APPENDIX A

WATER-LEVEL ELEVATION DATABASE

Water-Level Elevation Database,
Wheeling-Pittsburgh Steel Corporation,
Follansbee, West Virginia.

Well ID	Unit Monitored	Measuring Date	M.P. *Elevation	Depth to Water (feet)	Depth to Product (feet)	Oil Thickness (feet)	Groundwater *Elevation	Comment
MW-1	UA	2/26/96	419.32	6.45			412.87	
MW-1	UA	6/17/96	419.32	8.07			411.25	
MW-1	UA	12/13/96	419.32	4.32			415	
MW-1	UA	2/10/97	419.32	7.64			411.68	
MW-1	UA	9/9/97	419.32	8.2			411.12	
MW-1A	LA	2/26/96	419.02	6.17			412.85	
MW-1A	LA	6/17/96	419.02	7.77			411.25	
MW-1A	LA	12/13/96	419.02	4.08			414.94	
MW-1A	LA	2/10/97	419.02	7.3			411.72	
MW-1A	LA	9/9/97	419.02	7.93			411.09	
GM-1T	PF	2/26/96		14.77				No MPELEV
GM-1T	PF	6/17/96						Destroyed
MW-2A	LA/FP	2/26/96	442.39	29.94			412.45	
MW-2A	LA/FP	6/17/96	442.39	30.99			411.4	
MW-2A	LA/FP	12/13/96	442.39	29.33			413.06	
MW-2A	LA/FP	2/10/97	442.39	30.85			411.54	
MW-2A	LA/FP	9/9/97	442.39	31.43			410.96	
GM-2T	PF	2/26/96		14.81				No MPELEV
GM-2T	PF	6/17/96		15.07				No MPELEV
GM-2T	PF	12/13/96		15.83				No MPELEV
GM-2T	PF	2/10/97		15.79				No MPELEV
GM-2T	PF	9/9/97		NM				No MPELEV
GM-3T	PF	2/26/96		16.05				No MPELEV
GM-3T	PF	6/17/96		16.34				No MPELEV
GM-3T	PF	12/13/96		16.82				No MPELEV
GM-3T	PF	2/10/97		16.85	16.81	0.04		No MPELEV
GM-3T	PF	9/9/97		17.09	17.07	0.02		No MPELEV
OR-1	RIVER	2/26/96	419.55	6.83			412.72	
OR-1	RIVER	6/17/96	419.55	8.40			411.15	
OR-1	RIVER	12/13/96	419.55	4.58			414.97	
OR-1	RIVER	2/10/97	419.55	8.03			411.52	
OR-1	RIVER	9/9/97	419.55	8.47			411.08	
OR-2	RIVER	2/26/96	442.94	30.8			412.14	
OR-2	RIVER	6/17/96	442.94	32.29			410.65	
OR-2	RIVER	12/13/96	442.94	28.63			414.31	
OR-2	RIVER	2/10/97	442.94	31.91			411.03	
OR-2	RIVER	9/9/97	442.94	32.2			410.74	
P-1	UA	2/26/96	451.08	37.36			413.72	
P-1	UA	6/17/96	451.08	38.47			412.61	
P-1	UA	12/13/96	451.08	36.5			414.58	
P-1	UA	2/10/97	451.08	38.45			412.63	
P-1	UA	9/9/97	451.08	39.09			411.99	
P-2	UA	2/26/96	456.15	42.51			413.64	
P-2	UA	6/17/96	456.15	44.04			412.11	
P-2	UA	12/13/96	456.15	41.1			415.05	

Water-Level Elevation Database,
Wheeling-Pittsburgh Steel Corporation,
Follansbee, West Virginia.

Well ID	Unit Monitored	Measuring Date	M.P. *Elevation	Depth to Water (feet)	Depth to Product (feet)	Oil Thickness (feet)	Groundwater *Elevation	Comment
P-2	UA	2/10/97	456.15	43.77			412.38	
P-2	UA	9/9/97	456.15	44.39			411.76	
PDA-1	UA/FP	2/26/96	495.32	40.81			454.51	
PDA-1	UA/FP	6/17/96	495.32	39.07			456.25	
PDA-1	UA/FP	8/15/96	495.32	40.16			455.16	
PDA-1	UA/FP	12/13/96	495.32	41.21			454.11	
PDA-1	UA/FP	2/10/97	495.32	40.41			454.91	
PDA-1	UA/FP	9/9/97	495.32	41.36			453.96	
PDA-2	UA/FP	2/26/96	442.39	25.1			417.29	
PDA-2	UA/FP	6/17/96	442.39	25.70			416.69	
PDA-2	UA/FP	8/15/96	442.39	26.42			415.97	
PDA-2	UA/FP	12/13/96	442.39	25.32			417.07	
PDA-2	UA/FP	2/10/97	442.39	26.41			415.98	
PDA-2	UA/FP	9/9/97	442.39	27.34			415.05	
PDA-3	UA/FP	2/26/96	441.95	24.91			417.04	
PDA-3	UA/FP	6/17/96	441.95	25.55			416.4	
PDA-3	UA/FP	8/15/96	441.95	26.36			415.59	
PDA-3	UA/FP	12/13/96	441.95	24.98			416.97	
PDA-3	UA/FP	2/10/97	441.95	26.17			415.78	
PDA-3	UA/FP	9/9/97	441.95	27.12			414.83	
PDA-4	UA/FP	2/26/96	442.96	25.05			417.91	
PDA-4	UA/FP	6/17/96	442.96	25.57			417.39	
PDA-4	UA/FP	8/15/96	442.96	26.49			416.47	
PDA-4	UA/FP	12/13/96	442.96	25.7			417.26	
PDA-4	UA/FP	2/10/97	442.96	26.41			416.55	
PDA-4	UA/FP	9/9/97	442.96	27.44			415.52	
R-210	LA	2/26/96	446	32.49			413.51	
R-210	LA	6/17/96	446	34.10			411.9	
R-210	LA	8/15/96	446	34.24			411.76	
R-210	LA	12/13/96	446	30.87			415.13	
R-210	LA	2/10/97	446	33.69			412.31	
R-210	LA	9/9/97	446	34.3			411.7	
R-310	BR	2/26/96	446.12	32.1			414.02	
R-310	BR	6/17/96	446.12	33.99			412.13	
R-310	BR	12/13/96	446.12	31.81			414.31	
R-310	BR	2/10/97	446.12	33.35			412.77	
R-310	BR	9/9/97	446.12	34.42			411.7	
RSA-1	UA/FP	2/26/96	496.04	45.05			450.99	
RSA-1	UA/FP	6/17/96	496.04	43.54			452.5	
RSA-1	UA/FP	8/15/96	496.04	44.01			452.03	
RSA-1	UA/FP	12/13/96	496.04	45.15			450.89	
RSA-1	UA/FP	2/10/97	496.04	44.88			451.16	
RSA-1	UA/FP	9/9/97	496.04	44.87			451.17	
RSA-2	UA/FP	2/26/96	443.81	25.36			418.45	
RSA-2	UA/FP	6/17/96	443.81	25.97			417.84	

Water-Level Elevation Database,
Wheeling-Pittsburgh Steel Corporation,
Follansbee, West Virginia.

Well ID	Unit Monitored	Measuring Date	M.P. *Elevation	Depth to Water (feet)	Depth to Product (feet)	Oil Thickness (feet)	Groundwater *Elevation	Comment
RSA-2	UA/FP	8/15/96	443.81	26.92			416.89	
RSA-2	UA/FP	12/13/96	443.81	26.19			417.62	
RSA-2	UA/FP	2/10/97	443.81	26.92			416.89	
RSA-2	UA/FP	9/9/97	443.81	27.9			415.91	
RSA-3	UA/FP	2/26/96	442	24.53			417.47	
RSA-3	UA/FP	6/17/96	442	25.09			416.91	
RSA-3	UA/FP	8/15/96	442	26.11			415.89	
RSA-3	UA/FP	12/13/96	442	25.62			416.38	
RSA-3	UA/FP	2/10/97	442	26.29			415.71	
RSA-3	UA/FP	9/9/97	442	27.17			414.83	
RW-1	PF	2/26/96	442.98	11.07			431.91	
RW-1	PF	6/17/96	442.98	10.78			432.2	
RW-1	PF	12/13/96	442.98	11.26			431.72	
RW-1	PF	2/10/97	442.98	11.03			431.95	
RW-1	PF	9/9/97	442.98	NM			NM	
RW-2	PF	2/26/96	442.98	10.55	10	0.55	432.9	
RW-2	PF	6/17/96	442.98	9.93	9.66	0.27	433.28	
RW-2	PF	12/13/96	442.98	10.89	10.7	0.19	432.25	
RW-2	PF	2/10/97	442.98	10.66	10.61	0.05	432.36	
RW-2	PF	9/9/97	442.98	NM			NM	
SDB-1	SWR	2/26/96	490.2	54.08			436.12	
SDB-1	SWR	6/17/96	490.2	53.66			436.54	
SDB-1	SWR	8/15/96	490.2	54.3			435.9	
SDB-1	SWR	12/13/96	490.2	54.32			435.88	
SDB-1	SWR	2/10/97	490.2	54.14			436.06	
SDB-1	SWR	9/17/97	490.2	54.48			435.72	
SDB-2	SWR	2/26/96	488.18	55.08			433.1	
SDB-2	SWR	6/17/96	488.18	55.08			433.1	
SDB-2	SWR	12/13/96	488.18	55.34			432.84	
SDB-2	SWR	2/10/97	488.18	55.19			432.99	
SDB-2	SWR	9/9/97	488.18	55.44			432.74	
SDB-3	SWR	2/26/96	488.94	Dry, >41.6			<447.34	
SDB-3	SWR	6/17/96	488.94	Dry, >41.6			<447.34	
SDB-3	SWR	12/13/96	488.94	Dry, >41.6			<447.34	
SDB-3	SWR	2/10/97	488.94	Dry, >41.6			<447.34	
SDB-3	SWR	9/9/97	488.94	Dry, >41.6			<447.34	
SDB-4	SWR	2/26/96	488.58	51.93			436.65	
SDB-4	SWR	6/17/96	488.58	51.98			436.6	
SDB-4	SWR	8/15/96	488.58	52.23			436.35	
SDB-4	SWR	12/13/96	488.58	52.21			436.37	
SDB-4	SWR	2/10/97	488.58	51.99			436.59	
SDB-4	SWR	9/17/97	488.58	52.25			436.33	
SDB-5	SWR	2/26/96	488.67	48.2			440.47	
SDB-5	SWR	6/17/96	488.67	48.37			440.3	
SDB-5	SWR	12/13/96	488.67	48.32			440.35	

Water-Level Elevation Database,
Wheeling-Pittsburgh Steel Corporation,
Follansbee, West Virginia.

Well ID	Unit Monitored	Measuring Date	M.P. *Elevation	Depth to Water (feet)	Depth to Product (feet)	Oil Thickness (feet)	Groundwater *Elevation	Comment
SDB-5	SWR	2/10/97	488.67	48.24			440.43	
SDB-5	SWR	9/9/97	488.67	Dry, >48.38			<440.37	
VA-1	UA	2/26/96	440.67	27.46			413.21	
VA-1	UA	6/17/96	440.67	29.07			411.6	
VA-1	UA	8/15/96	440.67	29.15			411.52	
VA-1	UA	12/13/96	440.67	25.54			415.13	
VA-1	UA	2/10/97	440.67	28.59			412.08	
VA-1	UA	9/9/97	440.67	29.23			411.44	
VA-1A	LA	2/26/96	422.15	9.35			412.8	Damaged
VA-1A	LA	6/17/96	422.15	10.96			411.19	
VA-1A	LA	12/13/96	422.15	7.27			414.88	
VA-1A	LA	2/10/97	422.15	10.48			411.67	
VA-1A	LA	9/9/97	422.15	11.12			411.03	
VA-2	UA	2/26/96	442	28.7			413.3	
VA-2	UA	6/17/96	442	30.23			411.77	
VA-2	UA	8/15/96	442	30.41			411.59	
VA-2	UA	12/13/96	442	27.1			414.9	
VA-2	UA	2/10/97	442	29.79			412.21	
VA-2	UA	9/9/97	442	30.49			411.51	
VA-3	UA	2/26/96	453.66	40.16			413.5	
VA-3	UA	6/17/96	453.66	41.57			412.09	
VA-3	UA	8/15/96	453.66	41.84			411.82	
VA-3	UA	12/13/96	453.66	38.88			414.78	
VA-3	UA	2/10/97	453.66	41.39			412.27	
VA-3	UA	9/9/97	453.66	42.02			411.64	
VP-2	PF	2/26/96		12.72				No MPELEV
VP-2	PF	6/17/96		12.83				No MPELEV
VP-2	PF	8/15/96		14.56				No MPELEV
VP-2	PF	12/13/96		14.6				No MPELEV
VP-2	PF	2/10/97		14.6				No MPELEV
VP-2	PF	9/9/97		14.63				No MPELEV

UA: Upper Portion Alluvial Aquifer
LA: Lower Portion Alluvial Aquifer
SWR: Soil & Rock Rubble/Rock.
PS: Perched Zone, Silty Sand.
PF: Perched Zone, Fill.
FP: Fully Penetrating Well.
BR: Bedrock
NM: Not Measured.
MPELEV: Measuring Point Elevation.
M.P.: Measuring Point.
*: Elevation referenced to plant datum.

