A Study of Hazardous Air Pollutants at the Tidd PFBC Demonstration Plant

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APPENDIX A: SAMPLE COLLECTION, PRETREATMENT, AND ANALYTICAL PROCEDURES

This appendix describes in detail the procedures Radian used during the HAPs testing at Plant Tidd to collect, handle, and analyze each process stream sample. An overview of the gas, solid, and liquid sample collection and analysis performed for this project is presented in Tables A-1, A-2, and A-3. Where analyte groups such as "metals" or "semivolatile organics" are referenced, a complete list of the target analytes is provided in Tables A-4 through A-6.

Radian used established sampling and analytical methods wherever possible to provide comparable and useable data. Modifications or adaptations to these methods are noted and described appropriately. All deviations from the procedures outlined in the test plan are discussed.

Gas Streams

Gas stream samples were collected at the ESP inlet and outlet and APF inlet and outlet ducts. Samples from each of these streams were analyzed for particulate loading, metals, acid gases (anions), ammonia and cyanide, formaldehyde, volatile organics, semivolatile organics, and dioxins/furans. Particle size distribution (PSD) measurements were performed at the ESP inlet and outlet only, and samples for hexavalent chromium emissions were collected only at the ESP outlet.

Gas sampling at the APF inlet and outlet ducts required a fixed sampling probe because of the high process gas temperature and pressure. Consequently, the APF inlet and outlet gas

Table A-1 Field Sampling Completed for Gas Streams

	ESP	ESP	APF	APF	Field	Media	PE Audit
Analysis	Inlet	Outlet	Inlet	Outlet	Blanks ^a	Blanks	Samples
Particulate Loading	3/3¢	3/3	3/3	3/3	2/2	1/1	1/1
Metals ^d	3/3	3/3	3/3	3/3	2/2	1/1	1/1
Anions ^d	3/3	3/3	8/8	3/3	2/2	1/1	1/1
Ammonia/Cyanide ^e	3/3	3/3	3/3	3/3	2/2	1/1	1/1
Formaldehyde	3/3	3/3	3/3	3/3	2/2	1/1	· •
Volatile Organics ^e	₉ /9	_{\$} 9/9	₉ 9/9	9/9	12/128	1/1	
Semivolatile Organics ^d	3/3	3/3	3/3	3/3	2/2	1/1	
Dioxins/Furans	3/3 _h	3/3h	3 _h /3	3/3 ^d	2/2	1/1	1 1
Particle Size Distribution	3/3	3/3	••	:		1/1	~-
Hexavalent Chromiumh	1	3/3		;	1/1	1/1	1/1

A field blank is collected at the ESP inlet and at the APF inlet to assess the effect of sample handling at these two locations.

^b Media blanks refer to prepared reagents for impinger solutions, blank VOST tubes, XAD resin cartridges, and blank filters.

^c Samples planned/samples completed.

^d Both particulate and vapor phases analyzed, separately.

Vapor phase analysis only.

f Two 20-L samples collected per run.

g One field blank collected per location per run.

h Particulate and vapor phases combined for single analysis.

Table A-2 Field Sampling Completed for Coal, Sorbent, and Service Water

	Raw Coal*		Coal Paste		Soi	Sorbent (Dolomite)	iite)	9 ,	Service Water	
Analysis	Field Samples	Field Samples	Field Duplicates	PE Audit Samples	Field Samples	Field Duplicates	PE Audit Samples	Field Samples	Field Duplicates	PE Audit Samples
Ultimate/Proximate/HHV	1/1p	3/3	1/1	1/1	:	-		;	-	;
Metals	1/1	3/3	1/1	1/1	3/3	1/1	1/1	3/3	1/1	1/1
Anions	1/1	3/3	1/1	1/1	3/3	i/i	1/1	3/3	1/1	1/1
Radionuclides	1/1	3/3	1/1	••	. 1	ŧ	-	f	;	**
% Moisture	1/1	3/3	1/1	-	3/3	I/I	-	;	;	:

* Raw coal samples held for possible analysis pending data quality assessment of coal paste results.

^b Samples planned/samples completed.

Table A-3 Field Sampling Completed for Ash Samples

					ES	ESP Ash			
	Be	Bed Ash	Primary (Primary Cyclone Ash	(4 H	(4 Hoppers)	AP	APF Ash	
	Field	Field	Field	Field	Field	Field	Field	Field	QC Audit
Analysis	Samples	Duplicates	Samples	Duplicates	Samples	Duplicates	Samples	Duplicates	Samples
Metais	3/3	1/1	3/3	1/1	3/3 _p	1/1	3/3	1/1	1/1
Anions	3/3	1/1	3/3	1/1	q€/€	1/1	3/3	1/1	1/1
Radionuclides	3/3	1/1	3/3	1/1	q€/€	1/1	3/3	1/1	1
Carbon	3/3	1/1	3/3	1/1	q €/€	1/1	3/3	1/1	:
Semivolatile Organics	3/3	1/1	3/3	1/1	3/3 _p	1/1	3/3	1/1	ŀ
Dioxins/Furans	:	:	3/3	1/1	3/3 _p	1/1	3/3	1/1	;
Particle Size Distribution				1	12/8°	4/4	1	:	1

^a Samples planned/samples completed.

c ESP Fields 1 and 2 were sampled in triplicate; Fields 1-4 were sampled in duplicate during final run.

^b ESP fly ash composite samples.

Table A-4 Analyte List for Inorganic Parameters

Trace Elements	Major Elements
Antimony ^a	Aluminum
Arsenic ^a	Calcium
Barium ^a	Iron
Beryllium ^a	Magnesium
Boron	Potassium
Cadmium ^a	Sodium
Hexavalent Chromium ^b	Titanium
Chromium, total*	Ultimate/Proximate Parameters
Cobalt ^a	Carbon
Copper ^a	Hydrogen
Lead ^a	Nitrogen
Manganese ^a	Sulfur
Mercury*	Ash
Molybdenum ^a	Volatile Matter
Nickel ^a	Fixed Carbon
Selenium ^a	
Silver	
Vanadium ^a	
Ionic Species	
Chloride (Cl ⁻)	
Fluoride (F)	
Phosphates (as Total P)	
Sulfates (SO ₄ ⁻²)	
Ammonia	
Cyanide	

^a These elements were analyzed by ICP-MS in the gas impinger samples.

b Hexavalent chromium in ESP outlet flue gas only.

Table A-5
Analyte List for Organic Parameters

Volatile Organics ² (Method 8240)	Semivolatile Organics (I	Method 8270/CARB 429b)
Benzene	Acenaphthene ^b	2,4-Dimethylphenol
Bromoform.	Acenaphthylene ^b	Dimethylphthalate
Carbon Disulfide	Acetophenone	4,6-Dinitro-2-methylphenol
Carbon Tetrachloride	4-Aminobiphenyl	2,4-Dinitrophenol
Chlorobenzene	Aniline	2,4-Dinitrotoluene
Chloroform .	Anthracene ^b	2,6-Dinitrotoluene
1,4-Dichlorobenzene	Benzidine	bis(2-Ethylhexyl)phthalate
cis-1,3-Dichloropropene	Benzo(a)anthraceneb	Fluoranthene ^b
trans-1,3-Dichloropropene	Benzo(a)pyrene ^b	Fluoreneb
Ethyl Benzene	Benzo(b)fluorantheneb	Hexachlorobenzene
Ethyl Chloride (Chloroethane)	Benzo(g,h,i)peryleneb	Hexachlorobutadiene
Ethylene Dichloride (1,2-Dichloroethane)	Benzo(k)fluorantheneb	Hexachlorocyclopentadiene
Ethylidene Dichloride (1,1-Dichloroethane)	Benzoic Acid	Hexachloroethane
Methyl Bromide (Bromomethane)	Benzyl Alcohol	Indeno(1,2,3-cd)pyrene ^b
Methyl Chloride (Chloromethane)	4-Bromophenyl Phenyl Ether	Isophorone
Methyl Chloroform (1,1,1-Trichloroethane)	Butylbenzylphthalate	2-Methylnaphthaleneb
Methyl Ethyl Ketone (2-Butanone)	4-Chloro-3-Methylphenol	2-Methylphenol (o-cresol)
Methylene Chloride (Dichloromethane)	p-Chloroaniline	4-Methylphenol (p-cresol)
Propylene Dichloride (1,2-Dichloropropane)	bis(2-Chloroethoxy)methane	N-Nitrosodimethylamine
Styrene	bis(2-Chloroethyl)ether	N-Nitrosodiphenylamine
1,1,2,2-Tetrachloroethane	bis(2-Chloroisopropyl)ether	N-Nitrosopropylamine
Tetrachloroethene	2-Chloronaphthaleneb	Naphthalene ^b
Toluene	2-Chlorophenol	2-Nitroaniline
1,1,2-Trichloroethane	4-Chlorophenyl Phenyl Ether	3-Nitroaniline
Trichloroethene	Chrysene ^b	4-Nitroaniline
Vinyl Acetate	Di-n-octylphthalate	Nitrobenzene
Vinyl Chloride	Dibenz(a,h)anthraceneb	2-Nitrophenol
Vinylidene Chloride (1,1-Dichloroethene)	Dibenzofuran	4-Nitrophenol
m,p-Xylene	Dibutylphthalate	Pentachloronitrobenzene
o-Xylene	1,2-Dichlorobenzene	Pentachlorophenol
	1,3-Dichlorobenzene	Phenanthrene ^b
	1,4-Dichlorobenzene	Phenol
	3,3-Dichlorobenzidine	Pyreneb
	2,4-Dichlorophenol	1,2,4-Trichlorobenzene
	Diethylphthalate	2,4,5-Trichlorophenol
	p-Dimethylaminoazobenzene	2,4,6-Trichlorophenol

^a These are the volatile organic compounds detected by VOST (Method 8240) that are listed in the Clean Air Act list of hazardous air pollutants.

b These semivolatile organic compounds were analyzed in the gas samples by CARB Method 429 using high resolution GC/MS.

Table A-6
List of Radionuclide

4	^	_		_
ı		2	ī	П

Actinium-228 @ 338 Ke

Actinium-228 @ 911 Ke

Actinium-228 @ 968 Ke

Bismuth-212 @ 727 Ke

Bismuth-214 @ 609.4 K

sampling approach varied from the standard EPA Method 5¹ sampling approach used at the ESP inlet and outlet ducts. The difference, however, was limited to the collection of particulate matter. In the fixed probe system, hot-gas filters were used to collect particulate matter. Multiple gas samples were then collected for vapor-phase species from a header downstream of the filter. The Method 5 approach specifies a single filter for each independent sampling train.

A schematic of the fixed probe sampling system designed for the Plant Tidd APF unit is shown in Figure A-1. The system was designed to sample the process gas isokinetically at a single point in the center of the duct. Gas cooling was accomplished by thermal convection through the sample line. Sample gas was cooled from 1350°F to approximately 600°F to safely operate the isolation ball valve. A flow orifice and sample control valve downstream of the filter were used to maintain isokinetic sampling rates.

To keep volatile species from condensing in the sample line downstream of the filter, the filter holder and all downstream components were heat traced and kept at or above the temperature of the gas entering the filter holder. The system was designed to allow gas samples to cool only after the gas entered the recoverable quartz tubing portion of the sampling train. However, the quartz tubing broke repeatedly during the initial test runs because the ball joint could not withstand the thermal stresses at 600°F. To solve this problem, the heat tracing tape was removed from the sample line downstream of the orifice meter to allow the gas to cool slightly. Skin temperatures at the header sample valves were typically 250-350°F after this modification. Because most of the quartz tubes were broken during the initial test, subsequent tests at the APF inlet were conducted using Teflon® tubing instead of quartz. This modification is not judged to have any affect on the gas samples. The tubing that connects the impinger train to the fixed probe sample header was directly comparable to the sampling train components found downstream of the heated filter in the EPA Method 5 sampling train and was rinsed and recovered accordingly.

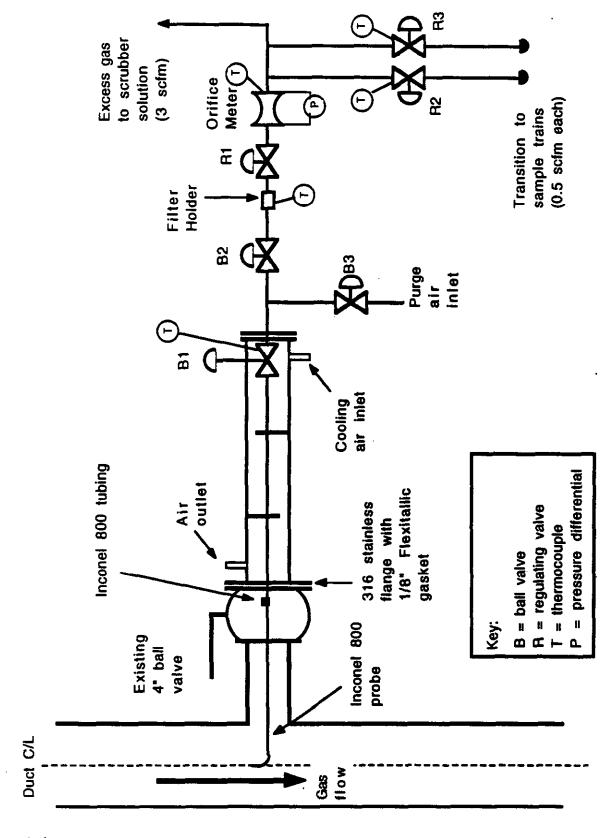


Figure A-1 APF High Pressure Sampling System

Particulate Loading

EPA Reference Method 5 was used to determine the particulate loading at the ESP inlet and outlet sampling locations. This method was performed in conjunction with the multi-metals sampling train to provide compatible particulate loading and particulate metals concentration data. Although not specified in Method 5 for determining particulate loading, quartz-fiber filters were used in place of glass-fiber filters to reduce background trace element contamination. Samples were collected isokinetically at multiple points across the duct as specified by EPA Reference Methods 1² and 2.³

At the APF inlet sampling location, the fixed probe system equipped with an allundum-ceramic thimble filter was used to collect isokinetic samples from a single point in the center of the duct. A 47 mm quartz-fiber filter in a high pressure Gelman filter holder was used in place of the allundum thimble at the APF outlet. Breakthrough of particulate occurred across the thimble filter during initial tests at the APF inlet because of the higher than expected particulate loading. To solve this problem, a second thimble filter assembly was installed in series and filters were changed out approximately every two hours to avoid exceeding the filter capacity. On Days 3 and 4, a third backup filter (high-pressure Gelman) was added downstream of the two thimble filters. The gas flow through the filter was determined by taking pressure differential readings and gas temperature readings across the flow orifice. The total gas flow through the filter was calculated using the orifice diameter, gas temperature and pressure at the orifice, and the sampling time.

Filters from both systems were recovered and weighed to determine the particulate mass collected. At the ESP sampling locations, particulate matter was also rinsed and recovered from the sampling nozzle and probe. Rinsing of the fixed high-pressure sampling probe was not feasible. Any wall losses or solids deposition inside the probe were assumed to be insignificant relative to the overall sample mass collected.

Particulate- and Vapor-Phase Metals

Collection of particulate- and vapor-phase metals was performed in conjunction with the particulate loading runs using the procedures detailed in EPA Draft Method 29.4 Method 29 is similar to Method 5 with a few sample train modifications. Method 29 requires replacement of the stainless steel nozzle and probe liner used in Method 5 with glass components. The particulate material was collected on quartz fiber filters, replacing the standard glass fiber filters normally used with Method 5.

At the APF inlet and outlet, the sampling probe was constructed of a high chromium-nickel alloy (Inconel 800) for strength and corrosion resistance a the high process temperature. The use of probe materials other than glass or quartz is a modification to Method 29 specific to the APF inlet and outlet sample locations.

Vapor-phase metals were collected in a series of impinger solutions. The first two impingers contained a dilute nitric acid and hydrogen peroxide (HNO₃/H₂O₂) solution. The third impinger was empty. The next two impingers contained acidic potassium permanganate (KMnO₄/H₂SO₄) solution for mercury collection. These impingers were followed by one dry impinger, and an impinger filled with silica gel. Approximately 90 to 100 dry standard cubic feet (dscf) of gas were collected isokinetically.

A description of the sampling train and sample fraction recovery for the multi-metals sampling train is presented in Table A-7. The sample fractions generated by the multi-metals sampling train and an overview of the sample handling process are shown in Figures A-2 through A-7. These particulate- and vapor-phase sample fractions were prepared and analyzed separately for the elements listed in Table A-4.

Particulate Phase. The filter samples were desiccated and weighed to a constant weight (defined as successive weight determinations within 0.5 mg at 6-hour intervals). For samples collected at the ESP, the acetone probe and nozzle rinses (PNR) were evaporated, desiccated, and also weighed to a constant weight. For the ESP outlet, the nitric acid PNR was added to

Description and Recovery of Method 29 (Multi-Metals) Sampling Train Table A-7

				.,,
Component	Contents	Recoverya	Container	ereparation & Analysis
Probe Nozzle Rinse and front half of filter holder rinse ^b	V V	Rinse probe, nozzle, and front half of fitter holder with acetone into sample container.	500 mL amber glass bottle	See Figures A-2 and A-3
Probe Nozzle Rinse and front half of filter holder rinse ^b	NA	Rinse probe, nozzle, and front half of filter holder with 0.1 N HNO ₃ into sample container.	500 mL amber glass bottle	See Figures A-2 and A-3
Filter	Tared quantz filter	Place filter in sample container.	Plastic petri dish	See Figures A-2 through A-4
Thimble ^c	Tared thimble ceramic	Place thimble in sample container.	Glass jar	Sec Figure A-5
Transfer Line Rinsed	NA	Rinse transfer line with 0.1 N HNO3 into sample container.	Combine transfer line rinse and Impingers 1 and 2 in a	See Figure A-6
Impinger #1	5% nitric acid in 10% hydrogen peroxide (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with 0.1 N HNO3 into sample container.	1000 mL amber glass bottle	
Impinger #2	5% nitric acid in 10% hydrogen peroxide (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with 0.1 N HNO ₃ into sample container.		
Impinger #3	Dry	Recover condensate, then rinse impinger and connecting glassware with 0.1 N HNO3 into sample container.	Combine Impingers 3,4, and 5 See Figure A-7 in a 1000 mL amber glass bottle.	Sec Figure A-7
Impinger #4	4% potassium permanganate in 10% sulfuric acid (200 mL)	anate in Recover impinger solution, then rinse impinger and mL) connecting glassware with fresh KMnO ₄ solution into sample container.		
Impinger #5	4% potassium permanganate in 10% sulfuric acid (200 mL)	Recover impinger solution, then rinse impinger with fresh KMnO ₄ solution into sample container.		
Impinger #4 - Second Rinse	NA	Rinse impinger with 8N HCl into sample container. Not to exceed 25 mL HCl.	250 mL amber glass bottle	Sec Figure A-7
Impinger #5 - Second Rinse	NA	Rinse impinger with 8N HCl into sample container. Not to exceed 25 mL HCl.		
Impinger #6	Silica Gel (300 g)	Replace when exhausted.	None	None

NA = Not applicable.

All impingers were weighed prior to recovery to determine gas sample moisture content by EPA Reference Method 4.

ESP inlet and outlet and APF outlet.

APF inlet only.

APF inlet only.

Includes back half of filter holder at ESP inlet and outlet; and gas cooling system at APF inlet and outlet.

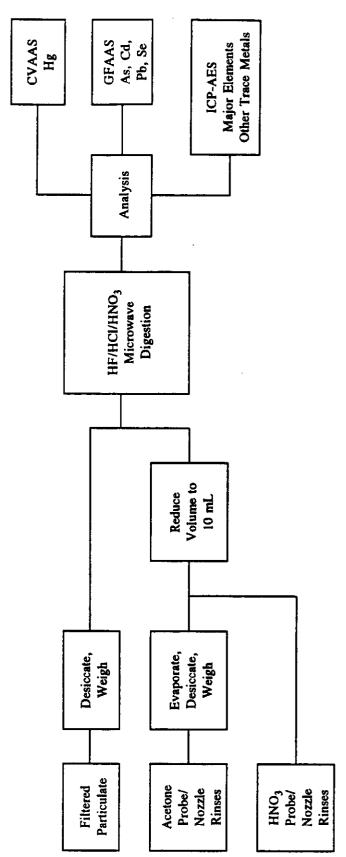


Figure A-2
Gas Particulate Sample Preparation and Analysis Plan for Metals (ESP Outlet)

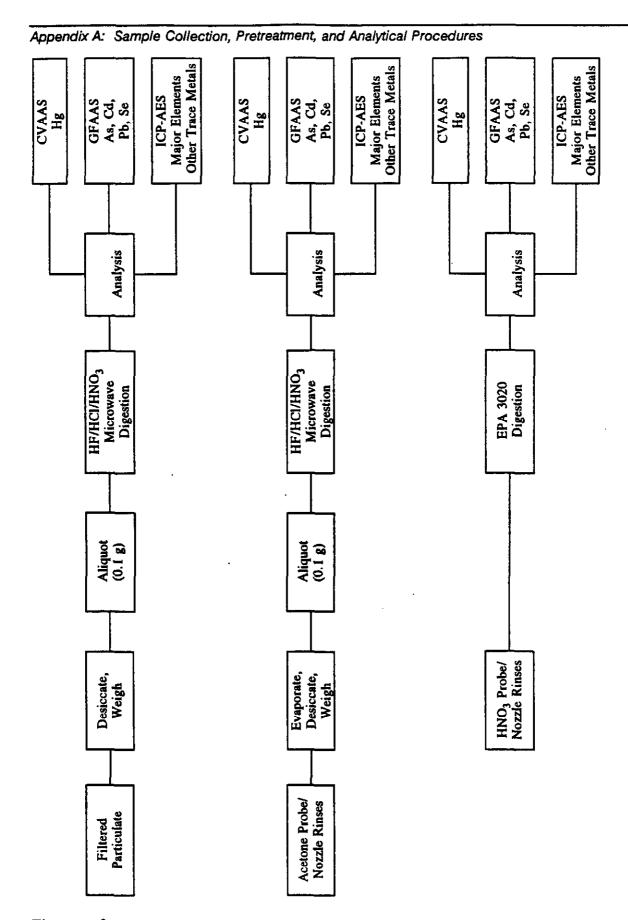


Figure A-3
Gas Particulate Sample Preparation and Analysis Plan for Metals (ESP Inlet)

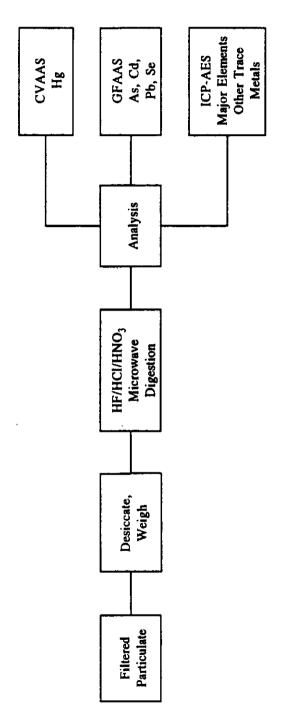


Figure A-4
Gas Particulate Sample Preparation and Analysis Plan for Metals (APF Outlet)

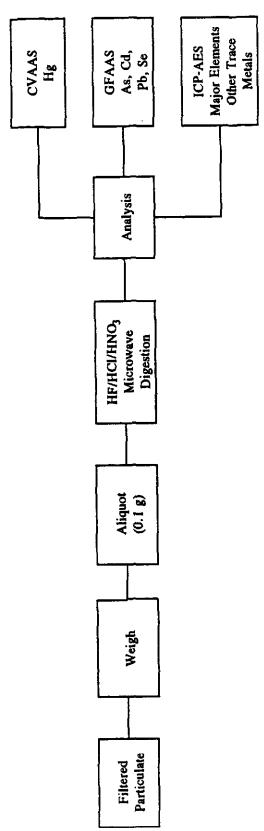


Figure A-5
Gas Particulate Sample Preparation and Analysis Plan for Metals (APF Inlet)

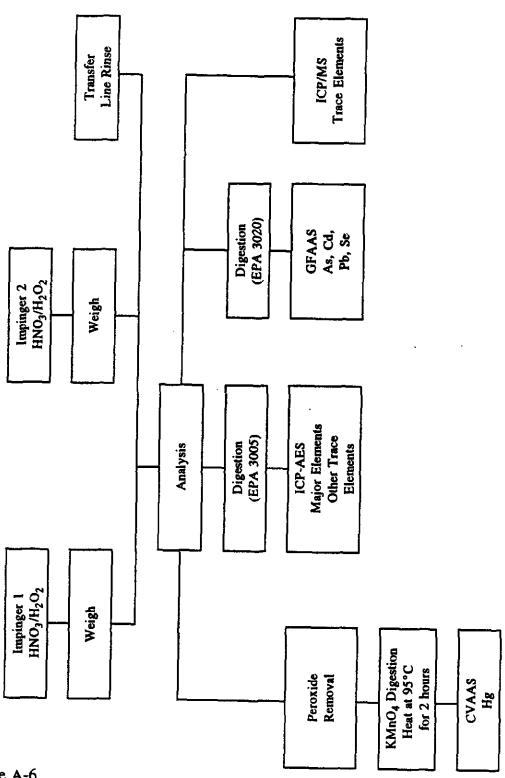


Figure A-6
Flue Gas Impinger Sample Preparation and Analysis Plan for Metals

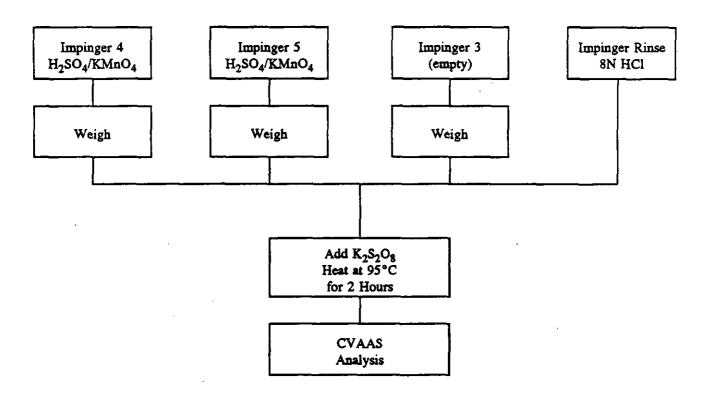


Figure A-7. Flue Gas Impinger Sample Preparation and Analysis Plan for Mercury

the solids recovered from the acetone PNR, and the volume reduced to 10 mL by evaporation on a hot plate. This volume was quantitatively transferred, along with the filter, to a microwave-digestion vessel. The total particulate sample from the collected gas was microwave digested⁵ with a mixture of hydrofluoric, hydrochloric, and nitric acids. For the ESP inlet, the nitric acid PNR and the acetone PNR were analyzed separately due to the high mass loadings recovered on the filter and in the acetone PNR. The APF outlet samples were analyzed similarly to the ESP outlet samples, without the presence of probe rinses. The APF inlet particulate was collected and analyzed directly.

