Grab
Fluoride	797	0.3	30.0		** Ave. of 5;high=0.6
Flash Pt. Closed Cup	916		>140 F		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: _____ Date: _____

* Sept. 29, Oct. 6, 13, 20, 27 1993

** 9/29 - .094
10/6 - .6
10/13 - .59
10/20 - .23
10/27 - .23

form 13-1A.fil
rev. 3/20/92

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 9-29-93 Incubator: 20 C Analyst: DM

Date/Time In: 9-29-93 / 3:00 Date/Time Out: 10-4-93 / 1245

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4T59	N/A	8.04		
1/N	5947	N/A		8.96	0.08

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	54	6	8.94		
1/N	45	6		1.31	177 mg/L

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3253 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)

Standard Methods, 17th Edition, [illegible] Paragraph 6.

3. Seed the QC bottles with 1 ml of DWW: 0

4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's) Seed Vol / Ave Vol)) (100) / 2

= ((8.94 - 1.31) - (____)(____ / ____)(~~100~~ 50)) / 2

= 354 / 2

= 177

0.55

4. Sodium Thiosulfate ($Na_2S_2O_3$):
Manufacturer: Fisher Other ____
Lot Number: B268
Date Opened: 9-22-93

Comments: ____

TJR 13 Mar 91
TJR 5 Jul 93 Revised

SCOEPA00020242

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 9-29-93 Incubator: 20 °C Analyst: DM

Date/Time In: 9-29-93 / 3:00 Date/Time Out: 10-4-93 1:45

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	66	2	8.87	4.72	
/N	49	8		~~7.39~~	155.62
OWW	71	5	9.03		
/N	92	5		6.04	179.4
OWW	77	3	9.07		
/N	84	3		7.39 ~~4.72~~	168
N					

Average OWW BOD, mg/L: 167.67

COMMENTS: ~~BOW~~ OWW - 2 - shots of Nitrification Inhibitor added to each bottle

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) x 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 22 C

TJR 17 Jan. 91
TJR 17 Jan. 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS [illegible]

Sample Date: 9-29-93 Oven Temp: 105 C Analyst: DM

Date In: 9-29-93 Time In/Out: ~~0945~~ 0945 1100

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
Blank #8	N/A	0.0865	0.0865	
Blank #6	N/A	0.0869	0.0869	
CE #2	200ml	0.0885	0.0871	7
CE #7	200ml	0.0879	0.0865	7
			CE Avg =	7mg/L
OWW "	50	0.0985	0.0872	226
OWW "	50	0.0988	0.0871	234
			OWW Avg =	230 mg/L

NOTES:

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) / Volume of Sample, ml × 1000

Reference: Standard Methods for the Examination of Water and Wastewater 1992 [illegible], Sect [illegible], Page 2-56.

TJR 21 Mar 87
TJR 21 Apr 93 Revised
DS 11 Aug 93 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 9-29-93 Sample Date: 9-29-93 Analyst: DM

Slope: -57.1 Ranges: -54 to -60 mV

Standards:

1.0 mg/L Lot #: 14DS Date Opened: 8-31-93

10.0 mg/L Lot #: 21DS Date Opened: 9-29-93

Data:

Sample	Fluoride, mg/L
CE (composite)	2.0
DNW (composite)	0.094

Quality Control: Spike each of the above samples with 1.1 ml of a 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	DNW
After Spike Concentration:	4.0 mg/L	2.0 mg/L
% Recovery:	100 %	~~91~~ % 95 % TJR

Comments:

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 94-09, 1971.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 10-6-93 Oven Temp: 107 C Analyst: DM

Date In: 10-6-93 Time In/Out: 0900 1015

Sample		Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
Blank	#3	N/A	0.0894	0.0895	
CE	0	200	0.0915	0.0898	8.5
CE	6	200	0.0887	0.0870	8.5
OWW	#7	50	0.1047	0.0867	360
OWW	#8	50	0.1033	0.0867	332
					346

NOTES:

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 87
TJR 21 Apr 93 Revised
CD 11 Aug 93 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Run Date: 10-6-93 Sample Date: 10-6-93 Analyst: DM

Slope: -56.2 (Range: -54 to -60 mV)

Standards:

1.0 mg/L Lot #: 10-1-93 Date Opened: 14 DS

10.0 mg/L Lot #: 9-29-93 Date Opened: 21 DS

Data:

Sample	Fluoride, mg/L
CE (composite)	~~0.8~~ 0.08
GWW (composite)	0.6

Quality Control: Spike each of the above samples with 0.1 ml of a 1000 mg/L Standard. The fluoride concentration should increase by 1.0 mg/L.

	CE	GWW
After Spike Concentration:	1.9 mg/L	2.6 mg/L
% Recovery:	~~89.5~~ 91 %	100 %

Comments:

References: 1. Standard Methods for the Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 94-09, 1991.

JGR 6 Apr 87
TGR 6 Apr 93 Revised

SCOEPA00020247

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Date: 10-6-93 Incubator: 20 C Analyst: DM

Date/Time In: 10-6-93 / 1210 Date/Time Out: ~~9~~ 10-11-93 1:00

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	5	8	8.83		
/N	83	5		5.03	142.5
OWW	49	5	8.97		
/N	48	5		6.44 ~~7.44~~	151.8
OWW	47	3	8.85		
/N	86	3		6.58	227

[illegible] 173.76 mg/L

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) x 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 17 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

[illegible]

[illegible]

[illegible] 10-6-93 [illegible] 20 [illegible] DM

[illegible] 10-6-93 12:10 [illegible] Out: 10-11-93 100

SAMPLE	[illegible] #	[illegible]	DOI, mg/L	[illegible] mg/L	BOD, mg/L
Blank	84	N/A	8.90		
/[illegible]	34	[illegible]		8.88	0.02

Notes: 1. The Blank (dilution [illegible]) should have a 50 Depletion ([illegible], mg/L [illegible] mg/L) [illegible] mg/L Reference Standard Methods, [illegible] [illegible] 52.0 B, para. 4b.

[illegible]	92	/6	8.78		
/[illegible]	45	/6		0.16	210

Notes: 1. [illegible] Glucose/Glutamic [illegible] Each [illegible] mg/L, Lot 3253 (Must divide number by 1 [illegible] Standard Methods QC is based on 100mg/L standard.)

2. QC BOD should be [illegible] mg/L +/- 30 mg/L (Reference [illegible])

3. [illegible] 25 ml [illegible] CE -

4. [illegible] (Sued Vol / [illegible] Vol) [illegible] 2

[illegible] 8.78 0.16 ~~25~~ 1.84 25 / ~~0.13~~ 200 / ~~[illegible]~~ 50

419 [illegible] / 2

210

192.31

0.23

5. Sodium Thiosulfate ([illegible]):

Manufacturer: [illegible] Other: [illegible]

Lot Number: B268

Date Opened: 9-22-93

Comments: [illegible]

BOD QC

11 Nov 93

SJR

WORKSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 10-13-93 Oven Temp: 106 C Analyst: DM

Date In: 10-13-93 Time In/Out: 0845 / 1015

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/l
CE #3	200	0.0888	0.0866	11
CE #8	200	0.0884	0.0868	8
			CE Average =	9.5
OWW #5	50	0.1008	0.0872	272
OWW #7	50	0.1010	0.0867	286
			OWW Avg =	279
Blank #6	N/A	0.0871	0.0871	

NOTES: H_2O_2 on CE = 26 mg/L

Calculations: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 87
TJR 21 Apr 93 Revised
DS 11 Aug 93 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 10-13-93 Sample Date: 10-13-93 Analyst: DM

Slope: -56.7 (Range: -54 to [illegible] mV)

Standards:

1.0 mg/L: Lot #: 14DS Date Opened: 10-13-93

10.0 mg/L: Lot #: 21DS Date Opened: 10-1-93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.4
OWW (composite)	0.59

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride Concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	3.5 mg/L	2.63 mg/L
% Recovery:	105 %	102 %

Comments:

References: 1. Standard Methods for the Examination of Water And Wastewater, 1991, 18th Edition, Section #500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 97
TJR 6 Apr 97 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 10-13-93 Incubation: 20 C Analyst: DM

Date/Time In: 10-13-93 / 1:55 Date/Time Out: 10-18-93 / 2:00

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
[illegible]	71	3	8.77		
/N	49	3		5.84	109.875
OWW	93	3	8.74		
/N	5	3		7.19 ~~7.83~~ DM	93
OWW	92	3	8.74		
/N	31	3		7.83	91

Average OWW BOD, mg/L: 97.95 mg/L

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) × 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 16 C

[illegible] 91
[illegible] 92 Revision

SCOEPA00020252

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 10-13-93 Incubator: 20 C Analyst: DM

Date/Time In: 10-13-93 / 1:55 Date/Time Out: 10-18-93 / 2:00

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	86	N/A	~~8.58~~ 8.78		
✓N	34	N/A		8.69	0.09

Notes: 1. The Blank (dilution H2O) should have a DO Depletion. (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. [illegible]

QC	25	~~3~~ 6	8.66		
✓N	83	~~4~~ 6		1.99	158

Notes: 1. QC Glucose/Glutamic [illegible] Hach, 300mg/L, Lot _____ (Must [illegible] number by 2 since Standard Methods QC is based on [illegible]mg/L standard.)
2. QC BOD should be 198 mg/L [illegible] (Reference [illegible]
3. Green [illegible]
4. QC BOD = ([illegible]

= 8.66 1.99 (1.80 1 5.33) .50
= 316.66
= 158.33

0.3368
0.34

5. [illegible]

B268
9-22-93

BOD QC
18 oct 93
SJR

SCOEPA00020253

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 10-20-93 Sample Date: 10-20-93 Analyst: DM

Slope: 59.0 (Range: -54 to -60 mV)

Standards:

[illegible] mg/L: Lot #: 14DS Date Opened: 10-14-93

10.0 mg/L: Lot #: 21DS Date Opened: 10-13-93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.4
GWW (composite)	0.23

[illegible] Spike [illegible] 1000 mg/L [illegible] should [illegible]

After Spike Concentration	3.6	2.5
% Recovery	110	114

Comments:

[illegible] Association of Water And [illegible] 10th Edition, Section 4300-[illegible]

[illegible] Research Manual for the Fluoride Electrode, Model 9309[illegible], 1991.

TJR 6 Apr [illegible]
TJR 6 Apr 93 Revised

SCOEPA00020254

[illegible]

[illegible] SUSPENDED SOLIDS [illegible]

[illegible] Date: 10-20-93 Oven Temp: 106 C [illegible] DM

Date In: 10-20-93 Time In/Out: 0926 / 1055

[illegible]	Vol, ml	Gross Wt, g	Tare Wt, g	[illegible]
CE #2	200	0.0936	0.0913	11.5
CE #5	200	0.0937	0.0914	11.5
			CE Avg =	11.5 mg/L
OWW #7	50	0.0954	0.0~~866~~ 864	180
OWW #8	50	0.1002	0.0911	182
			OWW Avg =	181 mg/L
Blank #11	N/A	0.0909	0.0910	

NOTES:

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 10th Edition, Section [illegible], page 2-56.

TJR 21 Mar 97
TJR 2[illegible] Apr 97 Revised
[illegible] 11 Aug 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 10-20-93 Incubator: 19.5 C Analyst: DM

Date/Time In: 10-20-93 / 1:45 Date/Time Out: 10-25-93 / 1:45

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
[illegible]	41	[illegible]	8.48		
/	51	5		5.70	104.25
OWW	86	5	8.68		
/ N	47	5		6.87	108.6
OWW	49	5	8.76		
/ N	40	5		7.88	88
/ N					

Average OWW BOD, mg/L: 106

COMMENTS: pH = 9.34 → 7.40 w/ H_2SO_4 1:20 dil with 5.25 N

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) × 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: ____ C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

PENCHSHEET
[illegible] OXYGEN DEMAND

[illegible]

10-20-93 [illegible] 19-5 [illegible] Dm

[illegible] 10-20-93 1:45 [illegible] 10-25-93 1:45

[illegible]	[illegible]	VOL. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	84	[illegible]	8.70			
/	~~8~~ 34	[illegible]		8.65	0.05	

[illegible] Standard [illegible] 17th Edition, Section 32.0 B, part. 4b.

[illegible]	31	~~/~~ 6	8.66		
/	83	~~/~~ 6		1.26	176

Notes: [illegible] Acid Mach. [illegible] 3253 [illegible] divide number by 2 since Standard Methods QC is [illegible] on 150mg/l [illegible]

[illegible]

[illegible] QC [illegible] ( )

[illegible] = ((8.66 1.26) - (1.82) 1 5.33)) ~~[illegible]~~ 50

= 353 0.34

= 176.5

[illegible] Thiosulfate [illegible]

[illegible] Other ~~0.3418~~

[illegible] B268

Date Opened: [illegible]

Comments: [illegible]

BOD QC
25 Nov 93
[illegible]

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 10-27-9995 Incubation: 20 [illegible] Analyst: DY

Date/Time In: 10-27-9995 12:15 Date/Time Out: [illegible] 1200

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	DOP, mg/L
OWW	49	8	9.06		
/N	55	8		3.78	198
OWW	47	5	~~9.06~~ 8.88		
/N	83	5		5.70	190.8
OWW	38	3	8.87		
/N	48	3		7.08	179
/N					
/N					

[illegible] 184.24

COMMENTS: pH → 9.8 → ↓ 7.22 w/ H_2SO_4 1:100 dil.

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) x [illegible]

Volume of Sample

NOTES: 1. A check mark in front of the [illegible] added.
2. Sample temperature:

[illegible]

SCOEPA00020258

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 10-27-93 Sample Date: 10-27-93 Analyst: DM

Slope: -56.4 (Range: [illegible] to 60 mV)

Standards:

1.0 mg/L Lot #: 14 DS Date Spaced: 10-14-93

10.0 mg/L Lot #: 21 DS Date [illegible]: 10-13-93

Data:

Sample	Fluoride mg/L
CE (composite)	1.7
OWW (composite)	0.23

[illegible] 1000 mg/L Standard. The fluoride concentration should increase by [illegible] mg/L.

	CE	OWW
After Spike Concentration	3.7 mg/L	2.4 mg/L
% Recovery	100 %	109 %

Comments: _____

Reference: 1. Standard Methods for the Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1981.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

SCOEPA00020259

ENCLOSURE

[illegible]

[illegible] 10-27-93 [illegible] 105 [illegible] pm

[illegible] 10-27-93 [illegible] 1000 1130

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
~~C~~4	CE	200	0.0912	0.0897	7.5
5	CE	200	0.0920	0.0910	5
				CE Avg =	6.25
6	OWW	100	0.1216	0.0898	318
7	OWW	100	0.1214	0.0899	315
				OWW Avg =	316.5

[illegible]

Calculation: TSS, mg L = Gross Wt, mg - Tare Wt, mg / [illegible]

Volume of Sample, ml

[illegible] Methods for the Examination of Water and Wastewater, 1992, 18th Edition, [illegible] page 2 [illegible]

[illegible]
TJR 21 Apr 93 Revised
SS 1[illegible] Aug 93 Revised

SCOEPA00020260

DEMUNSHEET
BIOCHEMICAL OXYGEN DEMAND

[illegible] / QUALITY CONTROL

Date: 10-27-[illegible] Incubator: 20.0 C Analyst: DM

Date/Time In: 10-27-93 / 1215 Date/Time Out: 11-1-93 / 1200

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	34	[illegible]	8.88		
/[illegible]	51	[illegible]		8.86	0.02

[illegible] Standard [illegible]

QC	4	/6	8.90		
/	92	/6		1.41	171

[illegible] Acid: Hach, 300mg/L, Lot _____
[illegible] (Vide number by 2 since Standard Methods QC is [illegible] 150mg/L standard.)

[illegible] should be 198 mg/L +/- 30 mg/L. (Reference [illegible]

3. Seed the QC bottles with 1 ml of GWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
   = ((8.90 - 1.41) - (3.42)(1 / 5.33))(~~100~~ 50)
   = 342.5 / 2 0.64 3gR
   = 171.25

4. Sodium Thiosulfate (Na2S2O3):
   Manufacturer: Ricca Other _____
   Lot Number: B268
   Date Opened: 10-20-93

Comments: _____

BOD QC
1 Nov 93
3gR

SCOEPA00020261

Tom McCue

P 431 369 849

UNITED STATES POSTAL SERVICE

Receipt for Certified Mail

No Insurance Coverage Provided
Do not use for International Mail
(See Reverse)

Sent to LINDA SCHEFFLER CITY OF PORTLAND	
Street and No. 1120 S.W. 5th AVE - Rm	
P.O., State and ZIP Code PORTLAND, OR. 97204	
Postage	$ .98
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	2.50
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	$5.48
Postmark or Date	

PS Form 3800, June 1991

STICK POSTAGE STAMPS TO ARTICLE TO COVER FIRST CLASS POSTAGE, CERTIFIED MAIL FEE, AND CHARGES FOR ANY SELECTED OPTIONAL SERVICES (see front).

1. If you want this receipt postmarked, stick the gummed stub to the right of the return address leaving the receipt attached and present the article at a post office service window or hand it to your rural carrier (no extra charge).

2. If you do not want this receipt postmarked, stick the gummed stub to the right of the return address of the article, date, detach and retain the receipt, and mail the article.

3. If you want a return receipt, write the certified mail number and your name and address on a return receipt card, Form 3811, and attach it to the front of the article by means of the gummed ends if space permits. Otherwise, affix to back of article. Endorse front of article **RETURN RECEIPT REQUESTED** adjacent to the number.

4. If you want delivery restricted to the addressee, or to an authorized agent of the addressee, endorse **RESTRICTED DELIVERY** on the front of the article.

5. Enter fees for the services requested in the appropriate spaces on the front of this receipt. If return receipt is requested, check the applicable blocks in item 1 of Form 3811.

6. Save this receipt and present it if you make inquiry.

105603-92-B-0226

PS Form **3800**, June 1991 *(Reverse)*

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

MS LINDA SCHEFFLER
CITY OF PORTLAND.
1120 SW. 5th AVE - Rm 400
PORTLAND, OR. 97204-1972

4a. Article Number

P431-369-849

4b. Service Type

☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery

26 OCT 1993

5. Signature (Addressee)

6. Signature (Agent)

Joyce A. Morrow

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, November 1990 ☆U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

UNITED STATES POSTAL SERVICE

Official Business

U.S. MAIL

PENALTY FOR PRIVATE USE, $300

Print your name, address and ZIP Code here

WACKER SILTRONIC CORPORATION
7200 N.W. FRONT AVENUE
P.O. BOX 83180
PORTLAND, OR 97283-0180

Attn: Tom McCue

Chip

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

October 12, 1993

SER 029:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the September Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 October 1993
SAMPLING PERIOD: September 1993
SAMPLE CODE:
TODAY'S DATE: 11 October 1993

REPORT TYPE (CHECK ONE):
- ☐ BASELINE MONITORING
- ☒ PERIODIC COMPLIANCE
- ☐ SPECIAL COMPLIANCE
- ☐

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	Sept. 1993	SAMPLE LOCATION>	OWW Parshall Flume	SAMPLE TYPE >	_x_ COMPOSITE ___ GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843	–	5.5-11.5 S.U.		Within Limits
Cadmium	736	–	0.7		
Cyanide (Total)	878	–	1.2		
Chromium (Total)	748	–	3.8		
Copper (Total)	752	–	2.3		
Nickel (Total)	824	–	3.0		
Lead (Total)	811	–	0.7		
Zinc (Total)	874	–	4.0		
B.O.D.	729	152	>300=ESSC		Ave of 4;high=182
T.S.S.	857	304	>350=ESSC		Ave of 4;high=343
FEM-T Oil & Grease (total)	913	–			
FEM-NP Oil & Grease (Non-Polar)	915	–	100		
FEM-P Oil & Grease (Polar)	914	–	500		
Arsenic	710	–	0.3		
Chlorinated Hydrocar	739	< 0.25	0.5		
Fluoride	797	0.3	30.0		**Ave of 4;high=0.6
Flash Pt. Closed Cup	916	–	>140 F		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORP. BY:
Signature: Thomas C. McCue Date: 10/12/93

* Sept. 1, 8, 15, 22, 1993

** 9/1 - 0.10
9/8 - 0.14
9/15- 0.6
9/22- 0.5

13-1A.fil
rev. 3/20/92

Tom

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052
SER 027:CB

September 13, 1993

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the August Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 September 1993
SAMPLING PERIOD: August 1993
SAMPLE CODE:
TODAY'S DATE: 13 September 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
Bureau of Environmental Services
RECEIVED
SEP 15 1993
SOURCE CONTROL MANAGEMENT
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	August 1993	SAMPLE LOCATION>	OWW Parshall Flume	SAMPLE TYPE >	X COMPOSITE — GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		Within Limits
Cadmium	736	< 0.0002	0.7		
Cyanide (Total)	878	—	1.2		
Chromium (Total)	748	< 0.12	3.8		
Copper (Total)	752	—	2.3		
Nickel (Total)	824	—	3.0		
Lead (Total)	811	—	0.7		
Zinc (Total)	874	0.3	4.0		
B.O.D.	729	163	>300=ESSC		Ave. of 4: High=185
T.S.S.	857	305	>350=ESSC		Ave. of 4: High=383
FEM-T Oil & Grease (total)	913	16			
FEM-NP Oil & Grease (Non-Polar)	915	—	100		
FEM-P Oil & Grease (Polar)	914	—	500		
Arsenic	710	< 0.024	0.3		
Chlorinated Hydrocar	739	< 0.250	0.5		Grab
Fluoride	797	0.45	30.0		** Ave. of 4: High=0.8
Flash Pt. Closed Cup	916	—	>140 F		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: Thomas C. McCue Date: 9/13/93

* Dates received at lab:
Aug. 4, 11, 18, 25, 1993

** 8/4 = .21 mg/L
8/11= .39 mg/L
8/18= .41 mg/L
8/25= .76 mg/L

form 13-13.fil
rev. 3/20/92

SCOEPA00020269

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

August 12, 1993

SER 021:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the July Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 August 93
SAMPLING PERIOD: July, 1993
SAMPLE CODE: ~~10 August 1993~~
TODAY'S DATE:

REPORT TYPE (CHECK ONE):
- ☐ BASELINE MONITORING
- XX PERIODIC COMPLIANCE
- ☐ SPECIAL COMPLIANCE
- ☐ _____

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	July 1993	SAMPLE LOCATION>	OWW P.F.	SAMPLE TYPE >	X COMPOSITE ___ GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				Within Limits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	152	>300=ESSC				~~Ave. of 4;High =177~~
T.S.S.	857	386	>350=ESSC				~~Ave. of 4;High =557~~
FEM-T Oil & Grease (total)	913						
FEM-NP Oil & Grease (Non-Polar)	915		100				
FEM-P Oil & Grease (Polar)	914		500				
Arsenic	710		0.3				
Chlorinated Hydrocar	739	<0.25	0.5				
Fluoride	797	0.8	30.0				Ave. of 4;High=1.6**
Flash Pt. Closed Cup	916		>140 F				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Thomas G. McGee Date: 8/12/93

* 7/7, 7/14, 7/23, 7/28 1993

** 7/7 = 1.6
7/14= 0.53
7/23= 0.9
7/28= 0.28

Form 13-13.fil
Rev. 3/20/92

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

July 12, 1993

SER 017:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the June Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 July 93
SAMPLING PERIOD: June 1993
SAMPLE CODE:
TODAY'S DATE: 9 July 93

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * * *

SAMPLE DATE >	June 1993	SAMPLE LOCATION>	OWW P.F.	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				Within Limits
Cadmium	736	< 0.05	0.7				24 Hour Composite
Cyanide (Total)	878		1.2				
Chromium (Total)	748	< 0.05	3.8				24 Hour Composite
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874	< 0.05	4.0				24 Hour Composite
B.O.D.	729	224	>300=ESSC				~~Ave. of 5; High=327~~
T.S.S.	857	364	>350=ESSC				Ave. of 5; High=431
FEM-T Oil & Grease (total)	913						
FEM-NP Oil & Grease (Non-Polar)	915		100				
FEM-P Oil & Grease (Polar)	914		500				
Arsenic	710	< 0.004	0.3				24 Hour Composite
Chlorinated Hydrocar	739	< 0.25	0.5				Grab Sample
Fluoride	797	0.6	30.0				Ave of 5 **
Flash Pt. Closed Cup	916		>140 F				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:

Signature: _____ Date: _____

* Sample Analysis Dates: June 2,9,16,23,30 1993.

** 6/30 = 0.16
6/23 = 0.30
6/16 = 0.75
6/9 = 0.8
6/2 = 0.8

form 13-1A.fil
rev. 3/20/92

Enclosure (1)

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

June 11, 1993

SER 013:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

RECEIVED
JUN 14 1993
WACKER SILTRONIC
Environmental Health & Safety

Dear Ms. Scheffler:

Enclosed is the May Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 June 1993
SAMPLING PERIOD: May 1993
SAMPLE CODE:
TODAY'S DATE: 9 June 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	May 1993	SAMPLE LOCATION>	OWW Parshall Flume	SAMPLE TYPE >	x COMPOSITE — GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843	—	5.5-11.5 S.U.		Within Limits
Cadmium	736	-	0.7		
Cyanide (Total)	878	-	1.2		
Chromium (Total)	748	-	3.8		
Copper (Total)	752	✓	2.3		
Nickel (Total)	824	-	3.0		
Lead (Total)	811	-	0.7		
Zinc (Total)	874	-	4.0		
B.O.D.	729	206	>300=ESSC		Ave of 2; high=224
T.S.S.	857	401	>350=ESSC		Ave of 3; high=506
FEM-T Oil & Grease (total)	913	-			
FEM-NP Oil & Grease (Non-Polar)	915	-	100		
FEM-P Oil & Grease (Polar)	914	-	500		
Arsenic	710	-	0.3		
Chlorinated Hydrocar	739	< 0.25	0.5		
Fluoride	797	0.5	30.0		Ave of 3; high=0.9
Flash Pt. Closed Cup	916	>140F	>140 F		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Thomas C. McCu Date: 6/11/93

* Dates: May 7, 21, 28 1993

form 13-1A.fil
rev. 3/20/92

Enclosure (1)

METHOD: Volatile Organic Compounds per EPA 8240
Results in ug/L (ppb)

Analyte	93-36	Detection Limit
Acetone	690	50
Acrolein	ND	500
Acrylonitrile	ND	250
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone	ND	38
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
Dibromomethane	ND	10
1,4-Dichloro-2-butene	ND	250
Dichlorobenzenes (total)	ND	10
Dichlorodifluoromethane	ND	25
1,1-Dichloroethane	ND	10
1,2-Dichloroethane	ND	10
1,1-Dichloroethene	ND	10
cis-1,2-Dichloroethene	ND	10
trans-1,2-Dichloroethene	ND	10
1,2-Dichloropropane	ND	10
cis-1,3-Dichloropropene	ND	10
trans-1,3-Dichloropropene	ND	10
Ethyl Methacrylate	ND	10
Ethylbenzene	ND	10
2-Hexanone	ND	25
Iodomethane	ND	10
4-Methyl-2-pentanone	ND	25
Methylene Chloride	ND	25
Styrene	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1-Trichloroethane	ND	10
1,1,2-Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
1,2,3-Trichloropropane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	25
Xylenes (total)	ND	10

Date Prepped: 05/06/93
Date Analyzed: 05/06/93

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

Surrogate Recovery (%)	93-36	Control Limit
4-Bromofluorobenzene	103	86-115
1,2,-Dichloroethane-d4	92	76-114
Toluene-d8	102	88-110

METHOD: Volatile Organic Compounds per EPA 8240
Results in ug/L (ppb)

Analyte	Method Blank	Detection Limit
Acetone	ND	10
Acrolein	ND	100
Acrylonitrile	ND	50
Benzene	ND	2.0
Bromodichloromethane	ND	2.0
Bromoform	ND	2.0
Bromomethane	ND	10
2-Butanone	ND	7.5
Carbon Disulfide	ND	2.0
Carbon Tetrachloride	ND	2.0
Chlorobenzene	ND	2.0
Chloroethane	ND	10
Chloroform	ND	2.0
Chloromethane	ND	10
Dibromochloromethane	ND	2.0
Dibromomethane	ND	2.0
1,4-Dichloro-2-butene	ND	50
Dichlorobenzenes (total)	ND	2.0
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0
1,1-Dichloroethene	ND	2.0
cis-1,2-Dichloroethene	ND	2.0
trans-1,2-Dichloroethene	ND	2.0
1,2-Dichloropropane	ND	2.0
cis-1,3-Dichloropropene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0
Ethyl Methacrylate	ND	2.0
Ethylbenzene	ND	2.0
2-Hexanone	ND	5.0
Iodomethane	ND	2.0
4-Methyl-2-pentanone	ND	5.0
Methylene Chloride	ND	5.0
Styrene	ND	2.0
1,1,2,2-Tetrachloroethane	ND	2.0
Tetrachloroethene	ND	2.0
Toluene	ND	2.0
1,1,1-Trichloroethane	ND	2.0
1,1,2-Trichloroethane	ND	2.0
Trichloroethene	ND	2.0
Trichlorofluoromethane	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Vinyl Acetate	ND	10
Vinyl Chloride	ND	5.0
Xylenes (total)	ND	2.0

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644- 0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY Wacker Siltronic Corp.
PROJECT NAME –
LAB PROJECT NUMBER 93-1294
PROJECT MANAGER Tom Rothschild
PROJECT NUMBER –
COLLECTED BY Tom Rothschild
P.O. NUMBER 37596
RUSH ☐ YES ☒ NO

COMMENTS

SAMPLES RECEIVED AT 4°C ☒ YES ☐ NO
SAMPLES IN APPROPRIATE CONTAINERS ☒ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☒ NO
PROVIDE PRELIMINARY FAX RESULTS ☒ YES ☐ NO
PROVIDE FINAL FAX RESULTS ☐ YES ☒ NO

PEL NO	SAMPLE ID	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	Flash Point	Oil/Grease 1) Polar 2) Non-Polar		Total Dissolved Solids (TDS)	REMARKS
	93-35	4 May 93	0945	C E (grab)		X		2								X										
	93-36	4 May 93	0945	C W (grab)		X		4									X					X	X			
	93-37	4 May 93	0945	C E (grab)		X		1																	X	

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
T. Rothschild	Wacker Siltronic	4 May 93 / 1000	T. [illegible]	WACKER
T. [illegible]	WACKER	5-4-93 / 11:40	[illegible]	PEL 5-4-93 / 1140
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

SCOEPA00020279

BENCHSHEET

TOTAL SUSPENDED SOLIDS

Sample Date: 5 May 93 Oven Temp: 104 °C Analyst: JJR

Date In: 5 May 93 Time In/Out: 0821 / 0956

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/l
1. Blank	NA	0.0859	0.0860	-
2. CE	200	0.0901	0.0857	7.0
3. CE	200	0.0897	0.0853	7.0
			Average CE TSS	7.0 (✓)
4. GWW	50	0.1020	0.0871	298
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

Notes:

Calculation: TSS, mg/l = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

References: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 97
JJR 21 Apr 93 Revised

Enclosure (3)

WORKSHEET

USE IDF ANALYSIS

Test Date: 5 May 93 Sample Date: 5 May 93 Analyst: JJR

Slope: -57.7 Range: 54 to -60 mV

Standards:

1.0 mg/L: Lot #: 25 ON Date Opened: 16 Apr 93

10.0 mg/L: Lot #: 01 QO Date Opened: 16 Apr 93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.5 (✓)
OWW (composite)	0.6

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	3.6 mg/L	2.6 mg/L
% Recovery:	105 %	100 %

Comments:

References:
1. Standard Methods for The Examination of Water and Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS

Sample Date: 19 May 93 Oven Temp: 105 C Analyst: JJR

Date In: 19 May 93 Time In/Out: 0940 / 1128

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0857	0.0857	–
2. CE	200	0.0892	0.0873	9.5
3. CE	200	0.0875	0.0853	11.0
			Average CE TSS	~~10.8~~ 10.2 (✓)
4. OWW	50	0.1129	0.0876	506 (✓)
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

Notes: Composite Samples. OWW is split with City on 18 May 93

Calculation: TSS, mg/L = $\frac{(\text{Gross Wt, mg} - \text{Tare Wt, mg}) \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater. 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 93
TJR 21 Apr 93 Revised

[illegible]

FLUORIDE ANALYSIS

Test Date: 19 May 93 Sample Date: 19 May 93 Analyst: JJR

Slope: -58.9 Range: [illegible] to [illegible]

Standards:

Low mg/L Lot #: 25 DN Date Opened: 16 ~~May~~ Apr 93

High mg/L Lot #: 01 DC Date Opened: 16 Apr 93

Data:

Sample	Fluoride, mg/L
CE (composite)	3.9 (✓)
OWW (composite)	0.12

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	6.0 mg/L	2.1 mg/L
% Recovery:	105 %	100 %

Comments:

References: 1. Standard Methods for The Examination of Water and Wastewater. 1992, 18th Edition, Section 1500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 19 May93 Incubator: 19.5 C Analyst: SJR

Date/Time In: 19 May93 / 11.54 Date/Time Out: 24 May93 1328

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	39	8	8.21		
✓N	40	8		3.01	195
OWW	47	5	8.23		
✓N	48	5		5.05	191
OWW	49	3	8.40		
✓N	54	3		6.58	182
N					
N					

Average OWW BOD, mg/L: 189

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 20 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
24 May93
SJR

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 19 May 93 Incubator: 19.5 C Analyst: JgR

Date/Time In: 19 May 93 / 1154 Date/Time Out: 24 May 93 / 1328

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.37		
✓ N	5	N/A		8.31	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.27		
✓ N	18	3		4.32	165

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3074 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 18th Edition, 1992, Section 5210, Paragraph 6.
3. Seed the QC bottles with 1 ml of OWW: ⊗
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.27 - 4.32) - (3.40)(1 / 5.33))(100)
= 331 / 2
= 165

0.64

4. Sodium Thiosulfate (Na2S2O3):
Manufacturer: Ricca Other -
Lot Number: M158
Date Opened: 19 Apr 93

Comments:

BOD QC
24 May 93
JgR

Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 28 May 93 Incubator: 20.0 C Analyst: JJR

Date/Time In 28 May 93 / 1057 Date/Time Out: 2 Jun 93 1119

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.71		
✓N	5	N/A		8.69	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.63		
✓N	18	3		3.97	

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3034 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 18th Edition, 1992, Section 5210, Paragraph 6.
3. Seed the QC bottles with 1 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.63 - 3.97) - (4.10)(1 / 5.33))(100)
= 389 / 2
= 194

0.77

4. Sodium Thiosulfate (Na2S2O3):
Manufacturer: Ricca Other _____
Lot Number: M158
Date Opened: 14 Apr 93

Comments: _____

BOD QC
2 Jun 93
JJR

SCOEPA00020286

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 28 May 93 Incubator: 20 C Analyst: JJP

Date/Time In: 28 May 93 / 1057 Date/Time Out: 25 May 93 / 1119

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	39	8	~~7~~ 8 1.60		
✓N	40	8		2.07	245
OWW	44	5	8.59		
✓N	47	5		4.86	224
OWW	48	3	8.65		
✓N	49	3		6.61	204
N					
N					

Average OWW BOD, mg/L: 224

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 19 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
25 May 93
JJP

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 26 May 93 Oven Temp: 108 C Analyst: Jyl

Date In: 26 May 93 Time In/Out: 0827 / 1012

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0857	0.0858	—
2. CE	200	0.0890	0.0864	13.0
3. CE	200	0.0879	0.0852	13.5
			Average CE TSS	13.2 (✓)
4. OWW	50	0.1088	0.0889	398
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

Notes:

Calculations: TSS, mg/L = $\frac{(\text{Gross Wt, mg} - \text{Tare Wt, mg}) \times 1000}{\text{Volume of Sample, ml}}$

References: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 D, page 2-56.

TJR 21 Mar 07
TJR 21 Apr 93 Revised

WORKSHEET

FLUORIDE ANALYSIS

Run Date: 21 May 93 Sample Date: 21 May 93 Analyst: JJR

Slope: -58.9 (Range: [illegible])

Standards:

1.0 mg/L: Lot #: 25DN Date Opened: 16 Apr 93

10.0 mg/L Lot #: 0100 Date Opened: 16 Apr 93

Data:

Sample	Fluoride, mg/L
CE (composite)	3.1 (J)
OWW (composite)	0.9

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	5.1 mg/L	2.9 mg/L
% Recovery:	100 %	100 %

Comments:

References: 1. Standard Methods For The Examination of Water and Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET

[illegible] SUSPENDED SOLIDS [illegible]

Sample Date: 28 May 93 Oven Temp: 104 [illegible] Analyst: BJR

Date In: 28 May 93 Time In/Out: 1152 1415

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0857	0.0857	—
2. CE	200	0.0920	0.0880	20.0
3. CE	200	0.0915	0.0880	17.5
			Average CE TSS	18.7 (✓)
4. OWW	50	0.1072	0.0866	412
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

Notes: Composite. Alum residual last 24 hours < 20 mg/L

Calculation: TSS, mg/L = $\frac{(\text{Gross Wt, mg} - \text{Tare Wt, mg}) \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1992, 18th Edition, Section 2540 [illegible] page 2-56.

[illegible] 21 Mar 93
[illegible] 21 Apr 93 Revised

SCOEPA00020290

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

May 13, 1993

SER 010:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the April Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

Enclosures in IDR File

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: May 15, 1993
SAMPLING PERIOD: April 1993
SAMPLE CODE:
TODAY'S DATE: May 13, 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
XX PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	April 1993	SAMPLE LOCATION>	OWW Discharge	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				Within Limits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	249	>300=ESSC				Ave of 5; high=325
T.S.S.	857	368	>350=ESSC				Ave of 5; high=400
FEM-T Oil & Grease (total)	913	27					
FEM-NP Oil & Grease (Non-Polar)	915	1	100				Grab 6 April'93
FEM-P Oil & Grease (Polar)	914	26	500				Grab 6 April'93
Arsenic	710		0.3				
Chlorinated Hydrocar	739	0.25	0.5				Grab 6 April'93
Fluoride	797	1.11	30.0				Ave of 4; high=1.8
Flash Pt. Closed Cup	916	Exting @ 130	>140 F				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Thomas G. McLu
Date: 5/14/93

* Refer to enclosures (2) & (3)

form 13-1R.fil
rev. 3/20/92

ENCLOSURE (1)

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

REC'D APR 16 1993
JDR

April 13, 1993

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attn: Tom Rothschild

Re: P.O. #37596
PEL #93-0989

Enclosed is the lab report for your samples which were received on April 6, 1993.

I. Sample Description

Two Water Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Project Manager

Rob May
Project Manager

Enclosure (2)

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

METHOD: Oil & Grease per EPA 413.2
Polar/Non-Polar Hydrocarbons per EPA 418.1
Results in mg/L (ppm)

Analyte	93-33	Detection Limit
Oil & Grease	27	0.50
Non-Polar Hydrocarbons	0.78	0.50
Polar Hydrocarbons by Difference	26	--
Date Prepped:	04/07/93	
Date Analyzed:	04/08/93	

Analyte	Method Blank	Detection Limit
Oil & Grease	ND	0.50
Non-Polar Hydrocarbons	ND	0.50
Polar Hydrocarbons by Difference	ND	--

PACIFIC
ENVIRONMENTAL
LABORATORY INC

METHOD: Flashpoint (PMCC) per EPA 1010
Results in degrees F

Analyte	93-33
Flame Extinguished at	130
No Flash to	146
Date Prepped:	04/07/93
Date Analyzed:	04/07/93

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

METHOD: Halogenated Volatile Organic Compounds per EPA 8010
Results in ug/L (ppb)

Analyte	93-34	Detection Limit
Benzyl Chloride	ND	0.50
Bromodichloromethane	ND	0.50
Bromoform	ND	0.50
Bromomethane	ND	1.0
Carbon Tetrachloride	ND	0.50
Chlorobenzene	ND	0.50
Chloroethane	ND	1.0
2-Chloroethyl Vinyl Ether	ND	0.50
Chloroform	9.0	0.50
Chloromethane	ND	1.0
Dibromochloromethane	ND	0.50
1,2-Dibromoethane	ND	0.50
Dibromomethane	ND	0.50
1,2-Dichlorobenzene	ND	0.50
1,3-Dichlorobenzene	ND	0.50
1,4-Dichlorobenzene	ND	0.50
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	0.50
1,2-Dichloroethane	ND	0.50
1,1-Dichloroethene	ND	0.50
cis-1,2-Dichloroethene	ND	0.50
trans-1,2,-Dichloroethene	ND	0.50
1,2-Dichloropropane	ND	0.50
cis-1,3-Dichloropropene	ND	0.50
trans-1,3-Dichloropropene	ND	0.50
Methylene chloride	ND	0.50
1,1,1,2-Tetrachloroethane	ND	0.50
1,1,2,2-Tetrachloroethane/ Bromobenzene	ND	0.50
Tetrachloroethene	ND	0.50
1,1,1-Trichloroethane	ND	0.50
1,1,2-Trichloroethane	ND	0.50
Trichloroethene	ND	0.50
Trichlorofluoromethane	ND	1.0
1,2,3-Trichloropropane	ND	0.50
Vinyl chloride	ND	1.0
Date Prepped:	04/08/93	
Date Analyzed:	04/08/93	

Surrogate Recovery (%)		Control Limit
Bromochloromethane	94	75-135
4-Bromofluorobenzene	97	50-130

METHOD: Halogenated Volatile Organic Compounds per EPA 8010
Results in ug/L (ppb)

Analyte	Method Blank	Detection Limit
Benzyl Chloride	ND	0.50
Bromodichloromethane	ND	0.50
Bromoform	ND	0.50
Bromomethane	ND	1.0
Carbon Tetrachloride	ND	0.50
Chlorobenzene	ND	0.50
Chloroethane	ND	1.0
2-Chloroethyl Vinyl Ether	ND	0.50
Chloroform	ND	0.50
Chloromethane	ND	1.0
Dibromochloromethane	ND	0.50
1,2-Dibromoethane	ND	0.50
Dibromomethane	ND	0.50
1,2-Dichlorobenzene	ND	0.50
1,3-Dichlorobenzene	ND	0.50
1,4-Dichlorobenzene	ND	0.50
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	0.50
1,2-Dichloroethane	ND	0.50
1,1-Dichloroethene	ND	0.50
cis-1,2-Dichloroethene	ND	0.50
trans-1,2,-Dichloroethene	ND	0.50
1,2-Dichloropropane	ND	0.50
cis-1,3-Dichloropropene	ND	0.50
trans-1,3-Dichloropropene	ND	0.50
Methylene chloride	ND	0.50
1,1,1,2-Tetrachloroethane	ND	0.50
1,1,2,2-Tetrachloroethane/ Bromobenzene	ND	0.50
Tetrachloroethene	ND	0.50
1,1,1-Trichloroethane	ND	0.50
1,1,2-Trichloroethane	ND	0.50
Trichloroethene	ND	0.50
Trichlorofluoromethane	ND	1.0
1,2,3-Trichloropropane	ND	0.50
Vinyl chloride	ND	1.0

METHOD: Volatile Organic Compounds per EPA 8240
Results in ug/L (ppb)

Analyte	93-33	Detection Limit
Acetone	1,700	50
Acrolein	ND	500
Acrylonitrile	ND	250
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone	ND	38
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
Dibromomethane	ND	10
1,4-Dichloro-2-butene	ND	250
Dichlorobenzenes (total)	ND	10
Dichlorodifluoromethane	ND	25
1,1-Dichloroethane	ND	10
1,2-Dichloroethane	ND	10
1,1-Dichloroethene	ND	10
cis-1,2-Dichloroethene	ND	10
trans-1,2-Dichloroethene	ND	10
1,2-Dichloropropane	ND	10
cis-1,3-Dichloropropene	ND	10
trans-1,3-Dichloropropene	ND	10
Ethyl Methacrylate	ND	10
Ethylbenzene	ND	10
2-Hexanone	ND	25
Iodomethane	ND	10
4-Methyl-2-pentanone	ND	25
Methylene Chloride	ND	25
Styrene	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1-Trichloroethane	ND	10
1,1,2-Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
1,2,3-Trichloropropane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	25
Xylenes (total)	ND	10

Date Prepped: 04/08/93
Date Analyzed: 04/08/93

Surrogate Recovery (%)	93-33	Control Limit
4-Bromofluorobenzene	97	86-115
1,2,-Dichloroethane-d4	95	76-114
Toluene-d8	101	88-110

METHOD: Volatile Organic Compounds per EPA 8240
Results in ug/L (ppb)

Analyte	Method Blank	Detection Limit
Acetone	ND	10
Acrolein	ND	100
Acrylonitrile	ND	50
Benzene	ND	2.0
Bromodichloromethane	ND	2.0
Bromoform	ND	2.0
Bromomethane	ND	10
2-Butanone	ND	7.5
Carbon Disulfide	ND	2.0
Carbon Tetrachloride	ND	2.0
Chlorobenzene	ND	2.0
Chloroethane	ND	10
Chloroform	ND	2.0
Chloromethane	ND	10
Dibromochloromethane	ND	2.0
Dibromomethane	ND	2.0
1,4-Dichloro-2-butene	ND	50
Dichlorobenzenes (total)	ND	2.0
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0
1,1-Dichloroethene	ND	2.0
cis-1,2-Dichloroethene	ND	2.0
trans-1,2-Dichloroethene	ND	2.0
1,2-Dichloropropane	ND	2.0
cis-1,3-Dichloropropene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0
Ethyl Methacrylate	ND	2.0
Ethylbenzene	ND	2.0
2-Hexanone	ND	5.0
Iodomethane	ND	2.0
4-Methyl-2-pentanone	ND	5.0
Methylene Chloride	ND	5.0
Styrene	ND	2.0
1,1,2,2-Tetrachloroethane	ND	2.0
Tetrachloroethene	ND	2.0
Toluene	ND	2.0
1,1,1-Trichloroethane	ND	2.0
1,1,2-Trichloroethane	ND	2.0
Trichloroethene	ND	2.0
Trichlorofluoromethane	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Vinyl Acetate	ND	10
Vinyl Chloride	ND	5.0
Xylenes (total)	ND	2.0

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 7 Apr 93 Incubator: 20 C Analyst: TJR

Date/Time In: 7 Apr 93 / 1058 Date/Time Out: 12 Apr 93 / 1115

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.70		
✓N	39	8		2.03	250
OWW	40	5	8.68		
✓N	47	5		5.19	209
OWW	48	3	8.67		
✓N	51	3		6.38	229
N					
N					

Average OWW BOD, mg/L: 230

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 17 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

Monthly Average (mg/L)
4/1 – 181
4/7 – 230
4/14 – 268
4/22 – 325
4/28 – 242
1246 ÷ 5 = 249

OWW BOD's
12 Apr 93
TJR

3.70 +
-
.67 *
.77 x
3.0 ÷
8. =
250.13 *
250.13 +M
.68 +
-
3.49 *
3.49 x
60. =
2.9.40 *
2.9.40 +M
8.67 +
-
.29 *
.29 x
1.0. =
29. [illegible] *
29. 0 +M
6 9.53 ÷M
3 8.53 ÷
3. =
29.51 *

Enclosure (3)
Pg 1 of 18

SCOEPA00020301

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 7 Apr 93 Incubator: 20 C Analyst: TJR

Date/Time In: 7 Apr 93 / 1058 Date/Time Out: 12 Apr 93 / 1115

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.75		
/N	5	N/A		8.74	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.66		
/N	18	3		4.89	150

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 1 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.66 - 4.89) - (4.15 x (1 / 5.33))(100)
= 299 / 2
= 150

0.78

4. Date Na2S2O3 bottle opened: 10 Mar 93 Ricca Lot H267

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
12 Apr 93
TJR

.57 +
3.49 +
.20 +
12.45 *

12.45 ÷
3. =
4.15 *

4.15 ÷
5.3 =
0.78 *

3.6 +
- -
2.9 *

2.9 x
10. =
29.0 *

29.0 ÷
14. =
148.50 *

SCOEPA00020302

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 14 Apr 93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 14 Apr 93 / 1102 Date/Time Out: 19 Apr 93 / 1100

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.85		
✓N	39	8		1.81	264
OWW	47	5	8.86		
✓N	48	5		4.16	282
OWW	49	3	9.01		
✓N	51	3		6.44	257
N					
N					

Average OWW BOD, mg/L: 268

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
19 Apr 93
TJR

3

SCOEPA00020303

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 14 Apr93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 14 Apr93 / 1102 Date/Time Out: 19 Apr93 / 1100

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.92		
✓N	5	N/A		8.94	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L -- DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.80		
✓N	18	3		4.88	152

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 1 ml of OWW: Y
4. QC BOD -- ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.80 - 4.88) - (4.77)(1 / 5.33))(100)
= 303 / 2
= 152

0.89

4. Date Na2S2O3 bottle opened: 14 Apr93 Ricca Lot m158

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
19 Apr93
TJR

7.05 +
4.70 +
2.57 +
14.32 *

14.32 ÷
3. =
4.7 *

4.7 +
5.3 =
0.89 *

.20 +
- -
.03 *

.03 ×
1.0 =
3. *

3.0 ÷
2. =
1.50 *

4

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 22 Apr 93 Incubator: 20.5C Analyst: TJR

Date/Time In: 22 Apr 93 / 1026 Date/Time Out: 27 Apr 93 / 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.72		
✓N	39	8		0.07	324
OWW	40	5	8.73		
✓N	47	5		2.84	353
OWW	48	3	8.82		
✓N	49	3		5.84	298
N					
N					

Average OWW BOD, mg/L: 325

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 18 C

TJR 13 Jun 9:
TJR 17 Mar 92 Revised

OWW BOD's
27 Apr 93
TJR

8.72 +
- 8.55 *
8.55 x
3.0 ÷
8. =
324.33 *
324.33 +M
8.73 +
- 5.89 *
3.89 x
60. =
53.40 *
53.40 +M
.22 ÷
- 2.93 *
2.93 x
1.0 =
293. 0 *
298.0 +M
975.73 ÷M
9.5.73 ÷
3. =
3.5.26 *
0. *

SCOEPA00020305

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 22 Apr 93 Incubator: 20.5C Analyst: TJR

Date/Time In: 22 Apr 93 / 1021 Date/Time Out: 27 Apr 93 / 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.82		
✓N	5	N/A		8.86	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.77		
✓N	18	3		4.41	163

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (1) (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 1 ml of OWW: 6
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.77 - 4.41) - (5.84)(1 / 5.33))(100)
= 326 / 2
= 163
1.10

4. Date Na2S2O3 bottle opened: 14 Apr 93 Ricca Lot m158

TJR 13 Nov 91
TJR 8 Apr 92 Revised

(1) Hach Glucose/Glutamic Acid not refrigerated for last 7 days.