WPSC\FOLLANS\DOCC\APP\WAT-LEV.XLS

APPENDIX B

COG DRIP LEG INVENTORY

COG Drip Leg Inventory,
Steubenville East Coke Plant,
Wheeling-Pittsburgh Steel Corporation,
Follansbee, West Virginia

Number	COG Drip Leg Description	Location	Formerly Discharged to Ground?	SWMU I.D.
1	Battery #1 Underfire	East of Coal Hopper		
2	Final Cooler Inlet	South of Final Coolers		
3	Benzol Scrubbers	Bottom of Both Scrubbers		
4	#1 Fuel Gas Precipitator	On #1 Fuel Gas Precipitator	Yes	B-30
5	Inlet to Fuel Gas Precipitators	South of Fuel Gas Precipitators	Yes	B-30
6	#2 Fuel Gas Precipitators	On #2 Fuel Gas Precipitators	Yes	B-30
7-12	Bottom Drains (2), Elephant Ears Drains (4)	Off of the Fuel Gas Precipitators		
13	North Exhausters Inlet	North of Exhausters		
14	South Exhausters Inlet	South of Exhausters/East of Barometric Condenser		
15-26	Exhauster Drains (4 exhausters, 3@)	Exhauster Floor and Floor Below		
27	Inlet to #1 Booster	Basement of Exhauster Building		
28-51	Booster Steamouts (3 boosters, 8@)	Exhauster Floor		
52	Low Pressure Gas Drip Downstream of Booster	Northeast Corner of Exhauster Building		
53	High Pressure Gas Drip Downstream of Booster	10' North of NE Corner of Exhauster Building	Yes	B-30
54	Gas Holder Water Overflow	East Side of Gas Holder		
55	Oil and Muck from Gas Holder	Southwest Side of Gas Holder		
56	#1 Saturator Inlet	Northwest of Saturator #1		
57	#2 Saturator Inlet	Southwest of #2 Saturator		
58	#1 and #2 Saturator Outlet	Southwest of #1 Saturator		
59-62	Detarrer Drains (4)	Southeast Corner of Exhauster Building		
63	Ammonia Vapor Inlet to Saturator	Northeast Corner of Salt Storage Building	Yes	B-30
64	Desulf Drips	East of Saturators		
65	#2 Battery Underfire	Northwest of Decanter	Yes	B-30
66	#3 Battery Underfire	West of Decanter	Yes	B-30
67	#3 Battery Underfire	Southwest of Decanter	Yes	B-30
68	Boiler House Drip	West of Boiler House	Yes	C-20
69	Sinter Plant Drip	East of Boiler House	Yes	H-12
70	COG to Sinter Plant	Southeast of Reaction Chamber	Yes	B-30
71	Acid Gas to Destructor Inlet	Southeast of Reaction Chamber	Yes	B-30

COG Drip Leg Inventory,
Steubenville East Coke Plant,
Wheeling-Pittsburgh Steel Corporation,
Follansbee, West Virginia

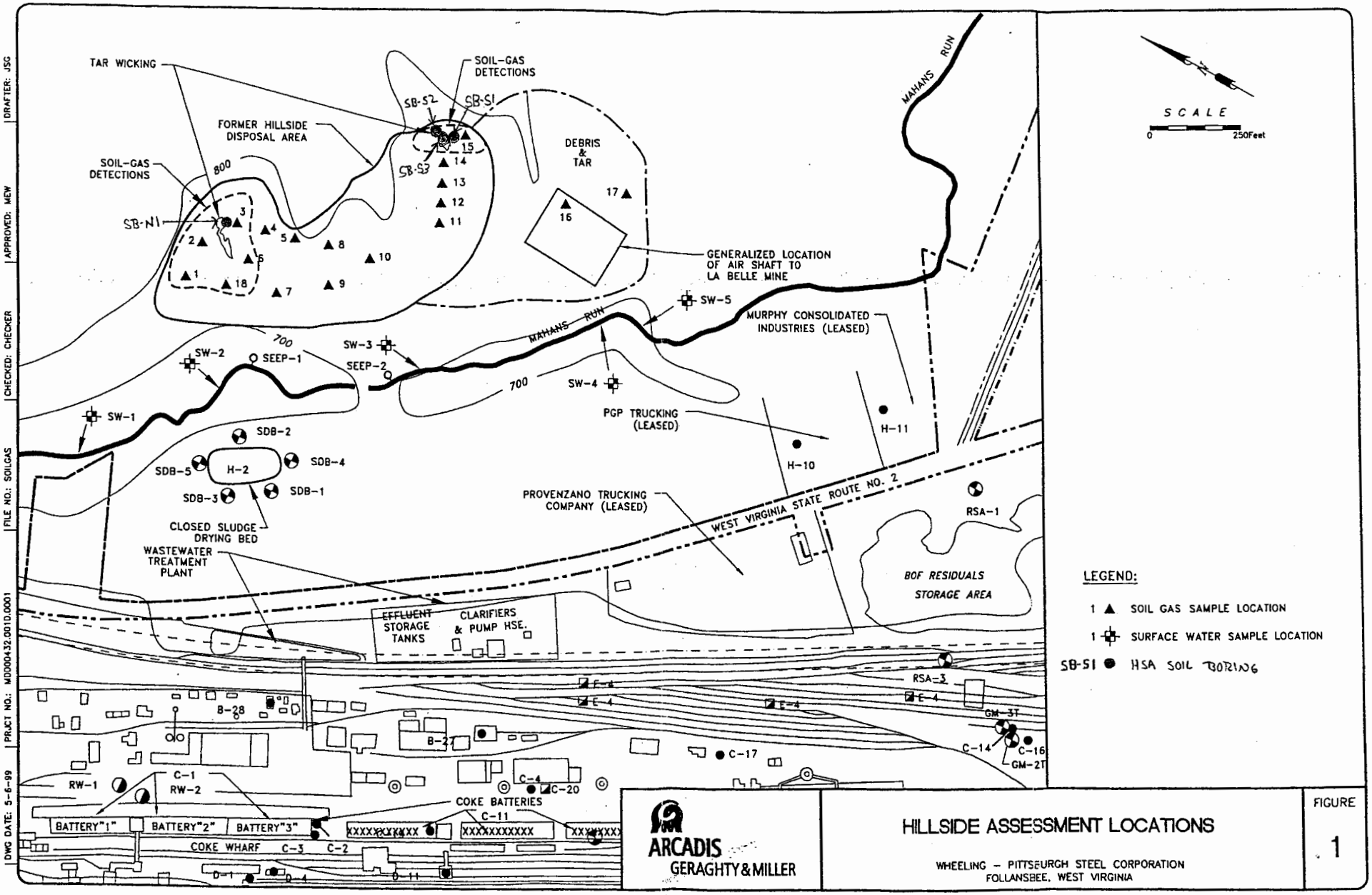
Number	COG Drip Leg Description	Location	Formerly Discharged to Ground?	SWMU I.D.
72	Bleeder Seal Drip	Southeast of Gas Holder		
73	High Pressure Drip Before Bridge	East of Pipe Bridge	Yes	A-14
74	Low Pressure Drip Before Bridge	East of Pipe Bridge	Yes	A-14
75	#1 Primary Cooler Outlet	North of #1 Primary Cooler		
76	#2 Primary Cooler Outlet	North of #2 Primary Cooler		
77	Elbow Downstream of Primary Coolers	Northwest of Primary Cooler		
78	Sinter Plant COG Supply Line Drip	West of Coke Plant Shower Room	Yes	E-4
79	Sinter Plant COG Supply Line Drip	East of #8 Battery North Crossover	Yes	E-4
80	Sinter Plant COG Supply Line Drip	East of #8 Battery Quench Station	Yes	E-4
81	Sinter Plant COG Supply Line Drip	Northeast of Sinter Plant Shower Room	Yes	E-4
82	Sinter Plant COG Supply Line Drip	East of C.U.R.D. North Ore Pile	Yes	E-4
83	Sinter Plant COG Supply Line Drip	East of Sinter Plant Office	Yes	E-4
84	Sinter Plant COG Supply Line Drip	East of Sinter Plant Office	Yes	E-4
85	Sinter Plant COG Supply Line Drip	North of Sinter Plant Canteen	Yes	F-4

APPENDIX C

HILLSIDE PRELIMINARY INVESTIGATION RESULTS

C1 – Figure 1 Hillside Assessment Locations
C2 – Soil Boring Logs
C3 – Soil Gas Analytical Results
C4 – Surface Water Analytical Results
C5 – Tar Seep Sample Analytical Results

C1 – Figure 1 Hillside Assessment Locations


TAR WICKING
SOIL-GAS DETECTIONS
FORMER HILLSIDE DISPOSAL AREA
SOIL-GAS DETECTIONS
SB-S2
SB-S1
SB-S3
SB-N1
800
700
700
DEBRIS & TAR
GENERALIZED LOCATION OF AIR SHAFT TO LA BELLE MINE
MAHANS RUN
MAHANS RUN
SW-5
MURPHY CONSOLIDATED INDUSTRIES (LEASED)
SW-2
SEEP-1
SW-3
SEEP-2
SW-4
SW-1
PGP TRUCKING (LEASED)
H-11
H-10
SDB-2
SDB-5
H-2
SDB-4
SDB-3
SDB-1
CLOSED SLUDGE DRYING BED
WASTEWATER TREATMENT PLANT
PROVENZANO TRUCKING COMPANY (LEASED)
WEST VIRGINIA STATE ROUTE NO. 2
RSA-1
BOF RESIDUALS STORAGE AREA
EFFLUENT STORAGE TANKS
CLARIFIERS & PUMP HSE.
RSA-3
B-28
B-27
C-17
GM-3T
C-14
C-16
GM-2T
RW-1
C-1
RW-2
C-4
C-20
COKE BATTERIES
C-11
BATTERY"1"
BATTERY"2"
BATTERY"3"
COKE WHARF
C-3
C-2
D-1
D-4
D-11
SCALE
0
250Feet
LEGEND:
1 ▲ SOIL GAS SAMPLE LOCATION
1 SURFACE WATER SAMPLE LOCATION
SB-S1 ● HSA SOIL BORING
DRAFTER: JSG
APPROVED: MEW
CHECKED: CHECKER
FILE NO.: SOILGAS
PRJCT NO.: MD000432.0010.0001
DWG DATE: 5-6-99
ARCADIS GERAGHTY & MILLER
HILLSIDE ASSESSMENT LOCATIONS
WHEELING – PITTSBURGH STEEL CORPORATION
FOLLANSBEE, WEST VIRGINIA
FIGURE
1

C2 – Soil Boring Logs

ARCADIS GERAGHTY & MILLER

mple/Core Log

Boring/Well SB-S1 Project/No. ND000432.0010.00002 Page ___ of ___

Site Location Wheeling Pitt, Follansbee - WV Drilling Started 5/12/99 Drilling Completed 5/12/99

Total Depth Drilled 8.9' Feet Hole Diameter 4.25 inches Type of Sample/ Coring Device splitspoon

Length and Diameter of Coring Device 2' long Sampling Interval Cont. feet

Land-Surface Elev. ___ feet ☐ Surveyed ☐ Estimated Datum ___

Drilling Fluid Used ___ Drilling Method auger

Drilling Contractor Penn Drill Driller Tom Helper Paul

Prepared By David Peters Hammer Weight 150 Hammer Drop 30 ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	Headspace ppm
6	1.5	6"	6/12/10	Black silt and f.1/2.5/(ML) - Dry coal tar, mixed with brownish yellow 10YR6/6 silt, micaceous	334
9 1.5	3.0	10"	8/12/18	Black coal tar 2.5/ mixed with silt, very dark grayish brown 10YR3/2, trace fine sands, Dry	>250c
12 4	6	10"	3/3 3/21	yellowish brown 10YR 5/6 silt, mixed with coal tar black, Dry, mixture is very dark grayish brown, trace fine sands	>250c
8 6	8	16"	12/31 46/36	Mostly dense coal tar black 2.5/, trace silt and coarse sand, very stiff, 3" of sludge	>250c
30 8	10	12"	50/2"	Refusal at 8.9', Dump to coal tar on top of rock/fill material	>250c

ARCADIS GERAGHTY & MILLER

Sample/Core Log

Boring/Well SB-52 Project/No. NJ000432.0010.00002 Page ___ of ___

Site Location Wheeling Pitt, Follansbee, WV Drilling Started 5/12/99 Drilling Completed 5/12/99

Total Depth Drilled 11.5 Feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Splitspoon

Length and Diameter of Coring Device 2' long Sampling Interval Cont. feet

Land-Surface Elev. ___ feet ☐ Surveyed ☐ Estimated Datum ___

Drilling Fluid Used ___ Drilling Method auger

Drilling Contractor Penn Drill Driller Tom Helper Paul

Prepared By David Peters Hammer Weight 140 Hammer Drop 30 ins.