The digestates were analyzed for metals (except boron) by a combination of techniques including inductively coupled plasma atomic emission spectroscopy (ICP-AES)⁶ and graphite furnace atomic absorption spectroscopy (GFAAS).^{7,8,9,10} Mercury was determined from an aliquot of the microwave digestate by cold vapor atomic absorption spectroscopy (CVAAS).¹¹ Boric acid was added to the digestate to solubilize metal fluorides that precipitate during the digestion. This addition of boric acid makes the analysis of boron in these samples impractical; however, boron was determined in all collected ash samples from the ESP, APF, and cyclone systems as described later.

Vapor Phase. The two HNO₃/H₂O₂ impinger samples were combined, digested, and analyzed for metals by ICP-AES and GFAAS. Aliquots of undigested impinger solutions were analyzed by ICP/MS.¹² A separate aliquot was removed for mercury analysis and the excess peroxide in the sample matrix was eliminated by the addition of solid KMnO₄ until a pale pink color persisted. The sample was then digested in KMnO₄/H₂SO₄ solution and analyzed for mercury by CVAAS.¹³

The contents of the third impinger, the two KMnO₄/H₂SO₄ impingers, and the hydrogen chloride (HCl) impinger rinse sample were combined and an aliquot was digested in KMnO₄/H₂SO₄ solution and analyzed for mercury by CVAAS.

Anions

The Method 5 train was used to collect vapor phase and particulate samples for acid gas species. Hydrochloric, hydrofluoric, and sulfuric acids along with sulfur dioxide and sulfur trioxide were collected using two impingers each containing 200 mL of a carbonate/ bicarbonate solution containing hydrogen peroxide. Approximately 30-45 dscf of gas was collected at each location.

A description of the sampling train and sample fraction recovery for the Method 5 anions sampling train is presented in Table A-7. The sample fractions generated by the anions/acid gas sampling train and an overview of the sample handling process are shown in Figures A-8 through A-11. The particulate and vapor phases were prepared and analyzed separately for chloride, fluoride, and sulfate.

Particulate Phase. The filter was desiccated and weighed prior to being combined with the PNR. The PNR sample was evaporated, desiccated, and weighed before being combined with the filter sample. The particulate matter was then sonicated with 100 mL of fresh carbonate/bicarbonate solution. The carbonate solution was analyzed for chloride and sulfate by ion chromatography (IC)¹⁴ and fluoride was determined by specific ion electrode (SIE).¹⁵

Vapor Phase. The impinger solutions received from the test site were sent directly to the analytical laboratory for chloride and sulfate analysis by IC, and fluoride analysis by SIE¹⁶.

Ammonia/Hydrogen Cyanide

Sample collection for ammonia and hydrogen cyanide in the gas streams was performed in conjunction with the Method 5 anions sampling train. Similarly, gas was extracted isokinetically at a single point in the duct through the anions train filter, then directed to an impinger train. For ammonia collection, 0.1 N sulfuric acid was placed in the first two impingers of the sampling train. The low pH of the H₂SO₄ solution allowed HCN to pass

Description and Recovery of Anions Sampling Train Table A-8

Component	Solution	Recoverya	Container	Preparation & Analysis
Probe Nozzle Rinse and front half of filter holder rinse ^b	. AN	Rinse probe, nozzle, and front half of filter holder with acetone/water into sample con- tainer.	500 mL plastic nalgene	See Figures A-8 through A-10
Filter	Tared quartz filter	Place filter in sample container.	Plastic petri dish	See Figures A-8 through A-10
Thimble	Tared ceramic thimble	Place thimble in sample container.	Glass jar	See Figure A-8 through A-10
Transfer Line Rinse ^d	NA	Rinse transfer line with absorbing solution into sample container.	1000 mL plastic nalgene	See Figure A-11
Impinger #1	Absorbing solution (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with absorbing solution into sample container.	Cool to 4°C	
Impinger #2	Absorbing solution (200 mL)	Recover impinger solution, then rinse impingers and connecting glassware with absorbing solution into sample container.		
Impinger #3	Dry	Recover condensate, then rinse impinger and connecting glassware with absorbing solution into sample container.		
Impinger #4	Silica gel (300 g)	Not recovered.	None	None

* All impingers were weighed prior to recovery.

^b ESP inlet and outlet and APF outlet.

c APF inlet only.

Includes back half of filter holder at ESP inlet and outlet and gas cooling system at APF inlet and outlet.

NA = Not applicable.

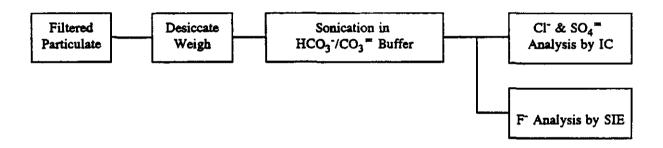


Figure A-8
Gas Particulate Sample Preparation and Analysis Plan for Anions (APF Outlet)

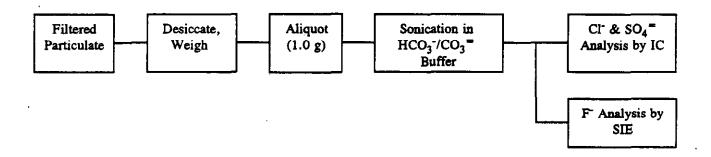


Figure A-9
Gas Particulate Sample Preparation and Analysis Plan for Anions (APF Inlet and ESP Inlet)

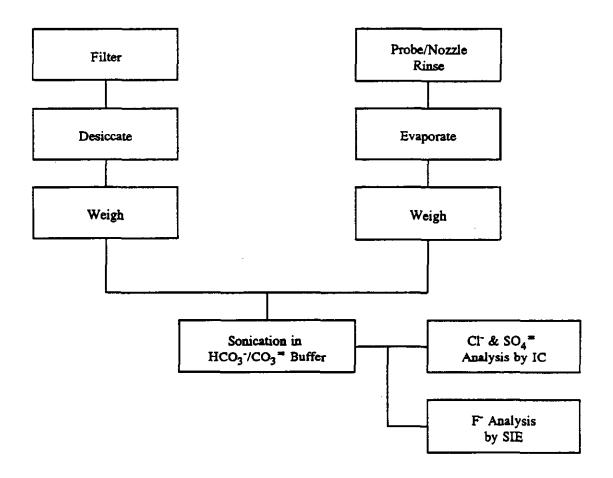


Figure A-10
Gas Particulate Sample Preparation and Analysis Plan for Anions (ESP Outlet)

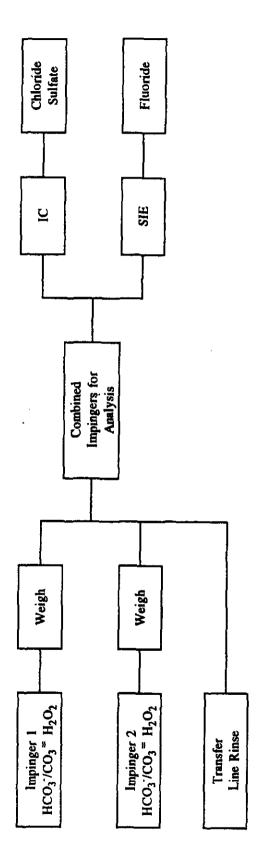


Figure A-11
Flue Gas Impinger Sample Preparation and Analysis Plan for Anions

through. A 2% zinc acetate solution was placed in the fourth and fifth impingers for the collection of cyanide. The gas sample volume for each run was approximately 40 to 60 dscf.

A description of the sampling train and sample fraction recovery for the ammonia/hydrogen cyanide trains is presented in Table A-9. The sample fractions generated by the combined ammonia/hydrogen cyanide sampling train were sent directly to the laboratory for analysis as shown in Figure A-12. The sulfuric acid impinger solutions (0.1 N H₂SO₄) were prepared for analysis by distillation according to EPA Method 350.2¹⁷ and the recovered distillates were analyzed by EPA 350.1, ¹⁸ an automated colorimetric method. Cyanide impinger samples (0.1 M zinc acetate) were digested and analyzed according to EPA Method 9012. ¹⁹

Formaldehyde

Formaldehyde was collected using an acidic solution of 2,4-dinitrophenylhydrazine (DNPH) according to EPA Method 0011.²⁰ Approximately 60 dscf of gas was collected isokinetically in conjunction with the anions sampling train using the same filter for particulate removal. The impinger solutions were combined into one sample along with the methylene chloride glassware rinses. The solutions were sealed in amber glass containers with Teflon® closures and stored at 4°C.

A description of the sampling train and sample fraction recovery for the aldehydes sampling train is presented in Table A-10. The sample fractions generated by the aldehydes sampling train and an overview of the sample handling process are shown in Figure A-13. The aqueous and methylene chloride layers of the sample were separated, and the aqueous fraction was then extracted with fresh methylene chloride. The methylene chloride portion of the sample and the aqueous extract are then combined. Since low levels of formaldehyde were expected, if any, an aliquot of this extract was concentrated during a solvent exchange procedure into acetonitrile. The resulting extract was then analyzed by high performance liquid chromatography (HPLC) according to EPA Method 0011A. Air Toxics, Ltd. was subcontracted to perform this analysis.

Description and Recovery of Ammonia and Hydrogen Cyanide Sampling Train Table A-9

Component	Solution	Recovery	Container	Preparation & Analysis
Transfer Line Rinse ^b	NA	Rinse transfer line with deionized water into sample container.	1000 mL Naigene bottle	See Figure A-12
Impinger #1 (NH ₃)	0. IN H ₂ SO ₄ (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with deionized water into sample container.		
Impinger #2 (NH ₃)	0.1N H ₂ SO ₄ (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with deionized water into sample container.		
Impinger #3	Dry	Recover condensate, then rinse impinger and connecting glassware with deionized water into sample container.		
Impinger #4 (CN)	0.1M ZnOAc (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with deionized water into sample container.	1000 mL Naigene bottle Cool to 4°C	See Figure A-12
Impinger #5 (CN)	0.1M ZnOAc (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with deionized water into sample container.		
Impinger #6	Silica Gel (300 g)	Not recovered.	None	None

All impingers were weighed prior to analysis.

b includes back half of filter holder at ESP inlet and outlet and gas cooling system at APF inlet and outlet.

NA = Not applicable.



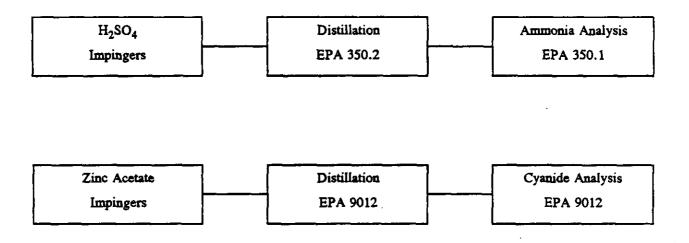


Figure A-12
Flue Gas Impinger Sample Preparation and Analysis Plan for Ammonia and Cyanide

Table A-10
Description and Recovery of Aldehydes Sampling Train

Component	Solution	Recovery®	Container	Preparation & Analysis
Transfer Line Rinse ^b	NA	Rinse transfer line with MeCl ₂ into sample container.	1000 mL amber glass bottle	See Figure A-13
Impinger #1	DNPH solution (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with MeCl ₂ into sample container.	Cool to 4°C	
Impinger #2	DNPH solution (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with MeCl ₂ into sample container.		
Impinger #3	Dry	Recover condensate into sample container.		
Impinger #4	Silica gel (300 g)	Not recovered.	None	None

^a All impingers will be weighed prior to recovery.

NA = Not applicable.

b Includes back half of filter holder at ESP inlet and outlet and gas cooling system at APF inlet and outlet.

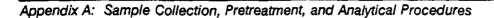




Figure A-13
Flue Gas Impinger Sample Preparation and Analysis Plan for Formaldehyde

Volatile Organics

Benzene, toluene, and other volatile organic compounds were sampled using a volatile organic sampling train (VOST). The VOST is described in Method 0030²¹ in SW-846. Volatile organics were removed from the sample gas by sorbent traps maintained at 20°C. The first sorbent trap contains Tenax resin and the second trap contains Tenax resin and petroleum-based charcoal. A dry gas meter was used to measure the volume of gas passed through the pair of traps. Sample volumes of 20 L were collected on two separate pairs of traps at a rate of 0.5 L/min.

Leak checks were performed before and after collection of each pair of resin traps. After the post-collection leak check was been completed, the traps were sealed with their end caps and returned to their respective glass containers for storage and transport. During storage and transportation, the traps were kept cool (<4°C).

The sample fractions generated by the VOST and an overview of the sample handling process are shown in Figure A-14. The Tenax and Tenax/charcoal cartridges were sent directly from the test site to the analytical laboratory for volatile organic compound analysis. The contents of the Tenax and Tenax/charcoal cartridges were spiked with internal standards and surrogates, thermally desorbed according to EPA Method 5040²², and directly analyzed for the compounds listed in Table A-5 by GC/MS according to EPA Method 8240.²³ Air Toxics, Ltd. was subcontracted to perform VOST analyses.

Semivolatile Compounds

Semivolatile organic compounds (SVOCs) were collected using a Modified Method 5 (MM5)²⁴ sampling train. The probe washes, filter catches, XAD sorbent traps, and aqueous condensate were extracted and analyzed for SVOCs by a combination of analytical protocols, SW-846 Method 8270²⁵ and CARB Method 429.²⁶

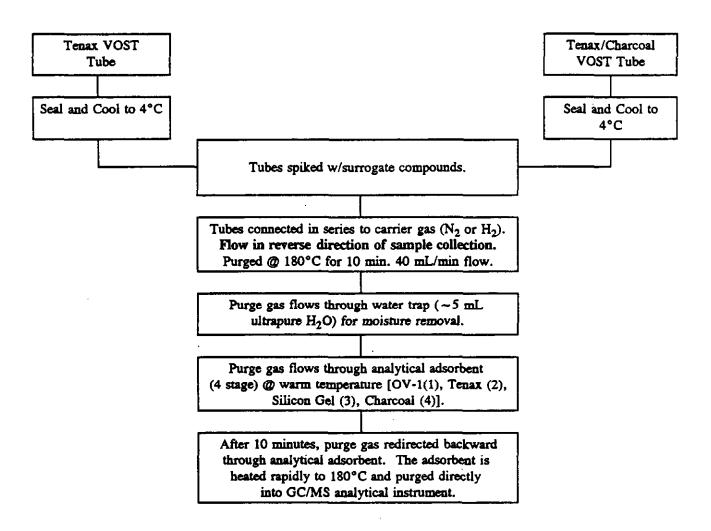


Figure A-14 VOST Sorbent Sample Preparation and Analysis Plan for Volatile Organic Compounds

The MM5 sampling protocol is Method 0010 in SW-846. The sampling system consists of a heated probe, heated filter, sorbent module, and pumping and metering unit.

From the heated filter, sample gas entered a sorbent module. The sorbent module consists of a water-cooled condenser followed by an XAD-2 resin trap. After the resin trap was a dry, modified Greenburg-Smith impinger which collected the aqueous condensate.

Samples were collected isokinetically at a sampling rate of approximately 0.5 dscfm for each train. Approximately 100 to 125 dscf of gas were collected by each train over a minimum sampling period of two hours.

Sampling train preparation and sample retrieval was performed in a controlled environment to reduce the possibility of sample contamination. Prior to assembly, each component of the sampling train was thoroughly rinsed with methylene chloride.

After sample collection, the ends of the sampling train were sealed with solvent-rinsed foil and returned to the clean-up area for sample retrieval. The filter was recovered and placed in a glass petri dish that was rinsed with methylene chloride. Aqueous condensate collected in the first two impingers and in the sorbent trap were transferred to amber glass bottles rinsed with methylene chloride with Teflon®-lined screw cap closures.

A description of the sampling train and sample fraction recovery for the MM5 sampling train is presented in Table A-11. The sample fractions generated by the MM5 sampling train and an overview of the sample handling process are shown in Figure A-15. The particulate-phase and vapor-phase sample fractions were analyzed separately for the semivolatile organic compounds presented in Table A-5. The sample extracts were split to provide analysis of the particulate and vapor phase samples by both SW-8270 and CARB Method 429 protocols.

The particulate phase consisted of the front-half acetone/methylene chloride PNR and the filter. The vapor phase consisted of the back-half acetone/methylene chloride rinse, the

Table A-11 Description and Recovery of Modified Method 5 (Semivolatile and PAHs 429) Sampling Train

Component	Solution	Recovery	Container	Preparation & Analysis
Probe/Nozzle Rinse ^b	NA.	Rinse probe, nozzle, and front half of filter holder with MeCl ₂ into sample container.	500 mL amber glass bottle. Cool to 4°C.	See Figure A-15
Filter	Pretreated quartz filter	Place filter in sample container.	Glass petri dish. Cool to 4°C.	See Figure A-15
Thimble	Tared thimble	Place thimble in sample container.	Glass jar. Cool to 4°C.	See Figure A-15
XAD Cartridge	XAD-2 resin	Seal resin cartridge.	Wrap in aluminum foil. Cool to 4°C.	See Figure A-15
Transfer Line Rinse ^d	NA	Rinse transfer line with MeCl ₂ into sample container.	1000 mL amber glass bottle.	See Figure A-15
Condenser	NA	Rinse condenser with MeCl ₂ into sample container.	Cool to 4°C	
Impinger #1	Dry	Recover condensate, then rinse impinger and connecting glassware with MeCl ₂ into sample container.		
Impinger #2	Ultrapure water (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with MeCl ₂ into sample container.		
Impinger #3	Ultrapure water (200 mL)	Recover impinger solution, then rinse impinger and connecting glassware with MeCl ₂ into sample container.		
Impinger #4	Silica gel (300 g)	Not recovered.	None	None

All impingers were weighed prior to analysis.

^b ESP inlet and outlet and APF outlet.

^c APF inlet only.

^d Includes back half of filter holder at ESP inlet and outlet and gas cooling system at APF inlet and outlet.

NA = Not applicable.

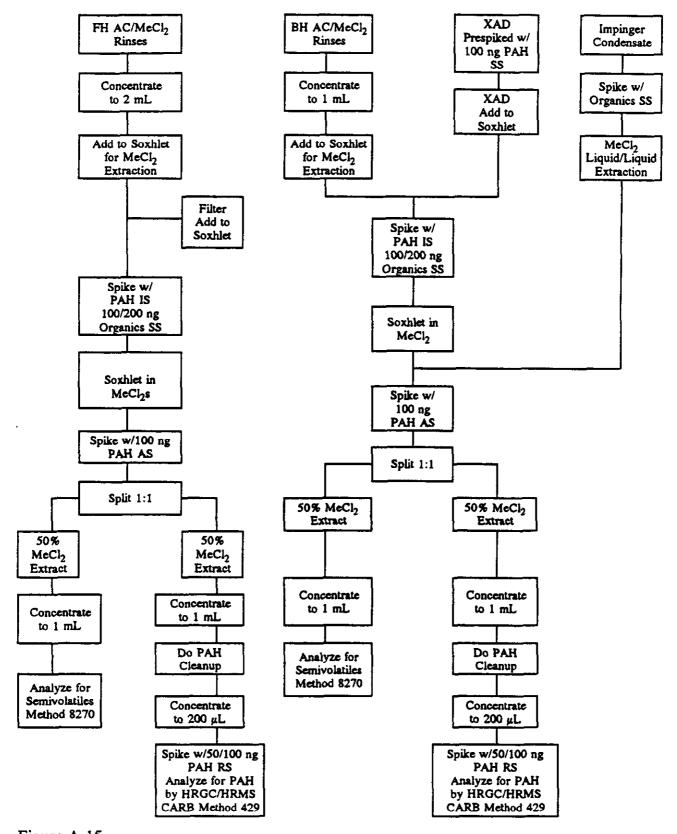


Figure A-15
Flue Gas Sample Preparation and Analysis Plan for Semivolatile Organic Compounds and PAHs

XAD resin, and the impinger condensate. The combined acetone/methylene chloride PNR/filter fraction and XAD fractions were soxhlet-extracted separately with methylene chloride. The impinger condensate fraction was liquid-liquid extracted with methylene chloride. The XAD extract and the impinger condensate extract were then combined, concentrated to 1 mL, and analyzed by gas chromatography/mass spectrometry (GC/MS) according to EPA Method 8270 and by high resolution GC/MS according to CARB Method 429. Triangle Laboratories, Inc. was subcontracted to perform these analyses.

Dioxins and Furans

Sampling for dioxins and furans in the selected gas streams was performed using EPA Reference Method 23.²⁷ Sample collection procedures specified in Method 23 were followed with the following exception: All train component rinses were performed with methylene chloride and acetone. The toluene rinse was then performed and added to the respective front half and back half acetone/methylene chloride rinse samples.

Adding the toluene rinses to the other solvent rinses provided a single sample for analysis of all congeners of dioxins and furans. Sample rate, volume and procedures were identical to the MM5 procedures described previously.

At the APF outlet, the particulate- and vapor-phase sample fractions were prepared and analyzed separately. At all other sampling locations, the particulate- and vapor-phase samples were combined for a single analysis. A description of the sampling train and sample fraction recovery for the Method 23 sampling train is presented in Table A-12. The sample fractions generated by the Method 23 sampling train and an overview of the sample handling process are shown in Figures A-16 and A-17.