BOD QC
27 Apr 93
TJR

3.55 +
5.39 +
2.93 +
17.52 *
17.52 ÷
3. =
5.84 *
5.54 ÷
5.3 =
.10 *
3.7 +
5.26 *
3.23 ×
10. =
326. ÷ *
326. 0 +
3. =
163. 0 *

SCOEPA00020306

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 28 Apr 93 Incubator: 20.6 C Analyst: TJR

Date/Time In: 28 Apr 93/ 1034 Date/Time Out: 3 May 93/ 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.77		
✓N	39	8		1.84	260
OWW	40	5	8.79		
✓N	47	5		4.71	245
OWW	48	3	8.80		
✓N	49	3		6.58	222
N					
N					

Average OWW BOD, mg/L: 242

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 18 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD
3 May 93
TJR

8.77 +
-
6.93 *
5.93 x
3.0 ÷
8. =
259. 3 *
259. 3 +M
8.79 +
-
4.03 *
4.03 x
60. =
2 4.30 *
2 4.30 +M
.30 +
-
. 2 *
. 2 x
1 0. =
2. 3 *
2. 3 +M
72 .58 ÷
72 .58 ÷
3. =
4 .2 *

7

SCOEPA00020307

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 28 Apr 93 Incubator: 20.0 C Analyst: TJR

Date/Time In: 28 Apr 93 / 1034 Date/Time Out: 3 May 93 / 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.83		
✓N	5	N/A		8.83	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.73		
✓N	18	3		4.58	166

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3074 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with (1) ml of DWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.73 - 4.58) - (4.41)(1 / 5.33))(100)
= 332 / 2
= 166

0.83

4. Date Na2S2O3 bottle opened: 14 Apr 93 Ricca Lot M185

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
3 May 93
TJR

6.93 +
4.08 +
.2 ÷
1[illegible].23 *
1 .23 ÷
[illegible] =
.41 *
.41 ÷
5.3 =
0.83 *
3.73 +
- -
.32 *
x

8

SCOEPA00020308

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 1 Apr 93 Incubator: 19.5 C Analyst: TJR

Date/Time In: 1 Apr 93 / 1028 Date/Time Out: ? / 0958

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	25	8	8.47		
✓N	31	8		3.87	172
OWW	39	5	8.49		
✓N	40	5		5.62	172
OWW	48	3	8.59		
✓N	51	3		6.62	197
N					
N					

Average OWW BOD, mg/L: 181

COMMENTS: OWW 24 hour composite sample. Follow-up test to 31 Mar 93 test.

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 16 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
6 Apr 93
TJR

8.47 +
-
4.60 *

4.60 x
3.0 ÷
3. =
172.50 *

172.50 +M
8.49 +
-
2.37 *

2.37 x
60. =
17.20 *

17.20 +M
8.59 +
-
1.97 *

1.97 x
1.0 =
197. *

197. 0 +M
541.7 ÷
3. =
180.37 *

9

SCOEPA00020309

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 7 Apr 93 Oven Temp: 105 C Analyst: TJR

Date In: 7 Apr 93 Time In/Out: 0835 / 1000

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0865	0.0866	–
2. CE	200	0.0905	0.0868	18.5
3. CE	200	0.0922	0.0887	17.5
			Average CE TSS	18.0 (✓)
4. OWW	50	0.1063	0.0877	372
In 1023 out 1248 5. CE grab 1018	200	0.0882	0.0869	6.5
6. CE grab 1010	200	0.0899	0.0887	6.0
7. OWW grab 1010	50	~~0.0957~~ 0.1037	0.0874	326
8.				

>6.2 (✓)

Notes: Large rate of filtering between 2/3 and 5/6

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) x 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

Monthly AVE TSS (OWW mg/L)
4/7 – 310
4/7 – 372
4/14 – 400
4/22 – 366
4/28 – 394
1842 ÷ 5 = 368

SCOEPA00020310

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 14 Apr 93 Oven Temp: 104 C Analyst: TJR

Date In: 14 Apr 93 Time In/Out: 0823 /

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0871	0.0872	—
2. CE	200	0.0891	0.0881	5.0
3. CE	200	0.0867	0.0857	5.0
			Average CE TSS	5.0
4. OWW	50	0.1057	0.0857	400
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 97
TJR 14 Oct 92 Revised

SCOEPA00020311

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 22 Apr 93 Oven Temp: 105 C Analyst: TJR

Date In: 22 Apr 93 Time In/Out: 0832 / 0958

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0872	0.0873	-
2. CE	200	0.0902	0.0874	14.0
3. CE	200	0.0903	0.0875	14.0
			Average CE TSS	14.0 (✓)
4. OWW	50	0.1052	0.0869	366
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{(\text{Gross Wt, mg} - \text{Tare Wt, mg}) \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

SCOEPA00020312

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 28 Apr 93 Oven Temp: 105 C Analyst: JJR

Date In: 28 Apr 93 Time In/Out: 0823 /

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0871	0.0872	-
2. CE	200	0.0880	0.0859	10.5
3. CE	200	0.0904	0.0879	12.5
			Average CE TSS	11.5 (✓)
4. OWW	50	0.1071	0.0874	394
5. CE	200	0.0898	0.0876	11.0
6. CE	200	0.0918	0.0896	11.0
7.				
8.				

11.0 (✓)

Notes: #5 and #6 CE 24-hour composite samples from the Parshall Flume.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

SCOEPA00020313

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 1 Apr 93 Oven Temp: 105 C Analyst: TJR

Date In: 1 Apr 93 Time In/Out: 1006 / 1120

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA			
2. CE	200			
3. CE	200			
			Average Ch TSS	
5/4. OWW	90	0.1026	0.0871	310
4.				
6.				
7.				
8.				

Notes: Follow-up test to 31 Mar 93 test.

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, section 2540 D, page 3-79

TJR 21 Mar 87
TJR 14 Oct 92 Revised

SCOEPA00020314

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7 Apr 93 Sample Date: 7 Apr 93 Analyst: TJR

Slope: -58.5 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 25 DN Date Opened: 6 Apr 93

10.0 mg/L: Lot #: 09 DL Date Opened: 6 Apr 93

Data:

Sample	Fluoride, mg/L
CE (composite)	2.4
OWW (composite)	0.14

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	4.6 mg/L	2.3 mg/L
% Recovery:	110 %	110 %

Comments: 1st slope = -60.1 mV. F⁻ electrode was stored in pH 7 buffer.
used backup F⁻ probe (US standard)

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

Monthly Ave (mg/L)
4/7 - .14
4/14 - 1.8
4/22 - 1.5
4/28 - 1.0
4.44 ÷ 4 = 1.11

SCOEPA00020315

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 14 Apr 93 Sample Date: 14 Apr 93 Analyst: TJR

Slope: -58.5 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: Notebook Date Opened: -

10.0 mg/L: Lot #: - Date Opened: -

Data:

Sample	Fluoride, mg/L
CE (composite)	2.2
OWW (composite)	1.8

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	4.5 mg/L	4.1 mg/L
% Recovery:	115 %	115 %

Comments: 1. Standards: 1 mg/L → 50ml of 1000 mg/L in 50ml of H_2O
10 mg/L → 500ml of 1000 mg/L in 50ml of H_2O

References:
1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

SCOEPA00020316

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 22 Apr 93 Sample Date: 22 Apr 93 Analyst: JJR

Slope: -58.3 (Range: -54 to 60 mV)

Standards:

1.0 mg/L: Lot #: 25DN Date Opened: 16 Apr 93

10.0 mg/L: Lot #: 01DO Date Opened: 16 Apr 93

Data:

Sample	Fluorice, mg/L
CE (composite)	1.5 (1)
OWW (composite)	1.5
CE, 21 Apr 93 comp.	1.8 ~~1.8~~ (1)

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW	CE, 21 Apr 9
After Spike Concentration:	3.4 mg/L	3.6 mg/L	3.7
% Recovery:	95 %	105 %	95

Comments: New F^- probe.

References:
1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

SCOEPA00020317

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 28 Apr 93 Sample Date: 28 Apr 93 Analyst: TJR

Slope: -59.0 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 25 ON Date Opened: 16 Apr 93

10.0 mg/L: Lot #: 01 DO Date Opened: 16 Apr 93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.8 (✓)
OWW (composite)	1.0

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	3.8 mg/L	3.1 mg/L
% Recovery:	100 %	105 %

Comments:

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 7 Apr 93 Incubator: 20 C Analyst: TJR

Date/Time In: 7 Apr 93 / 1058 Date/Time Out: 12 Apr 93 / 1115

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.70		
✓N	39	8		2.03	250
OWW	40	5	8.68		
✓N	47	5		5.19	209
OWW	48	3	8.67		
✓N	51	3		6.38	229
N					
N					

Average OWW BOD, mg/L: 230

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 17 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

Monthly Average (mg/L)
4/1 – 181
4/7 – 230
4/14 – 268
4/22 – 325
4/28 – 242
1246 ÷ 5 = 249

OWW BOD's
12 Apr 93
TJR

3.70 +
-
.67 *
.37 x
300. ÷
8. =
250.13 *
250.13 +M
8.68 +
-
3.49 *
3.49 x
60. =
209.40 *
209.40 +M
8.67 +
-
.29 *
.29 x
100. =
29. *
29.0 +M
6 8.53 ◊M
6 8.53 ÷
3. =
29.51 *

Enclosure (3)
Pg 1 of 18

SCOEPA00020319

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 7 Apr 93 Incubator: 20 C Analyst: TJR

Date/Time In: 7 Apr 93 / 1058 Date/Time Out: 12 Apr 93 / 1115

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.75		
✓N	5	N/A		8.74	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L – DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.66		
✓N	18	3		4.89	150

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/– 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 1 ml of OWW: Y
4. QC BOD = ((DOI – DOF) – (Ave DOI's – DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.66 – 4.89) – (4.15)(1 / 5.33))(100)
= 299 / 2
= 150 0.78

4. Date Na2S2O3 bottle opened: 10 Mar 93 Ricca Lot H267

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
12 Apr 93
TJR

.67 +
3.49 +
.29 +
12.45 *
12.45 ÷
3. =
4.15 *
4.15 ÷
5.33 =
0.78 *
8.66 +
[illegible] –
2.9 *
2.3 x
10. =
29.0 *
29.0 ÷
2. =
145.50 *

SCOEPA00020320

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 14 Apr 92 3 Incubator: 20.5 C Analyst: SJR

Date/Time In: 14 Apr 93 / 1102 Date/Time Out: 19 Apr 93 / 1100

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.85		
✓N	39	8		1.81	264
OWW	47	5	8.86		
✓N	48	5		4.16	282
OWW	49	3	9.01		
✓N	51	3		6.44	257
N					
N					

Average OWW BOD, mg/L: 268

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
19 Apr 93
SJR

3

SCOEPA00020321

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 14 Apr 93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 14 Apr 93 / 1102 Date/Time Out: 19 Apr 93 / 1100

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.92		
✓N	5	N/A		8.94	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L – DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.80		
✓N	18	3		4.88	152

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 1 ml of OWW: Y
4. QC BOD = ((DOI – DOF) – (Ave DOI's – DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.80 – 4.88) – (4.77)(1 / 5.33))(100)
= 303 / 2
= 152

0.81

4. Date Na2S2O3 bottle opened: 14 Apr 93 Ricca Lot M158

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
19 Apr 93
TJR

7.05 +
4.70 +
2.57 +
14.32 *

14.32 ÷
3. =
4. 7 *

4. 7 ÷
5. 3 =
0.99 *

.93 +

.03 *

.05 ×
1 0. =
5. 0 *

5. 0 ÷
2. =
1.50 *

4

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 22 Apr 93 Incubator: 20.5C Analyst: TJR

Date/Time In: 22 Apr 93 / 1026 Date/Time Out: 27 Apr 93 / 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.72		
✓N	39	8		0.07	324
OWW	40	5	8.73		
✓N	47	5		2.84	353
OWW	48	3	8.82		
✓N	49	3		5.84	298
N					
N					

Average OWW BOD, mg/L: 325

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 18 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
27 Apr 93
TJR

8.72 + 8.65 * - 8.65 x 3.0 ÷ 8. = 324.33 * 324.33 +M 8.73 + 5.89 * - 5.89 x 60. = 353.40 * 353.40 +M .82 ÷ 2.93 * - 2.93 x 1.0 = 298.0 * 298.0 +M 9.5.73 ◊M 9.5.73 ÷ 3. = 3.5.26 * 0. *

5

SCOEPA00020323

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 22 Apr 93 Incubator: 20.5C Analyst: TJR

Date/Time In: 22 Apr 93 / 1021 Date/Time Out: 27 Apr 93 / 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.82		
✓N	5	N/A		8.86	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.77		
✓N	18	3		4.41	163

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (1) (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 1 ml of OWW: 1
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.77 - 4.41) - (5.84)(1 / 5.33))(100)
= 326 / 2
= 163
1.10

4. Date Na2S2O3 bottle opened: 14 Apr 93 Ricca Lot m158

TJR 13 Nov 91
TJR 8 Apr 92 Revised

(1) Hach Glucose/Glutamic Acid not refrigerated for last 7 days.

BOD QC
27 Apr 93
TJR

8.65 +
5.39 +
2.93 +
17.52 *
17.52 ÷
3. =
5.84 *
5.94 ÷
5.13 =
.10 *
3.7 +
3.26 *
3.23 ×
10. =
326.0 *
326.0 ÷
2. =
163.0 *

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 28 Apr 93 Incubator: 20.6 C Analyst: TJR

Date/Time In: 28 Apr 93/ 1034 Date/Time Out: 3 May 93/ 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.77		
✓N	39	8		1.84	260
OWW	40	5	8.79		
✓N	47	5		4.71	245
OWW	48	3	8.80		
✓N	49	3		6.58	222
N					
N					

Average OWW BOD, mg/L: 242

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 18 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD
3 May 93
TJR

8.77 +
- 6.93 *
6.93 x
300 ÷
8 =
259.3 *
259.3 +M
8.79 +
- 4.03 *
4.03 x
60 =
2 4.30 *
2 4.30 +M
.30 ÷
- .2 *
.2 x
1 0 =
2 0 *
2 0 +M
72 .68 ◊M
72 .68 ÷
3 =
4 .25 *

7

SCOEPA00020325

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 28 Apr 93 Incubator: 20.0 C Analyst: TJR

Date/Time In: 28 Apr 93 / 1034 Date/Time Out: 3 May 93 / 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.83		
✓N	5	N/A		8.83	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.73		
✓N	18	3		4.58	166

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 3074 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with (1) ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.73 - 4.58) - (4.41)(1 / 5.33))(100)
= 332 / 2
= 166

0.83

4. Date Na2S2O3 bottle opened: 14 Apr 93 Ricca Lot M185

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
3 May 93
TJR

6.93 +
4.02 +
.2 +
13.23 *
17.23 ÷
3. =
4.41 *
4.41 ÷
5. 3 =
0.83 *
3.73 +
- -
.32 *
x

8

SCOEPA00020326

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 1 Apr 93 Incubator: 19.5 C Analyst: TJR

Date/Time In: 1 Apr 93 / 1028 Date/Time Out: ? / 0958

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	25	8	8.47		
✓N	31	8		3.87	172
OWW	39	5	8.49		
✓N	40	5		5.62	172
OWW	48	3	8.59		
✓N	51	3		6.62	197
N					
N					

Average OWW BOD, mg/L: 181

COMMENTS: OWW 24 hour composite sample. Follow-up test to 31 Mar 93 test.

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 16 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
6 Apr 93
TJR

8.47 +
−
4.60 *

4.60 ×
3.0 ÷
8. =
172.50 *

172.50 +M
8.49 +
−
2.87 *

2.87 ×
60. =
17[illegible].20 *

17[illegible].20 +M
8.59 +
−
1.97 *

1.97 ×
1[illegible]0. =
197.[illegible] *

197.0 +M
541.70 ÷M

541.70 ÷
3. =
180.57 *

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 1 Apr 93 Oven Temp: 105 C Analyst: TJR

Date In: 1 Apr 93 Time In/Out: 1006 / 1120

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA			
2. CE	200			
3. CE	200			
			Average CE TSS	
5 ~~4~~. OWW	50	0.1026	0.0871	310
~~5~~.				
6.				
7.				
8.				

Notes: Follow-up test to 31 Mar 93 test.

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

SCOEPA00020328

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7 Apr 93 Sample Date: 7 Apr 93 Analyst: JJR

Slope: -58.5 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 25 DN Date Opened: 6 Apr 93

10.0 mg/L: Lot #: 09 DL Date Opened: 6 Apr 93

Data:

Sample	Fluoride, mg/L
CE (composite)	2.4
OWW (composite)	0.14

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	4.6 mg/L	2.3 mg/L
% Recovery:	110 %	110 %

Comments: 1st slope = -60.1 mV. F⁻ electrode was stored in pH 7 buffer.
used backup F⁻ probe (US standard)

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

Monthly Ave (mg/L)
4/7 - .14
4/14 - 1.8
4/22 - 1.5
4/28 - 1.0
4.44 ÷ 4 = 1.11

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 14 Apr 93 Sample Date: 14 Apr 93 Analyst: TJR

Slope: -58.5 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: Note 1 Date Opened: -

10.0 mg/L: Lot #: - Date Opened: -

Data:

Sample	Fluoride, mg/L
CE (composite)	2.2
OWW (composite)	1.8

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	4.5 mg/L	4.1 mg/L
% Recovery:	115 %	115 %

Comments: 1. Standards: 1 mg/L → 50ul of 1000 mg/L in 50ml of H_2O
10 mg/L → 500ul of 1000 mg/L in 50ml of H_2O

References:
1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

SCOEPA00020330

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 22 Apr 93 Sample Date: 22 Apr 93 Analyst: JJR

Slope: -58.3 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 25DN Date Opened: 16 Apr 93

10.0 mg/L: Lot #: 01DO Date Opened: 16 Apr 93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.5 (✓)
OWW (composite)	1.5
CE, 21 Apr 93 comp.	1.8 ~~1.8~~ (✓)

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW	CE, 21 Apr 9
After Spike Concentration:	3.4 mg/L	3.6 mg/L	3.7
% Recovery:	95 %	105 %	95

Comments: New F⁻ probe.

References:
1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

SCOEPA00020331

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 28 Apr 93 Sample Date: 28 Apr 93 Analyst: JJR

Slope: -59.0 (Range: -54 to -60 mV)

Standards:

1.0 mg/L: Lot #: 25 DN Date Opened: 16 Apr 93

10.0 mg/L: Lot #: 01 DO Date Opened: 16 Apr 93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.8 (✓)
OWW (composite)	1.0

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	3.8 mg/L	3.1 mg/L
% Recovery:	100 %	105 %

Comments:

References: 1. Standard Methods For The Examination of Water And Wastewater, 1992, 18th Edition, Section 4500-F C, page 4-61.
2. Orion Research Manual for the Fluoride Electrode, Model 940900, 1991.

TJR 6 Apr 87
TJR 6 Apr 93 Revised

Chip

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

May 13, 1993

SER 010:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the April Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data

cc: John Pittman
Tom Rothschild

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

April 12, 1993

SER 003:CB

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

Dear Ms. Scheffler:

Enclosed is the March Industrial Discharge Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters.

If you have any questions, please contact Chip Bloomer at 243-2020 ext 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure:
(1) Industrial Discharge Report
(2) Pacific Environmental Laboratory analysis
(3) Bench sheet data for 3/3, 3/10, 3/17, 3/24 and 3/31

cc: John Pittman
Tom Rothschild

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 April 1993
SAMPLING PERIOD: March 1993
SAMPLE CODE:
TODAY'S DATE: 9 April 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
XX PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	March 1993	SAMPLE LOCATION>	OWW Discharge	SAMPLE TYPE >	X COMPOSITE — GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843	—	5.5-11.5 S.U.				Within Limits
Cadmium	736	—	0.7				
Cyanide (Total)	878	—	1.2				
Chromium (Total)	748	—	3.8				
Copper (Total)	752	—	2.3				
Nickel (Total)	824	—	3.0				
Lead (Total)	811	—	0.7				
Zinc (Total)	874	—	4.0				
B.O.D.	729	231	>300=ESSC				Ave of 5; High=997
T.S.S.	857	361	>350=ESSC				Ave of 5; High-484
FEM-T Oil & Grease (total)	913	—	—				
FEM-NP Oil & Grease (Non-Polar)	915	0.7	100				Grab 2 March 93
FEM-P Oil & Grease (Polar)	914	59	500				Grab 2 March 93
Arsenic	710	—	0.3				
Chlorinated Hydrocar	739	< 0.25	0.5				Grab 2 March 93
Fluoride	797	1.2	30.0				Ave of 5; High=4.0
Flash Pt. Closed Cup	916	Exting. @ 72	>140 F				Grab 2 March 93

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WACKER SILTRONIC CORPORATION BY:
Signature: Thomas C. McCue Date: 4/12/93

* Sample dates: March 3, 10, 17, 24,31, 1993

form 13-1A.fil
rev. 3/20/92

Enclosure (1)

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

REC'D MAR 11 1993 #1
3JR

March 8, 1993

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attn: Tom Rothschild

Re: P.O. #37596
PEL #93-0611A

Enclosed is the lab report for your samples which were received on March 2, 1993.

I. Sample Description

Two Water Samples
One Liquid Sample

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Project Manager

Rob May
Project Manager

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

Encl (2)

METHOD: Oil & Grease, polar/non-polar, per EPA 413.2, EPA 418.1
Results in mg/L (ppm)

Analyte	93-29	Detection Limit
Oil & Grease	60	0.50
Non-Polar Hydrocarbons	0.71	0.50
Polar Hydrocarbons by Difference	59	--
Date Prepped:	03/03/93	
Date Analyzed:	03/04/93	

Analyte	Method Blank	Detection Limit
Oil & Grease	ND	0.50
Non-Polar Hydrocarbons	ND	0.50
Polar Hydrocarbons by Difference	ND	--

METHOD: Flashpoint (PMCC) per EPA 1010
Results in Degrees F

Analyte	93-29
Flame Extinguished at	72
No flash to	144
Date Prepped:	03/03/93
Date Analyzed:	03/03/93

METHOD: Volatile Organic Compounds per EPA 8240
Results in ug/L (ppb)

Analyte	93-29	Detection Limit
Acetone	2,500	50
Acrolein	ND	500
Acrylonitrile	ND	250
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone	ND	38
Carbon Disulfide	ND	10
Carbon Tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
Dibromomethane	ND	10
1,4-Dichloro-2-butene	ND	250
Dichlorobenzenes (total)	ND	10
Dichlorodifluoromethane	ND	25
1,1-Dichloroethane	ND	10
1,2-Dichloroethane	ND	10
1,1-Dichloroethene	ND	10
cis-1,2-Dichloroethene	ND	10
trans-1,2-Dichloroethene	ND	10
1,2-Dichloropropane	ND	10
cis-1,3-Dichloropropene	ND	10
trans-1,3-Dichloropropene	ND	10
Ethyl Methacrylate	ND	10
Ethylbenzene	ND	10
2-Hexanone	ND	25
Iodomethane	ND	10
4-Methyl-2-pentanone	ND	25
Methylene Chloride	ND	25
Styrene	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1-Trichloroethane	ND	10
1,1,2-Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
1,2,3-Trichloropropane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	25
Xylenes (total)	ND	10

Date Prepped: 03/03/93
Date Analyzed: 03/03/93

Surrogate Recovery (%)	93-29	Control Limit
4-Bromofluorobenzene	97	86-115
1,2,-Dichloroethane-d4	92	76-114
Toluene-d8	96	88-110

METHOD: Volatile Organic Compounds per EPA 8240
Results in ug/L (ppb)

Analyte	Method Blank	Detection Limit
Acetone	ND	10
Acrolein	ND	100
Acrylonitrile	ND	50
Benzene	ND	2.0
Bromodichloromethane	ND	2.0
Bromoform	ND	2.0
Bromomethane	ND	10
2-Butanone	ND	7.5
Carbon Disulfide	ND	2.0
Carbon Tetrachloride	ND	2.0
Chlorobenzene	ND	2.0
Chloroethane	ND	10
Chloroform	ND	2.0
Chloromethane	ND	10
Dibromochloromethane	ND	2.0
Dibromomethane	ND	2.0
1,4-Dichloro-2-butene	ND	50
Dichlorobenzenes (total)	ND	2.0
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0
1,1-Dichloroethene	ND	2.0
cis-1,2-Dichloroethene	ND	2.0
trans-1,2-Dichloroethene	ND	2.0
1,2-Dichloropropane	ND	2.0
cis-1,3-Dichloropropene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0
Ethyl Methacrylate	ND	2.0
Ethylbenzene	ND	2.0
2-Hexanone	ND	5.0
Iodomethane	ND	2.0
4-Methyl-2-pentanone	ND	5.0
Methylene Chloride	ND	5.0
Styrene	ND	2.0
1,1,2,2-Tetrachloroethane	ND	2.0
Tetrachloroethene	ND	2.0
Toluene	ND	2.0
1,1,1-Trichloroethane	ND	2.0
1,1,2-Trichloroethane	ND	2.0
Trichloroethene	ND	2.0
Trichlorofluoromethane	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Vinyl Acetate	ND	10
Vinyl Chloride	ND	5.0
Xylenes (total)	ND	2.0

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 3 Mar 93 Oven Temp: 105 C Analyst: TJR

Date In: 3 Mar 93 Time In/Out: 0837 / 1006

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0844	0.0845	—
2. CE	200	0.0908	0.0880	14.0
3. CE	200	0.0905	0.0877	14.0
			Average CE TSS	14.0
4. OWW	50	0.1089	0.0847	484
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

Encl (3)

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 3 Mar93 Sample Date: 3 Mar93 Analyst: JgR

Slope: -59.0 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 27 Jan93

10.0 mg/L: Lot #: 24 DI Date Opened: 27 Jan93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.5
OWW (composite)	0.2

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	3.3 mg/L	2.3 mg/L
% Recovery:	90 %	105 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 10 Feb 93 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 4 Mar 93 Oven Temp: 104 C Analyst: TJR

Date In: 5 Mar 93 Time In/Out: 1006 / 1254

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	—	—	—
2. CE	200	0.0902	0.0874	14.0
3. CE	200	0.0898	0.0870	14.0
			Average CE TSS	14.0
4. CWW	50	0.1127	0.0918	418
5.				
6.				
7.				
8.				

Notes: Samples are 24-hour composites from the Parshall Flumes.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 3 Mar 93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 3 Mar 93 / 1030 Date/Time Out: 8 Mar 93 / 1132

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	9.01		
✓N	5	N/A		9.05	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	9.04		
✓N	18	3		3.15	203

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: ✓
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((9.04 - 3.15) - (4.85)(2 / 5.33))(100)
= 407 / 2 \ 1.82 /
= 203

4. Date Na2S2O3 bottle opened: 27 Jan 93

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
8 Mar 93
TJR

SCOEPA00020344

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 3 Mar 93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 3 Mar 93 / 1030 Date/Time Out: 8 Mar 93 / 1132

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	~~22~~ 37	8	8.97		
✓N	~~24~~ 38	8		1.70	273
OWW	39	5	8.97		
✓N	40	5		4.29	281
OWW	47	3	8.97		
✓N	49	3		6.37	260
N					
N					

Average OWW BOD, mg/L: 271

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 18 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
8 Mar 93
TJR

8.97 ÷
-
.27 *
.27 ×
3.0 ÷
8 =
72.63 *
72.63 +X
8.97 ÷
-
4.69 *
4.69 ×
30 =
2[illegible].30 *
2[illegible].30 +X
8.97 ÷
-
2.60 *
2.60 ×
1[illegible] =
2[illegible] *
2[illegible] +X
31.43 ÷
31.43 ÷
[illegible] =
27.14 *

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 10 Mar 93 Sample Date: 10 Mar 93 Analyst: JJR

Slope: -59.1 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 27 Jan 93

10.0 mg/L: Lot #: 24 DI Date Opened: 27 Jan 93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.9
OWW (composite)	4.0

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	3.9 mg/L	~~4.0~~ 6.1 mg/L
% Recovery:	100 %	105 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 10 Feb 93 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 12 Mar 93 Oven Temp: 107 C Analyst: TJR

Date In: 12 Mar 93 Time In/Out: 1159 / 1330

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	—	—	—
7. CE	200	0.0900	0.0866	17.0
8. CE Flume	200	0.0899	0.0865	17.0
			Average CE TSS	—
4. OWW	50	0.1034	0.0864	340
9. OWW Flume	50	0.1023	0.0868	310
10.				
7.				
8.				

Notes: 24-hour composites

Calculation: TSS, mg/L = (Gross Wt, mg − Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 9 Mar 93 Oven Temp: 107 C Analyst: TJR

Date In: 9 Mar 93 Time In/Out: 0831 / 1149

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	–	–	–
7 ~~2~~. CE #1	200	0.0927	0.0916	5.5
8 ~~3~~. CE #2	200	0.0927	0.0916	5.5
			Average CE TSS	–
9 ~~4~~. OWW #1	50	0.1142	0.0918	448
10 ~~5~~. OWW #2	50	0.1069	0.0904	330
6.				
7.				
8.				

Notes: CE #1 is normal sampler. CE #2 is Parshall Flume.
OWW #1 is normal sampler. ~~CE~~ OWW #2 is Parshall Flume.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 10 Mar93 Incubator: 20 C Analyst: TJR

Date/Time In: 10 Mar93 / 1040 Date/Time Out: 15 Mar93 1313

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.88		
√N	5	N/A		8.80	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	9.02		
√N	18	3		3.69	168

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((9.02 - 3.69) - (5.28)(2 / 5.33))(100)
= 335 / 2 1.98
= 168

4. Date Na2S2O3 bottle opened: 10 Mar93

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
15 Mar93
TJR

SCOEPA00020349

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 10 Mar93 Incubator: 20 C Analyst: TJR

Date/Time In: 10 Mar93 / 1040 Date/Time Out: 15 Mar93 / 1313

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.74		
✓N	38	8		0.89	294
OWW	39	5	8.74		
✓N	40	5		3.73	301
OWW	47	3	8.93		
✓N	49	3		5.96	297
N					
N					

Average OWW BOD, mg/L: 297

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 17 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD
15 Mar93
TJR

SCOEPA00020350

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 10 Mar 93 Oven Temp: 105 C Analyst: TJR

Date In: 10 Mar 93 Time In/Out: 0835 / 1052

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0873	0.0873	—
2. CE	200	0.0893	0.0868	12.5
3. CE	200	0.0902	0.0876	13.0
			Average CE TSS	12.8
4. OWW	50	0.1039	0.0869	340
5. CE	200	0.0902	0.0873	14.5
6. OWW	50	0.1026	0.0873	306
7.				
8.				

Notes: #5 and #6 are 24-hour composites from their Parshall Flumes.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

CE TSS for 12 Mar 93 TJR

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 17 Mar 93 Sample Date: 17 Mar 93 Analyst: TJR

Slope: -58.9 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 04 Date Opened: 27 Jan 93

10.0 mg/L: Lot #: 24 DI Date Opened: 27 Jan 93

Data:

Sample	Fluoride, mg/L
CE (composite)	2.5
OWW (composite)	0.7

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	4.6 mg/L	2.7 mg/L
% Recovery:	105 %	100 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 10 Feb 93 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 16 Mar 93 Oven Temp: 104 C Analyst: TJR

Date In: 16 Mar 93 Time In/Out: 0851 / 1121

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	–	–	–
7 ~~2~~. CE	200	0.0882	0.0866	8.0
8 ~~2~~. CE, Parshall Flume	200	0.0882	0.0869	6.5
			Average CE TSS	–
9 ~~1~~. OWW	50	0.1034	0.0874	320
10 ~~2~~. OWW Parshall Flume	50	0.0994	0.0860	268
6.				
7.				
8.				

Notes: Composite samples.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 18 Mar 93 Oven Temp: 107 C Analyst: SJR

Date In: 18 Mar 93 Time In/Out: 1030 / 1048

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	—	—	—
7 ~~2~~. CE	200	0.0881	0.0866	7.5
8 ~~3~~. CE Parshall Flume	200	0.0884	0.0869	7.5
			Average CE TSS	7.5
9 ~~4~~. OWW	50	0.0993	0.0851	284
10 ~~5~~. OWW Parshall Flume	50	~~0.0~~ 0.1000	0.0866	268
6.				
7.				
8.				

Notes: ~~0.1~~g

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 19 Mar 93 Oven Temp: 106 C Analyst: TJR

Date In: 19 Mar 93 Time In/Out: 0940 / 1153

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	–	–	–
1/~~2~~. CE	200	0.0880	0.0865	7.5
2/~~3~~. CE Parshall Flume	200	0.0885	0.0870	7.5
			Average CE TSS	7.5
3/~~4~~. DWW	50	0.1023	0.0847	352
4/~~5~~. DWW Parshall Flume	50	0.1050	0.0883	334
6.				
7.				
8.				

Notes: Composites

Calculation: TSS, mg/L = (Gross Wt, mg − Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 17 Mar 93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 17 Mar 93 / 1030 Date/Time Out: 23 Mar 93 / 0810

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	8	8.91		
✓N	37	8		2.10	255
OWW	38	5	8.87		
✓N	40	5		4.66	253
OWW	47	3	8.85		
✓N	49	3		7.15	170
N					
N					

Average OWW BOD, mg/L: 226

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 16 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD
23 Mar 93
TJR

WORKSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 17 Mar 93 Oven Temp. 106 C Analyst: JyR

Date In: 17 Mar 93 Time In/Out: 0836 / 0956

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0869	0.0869	-
2. CE	200	0.0887	0.0873	7.0
3. CE	200	0.0881	0.0867	7.0
			Average CE TSS	7.0
4. OWW	50	0.1020	0.0880	280
5. OWW Parshall Flume	50	0.1018	0.0876	284
6. CE Parshall Flume	200	0.0886	0.0874	6.0
7.				
8.				

Notes: All samples are 24-hour composites.

Calculation: TSS, mg/L = (Gross Wt, mg − Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

CE TSS for 17 Mar 93 JyR

SCOEPA00020357

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 17 Mar93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 17 Mar93 / 1030 Date/Time Out: 23 Mar93 / 0810

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.85		
✓N	5	N/A		8.86	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L – DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.75		
✓N	18	3		3.95	160

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: Y
4. QC BOD = ((DOI – DOF) – (Ave DOI's – DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.75 – 3.95) – (4.24)(2 / 5.33))(100)
= 321 / 2 1.59
= 160

4. Date Na2S2O3 bottle opened: 10 Mar93 Ricca Lot H8267

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
23 Mar93
TJR

SCOEPA00020358

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 24 Mar 93 Oven Temp: 107 C Analyst: TJR

Date In: 24 Mar 93 Time In/Out: 0827 / 1005

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0866	0.0868	-
2. CE	200	0.0888	0.0869	9.5
3. CE	200	0.0886	0.0868	9.0
			Average CE TSS	9.2
4. OWW	50	0.1034	0.0859	350
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 24 Mar 93 Sample Date: 24 Mar 93 Analyst: JJR

Slope: -58.9 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 OH Date Opened: 27 Jan 93

10.0 mg/L: Lot #: 24 OI Date Opened: 27 Jan 93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.6
OWW (composite)	0.4

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	3.6 mg/L	2.4 mg/L
% Recovery:	100 %	100 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 10 Feb 93 Revised

SCOEPA00020360

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 24 Mar93 Incubator: 21 C Analyst: TJR

Date/Time In: 24 Mar93/ 1032 Date/Time Out: 29 Mar93/ 1104

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	8	8.92		
✓N	37	8		3.98	185
OWW	38	5	8.89		
✓N	40	5		5.94	177
OWW	47	3	8.94		
✓N	49	3		7.21	173
N					
N					

Average OWW BOD, mg/L: 178

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 18 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
29 Mar 93
TJR

SCOEPA00020361

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 24 Mar93 Incubator: 21 C Analyst: JJR

Date/Time In: 24Mar93 / 1032 Date/Time Out: 29Mar93 / 1104

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.94		
✓N	5	N/A		9.00	-

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.84		
✓N	18	3		3.53	20L

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: ⓥ
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.84 - 3.53) - (3.21)(2 / 5.33))(100)
= 411 / 2 ✓ 1.20 ✓
= 20L

4. Date Na2S2O3 bottle opened: 10 Mar93 Ricca Lot H267

TJR 13 Nov 91
TJR 8 Apr 92 Revised

QC BOD
29 Mar 93
JJR

SCOEPA00020362

BLACKSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 1 Apr 93 Oven Temp: 105 °C Analyst: TJR

Date In: 1 Apr 93 Time In/Out: 1006 / 1120

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA			
2. CE	200			
3. CE	200			
			Average CE TSS	
5 ~~4~~. OWW	50	0.1026	0.0871	310
~~5~~.				
6.				
7.				
8.				

Notes: Follow-up test to 31 Mar 93 test.

Calculation: TSS, mg/L = (Gross Wt, mg − Tare Wt, mg) X 1000 / Volume of Sample, ml

References: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 31 Mar 93 Oven Temp: 105 C Analyst: TJR

Date In: 31 Mar 93 Time In/Out: 0821 / 1052

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0866	0.0866	—
2. CE	200	0.0899	0.0881	9.0
3. CE	200	0.0909	0.0890	9.5
			Average CE TSS	9.2
4. CWW	50	0.1068	0.0863	410
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg -- Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 31 Mar 93 Sample Date: 31 Mar 93 Analyst: TJR

Slope: -58.8 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 25 DN Date Opened: 31 Mar 93

10.0 mg/L: Lot #: 09 DL Date Opened: 31 Mar 93

Data:

Sample	Fluoride, mg/L
CE (composite)	3.5
OWW (composite)	0.5

Quality Control: Spike each of the above samples with 0.1 ml of 1000 mg/L Standard. The Fluoride concentration should increase by 2.0 mg/L.

	CE	OWW
After Spike Concentration:	5.6 mg/L	2.6 mg/L
% Recovery:	105 %	105 %

Comments: Chrome Batch filtrate dumped to CAD system during this sampling period.

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 10 Feb 93 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 31 Mar93 Incubator: 21 C Analyst: TJR

Date/Time In: 31 Mar93 / 1039 Date/Time Out: 5 Apr93 / 1019

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	8	9.01		
✓N	37	8		3.68	200
OWW	38	5	8.95		
✓N	40	5		5.48	208
OWW	47	3	8.99		
✓N	49	3		7.48	151
N					
N					

Average OWW BOD, mg/L: 186

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 18 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
5 Apr93
TJR

SCOEPA00020366

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 31 Mar 93 Incubator: 21 C Analyst: TJR

Date/Time In: 31 Mar 93 / 1039 Date/Time Out: 5 Apr 93 / 1019

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	9.04		
✓N	5	N/A		9.05	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	9.02		
✓N	18	3		4.85	144

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((9.02 - 4.85) - (3.44)(2 / 5.33))(100)
= 288 / 2 1.29
= 144

4. Date Na2S2O3 bottle opened: 10 Mar 93 Ricca Lot H267

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC 5 Apr 93

SCOEPA00020367

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 1 Apr 93 Incubator: 19.5 C Analyst: TJR

Date/Time In: 1 Apr 93 / 1028 Date/Time Out: ? / 0958

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	25	8	8.47		
✓N	31	8		3.87	172
OWW	39	5	8.49		
✓N	40	5		5.62	172
OWW	48	3	8.59		
✓N	51	3		6.62	197
N					
N					

Average OWW BOD, mg/L: 181

COMMENTS: OWW 24 hour composite sample. Follow-up test to 31 Mar 93 test.

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 16 C

TJR 13 Jun 91
TJR 17 Mar 92 Revised

OWW BOD's
6 Apr 93
TJR

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

February 11, 1993

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

RE: Monthly Monitoring Report for January 1993

Dear Ms. Scheffler:

Enclosed is the January 993 Monthly Monitoring Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. As indicated, all data is in compliance with permit parameters. If you have any questions, please call me at 241-7532.

Respectfully,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosures

cc: John Pittman

TMcC:md

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 February 1993
SAMPLING PERIOD: January 1993
SAMPLE CODE:
TODAY'S DATE: 10 February 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	January 1993	SAMPLE LOCATION>	OWW Discharge	SAMPLE TYPE >	X COMPOSITE GRAB	DATE RECEIVED AT LAB >	See *	DATE OF SAMPLE ANAYSIS >	See *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		Within Limits
Cadmium	736		0.7		
Cyanide (Total)	878		1.2		
Chromium (Total)	748		3.8		
Copper (Total)	752		2.3		
Nickel (Total)	824		3.0		
Lead (Total)	811		0.7		
Zinc (Total)	874		4.0		
B.O.D.	729	259	>300=ESSC		Ave. of 4; high=340
T.S.S.	857	294	>350=ESSC		Ave. of 4; high=391
FEM-T Oil & Grease (total)	913				
FEM-NP Oil & Grease (Non-Polar)	915	0.5	100		Grab 7 Jan 93
FEM-P Oil & Grease (Polar)	914	22	500		Grab 7 Jan 93
Arsenic	710		0.3		
Chlorinated Hydrocar	739	< 0.25	0.5		Grab 7 Jan 93
Fluoride	797	0.7	30.0		Ave. of 4; high=1.4
Flash Pt. Closed Cup	916	>200	>140 F		Grab 7 Jan 93

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. McCue Date: 2/11/93

form 13-1A.fil
rev. 3/20/92

* January 6, 13, 20, 27 1993

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

REC'D JAN 26 1993
3yR

January 19, 1993

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attn: Tom Rothschild

Re: P.O. #37596
PEL #93-0033

Enclosed is the lab report for your samples which were received on January 7, 1993.

I. Sample Description

Four Water Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Project Manager

Rob May
Project Manager

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

METHOD: Oil and Grease per EPA 413.2
Polar/Non-Polar per EPA 418.1
Results in mg/L (ppm)

Compound	93-1	Detection Limit
Oil and Grease	23	0.50
Non-Polar Hydrocarbons	0.53	0.50
Polar Hydrocarbons by Difference	22	--

Date Prepped: 1/12/93
Date Analyzed: 1/13/93

Compound	Method Blank	Detection Limit
Oil and Grease	ND	0.50
Non-Polar Hydrocarbons	ND	0.50
Polar Hydrocarbons by Difference	ND	--

METHOD: Flashpoint (PMCC) per EPA 1010
Results in degrees F

Compound	93-2
Flame extinguished at	132
No flash to	140

Date Prepped: 1/11/93
Date Analyzed: 1/11/93

PACIFIC ENVIRONMENTAL LABORATORY INC

METHOD: Volatile Organic Compounds per EPA 8240
Results in ug/L (ppb)

GWW

Compound	93-3	Detection Limit(f)
Acetone	ND	50
Acrolein	ND	500
Acrylonitrile	ND	250
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone	ND	38
Carbon Tetrachloride	ND	10
Carbon Disulfide	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
Dibromomethane	ND	10
1,4-Dichloro-2-butene	ND	250
Dichlorobenzenes (total)	ND	10
Dichlorodifluoromethane	ND	25
1,1-Dichloroethane	ND	10
1,2-Dichloroethane	ND	10
1,1-Dichloroethene	ND	10
cis-1,2-Dichloroethene	ND	10
trans-1,2-Dichloroethene	ND	10
1,2-Dichloropropane	ND	10
cis-1,3-Dichloropropene	ND	10
trans-1,3-Dichloropropene	ND	10
Ethyl Methacrylate	ND	10
Ethylbenzene	ND	10
2-Hexanone	ND	25
Iodomethane	ND	10
4-Methyl-2-pentanone	ND	25
Methylene chloride	ND	25
Styrene	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1-Trichloroethane	ND	10
1,1,2-Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
1,2,3-Trichloropropane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	25
Xylenes (total)	ND	10

Date Prepped: 1/07/93
Date Analyzed: 1/07/93

(f) Detection limit is raised due to dilution necessary for analysis.