Splitspoon Pen	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	Headspace (ppm)
25	0	2	20"	6/22 22/13	Damp-coal tar-Black 2.5/	>250
2500	2	4	16"	12/10 4/14	Damp-coal tar-Black 2.5/ with trace angular gravels	>250
2500	4	6	8"	12/14 6/7	Damp-coal tar-Black 2.5/ with trace white to gray subangular gravels-fill	>250
2500	6	8	4"	3/3 3/5	moist coal tar and sludge-very dark gray 3/N, trace subangular white to gray fill gravels	>250
2500	8	10	6"	41/50/5"	moist coal tar and sludge, Reddish gray 3/4 subangular white gravel fill, Black fill/slag	>250
25	10	12	2"	47/50/2"	cinter rock, gray, dry	26

Sampleig.xls

ARCADIS GERAGHTY & MILLER

mple/Core Log

Boring/Well SB-53 Project/No. MD000432.0010.00002 Page ___ of ___

Site Location Wheeling Pitt, Follansbee, WV Drilling Started 5/12/99 Drilling Completed 5/13/99

Total Depth Drilled 30 Feet Hole Diameter 4.25 inches Type of Sample/ Coring Device Splitspoon

Length and Diameter of Coring Device 2' long Sampling Interval Cont. feet

Land-Surface Elev. ___ feet ☐ Surveyed ☐ Estimated Datum ___

Drilling Fluid Used ← Drilling Method auger

Drilling Contractor Penn Drill Driller Tom Helper Paul

Prepared By David Peters Hammer Weight 140 Hammer Drop 30 ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	Headspace ppm
0	2	18"	5/15 9/18	First 15" Dark brown 10YR 3/3 silt mixed with black 2.5Y coal tar-clay, trace gravels, last 3" sludge	72500
2	4	12"	44/65/5"	Sludge and angular gravels, black 2.5Y	72500
4	6	8"	6/16 28/6	yellowish brown 10YR 5/6 sandy silt (ML), fine to med grain sands, Dry, trace coal tar, trace fine gravels	72500
6	8	10"	26/34 3/4	coal tar and silt black 2.5Y, fill from plant pink and olive gray rock. subangular	72500
8	10	12"	16/23 28/68	gray to orange rock. subangular - fill, first 3" dry coal tar, last 9" dark brown 7.5YR 3/3 silt and sand (ML), fine to coarse sands	72500
10	12	15"	52/40 48/46	cinter, plant fill, trace coal tar, dark brown 7.5YR 3/3 silt and sands, fine to coarse sands	72500
12	14	0.5"	50/0"	Fill rock in bottom of spoon	72500
14	16	20"	30/41 22/18	fill, cinter, coal tar odor, trace dry coal tar, Dark brown 7.5YR 3/3 fill, silt and sands, fine to coarse sands	72500
[illegible]	20	2"	[illegible]	sludge - probably from augers	72500
20	22	20"	30/25 30/40	cinter, fill, trace coal tar, Dark brown 7.5YR 3/3 silt and sand, fine to coarse sands	8534

Sampleig.xls

ARCADIS GERAGHTY & MILLER

Sample/Core Log (Cont.d)

Boring/Well SB-53

Prepared by David Peters

	Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	
33	24	26	4"	16/25 30/50/3"	Wet- sludge, angular rocks	>250
5	30	32	8"	11/12 13/19	Dense, silt, light yellowish brown 2.5Y 6/4, Dry, trace clay	682

Samplelg.xls

ARCADIS GERAGHTY & MILLER

Sample/Core Log

Boring/Well SB-N1 Project/No. MD000432.0010.00002 Page ___ of ___

Site Location Wheeling Pitt, Follansbee, WV Drilling Started 5/13/99 Drilling Completed 5/13/99

Total Depth Drilled 35 Feet Hole Diameter 4.25 inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2' long Sampling Interval Cont. feet

Land-Surface Elev. ___ feet ☐ Surveyed ☐ Estimated Datum ___

Drilling Fluid Used — Drilling Method auger

Drilling Contractor Penn Drill Driller Tom Helper Paul

Prepared By David Peters Hammer Weight 140 Hammer Drop 30 ins.

Split spoon Depth From	To	Sample/Core Depth (feet below land surface) Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	Headspace Ppm
52 0	2	6"	1/2 2/4	Dry coal tar - black 2.5/	7250
968 2	4	8"	2/2 3/3	Dry coal tar, black, 2" of sandy silt (ML), moist brownish yellow 10YR 6/6	7250
24 4	6	10"	5/6 7/10	silty sands (SM), fine sands, damp to moist, ang. to gravels dark yellowish brown 10YR 4/4., coal tar color	109
80 6	8	4"	13/8 8/10	silty clays (CL), fine to coarse sands, damp to moist, angular gravels, dark yellowish brown 10YR 4/4, coal tar color	7200
64 8	10	18"	7/6 8/18	silty clays (CL), fine to coarse sands, damp to moist, angular gravels, dark yellowish brown 10YR 4/4, trace coal tar	7250
906 10	12	16"	24/34 16/17	Dry coal tar, black 2.5Y	7250
2500 12	14	20"	6/12 14/18	Coal tar, damp to wet sludge 2.5Y black	7250
2500 16	18	24"	38/38 35/18	Coal tar, damp to wet sludge 2.5Y black	7250
20	22	20"	21 4/3	Dry coal tar and fine sands, loose, damp, stained black to light gray 7/ (SP)	725
82 22	24	8"	4/14 50/1"	fine sands and dry coal tar, loose sands, damp stained light gray to black 7/ (SP)	725

ARCADIS GERAGHTY & MILLER

Sample/Core Log (Cont.d)

Boring/Well SB-N1

Prepared by David Peters

Page ____ of ____

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Time/Hydraulic Pressure or Blows per 6 Inches	Sample/Core Description	
25	27	10"	15/24 48/50/2"	Sandy silt, fine sands, Brownish yellow 10YR 6/6, dry	522
				last 6" - Hard dense silt, light yellowish brown, 2.5Y 6/4 (mL)	
30	32	4"	50/3"	Hard, dense, silt, light yellowish brown 2.5Y 6/4 (mL)	2SCC
35	37	6"	50/0"	Hard dense, silt, light yellowish brown 2.5Y 6/4	6SC
				last 2" Hard dense silt. grayish green 5/2 (mL)	

Sampleig.xls

C3 – Soil Gas Analytical Results

1. BLE 1
Hillside Area-Follansbee Coke Plant
Soil-Gas Analyses

	Concentrations in PPMV					
Soil-Gas Station	**Benzene**	**Toluene**	**Ethylbenzene**	**M&P-Xylene**	**O-Xylene**	**Napthalene**
SG-1	**0.09**	nd	nd	nd	nd	nd
SG-2	**0.21**	nd	nd	nd	nd	nd
SG-3	**0.41**	nd	nd	nd	nd	nd
SG-4	nd	nd	nd	nd	nd	nd
SG-5	nd	nd	nd	nd	nd	nd
SG-6	**0.40**	**0.06**	nd	nd	nd	nd
SG-7	nd	nd	nd	nd	nd	nd
SG-8	nd	nd	nd	nd	nd	nd
SG-9	nd	nd	nd	nd	nd	nd
SG-10	nd	nd	nd	nd	nd	nd
SG-11	nd	nd	nd	nd	nd	nd
SG-12	nd	nd	nd	nd	nd	nd
SG-13	nd	nd	nd	nd	nd	nd
SG-14	nd	nd	nd	nd	nd	nd
SG-15	**0.44**	**0.44**	nd	**0.24**	**0.09**	**0.08**
SG-16	nd	nd	nd	nd	nd	nd
SG-17	nd	nd	nd	nd	nd	nd
SG-18	**0.12**	nd	nd	nd	nd	nd

Note: nd=not detected above method detection limit of 0.05 ppmv

VAPORTECH Services, Inc.

FAX COVER

724-898-2622
1158 Pittsburgh Road, Suite 201, Valencia, PA 16059

To: MARK Wagner / MIKE DANT	From : JOE MONTORE
Company : Arcadis G+M	Company : Vaportech Services, Inc.
Fax Number : 410-987-4392	Fax Number : 724-898-2633

Subject : DATA report and Collection Log.

Number of pages : 4 Date : 5-6-99 Time : 1115

MESSAGE

Mark / Mike,

Attached is your DATA and collection log from the ~~Titts~~ Wheeling Pittsburgh Steel project. A hard copy will be mailed shortly. Thanks for using Vaportech!

Joe.

Vaportech Services, Inc

CLIENT: Arcadis
LOCATION: Wheeling Pitt steel, Follansbee, WVA
PROJECT(#): 991035
PAGE: 1 OF: ____

********** SAMPLE COLLECTION LOG **********

SAMPLER NAME(S): AJC/ DJM

SAMPLE ID#	DATE	TIME	SEQ.#	SAMPLE DEPTH	SAMPLE TYPE G	S	W	SAMPLE SIZE	COMMENTS
SB #1	5-4-99	0845	1	-0-	✓			22mL	Ambient Air Sample
SG #7		0853	2	3.5'	✓				
SG # 9		0905	3	3.5	✓				
SG # 10		0908	4	3.5	✓				
SG # 8		0925	5	3.5'	✓				
SG #5		0938	6	3.5'	✓				
SG #4		0942	7	3.5'	✓				
SB #2		0948	8	-0-	✓				Ambient Air Sample
SG #3		0955	9	3	✓				
SG #2		1000	10	3.5'	✓				
SG #1		1020	11	2.5'	✓				
SG #6		1028	12	3.5	✓				
SG #18		1032	13	3.5	✓				
SG #17		1055	14	3.5	✓				
SG #16		1100	15	3'	✓				
SB #3		1110	16	-0-	✓				Ambient Air Sample
SG #15		1112	17	3.5'	✓				
SG #11		1119	18	3.5'	✓				
SG #12		1124	19	3.5'	✓				
SG #13		1131	20	3.5'	✓				
SG #14		1137	21	3.5'	✓				
SG #14A		1138	22	3.5'	✓				Duplicate
SB #4			23	-0-	✓				

Vaportech Services, Inc.

AGM1-992183

Arcadis Geraghty & Miller
Project: Wheeling Pittsburgh Steel Corp

CONCENTRATIONS IN PPMV

COMPOUND	SG-1	SG-2	SG-3	SG-4	SG-5	SG-6	MDL
BENZENE	0.09	0.21	0.41	ND	ND	0.40	0.05
TOLUENE	ND	ND	ND	ND	ND	0.06	0.05
ETHYL BENZENE	ND	ND	ND	ND	ND	ND	0.05
M&P XYLENE	ND	ND	ND	ND	ND	ND	0.05
O-XYLENE	ND	ND	ND	ND	ND	ND	0.05
NAPHTHALENE	ND	ND	ND	ND	ND	ND	0.05
FILE NAME	V6A2.01A	V6A2.02A	V6A2.03A	V6A2.04A	V6A2.05A	V6A2.06A	
DATE SAMPLED	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	
DATE RECEIVED	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	
DATE ANALYZED	05/04/99	05/04/99	05/05/99	05/05/99	05/05/99	05/05/99	

MDL - denotes lower 'Method Detection Limit'
ND - denotes 'Not Detected' at or above the lower method detection limit

COMPOUND	SG-7	SG-8	SG-9	SG-10	SG-11	SG-12	MDL
BENZENE	ND	ND	ND	ND	ND	ND	0.05
TOLUENE	ND	ND	ND	ND	ND	ND	0.05
ETHYL BENZENE	ND	ND	ND	ND	ND	ND	0.05
M&P XYLENE	ND	ND	ND	ND	ND	ND	0.05
O-XYLENE	ND	ND	ND	ND	ND	ND	0.05
NAPHTHALENE	ND	ND	ND	ND	ND	ND	0.05
FILE NAME	V6A2.07A	V6A2.08A	V6A2.09A	V6A2.10A	V6A2.11A	V6A2.12A	
DATE SAMPLED	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	
DATE RECEIVED	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	
DATE ANALYZED	05/05/99	05/05/99	05/05/99	05/05/99	05/05/99	05/05/99	

MDL - denotes lower 'Method Detection Limit'
ND - denotes 'Not Detected' at or above the lower method detection limit

Vaportech Services, Inc.