Particulate Phase. The particulate phase consisted of the combined front-half toluene and acetone/methylene chloride rinses, and the filtered particulate matter. The toluene/ acetone/methylene chloride rinse was concentrated to 2 mL and added to the filter fraction (and XAD fraction if particulate and vapor phases were combined). This was then spiked

Table A-12
Description and Recovery of Method 23 (Dioxins/Furans) Sampling Train

				Preparation
Component	Solution	Recovery ^a	Container	& Analysis
Probe/Nozzle Rinse ^b	NA	Rinse probe, nozzle, and front half of filter	500 mL amber glass bottle.	See Figures A-16
		holder with $MeCl_2$, acetone, then toluene into sample container.	Cool to 4°C.	and A-17
Filter	Pretreated quartz	Place filter in sample container.	Glass petri dish.	See Figures A-16
	filter		Cool to 4°C.	and A-17
Thimble	Thimble	Place thimble in sample container.	Glass jar.	See Figures A-16
			Cool to 4°C.	and A-17
Transfer Line Rinsed	NA	Rinse transfer line with MeCl ₂ , acetone, then	1000 mL amber glass bottle.	See Figure A-16
		toluene into sample container.	Cool to 4°C.	and A-17
Condenser	NA	Rinse condenser with MeCl ₂ , acetone, then		
		toluene into sample container.		
XAD Cartridge	Spiked XAD-2 resin Seal	Seal resin cartridge.	Wrap in aluminum foil.	See Figure A-16
			Cool to 4°C.	and A-17
Impinger #1	Dry	Recover condensate, then rinse impinger and	Discard.	None
		connecting glassware with MeCl, acetone, then		
		toluene into sample container.		
Impinger #2	Ultrapure water (200	Recover impinger solution, then rinse impinger and con-		
	III)	mL) necting glassware with MeCl ₂ , actone, then toluene		
		into sample container.		
Impinger #3	Ultrapure water (200	Ultrapure water (200 Recover impinger solution, then rinse impinger and		
	<u>II</u>	connecting glassware with MeCl ₂ , acetone, then toluene		
		into sample container.		
Impinger #4	Silica Gel (300 g)	Not recovered.	None	None

All impingers were weighed prior to recovery.

^b ESP inlet and outlet and APF outlet.

^c APF inlet only.

^d Includes back half of filter holder at ESP inlet and outlet and gas cooling system at APF inlet and outlet.

NA = Not applicable.

prevent an SO₂-induced drop in pH. Therefore, for the Cr(VI) tests at Plant Tidd, a 1.0 normal KOH solution was used to prevent the pH from dropping below that of the resulting carbonate/bicarbonate buffer.

Increasing the KOH concentration above 1.0 N is counterproductive. The concentration of CO_2 in the flue gas would have required a KOH concentration in excess of 20 normal to maintain a pH > 8.3. This concentration is unattainable. In addition, the background level of Cr(VI) in the KOH reagent tends to obscure the low levels of Cr(VI) potentially detectable in the sample.

The impinger solutions recovered from the EPA Cr(VI) sampling train were analyzed on site immediately after collection to minimize reduction of any Cr(VI) to Cr(III). The analysis was performed using an IC equipped with a post-column reactor and UV-VIS detector as specified in the sampling method. A concentrator column was used to load samples and an eluent solution of ammonium sulfate and ammonium hydroxide was used as the mobil phase. An acidic solution of 1,5-diphenyl carbazide was applied in the post-column reactor to develop a colored chromium complex with an absorbance maximum of 540 nm. The absorbance of the sample was measured at this wavelength to determine the concentration of Cr(VI) in the impinger sample. Following recovery of the caustic impinger solution, the sampling train was rinsed with 0.1 N HNO₃. These rinses and the caustic impinger solution were returned to Radian's Austin laboratory for total chromium analysis as a cross-check against the Cr(VI) results. Total chromium was determined on these samples by ICP emission spectroscopy.

A description of the sampling train and sample fraction recovery for the Cr(VI) sampling train is presented in Table A-14. The sample fractions generated by the Cr(VI) sampling train and an overview of the sample handling process are shown in Figure A-18.

Table A-14
Description and Recovery of Cr⁺⁶ Sampling Train

Component	Solution	Recovery	Container	Preparation & Analysis
Probe/Nozzle Rinse	NA	Rinse probe nozzle, aspirator sample and recirculation lines with DI water into sample container.	500 mL plastic bottle	See Figure A-18
Impinger #1	1.0 N KOH (150 mL)	Recover impinger, then rinse impinger and connecting Teflon® with DI water into sample container.		
Impinger #2	1.0 N KOH (75 mL)	Recover impinger, then rinse impinger and connecting Teflon® with DI water into sample container.		
Impinger #3	1.0 N KOH (75 mL)	Recover impinger, then rinse impinger and connecting Teflon® with DI water into sample container.		
Impinger #4	Dry	Not recovered.	None	None
Impinger #5	Silica gel (300 g)	Not recovered.	None	None
Nitric Acid Impinger Rinses	NA	Rinse all impingers and connecting Teflon® with 0.1 N HNO ₃ .	500 mL plastic bottle	Analyze for total chromium

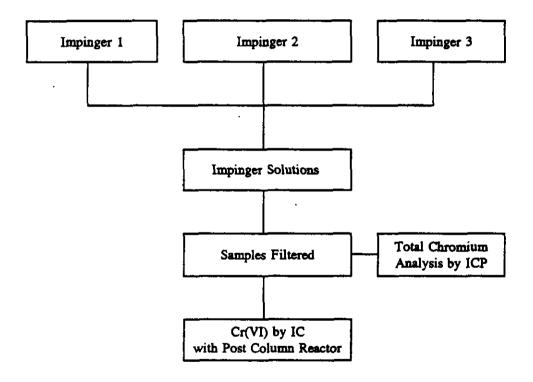


Figure A-18
Gas Impinger Sample Preparation and Analysis for Cr⁺⁶ and Total Chromium

Solid Streams

There were seven solid process streams identified for HAP sampling. Feed streams included the raw coal fed to the grinding mill, the coal-water paste fed to the PFBC, and the dry dolomite sorbent. Collected ash streams included the bed ash from the bottom of the PFBC unit, the primary cyclone ash, the APF ash, and the ESP hopper ash (four hoppers). The sample collection and analysis approach for each of these streams is presented in this section. An overview of the field sampling requirements for solids is shown in Tables A-2 and A-3. Duplicate samples were collected during one of the three test runs to assess sample collection precision.

Raw Coal

Samples of raw coal were collected from the coal conveyer by an ASTM autosampler. This sample, although it may be representative of the coal feedstock, was not the best representation of the coal fed to the PFBC unit since a four- to six-hour delay exists between sample collection and actual feed to the PFBC unit. The raw coal is mixed with water and pulverized to make a paste (70-75% coal by weight) which is fed to a mixing tank that supplies the unit with fuel. The coal paste provided the most representative fuel sample since it is closest to the point of injection. Nevertheless, raw coal samples were collected daily and held as a backup should coal paste sample integrity be questioned. Sample splits of the raw coal collected by the ASTM sampling system were stored at room temperature in sealed plastic bags.

Coal Paste Sampling

Coal paste is a 70-75 wt% slurry that is fed to the PFBC boiler. The paste is mixed in a run tank before being fed to the PFBC. The residence time is approximately two hours. For each run, multiple grab samples were taken at half-hour intervals from the paddle feeder when the paddle feeder was actively feeding coal paste to the mixing tank. The collection started approximately one hour before gas sampling to ensure that the sample was

representative of the burned mixture. The samples were composited and collected into a five-gallon bucket which was labeled, sealed, and sent to Radian's laboratories for preparation and analysis. Table A-15 presents the sampling plan.

Coal Paste Preparation. The coal paste in each bucket was thoroughly mixed and subsampled for drying. Weights were obtained on one subsample of the coal paste before and after drying at 104°C to determine the weight percent of solids in the paste. A second subsample was air dried, ground to -60 mesh, and sealed in plastic bags for the analyses shown in Figure A-19. All results were reported on a dry coal basis.

Coal Paste Analysis

Metals. A fraction of the subsample was analyzed by instrumental neutron activation (INAA).²⁹ A second subsample was prepared and analyzed by ASTM D3683³⁰ for target elements (beryllium, phosphorus, and lead) which cannot be determined by INAA. In addition, ASTM D3684³¹ was used to prepare and analyze samples for some of the more volatile metals such as arsenic, cadmium, and selenium. This technique combusts the prepared coal sample in a closed oxygen combustion bomb containing a small amount of nitric acid. The bomb washings were recovered and analyzed by GFAAS. Mercury was determined by combusting a sample and trapping the mercury vapors using a double gold amalgamation technique. The amalgamated mercury was thermally desorbed and analyzed by cold vapor atomic absorption spectroscopy (DGAA-CVAAS).³²

Anions. Chlorine and fluorine in coal were determined by ASTM D4208³³ and D3761,³⁴ respectively. Prepared coal samples were combusted in a closed oxygen combustion bomb containing a dilute basic solution. The bomb washings were analyzed by SIE.

Ultimate, Proximate, and Higher Heating Value. In conjunction with the other analyses, higher heating value (HHV), proximate (intrinsic moisture, volatile and fixed carbon, and ash), and ultimate (percent carbon, hydrogen, nitrogen, sulfur, oxygen, and ash) analyses were performed according to standard ASTM procedures. 35,36,37

Appendix A: Sample Collection, Pretreatment, and Analytical Procedures

Table A-15
Description and Recovery of Coal Paste

Parameter	Sample Frequency	Sample Handling	Preservation	Container	Preparation & Analysis
Metals	Hourly during coal	Grab samples	Sealed	Air-dried	See Figure A-19
Anions (Cl, F)	paste feed to stor- age tank.	composited directly into a 5	container	sample	
Radionuclides		gallon plastic		aliquots split into sealed	
HHV		bucket		plastic bags	
Ultimate/ Proximate	<u> </u>				

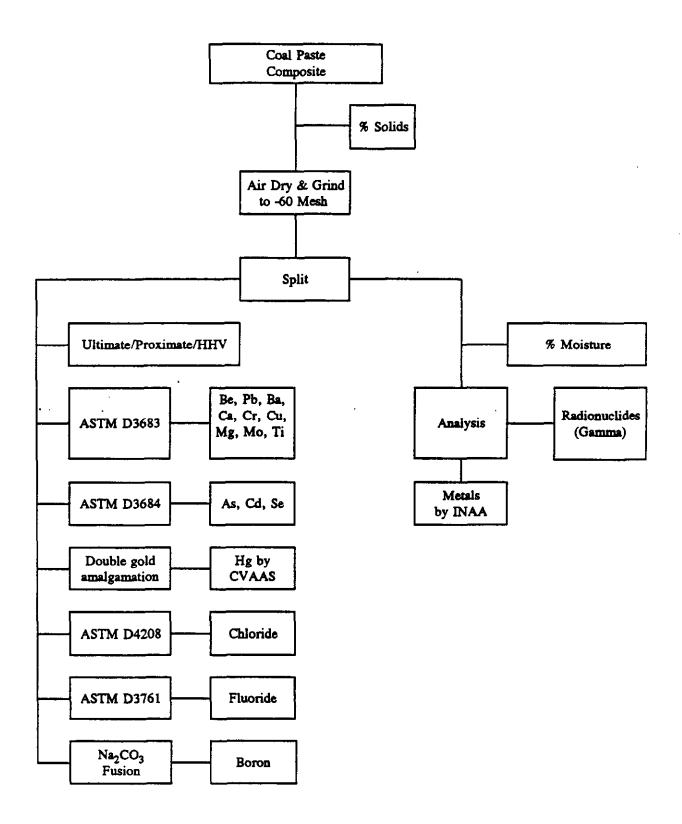


Figure A-19 Coal Sample Preparation and Analysis Plan

Radionuclides. Coal samples were analyzed by EPA Method 901.1.³⁸ This method uses gamma emitting spectrometry to measure radioactivity through gamma decay.

Dolomite Sorbent Sampling

The original plan called for collection of a run composite from the autosampler at the sorbent storage silo. However, the autosampler experienced mechanical problems on Days 1 and 2 of the test, so Run 3 samples were collected from the diversion gate upstream of the east and west silos. A single grab sample was collected 12 hours before the beginning of Run 3 to account for the lag time in the hopper. The samples were collected in plastic bottles, labeled, and sent to Radian laboratories for preparation and analysis. Table A-16 presents the sampling plan.

Dolomite Sorbent Analysis

Metals. The sorbent samples were air dried, ground to pass through a 60-mesh sieve, then subsampled for mercury analysis by CVAAS. Aliquots of the remaining material were digested with nitric acid by EPA Method 3050.³⁹ The digestate was analyzed by ICP-AES and GFAAS.

Anions. Separate preparatory techniques were necessary for the analysis of fluoride, chloride, and sulfate in these solids. All sample aliquots were taken from the ground, airdried material prepared for metal analysis. Fluoride sample aliquots were prepared by fusion with sodium hydroxide. The fusion melt was dissolved in deionized water and analyzed potentiometrically by fluoride-specific ion electrode. Samples for chloride analysis were prepared by mild digestion in nitric acid. The digestate was analyzed potentiometrically by chloride-specific ion electrode. For the analysis of sulfate, the sample was digested in HCl⁴¹ and the digestate was analyzed by IC.

Table A-16
Description and Recovery of Dolomite Sorbent

Parameter	Sample Frequency	Sample Handling	Preservation	Container	Preparation & Analysis
Metals	1 daily run sample from autosampler or	Grab sample collected from autosampler into	None	Air dried sample aliquots split into sealed plastic	See Figure A-20
Anions (Cl, F, SO ₄)	diversion gate upstream of silos.	a sealed plastic container.		bags.	

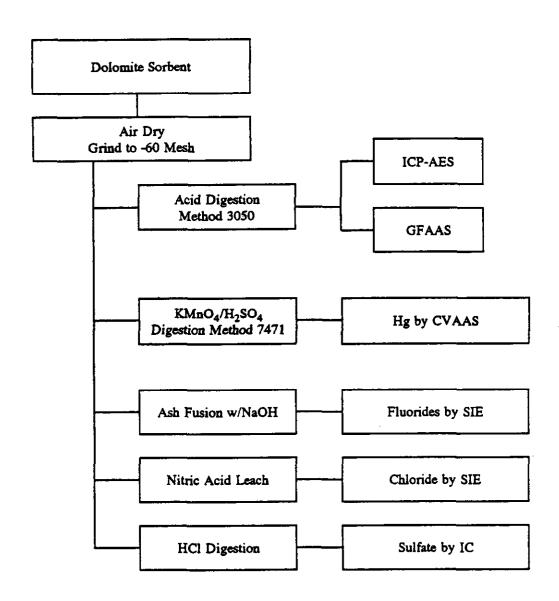


Figure A-20 Sorbent Sample Preparation and Analysis Plan

Ash Sampling

Ash was collected by autosampler at the primary cyclone and by composited grab samples at the other locations. Each composite was collected on site in two separate labeled containers. Plastic containers were used for samples targeted for inorganic analysis, and 1 L amber glass bottles were used for samples for organic analysis. Samples for organic analysis were cooled immediately after collection and stored at 4°C.

Bed Ash. Bed ash was grab-sampled manually as the ash was dumped to the ash conveyer. The grab samples were collected during each ash dumping cycle during the sample run and composited directly into a galvanized metal container. The daily composite was tumbled, riffled, and split for inorganic and organic analysis. Table A-17 presents the sample handling and preservation techniques.

Primary Cyclone Ash. This ash was collected from the facility's autosampler located at the ash feed line into the storage silo. The sampler was purged prior to a run and allowed to fill throughout the run period. The sampling frequency of the autosampler was set for sample collection every 15 minutes. The autosampler was not functioning properly during Run 3, so fewer sample cuts were obtained for the composite. Table A-18 presents the sample handling and preservation techniques.

APF Ash. The initial plan was to collect multiple grab samples of the APF ash from the ash collection truck. However, an alternate sampling location at the bottom of the APF ash lockhopper was identified once the crew arrived on site. The lockhopper system was disengaged a minimum of two times during each run to allow collection of grab samples from the system. These grab samples were then composited to obtain a run composite. Table A-19 presents the sample handling and preservation techniques.

ESP Ash. The ESP system was made up of four fields with two hoppers per field. ESP Fields 1 and 2 were dumped each morning before the test began and samples were collected at the end each test period for metals and anions analyses. ESP Fields 3 and 4 were dumped

Table A-17 Description and Recovery of Bed Ash

Parameter	Sample Frequency	Sample Handling	Preservation	Container	Preparation & Analysis
Metals	Grab samples collected	Grab samples composited	None	Plastic bottle or sealed	See Figure A-21
Anions	during each ash dumping	directly into a galvanized		plastic bags	
(Cl, F, PO ₄ , SO ₄)	cycle.	metal can.			
Radionuclides		Riffle bulk composite collect		•	
Carbon		into a plastic container.			
PSD					
Semivolatile Organics		Riffle bulk composite collect Cool to 4°C 1000 mL amber glass bottle	Cool to 4°C	1000 mL amber glass bottle	
		into separate sample bottles.			

Table A-18 Description and Recovery of Primary Cyclone Ash

		7			Preparation
Porometer	Samule Frequency	Sample Handling	Preservation	Container	& Analysis
- 1		Daily an composite collected from	None	Plastic bottle or	See Figure A-21
Metals	Every 15 minutes by	Daily I'm composite concerns		sealed plastic bag	
Anions (Cl, F, PO4,	autosampler.	autosampier mito a piastic conte-			ادار در
SO ₄)					
Radionuclides					
Carbon				,	-
Dioxins and Furans		Bulk composite split into separate	Cool to 4°C	1000 mL amber glass bottle	
Semivolatile Organics		sample boures.			

Table A-19 Description and Recovery of APF Ash

	## The state of th			•	Preparation
Domington	Samule Frequency	Sample Handling	Preservation	Container	& Analysis
I al amerci				District Localis	Con Limite A.71
Metals	Minimum of two grab	Multiple grab samples taken from	None	Flastic bottle	17 V Aingil pag
Anions (Cl, F, PO4,	samples during each test run.	a bulk composite in a plastic bottle.			
SO ₄)		•			
Radionuclides					
Carbon					
Dioxins and Furans		Bulk composite split into amber	Cool to 4°C	Cool to 4°C 1000 mL amber	
Semivolatile Organics		glass bottles.			

at the beginning of the first test period. Samples were collected after the ash was allowed to accumulate over a three-day period so that enough material could be obtained for analysis.

Table A-20 presents the sample handling and preservation techniques.

Ash Preparation. All ash samples were collected dry. Bed ash samples were ground to pass through a 60-mesh sieve prior to taking aliquots for mercury analysis. All other ash samples did not require grinding. Figure A-21 presents the sampling handling and preparation procedures for each ash sample analyzed for the following analytes.

Ash Analysis

Metals. Samples were digested in a microwave digestion vessel using nitric, hydrochloric, and hydrofluoric acids. The digestate was analyzed by ICP-AES and GFAAS. Mercury was analyzed by CVAAS (EPA Method 7471).

Anions. Separate preparatory techniques were necessary for analysis of fluoride, chloride, and sulfur in ash. All sample aliquots were taken from the ground, air-dried material prepared for trace element analysis. Subsamples for fluoride analysis were fused with sodium hydroxide. The fusion melt was dissolved in deionized water and analyzed potentio-metrically by fluoride-specific ion electrode. Ash samples for chloride analysis were prepared by mild digestion in nitric acid. The digestate was analyzed potentiometrically by chloride-specific ion electrode. Sulfur analysis was performed directly on the ground sample by ASTM Method D4239.⁴²

Semivolatile Organic Compounds. Ash samples targeted for SVOC analyses were separated at the test site and shipped directly to the laboratory. The ash samples were soxhlet-extracted in methylene chloride by EPA Method 3540.⁴³ The extracts were then analyzed by GC/MS according to EPA Method 8270.

Table A-20 Description and Recovery of ESP Ash

Parameter	Sample Frequency	Sample Handling	Preservation	Container	Preparation & Analysis
Metals	Fields 1 & 2: Daily at end	Grab samples composited into None	None	Plastic bottle or	See Figure A-21
Anions (Cl, F, SO ₄)	of test period.	plastic containers as a bulk		sealed plastic bag.	
Radionuclides	Fields 3 & 4: At conclusion	Composite for each field.	-		
Carbon	of test run.				
PSD					
Dioxins and Furans	Fields 1 & 2: Daily at end	Bulk composite split into	Cool to 4°C	1000 mL amber glass	
Semivolatile Organics	or too periou.	dilloca grass postico.		. come:	
	Fields 3 & 4: At conclusion				
	of test run.				

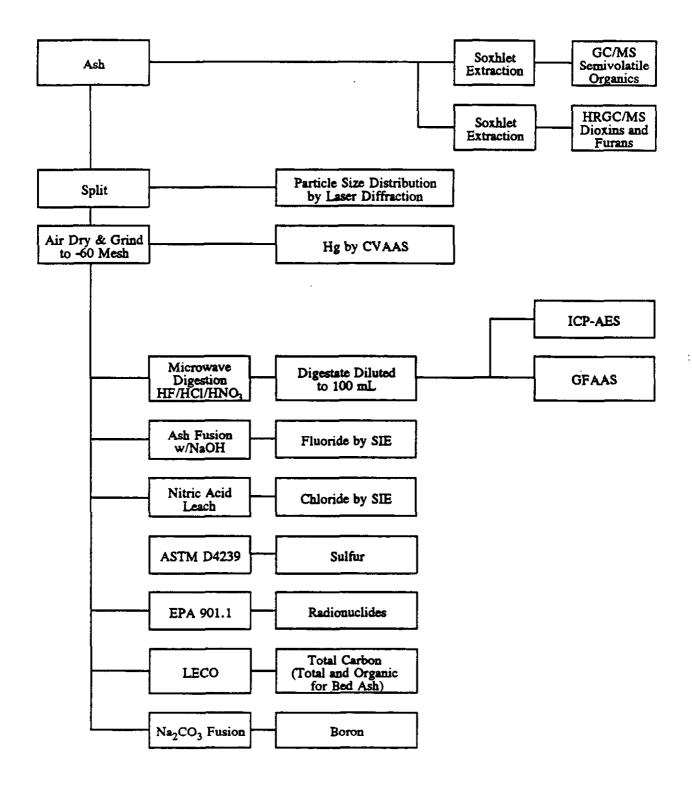


Figure A-21 Ash Sample Preparation and Analysis Plan

Dioxins and Furans. Ash samples analyzed for dioxins and furans were separated on site and shipped chilled directly to the laboratory for analysis. The ashes were toluene soxhlet-extracted and purified. The extract was analyzed using high resolution GC/MS. Both preparation and analysis are a part of EPA Method 8290.⁴⁴

Particle Size Distribution. Dry ash samples from the individual ESP fields were analyzed for PSD by laser diffraction using the Microtrac analyzer. Sample aliquots of well-mixed ash were suspended in either water or alcohol and injected into the recirculation system of a Microtrac particle-size analyzer.

Radionuclides. Ash samples were analyzed by EPA Method 901.1. This method uses gamma emitting spectrometry to measure radioactivity through gamma decay.

Carbon. Ash samples were analyzed for percent carbon by a LECO carbon-hydrogennitrogen analyzer. This analyzer combusts the sample in an oxygen atmosphere and measures the carbon dioxide in the combustion gas.

Service Water Sampling and Analysis

Plant service water was the only liquid stream sampled. A single grab sample was collected daily to represent the coal paste make-up water source during active paste preparation. The daily composite was collected into plastic sample bottles. Samples for metals analysis were preserved on site with HNO₃ to a pH <2. Samples for anions were cooled to 4°C. Table A-21 presents the sampling plan, and Figure A-16 lists the sample preparation and analysis procedures.