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

METHOD: Volatile Organic Compounds per EPA 8240
Results in ug/L (ppb)

Compound	Method Blank	Detection Limit
Acetone	ND	10
Acrolein	ND	100
Acrylonitrile	ND	50
Benzene	ND	2.0
Bromodichloromethane	ND	2.0
Bromoform	ND	2.0
Bromomethane	ND	10
2-Butanone	ND	7.5
Carbon Tetrachloride	ND	2.0
Carbon Disulfide	ND	2.0
Chlorobenzene	ND	2.0
Chloroethane	ND	10
Chloroform	ND	2.0
Chloromethane	ND	10
Dibromochloromethane	ND	2.0
Dibromomethane	ND	2.0
1,4-Dichloro-2-butene	ND	50
Dichlorobenzenes (total)	ND	2.0
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0
1,1-Dichloroethene	ND	2.0
cis-1,2-Dichloroethene	ND	2.0
trans-1,2-Dichloroethene	ND	2.0
1,2-Dichloropropane	ND	2.0
cis-1,3-Dichloropropene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0
Ethyl Methacrylate	ND	2.0
Ethylbenzene	ND	2.0
2-Hexanone	ND	5.0
Iodomethane	ND	2.0
4-Methyl-2-pentanone	ND	5.0
Methylene chloride	ND	5.0
Styrene	ND	2.0
1,1,2,2-Tetrachloroethane	ND	2.0
Tetrachloroethene	ND	2.0
Toluene	ND	2.0
1,1,1-Trichloroethane	ND	2.0
1,1,2-Trichloroethane	ND	2.0
Trichloroethene	ND	2.0
Trichlorofluoromethane	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Vinyl Acetate	ND	10
Vinyl Chloride	ND	5.0
Xylenes (total)	ND	2.0

8240 Surrogate Recoveries (%)

Compound	93-3
4-Bromofluorobenzene (86-115%)	101
1,2,-Dichloroethane-d4 (76-114%)	95
Toluene-d8 (88-110%)	101

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 27 Jan 93 Incubator: 21.0 C Analyst: TJR

Date/Time In: 27 Jan 93 / 1050 Date/Time Out: 1 Feb 93 / 1125

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	9.20		
✓N	5	N/A		9.28	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
QC	14	3	9.03		
✓N	18	3		4.17	164

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335
(Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~1~~ 2 ml of OWW: ⓧ
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((9.03 - 4.17) - (4.18)(2 / 5.33))(100)
= 329 / 2   \ 1.57 /
= 164

4. Date Na2S2O3 bottle opened: 27 Jan 93

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD - QC
1 Feb 93
TJR

SCOEPA00020376

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 27 Jan 93 Incubator: 21.0 C Analyst: TJR

Date/Time In: 27 Jan 93 / 1050 Date/Time Out: 1 Feb 93 / 1125

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.94		
✓N	38	8		2.36	247
OWW	39	5	9.20		
✓N	40	5		5.58	217
OWW	47	3	9.15		
✓N	49	3		6.82	233
N					
N					

Average OWW BOD, mg/L: 232

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 17 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
1 Feb 93
TJR

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 27 Jan 93 Sample Date: 27 Jan 93 Analyst: TJR

Slope: -58.3 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 27 Jan 93

10.0 mg/L: Lot #: 24 DI Date Opened: 27 Jan 93

Data:

Sample	Fluoride, mg/L
CE (composite)	1.4
OWW (composite)	1.4

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.3 mg/L	5.4 mg/L
% Recovery:	97.5 %	100 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 27 Jan 93 Oven Temp: 107 C Analyst: JJR

Date In: 27 Jan 93 Time In/Out: 0837 / 0955

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0903	0.0905	
2. CE	200	0.0930	0.0907	11.5
3. CE	200	0.0956	0.0931	12.5
			Average CE TSS	12.0
4. OWW	50	0.1209	0.0919	580
5. OWW grab (1005)	50	0.1018	0.0917	202
6.				
7.				
8.				

In: 1018
out: 1133

Notes: #5 visually lighter than #4 on filter.
Ave. OWW TSS = 391 mg/L

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

OWW TSS
27 Jan 93 JJR

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 20 Jan 93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 20 Jan 93/ 1100 Date/Time Out: 25 Jan 93/ 1213

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	~~7.~~ 8.89		
√N	5	N/A		8.91	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.86		
√N	18	3		3.45	200

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of CWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.86 - 3.45) - (3.37)(2 / 5.33))(100)
= 400 / 2 1.41
= 200

4. Date Na2S2O3 bottle opened: 22 Dec 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
25 Jan 93
TJR

SCOEPA00020380

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 20 Jan93 Incubator: 20.5 C Analyst: TJR

Date/Time In: 20 Jan93 / 1100 Date/Time Out: 25 Jan93 / 1213

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	8	8.94		
✓N	37	8		3.39	208
OWW	38	5	8.86		
✓N	39	5		5.47	203
OWW	40	3	8.94		
✓N	47	3		6.57	337
N					
N					

Average OWW BOD, mg/L: 216

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 18 C

TJR 7-10-07
TJR 17 Mar 92 Revised

OWW BOD's
25 Jan 93
TJR

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 20 Jan 93 Sample Date: 20 Jan 93 Analyst: TJR

Slope: -58.6 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 DI Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.6
OWW (composite)	0.6

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.4 mg/L	4.7 mg/L
% Recovery:	95 %	102.5 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 20 Jan 93 Oven Temp: 105 C Analyst: TJR

Date In: 20 Jan 93 Time In/Out: 0837 / 1000

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0910	0.0912	–
2. CE	200	0.0927	0.0901	13.0
3. CE	200	0.0934	0.0906	14.0
			Average CE TSS	13.5
4. OWW	50	0.01091	0.0901	380
5.				
6.				
7.				
8.				

Notes: All 3 WAD Stages looked turbid on 19 Jan 93.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 13 Jan 93 Incubator: 19.0 C Analyst: JDR

Date/Time In: 13 Jan 93 / 1127 Date/Time Out: 18 Jan 93 / 1119

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.86		
✓N	5	N/A		8.87	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.77		
✓N	18	3		3.06	203

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2335 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~1~~2 ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.77 - 3.06) - (4.40)(~~1~~2 / 5.33)) (100)
= 406 / 2
= 203

\1.65/

4. Date Na2S2O3 bottle opened: 22 Dec 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC 13 Jan 93 JDR

3.71 3.39 2.1

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 13 Jan 93 Incubator: 19.0 C Analyst: TJR

Date/Time In: 13 Jan 93 / 1127 Date/Time Out: 18 Jan 93 / 1119

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	8	8.86		
✓N	37	8		2.15	252
OWW	38	5	8.86		
✓N	39	5		4.97	233
OWW	40	3	8.98		
✓N	47	3		6.37	261
N					
N					

Average OWW BOD, mg/L: 249

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
18 Jan 93
TJR

SCOEPA00020385

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 13 Jan 93 Oven Temp: 105 C Analyst: TJR

Date In: 13 Jan 93 Time In/Out: 0847 / 0957

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0914	0.0915	-
2. CE	200	0.0956	0.0914	21.0
3. CE	200	0.0961	0.0916	22.5
			Average CE TSS	21.8
4. GWW	50	0.1027	0.0916	222
In: 1029 5. CE (grab)	200	0.0919	0.0906	6.5
6. 1010 CE (grab)	200	0.0926	0.0913	6.5
7.				
8.				

Notes: CE -> Alum conc. at 0600 = 127 mg/L. Lime added over last 24 hours -> 600 lbs and 500 lbs.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 13 Jan 93 Sample Date: 13 Jan 93 Analyst: TJR

Slope: -58.6 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 DI Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.8
OWW (composite)	0.13

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.6 mg/L	4.2 mg/L
% Recovery:	95 %	102.5 %

Comments: _____

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 6 Jan 93 Incubator: 20.0 C Analyst: JJR

Date/Time In: 6 Jan 93 / 1018 Date/Time Out: 11 Jan 93 / 1102

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.92		
✓N	5	N/A		8.96	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
QC	14	3	8.84		
✓N	18	3		2.75	194

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202
(Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~1~~ 2 ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.84 - 2.75) - (5.86)(2 / 5.33))(100)
= 389 / 2 — 2.2
= 194

4. Date Na2S2O3 bottle opened: 22 Dec 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

QC Bck = 11 Jan 93 JJR

SCOEPA00020388

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 6 Jan 93 Incubator: 20.0 C Analyst: TJR

Date/Time In: 6 Jan 93 / 1018 Date/Time Out: 11 Jan 93 / 1102

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	34	8	8.87		
✓N	37	8		0.08	330
OWW	38	5	8.96		
✓N	39	5		3.57	323
OWW	40	3	9.11		
✓N	47	3		5.71	340
N					
N					

Average OWW BOD, mg/L: 331

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature: 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD 5
11 Jan 93
TJR

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 6 Jan 93 Oven Temp: 106 C Analyst: TJR

Date In: 6 Jan 93 Time In/Out: 0820 / 0940

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0913	0.0915	Ø. -
2. CE	200	0.0921	0.0910	5.5
3. CE	200	0.0932	0.0921	5.5
			Average CE TSS	5.5
4. OWW	50	0.1000	0.0908	184
5.				
6.				
7.				
8.				

Notes: _____

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 6 Jan 93 Sample Date: 6 Jan 93 Analyst: JJR

Slope: -58.7 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 OH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 OJ Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	2.1
OWW (composite)	0.6

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	6.1 mg/L	4.6 mg/L
% Recovery:	97.5 %	100 %

Comments: First slope = -59.2 mv.

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

January 8, 1993

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
1120 S.W. Fifth Avenue, Room 400
Portland, Oregon 97204-1972

RE: Monthly Monitoring Report for December 1992

Dear Ms. Scheffler:

Enclosed is the December 1992 Monthly Monitoring Report for Wacker Siltronic Corporation Municipal Discharge Permit 469-01. Except for a reported pH of 5.2 on December 28th for 22 minutes, all other data is in compliance with permit parameters. If you have any questions, please call me at 241-7532.

Respectfully,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosures

cc: John Pittman

TMcC:md

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 January 1993
SAMPLING PERIOD: December 1992
SAMPLE CODE:
TODAY'S DATE: 6 January 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * * *

SAMPLE DATE >	Dec. 92	SAMPLE LOCATION>	OWW Discharge	SAMPLE TYPE >	X COMPOSITE — GRAB	DATE RECEIVED AT LAB >	2,9 16,30 12/92	DATE OF SAMPLE ANAYSIS >	2,9 16,30 12/92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		See below **
Cadmium	736	0.002	0.7		9 Dec 92
Cyanide (Total)	878		1.2		
Chromium (Total)	748	0.004	3.8		9 Dec 92
Copper (Total)	752		2.3		
Nickel (Total)	824		3.0		
Lead (Total)	811		0.7		
Zinc (Total)	874	0.135	4.0		9 Dec 92
B.O.D.	729	209	>300=ESSC		Ave. of 5;high=283
T.S.S.	857	204	>350=ESSC		Ave. of 5;high-286
FEM-T Oil & Grease (total)	913				
FEM-NP Oil & Grease (Non-Polar)	915	1.5	100		Grab 10 Dec 92
FEM-P Oil & Grease (Polar)	914	26	500		Grab 10 Dec 92
Arsenic	710	0.003	0.3		9 Dec 92
Chlorinated Hydrocar	739	< 0.25	0.5		Grab 10 Dec 92
Fluoride	797	1.2	30.0		Ave. of 5;high=3.6
Flash Pt. Closed Cup	916	>200	>140 F		Grab 10 Dec 92

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. McLean Date: 1/8/93

** pH 5.2 on Dec. 28th for 22 minutes

form 13-1A.fil
rev. 3/20/92

SCOEPA00020393

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 January 1993
SAMPLING PERIOD: December 1992
SAMPLE CODE:
TODAY'S DATE: 6 January 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)

* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	December 1992	SAMPLE LOCATION>	OWW Discharge	SAMPLE TYPE >	✓ COMPOSITE — GRAB	DATE RECEIVED AT LAB >	2,9,16 22,30 Dec92	DATE OF SAMPLE ANAYSIS >	2,9,16 22,30 Dec92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				pH 5.2 on 28 Dec92 for 22 minutes
Cadmium	736	0.002	0.7				9 Dec92
Cyanide (Total)	878	—	1.2				
Chromium (Total)	748	0.004	3.8				9 Dec92
Copper (Total)	752	—	2.3				
Nickel (Total)	824	—	3.0				
Lead (Total)	811	—	0.7				
Zinc (Total)	874	0.135	4.0				9 Dec92
B.O.D.	729	209	>300=ESSC				Ave. of 5; High=283
T.S.S.	857	204	>350=ESSC				Ave. of 5; High=286
FEM-T Oil & Grease (total)	913	—					
FEM-NP Oil & Grease (Non-Polar)	915	1.5	100				Grab 10 Dec92
FEM-P Oil & Grease (Polar)	914	26	500				Grab 10 Dec92
Arsenic	710	0.003	0.3				9 Dec92
Chlorinated Hydrocar	739	<0.25	0.5				Grab 10 Dec92
Fluoride	797	1.2	30.0				Ave. of 5; High=3.6
Flash Pt. Closed Cup	916	>200	<200 F				Grab 10 Dec92

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: _____

form 13-1A.fil
rev. 3/20/92

REC'D DEC 17 1992
JJR

WACKER SILTRONIC CORPORATION
ANALYTICAL CHEMISTRY LABORATORIES

STR# 1200

TEST TITLE:
TRACE METAL ANALYSIS ON ORGANIC WASTE WATER

TEST METHOD:
TRACE METAL ANALYSIS OF THE ORGANIC WASTE WATER FOR Zn, Cr, Cd, AND As WERE FOLLOWED EPA METHOD. SECTION 3050.

SAMPLED BY: TOM ROTHSCHILD DATE: 12/09/92
ANALYZED BY: NANCY LAO DATE: 12/16,17/92

RESULTS:

ANALYTE	TOTAL METALS (PPM)
Zn	0.135
Cr	0.004
Cd	0.002
As	0.003

COPIES SENT TO: TOM ROTHSCHILD, JERRY LINDEN

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

REC'D DEC 28 1992

December 21, 1992

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attn: Tom Rothschild

Re: P.O #37596
PEL #92-4006

Enclosed is the lab report for your samples which were received on December 10, 1992.

I. Sample Description

Four Water Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Project Manager

Rob May
Project Manager

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

METHOD: Oil and Grease per EPA 413.2
Polar/Non Polar per EPA 418.1
Results in mg/L (ppm)

Compound	92-39 OWW	Method Blank	Detection Limit
Oil and Grease	28	ND	0.50
Non Polar Hydrocarbons	1.5	ND	0.50
Polar Hydrocarbons by Difference	26	--	--

METHOD: Flashpoint (PMCC) per EPA 1010
Results in Degrees F

Sample I.D.	Flashpoint
92-40 OWW	Flame extinguished at 140°F

METHOD: Volatile Organic Compounds per EPA 8240 (GC/MS)
Results in ug/L (ppb)

Compound	92-41 dww	Detection Limit(f)
Acetone	1,400	50
Acrolein	ND	500
Acrylonitrile	ND	250
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone	ND	38
Carbon disulfide	ND	10
Carbon tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
Dibromomethane	ND	10
1,4-Dichloro-2-butene	ND	250
Dichlorobenzenes (total)	ND	10
Dichlorodifluoromethane	ND	25
1,1-Dichloroethane	ND	10
1,2-Dichloroethane	ND	10
1,1-Dichloroethene	ND	10
cis-1,2-Dichloroethene	ND	10
trans-1,2-Dichloroethene	ND	10
1,2-Dichloropropane	ND	10
cis-1,3-Dichloropropene	ND	10
trans-1,3-Dichloropropene	ND	10
Ethyl Methacrylate	ND	10
Ethylbenzene	ND	10
2-Hexanone	ND	25
Iodomethane	ND	10
4-Methyl-2-pentanone	ND	25
Methylene chloride	ND	25
Styrene	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1-Trichloroethane	ND	10
1,1,2-Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
1,2,3-Trichloropropane	ND	10
Vinyl chloride	ND	25
Vinyl acetate	ND	50
Xylenes (total)	ND	10

(f) Detection limit is raised due to dilution necessary for analysis.

METHOD: Volatile Organic Compounds per EPA 8240 (GC/MS)
Results in ug/L (ppb)

Compound	Method Blank	Detection Limit
Acetone	ND	10
Acrolein	ND	100
Acrylonitrile	ND	50
Benzene	ND	2.0
Bromodichloromethane	ND	2.0
Bromoform	ND	2.0
Bromomethane	ND	10
2-Butanone	ND	7.5
Carbon disulfide	ND	2.0
Carbon tetrachloride	ND	2.0
Chlorobenzene	ND	2.0
Chloroethane	ND	10
Chloroform	ND	2.0
Chloromethane	ND	10
Dibromochloromethane	ND	2.0
Dibromomethane	ND	2.0
1,4-Dichloro-2-butene	ND	50
Dichlorobenzenes (total)	ND	2.0
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0
1,1-Dichloroethene	ND	2.0
cis-1,2-Dichloroethene	ND	2.0
trans-1,2-Dichloroethene	ND	2.0
1,2-Dichloropropane	ND	2.0
cis-1,3-Dichloropropene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0
Ethyl Methacrylate	ND	2.0
Ethylbenzene	ND	2.0
2-Hexanone	ND	5.0
Iodomethane	ND	2.0
4-Methyl-2-pentanone	ND	5.0
Methylene chloride	ND	5.0
Styrene	ND	2.0
1,1,2,2-Tetrachloroethane	ND	2.0
Tetrachloroethene	ND	2.0
Toluene	ND	2.0
1,1,1-Trichloroethane	ND	2.0
1,1,2-Trichloroethane	ND	2.0
Trichloroethene	ND	2.0
Trichlorofluoromethane	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Vinyl chloride	ND	5.0
Vinyl acetate	ND	10
Xylenes (total)	ND	2.0

8240 Surrogate Recoveries (%)

Compound	92-41	Method Blank
4-Bromofluorobenzene (86-115%)	95	95
1,2,-Dichloroethane-d4 (76-114%)	95	95
Toluene-d8 (88-110%)	98	98

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644-0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY Wacker Siltronic Corporation PROJECT NAME – LAB PROJECT NUMBER 92-4006

PROJECT MANAGER – PROJECT NUMBER –

COLLECTED BY Tom Rothschild P.O. NUMBER 30381 RUSH ☐ YES ☒ NO

COMMENTS

SAMPLES RECEIVED AT 4°C ☒ YES ☐ NO

SAMPLES IN APPROPRIATE CONTAINERS ☒ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☒ NO

PROVIDE PRELIMINARY FAX RESULTS ☒ YES ☐ NO

PROVIDE FINAL FAX RESULTS ☐ YES ☒ NO

PEL NO.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	Oil and Grease 1) Polar 2) Non-Polar		Flash Point		REMARKS
1	92-39	10 Dec 92	0800	OWW (grab)		X		1														X				
2	92-40	10 Dec 92	0800	OWW (grab)		X		1																X		
3	92-41	10 Dec 92	0800	OWW (grab)		X		2									X									
4	92-42	10 Dec 92	0910	CE (grab)		X		2								X										

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
Thomas J. Rothschild	Wacker Siltronic	10 Dec 92/1000	T. CONROY	WACKER
[illegible]	WACKER	12-10-92 2:18	Sara McClurg	PEL

SCOEPA0020401

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 2 Dec92 Incubator: 20 C Analyst: TJR

Date/Time In: 2 Dec92 / 1010 Date/Time Out: 8 Dec92 / 1054

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	40	8	8.64		
✓N	44	8		1.64	262
OWW	47	5	8.67		
✓N	51	5		4.42	255
OWW	54	3	8.59		
✓N	73	3		5.97	262
N					
N					

Average OWW BOD, mg/L: 260

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 17 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
8 Dec92
TJR

8.64 +
1. -
7.00 *
7.00 x
3.0. ÷
8. =
262.50 *
262.50 +M
8.67 +
. -
4.25 *
4.25 x
60. =
255.00 *
255.00 +M
8.59 +
. -
.62 *
.62 x
1.0. =
262.00 *
262.00 +M
779.50 ÷M
779.50 ÷
3. =
259.83 *

SCOEPA00020402

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 2 Dec92 Incubator: 20 C Analyst: TJR

Date/Time In: 2 Dec92 / 1010 Date/Time Out: 8 Dec92 / 1054

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.71		
✓N	5	N/A		8.68	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.71		
✓N	18	3		2.55	221

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.71 - 2.55) - (4.62)(2 / 5.33))(100)
= 443 / 2
= 221

1.73

4. Date Na2S2O3 bottle opened: 4 Nov 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

7 Dec92 → sick

BOD QC
8 Dec92
TJR

7.70 +
4.25 +
.62 +
13.87 *
13.87 ÷
3. =
4.62 *
4.62 ×
2. ÷
5.33 =
1.73 *
8.71 +
-
-
4.43 *
4.43 ×
100. ÷
2. =
21.50 *

SCOEPA00020403

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 2 Dec 92 Sample Date: 2 Dec 92 Analyst: TJR

Slope: -57.7 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 DI Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	2.4
OWW (composite)	0.9

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	6.2 mg/L	4.9 mg/L
% Recovery:	95 %	100 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87

2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 2 Dec 92 Oven Temp: 107 C Analyst: TJR

Date In: 2 Dec 92 Time In/Out: 0826 / 0946

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0907	0.0910	—
2. CE	200	0.0930	0.0913	8.5
3. CE	200	0.0924	0.0907	8.5
			Average CE TSS	8.5
4. GWW	50	0.1040	0.0897	286
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 9 Dec92 Incubator: 19.5 C Analyst: TJR

Date/Time In: 9 Dec92 / 1105 Date/Time Out: 14 Dec92 / 1103

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	48	8	8.71		
✓N	49	8		2.80	222
OWW	51	5	8.81		
✓N	54	5		4.67	248
OWW	73	3	8.89		
✓N	86	3		6.53	236
N					
N					

Average OWW BOD, mg/L: 235

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 18 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
14 ~~Dec92~~
TJR

8.71 ÷
-
5.91 *

5.91 x
3.0 ÷
8 =
21.63 *

21.63 +M
.81 +
-
4.14 *

4.14 x
60 =
248.40 *

248.40 +M
.99 +
-
2.36 *

2.36 x
1 0 =
236 *

236.0 +M
7.6.03 ◊M

7.6.03 ÷
3 =
2.5.34 *

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 9 Dec 92 Incubator: 19.5 C Analyst: TJR

Date/Time In: 9 Dec 92 / 1105 Date/Time Out: 14 Dec 92 / 1103

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.78		
√N	5	N/A		8.78	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.68		
√N	18	3		2.92	210

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2022 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 3 ml of DWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.68 - 2.92) - (4.14)(2 / 5.33))(100)
= 421 / 2
= 210

4. Date Na2S2O3 bottle opened: 4 Nov 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
14 Dec 92
TJR
5.91 +
4.14 +
2.35 +
12.41 *
12.41 ÷
3. =
4.14 *
4.14 x
2. ÷
5.33 =
1.55 *
8.68 +
4.21 *
4.21 x
100. =
421.0 *
421.0 ÷
2. =
210.50 *

SCOEPA00020407

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 9 Dec92 Oven Temp: 106 C Analyst: TJR

Date In: 9 Dec92 Time In/Out: 0941 / 0948

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0905	0.0907	-
2. CE	200	0.0926	0.0906	10.0
3. CE	200	0.0930	0.0909	10.5
			Average CE TSS	10.2
4. DHW	50	0.1021	0.0909	224
5. outfall	200	0.0918	0.0902	8.0
6. outfall	200	0.0936	0.0917	9.5
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 9 Dec 92 Sample Date: 9 Dec 92 Analyst: JJR

Slope: -58.5 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 DI Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.5
OWW (composite)	0.4
outfall	0.9

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW	outfall
After Spike Concentration:	5.4 mg/L	4.6 mg/L	5.1 mg/L
% Recovery:	97.5 %	105 %	105%

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 16 Dec92 Incubator: 21.0 C Analyst: TJR

Date/Time In: 16 Dec92 / 1057 Date/Time Out: 21 Dec92 / 1303

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	39	8	8.82		
✓N	40	8		1.85	261
OWW	47	5	8.92		
✓N	49	5		5.16	225
OWW	54	3	9.01		
✓N	86	3		6.89	212
N					
N					

Average OWW BOD, mg/L: 233

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
21 Dec 92

.82 ÷
-
6.97 *
6.97 x
3.0 ÷
8. =
261.38 *
261.38 +M
8.92 +
-
3.76 *
3.76 x
60. =
225.60 *
225.60 +M
9.01 +
-
2.12 *
2.12 x
1.0 =
212.0 *
212.0 +M
6[illegible].98 ◊M
6[illegible].98 ÷
3. =
252.9 *

SCOEPA00020410

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 16 Dec92 Incubator: 21.0 C Analyst: TJR

Date/Time In: 16 Dec92/ 1057 Date/Time Out: 21 Dec92/ 1303

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.99		
√N	5	N/A		8.98	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	18	3	9.01		
√N	22	3		4.69	135

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~1~~ 2 ml of OWW: 1
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((9.01 - 4.69) - (4.28)(2 / 5.33))(100)
= 271 / 2
= 135

1.61

4. Date Na2S2O3 bottle opened: 4 Nov92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

QC BOD's
21 Dec 92
TJR

6.97 +
3.76 +
1.12 +
12.85 *

12.85 ÷
3. =
4.28 *

4.28 x
2. ÷
5.33 =
1.61 *

9.01 +
-
-
2.71 *

2.71 x
10. =
271. *

271. 0 ÷
2. =
1.32 *

271. ÷
2. =
13.50 *

SCOEPA00020411

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 16 Dec92 Oven Temp: 105 C Analyst: TJR

Date In: 16 Dec92 Time In/Out: 0835 / 0956

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0936	0.0938	—
2. CE	200	0.0969	0.0934	17.5
3. CE	200	0.0970	0.0931	19.5
			Average CE TSS	18.5
4. OWW	50	0.1037	0.0923	228
5. CE grab	200	0.0929	0.0926	1.5
6. CE grab (1005)	200	0.0923	0.0920	1.5
7.				Ave. → 1.5
8.				

In: 1015
out: 1134

Notes: 600 lbs of $Ca(OH)_2$ used in last 12 hours NTU high = 2 over last 12 hours. New sample taps ~~called~~ connected.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 16 Dec 92 Sample Date: 16 Dec 92 Analyst: TJR

Slope: -58.8 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 OI Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.7
OWW (composite)	0.5

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.6 mg/L	4.6 mg/L
% Recovery:	97.5 %	102.5 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 22 Dec 92 Incubator: 20 C Analyst: TJR

Date/Time In: 22 Dec 92 / 1201 Date/Time Out: 28 Dec 92 / 1021

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.98		
✓N	5	N/A		8.91	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	18	3	8.82		
✓N	22	3		2.66	214

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 22c2 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~12~~ 6 ml of OWW:
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.82 - 2.66) - (5.01)(2 / 5.33))(100)
= 428 / 2
= 214

1.88

4. Date Na2S2O3 bottle opened: 22 Dec 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
28 Dec 92
TJR

7.54 +
4.51 +
2.97 ÷
15.02 *
15.02 ÷
3. =
5.01 *
5.01 ×
2. ÷
5. 3 =
1. 8 *
.32 +
- -
4.28 *
4.28 ×
10. =
428. 0 *
428. 0 ÷
2. =
214. 0 *

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 22 Dec92 Incubator: 20 C Analyst: TJR

Date/Time In: 22 Dec92/ 1201 Date/Time Out: 28 Dec92/ 1021

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	39	8	8.81		
✓N	40	8		1.27	283
OWW	47	5	8.85		
✓N	49	5		4.34	271
OWW	51	3	8.85		
✓N	54	3		5.88	297
N					
N					

Average OWW BOD, mg/L: 283

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD
28 Dec92
TJR

8.81 ÷
- 1.27
7.54 *

7.54 x
300. ÷
8. =
282.75 *

282.75 +M
8.85 +
- 4.34
4.51 *

4.51 x
60. =
270.60 *

270.60 +M
8.85 +
- 2.97
2.97 *

2.97 x
100. =
297.00 *

297.00 +M
830.35 ÷M

830.35 ÷
3. =
283.45 *

SCOEPA00020415

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 22 Dec 92 Sample Date: 22 Dec 92 Analyst: TJR

Slope: -58.7 (Range: 54 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 DI Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	3.3
OWW (composite)	0.7

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	7.1 mg/L	4.7 mg/L
% Recovery:	95.0 %	100 %

Comments: 1st slope = -59.7

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 22 Dec 92 Oven Temp: 107 C Analyst: TJR

Date In: 22 Dec 92 Time In/Out: 0842 / 1006

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0936	0.0928	~
2. CE	200	0.0931	0.0922	4.5
3. CE	200	0.0924	0.0915	4.5
			Average CE TSS	4.5
4. DWW	50	0.1056	0.0927	258
5.				
6.				
7.				
8.				

Notes: Alum conc. ~ 0 over last 12 hours. Grace anti-scalent chemical exhausted.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 30 Dec92 Incubator: 21.0 C Analyst: TJR

Date/Time In: 30 Dec92/ 1029 Date/Time Out: 4 Jan93/ 1111

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	~~7~~	9.20		
/N	37	~~7~~ 50		3.79	32
OWW	38	~~7~~	8.82		
/N	39	~~7~~ 25		6.36	29
OWW	40	~~7~~	8.74		
/N	47	~~7~~ 10		7.63	33
N					
N					

Average OWW BOD, mg/L: 32

COMMENTS: Production down. ∴ Changed sample volumes

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 18 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
4 Jan 93
TJR

9.20 +
- 5.41 *
5.41 x
6. =
32.46 *
32.46 +M
.82 +
- 2.46 *
2.46 x
12. =
29.52 *
29.52 +M
8.74 +
- .11 *
.11 x
30. =
.30 *
.30 +M
95.28 OM
95.28 ÷
3. =
31.76 *

SCOEPA00020418

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 30 Dec92 Incubator: 21.0 C Analyst: JJR

Date/Time In: 30Dec92/ 1029 Date/Time Out: 4Jan93/ 1111

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.91		
✓N	5	N/A		8.8	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.69		
✓N	18	3		3.97	227

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2x5 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.69 - 3.97) - (2.99)(5 / 28.3))(100)
= 454 / 2
= 227

0.18

4. Date Na2S2O3 bottle opened: 22Dec92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

QC BOD
4 Jan 93

5.0 +
25.0 ÷
13.0 ÷
8.0 *

3.0 +
-
85.0 *

85.0 ÷
3. =
23.3 *

5.41 +
2.46 ÷
.1 ÷
.98 *

.98 ÷
3. =
2.9 *

8.69 +
-
4.72 *

5. ÷
29.3 =
0.18 *

4.72 +
-
.54 *

.54 x
10. =
54.0 *

54.0 ÷
2. =
27.0 *

SCOEPA00020419

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 30 Dec 92 Sample Date: 30 Dec 92 Analyst: TJR

Slope: -58.9 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 OH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 OI Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	0.5
OWW (composite)	3.6

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	4.5 mg/L	7.5 mg/L
% Recovery:	100 %	97.5 %

Comments: First slope = -59.0 mV.

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87

2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87 :
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 30 Dec 92 Oven Temp: 106 C Analyst: TJR

Date In: 30 Dec 92 Time In/Out: 0824 / 0948

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0918	0.0920	—
2. CE	200	0.0924	0.0920	2.0
3. CE	200	0.0920	0.0917	1.5
			Average CE TSS	1.8
4. OWW	~~50~~ 100	0.0934	0.0910	24
5.				
6.				
7.				
8.				

Notes: Production down. CE and OWW aliquots visually very light.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 January 1993
SAMPLING PERIOD: December 1992
SAMPLE CODE:
TODAY'S DATE: 6 January 1993

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)

* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	December 1992	SAMPLE LOCATION>	OWW Discharge	SAMPLE TYPE >	✓ COMPOSITE — GRAB	DATE RECEIVED AT LAB >	2,9,16 22,30 Dec92	DATE OF SAMPLE ANAYSIS >	2,9,16 22,30 Dec92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.		pH 5.2 on 28 Dec92 for 22 minutes
Cadmium	736	0.002	0.7		9 Dec 92
Cyanide (Total)	878	—	1.2		
Chromium (Total)	748	0.004	3.8		9 Dec 92
Copper (Total)	752	—	2.3		
Nickel (Total)	824	—	3.0		
Lead (Total)	811	—	0.7		
Zinc (Total)	874	0.135	4.0		9 Dec 92
B.O.D.	729	209	>300=ESSC		Ave. of 5; High=283
T.S.S.	857	204	>350=ESSC		Ave. of 5; High=286
FEM-T Oil & Grease (total)	913	—			
FEM-NP Oil & Grease (Non-Polar)	915	1.5	100		Grab 10 Dec92
FEM-P Oil & Grease (Polar)	914	26	500		Grab 10 Dec92
Arsenic	710	0.003	0.3		9 Dec92
Chlorinated Hydrocar	739	<0.25	0.5		Grab 10 Dec92
Fluoride	797	1.2	30.0		Ave. of 5; High=3.6
Flash Pt. Closed Cup	916	>200	<200 F		Grab 10 Dec92

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: _____

orm 13-1A.fil
ev. 3/20/92

SCOEPA00020422

EXCEPTION REPORT

DEC 92

DATE	SYSTEM DOWN	PROBLEM	DOWN TIME	CORRECTION
12/28/92	OWW (0129 to 01:42)	Ph. probe failure	13 min's	Replaced, probe, 3rd stage
12/28	OWW (01:45 to 01:54)	" " "	9 mins	

SCOEPA00020423

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

December 10, 1992

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

RE: Monthly Monitoring Report for November 1992

Dear Ms. Scheffler:

Attached is the November, 1992 Monthly Monitoring Report for Wacker Siltronic Corporation Municipal Discharge Permit No. 469-01. All data is in compliance with permit parameters. If yo have any questions, please call me at 241-7532.

Respectfully,

WACKER SILTRONIC CORPORATION

BY: Thomas C. McCue

Thomas C. McCue
Environmental Manager

enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 December 92
SAMPLING PERIOD: November 92
SAMPLE CODE:
TODAY'S DATE: 4 December 92

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	November 1992	SAMPLE LOCATION>	OWW Discharge	SAMPLE TYPE >	X COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	6,13, 20,27 Nov'92	DATE OF SAMPLE ANAYSIS >	6,13, 20,27 Nov'92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843	---	5.5-11.5 S.U.		within
Cadmium	736	---	0.7		
Cyanide (Total)	878	---	1.2		
Chromium (Total)	748	---	3.8		
Copper (Total)	752	---	2.3		
Nickel (Total)	824	---	3.0		
Lead (Total)	811	---	0.7		
Zinc (Total)	874	---	4.0		
B.O.D.	729	218	>300=ESSC		Ave.of 3; High=322
T.S.S.	857	278	>350=ESSC		Ave.of 5; High=498
FEM-T Oil & Grease (total)	913	---	---		
FEM-NP Oil & Grease (Non-Polar)	915	1	100		grab 5 Nov 92
FEM-P Oil & Grease (Polar)	914	14	500		grab 5 Nov 92
Arsenic	710	---	0.3		
Chlorinated Hydrocar	739	< 0.25	0.5		
Fluoride	797	0.6	30.0		Ave of 4; High-1.1
Flash Pt. Closed Cup	916	> 200	>140 F		grab 5 Nov 92

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. McCu Date: 12/10/92

form 13-1A.fil
rev. 3/20/92

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

REC'D NOV 13 1992

FAX TRANSMITTAL

DATE: Nov 12, 1992

TO: Wacker SiElectronic

ATTN: Rod Davis → ?

FROM: Howard Holmes

We are sending 6 *pages, including this cover sheet.*

DESCRIPTION PRELIMINARY REPORT PEL # 92-3646

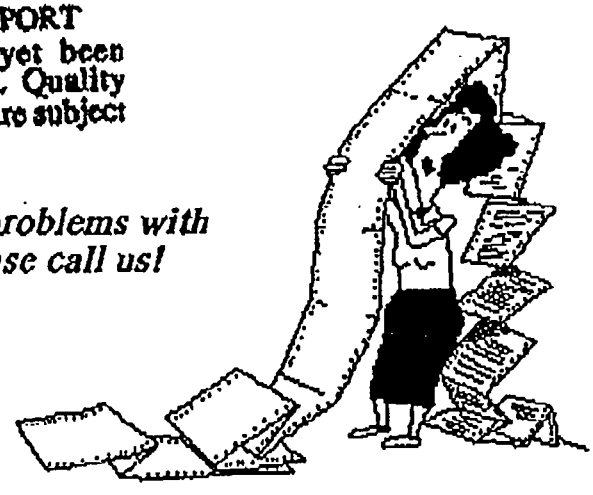
JOB #

P.O. # 375396

PROJECT -

PRELIMINARY REPORT
This report has not yet been reviewed by the PEL Quality Control Dept. Results are subject to final review.

If you experience any problems with this transmission, please call us!



PRELIMINARY REPORT
This report has not yet been reviewed by the PEL Quality Control Dept. Results are subject to final review.

COMPANY: Wacker Siltronic Corporation

PROCEDURE : OIL & GREASE, P/NP (WATER)
METHOD: Oil & grease, polar/non polar, per EPA 413.2, EPA 418.1

RESULTS IN mg/l (ppm)

Analyte	92-28 OW W (grab)	Det lim
Oil & grease	15	0.55
Non Polar hydrocarbons	0.61	0.55
Polar hydrocarbons by difference	14	
Date Prepped	110692	
Date Analyzed	110992	

Analyte	Method Blank 1192-05mB	Det lim
Oil & grease	ND	0.50
Non Polar hydrocarbons	ND	0.50
Polar hydrocarbons by difference	ND	
Date Prepped	110692	
Date Analyzed	110992	

11/9/92
NMS

FINAL REPORT FORM

DATE: 11-11-92

CHEMIST: JAC

PEL #: 92-3646-7

CLIENT: WACKER SILICONES CORP.

ITEMS: 1 LIQUID SAMPLE

PRELIMINARY REPORT
This report has not yet been reviewed by the PEL Quality Control Dept. Results are subject to final review.

METHOD: FLASHPOINT (PMCC) PER EPA 1010

Results in _____

Sample I.D.	FLASHPOINT
~~92-28 OWW~~ 92-28 OWW	NO FLASH, EXTINGUISHED @ 146°F

11/12/92

11/12/92

CLIENT WACKER SILTRONIC CORP.

PEL # 92-3646

DATE 11 12-92

PRELIMINARY REPORT
This report has not yet been reviewed by the PEL Quality Control Dept. Results are subject to final review.

METHOD: TCE per EPA 8010 (GC)
Results in µg/L

	92-28 CE (GRAB)	METHOD BLANK	DET. LIMIT	
TRICHLOROETHENE	ND	ND	0.50	
EXTRACTION DATE	---	—		
ANALYSIS DATE	11-11-92	11-11-92		
SURROGATE RECOVERIES (%)				
Bromochloromethane Limits Soil (50-150) (WATER (50-150))	97	121		
4-Bromofluorobenzene Limits Soil (63-123) (WATER (75-120))	82	91		

PRELIMINARY REPORT
This report has not yet been reviewed by the PEL Quality Control Dept. Results are subject to final review.

COMPANY: Wacker Siltronic Corporation

PROCEDURE: 8240 VOC'S (WATER)
METHOD: Volatile Organic Compounds per EPA 8240 (GC/MS)

RESULTS IN ug/L (ppb)

Analyte	92-28 OW W (grab)	Det lim	Method Blank	Det lim
Acetone	1800	50	ND	10
Acrolein	ND	500	ND	100
Acrylonitrile	ND	250	ND	50
Benzene	ND	10	ND	2.0
Bromodichloromethane	ND	10	ND	2.0
Bromoform	ND	10	ND	2.0
Bromomethane	ND	50	ND	10
2-Butanone	ND	38	ND	7.5
Carbon disulfide	ND	10	ND	2.0
Carbon tetrachloride	ND	10	ND	2.0
Chlorobenzene	ND	10	ND	2.0
Chloroethane	ND	50	ND	10
Chloroform	ND	10	ND	2.0
Chloromethane	ND	50	ND	10
Dibromochloromethane	ND	10	ND	2.0
Dibromomethane	ND	10	ND	2.0
1,4-Dichloro-2-butene	ND	250	ND	50
Dichlorobenzenes (total)	ND	10	ND	2.0
Dichlorodifluoromethane	ND	25	ND	5.0
1,1-Dichloroethane	ND	10	ND	2.0
1,2-Dichloroethane	ND	10	ND	2.0
1,1-Dichloroethene	ND	10	ND	2.0
cis-1,2-Dichloroethene	ND	10	ND	2.0
trans1,2Dichloroethene	ND	10	ND	2.0
1,2-Dichloropropane	ND	10	ND	2.0
cis-1,3-Dichloropropene	ND	10	ND	2.0
trans1,3Dichloropropene	ND	10	ND	2.0
Ethyl methacrylate	ND	10	ND	2.0
Ethylbenzene	ND	10	ND	2.0
2-Hexanone	ND	25	ND	5.0
Iodomethane	ND	10	ND	2.0
4-Methyl-2-pentanone	ND	25	ND	5.0
Methylene chloride	ND	25	ND	5.0
Styrene	ND	10	ND	2.0

PRELIMINARY REPORT
This report has not yet been reviewed by the PEL Quality Control Dept. Results are subject to final review.

1,1,2,2-Tetrachloroethane	ND	10	ND	2.0
Tetrachloroethene	ND	10	ND	2.0
Toluene	ND	10	ND	2.0
1,1,1-Trichloroethane	ND	10	ND	2.0
1,1,2-Trichloroethane	ND	10	ND	2.0
Trichloroethene	ND	10	ND	2.0
Trichlorofluoromethane	ND	10	ND	2.0
1,2,3-Trichloropropane	ND	10	ND	2.0
Vinyl acetate	ND	50	ND	10
Vinyl chloride	ND	25	ND	5.0
Xylenes (total)	ND	10	ND	2.0
Date Prepped	111092		111092	
Date Analyzed	111092		111092	

SURROGATE RECOVERIES (%)

Surrogate				Range
4-Bromofluorobenzene	97	86-115	100	86-115
1,2-Dichloroethane-d4	103	76-114	104	76-114
Toluene-d8	100	88-110	100	88-110

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 25 Nov 92 Sample Date: 25 Nov 92 Analyst: JJR

Slope: -58.3 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 06 DH Date Opened: 25 Nov 92

10.0 mg/L: Lot #: 24 DI Date Opened: 25 Nov 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.6
OWW (composite)	~~1.6~~ 1.1

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.5 mg/L	5.1 mg/L
% Recovery:	97.5 %	100 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 25 Nov92 Oven Temp: 104 C Analyst: TJR

Date In: 25 Nov92 Time In/Out: 0846 / 1057

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0921	0.0923	—
2. CE	200	0.0925	0.0913	6.0
3. CE	200	0.0917	0.0906	5.5
			Average CE TSS	5.8
4. OWW	50	0.1165	0.0916	498
1144 1302 5. CWW grab (1130)	50	0.0940	0.0912	56
6.				
7.				
8.				

Notes: CWW very slow to filter. New plumbing connection to bottom of pipe may have drawn sludge

Calculation: TSS, mg/L = $\frac{(\text{Gross Wt, mg} - \text{Tare Wt, mg}) \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 25 Nov 92 Incubator: 20.5 C Analyst: TJR

Date/Time In: 25 Nov 92/ 1048 Date/Time Out: 30 Nov 92/ 1255

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.87		
✓N	5	N/A		8.86	-

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.77		
✓N	18	3		2.77	190

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.77 - 2.77) - (5.84)(2 / 5.33))(100)
= 381 / 2
= 190

219

4. Date Na2S2O3 bottle opened: 4 Nov 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
30 Nov 92
TJR
8.72 +
6.02 +
2.79 +
17.53 *
17.53 ÷
3. =
5.84 *
5.84 x
2. ÷
5.33 =
2.19 *
8.77 +
[illegible] -
[illegible] -
3.81 *
3.81 x
100. =
381.0 *
381.0 ÷
2. =
190.50 *

SCOEPA00020434

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 25 Nov 92 Incubator: 20.5 C Analyst: TJR

Date/Time In: 25 Nov 92 / 1048 Date/Time Out: 30 Nov 92 / 1255

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	40	8	8.79		
✓N	44	8		0.07	327
OWW	47	5	8.91		
✓N	51	5		2.89	361
OWW	54	3	8.83		
✓N	73	3		6.04	279
N					
N					322

Average OWW BOD, mg/L: _____

COMMENTS: _____

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OW
30 Nov 92
TJR

8.79 +
.07 -
8.72 *
8.72 x
300 ÷
8 =
327.00 *
8.91 +
[illegible] -
6.02 *
6.02 x
60 =
361.20 *
361.20 +M
8.83 +
[illegible] -
2.79 *
2.79 x
100 =
279.00 *
~~3.27~~ +M
~~361.47~~ ◊M
~~361.47~~ *M
327.00 +
361.00 +
279.00 +
967.00 *
967.00 ÷
3 =
[illegible] *

SCOEPA00020435

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 11 Nov 92 Sample Date: 11 Nov 92 Analyst: TJR

Slope: -58.3 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04 OF Date Opened: 14 Oct 92

10.0 mg/L: Lot #: 01 OG Date Opened: 14 Oct 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.6
OWW (composite)	0.6

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.4 mg/L	4.7 mg/L
% Recovery:	95 %	102.5 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 11 Nov 92 Oven Temp: 105 C Analyst: JJR

Date In: 11 Nov 92 Time In/Out: 0823 / 0947

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0908	0.0909	–
2. CE	200	0.0929	0.0910	9.5
3. CE	200	0.0926	0.0909	8.5
			Average CE TSS	9.0
4. OWW	50	0.1023	0.0903	240
5.				
6.				
7.				
8.				

Notes: _____

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

aqua tech laboratory

2417 S.E. HAWTHORNE PORTLAND, OREGON 97214
(503) 233-9871

REC'D NOV 25 1992

November 23, 1992

Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

Laboratory Report No. 921145

Subject: Laboratory analysis of wastewater samples.
Samples collected: November 17, 1992
Samples received: November 17, 1992
Samples analyzed: November 17, 1992

Analysis	CE	MV-3	OWW
BOD-5, mg/L	1.0		70
Total Chromium, mg/L	< 0.05		
Hexavalent Chromium, mg/L	< 0.05		
Fluoride, mg/L	1.8		0.2
Total Phosphate, mg/L		0.037	
Suspended Solids, mg/L	< 1		330

AQUA-TECH LABORATORY

C. L. Chang

C. L. Chang

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 4 Nov 92 Oven Temp: 103 C Analyst: TJR

Date In: 4 Nov 92 Time In/Out: 0848 / 0958

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0916	0.0918	–
2. CE	200	0.0934	0.0919	7.5
3. CE	200	0.0928	0.0909	9.5
			Average CE TSS	8.5
4. OWW	50	0.1053	0.0919	268
5.				
6.				
7.				
8.				