AGM1-992183

Arcadis Geraghty & Miller
Project: Wheeling Pittsburgh Steel Corp

CONCENTRATIONS IN PPMV

COMPOUND	SG-13	SG-14	SG-15	SG-16	SG-17	SG-18	MDL
BENZENE	ND	ND	0.44	ND	ND	0.12	0.05
TOLUENE	ND	ND	0.44	ND	ND	ND	0.05
ETHYL BENZENE	ND	ND	ND	ND	ND	ND	0.05
M&P XYLENE	ND	ND	0.24	ND	ND	ND	0.05
O-XYLENE	ND	ND	0.09	ND	ND	ND	0.05
NAPHTHALENE	ND	ND	0.08	ND	ND	ND	0.05
FILE NAME	V6A2.13A	V6A2.14A	V6A2.16A	V6A2.17A	V6A2.18A	V6A2.19A	
DATE SAMPLED	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	
DATE RECEIVED	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	
DATE ANALYZED	05/05/99	05/05/99	05/05/99	05/05/99	05/05/99	05/05/99	

DL - denotes lower 'Method Detection Limit'
D - denotes 'Not Detected' at or above the lower method detection limit

COMPOUND	SG-14-DUP	SB-1	SB-2	SB-3	SB-4	MDL
BENZENE	ND	ND	ND	ND	ND	0.05
TOLUENE	ND	ND	ND	ND	ND	0.05
ETHYL BENZENE	ND	ND	ND	ND	ND	0.05
M&P XYLENE	ND	ND	ND	ND	ND	0.05
O-XYLENE	ND	ND	ND	ND	ND	0.05
NAPHTHALENE	ND	ND	ND	ND	ND	0.05
	ND	ND	ND	ND	ND	
FILE NAME	V6A2.15A	V6A2.00A	V6A2.20A	V6A2.21A	V6A2.22A	
DATE SAMPLED	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	
DATE RECEIVED	05/04/99	05/04/99	05/04/99	05/04/99	05/04/99	
DATE ANALYZED	05/05/99	05/05/99	05/05/99	05/05/99	05/05/99	

MDL - denotes lower 'Method Detection Limit'
ND - denotes 'Not Detected' at or above the lower method detection limit

C4 – Surface Water Analytical Results

Page ___ of ___

SURFACE WATER SAMPLE LOG

Sample ID WPSC/SW1
Date 5-3-99
Time 1450
Weather Sunny-70s

Project/No. MD000322.0010.00002
Sampling Personnel MD/DP

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body MAHANS RUN
Depth of Water 12"
Velocity 0.3 Ft. per second/CALM
Other Comments
Substrate Description SILTY
Location DOWN STREAM

Description of Nearby Vegetation UPLAND WOODLAND / SPARSE UNDERSTORY

FIELD PARAMETERS:

Sample Method Grab sample - tri-pour beaker
Sample Description Use beakers to take sample and pour directly into sample container.
Temperature (°C)/°F) 18.96
pH 8.85
Dissolved Oxygen % 110.5%/ 10.19 mg/l
SC 810.00 uS/cm
~~Salinity~~ ORP (mV) + 245.2

CONTAINER DESCRIPTION:

From X Lab ___ Geraghty & Miller

Bottle Type	Analysis	Perservative
40mL glass	VOC	HCl
Liter amber	SVOC	None
Liter plastic	CN	NaOH
Liter plastic	Nitrate/Ammonia	H_2SO_4

Page ___ of ___

SURFACE WATER SAMPLE LOG

Sample ID WPSC/SW2
Date 5/3/99
Time 1505
Weather 70's - Sunny

Project/No. M0000432.0010.00002
Sampling Personnel MO/DP

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body MANADS RUN
Depth of Water 12"
Velocity 1 FT PER SECOND / RIPPLES
Other Comments
Substrate Description SILTY
Location MIDSTREAM

Description of Nearby Vegetation UPLAND WOODLAND / FLOODPLAIN GRASSES

FIELD PARAMETERS:

Sample Method Grab sample - tri-pour beaker
Sample Description Use beakers to take sample and pour directly into sample containers.
Temperature (°C/°F) 18.97
pH 8.87
Dissolved Oxygen 103.9% / 9.61 mg/L
SC 770.00 uS/cm
~~Salinity~~ ORP (mV) +243.3

CONTAINER DESCRIPTION: From X Lab ___ Geraghty & Miller

Bottle Type	Analysis	Perservative
40mL VOA	VOA	ACC
Liter Amber	SVOC	None
Liter Plastic	CN	NaOH
Liter Plastic	Nit./Ammonia	H_2SO_4

SURFWAT.FRM/FORMS.ADS

Page ___ of ___

SURFACE WATER SAMPLE LOG

Sample ID WPSC/SW3
Date 5/3/99
Time 1610
Weather 70's - Sunny

Project/No. ND000432.0010.00001
Sampling Personnel ND/DD

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body Mahans Run
Depth of Water 6"
Velocity 1 FT PER SEC
Other Comments
Substrate Description SILTY W/ ROCKS & GRASS
Location ~~UPLAND~~ MIDSTREAM

Description of Nearby Vegetation UPLAND WOODLAND / FLOODPLAIN GRASS

FIELD PARAMETERS:

Sample Method Grab sample - tri-pour beaker
Sample Description Use beaker to collect sample and pour directly into sample container
Temperature (°C/°F) 19.33
pH 8.86
Dissolved Oxygen 107.2 % / 9.83 mg/L
SC 801.00 uS/cm
~~Salinity~~ ORP (mV) + 251.6

CONTAINER DESCRIPTION: From X Lab ___ Geraghty & Miller

Bottle Type	Analysis	Perservative
40mL glass	VOA	HCL
Liter Amber	SVOC	None
Liter plastic	CN	NaOH
Liter plastic	NH/Ammonia	H_2SO_4

SURFWAT.FRM/FORMS.AD5

Page ___ of ___

SURFACE WATER SAMPLE LOG

Sample ID WPSC/SW4
Date 5/3/99
Time 1630
Weather 70's-sunny

Project/No. MD000322 pa0000002
Sampling Personnel MD/DP

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body Mahans Run
Depth of Water 6"
Velocity 1 FT PER SEC.
Other Comments
Substrate Description ROCKY w/ SOME SILT
Location MID STREAM - DOWN FROM WHERE SMALL SEEP CONNECTS w/ MANANS RUN - ALGAE PROMINENT IN SEEP CHANNEL FLOW AREA
Description of Nearby Vegetation UPLAND WOODLAND / FLOODPLAIN GRASS

FIELD PARAMETERS:

Sample Method Grab Sample - Tri-pour beaker
Sample Description Use beaker to collect sample and pour directly into sample container.
Temperature (°C/°F) 18.61
pH 8.74
Dissolved Oxygen 98.6%/9.17 mg/l
SC 808.00 US/cm
~~Salinity~~ ORP (mV) +256.8

CONTAINER DESCRIPTION: From X Lab ___ Geraghty & Miller

Bottle Type	Analysis	Perservative
40mL glass	VOA	HCL
Liter Amber	SVOC	None
Liter plastic	CN	NaOH
Liter plastic	Nit/Ammonia	H_2SO_4

SURFWAT.FRM/FORMS.ADS

Page ___ of ___

SURFACE WATER SAMPLE LOG

Sample ID WPSC/SW5
Date 5/3/99
Time 1645
Weather 70's - sunny

Project/No. NP000322.0010.00002
Sampling Personnel MD/DP

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body Mehaffey Run
Depth of Water 6"
Velocity 1.5 FT. PER SEC.
Other Comments
Substrate Description ROCKY W/ SOME SILT GRASSES PROMINENT
Location UPSTREAM ABOVE WATER FALL

Description of Nearby Vegetation UPLAND WOODLAND

FIELD PARAMETERS:

Sample Method Grab Sample - tri-pour beaker
Sample Description Use beaker to collect sample and pour directly into sample container.
Temperature (°C/°F) 19.06
pH 8.86
Dissolved Oxygen 111.7% / 10.32 mg/L
SC 796.00 uS/cm
~~Salinity~~ ORP (mV) +246.2

CONTAINER DESCRIPTION: From X Lab ___ Geraghty & Miller

Bottle Type	Analysis	Perservative
40 ml glass	VOC	HCL
Liter Amber	SVOC	None
Liter plastic	CN	NaOH
Liter plastic	Nit/Ammonia	H_2SO_4

SURFWAT.FRM/FORMS.ADS

Page ___ of ___

SURFACE WATER SAMPLE LOG

Sample ID WPSC\ Seep1
Date 5/3/99
Time 1525
Weather 70's-sunny

Project/No. MD000432 0010.00002
Sampling Personnel MD/DP

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body _____
Depth of Water _____ Velocity _____
Other Comments _____
Substrate Description _____
Location _____

Description of Nearby Vegetation _____

FIELD PARAMETERS:

Sample Method Grab Sample- Tr.. pour beaker
Sample Description Use beaker to collect sample and pour directly into sample container
Temperature (°C/°F) 16.58 pH 8.57
Dissolved Oxygen 84.2 % 8.18 mg/L SC 768.00 uS/cm
~~Salinity~~ ORP (mV) +257.9

CONTAINER DESCRIPTION: From X Lab ____ Geraghty & Miller

Bottle Type	Analysis	Perservative
40mL glass	VOA	HCL
Liter Amber	SVOC	None
Liter Plastic	CN	NaOH
Liter Plastic	Nitrate/Ammonia	H_2SO_4

SURFWAT.FRM/FORMS.AD5

Page ___ of ___

SURFACE WATER SAMPLE LOG

Sample ID WPSC/Seep2
Date 5/3/99
Time 1725
Weather 70's-Sunny

Project/No. MD00132.0010.0000
Sampling Personnel MD/MD

DESCRIPTION OF SAMPLE LOCATION:

Name of Water Body ___
Depth of Water ___ Velocity ___
Other Comments ___
Substrate Description ___
Location ___

Description of Nearby Vegetation ___

FIELD PARAMETERS:

Sample Method Grab Sample - Tri-pour beaker
Sample Description Use beaker to collect sample pour directly into sample container
Temperature (°C/°F) 14.05 pH 7.73
Dissolved Oxygen 88.3 %/9.06 mg/L SC 601.00 uS/cm
~~Salinity~~ ORP (mV) + 284.7

CONTAINER DESCRIPTION: From X Lab ___ Geraghty & Miller

Bottle Type	Analysis	Perservative
40mL glass	VOC	HCC
Liter Amber	SVOC	None
Liter plastic	CN	NaOH
Liter plastic	Nit/Ammonia	H_2SO_4

SURFWAT.FRM/FORMS.ADS

DO/ORP CALIBRATION FORM

Project Name: Wheeling Pitt

Date: 5/3/99

Project Number: ND000432.0010.00002

Calibrating Personnel: David Peters

Time of Calibration: 1330

Weather Conditions: Sunny-70's

Barometric Pressure: 29.4 inches Hg x 25.4 = 746.76 mm Hg

CALIBRANT	INITIAL READING	VALUE ENTERED	FINAL READING	TIME	TEMPERATURE
pH 7.00	7.15	7.00	7.00	1337	25.24
pH 4.01	4.18	4.01	4.01	1345	25.55
Sc 700	718	731	720	1350	26.48
3682 Zobell solution (221-241)	308	230	230	1403	26.89
DO%	92.2	90.0	98.3	1410	25.40
pH 7.00					
pH 4.01					
Sc 700					
3682 Zobell solution (221-241)					
DO%					

ARCADIS G[illegible]/&MILLER

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____

Project Number/Name WPSC/N000432 [illegible] 2

Project Location Farmington, WV

Laboratory [illegible]

Project Manager Mike [illegible]

Sampler(s)/Affiliation M. [illegible]/ARCADIS/GM
David Petosl ARCADIS/GM

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	8260 VOCs 40 mL Glass Preserved HCL	8270 SVOCs 1 Amber Glass Preserved Ice	CN 1 Amber Glass Preserved NaOH	Nitrate/Nitrite 1 Amber Glass Preserved H2SO4			Remarks	Total
WPSC/SW1	L	5/3/99	1450	2	1	1	1				5
WPSC/SW2	L	5/3/99	1505	2	1	1	1				5
WPSC/SW3	L	5/3/99	1610	2	1	1	1				5
WPSC/SW4	L	5/3/99	1630	2	0	0	0				2
WPSC/SW5	L	5/3/99	1645	2	0	0	0				2
WPSC/Seep1	L	5/3/99	1525	2	0	0	0				2
WPSC/Seep2	L	5/3/99	1725	2	0	0	0				2
Trip Blank		from	Lab	1	0	0	0				1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 24

Relinquished by: [illegible]	Organization: ARCADIS Geo Hydro Mo	Date 5/3/99	Time 1530	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	
Relinquished by: _____	Organization: _____	Date / /	Time _____	Seal Intact?	
Received by: _____	Organization: _____	Date / /	Time _____	Yes No N/A	

Special Instructions/Remarks: _____

Delivery Method: ☐ In Person ☒ Common Carrier Fedex (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

ARCADIS GE[illegible] & MILLER

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page _____

Project Number/Name WPSC/[illegible]432.0016.00002

Project Location Evansbee, WV

Laboratory Lionie

Project Manager Mike Dent

Sampler(s)/Affiliation Mike Dent/ARCADIS G+M
David Peters/ARCADIS G+M

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	~~Lab ID~~ Time	8260 VOC Vial Glass/HCL	8270 SVOC Liter Amber glass Pres: None	CN Liter plastic Pres: NaOH	Nitrate/Ammonia Liter plastic Pres: H_2SO_4			Remarks	Total
WPSC/SW4	L	5/3/99	1630	O	1	1	1				3
WPSC/SW5	L	5/3/99	1645	O	1	1	1				3
WPSC/Seep1	L	5/3/99	1525	O	1	1	1				3
WPSC/Seep2	L	5/3/99	1725	O	1	1	1				3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 12

Relinquished by: David Peters	Organization: ARCADIS Geraghty & Miller	Date 5/3/99	Time 1655	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:

Delivery Method: ☐ In Person ☑ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other _____ (SPECIFY)

TABLE 2
Hillside Area-Follansbee Coke Plant
Surface Water Quality - Mahans Run

Sample I.D.	Location	NITRATE (mg/L	AMMONIA (mg/L)	CYANIDE (mg/L)
SW1	Downstream	1.85	0.22	<0.01
SW2	Midstream	1.57	0.2	<0.01
SEEP1	Midstream	1.84	0.11	<0.01
SEEP2	Midstream	8.48	<0.10	0.05
SW3	Midstream	1.25	0.28	<0.01
SW4	Midstream	4.96	1.49	<0.01
SW5	Upstream	0.11	0.12	<0.01

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

May 18, 1999

Mr. Mark Wagner
ARCADIS Geraghty & Miller, Inc.
1131 Benfield Boulevard
Suite A
Millersville, MD 21108

Dear Mr. Wagner:

Enclosed are the results for the analyses performed in support of the Geraghty & Miller, Inc., Industrial Plant Project, Project No. WPSC, SDG. SW1. The samples were taken from the field on May 3, 1999 received at Ceimic Corporation on May 4, 1999.