Metals

The unfiltered service water samples were prepared for total metal analysis according to EPA Methods 3005⁴⁵ and 3020.⁴⁶ The samples were vigorously digested in concentrated nitric acid to dissolve any suspended material that may be present in the samples. The

Table A-21
Description and Recovery of Service Water

Parameter	Sample Frequency	Sample Handling	Preservation	Container	Preparation & Analysis
Metals		Grab samples collected directly into plastic bottle containing preservative.	HNO ₃ to pH <2	1000 mL plastic bottle	See Figure A-22
Anions (Cl, F, PO ₄ , SO ₄)		Grab samples collected directly into 1 L plastic bottle.	Cool to 4°C		

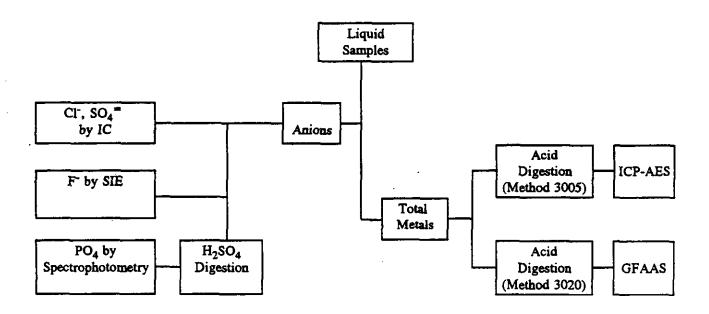


Figure A-22 Liquid Sample Preparation and Analysis Plan

digestates were diluted to a known volume and analyzed by ICP-AES and GFAAS. Mercury was determined by EPA Method 7470.

Anions

Sample aliquots for the analysis of chloride, fluoride, sulfate, sulfite, and phosphate were collected in separate containers and filtered. Chloride and sulfate were determined by IC according to EPA Method 300.0. Fluoride was determined potentiometrically by fluoride SIE. Phosphate was determined spectrophotometrically as a measure of total phosphorus after the sample was digested according to EPA Method 365.1.

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APPENDIX B: DETAILED ANALYTICAL DATA

Key to Appendix B Data Flags

Comment	Description
В	Analyte detected in method blank.
С	Result corrected with reagent blank result.
Е	Result exceeds instrument calibration range.
F	PCDF peak eluted at the same time as the associated diphenyl ether (DPE) and the DPE peak intensity is 10% or more of the PCDF peak intensity.
G	Estimated result because of coelution with sulfur dioxide.
J	Result is less than the quantitation limit but greater than the detection limit.
S	Result is an estimate because of saturated peak.

Appendix B: Detailed Analytical Data

DATA USED IN CALCULATIONS

Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

		41,214	Dunt	, mo	P.m.7	C mo	Run 3	Com 3
Analyte	Analytical Technique	Onits	Ruil I		7,441,4			
Mercury	CVAA	mg/kg	ND (0.012)		ND (0.012)		ND (0.012)	
	J. J	110/0	(6900 0) UN		ND (0.0064)		ND (0.0063)	
1,2,4-1 richiol obelizene	SMOO	9,90	(120 0) CIN		ND (0.021)		ND (0.021)	سنجي
1,2-Dichlorobenzene	CIMO	20/0 10/0	ND (0.024)		ND (0.024)		ND (0.024)	
1,3-Dichlorobenzene		9/92	ND (0.023)		ND (0.023)		ND (0.023)	
1,4-Dichlorochenol	GCMS	3/sn	(610) ON		ND (0:019)		(610.0) QN	
2,4,3-111cmotophenol	CCMS	3/3n			ND (0.016)		ND (0.016)	
2,4,0-111Ciliotophenol	GCMS	ue/e			(610.0) QN		(0.019) QN	
2,4-Dimethylphenol	GCMS	ug/g	ND (0.042)		ND (0.042)		_	
2,4-Dinitrophenol	GCMS	ug/g	ND (0.086)		ND (0.086)			
2.4-Dinitrotoluene	GCMS	ug/g	ND (0.025)				_	
2.6-Dinitrotoluene	GCMS	3/8n	ND (0.035)		_			
2-Chloronaphthalene	GCMS	ug/g	ND (0:030)		ND (0:030)			
2-Chlorophenol	GCMS	ng/g	(110.0) ON				_	
2-Methylnaphthalene	GCMS	g/gn	ND (0.020)					
2-Methylphenol	GCMS	g/gn						
2-Nitroaniline	GCMS	g/gn	ND (0.026)					
2-Nitrophenol	GCMS	ng/g					_	
3.3. Dichlorobenzidine	GCMS	8/3n		_				
3-Nitroaniline	GCMS	g/gn						
4,6-Dinitro-2-methylphenol	GCMS	g/gn			_			
4-Bromophenylphenyl ether	GCMS	a/gn						
4-Chloro-3-methylphenol	GCMS	8/8n						
4-Chlorophenylphenyl ether	GCMS	8/8n		·				
4-Methylphenol/3-Methylphenol	GCMS	a/gn			_		_	
4-Nitroaniline	GCMS	g/gn						
4-Nitrophenol	GCMS	3/3n	(120.0) QN		ND (0.021)			
Acenaphthene	GCMS	3/3n	ND (0.016)		(0.016) UN			
Acenaphthylene	GCMS	8/8n	ND (0.022)					
Anthracene	GCMS	8/8n	ND (0.018)		ND (0.018)		ND (0.018)	
Benz(a)anthracene	GCMS	8/8n	(110.0) QN			-	ND (0.011)	
Benz(a)pyrene	GCMS	ng/g	_		_			
Benzo(b)fluoranthene	GCMS	ng/g	ND (0.032)		ND (0.032)		ND (0.032)	

Analytical Data Used In Calculations

Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

9 9 9							
9 .		ng/g	ND (0.018)	ND (0.018)		ND (0.018)	
y		ng/g	_	ND (0.027)		ND (0.027)	
e		g/gn	_	(660.0) ON		(860:0) CN	
<u>u</u>		g/gn	_	ND (0.048)	_		
		ng/g	=	ND (0.025)			
	-	g/gn	_	 (610.0) QN			
Di-n-butylphthalate CCMS		ng/g	_	 ND (0.010)			
Di-n-octylphthalate GCMS		ng/g		(0.019) ND (0.019)		(0.019) (0.019)	
Dibenz(a,h)anthracene GCMS		ng/g		 ND (0.023)		ND (0.022)	•••
		g/gn		 ND (0.013)		ND (0.013)	•
Diethylphthalate GCMS		ng/g	ND (0.012)	ND (0.012)		ND (0.012)	
Dimethylphthalate GCMS		g/gn		 ND (0.016)		ND (0.015)	
Diphenylamine/N-NitrosoDPA GCMS		ng/g		 ND (0.025)	-	ND (0.025)	
		g/gn		ND (0.014)		ND (0.014)	
Fluorene GCMS		g/gn		ND (0.011)		ND (0.011)	•
robenzene	•	g/gn	ND (0.017)	ND (0.018)		ND (0.017)	
Hexachlorobutadiene GCMS		g/gn	ND (0.022)	ND (0.022)		ND (0.022)	•
Hexachlorocyclopentadiene GCMS		ng/g	ND (0.054)	ND (0.054)		ND (0.054)	
Hexachloroethane GCMS		g/gn	ND (0.033)	ND (0.033)		ND (0.033)	
Indeno(1,2,3-cd)pyrene GCMS		g/gn	ND (0:016)	ND (0.016)		(910.0) QN	
		g/gn	ND (0.0100)	ND (0.010)		ND (0.0100)	
li-n-propylamine		g/gn	ND (0.026)	 ND (0.026)		ND (0.026)	•
		g/gn	ND (0.022)	ND (0.022)		ND (0.022)	
43		g/gn	ND (0.013)	ND (0.013)	. in	ND (0.013)	
Pentachlorophenol GCMS		ng/g	ND (0.0063)	 ND (0.0064)		ND (0.0063)	
Phenanthrene GCMS		18/8n	ND (0.018)	ND (0.018)		ND (0.018)	
		8/8n	ND (0.033)	ND (0.034)		ND (0.033)	
Pyrene GCMS		g/gn	ND (0.015)	ND (0.015)	-	ND (0.015)	
hloroethoxy)methane		ng/g	ND (0:011)	ND (0.011)		ND (0.011)	
		g/gn		ND (0.015)		ND (0.015)	
bis(2-Chloroisopropyl)ether GCMS		g/gn		ND (0.019)	•	(610:0) QN	
		g/gn					-,
p-Chloroaniline GCMS		g/gn	ND (0.032)	ND (0.033)		ND (0.032)	

Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Archic	GFAA	mg/kg	235	B	274	В	291	В
Cadmium	GFAA	mg/kg		В		В	19:1	മ
I ead	GFAA	mg/kg	63.71		78.2		66.4	
Selenium	GFAA	mg/kg	(66'0) QN		1.08		ND (0.96)	
1234678-HnCDD	HR GCMS	jaat	ND (0.60)		(0.30) UN		(01.0) QN	
1,2,3,7,3,7,3,1,5,1,5,1,5,1,5,1,5,1,5,1,5,1,5,1,5,1	HR GCMS	ppt	ND (0:30)		(0.10) ND (0.10)	•	0.130	<u></u>
1.2.3.4.7.8.9-HnCDF	HR GCMS	ppt	ND (0.50)		ND (0.20)	-	ND (0.10)	
1.2.3.4.7.8-HxCDD	HR GCMS	ppt	ND (0.50)		ND (0.20)		ND (0.10)	
1.2.3.4.7.8-HxCDF	HR GCMS	ppt	ND (0.30)		ND (0.10)	,	ND (0.070)	
1,2,3,6,7,8-HxCDD	HR GCMS	ppt	ND (0.40)		ND (0.20)		ND (0.10)	
1.2.3.6.7.8-HxCDF	HR GCMS	Ppt	ND (0.20)		ND (0.10)	-	ND (0.060)	
1.2.3.7,8.9-HxCDD	HR GCMS	ppt	ND (0.40)		ND (0.20)	-	ND (0.10)	
1.2.3.7.8.9-HxCDF	HR GCMS	ppt	ND (0:30)		ND (0.20)		ND (0.080)	
1.2.3.7.8-PeCDD	HR GCMS	ppt	ND (0.40)		ND (0.20)		ND (0.10)	
1,2,3,7,8-PeCDF	HR GCMS	Ppt	ND (0.30)		ND (0.10)		ND (0.080)	
2,3,4,6,7,8-HxCDF	HR GCMS	ppt	0.480		0.270	•	0.260	
2.3,4,7,8-PeCDF	HR GCMS	ppt	ND (0.20)		(01.0) QN		ND (0.080)	
2.3.7.8-TCDD	HR GCMS	ppt	ND (0.30)		ND (0.10)		ND (0.10)	
2,3,7,8-TCDF	HR GCMS	ppt	ND (0.20)		ND (0.090)	_	ND (0.080)	
OCDD	HR GCMS	ppt	ND (0.80)		0.290		0.220	
OCDF	HR GCMS	ppt	ND (0.70)		ND (0.30)		ND (0.20)	
Total HpCDD	HR GCMS	bb¢	ND (0.60)		ND (0.30)		ND (0.10)	
Total HpCDF	HR GCMS	ppt	ND (0:30)	•	ND (0.20)	-	0.160	
Total HxCDD	HR GCMS	ppt	ND (0.40)		ND (0.20)	<i>,,,</i>	ND (0.10)	
Total HxCDF	HR GCMS	ppt	0.480		0.270	 -	0.260	
Total PeCDD	HR GCMS	ppt	ND (0.40)		ND (0.20)		ND (0.10)	
Total PeCDF	HR GCMS	ppt	ND (0.20)		ND (0.10)		ND (0.080)	
Total TCDD	HR GCMS	ppt	ND (0:30)	•	0.150		ND (0.10)	
Total TCDF	HR GCMS	ppt	ND (0.20)		ND (0.090)		ND (0.080)	
Aluminum	ICAP	mg/kg	55100	9	52500		26800	B
Antimony	ICAP	mg/kg	ND (45)		ND (49)		ND (50)	
Barium	ICAP	mg/kg	198		189		214	
			\$P.112		7	4	فيقتبا وتجرب سيبيا المناهدي ويتاريخ	

Analytical Data Used In Calculations

Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Beryllium	ICAP	mg/kg	7.30		5.75		6.54	
Boron	ICAP	g/gn	_		009			
Calcium	ICAP	mg/kg			88100			В
Chromium	ICAP	mg/kg	73.7	Ø	70.5			В
Cobalt	ICAP	mg/kg		В	18.6		17.2	m
Copper	ICAP	mg/kg	4.14		ND (4.2)		4.40	
Iron	ICAP	mg/kg	28200		28800		29200	
Magnesium	ICAP	mg/kg	48200	В	46800			В
Manganese	ICAP	mg/kg	100	В	97.8			В
Molybdenum	ICAP	mg/kg	ND (3.0)		ND (3.2)		ND (3.3)	
Nickel	ICAP	mg/kg		В	17.8		28.0	В
Phosphorus	ICAP	mg/kg	(IL) QN		ND (68)		(69) QN	
Potassium	ICAP	mg/kg	12500		12200		13100	
Silver		mg/kg	ND (3.4)		ND (3.7)		ND (3.8)	-
Sodium		mg/kg		В	1980		_	B
Titanium		mg/kg	2950	В	2760			В
Vanadium	ICAP	mg/kg	86.0		82.7		93.2	<u></u>
Chlorida	CIE	J. Vy	IVOL/ UIX				1,00% TI	
		Sy/Sm	(S) (N)	í				
Fluoriae	SIE	твукв	ND (12) B	Я	16.3	В	13.3	B
Carbon	Ultimate	%	0.0900		0.100		0.0700	
Sulfur	Ultimate	%	14.8		16.6		16.1	****
Actinium-228 @338	gamma	nCi/e	1001		1000		1 20 I	
		vCi/e	0.880		08/0		05.1	•
~		pCi/g	0.670		0 390		008 0	
		pCi/g	1.10		0.510	-	00000	
		pCi/g	1.70		1 40		3.30	
<i>L</i> :		pCi/g	3.10		0.910		2.50	
@609.4		pCi/g	2.10		1.40		2.30	
		pCi/g	16.0		00.6		18.0	•
		pCi/g	2.90		3.70		5.30	
		pCi/g	2.00		1.00		2.40	
Can-214 (M/27 /	gamma 1	37.70	1801		1101		2.20	:

Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1 and 314 (0352 f)	oamma	oCi/e	2.40		1.40		7.80	
	-		01.5		1 90		3.00	
Radium-226 @186.0	gamma	pung	0.10		0000		0730	
The Illium 200 @583	gamma	oCi/g	0.390		0.300		0.30	=
Inaminali-200		7,10	0.610		(C1 0) CIN		0.0700	7
Thallium-208 @860	gamma	pcvg			(71:0) CN1			
The 234 963 3	camma	nCi/e	2.60		2.50		05.5	_
11101101111-234 (CO)-13		00	0000		00000		1 26	-
Thorium-234 @92.6	gamma	pcvg	0.200		0.000			
11 min 22 6 @ 143 8	oamma	oCi/g	0.310		0.120		0.190	_
Cialitatica Cara Cara								

Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash FD

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
Mercury	CVAA	mg/kg					ND (0.012)	
1.2.4.Trichlorobenzene	GCMS	a/an					ND (0.0064)	
1.2.7 Hichoropenzene	GCMS	ne/e					ND (0.021)	
1 3-Dichlorobenzene	GCMS	ug/g					ND (0.024)	
1.4-Dichlorobenzene	GCMS	ng/g					ND (0.023)	
2.4.5-Trichlorophenol	GCMS	ng/g					(610.0) QN	
2.4.6-Trichlorophenol	GCMS	ng/g					ND (0.016)	
2.4-Dichlorophenol	GCMS	8/8n					ND (0.019)	
2.4-Dimethylphenol	GCMS	g/gn					ND (0.042)	
2.4-Dinitrophenol	GCMS	g/gn					ND (0.086)	
2.4-Dinitrotoluene	GCMS	ng/g					ND (0.025)	
2.6-Dinitrotoluene	GCMS	ng/g					(SE0.0) QN	
2-Chloronaphthalene	GCMS	3/3n					ND (0.030)	-
2-Chlorophenol	GCMS	g/gn					ND (0.011)	.=
2-Methylnaphthalene	GCMS	ng/g					ND (0.020)	
2-Methylphenol	GCMS	g/gn					ND (0.026)	
2-Nitroaniline	GCMS	g/gn					ND (0.026)	
2-Nitrophenol	GCMS	g/gn					ND (0.014)	
3.3'-Dichlorobenzidine	GCMS	8/8n					(9£0'0) QN	
3-Nitroaniline	GCMS	g/gn					ND (0.011)	

Analytical Data Used In Calculations

G

Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

A 1 - 4	Analytical	Imite	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Analyte	Technique							
	יייי	110/0					ND (0.024)	
4,0-Diniuo-2-inemy ipienoi	COMS	3/3n					ND (0.020)	-
4-bi omopiicii j.piicii j. care. 14-Chtoro-3-methylnhenol	GCMS	ug/g					ND (0.015)	
4 Chlorophenylphenyl ether	GCMS	ne/e					ND (0.024)	_
4. Methylphenol/3-Methylphenol	GCMS	ng/g					ND (0.041)	
4-Nitroaniline	GCMS	ng/g					ND (0.020)	
4-Nitrophenol	GCMS	g/gn					ND (0.021)	
Acenaphthene	GCMS	g/gn					ND (0.016)	
Acenaphthylene	GCMS	g/gn					(220.0) ON (220.0) CIV	
Anthracene	GCMS	8/8n					ND (0.018)	
Benz(a)anthracene	GCMS	ng/g					(110.0) UN (110.0) UN	
Benz(a)pyrene	GCMS	g/gn					(0.018) (0.018) (0.018)	
Benzo(b)fluoranthene	GCMS	8/8n					(20.0) UN (910,0) UN	· • • • • • • • • • • • • • • • • • • •
Benzo(g,h,i)perylene	GCMS	a/gn					(610.0) UN (10.0) UN	
Benzo(k)fluoranthene	GCMS	g/gn					(770.0) CM	V-1
Benzoic acid	GCMS	8/8n					(860.0) UN (960.0) CIV	
Benzyl alcohol	GCMS	8/8n					ND (0.048)	
Butylbenzylphthalate	GCMS	ng/g			···		(C20.0) CIN	
Chrysene	GCMS	ng/g					(910.0) UN	
Di-n-butylphthalate	GCMS	g/gn					(0.010) (0.010) (0.010)	
Di-n-octylphthalate	GCMS	ng/g					(810.0) ON	
Dibenz(a,h)anthracene	GCMS	8/8n					(570.0) CN	
Dibenzofuran	GCMS	g/gn					(S10.0) CN	
Diethylphthalate	GCMS	ag/gn					(210.0) QN	
Dimethylphthalate	GCMS	a/gn					ND (0.016)	
Diphenylamine/N-NitrosoDPA	GCMS	g/gn					(0.025) (0.025)	
Fluoranthene	GCMS	8/8n					ND (0.014)	
Fluorene	GCMS	8/8n					ND (0.011)	
Hexachlorobenzene	GCMS	g/gn					(0.0) QN	
Hexachlorobutadiene	GCMS	8/8n					ND (0.022)	
Hexachlorocyclopentadiene	GCMS	8/8n			·		ND (0.054)	
Hexachloroethane	GCMS	8/8n		•				
Indeno(1,2,3-cd)pyrene	GCMS	g/gn					ND (0.016)	

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Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Isophorone N-Nitroso-di-n-propylamine Naphthalene Nitrobenzene Pentachlorophenol Phenol Pyrene bis(2-Chloroethoxy)methane bis(2-Chlorospyl)ether bis(2-Ethylhexyl)phthalate p-Chloroaniline	GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	8/80 8/80 8/80 8/80 8/80 8/80 8/80 8/80	·				ND (0.010) ND (0.026) ND (0.022) ND (0.013) ND (0.018) ND (0.018) ND (0.018) ND (0.015) ND (0.015) ND (0.015) ND (0.015) ND (0.015)	
Arsenic Cadmium Lead Selenium	GFAA GFAA GFAA GFAA	mg/kg mg/kg mg/kg mg/kg					285 B 1.53 B 60.3 ND (0.96)	B
1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDD 1,2,3,4,7,8-HpCDF 1,2,3,4,7,8-HxCDD 1,2,3,6,7,8-HxCDD 1,2,3,6,7,8-HxCDD 1,2,3,6,7,8-HxCDF 1,2,3,7,8-9-HxCDF 1,2,3,7,8-9-HxCDF 1,2,3,7,8-PeCDF 2,3,4,6,7,8-HxCDF 2,3,4,7,8-PeCDF 2,3,4,7,8-PeCDF 2,3,7,8-TCDD 2,3,7,8-TCDD	HR GCMS						ND (0.20) ND (0.20)	

Analytical Data Used In Calculations

Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
(OCDD	HR GCMS	ppt					(09.0) QN	
OCDF	HR GCMS	ppt and			٠		ND (0.40)	-
Total UnCDE	HR GCMS						ND (0.30)	
Total HxCDD	HR GCMS	bb L					ND (0.30)	
Total HxCDF	HR GCMS	ppt					0.210	
Total PeCDD	HR GCMS	ppt			_		ND (0.40)	
Total PeCDF	HR GCMS	ppt	•				(0.20) UN (0.20) CIV	
Total TCDD Total TCDF	HR GCMS HR GCMS	ppt ppt		·			0.180 0.180	
, , , , , , , ,	ICA D	mo/ko					26500	<u>B</u>
Antimony	ICAP	mg/kg					ND (41)	
Barium	ICAP	mg/kg		_			217	-
Beryllium	ICAP	mg/kg					6.61	~
Boron	ICAP	a/gn					201	
Calcium	ICAP	mg/kg					83600	n (
Chromium	ICAP	mg/kg					4.0/	α ρ
Cobalt	ICAP	mg/kg					19.0	
Copper	ICAP	mg/kg					10.0	
Iron	ICAP	mg/kg					0047	
Magnesium	ICAP	mg/kg					44500	ם פ
Manganese	ICAP	mg/kg				_	103 201	
Molybdenum	ICAP	mg/kg					(7.2) UN	
Nickel	ICAP	mg/kg					7.07	מ
Phosphorus	ICAP	mg/kg					(69) QN	
Potassium	ICAP	mg/kg					13600	-
Silver	ICAP	mg/kg					ND (3.1)	
Sodium	ICAP	mg/kg	•				2250	E E
Titanium	ICAP	mg/kg					3090	<u>m</u>
Vanadium	ICAP	mg/kg					93.4	
Chloride	SIE	Ime/ke					261	
Fluoride	SIE	mg/kg					23.2	М
	**************************************].