Notes: _____

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 4 Nov 92 Incubator: 21.0 C Analyst: JJB

Date/Time In: 4 Nov 92 / 1035 Date/Time Out: 9 Nov 92 / 1244

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.38		
✓N	5	N/A		8.44	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	14	3	8.41		
✓N	18	3		2.85	189

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202
(Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: ⊗
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.41 - 2.85) - (4.71)(2 / 5.33))(100)
= 379 / 2 ~1.77
= 189

4. Date Na2S2O3 bottle opened: 4 Nov 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
9 Nov 92
JJB

7.58 +
3.86 +
2.68 +
14.12 *
14.12 ÷
3. =
4.71 *
4.71 x
2. ÷
5.33 =
1.77 *
8.41 +
[illegible] -
[illegible] -
3.79 *
3.79 x
100. =
379.00 *
379.00 ÷
2. =
189.50 *

SCOEPA00020440

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 4 Nov 92 Incubator: 21 C Analyst: TJR

Date/Time In: 4 Nov 92 / 1035 Date/Time Out: 9 Nov 92 / 1244

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	37	8	8.32		
✓N	39	8		0.74	284
OWW	46	5	8.35		
✓N	47	5		4.49	232
OWW	51	3	8.43		
✓N	54	3		5.75	268
____	____	____	____		
__N	____	____		____	____
____	____	____	____		
__N	____	____		____	____

Average OWW BOD, mg/L: 261

COMMENTS: _____

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
9 Nov 92
TJR

8.32 +
0.74 −
7.58 *
7.58 X
300. ÷
8. =
284.25 *
284.25 +M
8.35 +
.74 −
3.86 *
3.86 X
60. =
231.60 *
231.60 +M
8.43 +
.75 −
2.68 *
2.68 X
100. =
268.00 *
268.00 +M
7 3.85 ÷
3. =
261.28 *
0. *

File

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

November 9, 1992

Ms. Linda Scheffler
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for October 1992

Dear Ms. Scheffler,

Attached is our October, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All permit parameters were within permitted limits.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

BY: Thomas G. McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 November 92
SAMPLING PERIOD: October, 1992
SAMPLE CODE:
TODAY'S DATE: 6 November 92

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * * * *

SAMPLE DATE >	October 1992	SAMPLE LOCATION>	OWW Discharge	SAMPLE TYPE >	X COMPOSITE — GRAB	DATE RECEIVED AT LAB >	7,14, 21,27 Oct 92	DATE OF SAMPLE ANAYSIS >	7,14 21,27 Oct 92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843	---	5.5-11.5 S.U.				Within Limits
Cadmium	736	---	0.7				
Cyanide (Total)	878	---	1.2				
Chromium (Total)	748	---	3.8				
Copper (Total)	752	---	2.3				
Nickel (Total)	824	---	3.0				
Lead (Total)	811	---	0.7				
Zinc (Total)	874	---	4.0				
B.O.D.	729	308	>300=ESSC				Ave of 3; High=330
T.S.S.	857	218	>350=ESSC				Ave of 4; High =284
FEM-T Oil & Grease (total)	913	---					
FEM-NP Oil & Grease (Non-Polar)	915	1.6	100				Grab 6 Oct 92
FEM-P Oil & Grease (Polar)	914	19.4	500				Grab 6 Oct 92
Arsenic	710	---	0.3				
Chlorinated Hydrocar	739	< 0.25	0.5				Grab 6 Oct 92
Fluoride	797	0.4	30.0				Ave of 4; High = 0.5
Flash Pt. Closed Cup	916	> 200	>140 F				Flame Exting. at 148

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. McCline Date: 11/9/92

form 13-1A.fil
rev. 3/20/92

SCOEPA00020443

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7 Oct 92 Sample Date: 7 Oct 92 Analyst: TJR

Slope: -58.7 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: C4 DF Date Opened: 1 Sep 92

10.0 mg/L: Lot #: C1 DG Date Opened: 1 Sep 92

Data:

Sample	Fluoride, mg/L
CE (composite)	2.3
OWW (composite)	0.5

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	6.2 mg/L	4.6 mg/L
% Recovery:	97.5 %	102.5 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87

2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 7 Oct 92 Oven Temp: 103 Analyst: JJR

Date In: 7 Oct 92 Time In/Out: 0843 / 0945

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0914	0.0915	-
2. CE	200	0.0914	0.0906	4.0
3. CE	200	0.0928 4	0.0917	3.5
			Average CE TSS	3.8
4. CWW	50	0.1060	0.0918	284
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 7 oct 92 Incubator: 21.5 C Analyst: TJR

Date/Time In: 7 oct 92 / 1020 Date/Time Out: 12 oct 92 1438

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.94	-	
✓N	5	N/A		8.96	-

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	12	3	8.86		
✓N	~~18~~ 14	3		2.80	205

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~2~~ 3 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.86 - 2.80) - (5.22)(2 / 5.33))(100)
= 410 / 2
= 205

1.96

4. Date Na2S2O3 bottle opened: 16 Sep92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
12 oct 92
TJR

8.49 +
4.50 +
2.68 +
15.67 *
15.67 ÷
3. =
5. 2 *
5. 2 ×
2. ÷
5. 3 =
1.96 *
.86 +
4.10 *
4.10 ×
1.0. =
41. 0 *
41. 0 ÷
2. =
2 5. 0 *

SCOEPA00020446

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 7 Oct 92 Incubator: 21.5 C Analyst: TJR

Date/Time In: 7 Oct 92 / 1020 Date/Time Out: 12 Oct 92 / 1438

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	8	8.92		
✓N	37	8		0.43	318
OWW	~~39~~ 38	5	8.89		
✓N	~~40~~ 39	5		4.39	2.70
OWW	40	3	8.86		
✓N	49	3		6.18	2.68
N					
N					

Average OWW BOD, mg/L: 285

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
12 Oct 92
TJR

8.92 +
-
8.49 *
8.49 x
3.0 ÷
8 =
31.33 *
31.33 +M
.39 +
-
4.50 *
4.50 x
60 =
27.0 *
27.0 +M
.86 +
-
2.68 *
2.68 x
1.0 =
268.0 *
268.0 +M
256.33 ◊M
256.33 ÷
3 =
285.43 *

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 27 oct 92 Sample Date: 27 Oct 92 Analyst: TJR

Slope: -57.8 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04DF Date Opened: 14 Oct 92

10.0 mg/L: Lot #: 01DG Date Opened: 14 Oct 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.1
OWW (composite)	0.5

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW (0.1 ml of 100mg/L)
After Spike Concentration:	5.0 mg/L	2.5 mg/L
% Recovery:	97.5 %	100 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 27 oct 92 Oven Temp: 104 C Analyst: JJR

Date In: 27 oct 92 Time In/Out: 0854 / 1125

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0916	0.0919	–
2. CE	200	0.0931	0.0918	6.5
3. CE	200	0.0923	0.0906	8.5
			Average CE TSS	7.5
4. OWW	50	0.1014	0.0909	210
5. Grinding Trench (grab)	50	0.1146	0.0909	474
6.				
7.				
8.				

Notes: _____

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 14 Oct 92 Oven Temp: 106 °C Analyst: JJR

Date In: 14 Oct 92 Time In/Out: 0846 / 1000

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0915	0.0916	-
2. CE	200	0.0927	0.0913	7.0
3. CE	200	0.0940	0.0925	7.5
			Average CE TSS	7.2
4. OWW	50	0.1014	0.0928	172
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 14 Oct 92 Sample Date: 14 Oct 92 Analyst: TJR

Slope: -58.4 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: C4 OF Date Opened: 14 Oct 92

10.0 mg/L: Lot #: C1 DG Date Opened: 14 Oct 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.4
OWW (composite)	0.2

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.4 mg/L	4.3 mg/L
% Recovery:	100.0 %	102.5 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 14 oct 92 Incubator: 20.0 C Analyst: TJR

Date/Time In: 14 oct 92 / 1044 Date/Time Out: 19 oct 92 / 1350

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.81		
✓N	5	N/A		8.80	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	12	3	8.77		
✓N	14	3		2.33	211

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~2~~ 3 ml of OWW: Y
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.77 - 2.33) - (5.91)(2 / 5.33))(100)
= 422 / 2 2.22
= 211

4. Date Na2S2O3 bottle opened: 16 Sep 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
19 oct 92
TJR

.86 +
.56 +
.32 +
17.74 *
17.74 ÷
3. =
5.91 *
5.91 ×
2. ÷
5.3 =
.2 *
8.77 +
- -
4.2 *
4.2 ×
1.0 =
4.2 *
4.2 0 ÷
2. =
211. 0 *

SCOEPA00020452

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 14 Oct 92 Incubator: 20.0 C Analyst: TJR

Date/Time In: 14 Oct 92 / 1044 Date/Time Out: 19 Oct 92 / 1350

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	8	8.79		
✓ N	37	8		0.13	325
OWW	38	5	8.78		
✓ N	39	5		3.22	334
OWW	40	3	8.76		
✓ N	49	3		5.44	332
N					
N					

Average OWW BOD, mg/L: 330

COMMENTS: Floc seemed to settle slowly.

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
19 Oct 92
TJR

8.79 +
-
8.76 *
8.76 ×
300. ÷
8. =
324.75 *
324.75 +M
8.78 +
-
.56 *
.56 ×
60. =
3.60 *
3.60 +M
8.76 +
-
.32 *
.32 ×
1.0. =
32.0 *
32.0 +M
90.35 ◊M
90.35 ÷
3. =
30.12 *

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 21 Oct 92 Oven Temp: 102 C Analyst: TJR

Date In: 21 Oct 92 Time In/Out: 0826 / 1000

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	NA	0.0909	0.0910	—
2. CE	200	0.0914	0.0907	3.5
3. CE	200	0.0914	0.0908	3.0
			Average CE TSS	3.2
4. CWW	50	0.1012	0.0910	204
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 14 Oct 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 21 Oct 92 Sample Date: 21 Oct 92 Analyst: TJR

Slope: -58.1 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04 DF Date Opened: 14 Oct 92

10.0 mg/L: Lot #: 01 DG Date Opened: 14 Oct 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.9
OWW (composite)	~~6.0~~ 0.5

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	6.0 mg/L	4.6 mg/L
% Recovery:	102.5 %	102.5 %

Comments:

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 21 Oct 92 Incubator: 21.5 C Analyst: TJR

Date/Time In: 21 Oct 92 / 1110 Date/Time Out: 26 Oct 92 / 1305

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.56		
✓N	5	N/A		8.53	-

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	12	3	8.41		
✓N	14	3		3.43	147

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~1~~ 2 ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.41 - 3.43) - (5.44)(2 / 5.33))(100)
= 294 / 2
= 147

2.04

4. Date Na2S2O3 bottle opened: 16 Sep 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC 26 Oct 92
5.29 + 5.13 + 16.3 *
16.3 ÷ 2.0 = 5.4 *
5.4 x 2.0 ÷ 5.3 = 2.04 *
8.41 + - - 2.94 *
2.94 x 100 = 294.0 *
294.0 ÷ 2.0 = 147.0 *

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 21 Oct 92 Incubator: 21.5 C Analyst: TJR

Date/Time In: 21 Oct 92 / 1110 Date/Time Out: 26 Oct 92 / 1305

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	34	8	8.36	-	
✓N	36	8		0.45	296.63
OWW	37	5	8.42		
✓N	38	5		3.13	317.40
OWW	39	3	8.52		
✓N	40	3		5.39	313.00
N					
N					

Average OWW BOD, mg/L: 309.01

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 21 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
26 Oct 92
TJR

8.36 +
- 7.91 *
7.91 ×
3.0 ÷
8. =
29.63 *
29.63 +M
8.42 +
- 5.29 *
5.29 ×
60. =
317.40 *
317.40 +M
8.52 +
- .13 *
.13 ×
1 0. =
313. 0 *
313. 0 +M
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3. =
309.01 *

SCOEPA00020457

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

REC'D OCT 26 1992
JDR

October 20, 1992

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attn: Thomas J. Rothschild

Re: P.O. #30381
PEL #92-3250

Enclosed is the lab report for your samples which were received on October 6, 1992.

I. Sample Description

Two Water Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Project Manager

Rob May
Project Manager

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

METHOD: Oil & Grease, polar/non polar, per EPA 413.2, EPA 418.1
Results in mg/L (ppm)

Compound	92-25 OWW (grab)	Method Blank	Detection Limit
Non polar hydrocarbons	1.6	ND	0.50
Oil & grease	21	ND	0.50
Polar hydrocarbons by difference	19.4	--	--

METHOD: Flashpoint (PMCC) per EPA 1010

Sample I.D.	Flashpoint
92-25 OWW (grab)	No Flash, Flame Extinguished at 148°F

METHOD: Halogenated Volatile Organic Compounds per EPA 8010 (GC/MS)
Results in ug/L (ppb)

Compound	92-25 CE (grab)	Method Blank	Detection Limit
Bromodichloromethane	ND	ND	2.0
Bromoform	ND	ND	2.0
Bromomethane	ND	ND	10
Carbon tetrachloride	ND	ND	2.0
Chlorobenzene	ND	ND	2.0
Chloroethane	ND	ND	10
2-Chloroethyl Vinyl Ether	(y)	(y)	--
Chloroform	10	ND	2.0
Chloromethane	ND	ND	10
Dibromochloromethane	ND	ND	2.0
1,3-Dichlorobenzene	ND	ND	2.0
1,2-Dichlorobenzene	ND	ND	2.0
1,4-Dichlorobenzene	ND	ND	2.0
Dichlorodifluoromethane	ND	ND	5.0
1,2-Dichloroethane	ND	ND	2.0
1,1-Dichloroethane	ND	ND	2.0
cis-1,2-Dichloroethene	ND	ND	2.0
trans-1,2,-Dichloroethene	ND	ND	2.0
1,1-Dichloroethene	ND	ND	2.0
1,2-Dichloropropane	ND	ND	2.0
trans-1,3-Dichloropropene	ND	ND	2.0
cis-1,3-Dichloropropene	ND	ND	2.0
Methylene chloride	ND	ND	5.0
1,1,2,2-Tetrachloroethane	ND	ND	2.0
Tetrachloroethene	ND	ND	2.0
1,1,1-Trichloroethane	ND	ND	2.0
1,1,2-Trichloroethane	ND	ND	2.0
Trichloroethene	ND	ND	2.0
Trichlorofluoromethane	ND	ND	2.0
Vinyl chloride	ND	ND	5.0

8010 Surrogate Recoveries (%)

Compound	92-25 CE (grab)	Method Blank
4-Bromofluorobenzene (86-115%)	100	99
1,2-Dichloroethane-d4 (76-114%)	94	95

(y) Due to low response, we are unable to calculate a result for this compound.

METHOD: Volatile Organic Compounds per EPA 8240 (GC/MS)
Water results in ug/L (ppb)

Compound	92-25 OWW (grab)	Detection Limit
Acetone	2,500	50
Acrolein	ND	500
Acrylonitrile	ND	250
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone	ND	38
Carbon disulfide	ND	10
Carbon tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
Dibromomethane	ND	10
1,4-Dichloro-2-butene	ND	250
Dichlorobenzenes (total)	ND	10
Dichlorodifluoromethane	ND	25
1,2-Dichloroethane	ND	10
1,1-Dichloroethane	ND	10
1,1-Dichloroethene	ND	10
cis-1,2-Dichloroethene	ND	10
trans-1,2-Dichloroethene	ND	10
1,2-Dichloropropane	ND	10
trans-1,3-Dichloropropene	ND	10
cis-1,3-Dichloropropene	ND	10
Ethyl Methacrylate	ND	10
Ethylbenzene	ND	10
2-Hexanone	ND	25
Iodomethane	ND	10
4-Methyl-2-pentanone	ND	25
Methylene chloride	ND	10
Styrene	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,2-Trichloroethane	ND	10
1,1,1-Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
1,2,3-Trichloropropane	ND	10
Vinyl acetate	ND	50
Vinyl chloride	ND	25
Xylenes (total)	ND	10

METHOD: Volatile Organic Compounds per EPA 8240 (GC/MS)
Water results in ug/L (ppb) - continued

Compound	Method Blank	Detection Limit
Acetone	ND	10
Acrolein	ND	100
Acrylonitrile	ND	50
Benzene	ND	2.0
Bromodichloromethane	ND	2.0
Bromoform	ND	2.0
Bromomethane	ND	10
2-Butanone	ND	7.5
Carbon disulfide	ND	2.0
Carbon tetrachloride	ND	2.0
Chlorobenzene	ND	2.0
Chloroethane	ND	10
Chloroform	ND	2.0
Chloromethane	ND	10
Dibromochloromethane	ND	2.0
Dibromomethane	ND	2.0
1,4-Dichloro-2-butene	ND	50
Dichlorobenzenes (total)	ND	2.0
Dichlorodifluoromethane	ND	5.0
1,2-Dichloroethane	ND	2.0
1,1-Dichloroethane	ND	2.0
1,1-Dichloroethene	ND	2.0
cis-1,2-Dichloroethene	ND	2.0
trans-1,2-Dichloroethene	ND	2.0
1,2-Dichloropropane	ND	2.0
trans-1,3-Dichloropropene	ND	2.0
cis-1,3-Dichloropropene	ND	2.0
Ethyl Methacrylate	ND	2.0
Ethylbenzene	ND	2.0
2-Hexanone	ND	5.0
Iodomethane	ND	2.0
4-Methyl-2-pentanone	ND	5.0
Methylene chloride	ND	2.0
Styrene	ND	2.0
1,1,2,2-Tetrachloroethane	ND	2.0
Tetrachloroethene	ND	2.0
Toluene	ND	2.0
1,1,2-Trichloroethane	ND	2.0
1,1,1-Trichloroethane	ND	2.0
Trichloroethene	ND	2.0
Trichlorofluoromethane	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Vinyl acetate	ND	10
Vinyl chloride	ND	5.0
Xylenes (total)	ND	2.0

8240 Surrogate Recoveries (%)

Compound	92-25 OWW (grab)	Method Blank
4-Bromofluorobenzene (86-115%)	101	99
1,2-Dichloroethane-d4 (76-114%)	94	95
Toluene-d8 (88-110%)	98	98

PACIFIC ENVIRONMENTAL LABORATORY INC.
9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644- 0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY Wacker Siltronic Corporation PROJECT NAME — LAB PROJECT NUMBER 92-3250

PROJECT MANAGER — PROJECT NUMBER —

COLLECTED BY Thomas J. Rothschild P.O. NUMBER 30381 RUSH ☐ YES ☒ NO

COMMENTS

SAMPLES RECEIVED AT 4°C ☒ YES ☐ NO

SAMPLES IN APPROPRIATE CONTAINERS ☒ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☒ NO

PROVIDE PRELIMINARY FAX RESULTS ☒ YES ☐ NO

PROVIDE FINAL FAX RESULTS ☐ YES ☒ NO

PEL NO.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel - OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	TCE	Flash Point	Oil + Grease	D Polar N Non-Polar		REMARKS
	92-25	6 Oct 92	0745	CE (grab)		X		2														X					
	92-25	6 Oct 92	0745	CUW (grab)		X		4									X						X	X			

ALL SAMPLES WILL BE DISPOSED OF 30 DAYS AFTER RECEIPT

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
Thomas J. Rothschild	Wacker Siltronic Corp.	6 Oct 92 / 0845	Paul Conroy	WACKER 10-6-92
Paul Conroy	WACKER	10-6-92 / 1052	Julie Reynolds	PEL 10-6-92 1055
RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY

SCOEPA00020464

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

October 13, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for September 1992

Dear Mr. McCadden:

Attached is our September, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All permit parameters were within permitted limits.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

BY:

Tom McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 October 92
SAMPLING PERIOD: September 92
SAMPLE CODE:
TODAY'S DATE: 13 September 92

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
XX PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * * *

SAMPLE DATE >	September 1992	SAMPLE LOCATION>	MV-1	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	2,9,16 23,30 Sep92	DATE OF SAMPLE ANAYSIS >	2,9,16, 23,30 Sep92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				within limits
Cadmium	736	–	0.7				
Cyanide (Total)	878	–	1.2				
Chromium (Total)	748	–	3.8				
Copper (Total)	752	–	2.3				
Nickel (Total)	824	–	3.0				
Lead (Total)	811	–	0.7				
Zinc (Total)	874	–	4.0				
B.O.D.	729	273	>300=ESSC				Ave.of 5; High=393
T.S.S.	857	313	>350=ESSC				Ave of 6; High=376
FEM-T Oil & Grease (total)	913	---					
FEM-NP Oil & Grease (Non-Polar)	915	1.2	100				Grab, 3Sep92
FEM-P Oil & Grease (Polar)	914	17	500				Grab, 3Sep92
Arsenic	710	---	0.3				
Chlorinated Hydrocar	739	< 0.25	0.5				Grab, 3Sep92
Fluoride	797	0.8	30.0				Ave.of 5; High=1.1
Flash Pt. Closed Cup	916	>200	>140 F				Exting at 132°F

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Tom McCu Date: 10/13/92

form 13-1A.fil
rev. 3/20/92

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 2 Sep 92 Oven Temp: 104 Analyst: TJR

Date In: 2 Sep 92 Time In/Out: 0838 / 1011

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0911	0.0913	-0.8
2. CE	200	0.0934	0.0914	10.0
3. CE	200	0.0939	0.0920	9.5
			Average CE TSS	9.8
4. GWW	50	0.1092	0.0914	356
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 2 Sep92 Sample Date: 2 Sep92 Analyst: TJR

Slope: -58.5 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04DF Date Opened: 1 Sep92

10.0 mg/L: Lot #: 01DG Date Opened: 1 Sep92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.7
OWW (composite)	0.1

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.6 mg/L	3.9 mg/L
% Recovery:	97.5 %	95.0 %

Comments: First Slope = -58.5 mV, -58.6 mV.

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87

2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 2~~3~~ Sep92 Incubator: 20.5C Analyst: TJR

Date/Time In: 3Sep92 / 1110 Date/Time Out: 8Sep92/ 1313

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	46	8	8.33		
✓N	49	8		0.67	287
OWW	57	5	8.43		
✓N	67	5		4.00	266
OWW	76	3	8.41		
✓N	86	3		5.28	313
N					
N					

Average OWW BOD, mg/L: 289

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 18 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
8Sep92 TJR

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 3 Sep 92 Incubator: 20.5 C Analyst: TJR

Date/Time In: 3 Sep 92 / 1110 Date/Time Out: 8 Sep 92 / 1313

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF, mg/L	BOD, mg/L
Blank	5	N/A	8.63		
✓N	14	N/A		8.43	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	18	3	8.51		
✓N	22	3		3.81	140

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ~~1~~ ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.51 - 3.81) - (5.07)(2 / 5.33))(100)
= 280 / 2
= 140

1.90

4. Date Na2S2O3 bottle opened: 5 Aug 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC 8 Sep 92 TJR

7.6 + 4.43 + 3.13 + 15.2 * 15.2 ÷ 3 = 5.07 * 5.07 × 2 ÷ 5.3 = 1.90 * 8.51 + 2.80 * 2.80 × 10 = 28 *

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 9 Sep 92 Oven Temp: 101 °C Analyst: JJR

Date In: 9 Sep 92 Time In/Out: 0807 / 0917

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0917	0.0917	–
2. CE	200	0.0967	0.0925	21.0
3. CE	200	0.0957	0.0918	19.5
			Average CE TSS	20.2
4. OWW	50	0.1106	0.0918	376
CE grab – 0930 5. CE grab	200	0.0933	0.0918	7.5
0942 out: 1114 6. CE grab	200	0.0927	0.0912	7.5
WW grab – 0930 7. OWW grab	50	0.1066	0.0924	284
0942 out: 1114 8.				

> 7.5

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 9 Sep92 Sample Date: 9 Sep92 Analyst: JJR

Slope: -58.4 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: C4DF Date Opened: 1 Sep92

10.0 mg/L: Lot #: C1DG Date Opened: 1 Sep92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.6
OWW (composite)	1.1

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.4 mg/L	5.1 mg/L
% Recovery:	95 %	100 %

Comments: Slope 1) -59.0 mV 2) -58.4 mV

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 9 Sep92 Incubator: 20 C Analyst: JJR

Date/Time In: 9 Sep92 / 1018 Date/Time Out: 14 Sep92 / 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	5	N/A	8.83		
✓N	14	N/A		8.49	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L – DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	18	3	8.75		
✓N	22	3		1.46	234

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ~~1~~ ml of OWW: Y
4. QC BOD = ((DOI – DOF) – (Ave DOI's – DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.75 – 1.46) – (5.22)(2 / 4))(100)
= 468 / 2
= 234

2.61

4. Date Na2S2O3 bottle opened: 9 Aug 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

QC Standard -> New Lot.

6.39 +
4.04 +
10.43 *
10.43 ÷
2. =
5.22 *
5.22 ÷
2. =
2.61 *
8.75 +
–
–
4.68 *
4.68 ×
10. =
68.0 *
68.0 ÷
2. =

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 9 Sep92 Incubator: 20 C Analyst: JJR

Date/Time In: 9 Sep92 / 1018 Date/Time Out: 14 Sep92 / 1117

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	46	8	8.65		
✓N	49	8		0.08	321
OWW	57	5	8.66		
✓N	67	5		2.27	383
OWW	76	3	8.73		
✓N	86	3		4.69	404
N					
N					

Average OWW BOD, mg/L: 393

COMMENTS: Throw out sample #1 -> Reference Standard methods

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 22 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
14 Sep 92
TJR

93.50 * 2. = 187.00 ÷ 187.00 * 4.00 + 4.00 * 1.0. = 4.04 x 183.40 * 8.73 + 183.40 +M 6.39 * 60. = 6.39 x 321.38 * 8. = 8.57 x 8.57 * 8.65 +

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 16 Sep 92 Oven Temp: 102 Analyst: JJR

Date In: 16 Sep 92 Time In/Out: ~~0946~~ 0846 / 1008

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0919	0.0921	-0.8
2. CE	200	0.0984	0.0921	31.5
3. CE	200	0.0972	0.0915	28.5
			Average CE TSS	30.0
4. GWW	50	0.1094	0.0914	360
5. CE grab	200	0.0973	0.0922	25.5
6. 1040 ↓	200	0.0966	0.0915	25.5
7.				
8.				

In 1105
out 1301

Notes: Sample Temperature → 23°C
Excess Lime addition during previous 24 hours.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 16 Sep 92 Sample Date: 16 Sep 92 Analyst: JJR

Slope: -58.7 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04DF Date Opened: 1 Sep 92

10.0 mg/L: Lot #: 01DG Date Opened: 1 Sep 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.6
OWW (composite)	0.7

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.3 mg/L	4.7 mg/L
% Recovery:	92.5 %	100 %

Comments: 1st Slope -> -58.8 mV

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 16 Sep 92 Incubator: 21 C Analyst: JJR

Date/Time In: 16 Sep 92 / 1130 Date/Time Out: 21 Sep 92 1313

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.78		
✓N	5	N/A		8.77	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	12	3	8.65		
✓N	14	3		2.94	207

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ~~1~~ ml of DWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.65 - 2.94) - (4.18)(2 / 5.33))(100)
= 414 / 2
= 207

1.57

4. Date Na2S2O3 bottle opened: 16 Sep 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD Calc 21 Sep 92

6.57 + 3.89 + 2.09 + 12.55 *
12.55 ÷ 3. = 4.18 *
4.18 × 2. ÷ 5.3 = 1.57 *
8.65 + 1 1 4.14 *
4.14 × 1 0. ÷ 2. = 2 7. 0 *

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 16 Sep 92 Incubator: 21 C Analyst: JJR

Date/Time In: 16 Sep 92 / 1130 Date/Time Out: 21 Sep 92 / 1313

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	34	8	8.62		
✓N	36	8		2.05	246
OWW	37	5	8.66		
✓N	38	5		4.77	233
OWW	39	3	8.69		
✓N	40	3		6.60	209
N					
N					

Average OWW BOD, mg/L: 230

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 23 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's 21 Sep 92

8.62 + - 6.57 * 6.57 x 3.0 ÷ 8 = 246.38 * 246.38 +M 8.6 + - 3.89 * 3.89 x 60 = 233.40 * 233.40 +M 8.69 + - 2.09 * 2.09 x 1.0 = 2.09 * 2.09 +M 6.78 ÷ 3 = 22.59 *

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 23 Sep 92 Oven Temp: 108 Analyst: TJR

Date In: 23 Sep 92 Time In/Out: 0830 / 0946

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
3 ~~1~~. Blank	250	0.0915	0.0916	–
4 ~~2~~. CE	200	0.0933	0.0922	5.5
5 ~~3~~. CE	200	0.0934	0.0922	6.0
			Average CE TSS	5.8
6 ~~4~~. OWW	50	0.1064	0.0917	294
5.				
6.				
7.				
8.				

Notes: 1150 weighing → No change.

0815, 24 Sep 92 weighing → No change

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg} - \text{Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 23 Sep92 Sample Date: 23 Sep92 Analyst: JJR

Slope: -58.6 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 64DF Date Opened: 1 Sep92

10.0 mg/L: Lot #: 01DG Date Opened: 1 Sep92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.6
OWW (composite)	1.0

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.4 mg/L	5.00 mg/L
% Recovery:	95 %	100 %

Comments:

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87

2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 23 Sep 92 Incubator: 20.5 C Analyst: TJR

Date/Time In: 23Sep92/ 1058 Date/Time Out: 28 Sep 92 1120

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.52		
✓N	5	N/A		8.45	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	12	3	8.35		
✓N	14	3		3.50	170

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.35 - 3.50) - (3.83)(2 / 5.33))(100)
= 341 / 2
= 170
1.44

4. Date Na2S2O3 bottle opened: 16 Sep 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
28 Sep 92
TJR

5.77 +
3.70 +
2.02 +
1.49 *
1.49 ÷
3. =
.83 *
.83 x
2. ÷
5.33 =
1.4 *
8.35 +
-
-
3.41 *
3.41 x
10. =
341.0 *
341.0 ÷
2. =
170.50 *

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 23Sep92 Incubator: 20.9 C Analyst: TJR

Date/Time In: 23Sep92 / 1058 Date/Time Out: 28Sep92 / 1120

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	34	8	8.33		
✓N	37	8		2.56	216
OWW	38	5	8.38		
✓N	39	5		4.68	222
OWW	40	3	8.37		
✓N	49	3		6.35	202
N					
N					

Average OWW BOD, mg/L: 213

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 23 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's 28 Sep92

8.33 ÷
- 5.77 *
5.77 x
300. ÷
8. =
216.38 *
216.38 +M
3.38 +
- 3.70 *
3.70 x
60. =
2.0 *
2.0 +M
8.37 +
- 2.02 *
2.02 x
100. =
2.0 *
2.0 +M
640.38 ÷
3. =
213.43 *

SCOEPA00020482

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 30 Sep 92 Oven Temp: 105 Analyst: TJR

Date In: 30 Sep 92 Time In/Out: 0839 / 0959

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0919	0.0919	–
2. CE	200	0.0924	0.0919	2.5
3. CE	200	0.0920	0.0916	2.0
			Average CE TSS	2.2
4. OWW	50	0.1020	0.0917	206
5.				
6.				
7.				
8.				

Notes:

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 30 Sep92 Sample Date: 30 Sep92 Analyst: JJR

Slope: -58.1 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04 OF Date Opened: 1 Sep92

10.0 mg/L: Lot #: 01 OG Date Opened: 1 Sep92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.7
OWW (composite)	1.0

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.6 mg/L	5.1 mg/L
% Recovery:	97.5 %	102.5 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87

2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 30 Sep92 Incubator: 21 C Analyst: TJR

Date/Time In: 30 Sep92 / 1110 Date/Time Out: 5oct92 / 1124

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	36	8	8.46		
✓N	37	8		1.92	245
OWW	38	5	8.40		
✓N	39	5		4.13	256
OWW	40	3	8.39		
✓N	49	3		6.17	222
N					
N					

Average OWW BOD, mg/L: 241

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 21 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's 5oct92

8.46 +
- 6.54 *
6.54 x
3.0 ÷
8 =
247.25 *
247.25 +M
8.40 +
- 4.27 *
4.27 x
60 =
256.20 *
256.20 +M
8.39 +
- .2 *
.2 x
1.0 =
2.0 *
2.0 +M
723.45 ◊M
723.45 ÷
3 =
24.15 *

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 30 Sep92 Incubator: 21 C Analyst: JJR

Date/Time In: 30 Sep92 / 1116 Date/Time Out: 5 Oct92 / 1124

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	4	N/A	8.45		
✓N	5	N/A		8.46	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	12	3	8.32		
✓N	14	3		2.26	222

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2202 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with ~~x~~2ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.32 - 2.26) - (4.34)(2 / 5.33))(100)
= 443 / 2 1.63
= 222

4. Date Na2S2O3 bottle opened: 16 Sep92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC 5 Oct92 JJR

6.54 +
4.27 +
.2 +
13.03 *
17.03 ÷
3. =
4.34 *
.34 ×
2. ÷
5.33 =
1.63 *
8.32 +
-
-
4.43 *
.43 ×
1 0. ÷
2. =
21.50 *

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

REC'D SEP 23 1992
JJR

September 17, 1992

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180

Attn: Thomas Rothschild

Re: P.O. #30381
PEL #92-2884

Enclosed is the lab report for your samples which were received on September 3, 1992.

I. Sample Description

Two Water Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Project Manager

Rob May
Project Manager

9405 S.W. Nimbus Ave. ■ Beaverton, OR 97005 ■ (503) 644-0660 ■ FAX # (503) 644-2202

METHOD: Oil and Grease per EPA 413.2
Results in mg/L (ppm)

Sample I.D.	Oil & Grease
92-22-OWW (grab)	18
Method Blank	ND
Detection Limit	0.50

METHOD: Nonpolar Hydrocarbons per EPA 418.1
Results in mg/L (ppm)

Sample I.D.	Nonpolar Hydrocarbons
92-22-OWW (grab)	1.2
Method Blank	ND
Detection Limit	0.50

METHOD: Polar Hydrocarbons by Difference
Results in mg/L (ppm)

Sample I.D.	Polar Hydrocarbons
92-22-OWW (grab)	17

METHOD: Flashpoint (PMCC) per EPA 1010

Sample I.D.	Flashpoint
92-22-OWW (grab)	No flash to 140°F; flame extinguished at 132°F

METHOD: Halogenated Volatile Organic Compounds per EPA 8010 (GC/MS)
Results in ug/L (ppb)

Compound	92-22 CE (grab)	Method Blank	Detection Limit
Bromodichloromethane	ND	ND	2.0
Bromoform	ND	ND	2.0
Bromomethane	ND	ND	10
Carbon tetrachloride	ND	ND	2.0
Chlorobenzene	ND	ND	2.0
Chloroethane	ND	ND	10
2-Chloroethyl Vinyl Ether	*	*	--
Chloroform	5.4	ND	2.0
Chloromethane	ND	ND	10
Dibromochloromethane	ND	ND	2.0
1,2-Dichlorobenzene	ND	ND	2.0
1,3-Dichlorobenzene	ND	ND	2.0
1,4-Dichlorobenzene	ND	ND	2.0
Dichlorodifluoromethane	ND	ND	5.0
1,1-Dichloroethane	ND	ND	2.0
1,2-Dichloroethane	ND	ND	2.0
1,1-Dichloroethene	ND	ND	2.0
cis-1,2-Dichloroethene	ND	ND	2.0
trans-1,2,-Dichloroethene	ND	ND	2.0
1,2-Dichloropropane	ND	ND	2.0
cis-1,3-Dichloropropene	ND	ND	2.0
trans-1,3-Dichloropropene	ND	ND	2.0
Methylene chloride	ND	ND	2.0
1,1,2,2-Tetrachloroethane	ND	ND	2.0
Tetrachloroethene	ND	ND	2.0
1,1,1-Trichloroethane	ND	ND	2.0
1,1,2-Trichloroethane	ND	ND	2.0
Trichloroethene	ND	ND	2.0
Trichlorofluoromethane	ND	ND	2.0
Vinyl chloride	ND	ND	5.0

8010 Surrogate Recoveries (%)

Compound	92-22 CE (grab)	Method Blank
1,2-Dichloroethane-d4 (76-114%)	94	94
4-Bromofluorobenzene (86-115%)	101	100

* Due to low response, we are unable to calculate a result for this compound.

METHOD: Volatile Organic Compounds per EPA 8240 (GC/MS)
Results in ug/L (ppb)

Compound	92-22 OWW (grab)	Detection Limit
Acetone	1,800	50
Acrolein	ND	500
Acrylonitrile	ND	250
Benzene	ND	10
Bromodichloromethane	ND	10
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone	ND	38
Carbon disulfide	ND	10
Carbon tetrachloride	ND	10
Chlorobenzene	ND	10
Chloroethane	ND	50
Chloroform	ND	10
Chloromethane	ND	50
Dibromochloromethane	ND	10
Dibromomethane	ND	10
Dichlorobenzenes (total)	ND	10
1,4-Dichloro-2-butene	ND	250
Dichlorodifluoromethane	ND	25
1,1-Dichloroethane	ND	10
1,2-Dichloroethane	ND	10
1,1-Dichloroethene	ND	10
cis-1,2-Dichloroethene	ND	10
trans-1,2-Dichloroethene	ND	10
1,2-Dichloropropane	ND	10
cis-1,3-Dichloropropene	ND	10
trans-1,3-Dichloropropene	ND	10
Ethylbenzene	ND	10
Ethyl Methacrylate	ND	10
2-Hexanone	ND	25
Iodomethane	ND	10
Methylene chloride	ND	10
4-Methyl-2-pentanone	ND	25
Styrene	ND	10
1,1,2,2-Tetrachloroethane	ND	10
Tetrachloroethene	ND	10
Toluene	ND	10
1,1,1-Trichloroethane	ND	10
1,1,2-Trichloroethane	ND	10
Trichloroethene	ND	10
Trichlorofluoromethane	ND	10
1,2,3-Trichloropropane	ND	10
Vinyl acetate	ND	50
Vinyl chloride	ND	25
Xylenes (total)	ND	10

METHOD: Volatile Organic Compounds per EPA 8240 (GC/MS)
Results in ug/L (ppb)

Compound	Method Blank	Detection Limit
Acetone	ND	10
Acrolein	ND	100
Acrylonitrile	ND	50
Benzene	ND	2.0
Bromodichloromethane	ND	2.0
Bromoform	ND	2.0
Bromomethane	ND	10
2-Butanone	ND	7.5
Carbon disulfide	ND	2.0
Carbon tetrachloride	ND	2.0
Chlorobenzene	ND	2.0
Chloroethane	ND	10
Chloroform	ND	2.0
Chloromethane	ND	10
Dibromochloromethane	ND	2.0
Dibromomethane	ND	2.0
Dichlorobenzenes (total)	ND	2.0
1,4-Dichloro-2-butene	ND	50
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0
1,1-Dichloroethene	ND	2.0
cis-1,2-Dichloroethene	ND	2.0
trans-1,2-Dichloroethene	ND	2.0
1,2-Dichloropropane	ND	2.0
cis-1,3-Dichloropropene	ND	2.0
trans-1,3-Dichloropropene	ND	2.0
Ethylbenzene	ND	2.0
Ethyl Methacrylate	ND	2.0
2-Hexanone	ND	5.0
Iodomethane	ND	2.0
Methylene chloride	ND	2.0
4-Methyl-2-pentanone	ND	5.0
Styrene	ND	2.0
1,1,2,2-Tetrachloroethane	ND	2.0
Tetrachloroethene	ND	2.0
Toluene	ND	2.0
1,1,1-Trichloroethane	ND	2.0
1,1,2-Trichloroethane	ND	2.0
Trichloroethene	ND	2.0
Trichlorofluoromethane	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Vinyl acetate	ND	10
Vinyl chloride	ND	5.0
Xylenes (total)	ND	2.0

8240 Surrogate Recoveries (%)

Compound	92-22 OWW (grab)	Method Blank
1,2-Dichloroethane-d4 (76-114%)	93	94
Toluene-d8 (88-110%)	98	101
4-Bromofluorobenzene (86-115%)	98	100

PACIFIC ENVIRONMENTAL LABORATORY INC.
9405 S.W. Nimbus Ave.
Beaverton, OR 97005
(503) 644- 0660
Fax (503) 644-2202

CHAIN OF CUSTODY RECORD

COMPANY Wacker Siltronic Corporation PROJECT NAME — LAB PROJECT NUMBER 92-2884

PROJECT MANAGER — PROJECT NUMBER —

COLLECTED BY Thomas J. Rothschild P.O. NUMBER 30381 RUSH ☐ YES ☒ NO

COMMENTS

SAMPLES RECEIVED AT 4°C ☒ YES ☐ NO

SAMPLES IN APPROPRIATE CONTAINERS ☒ YES ☐ NO

PROVIDE VERBAL RESULTS ☐ YES ☒ NO

PROVIDE PRELIMINARY FAX RESULTS ☒ YES ☐ NO

PROVIDE FINAL FAX RESULTS ☐ YES ☒ NO

ANALYSES TO BE PERFORMED

PEL NO.	SAMPLE I.D.	DATE	TIME	SAMPLE DESCRIPTION	MATRIX: SOIL	MATRIX: WATER	MATRIX: OTHER	NUMBER OF CONTAINERS	TPH - HCID OAR/DEQ	TPH - Gasoline OAR/DEQ	TPH - Diesel OAR/DEQ	TPH - 418.1 Modified OAR/DEQ	HCID - Fuel Scan GC/FID	TPH 418.1	BTEX 602/8020	Halogenated Volatiles 601/8010	Volatiles 624/8240	Semivolatiles 625/8270	PCB's 608/8080	Chlorinated Pesticides 608/8080	TCLP (8) Metals	TCE	Flash Point	Oil + Grease	1. Polar 2. Non-Polar		REMARKS
1	92-22	3 Sep 92	0800	CE (grab)		X		2														X					
2	92-22	3 Sep 92	0800	OWW (grab)		X		4									X						X	X			

ALL SAMPLES WILL BE DISPOSED OF 30 DAYS AFTER RECEIPT

RELINQUISHED BY	COMPANY	DATE/TIME	RECEIVED BY	COMPANY
Thomas J. Rothschild	Wacker Siltronic Corp.	3 Sep 92 / 0845	P. Conway	WACKER
P. Conway	WACKER SILTRONIC	9-3-92 / 10:38	Julie Reynolds	PE 9-3-92 / 1038

SCOEPA00020493

Tom

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

September 11, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S. W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for August 1992

Dear Mr. McCadden:

Attached is our August 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All permit parameters were within permitted limits.

If you have questions, please call me at (503) 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Thomas C. McCue
Environmental Manager

Enclosure

cc: John Pittman - WSC

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 September 1992
SAMPLING PERIOD: August 92
SAMPLE CODE:
TODAY'S DATE: 4 September 92

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	August 1992	SAMPLE LOCATION>	MV-1	SAMPLE TYPE >	X COMPOSITE __ GRAB	DATE RECEIVED AT LAB >	7,14, 21,28 Aug92	DATE OF SAMPLE ANAYSIS >	7,14 21,28 Aug92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				within limits
Cadmium	736	---	0.7				
Cyanide (Total)	878	---	1.2				
Chromium (Total)	748	---	3.8				
Copper (Total)	752	---	2.3				
Nickel (Total)	824	---	3.0				
Lead (Total)	811	---	0.7				
Zinc (Total)	874	---	4.0				
B.O.D.	729	286	>300=ESSC				Ave.of 4;high=352
T.S.S.	857	232	>350=ESSC				Ave.of 4;high=290
FEM-T Oil & Grease (total)	913	---					
FEM-NP Oil & Grease (Non-Polar)	915	1	100				grab 5Aug92
FEM-P Oil & Grease (Polar)	914	17	500				grab 5Aug92
Arsenic	710	---	0.3				
Chlorinated Hydrocar	739	0.5	0.5				grab 5Aug92
Fluoride	797	0.2	30.0				Ave.of 4; high=0.4
Flash Pt. Closed Cup	916	200	>140 F				Extin. at 156

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. McCue Date: 9/11/92

form 13-1A.fil
rev. 3/20/92

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 5 Aug 92 Oven Temp: 105°C Analyst: CR

Date In: 5 Aug 92 Time In/Out: 1015 / 1300

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0892	0.0892	—
2. CE	~~200~~ 500	0.0953	0.0895	11.6
3. CE	~~200~~ 500	0.0951	0.0895	11.2
			Average CE TSS	11.4
4. OWW	50	0.0953	0.0914	78.0
5.				
6.				
7.				
8.				

Notes: _____

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 5Aug92 Sample Date: 5Aug92 Analyst: TJR

Slope: -55.1 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04DF Date Opened: 29Jul92

10.0 mg/L: Lot #: 01DG Date Opened: 29Jul92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.9
OWW (composite)	0.4

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.6 mg/L	4.2 mg/L
% Recovery:	92.5 %	95.0 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87

2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 5 Aug 92 Incubator: 20° C Analyst: CK / TJR

Date/Time In: 5 Aug 92 / 1130 Date/Time Out: 10 Aug 92 / 1128 1228 TJR

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	5	N/A	8.51		
✓ N	12	N/A		8.52	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	22	3	8.39		
✓N	24	3		4.69	148

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2104 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 1 ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.39 - 4.69) - (3.88)(1 / 5.33))(100)
= 297 / 2
= 148

4. Date Na2S2O3 bottle opened: 5 Aug 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

QC BOD
10 Aug 92 TJR

5.91 +
.33 +
2.39 +
11.62 *
11.63 ÷
3. =
3.88 *
3.88 ÷
5.33 =
0.72 *
8.39 +
- -
2.97 *
2.97 ×
1.0 =
297.0 *
297.0 ÷
2. =
148.50 *

SCOEPA00020498

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 5 Aug 92 Incubator: 20° C Analyst: [illegible]

Date/Time In: 5 Aug 92 / 1130 ? Date/Time Out: 10 Aug 92 / 1228

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	55	8	8.36		
✓N	57	8		2.45	222
OWW	60	5	8.22		
✓N	67	5		4.89	200
OWW	80	3	8.43		
✓N	86	3		6.04	239
N					
N					

Average OWW BOD, mg/L: 220

COMMENTS: _____

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; ? C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
10 Aug 92
TJR

8.36 +
-
5.91 *
5.91 ×
300. ÷
8. =
221.63 *
221.63 +M
8.[illegible]2 +
-
[illegible]3 *
[illegible] ×
60. =
[illegible]9.80 *
[illegible]9.80 +M
8.43 +
-
2.39 *
2.39 ×
1[illegible]0. =
239.[illegible] *
239.[illegible]0 +M
60.43 ◊M
60.43 ÷
3. =
[illegible]20.14 *

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 13Aug92 Oven Temp: 103 Analyst: TJR

Date In: 13Aug92 Time In/Out: 0758 / 0910

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0950	0.0952	-0.8
2. CE	200	0.0994	0.0951	21.5
3. CE	200	0.0976	0.0934	21.5
			Average CE TSS	21.5
4. OWW	50	0.1057	0.0916	282
5. CE grab 0905	200	~~0.0929~~ 0.0930	0.0921	4.5 > 4.2
In 0916 out 1033 6. CE grab	200	0.0927	0.0919	4.0
7.				
8.				