These samples were reported under the Ceimic Project Number 990381, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Manager

NP/jmf

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

VOLATILE ANALYSES

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

METHOD BLANK
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Ceimic Project: 990381

Blank ID: V120508-B1

Date Sample Analyzed: 05/08/99

Matrix: Aqueous

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

METHOD BLANK
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Blank ID: V120508-B1

Matrix: Aqueous

Ceimic Project: 990381

Date Sample Analyzed: 05/08/99

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Tetrachloroethene	ND	5
,2,2-Tetrachloroethane	ND	5
uene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	106	62 - 139
Dibromofluoromethane	104	75 - 125
Toluene-d8	100	75 - 125
Bromofluorobenzene	97	75 - 125

Reported by: _____ Approved by: _____

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW1

Laboratory ID: 990381-01

Date Sampled: 05/03/99

Date Sample Analyzed: 05/08/99

Date Sample Received: 05/04/99

Associated Method Blank: V120508-B1

Matrix: Aqueous

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW1

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-01

Date Sample Analyzed: 05/08/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: µg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Tetrachloroethene	ND	5
1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	110	62 - 139
Dibromofluoromethane	102	75 - 125
Toluene-d8	98	75 - 125
Bromofluorobenzene	95	75 - 125

Reported by: _____ Approved by: _____

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW2

Laboratory ID: 990381-02

Date Sampled: 05/03/99

Date Sample Analyzed: 05/08/99

Date Sample Received: 05/04/99

Associated Method Blank: V120508-B1

Matrix: Aqueous

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Chloromethane	ND	5
[illegible]omethane	ND	5
[illegible]yl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

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Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW2

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-02

Date Sample Analyzed: 05/08/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Tetrachloroethene	ND	5
1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	109	62 - 139
Dibromofluoromethane	104	75 - 125
Toluene-d8	98	75 - 125
Bromofluorobenzene	95	75 - 125

Reported by: _____ Approved by: _____

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW3

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-03

Date Sample Analyzed: 05/08/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW3

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-03

Date Sample Analyzed: 05/08/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
rachloroethene	ND	5
2,2-Tetrachloroethane	ND	5
uene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	112	62 - 139
Dibromofluoromethane	104	75 - 125
Toluene-d8	97	75 - 125
Bromofluorobenzene	97	75 - 125

Reported by: _____ Approved by: _____

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW4

Laboratory ID: 990381-04

Date Sampled: 05/03/99

Date Sample Analyzed: 05/09/99

Date Sample Received: 05/04/99

Associated Method Blank: V120508-B1

Matrix: Aqueous

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW4

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-04

Date Sample Analyzed: 05/09/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Tetrachloroethene	ND	5
,2,2-Tetrachloroethane	ND	5
luene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	110	62 - 139
Dibromofluoromethane	104	75 - 125
Toluene-d8	100	75 - 125
Bromofluorobenzene	96	75 - 125

Reported by: _____ Approved by: _____

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CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW5

Laboratory ID: 990381-05

Date Sampled: 05/03/99

Date Sample Analyzed: 05/09/99

Date Sample Received: 05/04/99

Associated Method Blank: V120508-B1

Matrix: Aqueous

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW5

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-05

Date Sample Analyzed: 05/09/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	112	62 - 139
Dibromofluoromethane	104	75 - 125
Toluene-d8	99	75 - 125
Bromofluorobenzene	95	75 - 125

Reported by: _____ Approved by: _____

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SEEP1

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-06

Date Sample Analyzed: 05/09/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

10 Dean Knauss Drive, Narragansett, RI 02882 Tel: (401) 782-8900 Fax: (401) 782-8905

CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SEEP1

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-06

Date Sample Analyzed: 05/09/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	111	62 - 139
Dibromofluoromethane	98	75 - 125
Toluene-d8	98	75 - 125
Bromofluorobenzene	98	75 - 125

Reported by: _____ Approved by: _____

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CEIMIC Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SEEP2

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-07

Date Sample Analyzed: 05/09/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

10 Dean Knauss Drive, Narragansett, RI 02882 Tel: (401) 782-8900 Fax: (401) 782-8905

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SEEP2

Date Sampled: 05/03/99

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-07

Date Sample Analyzed: 05/09/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	113	62 - 139
Dibromofluoromethane	105	75 - 125
Toluene-d8	98	75 - 125
Bromofluorobenzene	97	75 - 125

Reported by: _____ Approved by: 9/2

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: TRIPBLANK

Date Sampled:

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-08

Date Sample Analyzed: 05/09/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
loromethane	ND	5
omomethane	ND	5
yl Chloride	ND	5
Chloroethane	ND	5
Methylene Chloride	ND	5
Acetone	ND	10
Carbon Disulfide	ND	5
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
trans-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
cis-1,3-Dichloropropene	ND	5
Bromoform	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10

Reported by: _____ Approved by: _____

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
VOLATILE ORGANICS ANALYSIS
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: TRIPBLANK

Date Sampled:

Date Sample Received: 05/04/99

Matrix: Aqueous

Laboratory ID: 990381-08

Date Sample Analyzed: 05/09/99

Associated Method Blank: V120508-B1

Dilution Factor: 1

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
[illegible]rachloroethene	ND	5
[illegible]2,2-Tetrachloroethane	ND	5
[illegible]uene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

ND = Not detected

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	109	62 - 139
Dibromofluoromethane	102	75 - 125
Toluene-d8	98	75 - 125
Bromofluorobenzene	98	75 - 125

Reported by: _____ Approved by: _____

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CEIMIC
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"Analytical Chemistry for Environmental Management"

LABORATORY CONTROL SAMPLE SUMMARY
VOLATILE BLANK SPIKE
SW846 METHOD 8260A

Client: ARCADIS Geraghty & Miller Inc

Ceimic Project: 990381

Blank Spike ID: V120508-LCS

Date Sample Analyzed: 05/08/99

Matrix: Aqueous

Associated Method Blank: V120508-B1

Concentration: μg/L (ppb)

Spike Compound	Spike Added	Blank Spike Result	Blank Spike Recovery(%)	QC Limits(%)*
1,1-Dichloroethene	50	42	85	68 - 124
Trichloroethene	50	43	87	75 - 120
Benzene	50	45	90	78 - 127
Toluene	50	45	89	71 - 132
Chlorobenzene	50	44	88	77 - 128

*These limits are provided for advisory purposes.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
1,2-Dichloroethane-d4	106	62 - 139
Dibromofluoromethane	104	75 - 125
Toluene-d8	100	75 - 125
Bromofluorobenzene	97	75 - 125

Reported by: _____ Approved by: _____

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SEMIVOLATILE ORGANIC ANALYSES

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

METHOD BLANK
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc

Blank ID: S0510-B5

Matrix: Aqueous

Ceimic Project: 990381

Date Sample Analyzed: 05/11/99

Date Sample Extracted: 05/10/99

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Benzyl Alcohol	ND	5
Benzoic Acid	ND	5
N-Nitrosodimethylamine	ND	5
Pyridine	ND	5
[illegible]ol	ND	5
[illegible]2-Chloroethyl)Ether	ND	5
[illegible]Chlorophenol	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
2-Methylphenol	ND	5
2,2'-oxybis(1-Chloropropane)	ND	5
4-Methylphenol	ND	5
N-Nitroso-Di-n-Propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
2-Nitrophenol	ND	5
2,4-Dimethylphenol	ND	5
bis(2-Chloroethoxy)Methane	ND	5
2,4-Dichlorophenol	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
4-Chloroaniline	ND	5
Hexachlorobutadiene	ND	5
4-Chloro-3-methylphenol	ND	5
2-Methylnaphthalene	ND	5
Hexachlorocyclopentadiene	ND	5
2,4,6-Trichlorophenol	ND	5
2-Chloronaphthalene	ND	5
2-Nitroaniline	ND	10
Dimethyl Phthalate	ND	5
Acenaphthylene	ND	5
3-Nitroaniline	ND	10
[illegible]naphthene	ND	5
[illegible]Dinitrophenol	ND	10
[illegible]itrophenol	ND	10

Reported by: UP

Approved by: G/C

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

METHOD BLANK
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc

Blank ID: S0510-B5

Matrix: Aqueous

Ceimic Project: 990381

Date Sample Analyzed: 05/11/99

Date Sample Extracted: 05/10/99

Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Dibenzofuran	ND	5
2,4-Dinitrotoluene	ND	5
2,6-Dinitrotoluene	ND	5
Diethylphthalate	ND	5
4-Chlorophenyl-phenylether	ND	5
Fluorene	ND	5
4-Nitroaniline	ND	10
Azobenzene	ND	5
4,6-Dinitro-2-Methylphenol	ND	10
N-Nitrosodiphenylamine (1)	ND	5
4-Bromophenol-phenylether	ND	5
Hexachlorobenzene	ND	5
Pentachlorophenol	ND	10
Phenanthrene	ND	5
Anthracene	ND	5
Carbazole	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	5
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	5
Benzo(a)anthracene	ND	5
bis(2-Ethylhexyl)Phthalate	ND	5
Chrysene	ND	5
Di-n-Octyl Phthalate	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(k)fluoranthene	ND	5
Benzo(a)pyrene	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
Dibenzo(a,h)anthracene	ND	5
Benzo(g,h,i)perylene	ND	5
2,4,5-Trichlorophenol	ND	10

ND = Not detected

Reported by: VIP

Approved by: GK

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CEIMIC
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"Analytical Chemistry for Environmental Management"

METHOD BLANK
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc

Blank ID: S0510-B5

Matrix: Aqueous

Ceimic Project: 990381

Date Sample Analyzed: 05/11/99

Date Sample Extracted: 05/10/99

Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	47	21 - 110
henol-d5	29	10 - 110
trobenzene-d5	69	35 - 114
Fluorobiphenyl	83	43 - 116
2,4,6-Tribromophenol	86	10 - 123
Terphenyl-d14	86	33 - 141

* These limits are provided for advisory purposes.

Reported by: MP

Approved by: QK

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW1
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-01
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Benzyl Alcohol	ND	5
Benzoic Acid	ND	5
N-Nitrosodimethylamine	ND	5
ridine	ND	5
nol	ND	5
(2-Chloroethyl)Ether	ND	5
-Chlorophenol	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
2-Methylphenol	ND	5
2,2'-oxybis(1-Chloropropane)	ND	5
4-Methylphenol	ND	5
N-Nitroso-Di-n-Propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
2-Nitrophenol	ND	5
2,4-Dimethylphenol	ND	5
bis(2-Chloroethoxy)Methane	ND	5
2,4-Dichlorophenol	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
4-Chloroaniline	ND	5
Hexachlorobutadiene	ND	5
4-Chloro-3-methylphenol	ND	5
2-Methylnaphthalene	ND	5
Hexachlorocyclopentadiene	ND	5
2,4,6-Trichlorophenol	ND	5
2-Chloronaphthalene	ND	5
2-Nitroaniline	ND	10
Dimethyl Phthalate	ND	5
Acenaphthylene	ND	5
3-Nitroaniline	ND	10
enaphthene	ND	5
-Dinitrophenol	ND	10
Nitrophenol	ND	10

Reported by: UP

Approved by: a/c

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW1
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-01
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Dibenzofuran	ND	5
2,4-Dinitrotoluene	ND	5
2,6-Dinitrotoluene	ND	5
Diethylphthalate	ND	5
[illegible]hlorophenyl-phenylether	ND	5
[illegible]orene	ND	5
[illegible]itroaniline	ND	10
Azobenzene	ND	5
4,6-Dinitro-2-Methylphenol	ND	10
N-Nitrosodiphenylamine (1)	ND	5
4-Bromophenol-phenylether	ND	5
Hexachlorobenzene	ND	5
Pentachlorophenol	ND	10
Phenanthrene	ND	5
Anthracene	ND	5
Carbazole	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	5
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	5
Benzo(a)anthracene	ND	5
bis(2-Ethylhexyl)Phthalate	ND	5
Chrysene	ND	5
Di-n-Octyl Phthalate	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(k)fluoranthene	ND	5
Benzo(a)pyrene	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
Dibenzo(a,h)anthracene	ND	5
Benzo(g,h,i)perylene	ND	5
2,4,5-Trichlorophenol	ND	10

ND = Not detected

Reported by: YP

Approved by: G/C

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW1
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-01
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	39	21 - 110
Phenol-d5	25	10 - 110
Nitrobenzene-d5	71	35 - 114
2-Fluorobiphenyl	77	43 - 116
2,4,6-Tribromophenol	77	10 - 123
Terphenyl-d14	83	33 - 141

* These limits are provided for advisory purposes.