FD Stream: APF Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Carbon	Ultimate	%					0.0900	
Sulfur	Ultimate	%					7.¢1	
Artinium-228 @318	gamma	loCi/k					1.00	
	•	pCi/g					0.800	
Actinium-228 @968		pCi/g					0.560	
Bismuth-212 (@727		pCi/g					1.30	
Bismuth-214 @1120.4	gamma	pCi/g					1.80	
Bismuth-214 @1764.7		pCi/g					086:0	-4
Bismuth-214 @609.4	gamma	pCi/g					1.30	
K-40 @1460	gamma	pCi/g					9.50	
Lead-210 @46	gamma	pCi/g					2.90	
Lead-212 @238	gamma	pCi/g					0.920	
Lead-214 @295.2	gamma	pCi/g					1.20	
Lead-214 @352.0	gamma	pCi/g					09.1	
Radium-226 @186.0	gamma	pCi/g					2.00	
Thallium-208 @583	gamma	pCi/g					0.310	-
Thallium-208 @860	gamma	pCi/g					0.110	
Thorium-234 @63.3	gamma	pCi/g					0.650	
Thorium-234 @92.6	gamma	pCi/g					0.590	
Uranium-235 @143.8	gamma	pCi/g					0.0100	

Sample Type: Ammonia Impingers Collection Method: Ammonia/Cyanide Stream: APF inlet

Com 3		_	
Run 3		165	
Com 2		В	
Run 2	Andreas - The second	6.61	
Com 1		В	
Run 1	And the second s	255	
Units		ug/Nm3	
Analytical Technique		distil	
Analyte		Ammonia - Distilled	

Stream: APF Inle Collection Method: Ammonia/Cyanide Sample Type: Impingers

Com 3		
Run 3	1	
Com 2		7
Run 2		
Com 1		
Run 1	1610	
Units	le/Nm3	
Analytical Technique	NO Jose	
Analyte	Cyanida	Spanne

Stream: APF Inlet Collection Method: Anions Train Sample Type: Filtered Solids

4590 1330 1330	Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2 (Com 2	Run 3	Сош 3
SIE ug/Nm3 639 C 772 C SIE ug/g 175 C 162 C		ភិភភភ	ig/Nm3 ig/g ig/Nm3 ig/g	268 73		1100 231 385000 805000		5260 1520 4590000 1330000	
	Fluoride Fluoride	SIE SIE	ug/Nm3 ug/g	639 175	ပပ	772 162	ပပ	1840 532	840 C 532 C

Stream: APF Inlet Collection Method: Anions Train Sample Type: Impingers + TLR

Analyte	Analytical Technique	Units	Run 1	Com 1	y I	Com 2	Com 2 Run 3	Com 3
Chloride It	00	ug/Nm3 ug/Nm3	79100 79100		7170 95300		65400 811000	
Fluoride	SIE	ug/Nm3	7240	В	6860 B	В	5950 E	B

Stream: APF Inlet Collection Method: M0011a Sample Type: Impingers + MeCl2

Units Run 1 Com 1 Run 2 Com 2 Run 3 Com	17.01 146 17.01	
Analytical Technique		77 III
Analyte	C. Coldenies	rominalucilyuc

Stream: APF Inlet Collection Method: M29 Sample Type: Filtered Solids

Analyte	Analytical Technique	Units	Run 1	Com 1	Com 1 Run 2	Com 2	Com 2 Run 3 C	Com 3
		ug/Nm3	ND (0.042)				ND (0.046)	
Arsenic	GFAA	ug/Nm3	831		1420		0801	
Cadmium	GFAA	ug/Nm3	4.96		6.93		8.23	
Lead	GFAA	ug/Nm3	961		287	•	236	
Selenium	GFAA	ug/Nm3	50.7		54.0		48.6	

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Stream: APF Inlet Collection Method: M29 Sample Type: Filtered Solids

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	Technique							
	IICAD	lug/Mm3	71000016	ن	2710001C	Ü	235000IC	C
Aluminum	באן	CHINA	200017)	1000)	10000 011	
Antimony	ICAP	ug/Nm3	(061) QN		(0/2) QN		(077) CN	
Barium	ICAP	ug/Nm3	7111	ပ	970	ပ	892	ပ
Denillim	ICAP	ue/Nm3	24.4		28.3		27.2	
Calainm	ICAP	119/Nm3	323000	ပ	474000	ပ	356000 C	ပ
Carolina	ICAP	mN/an	21919	ပ	492 C	ပ	402	ပ
Cabalt	ICAP	119/Nm3	48.1	ပ	87.9	ပ	73.1	ပ
Codail	ICAP	I W N III	170		95.1		63.2	
Copper	ICAD	W.Van	114000		152000		120000	
	100	Control of the contro	2000021	ر	7 000000	ر	000981	ت
Magnesium	ICAR	CIIINIAM)	0000/1) (200717) (767) (
Manganese	ICAP	ug/Nm3	376	ပ	221	ن	430	١
Molybdenum	ICAP	ug/Nm3	66.4		(81) QN		ND(14)	
Nickel	ICAP	ug/Nm3	298		108		163	
	ICAP	ug/Nm3	ND (240)	ပ	(01E) QN	ပ	ND (260) C	ပ
Potaesium	ICAP	ug/Nm3	44300	ပ	62600	ပ	24000 C	ပ
Gilver	ICAP	ug/Nm3	ND (14) C	ပ	ND (20)	Ų	ND (16) C	ပ
Sodium	ICAP	ug/Nm3	7750		10101		8880	
Titaniim	ICAP	ue/Nm3	10600 C	Ú	141001C	ر د	12600 C	ပ
Vanadium	ICAP	ug/Nm3	325 C	ပ	445 C	ပ	380 C	ပ

Stream: APF Inlet Collection Method: MM5 Sample Type: Filtered Solids

Analyte	Analytical Technique	Units	Rup 1	Com 1	Run 2	Com 2	Run 3	Com 3
[124-Trichlorobenzene	GCMS	ug/Nm3	ND (2.9)		ND (2.8)		ND (2.9)	
1.2-Dichlorobenzene	GCMS	ug/Nm3	ND (2.7)		ND (2.7)		ND (2.8)	
1.3-Dichlorobenzene	GCMS	ug/Nm3	ND (2.6)		ND (2.5)		ND (2.7)	
1.4-Dichlorobenzene	GCMS	ug/Nm3	ND (2.5)		ND (2.4)		ND (2.6)	
2.4.5-Trichlorophenol	GCMS	ug/Nm3	ND (4.3)		ND (4.3)		ND (4.5)	
2.4.6-Trichlorophenol	GCMS	ug/Nm3	ND (4.6)		ND (4.6)		ND (4.8)	
2.4-Dichlorophenol	GCMS	ug/Nm3	ND (3.4)		ND (3.3)	_	ND (3.5)	
2,4-Dimethylphenol	GCMS	ug/Nm3	ND (3.8)		ND (3.7)		ND (3.9)	
2,4-Dinitrophenol	GCMS	ug/Nm3	ND (13)		ND (13)		ND (13)	

Analytical Data Used In Calculations

Stream: APF Inlet Collection Method: MM5 Sample Type: Filtered Solids

		ND (4.2) ND (4.2) ND (3.3) ND (3.1) ND (3.1) ND (3.1) ND (3.1) ND (3.2) ND (3.	ND (4.4) ND (6.2) ND (2.9) ND (3.5) ND (6.3) ND (6.3) ND (6.3) ND (6.3) ND (6.3) ND (6.3) ND (6.3) ND (6.2)
GCMS		ND (2.9) ND (2.9) ND (3.9) ND (3.9)	ND (6.2) ND (1.8) ND (1.7) ND (6.3) ND (6.3) ND (6.3) ND (6.2) ND (6.2)
GCMS		ND (2.3) ND (2.3) ND (3.3) ND (3.3) ND (3.3) ND (3.3) ND (3.3) ND (3.3) ND (3.3)	ND (2.9) ND (3.5) ND (3.5) ND (3.5) ND (3.9) ND (3.9) ND (3.9)
GCMS		N N N N N N N N N N N N N N N N N N N	ND (3.5) ND (3.5) ND (3.5) ND (3.5) ND (3.9) ND (3.9) ND (3.9)
alene GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 ethylphenol GCMS ug/Nm3 y1 GCMS ug/Nm3 y2 GCMS ug/Nm3 Iate GCMS ug/Nm3		B B B B B B B B B B B B B B B B B B B	ND (3.5) ND (6.3) ND (5.3) ND (3.9) ND (3.9) ND (3.9) ND (3.9)
GCMS GCMS GCMS GCMS Ug/Nm3 GCMS Ug/Nm3 ethylphenol GCMS Ug/Nm3 Ug/Nm3 Ithene GCMS Ug/Nm3 Ialate GCMS Ug/Nm3	•	ND (3.3) ND (3.1) ND (3.1) ND (3.1) ND (3.1) ND (3.1) ND (3.1) ND (3.1)	ND (3.5) ND (5.3) ND (3.4) ND (3.5) ND (3.5) ND (3.5)
GCMS GCMS GCMS Ug/Nm3 ethylphenol GCMS Ug/Nm3 Ithene GCMS Ug/Nm3 Ialate GCMS Ug/Nm3		ND ND (5.1) ND (3.1) ND (3.1) ND (1.6) ND (1.6) ND (1.6) ND (1.6) ND (1.6) ND (1.6)	ND (6.3) ND (3.4) ND (3.5) ND (3.9) ND (3.9) ND (3.9)
GCMS		N N N (3.3) N N (3.3)	ND (3.5) ND (3.4) ND (3.5) ND (3.9) ND (3.9) ND (3.9)
GCMS		M N N (3.5) M N N (3.5) M N (3.5) M N (3.5) M N (3.5) M (3.5)	ND (3.4) ND (8.3) ND (1.8) ND (5.2) ND (5.2)
GCMS	· •	ND (5.3) ND (1.6) ND (3.7) ND (5.9) ND (12)	ND (5.5) ND (8.3) ND (3.9) ND (5.2) ND (13)
GCMS Ug/Nm3		ND (7.7) ND (1.6) ND (3.7) ND (12)	ND (8.3) ND (1.8) ND (3.9) ND (13)
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS Ug/Nm3		ND (1.6) ND (3.7) ND (5.0) ND (12)	ND (1.8) ND (3.9) ND (5.2) ND (13)
Alphenol GCMS ug/Nm3 Hene GCMS ug/Nm3 Iate GCMS ug/Nm3		ND (3.7) ND (5.0) ND (12)	ND (3.9) ND (5.2) ND (13)
GCMS		ND (5.0) ND (12)	ND (5.2) ND (13)
GCMS GCMS GCMS GCMS Ug/Nm3	 .	ND (12)	ND (13)
GCMS GCMS Ug/Nm3			
GCMS ug/Nm3 ND		グご グ い	ND (2.0)
GCMS ug/Nm3 ND		(I.I) QN	ND (1.1)
GCMS ug/Nm3 ND		ND (2.7)	ND (2.9)
GCMS ug/Nm3 ND GCMS ug/Nm3 Ug/Nm3 ND GCMS ug/Nm3 Ug/		ND (2.2)	ND (2.3)
GCMS ug/Nm3		(I.I) QN	ND (1.2)
GCMS ug/Nm3 ND (R CCMS ug/Nm3 Ug/Nm3 ND (R CCMS ug/Nm3	·	ND (2.1)	ND (2.3)
GCMS ug/Nm3	_	(0.95) ND	ND (0.96)
GCMS ug/Nm3 ND (GCMS ug/Nm3 Ug/N		(16.0) QN	ND (0.93)
GCMS ug/Nm3 ND GCMS ug/Nm3		ND (1:0)	ND (1.0)
GCMS ug/Nm3 ND GCMS ug/Nm3 ND (GCMS ug/Nm3 Ug/		(01) QN	ND(II)
GCMS ug/Nm3 ND (GCMS ug/Nm3 CCMS ug/Nm3		ND (5.1)	ND (5.3)
GCMS ug/Nm3 ND (6		ND (1.5)	ND (1.6)
GCMS ug/Nm3	ug/Nm3 ND (0.89)	ND (0.87)	ND (0.95)
	ug/Nm3 3.09 BJ	20.3 B	10.9 B
GCMS (ug/Nm3	_	ND (0.82)	ND (0.84)
ene GCMS ug/Nm3			ND (1.1)
ug/Nm3	2	ND (1.2)	
Diethylphthalate GCMS ug/Nm3 ND (1.		ND (1.4)	ND (1.5)

=

Stream: APF Inlet Collection Method: MM5 Sample Type: Filtered Solids

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	lecunique							
Dimethylphthalate	GCMS	ug/Nm3	(9:1) QN		(9.1) QN		(9:1) QN	
Fluoranthene	GCMS	ug/Nm3	ND (0.87)		ND (0.88)		(S6:0) QN	
Fliorene		ug/Nm3	(9.1) QN		(9.1) QN		(1.7) QN	
Heyachlorobenzene	GCMS	ug/Nm3	ND (3.5)		(9.6) QN		ND (3.8)	
Hexachlorobutadiene	GCMS	ug/Nm3	ND (4.7)		ND (4.7)		(6.4) ND (4.9)	
Hexachlorocyclopentadiene	GCMS	ug/Nm3	ND (6.4)		ND (6.4)		(9.9) QN	
Hexachloroethane	GCMS	ug/Nm3	ND (5.1)		ND (5.1)		ND (5.3)	
Indeno(1.2.3-cd)pyrene	GCMS	ug/Nm3	ND (0.81)		ND (0.82)		ND (0.83)	
Isonhorone	GCMS	ug/Nm3	(L1) ON		(1.1) DN		ND (1.8)	
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (5.1)		ND (5.0)		ND (5.3)	
Naphthalene	GCMS	ug/Nm3	(I.I) QN		ND (1.1)		(1.1) ND (1.1)	
Nitrobenzene	GCMS	ug/Nm3	ND (2.9)		ND (2.9)		ND (3.0)	
Pentachloronitrobenzene	GCMS	ug/Nm3	(91) QN		(91) QN		(LI) QN	
Pentachlorophenol	GCMS	ug/Nm3	ND (8.1)		ND (8.1)		ND (8.8)	
Phenanthrene	GCMS	ug/Nm3	ND(1.1)		ND(1.1)		ND (1.2)	- *
Phenol	GCMS	ug/Nm3	ND (2.3)		ND (2.3)		ND (2.4)	
Pyrene	GCMS	ug/Nm3	ND (0.75)		ND (0.74)		ND (0.81)	- ~
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3	ND (2.5)		ND (2.5)		ND (2.6)	
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	ND (3.0)		ND (3.0)	-	ND (3.1)	
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3	1.20	BJ	ND(1.1)		ND (1.2)	

Sample Type: XAD Resin/Impingers + MeCl2 Stream: APF Inlet Collection Method: MMS

Апајуtе	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1.2.4-Trichlorobenzene	GCMS	ug/Nm3	ND (2.3)		(S:1) QN		ND (0.88)	
1,2-Dichlorobenzene	GCMS	ug/Nm3	ND (2.0)		ND (1.3)		(92.0) QN	
1,3-Dichlorobenzene	GCMS	ug/Nm3	(6.1) DN		ND (1.2)		ND (0.71)	
1,4-Dichlorobenzene	GCMS	ug/Nm3	(6.1) QN		ND (1.2)		ND (0.70)	
2,4,5-Trichlorophenol	GCMS	ug/Nm3	ND (3.4)		(8.1) QN		ND(1.1)	
2,4,6-Trichlorophenol	GCMS	ug/Nm3	ND (3.5)		(6.1) QN		ND (1.2)	
2,4-Dichlorophenol	GCMS	ug/Nm3	ND (2.6)		ND (0.71)		ND (0.48)	
2,4-Dimethylphenol	GCMS	ug/Nm3	ND (2.5)		ND (1.5)		ND (0.81)	

Analytical Data Used In Calculations

Sample Type: XAD Resin/Impingers + McCl2 Stream: APF Inlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
					1 (5 3) (1 K		IL O UN	
2,4-Dinitrophenol	GCMS	ng/Nm?			(cc) an		():3) GVI	
2,4-Dinitrotoluene	GCMS	ug/Nm3			(8.1.) ON		(9.1.) ON	
2,6-Dinitrotoluene	GCMS	ug/Nm3			ND (2.6)		(C.I.) UN	
2-Chloronaphthalene	GCMS	ug/Nm3			ND (0.73)		ND (0.47)	
2-Chlorophenol	GCMS	ug/Nm3	ND (2.0)		ND (1.2)		(12.0) QN	
2-Methylnaphthalene	GCMS	ug/Nm3	ND (1.3)		ND (0.70)		0.0824	
2-Methylphenol	GCMS	ug/Nm3	ND (2.5)		(1.1) QN		ND (0.88)	
2-Nitroaniline	GCMS	ug/Nm3	ND (4.0)		ND (2.5)		ND (1.2)	
2-Nitrophenol	GCMS	ug/Nm3	ND (3.8)	_	ND (2.7)		0.285	_
3.3'-Dichlorobenzidine	GCMS	ug/Nm3	(1.1) UN		ND (2.1)		ND (1.2)	
3-Nitroaniline	GCMS	ug/Nm3	(6:E) QN		ND (2.2)		(E.1) ON	
4.6-Dinitro-2-methylphenol	GCMS	ug/Nm3	ND (5.3)		ND (3.2)		(8.1) ON	_
4-Aminobiphenyl	GCMS	ug/Nm3	(0.1) QN		ND (0.50)		ND (0.43)	
4-Chloro-3-methylphenol	GCMS	ug/Nm3	ND (2.8)		ND (1.5)		ND (0.85)	
4-Nitroaniline	GCMS	ug/Nm3	ND (3.5)		(6.1) DN		ND (1.2)	
4-Nitrophenol	GCMS	ug/Nm3	ND (8.5)		0.645		0.539	
Acenaphthene	GCMS	ug/Nm3	ND (1.4)		ND (0.76)		ND (0.49)	
Acenaphthylene	GCMS	ug/Nm3	ND (0.80)		ND (0.45)		ND (0.28)	
Acetophenone	GCMS	ug/Nm3	1.35		1.75		2.62	_
Aniline	GCMS	ug/Nm3	(9.1) QN		ND (1.2)		(96.0) QN	
Anthracene	GCMS	ug/Nm3	ND (0.78)		ND (0.36)		ND (0.26)	71
Benzidine	GCMS	ug/Nm3	ND (1.2)		(I.1) DN		(17.0) QN	
Benzo(b)fluoranthene	GCMS	ug/Nm3	ND (0.49)	•••	ND (0.61)		ND (0.45)	·
Benzo(g,h,i)perylene	GCMS	ug/Nm3	ND (0.52)		ND (0.56)		ND (0.49)	
Benzo(k)fluoranthene	GCMS	ug/Nm3	ND (0.51)		(19:0) QN		ND (0.48)	-
Benzoic acid	GCMS	ug/Nm3	88.4		=	ш	113	
Benzyl alcohol	GCMS	ug/Nm3	ND (3.8)		ND (2.5)		(4.1) QN	
Butylbenzylphthalate	GCMS	ug/Nm3	(06.0) QN		ND (0.74)		ND (0.40)	•
Chrysene	GCMS	ug/Nm3	ND (0.54)		ND (0.54)		ND (0.35)	-
Di-n-butylphthalate	GCMS	ug/Nm3	1.34	-	5.43	_	54.6	
Di-n-octylphthalate	GCMS	ug/Nm3	ND (0.38)		ND (0.50)		ND (0.27)	
Dibenz(a,h)anthracene	GCMS	ug/Nm3	(19:0) QN		ND (0.75)		ND (0.55)	
Dibenzofuran	GCMS	ug/Nm3	ND (0.92)		ND (0.46)		ND (0.31)	

Sample Type: XAD Resin/Impingers + MeCl2 Stream: APF Inlet Collection Method: MM5

Analyte	Apalytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	Technique							
Diethylnhthalate	GCMS	ue/Nm3	(I.I) ND		ND (0.46)		ND (0:30)	
<u>.</u>	GCMS	ug/Nm3	ND (1.2)		ND (0.61)		ND (0.37)	
Fluoranthene	GCMS	ug/Nm3	ND (0.55)		ND (0.34)		ND (0.25)	
Fluorene	GCMS	ug/Nm3	ND (1.2)		ND (0.54)		ND (0.37)	
Hexachlorobenzene	GCMS	ug/Nm3	ND (2.6)		ND (1.4)		ND (1.2)	•
Hexachlorobutadiene	GCMS	ug/Nm3	ND (3.7)		ND (2.3)		(S:1) QN	
Hexachlorocyclopentadiene	GCMS	ug/Nm3	ND (4.4)		ND (2.3)		ND (1.3)	
Hexachloroethane	GCMS	ug/Nm3	ND (4.0)		ND (2.5)		ND (1.5)	
Indeno(1,2,3-cd)pyrene	GCMS	ug/Nm3	ND (0.45)		ND (0.56)		ND (0.43)	
Isophorone	GCMS	ug/Nm3	ND (1.3)		(16.0) QN		ND (0.38)	_
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (3.6)		ND (2.8)		(I.I) dN	
Naphthalene	GCMS	ug/Nm3	(18.0) QN		ND (0.45)		0.734 BJ	<u>B</u>
Nitrobenzene	GCMS	ug/Nm3	ND (2.2)		(L:1) QN		(99:0) QN	
Pentachloronitrobenzene	GCMS	ug/Nm3	(01) QN		ND (3.1)		ND (2.6)	;
Pentachlorophenol	GCMS	ug/Nm3	ND (6.7)		ND (3.0)		ND (2.6)	
Phenanthrene	GCMS	ug/Nm3	(62.0) QN		(9E'0) QN		ND (0.26)	
Phenol	GCMS	ug/Nm3	ND (1.7)		ND (1.4)		0.659	_
Pyrene	GCMS	ug/Nm3	ND (0.52)		ND (0.36)		ND (0.22)	
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3	(6.1) DN		ND (1.5)		ND (0.70)	
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	ND (2.3)		(6.1) CIN		(06.0) QN	_
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3	1.08	ſ	ND (0.62)		1.47	ī

Stream: APF Inlet Collection Method: Multimetals Train Sample Type: Mercury Impingers

Analyte	Analytical Technique	Units	Run í	Com 1	Run 2 Com 2	Com 2	Run 3 Com	Com 3
H	CVAA	ug/Nm3	0.299		0.530		0.284	
			Control of the last of the las		Manual Control of the			

Stream: APF Inlet Collection Method: Multimetals Train Sample Type: Nitric Acid Impingers + TLR

Com 3		-	1
Run 3 Cc	<u>``</u>	10.4	
Com 2			
1 Run 2 Com 2 Run 3	1631	0.61	
Com 1			
Run 1	621	7.01	
Units		uggrand	
Analytical Technique	A A USE	CVAA	
Analyte		Mercury	

Analytical Data Used In Calculations

Collection Method: Multimetals Train Sample Type: Nitric Acid Impingers + TLR Stream: APF Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Aluminum	ICAP	ug/Nm3	263 BC	BC	1190 BC	BC	395	395 BC
	ICAP	ug/Nm3	. 1.59	BC	6.05 BC	BC	2.32	2.32 BC
	ICAP	ug/Nm3	246	BC	209	BC	205	ည္က
=	ICAP	ug/Nm3	703	BC	2510		1220	BC
	ICAP	ug/Nm3	136	BC	332	BC	174	ည္က
Magnesium	ICAP	ug/Nm3	214	ပ	1070	ပ	817	ပ
	ICAP	ug/Nm3	ND(17)		(61) QN		91) QN	<u>-</u>
	ICAP	ug/Nm3	ND (220) BC	ည္ထ	282	BC	ND (220)	BC
	ICAP	ug/Nm3	ND (1.4)	В	(9:1) QN	В	ND (1.4) B	a
E	ICAP	ug/Nm3	148	ည္က	123	BC	135	ည္က
	ICAP	ug/Nm3	12.7		63.3		18.7	
Antimony	ICPMS	ug/Nm3	0.0433 C	<u> </u>	0.0852	၁	2.76 C	င
Arsenic	ICPMS	ug/Nm3	1.71	ပ	7.85	ပ	2.23	ပ
Barium	ICPMS	ug/Nm3	ND (0.0047)	၁	4.83	ပ	1.55	ပ
Beryllium	ICPMS	ug/Nm3	0.0528	ပ	0.233	ပ	0.0635	ပ
Cadmium	ICPMS	ug/Nm3	0.309	ပ	ND (0.0063)	ပ	ND (0.0055)	ပ
Chromium	ICPMS	ug/Nm3	41.1	ပ	2.95	ပ	12.9	ပ
Cobalt	ICPMS	ug/Nm3	0.431	ပ	0.218	ပ	0.149	_
Copper	ICPMS	ug/Nm3	67.5	ပ	29.2	ပ	44.3	ပ
Lead	ICPMS	ug/Nm3	1.23	ပ	2.90	ပ	1.09	ပ
Manganese	ICPMS	ug/Nm3	33.2	ပ	8.73	ပ	3.21	ပ
Molybdenum	ICPMS	ng/Nm3	5.87	ပ	0.702	ပ	1.22	ပ
Nickel	ICPMS	ug/Nm3	58.3	ပ	19.4	ပ	25.3	ပ
Selenium	ICPMS	ug/Nm3	14.4		18.4		14.8	
Vanadium	ICPMS	ug/Nm3	1.88	ပ	3.06	ပ	1.67	ပ

Sample Type: Filtered Solids/Solvent Rinses/XAD Resin Collection Method: PCDD/PCDF for Dioxins and Furans (M23) Stream: APF Inlet