Notes:

Calculation: TSS, mg/L = (Gross Wt, mg - Tare Wt, mg) X 1000 / Volume of Sample, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 13 Aug 92 Sample Date: 13 Aug 92 Analyst: JJR

Slope: -55.4 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04 OF Date Opened: 29 Jul 92

10.0 mg/L: Lot #: 01 DG Date Opened: 29 Jul 92

Data:

Sample	Fluoride, mg/L
CE (composite)	2.7
OWW (composite)	0.3

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	6.2 mg/L	3.8 mg/L
% Recovery:	87.5 %	87.5 %

Comments: _____

References: 1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87

2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 13 Aug 92 Incubator: 19.5 C Analyst: JJR

Date/Time In: 13Aug92/ 1025 Date/Time Out: 18Aug92/ 1350

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	5	N/A	8.71		
✓N	7	N/A		8.52	—

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	12	3	8.69		
✓N	22	3		4.83	134

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2104 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 1 ml of OWW: A
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.69 - 4.83) - (4.69)(1 / 4))(100)
= 269 / 2
= 134

4. Date Na2S2O3 bottle opened: 5 Aug 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

5.18 + 3.50 = 9.38 *
9.38 ÷ 2 = 4.69 *
4.69 ÷ 4 = 1.17 *
8.69 + 1 = 2.69 *
2.69 × 100 = 269.0 *
269.0 ÷ 2 = 134.50 *

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 13 Aug 92 Incubator: 19.5 C Analyst: TJR

Date/Time In: 13 Aug 92 / 1025 Date/Time Out: 18 Aug 92 / 1350

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	49	8	8.58		
✓N	55	8		0.06	320
OWW	57	5	8.61		
✓N	60	5		2.73	353
OWW	67	3	8.63		
✓N	80	3		5.13	350
N					
N					

Average OWW BOD, mg/L: 352

COMMENTS: Throw out First Sample per Standard Methods

CALCULATION: BOD, mg/L = (DOI, mg/L - DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 23 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's 18 Aug 92 TJR

0. * 8.58 + [illegible] - 8.52 * 8.52 x 300. ÷ 8. = 319.50 * 319.50 +M 8.61 + [illegible] - 5.[illegible]8 * 5.[illegible]8 x 60. = 352.80 * 352.80 +M 8.63 + [illegible] - 3.50 * 3.50 x 100. = 35[illegible]0 *

SCOEPA00020503

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 19 Aug 92 Oven Temp: 103 Analyst: JJR

Date In: 19 Aug 92 Time In/Out: 0829 / 1003

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L
1. Blank	250	0.0922	0.0925	-1.2
2. CE	200	0.0956	0.0931	12.5
3. CE	200	0.0956	0.0930	13.0
			Average CE TSS	12.8
4. OWW	50	0.1075	0.0930	290
5.				
6.				
7.				
8.				

Notes: Sand Filter on line

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg)} \times 1000}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 19 Aug 92 Sample Date: 19 Aug 92 Analyst: TJR

Slope: -57.5 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: 04DE Date Opened: 29 Jul 92

10.0 mg/L: Lot #: 01DG Date Opened: 29 Jul 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.5
OWW (composite)	0.1

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.3 mg/L	4.6 mg/L
% Recovery:	95 %	97.5 %

Comments: _____

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 19 Aug 92 Incubator: 19.5 C Analyst: JJR

Date/Time In: 19 Aug 92 / 1050 Date/Time Out: 24 Aug 92 / 1141

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	5	N/A	8.63		
✓N	7	N/A		8.47	–

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L – DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	12	3	8.67		
✓N	14	3		2.80	203

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2104 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/– 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: Y
4. QC BOD = ((DOI – DOF) – (Ave DOI's – DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.67 – 2.80) – (4.83)(2 / 5.33))(100)
1.81
= 406 / 2
= 203

4. Date Na2S2O3 bottle opened: 9 Aug 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC 24 Aug 92

14.50 * 2.71 + 4.54 + 7.25 +
4.83 * 3. = 14.50 ÷
4.83 × 2. ÷ 5.33 = 1.81 *
8.67 + 4.06 *
4.06 × 1.0. = 4.6.0 *
4.6.0 ÷ 2. = 2.3.0 *

SCOEPA00020506

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 19 Aug 92 Incubator: 19.5 C Analyst: TJR

Date/Time In: 19 Aug 92 / 1050 Date/Time Out: 24 Aug 92 1141

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	34	8	8.50		
✓N	36	8		1.25	272
OWW	38	5	8.61		
✓N	40	5		4.07	272
OWW	45	3	8.64		
✓N	46	3		5.93	271
N					
N					

Average OWW BOD, mg/L: 272

COMMENTS:

CALCULATION: BOD, mg/L = $\frac{(\text{DOI, mg/L} - \text{DOF, mg/L}) \times 300}{\text{Volume of Sample, ml}}$

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 21 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD's
24 Aug 92
TJR

8.50 +
1.[illegible] -
7.25 *
7.25 x
300. ÷ [illegible]
8. =
271.[illegible]8 *
271.[illegible]8 +M
8.61 +
[illegible] -
4.54 *
4.54 x
60. =
272.40 *
272.40 +M
8.64 +
[illegible] -
2.71 *
2.71 x
1[illegible]0. =
271.[illegible]0 *
271.[illegible]0 +M
815.28 ◊M
815.28 ÷
3. =
271.76 *

BENCHSHEET

TOTAL SUSPENDED SOLIDS (TSS)

Sample Date: 26 Aug 92 Oven Temp: 103 °C Analyst: TJR

Date In: 26 Aug 92 Time In/Out: 0823 / 1006

Sample	Vol, ml	Gross Wt, g	Tare Wt, g	TSS, mg/L	
1. Blank	250	0.0917	0.0917	—	
2. CE	200	0.1027	0.0917	55.0	
3. CE	200	0.1012	0.0912	50.0	
			Average CE TSS	52.5	
4. OWW	50	0.1048	0.0908	280	
5. CE grab	200	0.0960	0.0910	25.0	29.0
6. CE grab	200	0.0984	0.0918	33.0	
7. CCD	100	0.0950	0.0914	36.0	
8. CE	200	0.0938	0.0918	10.0	9.8
CE	200	0.0944	0.0925	9.5	

samples 1030

~ 1044
+ 1202

~ 1314 1300
+ 1426 Grab

Notes: OWW → Sample date is 25 Aug 92.
OWW → split with city.

Calculation: TSS, mg/L = $\frac{\text{(Gross Wt, mg - Tare Wt, mg) X 1000}}{\text{Volume of Sample, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75

TJR 21 Mar 87
TJR 17 Mar 92 Revised

CE Composite Sample → RO Scaping waste dumped to WAD.

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 26 Aug 92 Sample Date: 26 Aug 92 Analyst: JJR

Slope: -58.1 (Range: -56 +/- 2 mV)

Standards:

1.0 mg/L: Lot #: C4DF Date Opened: 29 Jul 92

10.0 mg/L: Lot #: C1DG Date Opened: 29 Jul 92

Data:

Sample	Fluoride, mg/L
CE (composite)	1.5
OWW (composite)	< 0.1

Quality Control: Spike one of the above samples with 2.0 ml of 100mg/L Standard. The Fluoride concentration should increase by 4.0 mg/L.

	CE	OWW
After Spike Concentration:	5.5 mg/L	4.0 mg/L
% Recovery:	100 %	100 %

Comments: 1st slope = -58.3

References:
1. Standard Methods For The Examination of Water And Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87
2. Orion Research Manual for the Fluoride Electrode, Model 940900

TJR 6 Apr 87
TJR 24 Mar 92 Revised

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND

BLANK / QUALITY CONTROL

Date: 26 Aug 92 Incubator: 21.5 C Analyst: TJR

Date/Time In: 26 Aug 92/ 1108 Date/Time Out: 31 Aug 92/ 1105

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
Blank	5	N/A	8.54		
✓N	14	N/A		8.35	~

Notes: 1. The Blank (dilution H2O) should have a DO Depletion (DOI, mg/L - DOF, mg/L) < 0.2 mg/L. Reference Standard Methods, 17th Edition, Section 5210 B, para. 4b.

QC	18	3	8.53		
✓N	22	3		3.41	158

Notes: 1. QC Glucose/Glutamic Acid: Hach, 300mg/L, Lot 2104 (Must divide number by 2 since Standard Methods QC is based on 150mg/L standard.)
2. QC BOD should be 198 mg/L +/- 30 mg/L. (Reference Standard Methods, 17th Edition, Section 5210 B, para 6)
3. Seed the QC bottles with 2 ml of OWW: (Y)
4. QC BOD = ((DOI - DOF) - (Ave DOI's - DOF's)(Seed Vol / Ave Vol)) (100) / 2
= ((8.53 - 3.41) - (5.25)(2 / 5.33))(100)
= 316 / 2
= 158

1.96

4. Date Na2S2O3 bottle opened: 5 Aug 92

TJR 13 Nov 91
TJR 8 Apr 92 Revised

BOD QC
31 Aug 92

7.14 +
5.52 +
3.04 +
15.70 *

15.70 ÷
3. =
5.23 *

5.23 x
2. ÷
5.23 =
1.96 *

8.53 +
1
1
3.16 *

3.16 x
10. =
316.0 *

316.0 ÷
2. =
158.0 *

SCOEPA00020510

BENCHSHEET
BIOCHEMICAL OXYGEN DEMAND
ORGANIC WASTEWATER (OWW)

Sample Date: 26 Aug 92 Incubator: 21.5 C Analyst: TJR

Date/Time In: 26 Aug 92 / 1108 Date/Time Out: 31 Aug 92 / 1105

SAMPLE	BOTTLE #	VOL, ml	DOI, mg/L	DOF mg/L	BOD, mg/L
OWW	40	8	8.37		
✓N	46	8		1.23	268
OWW	49	5	8.51		
✓N	57	5		2.99	331
OWW	67	3	8.56		
✓N	86	3		5.52	304
N					
N					

Average OWW BOD, mg/L: 301

COMMENTS:

CALCULATION: BOD, mg/L = (DOI, mg/L − DOF, mg/L) X 300 / Volume of Sample, ml

NOTES: 1. A check mark in front of the N = Nutrient Pillow added.
2. Sample Temperature; 19 C

TJR 7-10-87
TJR 17 Mar 92 Revised

OWW BOD'S 31 Aug 92 TJR

0. *
8.37 +
[illegible] -
7.14 *
7.14 x
300. ÷
8. =
267.75 *
267.75 +M
8.51 +
[illegible] -
[illegible].52 *
[illegible].52 x
60. =
331.20 *
331.20 +M
8.56 +
[illegible] -
3.04 *
3.04 x
100. =
304. 0 *
304.[illegible]0 +M
902.95 ◊M
902.95 ÷
3. =
300.98 *

File

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

August 11, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for July 1992

Dear Mr. McCadden:

Attached is our July, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All permit parameters were within permitted limits.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

BY:

Thomas C. McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 August 92
SAMPLING PERIOD: July 1992
SAMPLE CODE: 10 August 92
TODAY'S DATE:

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☐ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * *

SAMPLE DATE >	July 1992	SAMPLE LOCATION>	MV-1	SAMPLE TYPE >	x COMPOSITE / GRAB	DATE RECEIVED AT LAB >	1,8,15 22,29 Jul'92	DATE OF SAMPLE ANAYSIS >	1.8,15 22,29 Jul'92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily Monthly	VIOLATION YES (X) LEVEL	COMMENTS
pH	843	>5.5 <11.5	5.5-11.5 S.U.		within limits
Cadmium	736	-	0.7		
Cyanide (Total)	878	-	1.2		
Chromium (Total)	748	-	3.8		
Copper (Total)	752	-	2.3		
Nickel (Total)	824	-	3.0		
Lead (Total)	811	-	0.7		
Zinc (Total)	874	-	4.0		
B.O.D.	729	243	>300=ESSC		Ave.of 4;High=252
T.S.S.	857	206	>350=ESSC		Ave.of 5,High=242
FEM-T Oil & Grease (total)	913	33			
FEM-NP Oil & Grease (Non-Polar)	915	5.1	100		Grab 8Jul92
FEM-P Oil & Grease (Polar)	914	28	500		Grab 8Jul92
Arsenic	710	-	0.3		
Chlorinated Hydrocar	739	< 0.5	0.5		Grab 8Jul92
Fluoride	797	0.2	30.0		Ave.of5;High=0.4
Flash Pt. Closed Cup	916	> 140	>140 F		Grab 8Jul92

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. McLean Date: Aug 11, 1992

form 13-1A.fil
rev. 3/20/92

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

July 24, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Correction of Monthly Monitoring Report for June 1992

Dear Mr. McCadden:

Enclosed is a corrected version of our June, 1992 Monthly Monitoring Report, Municipal Discharge Permit No. 469-01.

The correction was necessary due to a typographical error on the original report, dated July 8, regarding the Chlorinated Hydrocarbon parameter. The correct reported concentration should be "<0.25" mg/L Chlorinated Hydrocarbon, which was non-detectable at this level and below the permitted limit of 0.50 mg/L.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

BY:

Kent C. Mayer
Environmental Engineer

Enclosure

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

NDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 July 92
SAMPLING PERIOD: June 1992
SAMPLE CODE:
TODAY'S DATE: July 8, 1992

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐

* * * * * * * * * * * * * * * * *
(For City Use Only)
* * * * * * * * * * * * * * * * *

SAMPLE DATE >	June 1992	SAMPLE LOCATION>	OWW at MV-1	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB > June	5,12 19,26	DATE OF SAMPLE ANAYSIS >	Same

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	LIMIT mg/L Monthly	VIOLATION YES (X)	VIOLATION LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				Within limits
Cadmium	736	0.001	0.7				
Cyanide (Total)	878	NA	1.2				
Chromium (Total)	748	0.008	3.8				
Copper (Total)	752	NA	2.3				
Nickel (Total)	824	NA	3.0				
Lead (Total)	811	NA	0.7				
Zinc (Total)	874	0.010	4.0				
B.O.D.	729	250	>300=ESSC				Avg of 4; high=298
T.S.S.	857	144	>350=ESSC				Avg of 4; high=202
FEM-T Oil & Grease (total)	913	NA					
FEM-NP Oil & Grease (Non-Polar)	915	1.0	100				
FEM-P Oil & Grease (Polar)	914	19.0	500				
Arsenic	710	< 0.001	0.3				
Chlorinated Hydrocar	739	<0.2 5	0.5				
Fluoride	797	0.36	30.0				Avg of 4; high=0.44
Flash Pt. Closed Cup	916	>200	>140 F				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Kent C. Moyer Date: 7/24/92

13-1A.f11
3/20/92

SCOEPA00020515

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

July 9, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for June 1992

Dear Mr. McCadden:

Attached is our June, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All permit parameters were within permitted limits.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

BY: Tom McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 July 92
SAMPLING PERIOD: June 1992
SAMPLE CODE:
TODAY'S DATE: July 8, 1992

REPORT TYPE (CHECK ONE):
- ☐ BASELINE MONITORING
- ☒ PERIODIC COMPLIANCE
- ☐ SPECIAL COMPLIANCE
- ☐

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	June 1992	SAMPLE LOCATION>	OWW at MV-1	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB > June	5,12 19,26	DATE OF SAMPLE ANAYSIS >	Same

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				Within limits
Cadmium	736	0.001	0.7				
Cyanide (Total)	878	NA	1.2				
Chromium (Total)	748	0.008	3.8				
Copper (Total)	752	NA	2.3				
Nickel (Total)	824	NA	3.0				
Lead (Total)	811	NA	0.7				
Zinc (Total)	874	0.010	4.0				
B.O.D.	729	250	>300=ESSC				Avg of 4; high=298
T.S.S.	857	144	>350=ESSC				Avg of 4; high=202
FEM-T Oil & Grease (total)	913	NA					
FEM-NP Oil & Grease (Non-Polar)	915	1.0	100				
FEM-P Oil & Grease (Polar)	914	19.0	500				
Arsenic	710	< 0.001	0.3				
Chlorinated Hydrocar	739	< 2.5	0.5				
Fluoride	797	0.36	30.0				Avg of 4; high=0.44
Flash Pt. Closed Cup	916	> 200	>140 F				

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. McCl[illegible] Date: 7/8/92

form 13-1A.fil
rev. 3/20/92

file

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

June 12, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for May 1992

Dear Mr. McCadden:

Attached is our May, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

The pH limit was exceeded during an upset condition which occurred on May 16, due to instrument failure, as explained in a May 20, 1992 letter to the City. At this time, there is no additional information to add to that report. All other permit parameters were within permit limits.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

BY:

Tom McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

* * * * * * * * * * * * * * * * *
(For City Use Only)

INDUSTRY NAME: WACKER SILTRONICS CORP.
PERMIT NUMBER: 469-001
REPORT DUE DATE: 15 Jun 92
SAMPLING PERIOD: May 1992
SAMPLE CODE:
TODAY'S DATE: June 11, 1991

REPORT TYPE (CHECK ONE):
☐ BASELINE MONITORING
☒ PERIODIC COMPLIANCE
☐ SPECIAL COMPLIANCE
☐ _____

* * * * * * * * * * * * * * * * *

SAMPLE DATE >	May 1992	SAMPLE LOCATION>	OWW at MV-1	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	5/6, 13,20, 27/92	DATE OF SAMPLE ANAYSIS >	5/6, 13,20 27/92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/L Daily	Monthly	VIOLATION YES (X)	LEVEL	COMMENTS
pH	843		5.5-11.5 S.U.				5-15-92 pH=2.9 for 10 mi
Cadmium	736		0.7				5-15-92 pH=4.0 for 5 min
Cyanide (Total)	878		1.2				5-16-92 pH=12.0 for 60 m
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	273	>300=ESSC				Ave. of 4; High = 302
T.S.S.	857	141	>350=ESSC				Ave. of 4; High = 180
FEM-T Oil & Grease (total)	913						
FEM-NP Oil & Grease (Non-Polar)	915	1.2	100				grab
FEM-P Oil & Grease (Polar)	914	32	500				grab
Arsenic	710		0.3				
Chlorinated Hydrocar	739	< 0.5	0.5				grab
Fluoride	797	0.8	30.0				Ave. of 5; High=24
Flash Pt. Closed Cup	916	>200°F	<140 F				grab

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: _____

3-1A.fil
3/20/92

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

May 13, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for April 1992

Dear Mr. McCadden:

Attached is our April, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Kent C. Mayer for

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 May 92	☐ BASELINE MONITORING	
SAMPLING PERIOD:	April 1992	☒ PERIODIC COMPLIANCE	
SAMPLE CODE:		☐ SPECIAL COMPLIANCE	
TODAY'S DATE:	8 May 92	☐ _____	

SAMPLE DATE >	See Comments *	SAMPLE LOCATION >	OWWNT Disch.	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	See Comments*	DATE OF SAMPLE ANALYSIS >	See Comments*

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				19 Apr'92, pH=3.0 for 10 minutes
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
per (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	285	>300=ESSC				Ave. of 5; High = 330
T.S.S.	857	209	>350=ESSC				Ave. of 5; High = 246
FEM-T Oil & Grease total	913						
FEM-NP O & G Non-polar	915	0.7	100				Grab, 7 April 92
FEM-P O & G Polar	914	15	500				Grab, 7 April 92
Arsenic			0.3				
Chlorin. Hydrocar.		< 0.5	0.5				Grab, 7 April 92
Fluoride		0.3	30.0				Ave. of 5; High = 0.6
Flash Point		>200	°F				Grab, 7 April 92
						*	Average taken on 4-1, 4-8, 4-15,
							4-22, 4-29, 1992

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Lori C. Mayer Date: 5-13-92

Form 13-14 rev 3.21.91

SCOEPA00020521

METHOD: Total Oil and Grease per EPA 413.2
Results in mg/L (ppm)

Sample I.D.	Oil & Grease
OWW	16
Lab Blank	ND
Detection Limit	0.5

METHOD: Nonpolar Hydrocarbons per EPA 418.1
Results in mg/L (ppm)

Sample I.D.	Nonpolar Hydrocarbons
OWW	0.7
Lab Blank	ND
Detection Limit	0.5

METHOD: Polar Hydrocarbons by Difference
Results in mg/L (ppm)

Sample I.D.	Polar Hydrocarbons
OWW	15
Lab Blank	ND
Detection Limit	0.5

METHOD: Flashpoint (PMCC) per EPA 1010

Sample I.D.	Flashpoint
OWW	Extinguished at 138°F ← QA/QC ✓

No Flash to 200°F, as per phone call to PEL on 5-8-92.

Tom

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

April 10, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for March 1992

Dear Mr. McCadden:

Attached is our March, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Tom McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 April 92	[ ] BASELINE MONITORING	
SAMPLING PERIOD:	March 1992	[x] PERIODIC COMPLIANCE	
SAMPLE CODE:		[ ] SPECIAL COMPLIANCE	
TODAY'S DATE:	10 April 92	[ ] _____	

SAMPLE DATE >	SEE * COMMENTS	SAMPLE LOCATION >	OWWNT Disch.	SAMPLE TYPE >	x COMPOSITE _ GRAB	DATE RECEIVED AT LAB >	SEE * COMMENTS	DATE OF SAMPLE ANALYSIS >	SEE * COMMENTS

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within Limits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	262	>300=ESSC				Ave. of 4; High = 331
T.S.S.	857	190	>350=ESSC				Ave. of 4; High = 204
FEM-T Oil & Grease total	913						
FEM-NP O & G Non-polar	915	< 0.5	100				Grab; 3 March 92
FEM-P O & G Polar	914	21	500				Grab; 3 March 92
Arsenic			0.3				
Chlorin. Hydrocar.		< 0.25	0.5				Grab; 3 March 92
Fluoride		1.0	30.0				Ave. of 4; High = 2.0
Flash Point		> 200	°F				Grab; 3 March 92
						*	Average taken on March 6, 13, 20
							27, 1992

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Kent C. Moyer Date: 4-10-92

Form 13-14 rev 3.21.01

SCOEPA00020524

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

March 13, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for February 1992

Dear Mr. McCadden:

Attached is our February, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Tom McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 March 92	[ ] BASELINE MONITORING	
SAMPLING PERIOD:	February 1992	[X] PERIODIC COMPLIANCE	
SAMPLE CODE:		[ ] SPECIAL COMPLIANCE	
TODAY'S DATE:	10 March 92	[ ] _____	

SAMPLE DATE >	Feb 92	SAMPLE LOCATION >	OWWNT Discharge	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	5,12,19,26 Feb 92	DATE OF SAMPLE ANALYSIS >	5,12,19,26 Feb 92

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within Limits
Cadmium	736	< 0.02	0.7				26 Dec 91
Cyanide (Total)	878	---	1.2				
Chromium (Total)	748	< 0.05	3.8				26 Dec 91
Copper (Total)	752	---	2.3				
Nickel (Total)	824	---	3.0				
Lead (Total)	811	---	0.7				
Zinc (Total)	874	0.04	4.0				26 Dec 91
B.O.D.	729	317	>300=ESSC				Ave of 4; High=514
T.S.S.	857	208	>350=ESSC				Ave of 4; High=256
FEM-T Oil & Grease total	913	---					
FEM-NP O & G Non-polar	915	< 0.5	100				grab 6Feb92
FEM-P O & G Polar	914	96	500				grab 6Feb92
Arsenic		< 0.05	0.3				26Dec91
Chlorin. Hydrocar.		< 0.1	0.5				grab 6Feb92
Fluoride		2.7	30.0				Ave. of 4; High=7.2
"Flash Point"		> 200° F					grab 6Feb92

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance wi a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of t person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitt is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitti false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas G McCue Date: 3-13-92

Form 13-14 rev 2.21.01

SCOEPA00020526

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

February 10, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for January 1992

Dear Mr. McCadden:

Attached is our January, 1992 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 Feb 92	[ ] BASELINE MONITORING	
SAMPLING PERIOD:	January 1992	[X] PERIODIC COMPLIANCE	
SAMPLE CODE:		[ ] SPECIAL COMPLIANCE	
TODAY'S DATE:	10 Feb 92	[ ] _____	

SAMPLE DATE >	See Comments *	SAMPLE LOCATION >	OWWNT Discharge	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	See Comments *	DATE OF SAMPLE ANALYSIS >	See Comments *

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within Limits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	199	>300=ESSC				Ave. of 5; High = 267
T.S.S.	857	160	>350=ESSC				Ave. of 5; High = 202
FEM-T Oil & Grease total	913						
FEM-NP O & G Non-polar	915	< 0.5	100				7 Jan 92 Grab
FEM-P O & G Polar	914	39	500				7 Jan 92 Grab
Arsenic			0.3				
Chlorin. Hydroca.		< 0.1	0.5				7 Jan 92 Grab
Fluoride		3.4	30.0				Ave. of 5; High 6.0
Flash Point		> 200°F					7 Jan 92 Grab
						*	Average taken on 1-2, 1-8, 1-15
							1-22 & 1-29

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance wit a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of th person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitte is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submittir false information, including the possibility of fine and imprisonment for knowing violations.

Signature:_____ Date:_____ Form 13-14 rev 3.21.01

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

January 10, 1992

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for December 1991

Dear Mr. McCadden:

Attached is our December, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Tom McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 Jan92	☐ BASELINE MONITORING	
SAMPLING PERIOD:	December 91	☒ PERIODIC COMPLIANCE	
SAMPLE CODE:		☐ SPECIAL COMPLIANCE	
TODAY'S DATE:	10 Jan92	☐ _____	

SAMPLE DATE >	See Comments	SAMPLE LOCATION >	OWWNT Discharge	SAMPLE TYPE >	_X COMPOSITE _ GRAB	DATE RECEIVED AT LAB >	See Comments*	DATE OF SAMPLE ANALYSIS >	See Comments*

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within LImits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
[illegible]omium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	189	>300=ESSC				Ave. of 4; High = 250
T.S.S.	857	159	>350=ESSC				Ave. of 4; High = 202
FEM-T Oil & Grease total	913						
FEM-NP O & G Non-polar	915	1.9	100				5 Dec91, Grab
FEM-P O & G Polar	914	31	500				5 Dec91, Grab
Arsenic			0.3				
Chlorin. Hydroca.		< 0.1	0.5				5 Dec91, Grab
Fluoride		3.3	30.0				Ave. of 4; High = 6.5
Flash Point		>200°F					5 Dec91, Grab
						*	Averages taken on 12-4, 12-12, 12-18
							& 12-26

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas G. McClure Date: 1-10-92

Form 13-1a rev 2.21.91

SCOEPA00020530

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

December 13, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for November 1991

Dear Mr. McCadden:

Attached is our November, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Tom McCue

Tom McCue
Environmental Manager

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 Dec 91	☐ BASELINE MONITORING	
SAMPLING PERIOD:	November 91	☒ PERIODIC COMPLIANCE	
SAMPLE CODE:		☐ SPECIAL COMPLIANCE	
TODAY'S DATE:	13 Dec 91	☐ _____	

SAMPLE DATE >	See Comments	SAMPLE LOCATION >	OWWNT Discharge	SAMPLE TYPE >	X COMPOSITE _ GRAB	DATE RECEIVED AT LAB >	See Comments	DATE OF SAMPLE ANALYSIS >	See Comments

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within Limits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	261	>300=ESSC				Average of 4; High = 445
T.S.S.	857	176	>350=ESSC				Average of 5; High = 194
FEM-T Oil & Grease total	913						
FEM-NP O & G Non-polar	915	< 0.5	100				12 Nov91 Grab
FEM-P O & G Polar	914	19	500				12 Nov91 Grab
Arsenic			0.3				
Chlorin. Hydrocar.		< 0.1	0.5				12 Nov91 Grab
Fluoride		1.9	30.0				Average of 5; High = 6.9
Flash Point		> 200	°F				12 Nov91 Grab
						*	Average taken on 10-30, 11-6, 11-13,
							11-20 & 11-27

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas G. McCline Date: 12-13-91

Form 13-1a rev 3.21.91

SCOEPA00020532

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

November 14, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S. W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report for October, 1991

Dear Mr. McCadden:

Attached is our October, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have questions, please call me at 243-2020, Ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Tom McCue

Tom McCue
Environmental Manager

TMcC:ll

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 Nov 91	[ ] BASELINE MONITORING	
SAMPLING PERIOD:	October 1991	[X] PERIODIC COMPLIANCE	
SAMPLE CODE:		[ ] SPECIAL COMPLIANCE	
TODAY'S DATE:	12 Nov 91	[ ] _____	

SAMPLE DATE >	Oct 91	SAMPLE LOCATION >	OWWNT Discharge	SAMPLE TYPE >	X COMPOSITE _ GRAB	DATE RECEIVED AT LAB >	See Comments	DATE OF SAMPLE ANALYSIS >	See Comments

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within limits
Cadmium	736		0.7				
Cyanide (Total)	878		1.2				
Chromium (Total)	748		3.8				
Copper (Total)	752		2.3				
Nickel (Total)	824		3.0				
Lead (Total)	811		0.7				
Zinc (Total)	874		4.0				
B.O.D.	729	250	>300=ESSC				Average of 3; High =296
T.S.S.	857	156	>350=ESSC				Average of 3; High =202
FEM-T Oil & Grease total	913						
FEM-NP O & G Non-polar	915	24	100				8 October 91; grab
FEM-P O & G Polar	914	6	500				8 October 91; grab
Arsenic			0.3				
Chlorin. Hydrocar.		< 0.1	0.5				8 October 91; grab
Fluoride		1.0	30.0				Average of 3; High =1.5
Flash Point		>200°F					8 October 91; grab
						*	Averages on 10/9, 10/16, 10/23

Note: No sampling week of 30 Sept thru 4 Oct 91 due to plant shutdown.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Kent C. Moger Date: 11-14-91

Form 33-1a rev 2.21.61

SCOEPA00020534

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

October 11, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our September, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

for

Tom McCue
Environmental Manger

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 Oct. 91	[ ] BASELINE MONITORING	
SAMPLING PERIOD:	September '91	[X] PERIODIC COMPLIANCE	
SAMPLE CODE:		[ ] SPECIAL COMPLIANCE	
TODAY'S DATE:	11 Oct. 91	[ ] _____	

SAMPLE DATE >	See Comments	SAMPLE LOCATION >	OWW MV1	SAMPLE TYPE >	X COMPOSITE _ GRAB	DATE RECEIVED AT LAB >	See Comments	DATE OF SAMPLE ANALYSIS >	See Comments

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within Limits
Cadmium	736	---	0.7				
Cyanide (Total)	878	---	1.2				
Chromium (Total)	748	---	3.8				
Copper (Total)	752	---	2.3				
Nickel (Total)	824	---	3.0				
Lead (Total)	811	---	0.7				
Zinc (Total)	874	---	4.0				
B.O.D.	729	260	>300=ESSC			*	Average of 4; High = 281
T.S.S.	857	178	>350=ESSC				Average of 4; High = 234
FEM-T Oil & Grease total	913	---					
FEM-NP O & G Non-polar	915	13	100				4 Sept. 91 Grab
FEM-P O & G Polar	914	15	500				4 Sept. 91 Grab
Arsenic		---	0.3				
Chlorin. Hydrocar.		<0.1	0.5				4 Sept 91 Grab
Fluoride		2.0	30.0				Average of 4; High = 6.4
Flash Point		>200°F					4 Sept 91 Grab
						*	Average taken on 9-4, 9-11, 9-18,
							9-25

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: [signature] Date: 10-11-91

Form 13-14 rev 2.21.91

SCOEPA00020536

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

September 10, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our August, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Tom McCue

Tom McCue
Environmental Manger

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	9/15/91	☐ BASELINE MONITORING	
SAMPLING PERIOD:	August 1991	☒ PERIODIC COMPLIANCE	
SAMPLE CODE:		☐ SPECIAL COMPLIANCE	
TODAY'S DATE:	9/10/91	☐ _____	

SAMPLE DATE >	See Comments	SAMPLE LOCATION >	OWW MVI	SAMPLE TYPE >	X COMPOSITE _ GRAB	DATE RECEIVED AT LAB >	Comments -	DATE OF SAMPLE ANALYSIS >	Comments

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within Limits
Cadmium	736	--	0.7				
Cyanide (Total)	878	--	1.2				
Chromium (Total)	748	--	3.8				
Copper (Total)	752	--	2.3				
Nickel (Total)	824	--	3.0				
Lead (Total)	811	--	0.7				
Zinc (Total)	874	--	4.0				
B.O.D.	729	223	>300=ESSC				Average of 4*; High = 252
T.S.S.	857	170	>350=ESSC				Average of 4*; High = 208
FEM-T Oil & Grease total	913	--					
FEM-NP O & G Non-polar	915	23	100				Aug. 13, 1991, (grab)
FEM-P O & G Polar	914	11	500				Aug. 13, 1991, (grab)
Arsenic		--	0.3				
Chlorin. Hydrocar.		< 0.1	0.5				Aug. 13, 1991, (grab)
Fluoride		2.7	30.0				Average of 4*; High= 6.6
Flashpoint		200°F					Aug. 13, 1991 (grab)
							* Average of 4, taken August 9, 16, 23, 30, 1991

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:_____ Date:_____ Form 13-14 rev 3.21.91

SCOEPA00020538

Tom - File

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

August 12, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our July, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month, except for one, four-minute pH excursion during the month as explained in the discharge report.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

by: Tom McCue

Tom McCue
Environmental Manger

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	460-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	15 Aug 91	☐ BASELINE MONITORING	
SAMPLING PERIOD:	July 91	☒ PERIODIC COMPLIANCE	
SAMPLE CODE:		☐ SPECIAL COMPLIANCE	
TODAY'S DATE:	8 Aug 91	☐ _____	

SAMPLE DATE >	See Comments	SAMPLE LOCATION >	OWW MV1	SAMPLE TYPE >	X COMPOSITE / GRAB	DATE RECEIVED AT LAB >	Comments	DATE OF SAMPLE ANALYSIS >	Comments

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				7-27-91; pH=4.2 for 4 minutes
Cadmium	736	---	0.7				
Cyanide (Total)	878	---	1.2				
Chromium (Total)	748	---	3.8				
Copper (Total)	752	---	2.3				
Nickel (Total)	824	---	3.0				
Lead (Total)	811	---	0.7				
Zinc (Total)	874	---	4.0				
B.O.D.	729	221	>300=ESSC				Average of 4*, High = 242
T.S.S.	857	224	>350=ESSC				Average of 4*; High = 288
FEM-T Oil & Grease total	913	---					
FEM-NP O & G Non-polar	915	22	100				Sample date: 7-19-91
FEM-P O & G Polar	914	13	500				Sample date: 7-19-91
Arsenic		---	0.3				
Chlorin. Hydrocar.		<0.0007	0.5				Sample date: 7-3-91
Fluoride		1.1	30.0				Average of 4*; High = 3.5
							* Average of 4, taken July 5, 12,
							19, 26, 1991

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. M'Cue Date: 8-13-91

Form 13-14 rev 2.21.01

SCOEPA00020540

PACIFIC
ENVIRONMENTAL
LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

Rec'd 8-2-91 JDR

July 30, 1991

Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

Attn: Thomas Rothschild

Re: P.O. #30381
PEL #91-2219

Enclosed is the lab report for your sample which was received on July 19, 1991.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Howard Boorse
QA/QC Manager

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2219
CLIENT: Wacker Siltronic Corp.
P.O. NUMBER: 30381
DATE: July 30, 1991
ITEM: One Water Sample

METHOD: Flashpoint (PMCC) per EPA 1010

Sample I.D.	Flashpoint
OWW Neutralization Tank	No flash to 200°F

METHOD: Nonpolar Hydrocarbons per EPA 418.1
Results in mg/L (ppm)

Sample I.D.	Nonpolar Hydrocarbons
OWW Neutralization Tank	22
Lab Blank	ND
Detection Limit	0.5

METHOD: Polar Hydrocarbons by Difference
Results in mg/L (ppm)

Sample I.D.	Polar Hydrocarbons
OWW Neutralization Tank	13
Lab Blank	ND
Detection Limit	0.5

PACIFIC ENVIRONMENTAL LABORATORY INC.

PEL REPORT NUMBER: 91-2219
CLIENT: Wacker Siltronic Corp.
P.O. NUMBER: 30381
DATE: July 30, 1991
ITEM: One Water Sample

METHOD: Halogenated Solvents - EPA 8010 List by GC/MS
Results in ug/L (ppb)

Compound	OWW Neutralization Tank	Lab Blank	Detection Limit
Bromodichloromethane	ND	ND	20
Bromoform	ND	ND	20
Bromomethane	ND	ND	100
Carbon tetrachloride	ND	ND	20
Chlorobenzene	ND	ND	20
Chloroethane	ND	ND	100
2-Chloroethylvinyl ether	ND	ND	20
Chloroform	ND	ND	20
Chloromethane	ND	ND	100
Dibromochloromethane	ND	ND	20
1,2-Dichlorobenzene	ND	ND	20
1,3-Dichlorobenzene	ND	ND	20
1,4-Dichlorobenzene	ND	ND	20
Dichlorodifluoromethane	ND	ND	20
1,1-Dichloroethane	ND	ND	20
1,2-Dichloroethane	ND	ND	20
1,1-Dichloroethene	ND	ND	20
cis-1,2-Dichloroethene	ND	ND	20
trans-1,2,-Dichloroethene	ND	ND	20
1,2-Dichloropropane	ND	ND	20
cis-1,3-Dichloropropene	ND	ND	20
trans-1,3-Dichloropropene	ND	ND	20
Methylene chloride	ND	ND	20
1,1,2,2-Tetrachloroethane	ND	ND	20
Tetrachloroethene	ND	ND	20
1,1,1-Trichloroethane	ND	ND	20
1,1,2-Trichloroethane	ND	ND	20
Trichloroethene	ND	ND	20
Trichlorofluoromethane	ND	ND	20
Vinyl chloride	ND	ND	100

8010 Surrogate Recoveries (%)

Compound	OWW Neutralization Tank	EPA Limits
1,2-Dichloroethane-d4	83	76-114
4-Bromofluorobenzene	101	86-115

Rcd 8 Aug 91 SJR

WACKER SILTRONIC

STR # 694

ANALYTICAL SUPPORT LABORATORIES

DATE REPORTED: August 8, 1991
FROM: Sandra Sailors
TO: Tom Rothchild

SAMPLE DESCRIPTION: Monthly set of OWW and CE samples.

ANALYTICAL METHOD: Samples were analyzed for trichloroethene via procedures outlined in EPA method 8010 (Halogenated Volatile Organics). Standards and samples were prepared by extracting 30 mL of aqueous solution with 3 mL of pentane containing Dibromomethane as an internal standard.

GC PARAMETERS: Column: 10% squalene on Chromosorb WAW, 80/100 mesh, 1/8" X 2' SS.

Temperatures: Column - 65 C, Injector - 200 C, Detector - 240 C.

Detector: Electron Capture.

DETECTION LIMITS: Detection limits were calculated on each analysis date by preparing and analyzing 7 repetitions of a sample containing 2.5 ug/l trichloroethane in water in an identical fashion to the samples and standards. The method detection limit is then given by: DL= 3.143*s/m. Where s is the standard deviation of (Area TCE)/(Area DBM) and m is the slope of the calibration curve.

RESULTS:

Sample Type	Collected by	Date	Analyzed by	Date	Conc. of TCE (ug/L)	Detect Limit
OWW	TR	7/3	SS	7/3	< 0.7	0.7
CE	TR	7/3	SS	7/3	1.15	0.7

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7-24-91 Analyst: JJR

I. Slope: -56.6 (Range: -56 +/-2 mV)

II. Standards: (Hach)

A. 1.0 mg/l: Lot # 04CP Date Opened: 7-12-91

B. 10.0 mg/l: Lot # 25CP Date Opened: 7-12-91

III. Data:

	Sample	Fluoride, mg/L
1	CE	3.1
2	OWW	0.1
3		
4		
5		
6		
7		
8		

Comments: _____

Reference: 1. Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87.
2. Orion Research Manual for Fluoride Electrode, Model 940900.

TJR 7-11-89
6-7-91 Rev

TOTAL SUSPENDED SOLIDS BENCHSHEET
(TSS)

SAMPLE DATE: 7-24-91 OVEN TEMP: 108 C ANALYST: JDR

Date In: 7-24-91 Time In/Out: 0835/1043

SAMPLE	VOL,(ml)	GROSS WT, (g)	TARE WT, (g)	TSS, (mg/l)	
1. BLANK	250	0.0956	0.0956	—	
2. Com Eff	200	0.0974	0.0951	11.5	AVE TSS (mg/l)
3. Com Eff	200	0.0976	0.0950	13.0	12.2
4. OWW	50	0.1049	0.0956	186	
5.					
6.					
7.					
8.					
9.					
10.					

COMMENTS: Dried filters in oven overnight prior to use.

CALCULATION: TSS (mg/l) = [GROSS WT, mg - TARE WT, mg] X 1000 / VOL, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75.

TJR 3-21-87
5-9-90 Rev

BIOCHEMICAL OXYGEN DEMAND BENCHSHEET

ORGANIC WASTEWATER (OWW)

SAMPLE DATE: 7-24-91 INCUBATOR: 20 C ANALYST: TJR

Date/Time In: 7-24-91/1025 Date/Time Out: 7-29-91/1033

SAMPLE	BOTTLE NO.	VOL,(ml)	DOI, (mg/l)	DOF, (mg/l)	BOD, (mg/l)
1. Blank	5	N/A	8.44		
(N)	12	N/A		8.41	—
2. OWW	20	8	8.37		
(N)	26	8		2.11	235
3. OWW	31	5	8.36		
(N)	36	5		4.33	241
4. OWW	38	3	8.33		
(N)	40	3		5.91	242
5. QC	41	3	8.41		
(N)	45	3		3.64	198
			Average OWW BOD (mg/l)		240

COMMENTS: _____

CALCULATION: BOD (mg/l) = [DOF, mg/l - DOI, mg/l] X 300 / VOL, ml

Notes:
1. (N) = Nutrient Pillow Added
2. QC BOD should be 198 +/- 30mg/L (Reference Standard Methods, 17th Edition, Section 5210B, Paragraph 6, Page 5-9).
3. Seed each QC bottle with ~~0.5~~ML OWW. 1.0 ml
4. QC Glucose/Glutamic Acid: Hach (300mg/L), Lot 1112.
5. Date Na2S2O3 Bottle Opened: 7-12-91
6. Sample Temperature: 19.2.
7. QC BOD Calculation:

((8.41 - 3.64) - (8.36 - 4.33) ~~0.5~~ 1.0 / 5) X 100 = 396 (/2 = 198)

TJR 7-10-87
7-11-91 Revised

TOTAL SUSPENDED SOLIDS BENCHSHEET
(TSS)

SAMPLE DATE: 7-17-91 OVEN TEMP: 106 C ANALYST: JJR

Date In: 7-17-91 Time In/Out: 0937 / 1212

SAMPLE	VOL,(ml)	GROSS WT, (g)	TARE WT, (g)	TSS, (mg/l)	
1. BLANK	250	0.0959	0.0960	-0.4	
2. Com Eff	200	0.0985	0.0966	9.5	AVE TSS (mg/l)
3. Com Eff	200	0.0984	0.0967	8.5	9.0
4. OWW	50	0.1116	0.0972	288	
5.					
6.					
7.					
8.					
9.					
10.					

COMMENTS: _____

CALCULATION: TSS (mg/l) = [GROSS WT, mg - TARE WT, mg] X 1000 / VOL, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75.

TJR 3-21-87
5-9-90 Rev

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7-17-91 Analyst: TJR

I. Slope: -56.5 (Range: -56 +/-2 mV)

II. Standards: (Hach)

A. 1.0 mg/l: Lot # 04CP Date Opened: 7-12-91

B. 10.0 mg/l: Lot # 25CP Date Opened: 7-12-91

III. Data:

	Sample	Fluoride, mg/L
1	CE	2.4
2	OWW	3.5
3		
4		
5		
6		
7		
8		

Comments: _____

Reference: 1. Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87.
2. Orion Research Manual for Fluoride Electrode, Model 940900.

TJR 7-11-89
6-7-91 Rev

BIOCHEMICAL OXYGEN DEMAND BENCHSHEET

ORGANIC WASTEWATER (OWW)

SAMPLE DATE: 7-17-91 INCUBATOR: 20 C ANALYST: TJR

Date/Time In: 7-17-91 / 1243 Date/Time Out: 7-22-91 / 0937

SAMPLE	BOTTLE NO.	VOL,(ml)	DOI, (mg/l)	DOF, (mg/l)	BOD, (mg/l)
1. Blank	5	N/A	8.49		
	(N) 12	N/A		8.26	—
2. OWW	22	8	8.25		
	(N) 26	8		2.14	229
3. OWW	31	5	8.30		
	(N) 36	5		4.58	223
4. OWW	38	3	8.38		
	(N) 40	3		6.21	217
5. QC	41	3	8.37		
	(N) 45	3		3.91	186

Average OWW BOD (mg/l) 223

COMMENTS: Tried increasing QC seed to 1.0 ml.

CALCULATION: BOD (mg/l) = [DOF, mg/l - DOI, mg/l] X 300 / VOL, ml

Notes: 1. (N) = Nutrient Pillow Added
2. QC BOD should be 198 +/- 30mg/L (Reference Standard Methods, 17th Edition, Section 5210B, Paragraph 6, Page 5-9).
3. Seed each QC bottle with ~~0.5~~ ML OWW. 1.0
4. QC Glucose/Glutamic Acid: Hach (300mg/L), Lot 1112.
5. Date Na2S2O3 Bottle Opened: 7-12-91
6. Sample Temperature: 25°C.
7. QC BOD Calculation:

((~~8.38~~ 8.37 - 3.91) - (8.30 - 4.58)) / (~~0.5~~ 1.0 / 5) X 100 = 372 (/2 = 186)

TJR 7-10-87
7-11-91 Revised

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7-12-91 Analyst: TJR

I. Slope: -56.6 (Range: -56 +/-2 mV)

II. Standards: (Hach)

A. 1.0 mg/l: Lot # 04CP Date Opened: 7-12-91

B. 10.0 mg/l: Lot # 25CP Date Opened: 7-12-91

III. Data:

	Sample	Fluoride, mg/L
1	CE	2.5
2	OWW	0.1
3		
4		
5		
6		
7		
8		

Comments: _____

Reference: 1. Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87.
2. Orion Research Manual for Fluoride Electrode, Model 940900.

TJR 7-11-89
6-7-91 Rev

TOTAL SUSPENDED SOLIDS BENCHSHEET
(TSS)

SAMPLE DATE: 7-12-91 OVEN TEMP: 108 C ANALYST: JJR

Date In: 7-12-91 Time In/Out: 0947/1104

SAMPLE	VOL,(ml)	GROSS WT, (g)	TARE WT, (g)	TSS, (mg/l)	
1. BLANK	250	0.0940	0.0943	-1.2	
2. Com Eff	200	0.0977	0.0951	13.0	AVE TSS (mg/l)
3. Com Eff	200	0.0978	0.0954	12.0	12.5
4. OWW	50	0.1028	0.0937	182	
5. Drum Filtrate	200	0.0954	0.0948	3.0	
6.					
7.					
8.					
9.					
10.					

COMMENTS: Dumped Chrome Filtrate.
Drum on Line. Concrete dust in WAD.

CALCULATION: TSS (mg/l) = $\frac{[\text{GROSS WT, mg} - \text{TARE WT, mg}] \times 1000}{\text{VOL, ml}}$

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75.