Reported by: VIP

Approved by: a/ (

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CEIMIC
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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW2
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-02
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Benzyl Alcohol	ND	5
Benzoic Acid	ND	5
N-Nitrosodimethylamine	ND	5
[illegible]dine	ND	5
[illegible]ol	ND	5
bis(2-Chloroethyl)Ether	ND	5
2-Chlorophenol	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
2-Methylphenol	ND	5
2,2'-oxybis(1-Chloropropane)	ND	5
4-Methylphenol	ND	5
N-Nitroso-Di-n-Propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
2-Nitrophenol	ND	5
2,4-Dimethylphenol	ND	5
bis(2-Chloroethoxy)Methane	ND	5
2,4-Dichlorophenol	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
4-Chloroaniline	ND	5
Hexachlorobutadiene	ND	5
4-Chloro-3-methylphenol	ND	5
2-Methylnaphthalene	ND	5
Hexachlorocyclopentadiene	ND	5
2,4,6-Trichlorophenol	ND	5
2-Chloronaphthalene	ND	5
2-Nitroaniline	ND	10
Dimethyl Phthalate	ND	5
Acenaphthylene	ND	5
[illegible]troaniline	ND	10
[illegible]aphthene	ND	5
[illegible]Dinitrophenol	ND	10
4-Nitrophenol	ND	10

Reported by: ZP

Approved by: G/C

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW2
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-02
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Dibenzofuran	ND	5
Dinitrotoluene	ND	5
Dinitrotoluene	ND	5
ethylphthalate	ND	5
4-Chlorophenyl-phenylether	ND	5
Fluorene	ND	5
4-Nitroaniline	ND	10
Azobenzene	ND	5
4,6-Dinitro-2-Methylphenol	ND	10
N-Nitrosodiphenylamine (1)	ND	5
4-Bromophenol-phenylether	ND	5
Hexachlorobenzene	ND	5
Pentachlorophenol	ND	10
Phenanthrene	ND	5
Anthracene	ND	5
Carbazole	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	5
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	5
Benzo(a)anthracene	ND	5
bis(2-Ethylhexyl)Phthalate	ND	5
Chrysene	ND	5
Di-n-Octyl Phthalate	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(k)fluoranthene	ND	5
Benzo(a)pyrene	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
Dibenzo(a,h)anthracene	ND	5
zo(g,h,i)perylene	ND	5
-Trichlorophenol	ND	10

D = Not detected

Reported by: NP

Approved by: a/c

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW2
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-02
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	43	21 - 110
ıol-d5	28	10 - 110
ırobenzene-d5	73	35 - 114
2-Fluorobiphenyl	77	43 - 116
2,4,6-Tribromophenol	76	10 - 123
Terphenyl-d14	85	33 - 141

* These limits are provided for advisory purposes.

Reported by: ZP

Approved by: QC

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW3
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-03
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Benzyl Alcohol	ND	5
Benzoic Acid	ND	5
N-Nitrosodimethylamine	ND	5
Pyridine	ND	5
nol	ND	5
(2-Chloroethyl)Ether	ND	5
Chlorophenol	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
2-Methylphenol	ND	5
2,2'-oxybis(1-Chloropropane)	ND	5
4-Methylphenol	ND	5
N-Nitroso-Di-n-Propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
2-Nitrophenol	ND	5
2,4-Dimethylphenol	ND	5
bis(2-Chloroethoxy)Methane	ND	5
2,4-Dichlorophenol	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
4-Chloroaniline	ND	5
Hexachlorobutadiene	ND	5
4-Chloro-3-methylphenol	ND	5
2-Methylnaphthalene	ND	5
Hexachlorocyclopentadiene	ND	5
2,4,6-Trichlorophenol	ND	5
2-Chloronaphthalene	ND	5
2-Nitroaniline	ND	10
Dimethyl Phthalate	ND	5
Acenaphthylene	ND	5
3-Nitroaniline	ND	10
naphthene	ND	5
Dinitrophenol	ND	10
itrophenol	ND	10

Reported by: NP

Approved by: A/C

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CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW3
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-03
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Dibenzofuran	ND	5
2,4-Dinitrotoluene	ND	5
2,6-Dinitrotoluene	ND	5
Diethylphthalate	ND	5
4-Chlorophenyl-phenylether	ND	5
Fluorene	ND	5
4-Nitroaniline	ND	10
Azobenzene	ND	5
4,6-Dinitro-2-Methylphenol	ND	10
N-Nitrosodiphenylamine (1)	ND	5
4-Bromophenol-phenylether	ND	5
Hexachlorobenzene	ND	5
Pentachlorophenol	ND	10
Phenanthrene	ND	5
Anthracene	ND	5
Carbazole	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	5
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	5
Benzo(a)anthracene	ND	5
bis(2-Ethylhexyl)Phthalate	1J	5
Chrysene	ND	5
Di-n-Octyl Phthalate	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(k)fluoranthene	ND	5
Benzo(a)pyrene	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
Dibenzo(a,h)anthracene	ND	5
Benzo(g,h,i)perylene	ND	5
2,4,5-Trichlorophenol	ND	10

J = Estimated Value
ND = Not detected

Reported by: NP

Approved by: a/C

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW3
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-03
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
uorophenol	43	21 - 110
enol-d5	29	10 - 110
Nitrobenzene-d5	74	35 - 114
2-Fluorobiphenyl	78	43 - 116
2,4,6-Tribromophenol	75	10 - 123
Terphenyl-d14	78	33 - 141

* These limits are provided for advisory purposes.

Reported by: NP

Approved by: G/C

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW4
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-04
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Benzyl Alcohol	ND	5
Benzoic Acid	ND	5
N-Nitrosodimethylamine	ND	5
[illegible]dine	ND	5
[illegible]nol	ND	5
bis(2-Chloroethyl)Ether	ND	5
2-Chlorophenol	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
2-Methylphenol	ND	5
2,2'-oxybis(1-Chloropropane)	ND	5
4-Methylphenol	ND	5
N-Nitroso-Di-n-Propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
2-Nitrophenol	ND	5
2,4-Dimethylphenol	ND	5
bis(2-Chloroethoxy)Methane	ND	5
2,4-Dichlorophenol	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
4-Chloroaniline	ND	5
Hexachlorobutadiene	ND	5
4-Chloro-3-methylphenol	ND	5
2-Methylnaphthalene	ND	5
Hexachlorocyclopentadiene	ND	5
2,4,6-Trichlorophenol	ND	5
2-Chloronaphthalene	ND	5
2-Nitroaniline	ND	10
Dimethyl Phthalate	ND	5
Acenaphthylene	ND	5
[illegible]troaniline	ND	10
[illegible]naphthene	ND	5
[illegible]-Dinitrophenol	ND	10
4-Nitrophenol	ND	10

Reported by: NP

Approved by: [illegible]

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW4
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-04
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Dibenzofuran	ND	5
2,4-Dinitrotoluene	ND	5
[illegible] Dinitrotoluene	ND	5
[illegible]thylphthalate	ND	5
[illegible]-Chlorophenyl-phenylether	ND	5
Fluorene	ND	5
4-Nitroaniline	ND	10
Azobenzene	ND	5
4,6-Dinitro-2-Methylphenol	ND	10
N-Nitrosodiphenylamine (1)	ND	5
4-Bromophenol-phenylether	ND	5
Hexachlorobenzene	ND	5
Pentachlorophenol	ND	10
Phenanthrene	ND	5
Anthracene	ND	5
Carbazole	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	5
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	5
Benzo(a)anthracene	ND	5
bis(2-Ethylhexyl)Phthalate	ND	5
Chrysene	ND	5
Di-n-Octyl Phthalate	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(k)fluoranthene	ND	5
Benzo(a)pyrene	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
Dibenzo(a,h)anthracene	ND	5
Benzo(g,h,i)perylene	ND	5
[illegible]5-Trichlorophenol	ND	10

[illegible] = Not detected

Reported by: NP

Approved by: a/C

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW4
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-04
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
[illegible]luorophenol	44	21 - 110
[illegible]enol-d5	31	10 - 110
Nitrobenzene-d5	75	35 - 114
2-Fluorobiphenyl	77	43 - 116
2,4,6-Tribromophenol	80	10 - 123
Terphenyl-d14	79	33 - 141

* These limits are provided for advisory purposes.

Reported by: YP

Approved by: G/C

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW5
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-05
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Benzyl Alcohol	ND	5
[illegible]zoic Acid	ND	5
[illegible]itrosodimethylamine	ND	5
[illegible]line	ND	5
Phenol	ND	5
bis(2-Chloroethyl)Ether	ND	5
2-Chlorophenol	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
2-Methylphenol	ND	5
2,2'-oxybis(1-Chloropropane)	ND	5
4-Methylphenol	ND	5
N-Nitroso-Di-n-Propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
2-Nitrophenol	ND	5
2,4-Dimethylphenol	ND	5
bis(2-Chloroethoxy)Methane	ND	5
2,4-Dichlorophenol	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
4-Chloroaniline	ND	5
Hexachlorobutadiene	ND	5
4-Chloro-3-methylphenol	ND	5
2-Methylnaphthalene	ND	5
Hexachlorocyclopentadiene	ND	5
2,4,6-Trichlorophenol	ND	5
2-Chloronaphthalene	ND	5
2-Nitroaniline	ND	10
Di[illegible]ethyl Phthalate	ND	5
[illegible]aphthylene	ND	5
[illegible]roaniline	ND	10
[illegible]aphthene	ND	5
2,4-Dinitrophenol	ND	10
4-Nitrophenol	ND	10

Reported by: ZP

Approved by: a/C

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW5
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-05
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Dibenzofuran	ND	5
2,4-Dinitrotoluene	ND	5
[illegible] Dinitrotoluene	ND	5
[illegible]thylphthalate	ND	5
[illegible]Chlorophenyl-phenylether	ND	5
Fluorene	ND	5
4-Nitroaniline	ND	10
Azobenzene	ND	5
4,6-Dinitro-2-Methylphenol	ND	10
N-Nitrosodiphenylamine (1)	ND	5
4-Bromophenol-phenylether	ND	5
Hexachlorobenzene	ND	5
Pentachlorophenol	ND	10
Phenanthrene	ND	5
Anthracene	ND	5
Carbazole	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	5
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	5
Benzo(a)anthracene	ND	5
bis(2-Ethylhexyl)Phthalate	ND	5
Chrysene	ND	5
Di-n-Octyl Phthalate	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(k)fluoranthene	ND	5
Benzo(a)pyrene	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
Dibenzo(a,h)anthracene	ND	5
Benzo(g,h,i)perylene	ND	5
[illegible]5-Trichlorophenol	ND	10

[illegible] = Not detected

Reported by: NP

Approved by: QIC

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SW5
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-05
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	41	21 - 110
Phenol-d5	26	10 - 110
Nitrobenzene-d5	72	35 - 114
2-Fluorobiphenyl	78	43 - 116
2,4,6-Tribromophenol	81	10 - 123
Terphenyl-d14	90	33 - 141

* These limits are provided for advisory purposes.

Reported by: NP

Approved by: a/C

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SEEP1
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-06
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Benzyl Alcohol	ND	5
Benzoic Acid	ND	5
N-Nitrosodimethylamine	ND	5
Pyridine	ND	5
Phenol	ND	5
bis(2-Chloroethyl)Ether	ND	5
2-Chlorophenol	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
2-Methylphenol	ND	5
2,2'-oxybis(1-Chloropropane)	ND	5
4-Methylphenol	ND	5
N-Nitroso-Di-n-Propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
2-Nitrophenol	ND	5
2,4-Dimethylphenol	ND	5
bis(2-Chloroethoxy)Methane	ND	5
2,4-Dichlorophenol	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
4-Chloroaniline	ND	5
Hexachlorobutadiene	ND	5
4-Chloro-3-methylphenol	ND	5
2-Methylnaphthalene	ND	5
Hexachlorocyclopentadiene	ND	5
2,4,6-Trichlorophenol	ND	5
2-Chloronaphthalene	ND	5
2-Nitroaniline	ND	10
Dimethyl Phthalate	ND	5
Acenaphthylene	ND	5
3-Nitroaniline	ND	10
Acenaphthene	ND	5
2,4-Dinitrophenol	ND	10
4-Nitrophenol	ND	10

Reported by: ZJP

Approved by: QIC

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SEEP1
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-06
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
benzofuran	ND	5
4-Dinitrotoluene	ND	5
6-Dinitrotoluene	ND	5
Diethylphthalate	ND	5
4-Chlorophenyl-phenylether	ND	5
Fluorene	ND	5
4-Nitroaniline	ND	10
Azobenzene	ND	5
4,6-Dinitro-2-Methylphenol	ND	10
N-Nitrosodiphenylamine (1)	ND	5
4-Bromophenol-phenylether	ND	5
Hexachlorobenzene	ND	5
Pentachlorophenol	ND	10
Phenanthrene	ND	5
Anthracene	ND	5
Carbazole	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	5
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	5
Benzo(a)anthracene	ND	5
bis(2-Ethylhexyl)Phthalate	ND	5
Chrysene	ND	5
Di-n-Octyl Phthalate	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(k)fluoranthene	ND	5
Benzo(a)pyrene	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
benzo(a,h)anthracene	ND	5
zo(g,h,i)perylene	ND	5
4,5-Trichlorophenol	ND	10

ND = Not detected

Reported by: 7/1D

Approved by: G/K

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SEEP1
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-06
Date Sample Analyzed: 05/13/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	45	21 - 110
[illegible]ol-d5	30	10 - 110
[illegible]benzene-d5	72	35 - 114
2-Fluorobiphenyl	76	43 - 116
2,4,6-Tribromophenol	75	10 - 123
Terphenyl-d14	75	33 - 141

* These limits are provided for advisory purposes.