Com 3	
Run 3 (0.000866
Com 2	
Run 2	0.000458 0.000206
Com 1	
Run I Com I	ug/Nm3 0.000268 0.000458 ug/Nm3 0.000189 0.000206
Jnits	ug/Nm3 ug/Nm3
Analytical Technique	th 23X th 23X
Analyte A	1234678-HpCDD Meth 23X 1234678-HpCDF Meth 23X

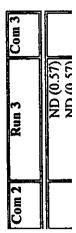
Sample Type: Filtered Solids/Solvent Rinses/XAD Resin Collection Method: PCDD/PCDF for Dioxins and Furans (M23) Stream: APF Inlet

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	anhimmaa t							
[123478-HxCDD	Meth 23X	ug/Nm3	0.0000510		0.000105		0.000248	
123478-HxCDF	Meth 23X	ug/Nm3	0.000160		0.000213		0.000802	·
1234789-HpCDF	Meth 23X	ug/Nm3	0.0000394		0.0000493		0.0000874	
123678-HxCDD	Meth 23X	ug/Nm3	0.0000723		0.000128		0.000209	
123678-HxCDF	Meth 23X	ug/Nm3	0.0000530		0.0000758		0.000243	
12378-PeCDD	Meth 23X	ug/Nm3	0.0000466		0.0000813		0.000132	
12378-PeCDF	Meth 23X	ug/Nm3	0.0000333	بتا	0.0000648 F	ند	0.000185	
123789-HxCDD	Meth 23X	ug/Nm3	0.0000831		0.000174		0.000269	
123789-HxCDF	Meth 23X	ug/Nm3	0.00000934		0.0000182		0.0000663	
234678-HxCDF	Meth 23X	ug/Nm3	0.0000526	В	0.000000		0.000234	
23478-PeCDF	Meth 23X	ug/Nm3	0.0000530		0.000107	Ľ.,	0.000300	
2378-TCDD	Meth 23X	ug/Nm3	0.00000575	В	0.00000648	В	0.0000182	В
2378-TCDF	Meth 23X	ug/Nm3	0.0000933		0.000174		0.000628	
ocpp	Meth 23X	ug/Nm3	0.000331		0.000492		0.00114	
OCDF	Meth 23X	ug/Nm3	0.000237		0.000156		0.000353	
TOTAL HpCDD	Meth 23X	ug/Nm3	0.000564		0.000939		0.00191	
TOTAL HPCDF	Meth 23X	ug/Nm3	0.000309		0.000340		0.00106	
TOTAL HXCDD	Meth 23X	ug/Nm3	0.00114		0.00187		0.00308	
TOTAL HxCDF	Meth 23X	ug/Nm3	0.000509		0.000698		0.00253	
TOTAL PeCDD	Meth 23X	ug/Nm3	0.00136		0.00263		0.00351	
TOTAL PecdF	Meth 23X	ug/Nm3	0.000538		0.000609		0.00334	
TOTAL TCDD	Meth 23X	ug/Nm3	0.00116		0.00258		0.00327	
TOTAL TCDF	Meth 23X	ng/Nm3	0.000744		0.00159		0.00490	Aire

Sample Type: Tenax-Tenax + Charcoal A Collection Method: VOST Stream: APF Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош З
I, i, I - Trichloroethane	GCMS	ug/Nm3	(85.0) QN		ND (0.57)		ND (0.57)	
1,1,2,2-Tetrachloroethane	GCMS	ug/Nm3	ND (0.58)		ND (0.57)		ND (0.57)	
[1,1,2-Trichloroethane	GCMS	ug/Nm3	ND (0.58)		ND (0.57)		ND (0.57)	
1,1-Dichloroethane	GCMS	ug/Nm3	ND (0.58)		ND (0.57)		ND (0.57)	
1,1-Dichloroethene	GCMS	ug/Nm3	ND (0.58)		ND (0.57)		ND (0.57)	

Appendix B: Detailed



Sample Type: Tenax-Tenax + Charcoal A Stream: APF Inlet Collection Method: VOST

ND (0.58) Run I Run I Com I ND (0.53)				
Collection Method: VOST Sample Type: Tenax-Tenax + Charcoal B		ND (0.57)	ND (0.57)	
Analyte Analytical Units Run I Com I Chiloroctbane GCMS ug/Nm3 ND (0.53) ctrachloroctbane GCMS ug/Nm3 ND (0.53) ctrachloroctbane GCMS ug/Nm3 ND (0.53) foroctbane GCMS ug/Nm3 ND (0.53) forobenzene GCMS ug/Nm3 ND (0.53) chloromethane GCMS ug/Nm3 ND (0.53) chloromethane GCMS ug/Nm3 ND (0.53) maxene GCMS ug/Nm3	H	В		
chloroethane GCMS ug/Nm3 ND (GCMS ug/Nm3 ND (GCMS ug/Nm3 Ug/Nm3 ND (GCMS ug/Nm3 ND	Run I	Run 2 C	Com 2 Run 3	Com 3
ctrachlorocthane GCMS ug/Nm3 ND (CMS ug/Nm3 Chlorocthane GCMS ug/Nm3 ND (CMS ug/Nm3 ND (CMS ug/Nm3 ND (CMS ug/Nm3 ND (CMS ug/Nm3 Ug/Nm3 ND (CMS ug/Nm3 Ug/Nm3 Ug/Nm3 Ug/Nm3 Ug/Nm3 ND (CMS ug/Nm3 Ug/Nm3 Ug/Nm3 Ug/Nm3 Ug/Nm3 Ug/Nm3 ND (CMS ug/Nm3 Ug/Nm3 Ug/Nm3 ND (CMS ug/Nm3		ND (0.58)	(65.0) UN	
chloroethane GCMS ug/Nm3 ND (GCMS ug/Nm		ND (0.58)	(65.0) QN	
lorocthane GCMS ug/Nm3 ND (lorocthane GCMS ug/Nm3 ND (lorochane GCMS ug/Nm3 ND (lorocthane GCMS ug/Nm3 ND (lorocthane GCMS ug/Nm3 ND (lorobenzene GCMS ug/Nm3 ND (loromethane GCMS ug/Nm3 ND (loropenzene GCMS ug/Nm		ND (0.58)	ND (0.59)	
lorobenzene GCMS ug/Nm3 ND (GCMS ug/Nm3	2	ND (0.58)	(0.59) ON (0.59)	
lorobenzene GCMS ug/Nm3 ND (GCMS ug/Nm3	Q!	(0.58) (0.58)	(6C.D) ON	
loroperane GCMS ug/Nm3 ND (GCMS ug/Nm3 lorobenzene GCMS ug/Nm3 ND (GCMS ug/Nm3 ND (GCMS ug/Nm3 ND (GCMS ug/Nm3 ND (GCMS ug/Nm3 ng/Nm3 Chloromethane GCMS ug/Nm3 ug/Nm3 Chloromethane GCMS ug/Nm3 (GCMS ug/Nm3 ng/Nm3 (GCMS ug/Nm3 ng/Nm3 (GCMS ug/Nm3 ng/Nm3 ng/Nm3 (GCMS ug/Nm3 (GCMS ug/		(8C.0) UN	(%C.0) UN	
loropropane GCMS ug/Nm3 ND (lorobenzene GCMS ug/Nm3 ND (loromethane GCMS		ND (0.58)	(8C.0) UN	
lorobenzene GCMS ug/m3 ND (GCMS ug/m3 ND (GCMS ug/m3 ND (GCMS ug/Nm3 ND		(8C.0) ON	(85.9) CM	
lorobenzene GCMS ug/m³ ND (GCMS ug/m³ ND (GCMS ug/Nm³ ND (GCMS ug/Nm³ ND (GCMS ug/Nm³ ND (GCMS ug/Nm³ nzene GCMS ug/Nm³ ND (GCMS ug/Nm³ nzene GCMS ug/Nm³ ND (GCMS ug/Nm³ ng/Nm³ nD (GCMS ug/Nm³ ng/Nm³ nD (GCMS ug/Nm³ ng/Nm³ nD (GCMS ug/Nm³ ng/Nm³ nD (GCMS ug/Nm³ nD (GCMS ug/Nm³ ng/Nm³ nD (GCMS ug/Nm³ nD (GCMS ug/Nm² nD (GCM		(0C.0) CIN	(8C.9) CM	
one GCMS ug/Nm3 ND I-2-Pentanone GCMS ug/Nm3 ND I-2-Pentanone GCMS ug/Nm3 ND GCMS ug/Nm3 ND I-2-Pentanone GCMS ug/Nm3 ND I-2-Pentanonethane GC		(8C.9) CN	(RCD) CIN	
one GCMS ug/Nm3 H.2-Pentanone GCMS ug/Nm3 ug/Nm3 chloromethane GCMS ug/Nm3 ug/N		ND (2.9)	(6.5) ON	
L2-Pentanone GCMS ug/Nm3 ND GCMS ug/Nm3 ND GCMS ug/Nm3 ND chloromethane GCMS ug/Nm3 ND isulfide GCMS ug/Nm3 ND isulfide GCMS ug/Nm3 ND inzene GCMS ug/Nm3 ND inzene GCMS ug/Nm3 ND intere	2 9	(8.2) UN (8.5) UN	(4) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A	-
chloromethane GCMS ug/m³ ND GCMS ug/m³ ND chloromethane GCMS ug/m³ ND cethane GCMS ug/m³ ND cetrachloride GCMS ug/m³ ND cetrachloride GCMS ug/m³ ND cetrachloride GCMS ug/m³ ND cetrachloride GCMS ug/m³ ND cethane GCMS ug/m³ ND cethane GCMS ug/m³ ND chloromethane GCMS ug/m³ ND chloromethane GCMS ug/m³ ND chloromethane GCMS ug/m³ ND	2 ;	(6.7) ON (6.7) ON	(8.2) CN	
chloromethane GCMS ug/Nm3 ND rm GCMS ug/Nm3 ND ethane GCMS ug/Nm3 ND GCMS ug/Nm3 ND GCMS ug/Nm3 ND razene GCMS ug/Nm3 ND razene GCMS ug/Nm3 ND razene GCMS ug/Nm3 ND chloromethane GCMS ug/Nm3 ND razene	Q _	(6.2) UN	(2.3) UN	
ethane GCMS ug/Nm3 ND		4.32	5.15	
GCMS	2	ND (0.58)	(ec.b) CN	
GCMS ug/Nm3 ND GCMS ug/Nm3 Ug/Nm3 ND GCMS ug/Nm3 Ug/Nm3 Ug/Nm3 Ug/Nm3 GCMS ug/Nm3	2 ;	(0.00) UN	(8C.0) UN	
CCMS Ug/Nm3 ND	2) OX	(8C.0) UN	(VC.D) UN	
loride GCMS ug/Nm3 ND ND GCMS ug/Nm3 ND ND ND GCMS ug/Nm3 ND		10.4 10.40	44:0 63:00 CIV	
GCMS ug/Nm3 ND	2 9	(0.00) (N)	(80.0) CM	
GCMS ug/nm3 ND GCMS ug/nm3 ND GCMS ug/nm3 ND GCMS ug/nm3 ND	2	ND (0.58)	(80.0) UN	
GCMS ug/Nm3 ND GCMS ug/Nm3 ND GCMS ug/Nm3 ND GCMS ug/Nm3 ND	2		35.7	
methane GCMS ug/Nm3 ND GCMS ug/Nm3 ND ND GCMS ug/Nm3 ND ND	Q.	ND (0.58)	1.29	
GCMS ug/Nm3 ND GCMS ug/Nm3 ND	•	3.57	\$.21	
GCMS Lug/Nm3 ND	2 -	ND (0.58)	(65.0) QN	
	2	ND (0.58)	(65.0) QN	_
Methylene Chloride GCMS ug/Nm3 ND (0.53)	QN	8.07	105	ED.

Analytical Data Used In Calculations

Sample Type: Tenax-Tenax + Charcoal Stream: APF Inlet Collection Method: VOST

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
0	COME	no/Nm3	VES 0) GN		ND (0.58)		(65.0) QN	
Styrene			ND (0.53)		(85 0) CZ		0.644	
Tetrachloroethene	CCMS	Curvian	(C.D) UNI		(000) (31)		77.0	
Toluene	GCMS	ug/Nm3	ND (0.53)		(8C.0) (IN		7.40	
Trichloroethene	GCMS	ue/Nm3	ND (0.53)		ND (0.58)		ND (0.59)	
Trichlorofluoromethane	COMS	ue/Nm3	ND (0.53)		ND (0.58)		(65.0) QN	
Tiend Acatata	SMO	no/Nm3	ND (2.6)		ND (2.9)		ND (2.9)	
Vinyi Accidio	SI CO	Vam	ND (0, 53)		ND (0.58)		ND (0.59)	
Vinyi Chloride	CCIVIS	Cirrican	(5) 6) (1)		(65 O) (IIV		(05 0) CIN	
cis-1,3-Dichloropropene	GCMS	ng/nm3	(cc.b) UN	-	(0.30)		(cc.v) ON	
m n-Xvlene	GCMS	ug/Nm3	ND (0.53)		ND (0.58)		1.17	
A. Yulene	GCMS	ue/Nm3	ND (0.53)		ND (0.58)		ND (0.59)	
trans-1 2. Dichloroethene	CCMS	ug/Nm3	ND (0.53)		ND (0.58)		ND (0.59)	
umis-1,2-Lichiotopronene	CCMS	110/Nm3	ND (0.53)		ND (0.58)		ND (0.59)	

Sample Type: Ammonia Impingers Collection Method: Ammonia/Cyanide Stream: APF Outlet

Com 3	124 B	
Run 3		
m 2		
Com 1 Run 2 Co	154 B	
Com 1		
Run 1	168	
Units	ug/Nm3	:
Analytical Technique	distil	•
Analyte	Ammonia - Distilled distil	

Stream: APF Outle Collection Method: Ammonia/Cyanide Sample Type: Impingers

Com 3			
Run 3		358	
Com 2			
Run 2		432	
Com 1		6	
Run 1		30	
Units	Annual Contract of the Contrac	(ug/Nm3	
Analytical Technique		tot CN	
Analyte		Cvanide	•

Stream: APF Outlet Collection Method: Anions Train Sample Type: 47 mm Filter + Solids

Analyte Analytical Technique		Units	Run 1	Com 1	Run 2	Com 2	Run 3 Com	Com 3
Chloride			Nm3 0.192 C) ၁	0	J J	ND (0.11)	ر د د
Chloride Sulfate	ನ ನ	ug/g ug/Nm3	4000 C 37.8	ن	407	ر	ND (370) 52.3)
					1			

Collection Method: Anions Train Sample Type: 47 mm Filter + Solids Stream: APF Outlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Sulfate IC		g/an	801000		219000		262000	
Fluoride SI Fluoride SI	स छ	ug/Nm3 ug/g	0.0463 C 980 C		0.219 C 575 C	ပပ	0.117 584	117 C 584 C

Sample Type: Impingers + TLR Collection Method: Anions Train Stream: APF Outlet

Analyte	Analytical Technique	Units	Run 1	Com 1	m 1 Run 2 Cor	Com 2	Run 3	Com 3
Chloride Sufate	<u>ව</u> ව	ug/Nm3 ug/Nm3	60100 474000		72700 532000		5 47	0400 0000
Fluoride	SIE	ug/Nm3	82001	0 B	94	olB (8870	В
				•				

Collection Method: M0011a Sample Type: Impingers + MeCl2 Stream: APF Outlet

Analyte		Units	Run 1	Com 1	Run 2	Com 2	om 2 Run 3	Com 3
hyde	HPLC	ug/Nm3	3.65		4.08		3.81	
							Committee of the last of the l	

Stream: APF Outlet Collection Method: M29 Sample Type: 47 mm Filter + Solids

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
Mercury	CVAA	ug/Nm3	ND (0.00027) C	ာ	ND (0:00030) C	၁	ND (0.00021) C	၁
Arsenic	GFAA	ug/Nm3	0.212 C	၁	0.361 C	၁	0.271]C	င
Cadmium		ug/Nm3	ND (0.0043)		ND (0.0048)		ND (0.0035)	
Lead		ug/Nm3	0.0191		0.0346		0.0334	
Selenium	GFAA	ug/Nm3	ND (0.0044) C	ပ	ND (0.0050) C	ပ	ND (0.0036) C	ပ
Ahminim	IICAP	ue/Nm3	0.875 C	S	4.811C	C	2.411C	ျ
Antimony	ICAP	ug/Nm3	ND (0.32)		ND (0.36)		ND (0.26)	
Barism		ug/Nm3	0.0914 C	ن د	0.0174 C	ပ	0.00491 C	U

Analytical Data Used In Calculations

Stream: APF Outlet Collection Method: M29 Sample Type: 47 mm Filter + Solids

Analyte	Analytical Technique	Units	Kun I		Kun 2	C0111 &	Kun J	COINS
	ICAD	m/Nm3	ND (0.0018)		ND (0.0020)		ND (0.0015)	
Berymum	ייי	me in the	(2120:0)	,	(0.3	(076	(
Calcium	ICAP	ug/Nm3	0.0923 C		28.6	ر	2.00.7	، ر
Chromium	ICAP	ue/Nm3	8.00 C	ا	12.9	ပ	68.8	ပ
	ICAP	ne/Nm3	ND (0.030)	Ü	ND (0.033)	ပ	ND (0.024) C	Ų
Codain	ICAP	ng/Nm3	ND (0.028)		ND (0.031)		ND (0.022)	
Copper	100		130	7	7 00 6	ζ	1 8 C	ر
Iron	ICAP	lug/nm3) kg I	<u> </u>	27.1	، ر	+0:7 -) (
Magnesium	ICAP	ug/Nm3	ND (0.53) C	O	2.79 C	ပ	1.30 05.1	ن
Managarase	ICAP	ne/Nm3	0.205		0.619		0.137	
Mothedonim	ICAP	no/Nm3	3.35 C	Ü	6.48 C	ပ	2.92	ပ
IVIOLY COCKINGS	ICAB	Non	0.257	- C	1.26 [6	Ú	0.344 C	ပ
Nickei	ICAL	CINIA	(0) 0) (1)) {	OF OUR	· (NID (0.33)	ر
Phosphorus	ICAP	ng/Nm3	ND (040) CN		ND (0.45)	. ر	(cc.u) dn	، ر
Potassium	ICAP	ug/Nm3	ND (2.4) C	ပ	ND (2.7) CN	ပ	ND (2:0)	ပ
Silver	ICAP	ug/Nm3	0.312		0.372		0.138	
Codium	ICAP	ue/Nm3	ND (0.17) C	ט	1.39	ပ	ND (0.14) C	ပ
Titanium	ICAP	No/Nm3	0.0606 C	E)	0.409 C	ပ	0.232	ပ
Versedium	ICAP	no/Nm3	2 656 0		0.814 C	ပ	0.848 C	ပ
Valiacium		- P. I.	2000					

Stream: APF Outlet Collection Method: MM5 Sample Type: 47 mm Filter

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Сош 2	Run 3	Com 3
					12 Y 32 1		107 W VIX	
11.2.4-Trichlorobenzene	CCMS	ug/Nm3	ND (0.44)	•	(/5.0) ON		ND (0.42)	
1.2-Dichlorobenzene	GCMS	ug/Nm3	ND (0.43)		ND (0.35)		ND (0.39)	
1.3-Dichlorobenzene	GCMS	ug/Nm3	ND (0.40)		ND (0.34)		ND (0.37)	
1.4-Dichlorobenzene	GCMS	ug/Nm3	ND (0.39)		ND (0.32)		ND (0.36)	
2.4.5-Trichlorophenol	GCMS	ug/Nm3	ND (0.68)		ND (0.58)		ND (0.63)	
2.4.6-Trichlorophenol	GCMS	ug/Nm3	ND (0.72)		ND (0.62)		(L9:0) QN	-
2.4-Dichlorophenol	GCMS	ug/Nm3	ND (0.52)		ND (0.44)		ND (0.49)	
2.4-Dimethylphenol	GCMS	ug/Nm3	ND (0.58)		ND (0.49)		ND (0.55)	-
2.4-Dinitrophenol	GCMS	ug/Nm3	ND (2.0)		(1.7) DN		(6.1) QN	
2.4-Dinitrotoluene	GCMS	ug/Nm3	ND (0.66)		ND (0.56)		ND (0.61)	
2,6-Dinitrotoluene	GCMS	ug/Nm3	ND (0.94)		ND (0.80)		ND (0.87)	
2-Chloronaphthalene	GCMS	ug/Nm3	ND (0.27)		ND (0.23)		ND (0.25)	