TJR 3-21-87
5-9-90 Rev

BIOCHEMICAL OXYGEN DEMAND BENCHSHEET

ORGANIC WASTEWATER (OWW)

SAMPLE DATE: 7-12-91 INCUBATOR: 20 C ANALYST: TJR

Date/Time In: 7-12-91 / 1040 Date/Time Out: 7-17-91 / 1032

SAMPLE	BOTTLE NO.	VOL, (ml)	DOI, (mg/l)	DOF, (mg/l)	BOD, (mg/l)
1. Blank	12	N/A	8.46		
√(N)	22	N/A		8.41	—
2. OWW	26	8	8.46		
√(N)	31	8		3.68	179.25
3. OWW	36	5	8.51		
√(N)	38	5		5.59	175.20
4. OWW	39	3	8.47		
√(N)	40	3		6.60	187.00
5. QC	43	3	8.47		
√(N)	45	3		5.00	158

Average OWW BOD (mg/l) 180.48

COMMENTS: Seeding QC with OWW
QC Low which invalidates this OWW data

CALCULATION: BOD (mg/l) = [DOF, mg/l - DOI, mg/l] X 300 / VOL, ml

Ref. Std methods 5210B para 6a

Notes: 1. (N) = Nutrient Pillow Added
2. QC BOD should be 198 +/- 30mg/L (Reference Standard Methods, 17th Edition, Section 5210B, Paragraph 6, Page 5-9).
3. Seed each QC bottle with 0.5ML OWW.
4. QC Glucose/Glutamic Acid: Hach (300mg/L), Lot 1112.
5. Date Na2S2O3 Bottle Opened: 7-12-91
6. Sample Temperature: 20°C.
7. QC BOD Calculation:

((8.47 - 5.00) - (8.46 - 3.68)0.5/8.0) X 100 = 317 (/2 = 158)

TJR 7-10-87
7-11-91 Revised

Suspect not enough seed volume.

SCOEPA00020553

BENCHSHEET

FLUORIDE ANALYSIS

Test Date: 7-3-91 Analyst: TJR

I. Slope: -57.2 (Range: -56 +/-2 mV)

II. Standards: (Hach)

A. 1.0 mg/l: Lot # 26CL Date Opened: 5-24-91

B. 10.0 mg/l: Lot # 10CM Date Opened: 5-24-91

III. Data:

	Sample	Fluoride, mg/L
1	CE	2.3
2	OWW	0.5
3		
4		
5		
6		
7		
8		

Comments: _____

Reference: 1. Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 4500-F C, page 4-87.
2. Orion Research Manual for Fluoride Electrode, Model 940900.

TJR 7-11-89
6-7-91 Rev

TOTAL SUSPENDED SOLIDS BENCHSHEET
(TSS)

SAMPLE DATE: 7-2-91 OVEN TEMP: 105 C ANALYST: JJR

Date In: 7-3-91 Time In/Out: 0946/1112

SAMPLE	VOL,(ml)	GROSS WT, (g)	TARE WT, (g)	TSS, (mg/l)	
1. BLANK	250	0.0944	0.0946	-0.8	
2. Com Eff	200	0.0963	0.0953	5.0	AVE TSS (mg/l)
3. Com Eff	200	0.0957	0.0948	4.5	4.8
4. OWW	50	0.1067	0.0948	238	
5.					
6.					
7.					
8.					
9.					
10.					

COMMENTS: _____

CALCULATION: TSS (mg/l) = [GROSS WT, mg - TARE WT, mg] X 1000 / VOL, ml

Reference: Standard Methods for the Examination of Water and Wastewater, 1989, 17th Edition, Section 2540 D, page 3-75.

TJR 3-21-87
5-9-90 Rev

BIOCHEMICAL OXYGEN DEMAND BENCHSHEET
(BOD)

ORGANIC WASTE WATER (OWW)

SAMPLE DATE: 7-2-91 INCUBATOR: 20 C ANALYST: TJR

Date/Time In: 7-3-91 / 1151 Date/Time Out: 7-8-91 / 1304

SAMPLE	BOTTLE NO.	VOL,(ml)	DOI, (mg/l)	DOF, (mg/l)	BOD, (mg/l)
1. OWW	39	8	8.15		
(N)	40	8		1.64	244
2. OWW	43	5	8.37		
(N)	45	5		4.02	261
3. OWW	46	3	8.11		
(N)	47	3		6.02	209
4.					
(N)					
5.					
(N)					

AVE OWW BOD (mg/l) 242

COMMENTS: _____

CALCULATION: BOD (mg/l) = [DOF, mg/l - DOI, mg/l] X 300 / VOL, ml

Notes: 1. (N) = Nutrient Pillow Added
2. Date Na2S2O3 Bottle Opened: 5-31-91
3. Sample Temperature: Not Taken.
4. For Blank and QC see BOD Benchsheet for CE, same date.

TJR 7-10-87
6-13-91 Rev

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland. OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

July
June 12, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our June, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

All parameters were within permit limits for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Thomas C. McCue

Tom McCue
Environmental Manger

Enclosure

cc: John Pittman

CITY OF PORTLAND
INDUSTRIAL DISCHARGE REPORT

INDUSTRY NAME:	Wacker Siltronic Corporation		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	July 15, 1991	☐ BASELINE MONITORING	
SAMPLING PERIOD:	June, 1991	☐ PERIODIC COMPLIANCE	
SAMPLE CODE:		☐ SPECIAL COMPLIANCE	
TODAY'S DATE:	July 12, 1991	☐ _____	

SAMPLE DATE >	See Comments	SAMPLE LOCATION >	OWW MV1	SAMPLE TYPE >	X COMPOSITE _ GRAB	DATE RECEIVED AT LAB >	Comments	DATE OF SAMPLE ANALYSIS >	Comments

PARAMETER	CODE	REPORTED CONCENTRATION mg/L	LIMIT mg/l daily	LIMIT mg/l monthly	VIOLATION YES(X)	VIOLATION LEVEL	COMMENTS
pH	843	S.U.	5.5-11.5 S.U.				Within limits
Cadmium	736	<0.020	0.7				June 7, 1991
Cyanide (Total)	878	NA	1.2				
Chromium (Total)	748	<0.010	3.8				June 7, 1991
C[illegible] (Total)	752	NA	2.3				
Nickel (Total)	824	NA	3.0				
Lead (Total)	811	NA	0.7				
Zinc (Total)	874	0.018	4.0				June 7, 1991
B.O.D.	729	240	>300=ESSC				Average of 4*, high = 268
T.S.S.	857	190	>350=ESSC				Average of 4*, high = 212
FEM-T Oil & Grease total	913	29					June 25, 1991 (Grab)
FEM-NP O & G Non-polar	915	NA	100				
FEM-P O & G Polar	914	NA	500				
Arsenic		<0.020	0.3				June 7, 1991
Chlorin. Hydrocar.		<0.010	0.5				June 25, 1991 (Grab)
Fluoride		4.2	30.0				Average of 4*, high = 14.6
							* Average of 4, taken June 7, 14
							21, & 28, 1991

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is [illegible] the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting fa[illegible] information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C. McLa[illegible] Date: 7-12-91

Form 13-1a rev 2.21.91

SCOEPA00020558

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

June 13, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our May, 1991 Monthly Monitoring Report and our Industrial Continuously Monitored pH Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions was experienced for more then fifteen minutes during a twenty four hour period during May. But there was one pH excursion for three minutes at a pH of 5.4. all other permit limits were met for the month.

If you have any question, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

T. McCue

Tom McCue
Environmental Manger

Enclosure

cc: John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

May 1991
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
5-3-91		--	--	--	0.3	0.5	--	<0.002	166
5-10-91		--	--	--	0.4	0.5	--	<0.002	162
5-17-91		--	--	--	0.3	0.5	--	0.002	202
-24-91		--	--	--	0.1	0.2	--	<0.0006	178
5-31-91		--	--	--	7.3	6.9	--	<0.0008	316
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

T. McCu
Authorized Signature

SCOEPA00020560

Tom McCl

CITY OF PORTLAND
INDUSTRIAL CONTINUOUSLY MONITORED pH REPORT

INDUSTRY NAME:	Wacker Siltronic Corp		(FOR CITY USE ONLY)
PERMIT NUMBER:	469-01	REPORT TYPE (CHECK ONE)	
REPORT DUE DATE:	6-14-91	☐ BASELINE MONITORING	
SAMPLING PERIOD:	Continous	☒ PERIODIC COMPLIANCE	
SAMPLE CODE:		☐ SPECIAL COMPLIANCE	
TODAY'S DATE:	6-11-91	☐ _____	

SAMPLE LOCATION>		METER BRAND		METER MODEL		pH LIMIT

pH CODE 843

#	DATE	STARTING TIME (use military time)	MOST EXTREME pH EXCURSION VALUE	DURATION in minutes	CLAIMED NON-VIOLATION	VIO LEVEL	COMMENTS
	5-30-91	17:35	5.4 S.U.	3	(y) ~~n~~		Less then 15 min in 24 hours
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		
		:	S.U.		y n		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Thomas C McCl Date: 6-11-91

INSTRUCTIONS: Source Control must be notified of all discharge violations within 24 hours of your knowledge of violation. Report all apparent pH violations on this form even if you claim they represent a non-violation.

VIOLATIONS: 1. pH excursions outside your permit range for a total duration of more than 15 minutes in any 24 hour period.
2. pH excursions outside the range 5.0-12.5 regardless of duration.

CLAIMED NON-VIOLATIONS: The pH recorder chart shows an apparent violation but the industry claims this did not represent a discharge pH violation.

List in this report all claimed non-violations and circle the y in the claimed non-violation column. State in the comments column why you claim this does not represent a pH discharge. Attach a detailed explanation with supporting documentation to this report. When the claimed non-violation was due to equipment failure or human error, describe the corrective measures taken and when pH monitoring returned to normal. Failure to properly claim and document a non-violation, may result in citation for a pH violation.

1398A

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

May 13, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our April, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions was experienced during April. And all other permit limits were met for the month.

If you have any questions, please call me at 243-2020, ext. 532.

Very truly yours,

WACKER SILTRONIC CORPORATION

Tom McCue

Tom McCue
Environmental Manger

Enclosure

cc: John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

April 1991
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
4-5-91					0.9	1.4		0.003	
4-12-91					0.1	0.1		<0.002	
4-19-91					0.2	0.3		0.004	
4-26-91					0.2	0.3		0.002	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Authorized Signature

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

April 12, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our March, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No Ph excursions was experienced during March. And all other permit limits were met for the month.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

T. McCue

Tom McCue
Environmental Manger

Enclosure

cc: John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

March 1991
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
3-1-91		--	--	--	0.1	0.2	--	<0.002	--
3-8-91		--	--	--	0.2	0.3	--	<0.001	--
3-15-91		--	--	--	0.2	0.3	--	0.002	--
3-22-91		--	--	--	5.1	8.6	--	0.001	--
3-29-91		--	--	--	0.2	0.3	--	<0.001	--
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Thomas C. McCun
Authorized Signature

SCOEPA00020565

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

March 8, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our February, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No Ph excursions was experienced during February. And all other permit limits were met for the month.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Tom McCue

Tom McCue
Environmental Manger

Enclosure

cc: John Pittman
Jerry Linden

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

February 1991
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
2-1-91					0.4	0.6		0.002	
2-8-91					1.2	2.1		<0.001	
2-15-91					0.2	0.3		0.001	
2-22-91					0.3	0.5		<0.002	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Thomas C. McCle
Authorized Signature

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

S/B February

~~January~~ 10, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our January, 1991 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursion was experienced during January. All other parameters were within the permit limitations.

If you have any question, please call me at 243-2020, ext. 216.

Very truly yours,

WACKER SILTRONIC CORPORATION

Jerry Linden
Facilities Environmental Operations Supervisor

Enclosure

cc: John Pittman
Tom McCue

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

January 1991
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
1-4-91					0.3	0.5		<0.0005	
1-11-91					0.2	0.3		<0.001	
1-18-91					0.1	0.1		<0.001	
1-25-91					1.7	3.0		<0.001	
	Semi Annual								253

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Authorized Signature

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

January 10, 1991

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our December, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

One pH excursions was experienced during December. All other parameters were within the permit limitations.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

December 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
12-7-90					0.3	0.5		<0.002	
12-14-90					0.4	0.7		<0.05	
12-21-90					0.2	0.3		<0.05	
12-28-90					1.5	2.5		<0.001	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
12-24	50 minutes	--	5.0

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Richard G. Gaupy 1-10-91
Authorized Signature

SCOEPA00020571

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

December 14, 1990

Mr. Jim McCadden
Industrial Waste Management
City of Portland
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. McCadden:

Attached is our November, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

One pH excursions was experienced during November. All other parameters were within the permit limitations.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

November 90
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
11-2-90					0.2	0.3		0.0004	
11-9-90					2.2	3.9		0.002	
11-16-90					10.7	17.4		<0.0009	
11-21-90					0.2	0.3		0.001	
11-30-90					13.1	21.5		<0.003	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
11-23-90	15 minutes	--	Approx. 5.0

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

R G Gaugy
Authorized Signature

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

November 12, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our October, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during October. All other parameters were also within the permit limitations.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

October 90
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT
LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
10-5-90					6.3	11.7		0.001	
10-12-90					4.8	8.2		0.001	
10-19-90					8.6	14.9		0.002	
10-26-90					0.3	0.5		0.001	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Richard G. Haney 11-12-90
Authorized Signature

SCOEPA00020575

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
Phone (503) 243-2020
FAX (503) 226-0052

October 8, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our September, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during July. All other parameters were also within the permit limitations.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

September 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
9-7-90					0.8	1.4		0.003	
9-14-90					0.3	0.5		0.001	
9-21-90					0.3	0.5		0.002	
9-28-90					0.4	0.7		0.003	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Richard J. Tanzy 10-8-90
Authorized Signature

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

August 14, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our July, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during July. All other parameters were within the permit limitations except for the fluoride levels tested on July 7. We believe this excursion was due to maintenance that was being done to our NOx scrubber. You will see that the levels immediately returned to their normal low levels the following week.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

July 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
7-6-90					40.2	48.6	0.001		330
7-13-90					0.5	0.8	0.005		222
7-20-90					2.5	4.1	0.005		152
7-27-90					7.9	13.9	0.003		340
									↓
									Avrge* 261
	Semi Annual								

pH: Summary of Data: * Semi-annual Permit Requirement

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Richard G. Gangy
Authorized Signature

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

September 12, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our August, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during July. All other parameters were also within the permit limitations.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

August 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
8-3-90					0.5	0.7		0.003	
8-10-90					0.8	1.5		<0.002	
8-17-90					2.8	4.9		<0.002	
8-24-90					6.4	7.8		0.002	
8-31-90					2.2	3.9		<0.001	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Richard A. Gamy 9-12-90
Authorized Signature

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

July 11, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our June, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during May. All other parameters were within the permit limitations.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

June 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
6-1-90					2.1	2.5		<0.026	
6-8-90					1.6	1.4		<0.026	
6-15-90					2.4	1.9		<0.006	
6-22-90					4.8	6.0		<0.006	
6-29-90					0.4	0.5		<0.012	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c - 24 hour sampling, composited, compared with "Mo. Ave."
g - grab sample, compared with "Daily Max."

Richard G Gangy 7-11-90
Authorized Signature

SCOEPA00020583

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

June 11, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our May, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during May. All other parameters were within the permit limitations.

If you have any question, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

May 90
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
5-4-90					2.1	3.1		<0.01	
5-11-90					0.5	0.76		0.019	
5-16-90					2.2	3.9		0.011	
5-25-90					23.2	36.6		0.012	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Barry 6-12-90
Authorized Signature

SCOEPA00020585

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

May 10, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our April, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during April. All other parameters were within the permit limitations.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

April 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
4-6-90					5.1	6.7		0.014	
4-13-90					7.8	9.7		0.009	
4-20-90					0.8	1.2		0.016	
4-27-90					3.3	5.0		0.015	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G Gariezy 5-9-90
Authorized Signature

SCOEPA00020587

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

April 11, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our March, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during March. All other parameters were within the permit limitations.

Also, as required by Schedule B of the permit, please find attached the yearly analytical results for Zinc, Cadmium, Chromium and Arsenic.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

March 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
3-2-90					2.7	3.4		0.011	
3-9-90					3.3	3.9		0.005	
3-16-90					2.7	3.5		0.006	
3-23-90					4.2	5.4		0.008	
3-30-90					3.8	4.7		No Data	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Gangy 4-12-90
Authorized Signature

SCOEPA00020589

Rcd 2-22-90 JJR

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION &ANALYTICAL SUPPORT LABS
DATE REPORTED: 02/22/90

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.
Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Tom Rothschild DATE: 01/05/90 0800AM
02/09/90 0845AM
SAMPLE ANALYZED BY: H. Hogle N. Lao DATE: 01/18/90
02/12/90

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.023	0.022	0.014	<0.01

OWW composite JJR

NOTEBOOK BM PAGE 97 to PAGE 104 DISC FILE METOWW29

SEND COPIES TO: TOM ROTHSCHILD, TERRY LINDEN, RICK GRIEPY, JERRY SCHAEFFER

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

March 13, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our February, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

One pH excursion was experienced during February for 20 minutes. All other parameters were within the permit limitations.

If you have any questions, please call me at 243-2020, ext. 216.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

February 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
2-2-90					3.0	4.1		< 0.01	
2-9-90					0.6	0.8		< 0.01	
2-16-90					1.8	2.5		< 0.01	
2-23-90					3.8	4.8		0.019	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
2-21-90	20 Minutes	--	3.6

ple*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Lanigy 3-13-90
Authorized Signature

SCOEPA00020592

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

February 12, 1990

Mr. Gary Barnes
Industrial Wastewater Section
City of Portland Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Barnes:

Attached is our January, 1990 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

One pH excursion was experienced during January for 30 minutes due to an acid pumping problem. All other parameters were within the permit limitations.

If you have any questions, please call me at 243-2020, ext. 216.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

January 1990
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
1-5-90					2.2	2.6		0.01	182
1-12-90					2.5	2.9		0.01	342
1-19-90					4.3	6.1		0.02	320
1-26-90					4.4	5.7		0.02	172
	Semi Annual								

Average TSS
254

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
1-5-90	30 minutes	---	5.1

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Gariepy 2-12-90
Authorized Signature

SCOEPA00020594

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

January 8, 1990

Mr. Harry G. Edmonds, P.E.
Industrial Waste Engineer
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Room 400
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Edmonds:

Attached is our December, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during the month. All other parameters were also within permitted limits.

If you have any questions, please call me at 243-2020, ext. 216.

Very truly yours,

WACKER SILTRONIC CORPORATION

Jerry Linden

Jerry Linden for Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

December 1989
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency / Sample*	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
12-1-89					18.0	15.1		0.002	
12-8-89					2.4	3.0		0.027	
12-15-89					4.0	7.3		0.036	
12-22-89					2.0	2.6		0.050	
12-29-89					6.7	9.4		0.050	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Garvey
Authorized Signature

SCOEPA00020596

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 83180
Portland, OR 97283-0180
7200 N.W. Front Ave.
Portland, OR 97210-3676
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

December 12, 1989

Mr. Harry G. Edmonds, P.E.
Industrial Waste Engineer
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Room 400
Portland, Oregon 97204-1972

Subject: Monthly Monitoring Report

Dear Mr. Edmonds:

Attached is our November, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during the month. All other parameters were also within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

November 89
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As	Cd	Cr	F	Lbs F	TTO	TCE	TSS
		c	c	c	c	c	g	g	g
	Weekly								
11-3-89					5.9	9.6		0.006	
11-10-89					2.1	3.3		0.015	
11-17-89					4.2	6.3		0.003	
11-24-89					3.8	2.1		0.001	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Grigy 12-15-89
Authorized Signature

SCOEPA00020598

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

November 10, 1989

Mr. Harry G. Edmonds, P.E.
Industrial Waste Engineer
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Room 400
Portland, Oregon 97204-1972

Subject: October, 1989 Monthly Monitoring Report

Dear Mr. Edmonds:

Attached is our October, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during the month. All other parameters were also within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

October 1989
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
10-6-89					2.8	3.97		0.007	
10-13-89					2.0	2.83	<	0.05	
10-20-89					2.9	4.52	<	0.05	
10-27-89					3.6	5.14		No Data	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Lanzy 11-10-89
Authorized Signature

SCOEPA00020600

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

October 10, 1989

Mr. Harry G. Edmonds, P.E.
Industrial Waste Engineer
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Room 400
Portland, Oregon 97204-1972

Subject: September, 1989 Monthly Monitoring Report

Dear Mr. Edmonds:

Attached is our September, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

No pH excursions were experienced during the month. All other parameters were also within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

September 89
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
9-1-89					5.5	7.3		0.004	
9-8-89					5.2	7.6		0.003	
9-15-89					6.5	3.1		0.006	
9-22-89					4.2	3.9		0.004	
9-29-89					2.6	2.1		No Data	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
	None		

S le*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Gariepy 10-12-89
Authorized Signature
Richard G. Gariepy

SCOEPA00020602

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

September 12, 1989

Mr. Harry G. Edmonds, P.E.
Industrial Waste Engineer
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Room 400
Portland, Oregon 97204-1972

Dear Mr. Edmonds:

August, 1989 Monthly Monitoring Report

Attached is our ~~September~~ August, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we experienced one pH excursion of 20 minutes for the month. This was due to an acid pump control problem which has been repaired. All other parameters were within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

August 1989
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
8-4-89					5.0	2.3		0.006	
8-11-89					6.6	1.1		0.035	
8-18-89					6.7	5.5		0.005	
8-25-89					7.1	6.1		0.003	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)	
8-1-89	20 minutes	--	3.0	Acid Pump

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Gariepy 9-13-89
Authorized Signature

SCOEPA00020604

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

August 10, 1989

Mr. Harry G. Edmonds, P.E.
Industrial Waste Engineer
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Room 400
Portland, Oregon 97204-1972

Dear Mr. Edmonds:

July, 1989 Monthly Monitoring Report

Attached is our July, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we experienced three pH excursions totaling 151 minutes for the month. This was due to an acid pump control problem which has been repaired. All other parameters were within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

July (MONTH) 89 (YEAR)

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency / Sample*	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
7-7-89					6.4	7.5		0.034	
7-14-89					3.6	5.0		0.035	
7-21-89					6.1	8.0		0.001	
7-28-89					2.9	4.1		0.001	(1) 203
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)	
7-5-89	16	10.6	--	CCW
7-22-89	30	11.6	--	CCW
7-31-89	105	10.0	--	

Sample: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Gariepy 8/11/89
Authorized Signature Richard G. Gariepy
(1) Semi-annual Permit requirement

SCOEPA00020606

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

July
~~June~~ 14, 1989

Mr. Harry G. Edmonds, P.E.
Industrial Waste Engineer
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Room 400
Portland, Oregon 97204-1972

Dear Mr. Edmonds:

June, 1989 Monthly Monitoring Report

Attached is our June, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we experienced one pH excursion of 30 minutes for the month. This was due to an acid pump malfunction which was quickly repaired. All other parameters were within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

June 1989
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

		CONCENTRATION mg/l							
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
6-2-89					13	17.2		0.01	
6-9-89					6.6	9.1		0.01	
6-16-89					15	19.8		0.01	
6-23-89					4.4	6.1		0.03	
6-30-89					4.7	6.4		0.03	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)	
6-21-89	30 minutes	--	2	Acid Pump Malfunction

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Gariepy 7-13-89
Authorized Signature
Richard G. Gariepy

SCOEPA00020608

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

June 14, 1989

Mr. Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman:

May, 1989 Monthly Monitoring Report

Attached is our May, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we experienced no pH excursions during the month. All other parameters were also within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

May — MONTH
1989 — YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As	Cd	Cr	F	Lbs F	TTO	TCE	TSS
		c	c	c	c	c	g	g	g
	Weekly								
5-5-89					7.7	10.5		0.007	
5-12-89					9.9	12.5		0.019	
5-19-89					8.9	12.8		0.025	
5-26-89					13.0	18.3		0.006	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None		

mple*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Haney 6-14-89
Authorized Signature

SCOEPA00020610

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

May 10, 1989

Mr. Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman:

April, 1989 Monthly Monitoring Report

Attached is our April, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we experienced one pH excursions of 25 minutes for the month. This was a result of an overflow of alum into the treatment system, which was quickly resolved. All other parameters were within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

April 89
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
4-7-89					4.6	5.8		0.003	
4-14-89					7.1	7.6		0.004	
4-21-89					8.0	10.9		0.004	
4-28-89					4.8	6.3		0.011	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)	
4-12-89	25 minutes	--	4.0	Alum Overflow

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

[signature] 5-16-89
Authorized Signature

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

April 13, 1989

Mr. Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman:

March, 1989 Monthly Monitoring Report

Attached is our March, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we experienced one pH excursions of 15 minutes for the month. This was a result of a pH adjustment problem which was quickly resolved. All other parameters were within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

March 1989
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 83180
Portland, OR 97283-0180

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
3/3/89					12.6	11.9		0.004	
3/10/89					7.4	7.5		0.003	
3/17/89					17.4	17.4		0.004	
3/24/89					8.8	9.2		0.004	
3/31/89					15.8	20.0		0.019	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)	
3-18-89	15 minutes	11.6	3.7	Overflow Tank

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

April 13, 1989

Mr. Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Subject: Annual reporting for metals, Permit No. 469-01

Dear Mr. Beyerman:

Enclosed are the annual result for arsenic , cadmium, chromium and zinc analysis which have been done for the wastewater discharge to the City of Portland from our plant. This sample was collected on February 10, 1989.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION &ANALYTICAL SUPPORT LABS
DATE REPORTED: 03/10/89

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.
Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.3 AAS Flame
As method: EPA Method No. 206.2 AAS Graphite Furnace

As,Cd,Zn analyses were done using standard additions methods with the filtered digested sample solutions. Cd, and Zn determinations were done on a common 100ml sample. Cr, As determination were done on a separate 100ml samples. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Tom Rothschild DATE: 02/10/89
SAMPLE ANALYZED BY: H. Hogle N. Lao DATE: 03/09/89

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.036	<0.012	0.002	0.004

NOTEBOOK BM PAGE 94,95,96 DISC FILE METOWW28

SEND COPIES TO: Tom Rothschild, Jerry Linden, Rick Gartepy, Jerry Schaeffer

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

March 13, 1989

Mr. Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman:

February, 1989 Monthly Monitoring Report

Attached is our February, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we experienced two pH excursions (one for 45 minutes, the second for 80 minutes) for the month. Both were the result of freezing problems caused by the extremely cold tempuratures experience in Portland during the week of January 30. All other parameters were within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

February 1989
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As	Cd	Cr	F	Lbs F	TTO	TCE	TSS
		c	c	c	c	c	g	g	g
	Weekly								
2-3-89					1.0	1.3		0.006	
2-10-89					10.1	8.1		0.005	
2-17-89					8.3	9.6		0.005	
2-24-89					3.8	1.6		0.006	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)	
2-3-89	45	10.7	--	Acid Froze
2-6-89	80	11.0	--	Weather

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Lanier 3-14-89
Authorized Signature

SCOEPA00020618

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

February 13, 1989

Mr. Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman:

January, 1989 Monthly Monitoring Report

Attached is our January, 1989 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we did not experience a pH outage greater than 15 minutes during the month of January. All other parameters were also within permitted limits.

If you have any questions, please call me at 243-2020, ext. 132.

Very truly yours,

WACKER SILTRONIC CORPORATION

Richard G. Gariepy

Richard G. Gariepy
Environmental Engineer

Enclosure

cc: John Pittman
Jerry Schaeffer
Jerry Linden
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

January 1989
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
1-6-89					6.3	8.0		0.025	280 (Note 1)
1-13-89					6.9	7.9		0.025	
1-20-89					5.6	5.7		0.100	
1-27-89					3.3	3.8		0.105	
	Semi Annual								

Note 1: Semi Annual Requirement

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
	None > 15 minutes		

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Richard G. Gaupy 2-13-89
Authorized Signature

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

January 13, 1989

Mr. Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman:

December, 1988 Monthly Monitoring Report

Attached is our December, 1988 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had one pH outage of 15 minutes during the month resulting from normal operations.

All other parameters are also within limits for the month of December, 1988.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Rick Gariepy
Jerry Linden
John Pittman
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

December 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
12/2/88					4.2	4.9		0.023	
12/9/88					9.4	10.9		0.021	
12/16/88					4.5	4.9		0.214	
12/22/88					9.0	10.0		0.117	
12/30 /88					9.6	11.0		0.048	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)	
12/3/88	15	--	4.0	Low pH dump

ple*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

1/13/89
Authorized Signature

SCOEPA00020622

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

December 15, 1988

Mr. Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman:

~~December~~ November, 1988 Monthly Monitoring Report

Attached is our November, 1988 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had one pH outage of 25 minutes during the month resulting from normal operations. In addition, we experienced a pH outage in our Sanitary Sewer System on November 30, 1988 as documented to you in our December 8, 1988 letter.

All other parameters are also within limits for the month of November, 1988.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Rick Gariepy
Jerry Linden
John Pittman
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

November 88
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As	Cd	Cr	F	Lbs F	TTO	TCE	TSS
		c	c	c	c	c	g	g	g
	Weekly								
11/4/88					21.0	25.22		0.03	
11/11/88					16.0	20.02		0.03	
11/18/88					4.4	5.50		0.04	
11/23/88					12.3	14.36		0.04	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
11/16/88	25 minutes	-	5.5

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

SCOEPA00020624

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

November 15, 1988

Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman:

October, 1988 - Monthly Monitoring Report

Attached is our October, 1988 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had one pH outage of 70 minutes during the month as a result of an acid pump being unoperational.

All other parameters are within permit limits for the month of October 1988.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

MMT:md

Enclosure

cc: Rick Gariepy
Jerry Linden
John Pittman
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

October 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Weekly								
10-7-88					2.1	2.6		0.02	
10-14-88					3.6	4.8		0.04	
10-21-88					0.3	0.4		0.02	
10-28-88					4.9	6.9		0.03	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)	
10-15-88	70 min	10.3	-	Acid Pump Plugged

ple*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

11/15/88
Authorized Signature

SCOEPA00020626

Murray

October 14, 1988

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

Glen Beyerman
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Beyerman,

September, 1988 - Monthly Monitoring Report:

Attached is our September, 1988, Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had one pH outage of 90 minutes as a result of a RODI regeneration.

As discussed with Harry Edmonds of your office last week, we were able to correct the problem associated with high fluoride levels reported as follows:

Date:	F (ppm):
8/26	39.0
9/2	8.0
9/9	34.0
9/16	12.1
9/23	9.7
9/30	8.0

We found that a process tank located in the Process Technology lab had a drain bath discharge line connected to the OWW drain system instead of the CAD. This situation was corrected during the second week of September. Since then our fluoride effluent level has been within compliance.

All other parameters are within permit limits for the month of September are within compliance. If you have any questions, please call me at 243-2020, extension 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Rick Gariepy
Jerry Linden
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

September 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
9/2/88					8.0	9.34		0.14	
9/9/88	Weekly				34.0	45.37		0.026	
9/16/88					12.1	14.13		0.032	
9/23/88					9.7	11.33		0.01	
9/30/88					8.0	9.34		0.02	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
9/24/88	90 minutes	12.7	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

10/14/88
Authorized Signature

Murray

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

September 15, 1988

Mr. Harry Edmonds, P.E.
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Edmonds:

August, 1988 Monthly Monitoring Report

Attached is our August, 1988 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had a total of 40 minutes of pH outage during the month as a result of RODI bed regenerations.

All other parameters except for fluoride are well within limits. Since the last week of August we have experienced high levels of fluoride samples (between 30-40 ppm) on two of the last four weekly samples. We are in the process of trouble shooting all possible sources and hope to have this problem resolved shortly.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

August 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
8/5/88					4.8	6.1		0.05	
8/12/88	Weekly				9.9	12.5		0.20	
8/19/88					12.6	15.1		No data	
8/26/88					39	56.2		0.14	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
8/2/88	5 minutes	10.2	
8/10/88	10 minutes	10.1	
8/30/88	15 minutes	10.4	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

9/15/88
Authorized Signature

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

August 11, 1988

Mr. Harry Edmonds, P.E.
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Edmonds

July, 1988 Monthly Monitoring Report

Attached is our July, 1988 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had one pH outage of 10 minutes during the month as a result of performing an anion bed regeneration.

All other parameters are within limits for the month of July, 1988.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Mike Pilkington
John Pittman
Tom Rothschild

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

July 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97210

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
7/08					1.6	2.2		0.06	
7/15	Weekly				8.9	11.5		0.16	
7/22					4.2	5.2		0.04	
7/29					18.8	22.1		0.05	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
7/29	10 minutes	10.5	3.0

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

8/11/88
Authorized Signature

SCOEPA00020632

Murray

Wacker Siltronic Corporation

WACKER

RECEIVED
JUL
WACKER SILTRO. ENGINEERING

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
FAX 503-226-0052
TWX 910-464-4777
TLX 4970339

July 12, 1988

Mr. Harry Edmonds, P.E.
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Mr. Edmonds:

~~July~~ June, 1988 Monthly Monitoring Report

Attached is our June, 1988 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had no pH outages during the month.

All other parameters are also within limits for the month of June, 1988.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

June 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →				F c	LBS F c		TCE g	
6/02					5.4	7.4		.03	
6/09	Weekly				7.3	9.6		.04	
6/16					4.1	5.5		.04	
6/23					3.6	5.3		.04	
	Semi Annual								

pH: Summary of Data: No excursions

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

7/12/88
Authorized Signature

SCOEPA00020634

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM
PERMITTEE MONITORING REPORT

May 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

		CONCENTRATION mg/l							
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
5/05					9.2	11.2		.07	
5/12	Weekly				9.2	11.2		.07	
5/19					8.5	11.2		.04	
5/26					8.5	11.0		.05	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
5/22	20 min.	20.0	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

SCOEPA00020635

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

May 13, 1988

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

April, 1988 Monthly Monitoring Report

Attached is our April, 1988 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had no pH outages during the month.

All other parameters are also within limits for the month of April, 1988.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

April 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

		CONCENTRATION mg/l							
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	LBS. F c	TTO g	TCE g	TSS g
	Monthly								
4/01	Weekly				6.8	8.6		.07	
4/07					4.3	5.9		.07	
4/14					7.9	10.2		.03	
4/21					4.8	6.4		.05	
4/28					8.1	12.1		.08	
	Semi Annual								

pH: Summary of Data: No pH excursions during the month of April

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

5/13/88
Authorized Signature

SCOEPA00020637

Murray

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

March 9, 1988

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

February 1988 Monthly Monitoring Report

Attached is our February 1988 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had no pH outages during the month.

All other parameters are also within limits for the month of February, 1988.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

February, 1988
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Lbs F c	TTO g	TCE g	TSS g
	Monthly								
2/4	Weekly				3.2	4.1		.19	
2/11					6.7	7.7		.07	
2/18					4.5	5.7		.06	
2/25					5.8	7.5		.08	
	Semi Annual								

pH: Summary of Data: No pit excursions this month

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

3/9/88

Authorized Signature

SCOEPA00020639

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

February 11, 1988

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

January 1988 Monthly Monitoring Report:

Attached is our January, 1988, Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had one pH outage of 45 minutes as a result of a valve malfunction associated with our lime feed system.

All other parameters are also within limits for the month of January, 1988.

We are in receipt of your February 3, 1988 letter regarding your approval to change our heavy metal sampling frequency from monthly to annually. The January 15 data provided for this monitoring is enclosed and will serve as our annual sampling requirement for 1988. We thank you for approving our request.

During the past year we have actively pursued efforts to conserve the use of water in our processes where appropriate. We have also diverted some minor streams to drain systems permitted by our NPDES permit.

If you have any questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tulson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

January (MONTH) 1988 (YEAR)

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F. c	Zn c	Lbs. F. g	TCE g	TSS g
1/15/88	Annually	<.005	<.005	<.013		.025			
1/07/88	Weekly				6.5		7.4	.08	
1/14/88					9.2		12.2	.08	
1/21/88					1.3		1.6	.10	
1/28/88					4.4		5.4	.17	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
1/30/88	45 minutes	12	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

2/16/88
Authorized Signature

SCOEPA00020641

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

January 13, 1988

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

December, 1987 Monthly Monitoring Report

Attached is our November 1987 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had one hour and 45 minutes or 0.24% out of compliance for pH. This excursion is directly related to regenerations of our Deionization beds.

All other parameters are also within limits for the month of November 1987.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

December (MONTH) 1987 (YEAR)

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	LBS F c	TCE g	TSS g
12/17	Monthly	<.002	<.008	<.02		.023			
12/03	Weekly				8.3		12.9	.07	
12/10					8.8		12.4	.06	
12/17					2.3		3.6	.16	
12/24					7.1		3.7	.05	
12/31					3.2		2.5	.07	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
12/04	35 min.	12.9	
12/09	45 min.	12.4	
12/15	25 min.		2.0

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

1/12/88

Authorized Signature

SCOEPA00020643

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

January 13, 1988

Ms. Jane Whitcher
Customer Services Supervisor
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Whitcher:

Monthly Sanitary Sewer Consumption

This letter will provide the following consumption data for our sanitary waste discharge into your sewerage system. As of December 31, 1987 the following totalizer recordings were made:

OWW discharge	563,871
Meter Vault #2	1,941,293

If you have any questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

MMT:ll

cc: Greg Carr

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

December 16, 1987

Tom Bottenberg, P.E.
Industrial Waste Manager
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Mr. Bottenberg:

Subject: Request for change in Heavy Metal Monitoring Frequency for Permit No. 469-01.

As a follow-up to a conversation with Ms. Molly Heany of your department, I am forwarding this letter to you to formally request that the monthly analysis requirement for arsenic, cadmium, chromium and zinc be reduced to an annual sampling frequency.

Since we originally started performing analysis on these constituents early in 1985 our analysis shows that we are consistently below 1 % of all parameter limits for these elements.

Some of this data is shown in the enclosed memorandum from our Facilities Chemist. We look forward to your review and reply of our request as soon as possible.

Please call me at 243-2020, extension 301, if you have any questions regarding this matter.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure:

(1) Wacker memorandum dated 11/19/87

cc: John Pittman
Greg Carr
Mike Pilkington
Judy Duncan

TO: Environmental Engineering Manager/Murray Tilson 19 Nov 87

SUBJECT: Request for Wastewater Discharge Permit #469-01 Change with Respect to Monthly Analysis of Arsenic, Cadmium, Chromium, and Zinc

FROM: Facilities Chemist/Thomas J. Rothschild

1. Request the current requirement in our Wastewater Discharge Permit #469-01 of monthly analyses for Arsenic, Cadmium, Chromium, and Zinc to changed to a annual requirement.

2. The following data is submitted to support this request:

METAL	PERMIT LIMIT	Apr87	May87	Jun87	Jul87	Aug87	Sep87	Oct87
Arsenic	1.0 mg/L	<0.003	<0.004	<0.004	0.005	<0.005	0.004	<0.005
Cadmium	1.0 mg/L	<0.004	0.003	<0.002	<0.002	<0.004	<0.002	0.005
Chromium	5.0 mg/L	<0.02	<0.007	<0.005	0.001	<0.001	<0.008	<0.002
Zinc	4.0 mg/L	0.017	0.02	0.015	0.027	0.027	0.017	0.023

3. The above data clearly demonstrates that we consistently far below the Permit limitations.

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

December 16, 1987

Tom Bottenberg, P.E.
Industrial Waste Manager
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Mr. Bottenberg:

Subject: Request for change in Heavy Metal Monitoring Frequency for Permit No. 469-01.

As a follow-up to a conversation with Ms. Molly Heany of your department, I am forwarding this letter to you to formally request that the monthly analysis requirement for arsenic, cadmium, chromium and zinc be reduced to an annual sampling frequency.

Since we originally started performing analysis on these constituents early in 1985 our analysis shows that we are consistently below 1 % of all parameter limits for these elements.

Some of this data is shown in the enclosed memorandum from our Facilities Chemist. We look forward to your review and reply of our request as soon as possible.

Please call me at 243-2020, extension 301, if you have any questions regarding this matter.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure:

(1) Wacker memorandum dated 11/19/87

cc: John Pittman
Greg Carr
Mike Pilkington
Judy Duncan

TO: Environmental Engineering Manager/Murray Tilson 19 Nov 87

SUBJECT: Request for Wastewater Discharge Permit #469-01 Change with Respect to Monthly Analysis of Arsenic, Cadmium, Chromium, and Zinc

FROM: Facilities Chemist/Thomas J. Rothschild

1. Request the current requirement in our Wastewater Discharge Permit #469-01 of monthly analyses for Arsenic, Cadmium, Chromium, and Zinc to changed to a annual requirement.

2. The following data is submitted to support this request:

METAL	PERMIT LIMIT	Apr87	May87	Jun87	Jul87	Aug87	Sep87	Oct87
Arsenic	1.0 mg/L	<0.003	<0.004	<0.004	0.005	<0.005	0.004	<0.005
Cadmium	1.0 mg/L	<0.004	0.003	<0.002	<0.002	<0.004	<0.002	0.006
Chromium	5.0 mg/L	<0.02	<0.007	<0.005	0.001	<0.001	<0.008	<0.002
Zinc	4.0 mg/L	0.017	0.02	0.015	0.027	0.027	0.017	0.023

3. The above data clearly demonstrates that we consistently far below the Permit limitations.

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

December 9, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

November, 1987 Monthly Monitoring Report

Attached is our November 1987 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had 30 minutes or 0.07% out of of compliance for pH. This excursion is directly related to a regeneration of our Anion Deionization bed.

All other parameters are also within limits for the month of November 1987.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

November 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	LBS F g	TCE g	TSS g
11/19	Monthly	<.002	<.011	<.01		.015			
11/05	Weekly				2.9		4.3	.07	
11/12					2.1		3.2	.04	
11/19					4.4		5.8	.12	
11/26					6.6		3.1	.06	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
11/7	30 min	10.3	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

12/10/87
Authorized Signature

SCOEPA00020650

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

November 12, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

October, 1987 Monthly Monitoring Report

Attached is our October 1987 Monthly Monitoring Report, as required by our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had 22 minutes or 0.05% out of of compliance for pH. This excursion is directly related to a regeneration of our Anion Deionization bed.

All other parameters are also within limits for the month of October 1987.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

October 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency / Sample*	As c	Cd c	Cr c	F c	Zn c	LBS F c	TCE g	TSS g
10/16	Monthly	<.005	.006	<.002		.023			
10/1	Weekly				3.2		4	.14	
10/8					3.9		5	.11	
10/16					1.1		1	.11	
10/22					2.8		4	.14	
10/29					3.6		6	.07	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
10/4	23 min	11.1	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

11/12/87
Authorized Signature

SCOEPA00020652

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

November 12, 1987

Ms. Jane Whitcher
Customer Services Supervisor
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Whitcher:

Monthly Sanitary Sewer Consumption

This letter will provide the following consumption data for our sanitary waste discharge into your sewerage system. As of October 31, 1987 the following totalizer recordings were made:

OWW discharge	798,610
Meter Vault #2	1,932,578

If you have any questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

MMT:ll

cc: Greg Carr

WACKER SILTRONIC CORPORATION

STR# REGULAR

SPECIAL TEST REPORT: INCOMING INSPECTION & ANALYTICAL SUPPORT LABS

DATE REPORTED 10/30/87

TITLE: TCE IN PWW AND OWW

TEST METHOD:

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Tom Rothchild DATE OWW 10/2/87 0845 hrs, PWW 10/7/87 1000 hrs, OWW 10/7/87 0955 hrs 10/16/87 OWW 0815 HRS,OWW 10/21/87 0925 hrs
George StevensDate OWW 10/28/87 0930 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 10/7/87,10/23/87 10/29/87

RESULTS:

SAMPLE	TCE PPM
OWW 10/2/87	0.14
OWW 10/7/87	0.11
PWW 10/7/87	0.15
OWW 10/16/87	0.11
OWW 10/21/87	0.14
OWW 10/28/87	0.07

NOTEBOOK PAGE BV 22-31 DISC FILE A:WAST.A17

FTIR # IC# EDS#

COPIES SENT TO: Murray, Mike, Tom, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION &ANALYTICAL SUPPORT LABS
DATE REPORTED: 11/03/87

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.
Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: TOM ROTHCHILD DATE 10/16/87
SAMPLE ANALYZED BY: H. Hogle N. Lao DATE: 10/20,21/87

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.023	0.006	<0.002	<0.005

NOTEBOOK BM PAGE 76,77,78 DISC FILE METOWW26

SEND COPIES TO: Murray, Mike, Tom, Doug
FORM#107-016

SCOEPA00020655

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

October 14, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

September, 1987 Monthly Monitoring Report

Attached is the September, 1987 Monthly Monitoring Report, as required by Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had 90 minutes or 0.2% out of compliance for pH. These excursions are directly related to periods of regeneration of our Mixed and Anion Deionization beds.

All other parameters are within limits for the month of September.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

September 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	LBS F c	TCE g	TSS g
9/18	Monthly	.0004	<.002	<.008		.017			
9/03	Weekly				7.8		10.5	.09	
9/10					4.1		5.0	.07	
9/17					3.1		3.9	.08	
9/24					10.6		15.0	.11	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
9/24	30 min	10.5	-
9/25	60 min	14 +	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

10/14/87
Authorized Signature

SCOEPA00020657

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TLX 4970339
FAX 503-226-0052

September 14, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

August, 1987 Monthly Monitoring Report

Attached is the August 1987 Monthly Monitoring Report, as required by Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had 90 minutes or 0.2% out of compliance for pH. These excursions are directly related to periods of regeneration of our Mixed and Anion Deionization beds.

All other parameters are within limits for the month of August.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM
PERMITTEE MONITORING REPORT

August 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As	Cd	Cr	F	Zn	TTO	TCE	TSS
		c	c	c	c	c	g	g	g
8/14	Monthly	<.005	<.004	<.001		.027			
8/06	Weekly				14			.08	
8/13					.14			.06	
8/20					4.6			.05	
8/27					3.9			.10	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
8/10	20 min	12.8	-
8/15	30 min	10.9	-
8/28	40 min	10.5	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

9/14/87
Authorized Signature

SCOEPA00020659

Murray

Wacker Siltronic Corporation WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

July 14, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

June, 1987 Monthly Monitoring Report

Attached is our June 1987 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we had no minutes out of compliance for pH. This can be attributed to exceptional operator control during our regenerations, as well as no in-plant upsets during the month.

All other parameters are also within limits for the month of June.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Mike Pilkington
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

June 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
6/12/87	Monthly	<.004	<.002	<.005		.015			
6/04	Weekly				8.3			.07	
6/11					13.0			.10	
6/18					20.8			.10	
6/25					30.2			.09	
	Semi Annual								

pH: Summary of Data: No Excursions

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

7/14/87
Authorized Signature

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

June 10, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

May, 1987 Monthly Monitoring Report

Attached is our May 1987 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH 70 minutes, or approximately 0.16% of the time for the month. This excursion resulted on May 21st while performing an Anion Bed regeneration.