Reported by: ZIP

Approved by: GIC

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SEEP2
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-07
Date Sample Analyzed: 05/14/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Benzyl Alcohol	ND	5
Benzoic Acid	ND	5
N-Nitrosodimethylamine	ND	5
Pyridine	ND	5
[illegible]nol	ND	5
[illegible]2-Chloroethyl)Ether	ND	5
[illegible]hlorophenol	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
2-Methylphenol	ND	5
2,2'-oxybis(1-Chloropropane)	ND	5
4-Methylphenol	ND	5
N-Nitroso-Di-n-Propylamine	ND	5
Hexachloroethane	ND	5
Nitrobenzene	ND	5
Isophorone	ND	5
2-Nitrophenol	ND	5
2,4-Dimethylphenol	ND	5
bis(2-Chloroethoxy)Methane	ND	5
2,4-Dichlorophenol	ND	5
1,2,4-Trichlorobenzene	ND	5
Naphthalene	ND	5
4-Chloroaniline	ND	5
Hexachlorobutadiene	ND	5
4-Chloro-3-methylphenol	ND	5
2-Methylnaphthalene	ND	5
Hexachlorocyclopentadiene	ND	5
2,4,6-Trichlorophenol	ND	5
2-Chloronaphthalene	ND	5
2-Nitroaniline	ND	10
Dimethyl Phthalate	ND	5
Acenaphthylene	ND	5
3-Nitroaniline	ND	10
[illegible]naphthene	ND	5
[illegible]Dinitrophenol	ND	10
[illegible]itrophenol	ND	10

Reported by: NP

Approved by: [illegible]

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SEEP2
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-07
Date Sample Analyzed: 05/14/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Target Analyte	Sample Concentration	Quantitation Limit
Dibenzofuran	ND	5
2,4-Dinitrotoluene	ND	5
2,6-Dinitrotoluene	ND	5
thylphthalate	ND	5
hlorophenyl-phenylether	ND	5
uorene	ND	5
4-Nitroaniline	ND	10
Azobenzene	ND	5
4,6-Dinitro-2-Methylphenol	ND	10
N-Nitrosodiphenylamine (1)	ND	5
4-Bromophenol-phenylether	ND	5
Hexachlorobenzene	ND	5
Pentachlorophenol	ND	10
Phenanthrene	ND	5
Anthracene	ND	5
Carbazole	ND	5
Di-n-butylphthalate	ND	5
Fluoranthene	ND	5
Benzidine	ND	5
Pyrene	ND	5
Butylbenzylphthalate	ND	5
3,3'-Dichlorobenzidine	ND	5
Benzo(a)anthracene	ND	5
bis(2-Ethylhexyl)Phthalate	ND	5
Chrysene	ND	5
Di-n-Octyl Phthalate	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(k)fluoranthene	ND	5
Benzo(a)pyrene	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
Dibenzo(a,h)anthracene	ND	5
Benzo(g,h,i)perylene	ND	5
2,4,5-Trichlorophenol	ND	10

= Not detected

Reported by: NP

Approved by: a/C

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"Analytical Chemistry for Environmental Management"

TARGET COMPOUND LIST (TCL)
SEMIVOLATILE ORGANICS ANALYSIS
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc
Client Sample ID: WPSC/SEEP2
Date Sampled: 05/03/99
Date Sample Received: 05/04/99
Matrix: Aqueous

Laboratory ID: 990381-07
Date Sample Analyzed: 05/14/99
Date Sample Extracted: 05/10/99
Associated Method Blank: S0510-B5
Dilution Factor: 1
Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
2-Fluorophenol	30	21 - 110
Phenol-d5	21	10 - 110
Nitrobenzene-d5	72	35 - 114
2-Fluorobiphenyl	77	43 - 116
2,4,6-Tribromophenol	77	10 - 123
Terphenyl-d14	77	33 - 141

* These limits are provided for advisory purposes.

Reported by: NP

Approved by: GC

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"Analytical Chemistry for Environmental Management"

LABORATORY CONTROL SAMPLE SUMMARY
SEMIVOLATILE BLANK SPIKE
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc

Blank Spike ID: S0510-LCS5

Matrix: Aqueous

Ceimic Project: 990381

Date Sample Analyzed: 05/14/99

Date Sample Extracted: 05/10/99

Associated Method Blank: S0510-B5

Concentration in: μg/L (ppb)

Spike Compound	Spike Added	Blank Spike Recovery(%)	QC Limits(%)*
[illegible]yl Alcohol	50.0	84	25 - 125
Benzoic Acid	100.0	22	1 - 162
N-Nitrosodimethylamine	50.0	31	25 - 125
Pyridine	50.0	30	25 - 125
Phenol	50.0	33	10 - 125
bis(2-Chloroethyl)Ether	50.0	75	44 - 125
2-Chlorophenol	50.0	70	41 - 125
1,3-Dichlorobenzene	50.0	69	36 - 125
1,4-Dichlorobenzene	50.0	68	30 - 125
1,2-Dichlorobenzene	50.0	67	42 - 155
2-Methylphenol	50.0	65	25 - 125
2,2'-oxybis(1-Chloropropane)	50.0	147	36 - 166
4-Methylphenol	50.0	59	33 - 125
N-Nitroso-Di-n-Propylamine	50.0	73	37 - 125
Hexachloroethane	50.0	104	25 - 153
Nitrobenzene	50.0	74	46 - 133
Isophorone	50.0	76	26 - 175
2-Nitrophenol	50.0	78	44 - 125
2,4-Dimethylphenol	50.0	57	1 - 139
bis(2-Chloroethoxy)Methane	50.0	75	49 - 125
2,4-Dichlorophenol	50.0	74	46 - 125
1,2,4-Trichlorobenzene	50.0	71	44 - 142
Naphthalene	50.0	74	50 - 125
4-Chloroaniline	50.0	76	1 - 136
Hexachlorobutadiene	50.0	69	25 - 125
4-Chloro-3-methylphenol	50.0	77	44 - 125
2-Methylnaphthalene	50.0	74	41 - 125
Hexachlorocyclopentadiene	50.0	58	18 - 125
2,4,6-Trichlorophenol	50.0	77	39 - 128
[illegible]loronaphthalene	50.0	75	60 - 125
[illegible]roaniline	50.0	86	50 - 125
[illegible]methyl Phthalate	50.0	79	25 - 175
Acenaphthylene	50.0	76	47 - 125

Reported by: MP

Approved by: a/C

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

LABORATORY CONTROL SAMPLE SUMMARY
SEMIVOLATILE BLANK SPIKE
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc

Blank Spike ID: S0510-LCS5

Matrix: Aqueous

Ceimic Project: 990381

Date Sample Analyzed: 05/14/99

Date Sample Extracted: 05/10/99

Associated Method Blank: S0510-B5

Concentration in: μg/L (ppb)

Spike Compound	Spike Added	Blank Spike Recovery(%)	QC Limits(%)*
itroaniline	50.0	96	29 - 94
naphthene	50.0	74	49 - 125
-Dinitrophenol	50.0	105	10 - 151
4-Nitrophenol	50.0	20	10 - 131
Dibenzofuran	50.0	76	52 - 125
2,4-Dinitrotoluene	50.0	103	39 - 139
2,6-Dinitrotoluene	50.0	97	51 - 125
Diethylphthalate	50.0	78	37 - 125
4-Chlorophenyl-phenylether	50.0	79	51 - 132
Fluorene	50.0	79	48 - 139
4-Nitroaniline	50.0	96	40 - 143
Azobenzene	50.0	81	25 - 125
4,6-Dinitro-2-Methylphenol	50.0	105	26 - 134
N-Nitrosodiphenylamine (1)	50.0	84	27 - 125
4-Bromophenol-phenylether	50.0	86	53 - 127
Hexachlorobenzene	50.0	89	46 - 133
Pentachlorophenol	50.0	45	28 - 136
Phenanthrene	50.0	81	54 - 125
Anthracene	50.0	84	45 - 165
Carbazole	50.0	92	25 - 125
Di-n-butylphthalate	50.0	80	34 - 126
Fluoranthene	50.0	92	47 - 125
Benzidine	50.0	67	1 - 150
Pyrene	50.0	92	47 - 136
Butylbenzylphthalate	50.0	76	26 - 125
3,3'-Dichlorobenzidine	50.0	79	1 - 175
Benzo(a)anthracene	50.0	91	51 - 133
bis(2-Ethylhexyl)Phthalate	50.0	73	33 - 129
Chrysene	50.0	91	55 - 133
Di-n-Octyl Phthalate	50.0	76	38 - 127
zo(b)fluoranthene	50.0	90	37 - 125
o(k)fluoranthene	50.0	92	37 - 125
o(a)pyrene	50.0	92	41 - 125

Reported by: MP

Approved by: G/C

---

10 Dean Knauss Drive, Narragansett, RI 02882 Tel: (401) 782-8900 Fax: (401) 782-8905

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

LABORATORY CONTROL SAMPLE SUMMARY
SEMIVOLATILE BLANK SPIKE
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc

Blank Spike ID: S0510-LCS5

Matrix: Aqueous

Ceimic Project: 990381

Date Sample Analyzed: 05/14/99

Date Sample Extracted: 05/10/99

Associated Method Blank: S0510-B5

Concentration in: μg/L (ppb)

Spike Compound	Spike Added	Blank Spike Recovery(%)	QC Limits(%)*
ıeno(1,2,3-cd)pyrene	50.0	88	27 - 160
ıbenzo(a,h)anthracene	50.0	88	50 - 125
Benzo(g,h,i)perylene	50.0	86	34 - 149
2,4,5-Trichlorophenol	50.0	75	25 - 175

* These limits are provided for advisory purposes.

Reported by: MP

Approved by: 9/C

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

LABORATORY CONTROL SAMPLE SUMMARY
SEMIVOLATILE BLANK SPIKE
SW846 METHOD 8270B

Client: ARCADIS Geraghty & Miller Inc

Blank Spike ID: S0510-LCS5

Matrix: Aqueous

Ceimic Project: 990381

Date Sample Analyzed: 05/14/99

Date Sample Extracted: 05/10/99

Associated Method Blank: S0510-B5

Concentration in: μg/L (ppb)

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
Fluorophenol	43	21 - 110
Phenol-d5	33	10 - 110
Nitrobenzene-d5	75	35 - 114
2-Fluorobiphenyl	72	43 - 116
2,4,6-Tribromophenol	94	10 - 123
Terphenyl-d14	92	33 - 141

* These limits are provided for advisory purposes.