Stream: APF Outlet Collection Method: MM5 Sample Type: 47 mm Filter

2-Chicophenol GCMS ug/Nm3 ND (0.44) ND (0.23) ND (0.24) 2-Achtorophenol GCMS ug/Nm3 ND (0.25) ND (0.44) ND (0.44) ND (0.44) 2-Methylphenol GCMS ug/Nm3 ND (0.95) ND (0.44) ND (0.44) 2-Mitroaniline GCMS ug/Nm3 ND (0.89) ND (0.44) ND (0.48) 3-Mitroaniline GCMS ug/Nm3 ND (0.84) ND (0.47) ND (0.48) 4-A-Dinito-2-methylptenol GCMS ug/Nm3 ND (0.26) ND (0.47) ND (0.73) 4-Chioro-3-methylptenol GCMS ug/Nm3 ND (0.26) ND (0.27) ND (0.73) 4-Chioro-3-methylptenol GCMS ug/Nm3 ND (0.26) ND (0.27) ND (0.25) 4-Chioro-3-methylptenol GCMS ug/Nm3 ND (0.26) ND (0.27) ND (0.25) 4-Chioro-3-methylptenol GCMS ug/Nm3 ND (0.26) ND (0.27) ND (0.25) 4-Chioro-3-methylptenol GCMS ug/Nm3 ND (0.26) ND (0.27) ND (0.25)	Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2		Com 3
cent GCMS ug/hm3 ND (0.24) ND (0.22) ND (0.24) ND (0.24) GCMS ug/hm3 ND (0.35) ND (0.44) ND (0.44) ND (0.49) GCMS ug/hm3 ND (0.35) ND (0.44) ND (0.48) ND (0.48) GCMS ug/hm3 ND (0.44) ND (0.44) ND (0.48) ND (0.48) hylphenol GCMS ug/hm3 ND (0.44) ND (0.44) ND (0.45) hylphenol GCMS ug/hm3 ND (0.44) ND (0.45) ND (0.45) hylphenol GCMS ug/hm3 ND (0.25) ND (0.23) ND (0.25) hylphenol GCMS ug/hm3 ND (0.28) ND (0.25) ND (0.25) hylphenol GCMS ug/hm3 ND (0.24) ND (0.25) ND (0.25) hylphenol GCMS ug/hm3 ND (0.14) ND (0.25) ND (0.25) hylphenol GCMS ug/hm3 ND (0.14) ND (0.15) ND (0.15) GCMS ug/hm3 ND (0.14) ND (0.25) <t< td=""><td></td><td>COME</td><td>ng/Nm3</td><td>ND (0.44)</td><td></td><td>ND (0.37)</td><td></td><td>ND (0.40)</td><td></td></t<>		COME	ng/Nm3	ND (0.44)		ND (0.37)		ND (0.40)	
CCMS Ug/Mm ND (0.55)	2-Chiolophenol	SWOO	MW/am	ND (0.26)		ND (0.22)		ND (0.24)	, ,
GCMS Ug/Nm3 ND (0.95) ND (0.81) ND (0.81) ND (0.88)	2-Methyliniaiche Methylphenol	GCMS	us/Nm3	ND (0.53)		ND (0.44)		ND (0.49)	
CCMS	2-Nitroaniline	GCMS	ug/Nm3	(S60) QN		(18.0) QN		ND (0.88)	
CCMS ug/Nm3	2-Nitrophenol	GCMS	ug/Nm3	ND (0.80)		ND (0.67)		ND (0.75)	
GCMS ug/Nm3 ND (0.34) ND (0.71) ND (0.71) filtlehend GCMS ug/Nm3 ND (0.28) ND (0.23) ND (0.23) forMS ug/Nm3 ND (0.28) ND (0.24) ND (0.49) forMS ug/Nm3 ND (0.38) ND (0.49) ND (0.45) forMS ug/Nm3 ND (0.17) ND (0.49) ND (0.45) forMS ug/Nm3 ND (0.17) ND (0.15) ND (0.45) forMS ug/Nm3 ND (0.17) ND (0.15) ND (0.15) forMS ug/Nm3 ND (0.14) ND (0.15) ND (0.15) forMS ug/Nm3 ND (0.14) ND (0.15) ND (0.15) forMS ug/Nm3 ND (0.14) ND (0.11) ND (0.17) forMS ug/Nm3 ND (0.15) ND (0.11) ND (0.12) forMS ug/Nm3 ND (0.15) ND (0.12) ND (0.12) forMS ug/Nm3 ND (0.12) ND (0.12) ND (0.12) forMS ug/Nm3 ND (0.12) ND (0.15) <td>3'-Dichlorobenzidine</td> <td>GCMS</td> <td>ug/Nm3</td> <td>ND (0.46)</td> <td></td> <td>ND (0.39)</td> <td>-</td> <td>ND (0.44)</td> <td></td>	3'-Dichlorobenzidine	GCMS	ug/Nm3	ND (0.46)		ND (0.39)	-	ND (0.44)	
December GCMS Ug/Nm3 ND (1.2) ND (1.1) ND (1.2) ND (0.25) ND (3-Nitroaniline	GCMS	ug/Nm3	ND (0.84)		ND (0.71)		ND (0.78)	
CCMS Ug/Nm3 ND (0.28) ND (0.49) ND (0.45) ND (0.48)	6-Dinitro-2-methylphenol	GCMS	ug/Nm3	ND (1.2)		ND (1.1)		ND (1.2)	
Independing GCMS ug/Nm3 ND (0.58) ND (0.67) ND (0.55) GCMS ug/Nm3 ND (0.19) ND (0.67) ND (0.73) GCMS ug/Nm3 ND (0.17) ND (0.15) ND (0.18) GCMS ug/Nm3 ND (0.17) ND (0.15) ND (0.18) GCMS ug/Nm3 ND (0.17) ND (0.15) ND (0.18) GCMS ug/Nm3 ND (0.13) ND (0.15) ND (0.18) GCMS ug/Nm3 ND (0.13) ND (0.15) ND (0.18) hene GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.10) hene GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) hene GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) hene GCMS ug/Nm3 ND (0.15) ND (0.11) ND (0.12) hene GCMS ug/Nm3 ND (0.12) ND (0.11) ND (0.12) fcCMS ug/Nm3 ND (0.12) ND (0.11) ND (0.12) fc	-Aminobiphenyl	GCMS	ug/Nm3	ND (0.26)		ND (0.23)		ND (0.25)	
GCMS ug/hm3 ND (0.78) ND (0.67) ND (0.78) ne GCMS ug/hm3 ND (0.19) ND (0.15) ND (0.18) ne GCMS ug/hm3 ND (0.44) ND (0.15) ND (0.18) ne GCMS ug/hm3 ND (0.17) ND (0.15) ND (0.40) ngCMS ug/hm3 ND (0.18) ND (0.15) ND (0.40) ngCMS ug/hm3 ND (0.18) ND (0.15) ND (0.15) ngCMS ug/hm3 ND (0.14) ND (0.11) ND (0.11) nylene GCMS ug/hm3 ND (0.15) ND (0.11) ND (0.11) nthale GCMS ug/hm3 ND (0.15) ND (0.12) ND (0.12) nthalate GCMS ug/hm3 ND (0.13) ND (0.12) ND (0.11) nalate GCMS ug/hm3 ND (0.12) ND (0.13) ND (0.13) nalate GCMS ug/hm3 ND (0.12) ND (0.13) ND (0.13) ne GCMS ug/hm3 ND (0.12)	4-Chloro-3-methylphenol	GCMS	ug/Nm3	ND (0.58)		ND (0.49)		ND (0.55)	
GCMS ug/Nm3 ND (1.9) ND (1.6) ND (1.8) GCMS ug/Nm3 ND (0.17) ND (0.15) ND (0.18) GCMS ug/Nm3 ND (0.17) ND (0.13) ND (0.16) GCMS ug/Nm3 ND (0.14) ND (0.15) ND (0.16) GCMS ug/Nm3 ND (0.18) ND (0.16) ND (0.13) GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.13) anthene GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) arthene GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) anthene GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) anthene GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) anthene GCMS ug/Nm3 ND (0.12) ND (0.11) ND (0.12) anthene GCMS ug/Nm3 ND (0.12) ND (0.13) ND (0.12) anthene GCMS ug/Nm3 ND (0.22) ND (0.11) <td< td=""><td>-Nitroaniline</td><td>GCMS</td><td>ug/Nm3</td><td>ND (0.78)</td><td></td><td>(19:0) QN</td><td></td><td>ND (0.73)</td><td></td></td<>	-Nitroaniline	GCMS	ug/Nm3	ND (0.78)		(19:0) QN		ND (0.73)	
COMB	-Nitrophenol	GCMS	ug/Nm3	(6:1) QN		(9:1) QN		(1.8) MD (1.8)	
GCMS ug/Nm3 ND (0.17) ND (0.15) ND (0.16) GCMS ug/Nm3 ND (0.44) ND (0.29) ND (0.40) GCMS ug/Nm3 ND (0.18) ND (0.16) ND (0.17) GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) GCMS ug/Nm3 ND (0.14) ND (0.12) ND (0.11) GCMS ug/Nm3 ND (0.15) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.15) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.13) ND (0.13)	Acenaphthene	GCMS	ug/Nm3	ND (0.30)		ND (0.26)		ND (0.28)	
GCMS ug/Nm3 ND (0.44) ND (0.29) ND (0.40) GCMS ug/Nm3 ND (0.18) ND (0.16) ND (0.17) GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.17) GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) GCMS ug/Nm3 ND (0.15) ND (0.11) ND (0.11) GCMS ug/Nm3 ND (0.15) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.15) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.13) ND (0.18) ND (0.15) GCMS ug/Nm3 ND (0.13) ND (0.18) ND (0.15) GCMS ug/Nm3 ND (0.12) ND (0.18) ND (0.15) GCMS ug/Nm3 ND (0.12) ND (0.19) ND (0.15)	Acenaphthylene	GCMS	ug/Nm3	(1.0) QN		ND (0.15)		(91.0) QN	
GCMS ug/Nm3 ND (0.35) ND (0.29) ND (0.23) GCMS ug/Nm3 ND (0.18) ND (0.16) ND (0.17) GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.17) GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) GCMS ug/Nm3 ND (0.15) ND (0.12) ND (0.11) GCMS ug/Nm3 ND (0.81) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.13) ND (0.18) ND (0.18) GCMS ug/Nm3 ND (0.12) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.18) ND (0.15) GCMS ug/Nm3 ND (0.12) ND (0.13) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.12) ND (0.15) GCMS ug/Nm3 ND (0.23) ND (0.12) ND (0.12)	Acetophenone	GCMS	ug/Nm3	ND (0.44)		ND (0.36)		ND (0.40)	
GCMS ug/Nm3 ND (0.18) ND (0.16) ND (0.17) GCMS ug/Nm3 ND (0.14) ND (0.27) ND (0.11) GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) GCMS ug/Nm3 ND (0.15) ND (0.12) ND (0.11) GCMS ug/Nm3 ND (0.15) ND (0.12) ND (0.11) GCMS ug/Nm3 ND (0.22) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.13) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.19) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.13) ND (0.12) GCMS ug/Nm3 ND (0.23) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.23) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.24) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.24) ND (0.21) ND (0.23)	Aniline	GCMS	ug/Nm3	ND (0.35)		ND (0.29)		ND (0.32)	
GCMS ug/hm3 ND (0.14) ND (0.12) ND (0.11) ND (0.11) GCMS ug/hm3 ND (0.14) ND (0.11) ND (0.11) ND (0.11) GCMS ug/hm3 ND (0.15) ND (0.12) ND (0.11) GCMS ug/hm3 ND (0.15) ND (0.12) ND (0.12) GCMS ug/hm3 ND (0.22) ND (0.18) ND (0.12) GCMS ug/hm3 ND (0.13) ND (0.18) ND (0.12) GCMS ug/hm3 ND (0.12) ND (0.12) ND (0.12) GCMS ug/hm3 ND (0.12) ND (0.13) ND (0.12) GCMS ug/hm3 ND (0.16) ND (0.19) ND (0.19) GCMS ug/hm3 ND (0.12) ND (0.12) GCMS ug/hm3 ND (0.23) ND (0.12) GCMS ug/hm3 ND (0.23) ND (0.12) GCMS ug/hm3 ND (0.23) ND (0.12) GCMS ug/hm3 ND (0.25) ND (0.12) MD (0.12) ND (0.12) ND (0.	Anthracene	GCMS	ug/Nm3	ND (0.18)		(91.0) DN		(71.0) CIN	
GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.11) GCMS ug/Nm3 ND (0.14) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.15) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.81) ND (0.22) ND (0.67) ND (0.14) GCMS ug/Nm3 ND (0.22) ND (0.18) ND (0.14) ND (0.12) GCMS ug/Nm3 ND (0.13) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.13) ND (0.18) ND (0.12) GCMS ug/Nm3 ND (0.15) ND (0.19) ND (0.19) GCMS ug/Nm3 ND (0.16) ND (0.16) ND (0.16) GCMS ug/Nm3 ND (0.16) ND (0.16) ND (0.16) GCMS ug/Nm3 ND (0.16) ND (0.16) ND (0.16) GCMS ug/Nm3 ND (0.25) ND (0.16) ND (0.16) GCMS ug/Nm3 ND (0.25) ND (0.16) ND (0.16) GCMS ug/Nm3 ND (0.25) <t< td=""><td>Benzidine</td><td>GCMS</td><td>ug/Nm3</td><td>ND (0.32)</td><td></td><td>ND (0.27)</td><td></td><td>ND (0:30)</td><td></td></t<>	Benzidine	GCMS	ug/Nm3	ND (0.32)		ND (0.27)		ND (0:30)	
GCMS ug/Nm3 ND (0.14) ND (0.11) ND (0.12) ND (0.13) ND (0.	Benzo(b)fluoranthene	GCMS	ug/Nm3	ND (0.14)		ND (0.11)		(11.0) QN	
GCMS ug/Nm3	Benzo(g,h,i)perylene	GCMS	ug/Nm3	ND (0.14)		ND (0.11)		ND (0.11)	
GCMS ug/Nm3 ND (0.81) ND (0.67) ND (0.74) GCMS ug/Nm3 ND (0.22) ND (0.18) ND (0.13) GCMS ug/Nm3 ND (0.13) ND (0.11) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.13) ND (0.13) GCMS ug/Nm3 ND (0.16) ND (0.13) ND (0.13) GCMS ug/Nm3 ND (0.12) ND (0.13) ND (0.13) GCMS ug/Nm3 ND (0.23) ND (0.13) ND (0.13) GCMS ug/Nm3 ND (0.23) ND (0.12) ND (0.13) GCMS ug/Nm3 ND (0.23) ND (0.21) ND (0.21) GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.21) GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.21)	Benzo(k)fluoranthene	GCMS	ug/Nm3	ND (0.15)		ND (0.12)		ND (0.12)	
GCMS ug/Nm3 ND (0.21) ND (0.18) ND (0.11) GCMS ug/Nm3 ND (0.13) ND (0.11) ND (0.12) GCMS ug/Nm3 ND (0.13) ND (0.11) ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.16) ND (0.13) ND (0.13) GCMS ug/Nm3 ND (0.19) ND (0.19) ND (0.19) GCMS ug/Nm3 ND (0.23) ND (0.12) ND (0.13) GCMS ug/Nm3 ND (0.24) ND (0.12) ND (0.21) GCMS ug/Nm3 ND (0.24) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.21) GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.23)	Benzoic acid	GCMS	ug/Nm3	(9:1) QN		ND (1.4)		ND (1.5)	
GCMS ug/Nm3 ND (0.22) ND (0.18) ND (0.12) GCMS ug/Nm3 17.8 B L.19 B ND (0.12) GCMS ug/Nm3 ND (0.12) ND (0.12) ND (0.13) ND (0.090) GCMS ug/Nm3 ND (0.19) ND (0.19) ND (0.13) ND (0.18) GCMS ug/Nm3 ND (0.23) ND (0.19) ND (0.19) ND (0.13) GCMS ug/Nm3 ND (0.24) ND (0.21) ND (0.21) GCMS ug/Nm3 ND (0.24) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.24) ND (0.21) ND (0.21) GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.21)	Benzyl alcohol	GCMS	ug/Nm3	ND (0.81)		(19.0) QN		ND (0.74)	
GCMS ug/Nm3 ND (0.13) ND (0.11) ND (0.12) GCMS ug/Nm3 17.8 B 1.19 B 10.0 GCMS ug/Nm3 ND (0.12) ND (0.099) ND (0.096) GCMS ug/Nm3 ND (0.19) ND (0.13) ND (0.18) GCMS ug/Nm3 ND (0.23) ND (0.19) ND (0.19) GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.21) GCMS ug/Nm3 ND (0.14) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.23)	Butylbenzylphthalate	GCMS	ug/Nm3	ND (0.22)		ND (0.18)		ND (0.21)	
GCMS ug/Nm3 17.8 B 1.19 B 10.0	Chrysene	GCMS	ug/Nm3	ND (0.13)		ND (0.11)		೨	
GCMS ug/Nm3 ND (0.12) ND (0.099) ND (0.19) CCMS ug/Nm3 ND (0.16) ND (0.13) ND (0.13) GCMS ug/Nm3 ND (0.19) ND (0.16) ND (0.16) GCMS ug/Nm3 ND (0.25) ND (0.19) ND (0.19) GCMS ug/Nm3 ND (0.14) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.25) ND (0.12) ND (0.12)	Di-n-butylphthalate	GCMS	ug/Nm3	17.8	<u>മ</u>	1.19	ø.	10.0	Д
nthracene GCMS ug/Nm3 ND (0.16) ND (0.13) ND (0.16) GCMS ug/Nm3 ND (0.23) ND (0.16) ND (0.16) late GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.21) late GCMS ug/Nm3 ND (0.14) ND (0.12) ND (0.12) GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.21)	Di-n-octylphthalate	GCMS	ug/Nm3	ND (0.12)		ND (0.099)		ND (0.096)	
GCMS ug/Nm3 ND (0.19) ND (0.16) ND (0.16) ND (0.18) ND (0.19) ND (0.19) ND (0.19) ND (0.19) ND (0.19) ND (0.21) ND (0.221) ND (0.221) ND (0.221) ND (0.2221) ND (0.22221) ND (0.222221) ND (0.222222222222222222222222222222222222	Dibenz(a,h)anthracene	GCMS	ug/Nm3	ND (0.16)		ND (0.13)		ND (0.13)	
ale GCMS ug/Nm3 ND (0.23) ND (0.19) ND nalate GCMS ug/Nm3 ND (0.25) ND (0.21) ND GCMS ug/Nm3 ND (0.14) ND (0.12) ND GCMS ug/Nm3 ND (0.25) ND (0.21) ND	Dibenzofuran	GCMS	ug/Nm3	(61.0) UN		ND (0.16)	•	ND (0.18)	
GCMS ug/Nm3 ND (0.25) ND (0.21) ND (0.15) ND (0.15) ND (0.15) ND (0.25) ND (0.21) ND (0.25) ND (0.21) ND (0.25) ND (0.21) ND (0.25)	Diethylphthalate	GCMS	ug/Nm3	ND (0.23)		(61.0) QN		ND (0.21)	,
GCMS ug/Nm3 ND (0.14) ND (0.12) ND GCMS ug/Nm3 ND (0.25) ND (0.21) ND	Dimethylphthalate	GCMS	ug/Nm3	ND (0.25)		ND (0.21)	-	ND (0.23)	
GCMS ug/Nm3 ND (0.25) ND (0.21) ND	fluoranthene	GCMS	ng/Nm3			(21.0) QN		ND (0.13)	-
	Fluorene	GCMS	ug/Nm3					ND (0.23)	

Analytical Data Used In Calculations

Stream: APF Outlet Collection Method: MM5 Sample Type: 47 mm Filter

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	Technique							
Usvach orchanzena	CCMS	ue/Nm3	(95.0) QN		ND (0.50)		ND (0.53)	
q	GCMS	118/Nm3	ND (0.73)		ND (0.62)		(69.0) QN	
Hexachlorocyclonentadiene	CCMS	ug/Nm3	ND (1.0)		ND (0.85)		ND (0.93)	
Hexachloroethane	GCMS	ug/Nm3	ND (0.81)		ND (0.67)		ND (0.74)	
Indeno(1 2 3-cd)nvrene	GCMS	ug/Nm3	ND (0.12)		ND (0.099)	·	ND (0.095)	
Isonhorone	GCMS	ug/Nm3	ND (0.26)		ND (0.22)		ND (0.25)	
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (0.80)		ND (0.67)		ND (0.73)	
Namhthalene	GCMS	ug/Nm3	(71.0) QN		ND (0.14)		(91.0) QN	
Nitrobenzene	GCMS	ug/Nm3	ND (0.45)		ND (0.38)		ND (0.43)	
Pentachloronitrobenzene	GCMS	ug/Nm3	ND (2.5)		ND (2.3)		ND (2.4)	
Pentachlorophenol	GCMS	ug/Nm3	ND(1.3)		(I.I) ON		ND(1.2)	
Phenanthrene	GCMS	ug/Nm3	ND (0.17)		(0.16) ND (0.16)		ND (0.16)	
Phenol	GCMS	ug/Nm3	ND (0.37)		ND (0:30)		ND (0.33)	
Pyrene	GCMS	ug/Nm3	ND (0.11)		ND (0.094)		ND (0.10)	
his/2-Chloroethoxy)methane	GCMS	ug/Nm3	ND (0.39)		ND (0.33)		ND (0.37)	
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	ND (0.48)		ND (0.40)		ND (0.44)	
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3	0.0940 BJ	B	0.103	BJ	0.0703 B.	BJ

Sample Type: XAD Resin/Impingers + MeCl2 Stream: APF Outlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1.2.4-Trichlorobenzene	GCMS	ug/Nm3	ND (1.4)		(68.0) QN		ND (0.94)	
1,2-Dichlorobenzene	GCMS	ug/Nm3	(C.1) QN		(51.0) ON		ND (0.83)	
1,3-Dichlorobenzene	GCMS	ug/Nm3	ND (1.2)		ND (0.70)		ND (0.78)	
1,4-Dichlorobenzene	GCMS	ug/Nm3	(I.1) ON		(69.0) QN		ND (0.76)	•
2,4,5-Trichlorophenol	GCMS	ug/Nm3	ND (2.1)		(I.I) QN		ND (1.1)	
2,4,6-Trichlorophenol	GCMS	ug/Nm3	ND (2.2)		ND (1.2)		ND (1.2)	
2,4-Dichlorophenol	GCMS	ug/Nm3	ND (0.68)		ND (0.49)		ND (0.51)	
2,4-Dimethylphenol	GCMS	ug/Nm3	(S.1) UN		ND (0.82)		ND (0.86)	
2,4-Dinitrophenol	GCMS	ug/Nm3	ND (6.1)		ND (2.7)		ND (2.7)	
2,4-Dinitrotoluene	GCMS	ug/Nm3	ND (2.0)		(0.1) QN		(0.1) QN	
2,6-Dinitrotoluene	GCMS	ug/Nm3	ND (3.0)		ND (1.5)		ND (1.5)	

Analytical Data Used In Calculations

Sample Type: XAD Resin/Impingers + MeCl2 Stream: APF Outlet Collection Method: MM5

uthalene hol hukalene hol e l e -methylphenol ee l ee l ee l erthylphenol ee l ee	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.84) ND (1.2) ND (2.6) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5)	ND (0.46) ND (0.46) ND (0.87) ND (1.1) ND (1.2) ND (1.2) ND (1.2) ND (1.2) ND (1.3) ND (1.3) ND (1.3) ND (1.3)		ND (0.47)	
sphenol Inaphthalene Iphenol niline henol alorobenzidine niline tro-2-methylphenol obiphenyl niline henol thene henol thene henol thylene enone ithylene enone ithylene henol henol henol henol henol henol henol henol henol	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.69 ND (1.2) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5)	ND (0.76) ND (0.84) ND (1.1) ND (1.2) ND (1.2) ND (1.2) ND (1.3) ND (1.3) ND (1.3) ND (1.3)		(P8 0/ CN	
Inaphthalene iphenol niline henol nilorobenzidine niline tro-2-methylphenol biphenyl niline henol niline henol niline henol niline henol niline henol niline henol henol niline henol hiphene henone henone	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.66) ND (1.7) ND (2.8) ND (2.6) ND (0.49) ND (2.2) ND (2.2) ND (2.2)	ND (0.46) ND (0.87) ND (1.1) ND (1.2) ND (1.2) ND (1.2) ND (1.3) ND (1.3) ND (1.3) ND (0.43)			
lphenol niline henol nilone nilone nilone tro-2-methylphenol biphenyl niline henol niline henol thene thylene enone h, i, i)perylene in fluoranthene	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (2.3) ND (2.3) ND (2.3) ND (2.5) ND (2.5) ND (2.2) ND (2.2) ND (2.2) ND (2.2)	ND (0.87) ND (1.1) ND (1.2) ND (1.2) ND (1.2) ND (1.3) ND (1.3) ND (0.43) ND (0.43)		ND (0.49)	
niline henol alorobenzidine niline tro-2-methylphenol obiphenyl niline henol athene athylene enone enone in, i)perylene ine ine ine ine inthylene	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (2.6) ND (2.6) ND (2.5) ND (2.5) ND (2.5) ND (2.2) ND (2.2) ND (2.2) ND (2.2)	ND (1.1) ND (1.2) ND (1.2) ND (1.3) ND (1.3) ND (1.3) ND (0.43) ND (0.43)		(96.0) ON	
henol alorobenzidine niline tro-2-methylphenol obiphenyl o-3-methylphenol niline thenol thene athylene enone enone in	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (2.5) ND (2.5) ND (3.1) ND (3.1) ND (2.2) ND (4.1) ND (4.1)	ND (1.2) ND (1.2) ND (1.3) ND (1.3) ND (0.43) ND (0.43)		ND (1.2)	
nlorobenzidine niline tro-2-methylphenol bojiphenyl b-3-methylphenol niline henol trhene thylene enone enone ithylene henone ithylene enone ithylene henone ithylene honne honne	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (2.5) ND (2.6) ND (3.1) ND (1.4) ND (2.2) ND (4.1)	ND (1.2) ND (1.3) ND (1.7) ND (0.43) ND (0.86)			
niline tro-2-methylphenol biphenyl b-3-methylphenol niline henol tthene tthylene enone enone in	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (2.6) ND (0.49) ND (2.2) ND (2.2) ND (4.1)	ND (1.3) ND (1.7) ND (0.43) ND (0.86)		ND (1.3)	
tro-2-methylphenol beiphenyl niline henol thene thylphene enone ene th	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.49) ND (1.49) ND (2.2) ND (4.1)	ND (1.7) ND (0.43) ND (0.86)		ND (1.3)	
obiphenyl niline niline henol tthene tthylene enone enc ne 'h', i)perylene fluoranthene	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.49) ND (1.4) ND (2.2) ND (4.1)	ND (0.43) ND (0.86)	-	ND (1.8)	
niline niline henol thenol thenol thene thylene enone enone th 'h', i)perylene fluoranthene	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (1.4) ND (2.2) ND (4.1)	ND (0.86)		ND (0.44)	
niline thenol thenol thenoe thylene enone enc th thi)perylene fluoranthene	ug/Nm3 ug/Nm3 ug/Nm3	ND (2.2) ND (4.1)			(16.0) QN	
henol thene three thylene enone enc th in	ug/Nm3 ug/Nm3 ug/Nm3	ND (4.1)	(I.1) QN		ND (1.2)	
othene nthylene enone ene ene nte nte nte nte nte nte nte n	ug/Nm3	(88 C) CZ	(C.1) QN	_	(7.1.) CN	
othylene enone ene ene te te te this fluoranthene fluoranthene	ug/Nm3		ND (0.48)		ND (0.48)	
enone ene re)fluoranthene "h,i)perylene)fluoranthene		ND (0.52)	(0.27) ND		ND (0.28)	
ene se jfuoranthene "h,i)perylene jfuoranthene	ug/Nm3	2.02	1.59	_	2.81	_
ene ne)fluoranthene "h,i)perylene)fluoranthene	ug/Nm3	CI.DON	ND (0.95)		ND(1.1)	
	ug/Nm3	ND (0.35)	ND (0.26)		ND (0.26)	
- 	ug/Nm3	ND (1.4)	ND (0.73)	_	ND (0.74)	
	ug/Nm3	(91) QN	ND (0.51)		ND (0.44)	
	ug/Nm3	(SI) QN	ND (0.56)		ND (0.48)	
	ug/Nm3	(91) QN	ND (0.54)		ND (0.47)	
Benzoic acid	ug/Nm3	125 E	901		194	田
70	ug/Nm3	ND (2.5)	ND (1.4)	•	(5.1) QN	
Butylbenzylphthalate GCMS	ug/Nm3	ND (0.92)	ND (0.41)		ND (0.42)	
Chrysene	ug/Nm3	ND (0.66)	ND (0.36)		ND (0.37)	
Di-n-butylphthalate GCMS	ug/Nm3	3.73 1	1.01		102	
Di-n-octylphthalate GCMS	ug/Nm3	ND(13)	ND (0.30)		ND (0.26)	
Dibenz(a,h)anthracene GCMS	ug/Nm3	ND (20)	ND (0.63)		ND (0.55)	
Dibenzofuran	ug/Nm3	ND (0.54)	ND (0.30)		ND (0.31)	
Diethylphthalate GCMS	ug/Nm3	ND (0.54)	ND (0.29)		ND (0:30)	
Dimethylphthalate	ug/Nm3	ND (0.71)	ND (0.37)		ND (0.37)	
Fluoranthene	ug/Nm3	ND (0.34)	ND (0.25)		ND (0.26)	