All parameters are within limits for the month of May except as noted in our letter to your office dated May 20, 1987 regarding a small TCE spill on May 18, 1987. This caused us to exceed our TCE limit with a discharge of 2.85 ppm as reported on May 19, 1987.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

May 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
5/15	Monthly	<.004	.003	<.007		.02			
5/01	Weekly				7.4			.12	
5/07					6.7			.18	
5/14					4.8			.10	
5/ 19					9.8			2.85	
5/28					9.8			.06	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
5/21	70 minutes	12.6	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

6/2/87
Authorized Signature

SCOEPA00020663

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

May 14, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

~~March~~ April 1987 Monthly Monitoring Report

Attached is our April 1987 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH 75 minutes, or approximately 0.17% of the time for the month. This excursion resulted from an acid pump failure while performing an Anion Bed Regeneration on April 11, 1987.

All parameters are within limits for the month of April.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

April 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
4/11/87	Monthly	<.003	<.004	<.02		.017			
4/03/87	Weekly				11.6			.11	
4/10					8.6			.12	
4/17					13.1			.07	
4/24					4.2			.11	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
4/12	75 min	10.4	-

ple*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

4/14/87
Authorized Signature

SCOEPA00020665

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

May 14, 1987

Ms. Jane Whitcher
Customer Services Supervisor
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Whitcher:

Monthly Sanitary Sewer Consumption

This letter will provide the following consumption data for our sanitary waste discharge into your sewerage system. As of April 30, 1987, the following totalizer recordings were made:

OWW discharge	932,318
Meter Vault #2	1,906,161

Please note that we did have power problems with our OWW totalizer on April 18, 1987. As a result of this, we have re-calculated our OWW flow for the month to be 3,687,900 gallons. This is detailed on the enclosed summary sheet.

If you have any questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

MMT:ll

enclosure

cc: Greg Carr

DY OF YR	OF pH	DY OF MO	OWW TOT	COMB TOT	MV2 TOT	MV3 TOT	DATE	OWW FLOW	COMB FLOW	MV2 FLOW	MV3 FLOW	OUTFALL
90.00	6.0 - 9.0	1	271407	883881	1903525	3843414	1	156700	338820	7900	292600	631420
91	*	2	287077	917763	1903604	3846340	2	137540	341760	6000	77800	419560
92	*	3	300831	951939	1903664	3847118	3	133900	299790	6900	68500	368290
93	*	4	314221	981918	1903733	3847803	4	33610	174690	7300	56000	230690
94	*	5	317582	999387	1903806	3848363	5	52530	171920	10400	87200	259120
95	*	6	322835	1016579	1903910	3849235	6	159880	362840	7700	89100	451940
96	*	7	338823	1052863	1903987	3850126	7	161450	359830	7300	98600	458430
97	*	8	354968	1088846	1904060	3851112	8	166540	370790	6300	83800	454590
98	*	9	371622	1125925	1904123	3851950	9	164460	324560	7700	90300	414860
99	*	10	388068	1158381	1904200	3852853	10	158050	326670	8300	75500	402170
100	*	11	403873	1191048	1904283	3853608	11	102970	230120	10600	70300	300420
101	*	12	414170	1214060	1904389	3854311	12	67560	199050	9100	71800	270850
102	*	13	420926	1233965	1904480	3855029	13	141040	330130	6800	82300	412430
103	*	14	435030	1266978	1904548	3855852	14	156530	360240	7700	92500	452740
104	*	15	450683	1303002	1904625	3856777	15	143010	358440	11400	86100	444540
105	*	16	464984	1338846	1904739	3857638	16	143220	331530	9200	81600	413130
106	*	17	479306	1371999	1904831	3858454	17	123940	334310	12700	119200	453510
107	*	18	491700	1405430	1904958	3859646	18	86700	106930	6400	34700	141630
108	*	19	802580*	1416123	1905022	3859993	19	24820	173210	8000	84000	257210
109	*	20	805062	1433444	1905102	3860833	20	160380	342760	8900	91800	434560
110	*	21	821100	1467720	1905191	3861751	21	149000	314000	6500	96700	410700
111	*	22	836000	1499120	1905256	3862718	22	134270	313590	9700	88800	402390
112	*	23	849427	1530479	1905353	3863606	23	145810	345320	9900	86500	431820
113	*	24	864008	1565011	1905452	3864471	24	135190	309890	11500	69600	379490
114	*	25	877527	1596000	1905567	3865167	25	5860	157420	5900	50500	207920
115	*	26	878113	1611742	1905626	3865672	26	18870	181580	7800	67600	249180
116	*	27	880000	1629900	1905704	3866348	27	155400	354150	11600	124300	478450
117	*	28	895540	1665315	1905820	3867591	28	162570	377980	17000	94000	471980
118	*	29	911797	1703113	1905990	3868531	29	146500	323970	17100	124400	448370
119	*	30	926447	1735510	1906161	3869775	30	159600	376380	12900	83500	459880
120	*	1	942407	1773148	1906290	3870610	1					

STREAM	COMBINED	OWW	MV2	MV3	OUTFALL
MAXIMUM FLOW GPD	377980	166540	17100	292600	631420
MINIMUM FLOW GPD	106930	5860	5900	34700	141630
AVERAGE FLOW GPD	296422	122930	9217	90653	387076
MAXIMUM FLOW GPM	262	116	12	203	438
MINIMUM FLOW GPM	74	4	4	24	98
AVERAGE FLOW GPM	206	85	6	63	269
TOTAL FLOW GAL	8892670	3687900	276500	2719600	11612270

*- OWW Flow Totalizer incorrect. Reading jumped 3,022,100 gallons between 08:00 & 12:00 on 4/18/87. Totals show corrected values.

G Carr

DATE OF ANALYSIS	COMBINED EFFLUENT ANALYSIS PARAMETERS	BOD	TSS	CR 6+	CR TOTAL	FLUORIDE	OUTFALL ANALYSIS TEMP C	METER VAULT THREE PHOSPHATES	EFFLUENT FLOW
3.00	MG/L	3.6	10.8	0.002	0.004	8.0	23.00	0.12	299790
	LBS/DAY	9.0	27.0	0.005	0.010	20.0			
10.00	MG/L	2.8	15.5	0.002	0.002	4.6	19.00	1.10	326670
	LBS/DAY	7.6	42.2	0.005	0.005	12.5			
17.00	MG/L	6.2	6.5	0.002	0.002	6.0	19.00	0.35	334310
	LBS/DAY	17.3	18.1	0.006	0.006	16.7			
[illegible]0	MG/L	1.2	12.8	0.002	0.001	5.0	25.00	0.02	309890
	LBS/DAY	3.1	33.1	0.005	0.003	12.9			
5.00	MG/L								171920
	LBS/DAY	0.0	0.0	0.000	0.000	0.0			
AVERAGE	MG/L CE	3.5	11.4	0.002	0.002	5.9	21.5	0.4	360645.0
4.00	LBS/DAY	9.3	30.1	0.005	0.006	15.5			

WACKER SILTRONIC CORPORATION

STR# Regular

SPECIAL TEST REPORT: INCOMING INSPECTION & ANALYTICAL SUPPORT LABS

DATE REPORTED 5/07/87

TEST METHOD:

TCE IN OWW AND PWW GRAB SAMPLES

After liquid/liquid extraction of blanks, standards, and samples, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Tom Rothchild DATE OWW 5/1/87 0930 hrs.
PWW and OWW 5/6/87 1100 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 5/6/87

RESULTS:

SAMPLE	TCE PPM	
OWW 5/1/87	0.12	
PWW 5/6/87	0.06	Sample split with Oregon DEQ
OWW 5/6/87	0.18	

NOTEBOOK PAGE BE 150-151 DISC FILE A:WAST.517

FTIR # IC# EDS#

COPIES SENT TO: Mike, Murray, Tom, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION & ANALYTICAL SUPPORT LABS
DATE REPORTED __ 04/23/87 __

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: __ Tom Rothchild __ DATE_ 4/17/87 1000 hrs
Tom Rothchild DATE 4/22/87 0930 hrs

SAMPLE ANALYZED BY: __ Elinor Levin _DATE_ 4/22/87__

RESULTS:

SAMPLE	TCE PPM
OWW 4/17/87	0.08
OWW 4/22/87	0.12

NOTEBOOK PAGE BE 148-149 DISC FILE A:WAST.A27

COPIES SENT TO: Murray, Greg, Mike, Tom
FORM# 107-016

96

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION &ANALYTICAL SUPPORT LABS
DATE REPORTED: 05/12/87

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: TOM ROTHCHILD DATE 04/17/87
SAMPLE ANALYZED BY: H. Hogle N. Lao E. Levin DATE: 05/04,05,11/87

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.017	≤ 0.004	≤ 0.02	<0.003

SEND COPIES TO: Murray, Mike, Tom, Greg

FORM#107-016

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

April 14, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

March, 1987 Monthly Monitoring Report

Attached is our March 1987 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH 20 minutes, or approximately 0.045% of the time for the month. This excursion resulted on March 4 while performing an Anion Bed regeneration.

All parameters are within limits for the month of March.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

March 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
3/13	Monthly	<.005	<.005	<.002		.030			
3/06	Weekly				15.0			.09	
3/11								.08	
3/13					3.8				
3/20					1.2			.09	
3/25								.10	
3/27					1.0				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
3/04	20 min	10.1	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

4/14/87
Authorized Signature

SCOEPA00020672

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

April 3, 1987

Ms. Jane Whitcher
Customer Services Supervisor
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Whitcher:

Monthly Sanitary Sewer Consumption

This letter will provide the following consumption data for our sanitary waste discharge into your sewerage system. As of March 31, 1987, the following totalizer recordings were made:

OWW discharge	257,731
Meter Vault #2	1,903,462

If you have any questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

MMT:ll

cc: Greg Carr

WACKER SILTRONIC CORPORATION

STR# Regular

SPECIAL TEST REPORT: INCOMING INSPECTION & ANALYTICAL SUPPORT LABS

DATE REPORTED 3/16/87

TEST METHOD:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Jeff Jones DATE OWW 3/6/87 0900 hrs, PWW and OWW 3/11/87 0830 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 3/13/87

RESULTS:

SAMPLE	TCE PPM
OWW 3/6/87	0.09
PWW 3/11/87	0.12
OWW 3/11/87	0.08

NOTEBOOK PAGE BE 142-143 DISC FILE A:WAST.M17

FTIR # IC# EDS#

COPIES SENT TO: Murray, Mike, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION & ANALYTICAL SUPPORT LABS
DATE REPORTED __ 03/25/87 __

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: __ Jeff Jones __DATE_ 3/20/87 0830 hrs
George Stevenson 3/25/87 0855 hrs

SAMPLE ANALYZED BY: __ Elinor Levin _DATE_ 3/25/87__

RESULTS:

SAMPLE	TCE PPM
OWW 3/20/87	0.09
OWW 3/25/87	0.11

NOTEBOOK PAGE BE 144-145 DISC FILE A:WAST.M27

COPIES SENT TO: Murray, Greg, Mike Pickington
FORM# 107-016

WACKER SILTRONIC CORPORATION

STR# Regular

SPECIAL TEST REPORT: INCOMING INSPECTION & ANALYTICAL SUPPORT LABS

DATE REPORTED 4/10/87

TEST METHOD:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Jeff Jones DATE OWW 4/3/87 24-hr.
Tom Rothchild PWW and OWW 4/08/87 0900 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 4 08/87

RESULTS:

SAMPLE	TCE PPM
OWW 4/3/87	0.12
PWW 4/8/87	0.12
OWW 4/8/87	0.13

NOTEBOOK PAGE BE 146-147 DISC FILE A:WAST.A17

FTIR # IC# EDS#

COPIES SENT TO: Murray, Mike, Greg, Tom

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION &ANALYTICAL SUPPORT LABS
DATE REPORTED: 04/09/87

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.
Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: TOM ROTHCHILD DATE 03/13/87
SAMPLE ANALYZED BY: H.Hogle N. Lao DATE 04/03,04/87

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.030	< 0.005	< 0.002	<0.005

SEND COPIES TO: Murray, Greg, Mike, Tom
FORM#107-016

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

March 12, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

February, 1987 Monthly Monitoring Report

Attached is our February 1987 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH 37 minutes, or approximately 0.086% of the time for the month. This excursion resulted on February 21 during a KOH flush operation associated with our slurry rooms.

All parameters are within limits for the month of February.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM
PERMITTEE MONITORING REPORT

February 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
2/6	Monthly	<.01	<.02	.009		.036			
2/6	Weekly				6.9			.05	
2/13					9.9			.05	
2/20					2.1			.06	
2/27					14.4			.05	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
2/21	37 min Total *	10.6	4.0

* No individual excursions were longer than 15 minutes

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

3/12/87
Authorized Signature

SCOEPA00020679

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

February 13, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

January, 1987 Monthly Monitoring Report

Attached is our January, 1987 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH ~~34.5~~ 398 minutes, or approximately 0.89% of the time for the month. These excursions were all related to regeneration activities.

All parameters are within limits for the month of December.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM
PERMITTEE MONITORING REPORT

January 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
1/09/87	Monthly	<.006	<.002	<.003		.023			
1/02/87	Weekly				.16				
1/14/87					3.0			.10	
1/23/87					1.9			.13	
1/30/87					.09				
1/07/87								.23	
1/28/87								.08	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
1/6	35 min	11.1	-
1/25	2 hours	14 +	-
1/25	4 hours	14 +	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

February 13, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

January, 1987 Monthly Monitoring Report

Attached is our January, 1987 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH 34.5 minutes, or approximately 0.89% of the time for the month. These excursions were all related to regeneration activities.

All parameters are within limits for the month of December.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

January 1987
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
1/09/87	Monthly	<.006	<.002	<.003		.023			
1/02/87	Weekly				.16				
1/14/87					3.0			.10	
1/23/87					1.9			.13	
1/30/87					.09				
1/07/87								.23	
1/28/87								.08	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
1/6	35 min	11.1	-
1/25	2 hours	14 +	-
1/25	4 hours	14 +	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

SCOEPA00020683

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

February 13, 1987

Ms. Jane Whitcher
Customer Services Supervisor
Bureau of Environmental Services
Room 400
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Whitcher:

Monthly Sanitary Sewer Consumption

This letter will provide the following consumption data for our sanitary waste discharge into your sewerage system. As of January 31, 1987, the following totalizer recordings were made:

OWW discharge	536,001
Meter Vault #2	1,894,677

If you have any questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

MMT:ll

cc: Greg Carr

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
January 29, 1987

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 1/14/87 1100 hrs. OWW 1/23/87 11.05, OWW 1/28/87 1000 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 1/14/87, 1/23/87, 1/28/87

RESULTS:

SAMPLE	TCE PPM
OWW 1/14/87	0.10
OWW 1/23/87	0.13
OWW 1/28/87	0.08

Notebook-Page BE 134-137 Disk File B:WAST.J26

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FORM# 107-016

SCOEPA00020685

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
January 8, 1987

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: George Stevenson DATE OWW 01/7/87 1035 Hrs. PWW 01/7/87 1035 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 1/7/87

RESULTS:

SAMPLE	TCE PPM
OWW 1/7/87	0.23
PWW 1/7/87	0.06

Notebook-Page BE 132-133 Disc File B:WAST.J17

COPIES SENT TO: Greg, Murray, Mike

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 01/09/87
SAMPLE ANALYZED BY: H.Hogle N. Lao DATE 01/20,21/87

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.023	< 0.002	0.003	<0.006

SEND COPIES TO: Greg, Murray, Mike
FORM#107-016

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

January 13, 1987

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

December, 1986 Monthly Monitoring Report

Attached is our December, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH 35 minutes, or approximately 0.1% of the time for the month. This excursion was related to regeneration activities.

All parameters are within limits for the month of December.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

December 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
	Monthly	<.005	<.001	.005		.024			
12/05	Weekly				1.0			.06	
12/12					3.1			.08	
12/19					1.4			.07	
12/30					2.0			.07	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
12/14	35 min	10.6	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

1/13/87
Authorized Signature

SCOEPA00020689

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 12/30/86
SAMPLE ANALYZED BY: H.Hogle N. Lao DATE 01/8,9/87

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.024	< 0.001	0.005	<0.005

SEND COPIES TO: Murray, Greg, Mike
FORM#107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
December 30, 1986

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: George Stevenson DATE OWW 12/30/86 0830hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 12/30/86

RESULTS:

SAMPLE	TCE PPM
OWW 12/30/86	0.09

Notebook-Page BE 130-131 Disk File B:WAST.D36

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FORM# 107-016

Greg Carr

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
December 16, 1986

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 12/5/86
0945 Hrs. PWW 12/12/86 0930 hrs. OWW 12/12/86 0940hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 12/5/86
12/12/86

RESULTS:

SAMPLE	TCE PPM
OWW 12/5/86	0.07
PWW 12/12/86	0.08
OWW 12/12/86	0.10

Notebook-Page BE 122-125 Disc File B:WAST.D16

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SCOEPA00020693

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
December 24, 1986

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Greg Carr DATE OWW 12/19/86 ~1000 Hrs. PWW 12/19/86 ~1000 hrs. Jeff Jones OWW 12/23/86 0935hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 12/19/86 12/23/86

RESULTS:

SAMPLE	TCE PPM
OWW 12/19/86	0.09
PWW 12/19/86	0.08
OWW 12/23/86	0.09

Notebook-Page BE 126-129 Disc File B:WAST.D26

COPIES SENT TO: Mike, Greg, Murray
FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

There is an EWR (#4611) currently in the approval cycle. This EWR requests that the freon (7.17) and caustic (7.13) drains be separated to avoid drain blockage problems. The purpose of this test is to verify that the freon/caustic combination is the problem. A sample of the NaOH/Q9 and DI water solution in bath #2 of the 7.13 and a sample of the Freon/Isopropanol and DI water solution from the freon dryer of the 7.17 (skimming the surface of the bath for the sample) were submitted in order to combine these samples to simulate the conditions that are present in the caustic drain. Both of these baths drain into the same system which is periodically becoming plugged. Please verify the theory that the freon is causing the caustic to crystallize.

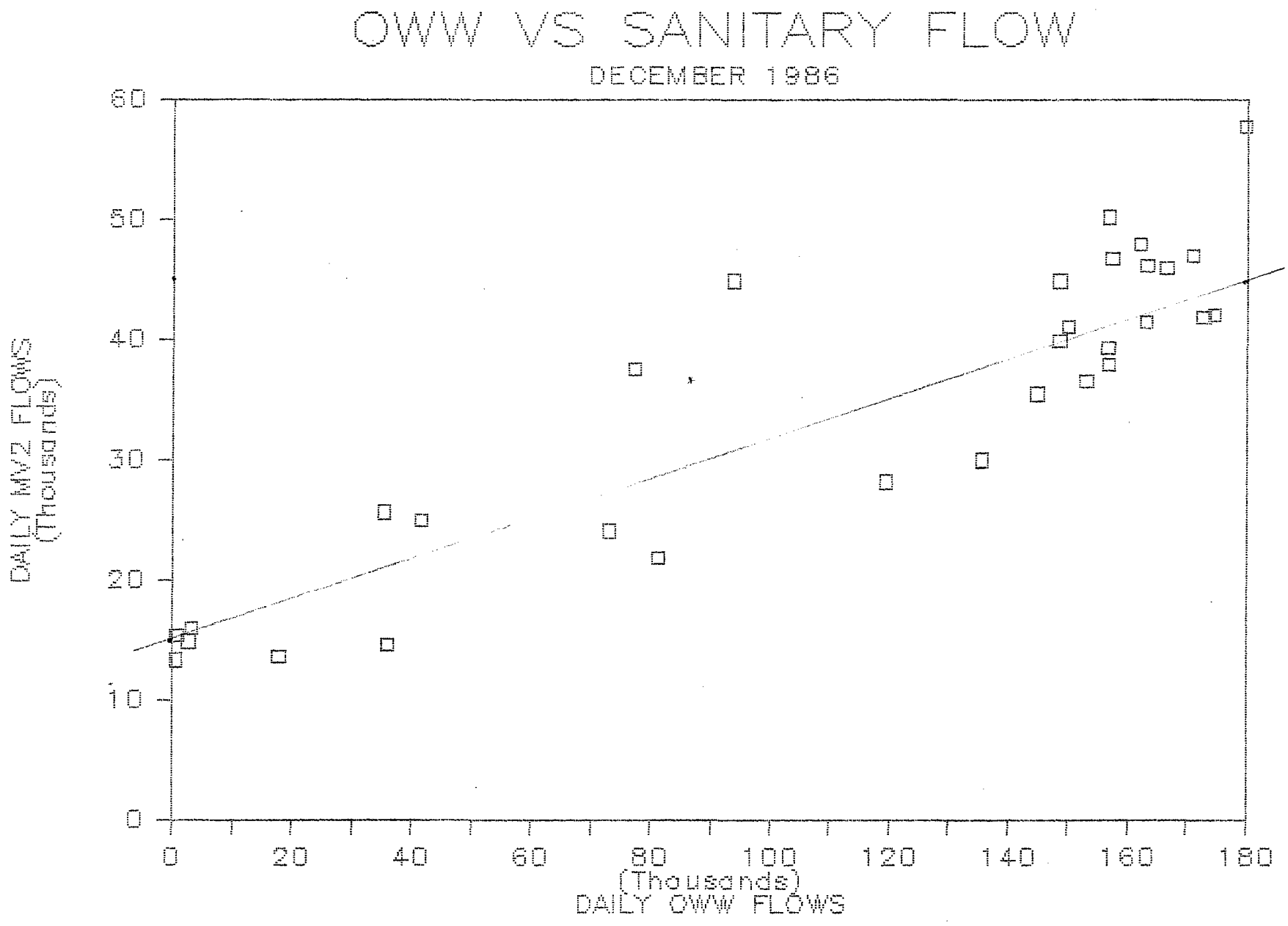
SAMPLE COLLECTED BY: Neil Birch DATE 12/4/85
SAMPLE ANALYZED BY: Elinor Levin DATE 12/4-9/85

RESULTS:

1. Equal volumes of the 7.13 and 7.17 samples were mixed in a beaker and allowed to stand at room temperature. When the samples were mixed the solution became cloudy and whiter in appearance. The next day the black material (graphite or silicon?) settled on the bottom of the beaker and a white amorphous precipitate settled on the top of the black layer. Some Freon TF separated on the bottom of the beaker. On 12/9/85 the white amorphous precipitate had disappeared and the solution was cloudy in appearance.
2. Some of the 7.13 sample was placed in a beaker and allowed to stand at room temperature. The sample showed no changes until 12/9/85 when crystals with the shape of large hexagonal prisms were seen on the bottom of the beaker and needle like crystals were seen at the meniscus of the solution as it was as evaporating.
3. Some of the 7.13 sample was placed in a beaker and allowed to stand in the refrigerator. The solution became cloudy and whiter in a short time. On 12/9/85 large rosette type crystal were found on the bottom of the beaker.
4. Some of the 7.13 sample was placed in a beaker and isopropyl alcohol was added and needle-like crystals formed immediately.
5. Some of the 7.13 sample was placed in a beaker and Freon TF was added. There was no change. On 12/9/85 a large crystal was seen on the bottom of the beaker.
6. Some of the 7.17 sample was placed in a beaker and allowed to stand at room temperature. There were no changes in the solution.

All of these crystals are probably the same material in different forms. An IR could be run. Due to scheduling of IR and our work an additional request justifying this need is required.

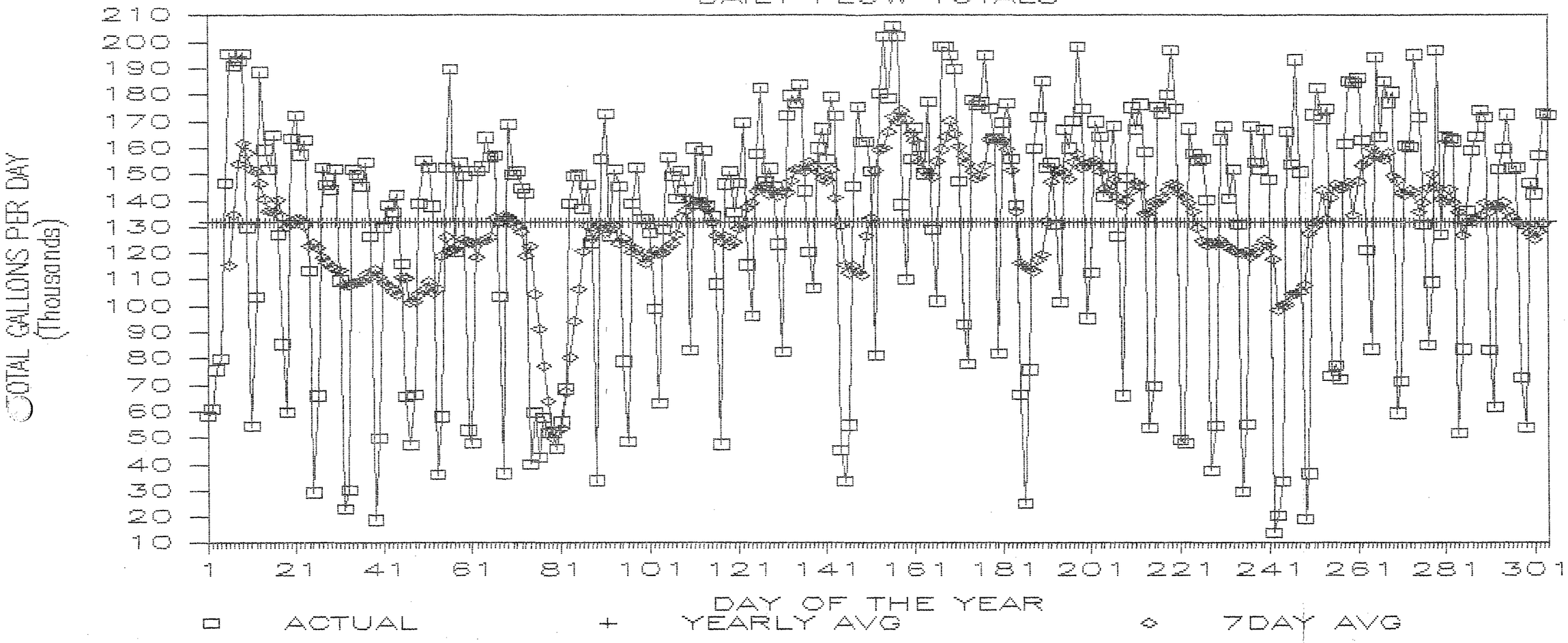
COPIES SENT TO: Stan, Neil, Ann, Murry, Greg, Lyle Hanson
FORM# 107-016



SCOEPA00020696

OWW FLOWS 1986

DAILY FLOW TOTALS



Murray

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

December 12, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: November, 1986 - Monthly Monitoring Report

Attached is our November, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 1 hour and 50 minutes or approximately 0.25% of the time for the month. These excursions are primarily due to regeneration activities.

All parameters are within limits for the month of November.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM
PERMITTEE MONITORING REPORT

November, 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
11/21	Monthly	<0.004	0.005	0.005		0.038			
11/7	Weekly				1.1			0.1	
11/14					.6			0.1	
11/21					2.5			0.08	
11/28					1.3			0.05	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
11/4	45 min	12.0	-
11/8	25 min	0 -	3.1
11/23	40 min	10.5	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

12/12/86
Authorized Signature

SCOEPA00020699

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
November 14, 1986

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 11/6/86
0920 Hrs. PWW 11/13/86 1040 hrs. OWW 11/13/86 1040hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 11/6/86
11/13/86

RESULTS:

SAMPLE	TCE PPM
OWW 11/6/86	0.12
PWW 11/13/86	0.12
OWW 11/13/86	0.11

Notebook-Page BE 114-117 Disc File B:WAST.N16

COPIES SENT TO: Murray, Greg, Mike
FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
December 2, 1986

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 11/20/86
1010 hrs; OWW 11/25/86 1030 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 11/20/86.
11/26/86

RESULTS:

SAMPLE	TCE PPM
OWW 11/20/86	0.10
OWW 11/25/86	0.07

Notebook-Page BE 118-121 Disk File B:WAST.N26

COPIES SENT TO: Murray, Greg, Mike
FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

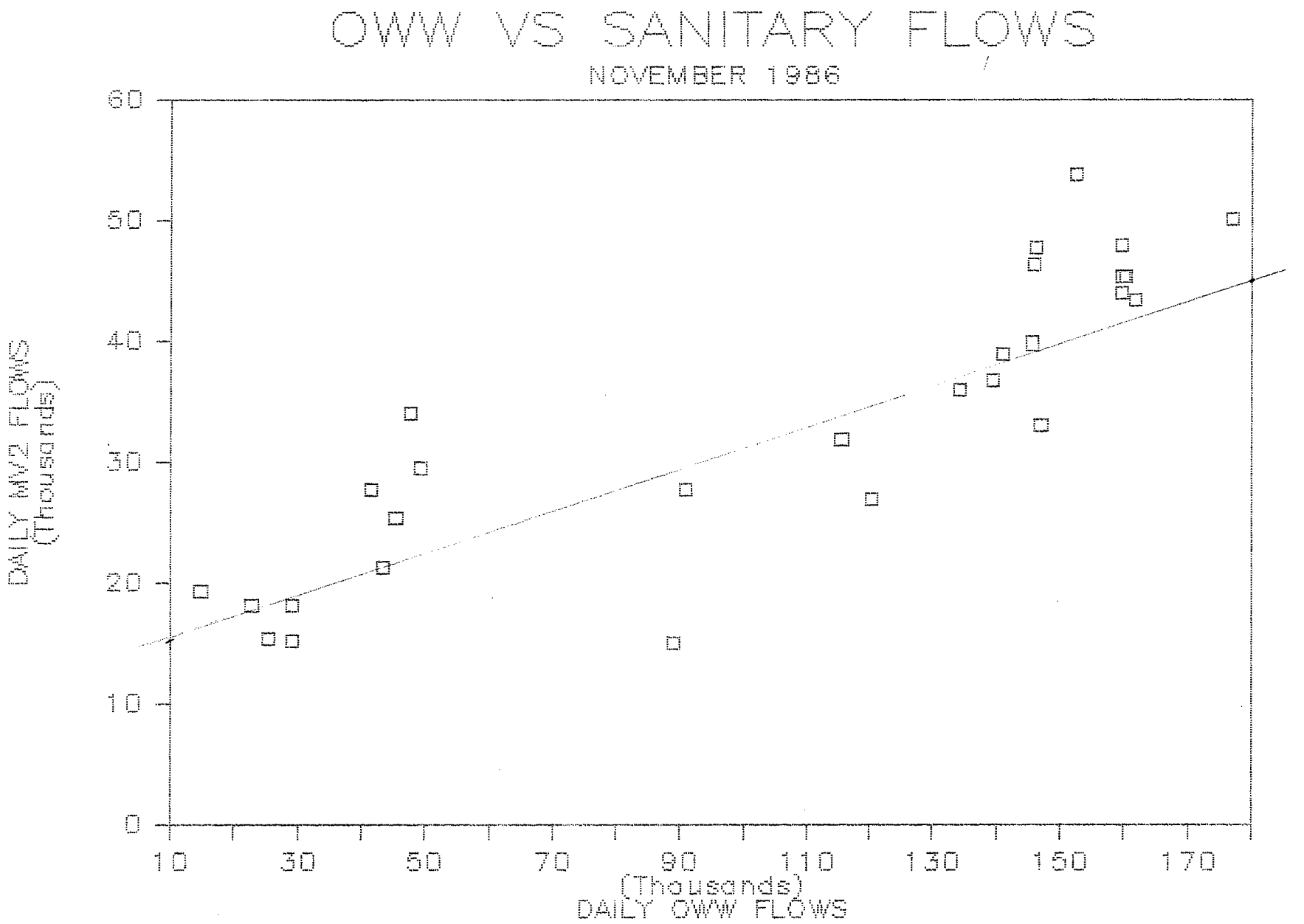
All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 11/21/86
SAMPLE ANALYZED BY: H.Hogle N. Lao DATE 12/2,3 /86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.048	0.006	0.006	<0.005

SEND COPIES TO: Murray, Mike, Greg
FORM#107-016


OWW VS SANITARY FLOWS
NOVEMBER 1986
DAILY MWD FLOWS
(Thousands)
0
10
20
30
40
50
60
10
30
50
70
90
110
130
150
170
(Thousands)
DAILY OWW FLOWS

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

Analysis of Process Wastewater and Organic Wastewater for Freon TF by Gas Chromatography using the Electron Capture detector.

Process Wastewater Grab Sample 11/13/84 1005 Hrs
Organic Wastewater Grab Sample 11/13/84 1000 Hrs

SAMPLE PULLED BY: _____Sam Pengelly_____ DATE__11/13/84_____
SAMPLE ANALYZED BY: _____Elinor Levin_____ DATE__11/13/84_____
_____ DATE_____
_____ DATE_____

RESULTS:

SAMPLE	FREON TF,PPM
Process Wastewater	4.88 PPM
Organic Wastewater	Not Detected

It is not definite that this peak is Freon TF since we do not have auxiliary instrumentation such as infrared or mass spectrometers to use as a method of positive identification. The peak we see does have the same retention time as that given by Freon TF.
However, in repeated injections of the solvent alone an abnormally high peak at this retention time will often be seen irregularly. The 10% Squalene column used does have a tendency to bleed and this peak may be from the packing material in the column. In addition the solvent although of high purity does show a small peak at the same retention time of Freon TF.
These wastewaters form emulsions with the extracting solvent and the emulsions break with difficulty. These wastewaters contain a lot of chemicals. The ECD is not a halogen specific detector and does respond to molecular oxygen, water, and such compounds as nitrobenzenes, phenols,oxalates, conjugated ketones, and others.

COPIES SENT TO: Greg Carr
FORM# 107-016

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

November 14, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: October, 1986 - Monthly Monitoring Report

Attached is our October, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 3 hours and 5 minutes or approximately 0.4% of the time for the month. These excursions are primarily due to regeneration activities.

All parameters are within limits for the month of October.

If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

October 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
10/17	Monthly	<.003	<.007	.004		.033			
10/01	Weekly							.10	
10/03					.95				
10/08								.13	
10/10					5.5				
10/14								.12	
10/17					8.5				
10/22								.12	
10/24					2.5				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
10/13	35 min	11.5	
10/05	150 min	10.6	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

11/13/86
Authorized Signature

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

October 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
	Monthly								
10/29	Weekly							.12	
10/31					4.4				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

11/13/86
Authorized Signature

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 10/1/86
0930 Hrs, PWW 10/1/86 0930 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 10/1/86

RESULTS:

SAMPLE	TCE PPM
OWW 10/1/86	0.10
PWW 10/1/86	0.13

COPIES SENT TO: Mike Pilkington, Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 10/8/86
0920 hrs; OWW 10/14/86 0850 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 10/8/86, 10/14/86

OWW 10/1 .10
PWW 10/1 .13

RESULTS:

SAMPLE	TCE PPM
OWW 10/8/86	0.13
OWW 10/14/86	0.12

COPIES SENT TO: MIKE, MURRAY, GREG
FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
October 31, 1986

B_____

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 10/22/86
0945 hrs; OWW 10/29/86 1000 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 10/22/86.
10/29/86

RESULTS:

SAMPLE	TCE PPM
OWW 10/22/86	0.12
OWW 10/29 86	0.12

Notebook-Page BE 110-113 Disk File B:WAST.1036

COPIES SENT TO: Greg, Murray, Mike
FORM# 107-016

SCOEPA00020710

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.
Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 10/17/86
SAMPLE ANALYZED BY: H.Hogle N. Lao DATE 10/22-23/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.033	<0.007	0.004	<0.003

SEND COPIES TO: Murray, Greg, Mike
FORM#107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION
October 31, 1986

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF UPPER LIQUID LAYER IN SOD-C TANK

800 ml taken from upper liquid layer in SOD-C Tank which contains waste from wafer dryers in 7B and Acid Etch. Amounts of water, isopropanol, other alcohols, and Freon TF were to be determined in the sample.

SAMPLE COLLECTED BY: Greg Carr DATE 10/28/86

SAMPLE ANALYZED BY: Elinor Levin DATE 10/31/86

RESULTS:

The only peak observed in the sample from the SOD-C tank on the GC chromatogram was Isopropanol. Standard samples of isopropanol in water were prepared at 10, 20, and 30 % isopropanol.

The concentration of isopropanol in the SOD-C sample was 22.3% as determined by peak area of the standards and the unknown and the concentration of the standard isopropanol solutions.

By difference the concentration of water is approximately 77.7%. There may be a slight trace of detergent in the sample since the material foams when shaken and almost all of the foam diappears. The isopropanol standards also foam when shaken but the foam completely diappears when the shaking is stopped.

Notebook Page BH 39 Disk File B:SOD-C.106

COPIES SENT TO: Greg Carr, Murray Tilson

FORM# 107-016

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

October 10, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: September, 1986 - Monthly Monitoring Report

Attached is our September, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 15 minutes or less than 0.1% of the time for the month. These excursions are primarily due to regeneration activities.

On September 19th, our fluoride sample was reported as 32 mg/l, which is our daily maximum allowable level. We are currently reviewing past operations to help determine the cause of this.

All other parameters are within limits for the month of September. If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM
PERMITTEE MONITORING REPORT

September 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
9/16	Monthly	<.003	<.003	.013		.017			
9/02	Weekly							.2	
9/05					3.7				
9/09								.15	
9/12					1.3				
9/17								.21	
9/19					32				
9/24								.10	
9/26					8.9				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
9/13	15 min	12.3	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

10/10/86
Authorized Signature

SCOEPA00020714

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 9/2/86 0820 hrs, OWW 9/9/86 0920 hrs, PWW 9/9/86 0930 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 9/2/86, 9/9/86

RESULTS:

SAMPLE	TCE PPM
OWW 9/2/86	0.20
OWW 9/9/86	0.15
PWW 9/9/86	0.16

COPIES SENT TO: Murray, Greg, Mike

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 9/17/86
1005 hrs; Jeff Jones OWW 9/24/86 0900 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 9/17/86, 9/24/86

RESULTS:

SAMPLE	TCE PPM
OWW 9/17/86	0.21
OWW 9/24/86	0.10

COPIES SENT TO: Greg, Murray, Mike

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 9/16/86
SAMPLE ANALYZED BY: H.Hogle N. Lao DATE 10/2-3/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.017	<0.003	0.013	<0.003

SEND COPIES TO: Murray, Greg, Mike
FORM#107-016

Murray Tilson

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

September 12, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: August, 1986 - Monthly Monitoring Report

Attached is our August, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 45 minutes or 0.1% of the time for the month. These excursions are primarily due to regeneration activities.

All other parameters are within limits for the month of August. If you have questions, please call me at 243-2020, ext. 301.

Very truly yours,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

August 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
8/15	Monthly	<.01	.003	.02		.02			
8/01	Weekly				3.5				
8/08					12.6			.52	
8/15					2.9			.13	
8/22					6.3			.14	
8/28					7.8			.17	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
8/03	25 Min	-	2.5
8/14	20 Min	-	3.5

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

9/12/86
Authorized Signature

SCOEPA00020719

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc and cadmium concentrations in the sample were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 8/15/86
SAMPLE ANALYZED BY: Howard Hogle DATE 9/8-9/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.02	0.003	0.023	<0.01

SEND COPIES TO: Murray, Mike, Greg
FORM#107-016

Conversation @ Molly Heany, City of Portland
Subject: Antimony in effluent - Limitations

Requirment exists for ~~Luminious Mat~~ "Luminescent Materials"
coatings for fluorescent lamps

NSPS .1 mg/l (total) max per 1 day

.04 monthly average

~~Sem~~
Antimony is excluded from Semiconductor Crystals Manufacturing since it is in amounts too small to be effectively reduced.

7/24/86

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

August 12, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: July, 1986 - Monthly Monitoring Report

Attached is our July, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 1 hour and 20 minutes or 0.17% of the time for the month. These excursions are primarily due to regeneration activities.

All other parameters are within limits for the month of July. If you have questions, please call me at 243-2020, ext. 216.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM
PERMITTEE MONITORING REPORT

July 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
7/18/86	Monthly	<.004	<.007	.03		.044			
7/02	Weekly							.17	
7/03					2.3				
7/08								.15	
7/11					1.4				
7/15								.15	
7/18					2.6				
7/23								.35	
7/25					5.4				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
7/07	80 min	11.6	4.8

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

8/11/86
Authorized Signature

SCOEPA00020723

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 100ml sample. The As determination was done on a separate 100ml sample. Zinc concentration in the sample and the detection limit requirements for cadmium determination were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 7/18/86
SAMPLE ANALYZED BY: Howard Hogle DATE 8/7-8/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.044	<0.007	0.03	<0.004

SEND COPIES TO: _____

FORM#107-016

Greg Carr

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 6/30/86 1218 hrs; OWW 7/1/86 1115 hrs; OWW 7/2/86 0900 hrs, PWW 7/2/86 0910 hrs; OWW 7/8/86 0740 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 7/2/86, 7/8/86

RESULTS:

SAMPLE	TCE PPM
OWW 6/30/86	26.00
OWW 7/1/86	0.17
OWW 7/2/86	0.17
PWW 7/2/86	0.16
OWW 7/8/86	0.15

COPIES SENT TO: Murray, Greg Carr

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

Determination of concentration of antimony in wash water used in cleaning dust screen in growing area. Both dissolved and total antimony determinations were made. Measurements were done by flame atomic absorption spectrometry (AAS-FL) using standard additions methods. An acid blank was used as an analytical blank.

SAMPLE COLLECTED BY: Don Anderson DATE 7/2/86

SAMPLE ANALYZED BY: Howard Hogle DATE 7/14-15/86

RESULTS: Multiple determinations were made on one sample preparation for both the dissolved and total antimony determinations.

Measurement	[Sb] ppm	No. of measurements	S.D. ppm	RSD %
Dissolved	60.7	3	2.2	3.59
Total	1030	3	57.7	5.61

COPIES SENT TO: Don Anderson, Murray Jilson, Greg Carr, Sam Pengally, al Parisi

FORM# 107-016

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

July 11, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: June, 1986 - Monthly Monitoring Report

Attached is our June, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 2 hours and 50 minutes or 0.4% of the time for the month. These exclusions are primarily due to inadequate flows on weekends, minor operator/controller problems and regeneration activities.

All other parameters are within limits for the month of June except for a TCE violation on June 30, which was discussed in our letter dated July 9th to your office. If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
John Pittman

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM
PERMITTEE MONITORING REPORT

June 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
6/20	Monthly	<.01	<.008	<.02		.023			
6/06	Weekly				2.4			.19	
6/13					6.0			.22	
6/20					3.6			.17	
6/27					1.0			.30	
6/30								26	
	Semi Annual								

pH: Summary of Data: Excursions due to acid pump failure.

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
6/09	100 min	10.5	-
6/12	20 min	10.5	-
6/13	50 min	11.8	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

7/11/86
Authorized Signature

SCOEPA00020729

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE 6/6/86
PWW 1050 hrs, OWW 1045 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 6/6/86

RESULTS:

SAMPLE	TCE PPM
PWW 6/6/86	0.11
OWW 6/6/86	0.19

COPIES SENT TO: Murray, Greg
FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 150ml sample. The As determination was done on a separate 100ml sample. Zinc concentration in the sample and the detection limit requirements for cadmium determination were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 6/20/86
SAMPLE ANALYZED BY: Howard Hogle DATE 7/8-9/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.023	<0.008	<.02	<0.01

SEND COPIES TO: Murray, Greg Carr
FORM#107-016

Murray

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

June 12, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: May, 1986 - Monthly Monitoring Report

Attached is our May, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 2 hours and 10 minutes or 0.3% of the time for the month. These exclusions are primarily due to inadequate flows on weekends, minor operator/controller problems and regeneration activities.