Reported by: NP

Approved by: QC

10 Dean Knauss Drive, Narragansett, RI 02882 Tel: (401) 782-8900 Fax: (401) 782-8905

INORGANIC ANALYTES

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

QUALITY CONTROL

METHOD BLANK

Client: ARCADIS Geraghty & Miller Inc

Blank ID: PBW

Ceimic Project: 990381

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
Ammonia-N	ND	mg/L	0.10	05/14/99	05/14/99
Nitrate-Nitrite (as N)	ND	mg/L	0.050	05/12/99	05/12/99
Total Cyanide	ND	mg/L	0.01	05/17/99	05/17/99

ND = Not Detected

Reported by: Jeffrey D Maymon

Approved by: Donald Tatarelli

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW1

Date Sampled: 05/03/99

Laboratory ID: 990381-01

Date Sample Received: 05/04/99

Matrix: Aqueous

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
monia-N	0.22	mg/L	0.10	05/14/99	05/14/99
trate-Nitrite (as N)	1.85	mg/L	0.050	05/12/99	05/12/99
Total Cyanide	ND	mg/L	0.01	05/17/99	05/17/99

ND = Not Detected

Reported by: Jeffrey D. Maynor

Approved by: Donald Tatarelli

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW2

Date Sampled: 05/03/99

Laboratory ID: 990381-02

Date Sample Received: 05/04/99

Matrix: Aqueous

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
[illegible]monia-N	0.20	mg/L	0.10	05/14/99	05/14/99
[illegible]rate-Nitrite (as N)	1.57	mg/L	0.050	05/12/99	05/12/99
Total Cyanide	ND	mg/L	0.01	05/17/99	05/17/99

ND = Not Detected

Reported by: Jeffrey D. Maymon

Approved by: Donald Zottoli

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW3

Date Sampled: 05/03/99 Laboratory ID: 990381-03

Date Sample Received: 05/04/99

Matrix: Aqueous

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
nonia-N	0.28	mg/L	0.10	05/14/99	05/14/99
rate-Nitrite (as N)	1.25	mg/L	0.050	05/12/99	05/12/99
Total Cyanide	ND	mg/L	0.01	05/17/99	05/17/99

ND = Not Detected

Reported by: Jeffrey D. Maymon

Approved by: Donald Fatorelli

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW4

Date Sampled: 05/03/99

Laboratory ID: 990381-04

Date Sample Received: 05/04/99

Matrix: Aqueous

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
ımonia-N	1.49	mg/L	0.10	05/14/99	05/14/99
Nitrate-Nitrite (as N)	4.96	mg/L	0.50	05/12/99	05/12/99
Total Cyanide	ND	mg/L	0.01	05/17/99	05/17/99

ND = Not Detected

ɔrted by: Jeffrey D. Mangnon

Approved by: David Tatarelli

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SW5

Date Sampled: 05/03/99

Laboratory ID: 990381-05

Date Sample Received: 05/04/99

Matrix: Aqueous

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
[illegible]monia-N	0.12	mg/L	0.10	05/14/99	05/14/99
[illegible]rate-Nitrite (as N)	0.11	mg/L	0.050	05/12/99	05/12/99
Total Cyanide	ND	mg/L	0.01	05/17/99	05/17/99

ND = Not Detected

Reported by: Jeffrey D. Maymon

Approved by: Donald Fortelli

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SEEP1

Date Sampled: 05/03/99

Laboratory ID: 990381-06

Date Sample Received: 05/04/99

Matrix: Aqueous

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
monia-N	0.11	mg/L	0.10	05/14/99	05/14/99
rate-Nitrite (as N)	1.84	mg/L	0.050	05/12/99	05/12/99
Total Cyanide	ND	mg/L	0.01	05/17/99	05/17/99

ND = Not Detected

Reported by: Jeffrey D. Maynnon

Approved by: Donald Tortorelli

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: ARCADIS Geraghty & Miller Inc

Client Sample ID: WPSC/SEEP2

Date Sampled: 05/03/99

Laboratory ID: 990381-07

Date Sample Received: 05/04/99

Matrix: Aqueous

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
Ammonia-N	ND	mg/L	0.10	05/14/99	05/14/99
Nitrate-Nitrite (as N)	8.48	mg/L	0.50	05/12/99	05/12/99
Total Cyanide	0.052	mg/L	0.01	05/17/99	05/17/99

ND = Not Detected

Reported by: Jeffrey D. Maymon

Approved by: Donald Tatarelli

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

QUALITY CONTROL

LABORATORY CONTROL SAMPLE SUMMARY

Client: ARCADIS Geraghty & Miller Inc

Laboratory Control Spike ID: QC

Ceimic Project: 990381

Concentration in: mg/L (ppm)

Target Analyte	Date Prep'd	Date Analyzed	Spike Added	Lab Control Spike Result	Lab Control Spike Recovery(%)	QC Limits(%)
...monia-N	05/14/99	05/14/99	9.13	9.80	107.0	80-120
Nitrate-Nitrite (as N)	05/12/99	05/12/99	1.00	1.01	101.0	80-120
Total Cyanide	05/17/99	05/17/99	0.080	0.080	100.0	80-120

...rted by: Jeffrey D. Magnuson

Approved by: David Tatarelli

CHAIN OF CUSTODY

ARCADIS G[illegible]Y&MILLER

Laboratory Task Order No./P.O. No. 990381

CHAIN-OF-CUSTODY RECORD

Page ____

Project Number/Name WPSC/WV000432 cord. 0002

Project Location Franklin, WV

Laboratory Ceimic

Project Manager Mike Dant

Sampler(s)/Affiliation Mike Dant/ARCADIS G&M
David Peters/ARCADIS G&M

ANALYSIS / METHOD / SIZE

	Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	8260 VOCs 40mL glass Pres: HCL	8270 SVOCs Liter amber glass	CN Pres: NaOH Liter poly	Nitrate/Ammonia Liter poly Pres: H_2SO_4			Remarks	Total
1	WPSC/SW1	L	5/3/99	1450	2	1	1	1				5
2	WPSC/SW2	L	5/3/99	1505	2	1	1	1				5
3	WPSC/SW3	L	5/3/99	1610	2	1	1	1				5
4	WPSC/SW4	L	5/3/99	1630	2	0	0	0				2
5	WPSC/SW5	L	5/3/99	1645	2	0	0	0				2
6	WPSC/Seep1	L	5/3/99	1525	2	0	0	0				2
7	WPSC/Seep2	L	5/3/99	1725	2	0	0	0				2
8	Trip Blank		from	Lab	1	0	0	0				1

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 24

Relinquished by: David Peters	Organization: ARCADIS Geraghty & Miller	Date 5/3/99	Time 1830	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?
Received by: David Hallinan	Organization: Ceimic Corp	Date 5/14/99	Time 10:00	(Yes) No N/A

Special Instructions/Remarks: COOLER TEMP 4°C

Delivery Method: ☐ In Person ☒ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

ARCADIS G. Y & MILLER

Laboratory Task Order No./P.O. No. 98038

CHAIN-OF-CUSTODY RECORD

Page ____

Project Number/Name WPSC/W000432.0010.00002

Project Location Foransbee, WV

Laboratory Ceimic

Project Manager Mike Lant

Sampler(s)/Affiliation Mike Lant/ARCADIS G+M
David Peters/ARCADIS G+M

ANALYSIS / METHOD / SIZE

	Sample ID/Location	Matrix	Date/~~Time~~ Sampled	~~Lab ID~~ Time	8260 VOC 40ml Glass/HCL	8270 SVOC 1 Liter Amberglass	CN Liter plastic Pres/NaOH	Nitrate/Ammonia Liter plastic Pres/H2SO4			Remarks	Total
1	WPSC/SW4	L	5/3/99	1630	O	1	1	1				3
2	WPSC/SW5	L	5/3/99	1645	O	1	1	1				3
6	WPSC/Seep1	L	5/3/99	1525	O	1	1	1				3
7	WPSC/Seep2	L	5/3/99	1725	O	1	1	1				3

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers 12

Relinquished by: David Peters	Organization: ARCADIS Geraghty & Miller	Date 5/3/99	Time 1835	Seal Intact?	
Received by:	Organization:	Date / /	Time	Yes No N/A	
Relinquished by:	Organization:	Date / /	Time	Seal Intact?	
Received by: Daniel Hallinell	Organization: Ceimic Corp	Date 5/4/99	Time 10:00	(Yes) No N/A	

Special Instructions/Remarks: COOLER TEMP 4°C

Delivery Method: ☐ In Person ☒ Common Carrier FedEx (SPECIFY) ☐ Lab Courier ☐ Other ____ (SPECIFY)

AG 05 0597

CEDIC CORPORATION
Sample Receiving Checklist

LIMS # 990381 Cooler Number: _____

Client: GERAGHTY MILLER Number of Coolers: 2

Project: WPSC Date Received: 5/4/99

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 5/4/99

1. Have designated person initial here to acknowledge receipt of cooler: DH (date): 5/4/99

2. Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO

If YES, enter carrier name & airbill number here: Fx 1360710562

3. Were custody seals on outside of cooler? ..... (YES) NO

How many & where: 1 f/B seal date: 5/3/99 seal name: _____

4. Were custody seals unbroken and intact at the date and time of arrival ..... (YES) NO

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: ND (YES) NO

6. Chain of Custody #: _____

7. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO

8. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO

9. Did you sign custody papers in the appropriate place? ..... (YES) NO

10. Was project identifiable from custody papers? ..... (YES) NO

11. If required, was enough ice used? ..... Cooler Temperature: 4°C Type of ice: CUBED (YES) NO

B. LOG-IN PHASE: Date samples were logged-in: 5/4/99

by (print): D. Hallwell (sign): D. Hallwell

12. Describe type of packing in cooler: _____

13. Were all bottles sealed in separate plastic bags? ..... (YES) NO

14. Did all bottles arrive unbroken and were labels in good condition? ..... (YES) NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

16. Did all bottle labels agree with custody papers? ..... (YES) NO

17. Were correct containers used for the tests indicated? ..... (YES) NO

18. Were samples received at the correct pH? ..... (YES) NO

19. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: _____ (YES) NO

21. Laboratory labelling verified by: (Initials): _____ (date): / /

OATT261

C5 – Tar Seep Sample Analytical Results

MICROSEEPS

Wheeling Pgh Steel Corp Date:04/13/98 Lab C-o-C No.:146149 Report No.:24210 Page 3 of 3

Samp.#: 2938/0004 Samp.ID: KMQ007 Group ID: Tar Cleanup E Rt 2 Date Received: 04/01/98
TCLP Extraction
Continued from previous page.

Parameter	Result	Units
2,4,6-Trichlorophenol	< 11.1	ug/l

MICROSEEPS

220 William Pitt Way, Pittsburgh, PA 15238 • Phone (412) 826-5245 Fax (412) 826-2438

MICROSEEPS

Wheeling Pgh Steel Corp | Date:04/13/98 | Lab C-o-C No.:146149 | Report No.:24210 | Page 2 of 3

Samp.#: 2938/0004 Samp.ID: KMQ007 Group ID: Tar Cleanup E Rt 2 Date Received: 04/01/98
TCLP Extraction

Field Parameters-> Date Sampled:04/01/98 Time Sampled:11:00

Comments: Ortho and para-Cresol co-elute during analysis; the reported result for ortho-cresol reflects the total concentration for both isomers.

Parameter	Result	Units
Silver	< 0.020	mg/l
Arsenic	< 0.060	mg/l
Barium	0.0922	mg/l
Cadmium	0.0079	mg/l
Chromium	0.0486	mg/l
Mercury	< 0.0002	mg/l
Lead	0.3927	mg/l
Selenium	0.0934	mg/l
Benzene	230000	ug/l
Carbon Tetrachloride	< 50	ug/l
Chlorobenzene	< 50	ug/l
Chloroform	< 50	ug/l
1,2-Dichloroethane	< 50	ug/l
1,1-Dichloroethene	< 50	ug/l
Methyl Ethyl Ketone	< 100	ug/l
Tetrachloroethene	< 50	ug/l
Trichloroethene	< 50	ug/l
Vinyl Chloride	< 50	ug/l
o-Cresol	2778	ug/l
m-Cresol	667	ug/l
p-Cresol	< 11.1	ug/l
1,4-Dichlorobenzene	< 11.1	ug/l
2,4-Dinitrotoluene	< 11.1	ug/l
Hexachlorobenzene	< 11.1	ug/l
Hexachlorobutadiene	< 11.1	ug/l
Hexachloroethane	< 11.1	ug/l
Nitrobenzene	< 11.1	ug/l
Pentachlorophenol	< 22.2	ug/l
Pyridine	4222	ug/l
2,4,5-Trichlorophenol	< 11.1	ug/l

Continued on next page.....

MICROSEEPS

Wheeling Pgh Steel Corp | Date:04/13/98 | Lab C-o-C No.:146148 | Report No.:24209 | Page 2 of 2

Samp.#: 2938/0003 Samp.ID: KMQ007 Group ID: Tar Cleanup E Rt 2 Date Received: 04/01/98

Field Parameters-> Date Sampled:04/01/98 Time Sampled:11:00

Parameter	Result	Units
pH	1.1	S.U.
Ignitability	80.0	deg. F
Paint Filter Test	Pass	
In-house % Solids	75.1	%
Cyanide-Total	18.0	mg/kg
Sulfide - Reactive	< 10	mg/kg
Tot. Petro. Hydrocarbon	237	mg/kg
Aroclor 1016	< 997.7	ug/kg
Aroclor 1221	< 997.7	ug/kg
Aroclor 1232	< 997.7	ug/kg
Aroclor 1242	< 997.7	ug/kg
Aroclor 1248	< 997.7	ug/kg
Aroclor 1254	< 997.7	ug/kg
Aroclor 1260	< 997.7	ug/kg

MICROSEEPS

Client: Wheeling Pgh Steel Corp
P.O. Box 670
Follansbee, WV 26037

Page 1 of 2
Date: 04/13/98
Report No: 24209
Cocid No: 146148

Attention: Kevin Quattrochi

ANALYTICAL REPORT

This report contains information for the following sample:

Microseeps Sample No	Client Sample ID	Client Group ID
2938/0003	KMQ007	Tar Cleanup E Rt 2

Approved: Ruth Welch

MICROSEEPS

lient: Wheeling Pgh Steel Corp
P.O. Box 670
Follansbee, WV 26037

Page 1 of 3
Date: 04/13/98
Report No: 24210
Cocid No: 146149

ttention: Kevin Quattrochi

ANALYTICAL REPORT

his report contains information for the following sample:

Microseeps Sample No	Client Sample ID	Client Group ID
1938/0004	KMQ007	Tar Cleanup E Rt 2

pd: Ruth Welsh