All other parameters are within limits for the month of May. If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Environmental Manager

Enclosure

cc: Greg Carr
Jim DiSorbo
Jim Harper
John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

May 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
5/9	Monthly	<.006	<.003	.01	.9	.017		.16	
5/15	Weekly				<.1			.12	
5/20								.17	
5/23					1.8				
5/28					<.1			.23	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
5/02	60 min	11.4	-
5.13	25 min	11.3	-
5/19	25 min	-	3.9
5/28	20 min	11.3	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

6/12/86
Authorized Signature

SCOEPA00020733

ACKER

WASTE PLANT LOG

DATE: 5-19 DAYS: GS NIGHTS: RL/PT

TIME	FLOW/LEVEL LIC SET POINT			NEUTRAL pH CONTROL			LIME/CAUSTIC BASE CONTROL			ALUM SET		CHEMICALS USED			DAY SHIFT 0800
	WAD	CAD	OWW	WAD	CAD	OWW	WAD	CAD	OWW			ALUM		LIME	
0200	50	50	50	6.5	8.0	8.5	T	T	T	198		—		—	METER VAULT 2
0600	50	50	50	6.5	8.0	8.5	T	T	T	198		16gals		350#	
1000	50	5.0	5.0	6.5	8.0	8.5	T	T	T	198		4		—	1753129
1400	50	5.0	5.0	6.5	8.5	8.5	T	T	T	198		~~1gal~~		~~600~~	METER VAULT 3
1800	50	5.0	5.0	6.8	8.0	8.5	T	T	T	198		12gal		600	
2200	50	5.0	5.0	6.5	8.0	8.5	T	T	T	198		10gls			3529806

TIME OUT -- 0

MINUTES -- 157.6

TIME	NEUTRAL pH			STORAGE TANK LEVELS					FLOWS			DISCHARGE pH		DISCHARGE TOTALS	
	WAD	CAD	OWW	WAD	CAD	OWW	CCW	H_2SO_4	CLAIR	OWW	COMB	RIVER	COMB	OWW	COMB
0200	6.8	9.1	9.0	58	60	58	39	64	70	90	250	7.6	8.6	098485	180189
0600	6.5	9.1	9.0	60	64	60	37	64	70	100	275	7.8	8.8	100662	183878
1000	7.4	9.0	8.5	6.6	6.7	6.7	—	64	70	110	290	7.8	8.2	103418	191046
1400	7.0	9.5	9.0	6.2	6.0	6.8	39	64	70	120	260	8.0	8.8	203189	~~19~~ 83
1800	5.5	9.4	9.4	58	6.2	8.2	43	64	70	135	290	7.2	8.0	212490	204053
2200	8.6	9.1	8.5	5.6	54	67	448	64	70	100	275	7.0	8.5	215110	210073

SCOEPA00020734

DY OF YR	DY OF MO	OWW TOT	COMB TOT	MV2 TOT	MV3 TOT	DATE	OWW FLOW	COMB FLOW	MV2 FLOW	MV3 FLOW	OUTFALL
120.00	6.0 - 9.0	1	838401	537539	1737927	3521280	1	146900	423280	66700	42400	465680
121	0.00	2	853091	579867	1738594	3521704	2	169380	415120	83300	43900	459020
122	0.00	3	870029	621379	1739427	3522143	3	115520	213840	58400	43900	257740
123	101.80	4	881581	642763	1740011	3522582	4	96310	212390	76200	45500	257890
124	101.80	5	891212	664002	1740773	3523037	5	157630	389730	85300	49700	439430
125	101.80	6	906975	702975	1741626	3523534	6	182580	453470	90700	51600	505070
126	101.80	7	925233	748322	1742533	3524050	7	147090	400470	93900	61700	462170
127	101.80	8	939942	788369	1743472	3524667	8	152150	419980	88600	52900	472880
128	101.80	9	955157	830367	1744358	3525196	9	145090	425610	78100	58900	484510
129	101.80	10	969666	872928	1745139	3525785	10	123340	285860	73200	61000	346860
130	101.80	11	982000	901514	1745871	3526395	11	82410	179400	68300	57400	236800
131	101.80	12	990241	919454	1746554	3526969	12	171930	404380	99600	55500	459880
132	101.80	13	1007434	959892	1747550	3527524	13	179520	403190	112400	57300	460490
133	101.80	14	1025386	1000211	1748674	3528097	14	176550	407430	117400	37100	444530
134	101.80	15	1043041	1040954	1749848	3528468	15	183860	434580	104400	38200	472780
135	101.80	16	1061427	1084412	1750892	3528850	16	143540	380920	79600	33600	414520
136	101.80	17	1075781	1122504	1751688	3529186	17	120210	325620	66000	31300	356920
137	137.10	18	1087802	1155066	1752348	3529499	18	106830	251230	78100	30700	281930
138	157.60	19	1098485	1180189	1753129	3529806	19	160000	407270	97600	35800	443070
139	157.60	20	*1219221	1220916	1754105	3530164	20	167180	431200	83300	43400	474600
140	157.60	21	1235939	1264036	1754938	3530598	21	155550	385520	100700	38900	424420
141	157.60	22	1251494	1302588	1755945	3530987	22	179080	472730	119100	35100	507830
142	177.00	23	1269402	1349861	1757136	3531338	23	172210	449200	90800	33300	482500
143	177.00	24	1286623	1394781	1758044	3531671	24	45480	128620	69300	32700	161320
144	177.00	25	1291171	1407643	1758737	3531998	25	33470	109150	66700	27900	137050
145	252.00	26	1294518	1418558	1759404	3532277	26	54670	161060	71000	35300	196360
146	252.00	27	1299985	1434664	1760114	3532630	27	145420	432450	91800	35900	468350
147	252.00	28	1314527	1477909	1761032	3532989	28	175590	443070	86700	34400	477470
148	252.00	29	1332086	1522216	1761899	3533333	29	162330	408030	87300	29600	437630
149	259.10	30	1348319	1563019	1762772	3533629	30	162420	385520	82300	208800	594320
150	365.00	31	1364561	1601571	1763595	3535717	31	151320	311220	75200	2126200	2437420
151	365.00	1	1379693	1632693	1764347	3556979	1					

STREAM	COMBINED	OWW	MV2	MV3	OUTFALL
MAXIMUM FLOW GPD	472730	183860	119100	2126200	2437420
MINIMUM FLOW GPD	109150	33470	58400	27900	137050
AVERAGE FLOW GPD	353275	140825	85226	115158	468434
MAXIMUM FLOW GPM	328	128	83	1477	1693
MINIMUM FLOW GPM	76	23	41	19	95
AVERAGE FLOW GPM	245	98	59	80	325
TOTAL FLOW GAL	10640320	4214240	2566800	1443700	12084020

NOTE: OWW TOTALIZER IN ERROR ON 6/20 DUE TO SIGNAL/POWER PROBLEMS

METER VAULT

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE 5/20/86 0900 hrs; Greg Carr 5/29/86 0830 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 5/20/86 5/29/86

RESULTS:

SAMPLE	TCE PPM
OWW 5/20/86	0.17
OWW 5/29/86	0.23

COPIES SENT TO: Greg Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 200ml sample. The As determination was done on a separate 100ml sample. Zinc concentration in the sample and the detection limit requirements for cadmium determination were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 5/09/86
SAMPLE ANALYZED BY: Howard Hogle DATE 5/12-13/86
Nancy Lao, Elinor Levin

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.026	<0.004	0.015	<0.009

SEND COPIES TO: Murray, Greg
FORM#107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 5/7/86
0930 hrs, OWW 5/15/86 0825 hrs, PWW 5/15/86 0830 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 5/7/86 , 5/15/86

RESULTS:

SAMPLE	TCE PPM
OWW 5/7/86	0.17
OWW 5/15/86	0.18
PWW 5/15/86	0.11

COPIES SENT TO: Greg Murray
FORM# 107-016

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

May 9, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: April, 1986 - Monthly Monitoring Report

Attached is our April, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 1 hour and 23 minutes or 0.18% of the time for the month. These exclusions are primarily due to inadequate flows on weekends, minor operator/controller problems and regeneration activities.

All other parameters are within limits for the month of April. If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operation and
Environmental Supervisor

Enclosure

cc: Greg Carr
Jim DiSorbo
Jim Ellis
Jim Harper
John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT PROGRAM PERMITTEE MONITORING REPORT

April 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
4/22	Monthly	<.007	<.002	<.002		<.005			
4/01	Weekly							.13	
4/04					2.9				
4/09								.16	
4/11					.8				
4/15								.29	
4/18					4.0				
4/22								.26	
4/25					3.3		(4/30)	.16	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
4/09	15 min	10.4	-
4/16	45 min	10.0	2.0
4/18	25 min	10.4	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

5/9/86
Authorized Signature

SCOEPA00020740

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 4/9/86 0820 hrs., OWW 4/15/86 1105 hrs., OWW 4/22/86 0820 hrs., OWW 4/30/86 0830 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 4/9/86, 4/15/86, 5/1/86.
Howard Hogle DATE 4/22/86

RESULTS:

SAMPLE	TCE PPM
OWW 4/9/86	0.16
OWW 4/15/86	0.41
OWW 4/22/86	0.38
OWW 4/30/86	0.24

COPIES SENT TO: Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 200ml sample. The As determination was done on a separate 100ml sample. Zinc concentration in the sample and the detection limit requirements for cadmium determination were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 4/22/86
SAMPLE ANALYZED BY: Howard Hogle DATE 4/24-25/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.007	<0.003	<0.003	<0.01

SEND COPIES TO: Murray, Greg

FORM#107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 4/9/86 0820 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 4/9/86

RESULTS:

SAMPLE	TCE PPM
OWW 4/9/86	0.16
4/15	.41
4/22	.38
4/30	.24

COPIES SENT TO: Greg Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE PWW ,OWW 4/1/86 1310 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 4/1/86

RESULTS:

SAMPLE	TCE PPM
PWW 4/1/86	0.04
OWW 4/1/86	0.13

COPIES SENT TO: Greg Murray

FORM# 107-016

Murray.

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

April 11, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: March, 1986 - Monthly Monitoring Report

Attached is our March, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 1 hour and 10 minutes or 0.15% of the time for the month. These exclusions are primarily due to inadequate flows on weekends, plant shutdown activities and from regeneration activities.

All other parameters are within limits for the month of March. If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operation and
Environmental Supervisor

Enclosure

cc: Greg Carr
Jim DiSorbo
Jim Ellis
Jim Harper
John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

March 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As	Cd	Cr	F	Zn	TTO	TCE	TSS
		c	c	c	c	c	g	g	g
3/26	Monthly	<.01	<.004	.036		.016			
3/05	Weekly							1.08	
3/07					2.9				
3/11								.40	
3/14					1.1				
3/21					3.2				
3/26								.17	
3/28					2.2				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
3/07	35 min	11.3	-
3/08	20 min	11.3	-
3/23	15 min	-	3.3

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave,"
g = grab sample, compared with "Daily Max".

4/9/86
Authorized Signature

SCOEPA00020746

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE PWW 3/5/86 0940 hrs. OWW 3/11/86 0835 hrs. by George Stevens, OWW

SAMPLE ANALYZED BY: Elinor Levin DATE 3/5/86, 3/11/86

RESULTS:

SAMPLE	TCE PPM
PWW 3/5/85	0.12
OWW 3/5/86	1.33
OWW 3/11/86	0.50

COPIES SENT TO: Greg, Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 3/26/86 0820 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 3/26/86

RESULTS:

SAMPLE	TCE PPM
OWW 3/26/86	0.23

COPIES SENT TO: Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.
Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 200ml sample. The As determination was done on a separate 100ml sample. Zinc concentration in the sample and the detection limit requirements for cadmium determination were large enough to permit the use of AAS flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 3/26/86
SAMPLE ANALYZED BY: Howard Hogle DATE 3/31-4/1/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.016	<0.004	0.037	<0.01

SEND COPIES TO: Greg Murray
FORM#107-016

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

March 11, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 SW Fifth Ave
Portland, Oregon 97204-1972

Ms. Heany:

Subject: February 1986 Monthly Monitoring Report

Attached is the February 1986 Monitoring report as required by our Municipal Discharge Permit No. 469-01.

As shown on the report, we were out of compliance of pH for a total of 255 minutes, or .63% of the time. These pH violations were basically caused by the inability of our pH neutralization system to add sufficient neutralization acid under proper control. This problem is being addressed as part of a Capital Project to upgrade our reagent and control systems in the wastewater treatment plant. This project is scheduled for completion in June, 1986.

All other parameters were within the permit limits. If you have any questions, please call me at 243-2020, ext. 132. Murray Tilson is on active Military duty and will return March 24, the week of our next shutdown.

Sincerely,

WACKER SILTRONIC CORPORATION

Greg Carr

Greg E. Carr
Facilities Engineer

GEC/md

cc: Jerry Schaeffer
Murray Tilson
File

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

February 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
2/21	Monthly	<.010	<.002	.010		.033			
2/05	Weekly							.45	
2/07					3.6				
2/13					1.6			.25	
2/19								.33	
2/21					.08				
2/26								.34	
2/28					1.2				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
2/03	45 min	10.9	-
2/25	90 min	11.9	-
2/27	120 min	10.6	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Greg Carr
Authorized Signature

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 2/19/86 0900 hrs. OWW 2/26/86 0820 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 2/19/86, 2/26/86

2/5 - PWW .05
OWW .56
2/13 OWW. 31

RESULTS:

SAMPLE	TCE PPM
OWW 2/19/86*	0.41
OWW 2/26/86**	0.43

* There was a large peak on the chromatograph at the retention time of 0.72 with an area % of about 74%. When Freon TF was added to a 0.10 PPM TCE Standard, it appeared at a retention time of 0.72 on the chromatograph.

** There was a peak on the chromatograph at the retention time of 0.72 with an area % of about 33%.

COPIES SENT TO: Greg, Murray
FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.2 AAS Graphite Furnace
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Zn, Cr, and Cd determinations were done on common 200ml samples. The As determination was done on separate 100ml samples. Zinc concentrations in the sample were high enough to permit the use of AAS Flame Spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 2/21/86

SAMPLE ANALYZED BY: Howard Hogle DATE 3/5-6/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.042	0.003	0.013	<0.013

COPIES SENT TO: Greg, Murray

FORM# 107-016

SCOEPA00020753

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE PWW 2/5/86 0930 hrs. OWW OWW 2/13/86 1045 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 2/5/86, 2/13/86

RESULTS:

SAMPLE	TCE PPM
PWW 2/5/85	0.05
OWW 2/5/86	0.56
OWW 2/13/86	0.31

COPIES SENT TO: Greg Murray

FORM# 107-016

Murray

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

February 12, 1986

RECEIVED
FEB 12 1986
WACKER SILTRONIC ENGINEERING

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: January, 1986 Monthly Monitoring Report

Attached is our January, 1986 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 3 hours and 12 minutes or 0.4% of the time for the month. These exclusions are primarily due to inadequate flows on weekends, plant shutdown activities and from regeneration activities.

As reported to you on January 23rd, we did experience an upset during the operation of our TCE stripper which resulted in a non-compliance condition of our TCE discharge. This was documented to you in my letter of January 27, 1986. As the monthly report shows, we are now well within the permit limit for TCE.

We plan on installing more control equipment on our stripper to prevent this sort of repeat occurrence in the future. These changes should be complete within 30 days.

All other parameters are within limits for the month of January. If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray N. Tilson, P.E.
Facilities Operation and
Environmental Supervisor

Enclosure

cc: Greg Carr
Jim DiSorbo
Jim Ellis
Jim Harper
John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

January 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
1/17	Monthly	.006	.002	.008		.033			
1/04	Weekly				1.3			.29	
1/08								.26	
1/10					<.08				
1/15								.19	
1/17					<.08				
1/22								2.68	
1/24					2.7				
1/31					<.08			.88	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
1/01/86	90 min	-	3.7
1/07/86	30 min	11.5	-
1/17/86	72 min	12.6	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

SCOEPA00020756

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.2 AAS Graphite Furnace
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr and Cd determinations were done on common 200ml samples. The As and Zn determinations were done on a separate 100ml samples. Zinc concentrations in the sample were high enough to permit the use of AAS Flame Spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 1/17/86

SAMPLE ANALYZED BY: Howard Hogle DATE 1/30-31/86

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.043	0.002	0.010	<0.008

COPIES SENT TO: Murray, Greg Tilson Carr

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 1/22/86 0840 hrs, OWW 1/29/86 0800 hrs, OWW 1/31/86 0830 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 1/22/86, 1/29/86, 1/31/86

RESULTS:

SAMPLE	TCE PPM
OWW 1/22/86	3.44
OWW 1/29/86	1.78
OWW 1/31/86	1.18

COPIES SENT TO: Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 1/15/86 830 HRS

SAMPLE ANALYZED BY: Elinor Levin Howard Hogle DATE 1/15/86

RESULTS:

SAMPLE	TCE PPM
OWW 1/15/86	0.25

COPIES SENT TO: Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 1/4/86, OWW 1/8/86 0930 hrs, PWW 1/8/86 0920 hrs ,Mike Pilkington OWW 12/27/85

SAMPLE ANALYZED BY: Elinor Levin DATE 1/8/86

RESULTS:

SAMPLE	TCE PPM	APPEARANCE
OWW 12/27/85*"	0.08*"	Colorless
OWW 1/4/86"	0.36"	Black w/silicon solids
OWW 1/8/86	0.32	Black w/silicon solids
PWW 1/8/86	0.19	Colorless

* Not analyzed within 7 days of the collection date.

" Results considered questionable as samples arrived in laboratory with septum bottle standing up instead of down and the sample seemed to be at room temperature. It was not confirmed that proper storage procedures had been maintained. Murray was informed of importance of storage and will insure operators are cognizant of correct procedures.

COPIES SENT TO: Murray, Greg

FORM# 107-016

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

January 13, 1986

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: December, 1985 Monthly Monitoring Report

Attached is our December, 1985, Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 3 hours and 40 minutes or 0.6% of the time for the month. These exclusions are primarily due to inadequate flows on weekends, plant shut downs activities and from regereration activities.

All other parameters are within limits for the month of December. Since the plant was completely shutdown from December 21st to January 2nd, a TCE grab sample was not taken for the final week of the month.

If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operation and
Environmental Supervisor

MMT:ll

Enclosure

cc: Greg Carr
Jim DiSorbo
Jim Ellis
Jim Harper
John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

December 1986
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As	Cd	Cr	F	Zn	TTO	TCE	TSS
		c	c	c	c	c	g	g	g
	Monthly	.003	<.001	.009		<.07			
12/06	Weekly				1-1			.22	
12/11								.21	
12/13					<1.0				
12/18								.23	
12/20					1.1				
12/27					3.2			-	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
12/02	80 Min	12.2	4.3
12/04	20 Min	-	2.2
12/27	2 Hours	11.0	4.0

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

1/13/86
Authorized Signature

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.2 AAS Graphite Furnace
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr and Cd determinations were done on common 200ml samples. The As and Zn determinations were done on a separate 100ml samples. Zinc concentrations in the sample were high enough to permit the use of AAS Flame Spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 12/13/85

SAMPLE ANALYZED BY: Elinor Levin DATE 12/16-17/85

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
<0.07	<0.001	0.009	0.003

COPIES SENT TO: Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLE FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 12/6/85 1000 HRS

SAMPLE ANALYZED BY: Elinor Levin DATE 12/6/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.20 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 12/6/85	0.22	0.38	80 %

COPIES SENT TO: Murray, Brez

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE 12/11/85 OWW,PWW 1000HRS.

SAMPLE ANALYZED BY: Elinor Levin DATE 12/11/85

RESULTS:

SAMPLE	TCE PPM
PWW 12/11/85	0.09
OWW 12/11/85	0.21

COPIES SENT TO: Greg Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLE FOR TCE

After liquid/liquid extraction of blanks, standards, and sample the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE 12/18/85
OWW 0930 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 12/18/85

RESULTS:

SAMPLE	TCE PPM
OWW 12/18/85	0.23

COPIES SENT TO: Murray, Greg
FORM# 107-016

CD X LT

Free
GEAR *.*

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.2 AAS Graphite Furnace
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr and Cd determinations were done on common 200ml samples. The As and Zn determinations were done on a separate 100ml samples. Zinc concentrations in the sample were high enough to permit the use of AAS Flame Spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 12/13/85

SAMPLE ANALYZED BY: Elinor Levin DATE 12/16-17/85

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
<0.07	<0.001	0.009	0.003

COPIES SENT TO: Murray, Greg

FORM# 107-016

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

December 11, 1985

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: November, 1985 Monthly Monitoring Report

Attached is our November, 1985, Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 1 hour and 20 minutes or 0.2% of the time for the month. These exclusions are primarily due to inadequate flows on weekends and from regeneration activities.

All other parameters are within limits for the month of November. Since the plant was completely shutdown from November 23 to November 30, a TCE grab sample was not taken for the final week of the month.

If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operation and
Environmental Supervisor

MMT:ll

Enclosure

cc: Greg Carr
Jim DiSorbo
Jim Ellis
Jim Harper
John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

November 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
11/08/85	Monthly	.002	<.001	<.002		.038			
11/01/85	Weekly				3.7				
11/08/85					1.6			.48	
11/12/85					7.2			.12	
11/18/85								.16	
11/22/85					4.1				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
11/03	15 min		3.2
11/11	15 min	10.5	
11/23	50 min	13.0	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

12/11/85
Authorized Signature

SCOEPA00020770

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 11/8/88 1300 hrs. PWW 11/12/85 0830 hrs. OWW 11/12/85 0830 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 11/12/85

RESULTS:

SAMPLE	TCE PPM		SAMPLE PLUS 0.20 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 11/8/85	0.62	diluted .48	not determined	
PWW 11/12/85	0.09		0.21	60 %
OWW 11/12/85	0.15	.12	0.31	80 %

COPIES SENT TO: Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.2 AAS Graphite Furnace
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Zn, Cr, and Cd determinations were done on common 200ml samples. The As determination was done on a separate 100ml sample. Zinc concentrations in the sample were high enough to permit the use of AAS Flame Spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 11/8/85

SAMPLE ANALYZED BY: Elinor Levin DATE 11/20-21/85

RESULTS:

	[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
	0.049	0.001	<0.002	0.003
Piluted	.038	.00078	<.0016	.0023

COPIES SENT TO: Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLE FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 11/18/85 1030 hrs.

SAMPLE ANALYZED BY: Howard Hogle, Elinor Levin DATE 11/18/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.20 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 11/18/85	0.19 .16	0.35	80 %

dilution

COPIES SENT TO: Murray, Greg

FORM# 107-016

SCOEPA00020773

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

November 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
11/08/85	Monthly	.002	<.001	<.002		.038			
11/01/85	Weekly				3.7				
11/08/85					1.6			.48	
11/12/85					7.2			.12	
11/18/85								.16	
11/22/85					4.1				
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
11/03	15 min		3.2
11/11	15 min	10.5	
11/23	50 min	13.0	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

November 11, 1985

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: October, 1985 Monthly Monitoring Report

Attached is our October, 1985, Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 1 hour and 15 minutes or 0.2% of the time for the month. These exclusions are primarily due to inadequate flows on weekends and from regeneration activities.

All other parameters are within limits except for TCE levels taken during the first week of October. This incident was discussed in our letter to you dated October 14, 1985. I am pleased to report that when we pumped out our OWW forwarding sump on October 5th, TCE effluent levels were lowered to within our compliance concentration of 1.37 mg/l.

If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operation and
Environmental Supervisor

MMT:ll

Enclosure

cc: Greg Carr
Jim DiSorbo
Jim Ellis
Jim Harper
John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

October	1985
MONTH	YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
10/25	Monthly	<.003	<.001	<.005		.028			
10/04	Weekly				.74				
10/08								1.75	
10/09					.38				
10/14								.38	
10/18					.50				
10/23								.10	
10/25					.23				
10/31								.24	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
10/20	35 min	11.2	-
10/30	40 min	11.3	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

11/11/85
Authorized Signature

SCOEPA00020776

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, and samples, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

The samples analyzed were:

OWW 10/11/85 1300 hrs
OWW Outlet 10/14/85
OWW Inlet 10/14/85
OWW Effluent (NT) 10/14/85

SAMPLES COLLECTED BY: Sam Pengelly DATE OWW 10/11/85 1300 hrs; Pat Tapley OWW 10/14/85

SAMPLE ANALYZED BY: Elinor Levin DATE 10/14/85

PWW 10/2/85 .11
OWW 10/2/85 2.3

10/23 .20
10/31 .30

RESULTS:

SAMPLE	TCE PPM
OWW 10/11/85 1300 hrs	3.18
OWW Outlet 10/14/85	1.38
OWW Inlet 10/14/85	0.12
OWW Effluent 10/14/85	0.61

COPIES SENT TO: Murray, Greg

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

Analysis of grab samples for TCE obtained from the following sites:
Sample #1 : Inlet to OWW forwarding sump
Sample #2 : Outlet of OWW forwarding sump
Sample #3 : Outlet of OWW storage tank
Sample #4 : OWW effluent

After liquid/liquid extraction of blanks, standards, and samples, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Murray Tilson DATE 10/8/85 1100 hrs; Samples collected in 500 ml polyethylene bottles and transferred to EPA approved septum bottles about an hour after collection.

SAMPLE ANALYZED BY: Elinor Levin DATE 10/9/85

RESULTS:

SAMPLE	TCE PPM
#1 Inlet to OWW forwarding sump	0.11
#2 Outlet of OWW forwarding sump	3.05
#3 Outlet of OWW storage tank	3.09
#4 OWW effluent	3.05

COPIES SENT TO: Murray, Greg
FORM# 107-016

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P. O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

October 14, 1985

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

RECEIVED
ENGINEERING
OCT 14 1985

John L. Pittman
Wacker Siltronic

Dear Ms. Heany:

Subject: September, 1985 Monthly Monitoring Report

Attached is our September, 1985 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As shown on the attached Monitoring Report, we were out of compliance for pH for 4 hours and 45 minutes or 0.7% of the time for the month. These excursions were due primarily to regeneration activities and inadequate flows on weekends when most of the production facilities is shutdown.

All other parameters are within limits, except for TCE. Two samples were reported over the compliance limit of 1.37 mg/l on September 8 and 27.

As discussed with Harry Edmonds of your agency on this date, we are doing all we can to insure that this situation doesn't occur in the future. Although we were aware of the TCE violation last Friday, the magnitude was not substantiated until early this week. Upon receiving this information, the following action was taken:

1.) Collected 4 TCE samples on 10/7/85

Sample Location	TCE (mg/l)
a.) inlet to OWW forwarding sump	0.11
b.) outlet of OWW forwarding sump	3.05
c.) outlet of OWW storage tank	3.09
d.) outlet of OWW neutralization tank	3.05

2.) I sent a memorandum to all managers and supervisors on 10/8/85 notifying them of the permit violations, and requesting their assistance in this area.

3.) I discussed this matter with all management personnel at the Monthly Operations meeting on 10/11/85.

From the above data on item No. 1, it appears that there is some TCE at the bottom of the OWW forwarding sump. We will pump out the bottom of this sump on Saturday and transfer the contents to barrels. After testing, we will treat this material through our stripper into the OWW system in a manner which insures permit compliance.

If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operation and
Environmental Supervisor

MMT:ll

Enclosure

cc: Greg Carr
Jim DiSorbo
Jim Ellis
Jim Harper
John Pittman
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

September 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As	Cd	Cr	F	Zn	TTO	TCE	TSS
		c	c	c	c	c	g	g	g
9/13	Monthly	<.01	<.001	.01		.008			
9/6	Weekly				2.9			1.8	
9/13					.59			.14	
9/18								3.8	
9/20					3.8				
9/27						.56		28	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
9/06	50 min.	10.7	
9/08	90 min.		1.4
9/10	25 min.	10.9	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

10/10/85
Authorized Signature

SCOEPA00020781

Additional pH Violations

DATE	Duration	pH Max.	pH Min.
9/22	75 min.	10.6	
9/24	45 min.	11.6	

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 8/30/85 2000 HRS, OWW 9/6/85 1000 HRS.

SAMPLE ANALYZED BY: Elinor Levin DATE 9/6/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.20 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 8/30/85	0.11	0.26	75 %
OWW 9/6/85	3.35	Not Determined*	%

* The original 30 ml sample was too high for the TCE standard concentrations used in the test so dilutions of the original sample were used to run the test at the end of the day and there was not sufficient time to run recoveries.

COPIES SENT TO: Greg, Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

Water sample from TCE stripper bottoms for TCE analysis following liquid/liquid extraction and analysis of extracts by gas liquid chromatography using the electron capture detector. The sample was run with the blanks, standards, and wastewater samples. Test requested to determine where the occasional high TCE concentrations in the OWW are coming from.

SAMPLE COLLECTED BY: Sam Pengelly DATE 9/17/85 1530 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 9/18/85

RESULTS:

The concentration of TCE in the water sample from TCE stripper bottoms was 1.02 PPM TCE.

COPIES SENT TO: Greg Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metals analysis of cascade rinse sample from acid etch room. Chloride ion determination of same. Trace metals were determined by Atomic Absorption Spectrometry; chloride analysis was done by wet chemical methods.

SAMPLE COLLECTED BY: Steve Shuholm DATE 9/17/85

SAMPLE ANALYZED BY: Nancy Lao DATE 9/19/85
Howard Hogle DATE 9/19/85

RESULTS: Chloride analysis on the sample was negative for cascade rinse sampled on 9/17/85.

AAS-FL results: All concentrations listed below are in units of ug/ml.

Sample	[Na]	[Ca]	[K]	[Mg]
Cascade 9/10/85	1.40	2.05	0.25	0.54
Cascade 9/17/85	<.005	<.02	<.008	<.005

COPIES SENT TO: Steve Shuholm, Tom D'Silva, Greg Carr, Bob. G.
FORM# 107-016

SCOEPA00020785

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.1 AAS Flame
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 200ml sample. The As determination was done on a separate 100ml sample. Zinc concentration in the sample and detection limit requirements for cadmium determination were sufficiently high enough to permit the use of AAS Flame Spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 9/13/85

SAMPLE ANALYZED BY: Howard Hogle DATE 10/1-2/85

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.008	<0.001	0.010	≤0.01*

* Note: Upon filtration of the arsenic samples some colloidal silicon passed through to the solution. The presence of the silicon may have caused the absorbance attributed to 0.01ppm silicon. Therefore, the measured value of 0.01ppm is listed as ≤0.01ppm because of the doubt due to the presence of the colloid. A remedy for the elimination of the unfiltered silicon will be sought next month.

COPIES SENT TO: Murray Filson, Greg Carr
FORM# 107-016

SCOEPA00020786

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 9/13/85
1600 HRS; OWW 9/18/85 0830 HRS; PWW 9/17/85

SAMPLE ANALYZED BY: Elinor Levin DATE 9/18/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.20 PPM TCE ADDED TCE PPM	% RECOVERY
PWW 9/17/85	0.09	0.19	51 %
OWW 9/13/85	0.24	0.37	65 %
OWW 9/18/85	0.16	0.32	80 %

COPIES SENT TO: Greg Murray
FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 9/27/85 1440 hrs; PWW 10/2/85 930 hrs; OWW 10/2/85 930 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 10/2/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.20 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 9/27/85	50.0	--------	
PWW 10/2/85	0.11	0.23	60 %
OWW 10/2/85	5.6	--------	

COPIES SENT TO: Murray Olson, Greg Carr

FORM# 107-016

SCOEPA00020788

Wacker Siltronic Corporation

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SEP 1 1 1985
John L. Pittman
Wacker Siltronic

September 11, 1985

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Ave.
Portland, OR 97204-1972

Dear Ms. Heany:

Subject: August 1985 Monthly Monitoring Report

Attached is our August, 1985 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As noted in our monitoring report, we were out of compliance for pH for 1.85% of the time. This was primarily due to heavy regeneration activities and operations of our TCE column stripper.

One TCE violation occurred during the operation of our TCE stripper on August 9th. The concentration was measured at 2.4 mg/l. This will be eliminated in the future through better stripper operation monitoring and control.

All other parameters monitored in the month of August were found to be within our permit limits.

If you have any questions, please call me at 243-2020, ext. 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operation and
Environmental Supervisor

MMT:ll

Enclosure

cc: Greg Carr
Jim Ellis
Jim Harper
John Pittman
Mal Russ
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

August	1985
MONTH	YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
8/16	Monthly	<.006	.002	.002		.007			
8/02	Weekly				1.6			.14	
8/09					.74			2.4[1]	
8/16					.64			.10	
8/23					5.8			.12	
8/30					11.1				
	Semi Annual								

pH: Summary of Data: See attached for additional incidents

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
8/04	4 hrs (4 incidents)	11.3	2.0
8/13	7 hs 45 min (1 incident)	11.9	-
8/23	35 min	10.8	-

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

SCOEPA00020790

DATE	DURATION of EXCUSION	pH (MAX)	pH (MIN)
8/25	55 min Acid Pump Failure	12.2	-
8/26	20 min	10.3	-

[1]TCE violation occured during operation of TCE - Wastewater stripper.

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLE FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 8/20/85 1000HRS

SAMPLE ANALYZED BY: Elinor Levin DATE 8/20/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.20 PPM TCE ADDED TCE PPM	% RECOVERY
OWW	0.18	0.35	85 %

COPIES SENT TO: Greg, Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.

Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.2 AAS Graphite Furnace
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace

All four analyses were done using standard additions methods with the filtered digested sample solutions. Cr, Cd, and Zn determinations were done on a common 200ml sample. The As determination was done on a separate 100ml sample. Zinc concentrations in the sample were high enough to permit the use of AAS Flame Spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 8/16/85

SAMPLE ANALYZED BY: Howard Hogle DATE 8/20-21/85

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.011	0.003	0.004	<0.01

COPIES SENT TO: Greg Murray

FORM# 107-016

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P. O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97210
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

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AUG 12 1985

John L. Pittman
Wacker Siltronic

August 9, 1985

Ms. Molly Heany
Bureau of Environmental Quality
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204 - 1972

Dear Ms. Heany:

Subject: July 1985 Monthly Monitoring Report

Attached is our July 1985 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

All 24 hour composite and grab samples were well within compliance. Our effluent pH was within compliance for all but 0.15% of the time. The caustic upsets were caused from operation of our stripper unit and resulted in being out of compliance for only 1 hour and 15 minutes during the month of July.

If you have any further questions, please call me at 243-2020, extension 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operations and
Environmental Supervisor

MMT:jm

Enclosure

cc: Greg Carr
Jim Ellis
Jim Harper
John Pittman
Mal Russ
Jerry Schaeffer

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

July 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F^- c	Zn c	TTO g	TCE g	TSS g
7/12	Monthly	<.006	<.001	.013		.013			
7/5	Weekly				.57		.09		
7/12					13.4		.08		
7/19					4.5		.22		
7/26					4.2		.25		
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
7/13	25 min	11.9	
7/21	25 min	10.6	
7/25	15 min		3.8

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Greg Carr
Authorized Signature

SCOEPA00020795

Wacker Siltronic Corporation

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ENGINEERING

JUL 11 1985

John L. Pittman
Wacker Siltronic

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

July 10, 1985

Ms. Molly Heany
Bureau of Environmental Quality
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204 - 1972

Dear Ms. Heany:

Subject: June 1985 Monthly Monitoring Report

Attached is our June 1985 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

All 24 hour composite and grab samples were well within compliance. Our effluent pH was within compliance for all but 0.3% of the time. A slight caustic upset resulted in the OWW neutralization tank being out of compliance for a short duration on June 19, 1985 of 2 hours and 15 minutes.

If you have any further questions, please call me at 243-2020, extension 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operations and
Environmental Supervisor

MMT:jm

Enclosure

cc: Greg Carr
Jim Ellis
Jim Harper
✓John Pittman
Mal Russ

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

June 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
6/21	Monthly	<.007	<.001	.002		.018			
6/7	Weekly				1.60			.16	
6/14					.20			.21	
6/19								.17	
6/21					.30				
6/27					4.10			.24	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
6/19	2hrs 15 minutes	11.0	–

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Gregory E. Carr
Authorized Signature

SCOEPA00020797

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.
Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.2 AAS Graphite Furnace
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace with the following changes in the As method: The sample digestion method common to the Zn, Cr, and Cd methods was also used for the As determination.

Spikes of 0.050 ug/ml As, Zn, Cd, and Cr were added to one OWW sample and carried through all steps of the method to determine recovery.

All four metal analyses were done using standard additions methods with the filtered digested sample solutions. A volume of 200 ml of OWW sample was evaporated and digested with nitric acid. The digested sample was brought to a final volume of 100 ml for analysis. Zinc concentrations in the sample were high enough to permit the use of AAS Flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 6/21/85

SAMPLE ANALYZED BY: Howard Hogle DATE 7/1-2/85

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.028	<0.001	0.033	<0.01

Recovery on the As spike was 133%; recovery on the Cd spike was 146%; recovery on the Cr spike was 140%; recovery on the Zn spike was 74%. The recoveries of higher than 100% may be due to non-linear calibration curves which may, in turn, be due to the high concentration of salts in the OWW samples. The linearity of the calibration curves will be examined when time is available.

COPIES SENT TO: Greg, Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 6/14/85
1500 hrs OWW 6/19/85 0730 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 6/19/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.30 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 6/14/85	0.21	0.40	63 %
OWW 6/19/85	0.17	0.35	60 %

COPIES SENT TO: Greg, Murray

FORM# 107-016

SCOEPA00020799

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

June 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
6/21	Monthly	<.007	<.001	.002		.018			
6/7	Weekly				1.60			.16	
6/14					.20			.21	
6/19								.17	
6/21					.30				
6/27					4.10			.24	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
6/19	2hrs 15 minutes	11.0	–

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Gregory E. Carr
Authorized Signature

SCOEPA00020800

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 6/27/85 1400 hrs; OWW 7/2/85 1020 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 7/3/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.20 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 6/27/85	0.24	0.42	90 %
OWW 7/2/85	0.20	0.37	85 %

COPIES SENT TO: Greg Murray

FORM# 107-016

SCOEPA00020801

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

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JUN 13 1985

John L. Pittman
Wacker Siltronic

June 13, 1985

Ms. Molly Heany
Bureau of Environmental Services
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204-1972

Dear Ms. Heany:

Subject: May 1985 Monthly Monitoring Report

Attached is our May 1985 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As noted in our May reports, we were out of compliance for pH on May 8 for two hours and 30 minutes. This resulted when we had to clean out the bottom portion of our lime slurry tank in order to install a shutoff valve at the base of the tank. Neutralization was not possible during this period of time due to the high discharge level of lime slurry.

All other parameters monitored for the month of May were found to be within our permit limits.

If you have any questions regarding this, please call me at 243-2020, extension 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operations and
Environmental Supervisor

MMT:jm

Enclosure

cc: Greg Carr
Jim Harper
✓John Pittman
Mal Russ

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

MAY 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
5/3	Monthly				6.52			0.22	
5/10	Weekly				1.53			0.12	
5/17		<0.01	0.001	0.004	6.75	0.020		0.15	
5/24					0.68			0.14	
5/30					11.48			0.11	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
5/8/85	2 hrs 30 min. Above 12.0	12.6	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

6/10/85
Authorized Signature

SCOEPA00020803

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metal analysis of the organic waste water (OWW) for Zn, Cr, Cd, and As.
Zn method: EPA Method No. 289.1 AAS Flame
Cd method: EPA Method No. 213.2 AAS Graphite Furnace
Cr method: EPA Method No. 218.2 AAS Graphite Furnace
As method: EPA Method No. 206.2 AAS Graphite Furnace with the following changes in the As method: The sample digestion method common to the Zn, Cr, and Cd methods was also used for the As determination.

Spikes of 0.050 ug/ml As, Cr, and Zn were added to one OWW sample and carried through all steps of the method to determine recovery.

All four metal analyses were done using standard additions methods with the filtered digested sample solutions. A volume of 200 ml of OWW sample was evaporated and digested with nitric acid. The digested sample was brought to a final volume of 100 ml for analysis. Zinc concentrations in the sample were high enough to permit the use of AAS Flame spectrometry.

SAMPLE COLLECTED BY: Sam Pengelly DATE 5/17/85

SAMPLE ANALYZED BY: Howard Hogle DATE 6/10-11/85

RESULTS:

[Zn] ppm	[Cd] ppm	[Cr] ppm	[As] ppm
0.032	0.002	0.007	<0.01

Recovery on the As spike was 122%; recovery on the Cr spike was 155%; recovery on the Zn spike was 78%. The reason for the excess rate of recovery is not understood at this time. The recovery of all four elements will be examined as monthly data accumulates and as time permits.

COPIES SENT TO: Greg, Murray

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 5/3/85
0500 hrs; OWW 5/10/85 0930 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 5/10/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.51 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 5/3/85	0.88	1.19	61%
OWW 5/10/85	0.19	0.72	104%

COPIES SENT TO: Greg Carr, Murray Olson

FORM# 107-016

SCOEPA00020805

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION: Trace metals analyses of Anti-Rust 404T by Flame Atomic Absorption Spectrometry for zinc and cadmium. A mass of 115.16g of sample was diluted to 250ml with de-ionized water. The analyses were performed by standard additions methods. Deionized water served as an analytical blank.

SAMPLE COLLECTED BY: Tom Nebert DATE 5/14/85

SAMPLE ANALYZED BY: Howard Hogle DATE 6/6/85

RESULTS:

Element	Linear Correlation	Concentration in Anti-Rust 404T ppm
Zinc	1.000	0.94
Cadmium	.9997	<0.02

COPIES SENT TO: Gregg Carr

FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 5/17/85 1615 hrs, PWW 5/22/85 0830 hrs, OWW 5/22/85 0825 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 5/22/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.40 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 5/17/85	0.24	0.57	82.5%
PWW 5/22/85	0.11	0.38	67.5%
OWW 5/22/85	0.22	0.59	92.5%

COPIES SENT TO: Greg Carr

FORM# 107-016

PA

Wacker Siltronic Corporation

WACKER

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
Fax [illegible]

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MAY 13 1985

John L. Pittman
Wacker Siltronic

May 10, 1985

Ms. Molly Heany
Bureau of Environmental Quality
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204 - 1972

Dear Ms. Heany:

Subject: April 1985 Monthly Monitoring Report

Attached is our April 1985 Monthly Monitoring Report as required in our Municipal Discharge Permit No. 469-01.

As noted in our report, we were out of compliance for pH on April 18th for twenty minutes. This resulted from a leak in our sulphuric acid treatment system which caused our pH in the effluent OWW stream to dip to 1.2. The leak was stopped in less than five minutes, but the pH excursion lasted twenty minutes. I notified the Columbia Boulevard Treatment Plant immediately of the situation. We have since completed repairs to insure this type of accident will not occur again.

On April 11, 1985 we completed our diversion of the Slicing/Plate Prep Stream into the City's collection system as per your letter of authorization dated March 20, 1985 to Greg Carr. This has proved to be very successful in allowing us to achieve BOD compliance in our NPDES Waste Discharge Permit. Again, we thank you for your cooperation in this matter.

All other parameters monitored for this month were found to be in compliance.

If you have any further questions, please call me at 243-2020, extension 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operations and
Environmental Supervisor

MMT:jm

Enclosure

cc: Greg Carr
Jim Harper
John Pittman
Mal Russ

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

April '85
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l									
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
4/5	Monthly				1.7				
4/9	Weekly							.34	
4/12					2.4			.20	
4/19					.69			.14	
4/23								.18	
4/26		N/D	.002	<.001	.80	.025			
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (≥ 15 min.)	pH (max.)	pH (min.)
4/18	20 minutes below 5.5		1.2

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

5/10/85
Authorized Signature

SCOEPA00020809

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE 4/5/85
OWW 15:30 hrs.4/9/85 PWW 8:45 hrs OWW 8:55 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 4/9/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.52 PPM TCE ADDED TCE PPM	% RECOVERY
PWW 4/9/85	0.07	0.53	88%
OWW 4/5/85	1.20	1.33	25%
OWW 4/9/85	0.60	1.25	125%

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FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE OWW 4/12/85 9:40 hrs, OWW 4/19/85 10:12 hrs, OWW 4/23/85 11:00 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 4/23/85

RESULTS:

SAMPLE	TCE PPM	SAMPLE PLUS 0.51 PPM TCE ADDED TCE PPM	% RECOVERY
OWW 4/12/85 9:40 hrs	0.37	0.73	71 %
OWW 4/19/85 10:12 hrs	0.25	0.90	127 %
OWW 4/23/85 11.00 hrs	0.32	0.65	65 %

COPIES SENT TO: Greg, Murray

FORM# 107-016

Wacker Siltronic Corporation

Wacker Siltronic Corporation
P.O. Box 03180
Portland, OR 97203
7200 N.W. Front Ave.
Portland, OR 97229
Phone (503) 243-2020
TWX 910-464-4777
FAX 503 226-0052

April 10, 1985

RECEIVED
ENGINEERING
APR 1 2 1985

John L. Pittman
Wacker Siltronic

Ms. Molly Heany
Bureau of Environmental Quality
City of Portland
1120 S.W. Fifth Avenue
Portland, Oregon 97204 - 1972

Dear Ms. Heany:

Subject: March 1985 Monthly Monitoring Report

Attached is our March 1985 Monthly Monitoring Report as required in our Municipal Sources Discharge Permit No. 469-01.

As noted in our report, we were above our permit level for TCE concentration on March 28. Since our shutdown occurred from March 23 to March 30, a flow of about 5 gpm or 10% of normal was discharging through the Organic Waste Water (OWW) forwarding sump. This sump has a build up of TCE laden sludge (about 0.85%) and is probably diffusing TCE into the liquid stream. We are in the process of cleaning this sump. This should alleviate any further TCE from this source.

If you have any further questions, please call me at 243-2020, extension 301.

Sincerely,

WACKER SILTRONIC CORPORATION

Murray M. Tilson, P.E.
Facilities Operations and
Environmental Supervisor

MMT:jm

Attachment

cc: Greg Carr
Jim Harper
✓ John Pittman
Mal Russ

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

March 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

		CONCENTRATION mg/l Sanitary + Process Waste							
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	TSS g
3/15	Monthly	N/S	.003	N/S		.039			
3/1	Weekly				3.01				
3/8					2.7			.08	
3/15					2.7			.14	
3/19								.11	
3/22					3.2				
3/28								1.9 *	
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
3/5	25 min	10.7	
3/7	35 min	10.3	
3/7	45 min	11.4	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Greg Carr
Authorized Signature

* Note- high TCE may be due to leaching from sludge during shut-down.

COFFEY LABORATORIES, INC.
4914 N.E. 122nd Ave.
Portland, OR 97230
Phone: (503) 254-1794

March 8, 1985
Log #A-850304-D

Wacker Siltronics
P. O. Box 03180
Portland, Oregon 97203

Attention: Greg Carr

Sample Received: March 4, 1985

Sample ID: Organic Waste Water Composite 2-25-85 to 3-1-85 (51021)

Analysis Requested: Total Chromium, Zinc, Arsenic, and Cadmium

ANALYSIS	RESULTS
Chromium	0.02
Zinc	0.59
Arsenic	< 0.08
Cadmium	0.17

< denote less than

Results in mg/l

Sincerely,

Susan M. Coffey

Susan M. Coffey
President

SMC/jc

Portland, Oregon
Industrial Sewage Division

Permit Number: 469-01
EPA Class: Electronic Crystals and manufacture of electronic crystals.

MUNICIPAL PRETREATMENT
PROGRAM
PERMITTEE MONITORING REPORT

March 1985
MONTH YEAR

FROM: Wacker Siltronic Corp.
P.O. Box 03180
Portland, OR 97203

PLANT LOCATION: 7200 N.W. Front Ave.
Portland, OR 97229

CONCENTRATION mg/l – OWW									OWW Total Fraction
Sampling Date	Frequency ↓ Sample* →	As c	Cd c	Cr c	F c	Zn c	TTO g	TCE g	~~TSS~~ g
3/15	Monthly	N/S	.006	N/S		.060			.58
3/1	Weekly				5.1				.59
3/8					4.9			.14	.56
3/15					4.6			.24	.58
3/22					5.6				.58
3/19								.18	.59
3/28								5.9	.33
	Semi Annual								

pH: Summary of Data:

Date	Duration of excursion (> 15 min.)	pH (max.)	pH (min.)
3/5	25 min	10.7	–
3/7	35 min	10.3	
3/7	45 min	11.4	

Sample*: c = 24 hour sampling, composited, compared with "Mo. Ave."
g = grab sample, compared with "Daily Max".

Authorized Signature

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF ORGANIC WASTEWATER GRAB SAMPLE FOR TCE.
After liquid/liquid extraction of blanks, standards, and samples, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Fengelly DATE 3/28/85 17.00 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 4/2 and 4/9/85

RESULTS:

SAMPLE	TCE PPM
3/28/85 Organic Wastewater	5.9 PPM

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FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

RECOVERY OF TCE IN VARIOUS ALIQUOTS OF WASTEWATER USED IN ANALYSIS FOR TCE

Samples of process wastewater and organic wastewater were analyzed on various dilutions of the samples for TCE. Known additions of TCE were added to the samples and the recovery of the TCE was determined. After liquid/liquid extraction of blanks, standards, samples, and samples plus added TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE 3/8/85
PWW 10.00 hrs OWW 10.20 hrs

SAMPLE ANALYZED BY: Elinor Levin DATE 3/8/85

RESULTS:

Aliquot, ML	TCE, PPM Sample	TCE, PPM plus 0.50 ppm TCE	TCE, PPM Recovered	% Recovery 0.5PPM = 100%
Process Wastewater 3/8/85				
5	0.31	0.62	0.31	62
10	0.20	0.55	0.35	70
20	0.14	0.49*	0.35	70
30	0.12	0.54	0.42	84
Organic Wastewater 3/8/85				
1	1.40*	1.72	0.32	64
2	0.70	1.07	0.37	74
5	0.34	0.78	0.44	88
30	0.14	0.63	0.49	98

* Faulty injection by autosampler. May be due to vial seal.

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FORM# 107-016

WACKER SILTRONIC CORPORATION

SPECIAL TEST REPORT: INCOMING INSPECTION

TEST METHOD DESCRIPTION AND IDENTIFICATION:

ANALYSIS OF PROCESS WASTEWATER AND ORGANIC WASTEWATER GRAB SAMPLES FOR TCE .

After liquid/liquid extraction of blanks, standards, samples, and samples with added TCE for recoveries of TCE, the extracts were analyzed by gas liquid chromatography using the electron capture detector.

SAMPLE COLLECTED BY: Sam Pengelly DATE 3/8/85
PPW 10.10 hrs, OWW 10.20 hrs, 3/15/85 OWW 14.15 hrs, 3/19/85 OWW 11.30 hrs.

SAMPLE ANALYZED BY: Elinor Levin DATE 3/8/85,3/19/85

RESULTS:

SAMPLE	TCE PPM	0.50 PPM (3/8/85) OR 0.52 PPM TCE ADDED TCE PPM	% RECOVERY
PWW 3/8/85	0.12	0.54	84%
OWW 3/8/85	0.14	0.63	98%
OWW 3/15/85	0.24	0.77	102%
OWW 3/19/85	0.18	0.65	90%

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