Analytical Data Used In Calculations

Sample Type: XAD Resin/Impingers + MeCl2 Stream: APF Outlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2 Com 2	Com 2	Run 3	Com 3
			110 W VIIV		IND ON THE		(75 0) AN	
Fluorene	CCMS	ug/nm ³	(co.u) CN		(VC.D) CN		((0.0) 0.1	
Hexachlorobenzene	GCMS	ug/Nm3	(£.1) dN		ND (1.2)		(E.1)UN	
Heyachlorobutadiene	CMS	ue/Nm3	ND (2.2)		ND (1.5)		(9'1) QN	
Transfer out of the second of	SWJ9	ne/Nm3	ND (2.7)		(£.1) QN		ND (1.3)	
TIEXACIIIOI OCYCIOPORTAGIOTIC			O UN		ND CIA		(9T) QN	
Hexachloroemane	CMS	cmy/An	(C.2) CNI		(1.11)		(27.0) (27.0)	
Indeno(1,2,3-cd)pyrene	GCMS	ug/Nm3	(SI) QN		ND (0.48)		ND (0.42)	
Isophorone	GCMS	ug/Nm3	1.71	_	ND (0.38)		ND (0.40)	
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (2.8)		ND (1.1)		ND (1.2)	
Nanhthalene	GCMS	ug/Nm3	ND (0.43)		ND (0.29)		0.562	Bì
Nitrobenzene	GCMS	ug/Nm3	(9:1) QN		ND (0.67)		ND (0.71)	
Pentachloronitrobenzene	GCMS	ug/Nm3	ND (3.1)		ND (2.6)		(L.2) QN	
Dentachloronhenol	GCMS	ue/Nm3	ND (3.0)		ND (2.5)		ND (2.6)	
Tolling of the state of the sta	O CIVE	Na.	(SE 0) CIN		ND (0.26)		ND (0.27)	
rnenanurene	COMP		(((()))	-	(22)	-	81 1	_
Phenol	CCMS	ugynma	97-1	_	0.040		01:1	•
Pyrene	GCMS	ug/Nm3	ND (0.44)		ND (0.22)		ND (0.23)	
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3	(S.1) QN		ND (0.71)		ND (0.75)	
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	(8.1) QN		ND (0.89)		(86'0) QN	
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3	1.03	-	0.522	-	9.87	

Collection Method: Multimetals Train Sample Type: Mercury Impingers Stream: APF Outlet

Analyte	Units	Run 1	Com 1	1 Run 2	Com 2	Com 2 Run 3	Сош 3
Mercury	ug/Nm3	4.76		2.8	8:	4.8	

Sample Type: Nitric Acid Impingers + TL Collection Method: Multimetals Trai Stream: APF Outle

	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Com 2 Run 3	Com 3
Mercury		ng/Nm3	6		.30		5	.44)
Aluminum ICAP Barium ICAP		ug/Nm3 ug/Nm3	0.5	3.2 BC 43 BC	55.0 BC 0.740 BC	BC BC		58.9 BC 0.788 BC

Sample Type: Nitric Acid Impingers + TLR Stream: APF Outlet Collection Method: Multimetals Train

Analyte	Analytical	Units	Run I	Com 1	Run 2	Com 2	Kun 3	Sen s
	Technique							
Boron	TICAP	ug/Nm3	377 BC	BC	382	382 BC	321	321 BC
Calcium	ICAP	ug/Nm3	214 BC	BC	280	ВС	361	361 BC
Iron	ICAP	ug/Nm3	58.0 BC	BC	36.8 BC	BC	810	
Magnesium	ICAP	ug/Nm3	19.7	ပ	23.1	၁	25.3	ပ
Phosphorus	ICAP	ug/Nm3	ND (18)		ND (21)		(L1) QN	
Potassium	ICAP	ug/Nm3	ND (250)	BC	ND (280) BC	BC	ND (230) BC	BC
Silver	ICAP	ug/Nm3	ND (1.6) B	B	ND (1.8)	В	ND (1.5)	B
Sodium	ICAP	ug/Nm3	· 260 BC	BC	363	BC	413	BC
Titanium	ICAP	ug/Nm3	1.87		2.10		2.08	
Antimony	ICPMS	ug/Nm3	0.0223	ပ	0.0230 C	ြ	0.0331 C	<u></u>
Arsenic	ICPMS	ug/Nm3	2.95	ပ	3.89	ပ	4.12	ပ
Barium	ICPMS	ug/Nm3	ND (0.0052)	ပ	ND (0.0059)	ပ	ND (0.0049)	ပ
Beryllium	ICPMS	ug/Nm3	ND (0.0047)	ပ	ND (0.0054)	ပ	ND (0.0045)	ပ
Cadmium	ICPMS	ug/Nm3	ND (0.0062) C	ပ	ND (0.0071) C	၁	ND (0.0059)	ပ
Chromium	ICPMS	ug/Nm3	3.22	ပ	1.67	ပ	147	ပ
Cobalt	ICPMS	ug/Nm3	0.0616 C	ပ	0.0204	ပ	0.832	ပ
Copper	ICPMS	ug/Nm3	0.751	ပ	0.771	ပ	0.885	ပ
Lead	ICPMS	ug/Nm3	ND (0.0050) C	ن ن	ND (0.0057)	ပ	ND (0.0047)	
Manganese	ICPMS	ug/Nm3	0.565	ပ	0.717	ပ	22.0	ပ
Molybdenum	ICPMS	ug/Nm3	7.75	_ ပ	3.36	ບ	3.43	ပ
Nickel	ICPMS	ug/Nm3	54.5	ပ	6.73	ပ	1.68	
Selenium	ICPMS	ug/Nm3	58.5		46.1		41.2	
Vanadium	ICPMS	ug/Nm3	1.03	် ပ	10.1	ပ	1.36 C	ن ن

Sample Type: 47 mm Filter Collection Method: PCDD/PCDF for Dioxins and Furans (M23) Stream: APF Outlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1234678-HpCDD 1234678-HpCDF 123478-HxCDD 123478-HxCDF	Meth 23 X Meth 23 X Meth 23 X Meth 23 X	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.00000049) ND (0.00000027) ND (0.00000044) ND (0.00000027)		ND (0.00000080) ND (0.00000043) ND (0.00000068) ND (0.00000043)		ND (0.0000021) ND (0.0000011) ND (0.0000018) ND (0.0000011)	

Analytical Data Used In Calculations

Collection Method: PCDD/PCDF for Dioxins and Furans (M23) Sample Type: 47 mm Filter Stream: APF Outlet

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	anhimmar							
[1234789-HpCDF	Meth 23X	ug/Nm3	ND (0.00000040)		ND (0.00000068)		ND (0.0000018)	
123678-HxCDD	Meth 23X	ug/Nm3	ND (0.00000035)		ND (0.00000055)		ND (0.0000016)	
123678-H×CDF	Meth 23X	ug/Nm3	ND (0.00000022)		ND (0.00000031)		ND (0.00000085)	
12378-PeCDD	Meth 23X	ug/Nm3	ND (0.00000040)		ND (0.00000062)		ND (0.0000016)	
12378-PeCDF	Meth 23X	ug/Nm3	ND (0.00000022)		ND (0.00000037)		ND (0.00000092)	
123789-HxCDD	Meth 23X	ug/Nm3	ND (0.00000040)	W	ND (0.00000062)		ND (0.0000016)	
123789-HxCDF	Meth 23X	ug/Nm3	ND (0.00000027)		ND (0.00000043)		ND (0.0000011)	
1234678-HxCDF	Meth 23X	ug/Nm3	0.000000350 F	í.	ND (0.00000037)		(0.00000009) QN	
23478-PeCDF	Meth 23X	ug/Nm3	ND (0.00000022)		ND (0.00000031)		ND (0.00000092)	
2378-TCDD	Meth 23X	ug/Nm3	ND (0.00000022)		ND (0.00000037)		ND (0.00000092)	
2378-TCDF	Meth 23X	ug/Nm3	ND (0.00000018)		ND (0.00000025)		ND (0.000000078)	
OCDD	Meth 23X	ug/Nm3	ND (0.00000080)		ND (0.0000013)		ND (0.0000049)	
OCDF	Meth 23X	ug/Nm3	ND (0.00000066)		ND (0.0000011)		ND (0.0000042)	
TOTAL HDCDD	Meth 23X	ug/Nm3	ND (0.00000049)		ND (0.00000080)		ND (0.0000021)	
TOTAL HPCDF	Meth 23X	ug/Nm3	ND (0.00000031)		ND (0.00000055)		ND (0.0000013)	
TOTAL HxCDD	Meth 23X	ug/Nm3	ND (0.00000040)		ND (0.00000062)		(91000001e) MD (0.000001e)	
TOTAL HxCDF	Meth 23X	ug/Nm3	0.000000350 F	Œ	ND (0.00000037)		ND (0.000000099)	
TOTAL PeCDD'	Meth 23X	ug/Nm3	ND (0.00000040)		ND (0.00000062)		ND (0.0000016)	
TOTAL PeCDF	Meth 23X	ug/Nm3	ND (0.00000022)		ND (0.00000037)		ND (0.000000092)	
TOTAL TCDD	Meth 23X	ug/Nm3	ND (0.00000022)		ND (0.00000037)		ND (0.000000092)	
TOTAL TCDF	Meth 23X	ug/Nm3	ND (0.00000018)		ND (0.00000025)		ND (0.00000078)	

Sample Type: Filtered Solids/Solvent Rinses/XAD Resi Collection Method: PCDD/PCDF for Dioxins and Furans (M23 Stream: APF Outle

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1234678-HpCDD	Meth 23X	ug/Nm3	0.00000877		0.0000223		0.0000103	
1234678-HpCDF	Meth 23X	ug/Nm3	0.0000113 B	82	0.0000174 B	В	0.0000128 B	<u> </u>
123478-HxCDD	Meth 23X	ug/Nm3	ND (0.0000071)	•	0.00000346 F	ī.	ND (0.0000056)	
123478-HxCDF	Meth 23X	ug/Nm3	0.00000001 B	<u> </u>	0.0000239	В	0.0000145 E	<u> </u>
1234789-HpCDF	Meth 23X	ug/Nm3	ND (0.0000071)		0.00000446	ŭ.	0.00000523	
123678-HxCDD	Meth 23X	ug/Nm3	ND (0.0000060)		0.00000570		ND (0.0000045)	
123678-HxCDF	Meth 23X	ug/Nm3	ND (0.0000030)		0.00000545		0.00000346	•

Sample Type: Filtered Solids/Solvent Rinses/XAD Resin Stream: APF Outlet Collection Method: PCDD/PCDF for Dioxins and Furans (M23)

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
12378-PeCDD	Meth 23X	ug/Nm3	ND (0.0000060)		0.00000292	F	ND (0.0000053)	
12378-PeCDF	Meth 23X	ug/Nm3	ND (0.0000030)		0.00000684		ND (0.00000030)	-
123789-HxCDD	Meth 23X	ug/Nm3	ND (0.0000063)		0.00000567		ND (0.0000053)	
123789-HxCDF	Meth 23X	ug/Nm3	ND (0.0000041)		0.00000253		ND (0.0000034)	~ -
234678-HxCDF	Meth 23X	ug/Nm3	0.00000332 F	Ĺ.	0.00000599		0.00000508	Ľ
23478-PeCDF	Meth 23X	ug/Nm3	ND (0.0000030)		0.00000499	بت	ND (0.0000030)	
2378-TCDD	Meth 23X	ug/Nm3	ND (0.0000030)		0.00000121	(1,	ND (0.0000034)	
2378-TCDF	Meth 23X	ug/Nm3	ND (0.0000011)	.	0.0000120		0.00000450	
OCDD	Meth 23X	ug/Nm3	0.0000351	8	0.0000446 BF	BF	0.0000345 BF	BF
OCDF	Meth 23X	ug/Nm3	0.0000321	Œ	0.0000661		0.0000423	
TOTAL HPCDD	Meth 23X	ug/Nm3	0.00000877		0.0000223		0.0000103	
TOTAL HPCDF	Meth 23X	ug/Nm3	0.0000140		0.0000243		0.0000199	
TOTAL HXCDD	Meth 23X	ug/Nm3	0.00000522		0.0000458		0.00000520	د د
TOTAL HxCDF	Meth 23X	ug/Nm3	0.00000858		0.0000512		0.0000178	
TOTAL PeCDD	Meth 23X	ug/Nm3	ND (0.00000060)		0.0000412		0.0000104	ند
TOTAL PeCDF	Meth 23X	ug/Nm3	0.00000396		0.0000529		0.00000719	ت
TOTAL TCDD	Meth 23X	ug/Nm3	ND (0.0000030)		0.000127		0.0000136	
TOTAL TCDF	Meth 23X	ug/Nm3	0.00000282		0.0000988		0.0000122	

Sample Type: Tenax-Tenax + Charcoal A Collection Method: VOST Stream: APF Outlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1,1,1-Trichloroethane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
1,1,2,2-Tetrachloroethane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
1,1,2-Trichloroethane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
1,1-Dichloroethane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
1,1-Dichloroethene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
1,2-Dichlorobenzene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)	•	ND (0.55)	
[1,2-Dichloroethane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
1,2-Dichloropropane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)	-	ND (0.55)	
1,3-Dichlorobenzene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
I,4-Dichlorobenzene	GCMS	ng/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	

Analytical Data Used In Calculations

Sample Type: Tenax-Tenax + Charcoal A Stream: APF Outlet Collection Method: VOST

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
() Distancine	UCMS	Ino/Nm3	ND (2.3)		ND (2.3)		ND (2.8)	
2-Duminone		ue/Nm3	ND (2.3)		ND (2.3)		ND (2.8)	
4-Methyl-2-Pentanone		ue/Nm3	ND (2.3)		ND (2.3)		ND (2.8)	
Acetone	_	ug/Nm3	ND (2.3)		ND (2.3)		ND (2.8)	
Benzene		ug/Nm3	10.2		ND (0.47)		0.938	
Bromodichloromethane		ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Bromoform		ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Bromomethane		ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Carbon Disulfide	GCMS	ug/Nm3	14.9		12.6	_	46.3	
Carbon Tetrachloride		ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Chlorobenzene		ug/Nm3	ND (0.47)		ND (0.47)		(SS.0) QN	
Chloroethane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Chloroform	GCMS	ug/Nm3	1.30		ND (0.47)		ND (0.55)	
Chloromethane	GCMS	ug/Nm3	9.32		ND (0.47)		1.16	
Dibromochloromethane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Ethyl Benzene	GCMS	ug/Nm3	ND (0.47)				ND (0.55)	
Methylene Chloride	GCMS	ug/Nm3	> 1860 S	S	_	S	662 E	田
Styrene		ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Tetrachloroethene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Toluene	GCMS	ug/Nm3	4.66		0.559		0.993	
Trichloroethene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Trichlorofluoromethane	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
Vinyl Acetate	GCMS	ug/Nm3	ND (2.3)		ND (2.3)		ND (2.8)	
Vinyl Chloride	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
cis-1,3-Dichloropropene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
m.p-Xylene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
o-Xylene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
trans-1,2-Dichloroethene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	
trans-1,3-Dichloropropene	GCMS	ug/Nm3	ND (0.47)		ND (0.47)		ND (0.55)	

Sample Type: Tenax-Tenax + Charcoal B Stream: APF Outlet Collection Method: VOST

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	Technique							
1 1 1. Trichloroethane	GCMS	ug/Nm3	ND (0.34)		(ES:0) QN		ND (0.49)	
1.1.2.2-Tetrachloroethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
1.1.2-Trichloroethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
1.1-Dichloroethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
1.1-Dichloroethene	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
1.2-Dichlorobenzene	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
1.2-Dichloroethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
1.2-Dichloropropane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)	-	ND (0.49)	
1.3-Dichlorobenzene	GCMS	ug/Nm3	ND (0.34)	•	ND (0.53)		ND (0.49)	-
1.4-Dichlorobenzene	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
2-Butanone	GCMS	ug/Nm3	(1.1) DN		ND (2.7)		ND (2.5)	
2-Hexanone	GCMS	ug/Nm3	(L.1) QN				ND (2.5)	
4-Methyl-2-Pentanone	GCMS	ug/Nm3	(7:1) QN	_	(7.2) QN		ND (2.5)	
Acetone	GCMS	ug/Nm3	(1.1) ON		ND (2.7)	-	ND (2.5)	
Benzene	GCMS	ug/Nm3	5.79		0.850		0.641	
Bromodichloromethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	÷.
Bromoform	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	· <u>·</u> · ·
Bromomethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)			
Carbon Disulfide	GCMS	ug/Nm3	27.9		48.9		ND (0.49)	
Carbon Tetrachloride	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Chlorobenzene	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Chloroethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Chloroform	GCMS	ug/Nm3	ND (0.34)		ND (0.53)	-	ND (0.49)	
Chloromethane	GCMS	ug/Nm3	0.953		ND (0.53)		3.40	
Dibromochloromethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)	-	ND (0.49)	
Ethyl Benzene	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Methylene Chloride	GCMS	ug/Nm3	> 1230	S	154	ш	ND (0.49)	
Styrene	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Tetrachloroethene	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Toluene	GCMS	ug/Nm3	0.613		ND (0.53)		ND (0.49)	
Trichloroethene	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Trichlorofluoromethane	GCMS	ug/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Vinyl Acetate	GCMS	ng/Nm3	(1.1) DN		ND (2.7)		ND (2.5)	:

Analytical Data Used In Calculations

Sample Type: Tenax-Tenax + Charcoal B Stream: APF Outlet Collection Method: VOST

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Kun 3	C 1111 3
			Ψ.				Not of Six	
	COME	ha/Nm3	ND (0.34)		ND (0.53)		ND (0.49)	
Vinyl Chloride	COMP	A PARTIES			ND (0.53)		10 ON ON 10 49)	
Leis 1 2-Dichloronronene	CMS	l ue/Nm3	(45.0) UN		(((())))		(5) (5) (1)	
Sindardardard -C'1-Sin		Man	(A) (A) (A)		ND (0,53)		ND (0.49)	
m.p-Xvlene	CCMS	CIIINI/Am			(0) 0) (1)		VOV OV CIN	
	SMC.	Le/Nm3	ND (0.34)		(cc.0) UN		(xt.0) (N	
lo-Xylene					(55 O) UN		ND (0.49)	
trans_1 2_Dichloroethene	GCMS	ug/Nm3	(45.9) UN		Corrol Civi		(0) (0)	
ualla-1,4-Divinoroment	0,000		AD ON THE		ND (0.53)		ND (0.49)	
trans-1,3-Dichloropropene	CCMS	cmN/8n	(ACO) CIVI		() = 1 = 1			

Stream: Bed Ash Collection Method: Grab Composite Sample Type: Ash + Mg + Ca

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
	ЛГ	0/01	001		100		89.0	
Boron		9.9-						
Cabon	[1]Itimate	8	3.44		3.42		3.75	
Sulfur	Ultimate	%	7.47		8.06	l	T9.T	
		۳/۱/۵	0 240		0.150		0.310	
Actinium-228 (@338	gamma	֓֞֝֞֝֞֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	0.0200		0.0500		0.100	
Actinium-228 (@911	gamma	PC S	00200		0.0700		(010) QN	
Actinium-228 (@968	gamma	10 PC	0.260	,	0.260		ND (0.21)	
Bismuth-212 (g/2/	gamna	PC#6	0.370		0.280		0.770	
Bismuth-214 (@1120.4	gamma	pci/s	0900		0.450		0.520	
Bismuth-214 (@1/64./	galinila	PCES 501/a	0.680		0.440		0.650	
Bismuth-214 (@009.4	Ballillia	PCV6	90		0.890		1.10	
K-40 @1460	ganna	PC.56	0000		WD (0) 10)		0.580	
Lead-210 @46	gamma	PCVB	0.20		0800		061 0	
Lead-212 @238	gamma	pcvg	0.510		0.0000		061.0	
Lead-214 @295.2	gamma	pCi/g	0.470		0.450		0.000	
Lead-214 @352.0	gamma	pCi/g	0.510		0.610		0.040.0	
Radium-226 @186.0	gamma	pCi/g	0.620		0.900		00.1	
Thallium-208 @583	gamma	pCi/g	0.0300		0.0600		0.000	
Thallium-208 @860	gamma	pCi/g	ND (0.28)		0.0500		0.200	
Thorium-234 @63 3	gamma	pCi/g	0.440		1.70		0.830	
Thorium_234 @92 6	oamma	pCi/g	0.210		ND (0.010)		0.190	·
11 1 1 1 2 4 3 4 4 8 4 4 4 4 4 4 4	gamma	DCi/E	0.0400		0090'0		0.100	
Ulanimin-233 (4,143.0	, P	M. S.						2

FD Stream: Bed Ash Collection Method: Grab Composite Sample Type: Ash + Mg + Ca

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Boron	ICAP	g/gn					81.5	
Carbon Sulfur	Ustimate Ustimate	%%	,				3.74 7.94	
Actinium-228 @338	gamma	pCi/g					0.290	
Actinium-228 @911	gamma	pCi/g					0.150	
Actunium-228 @908 Bismuth-212 @727	gamma					· -	ND (0.20)	
Bismuth-214 @1120.4	gamma	pCi/g				-	0.610	
Bismuth-214 @1764.7	gamma	pCi/g					0.550	<u>.</u>
Bismuth-214 @609.4	gamma	pCi/g					0.560	
K-40 @1460	gamma	pCi/g					0.710	
Lead-210 @46	gamma	pCi/g					ND (0.60)	
Lead-212 @238	gamma	pCi/g	•				0.230	
Lead-214 @295.2	gamma	pCi/g					0.440	
Lead-214 @352.0	gamma	pCi/g					0.520	
Radium-226 @186.0	gamma	pCi/g					00.00	
Thallium-208 @583	gamma	pCi/g					0.0400	
Thallium-208 @860	gamma	pCi/g					0.0200	
Thorium-234 @63.3	gamma	pCi/g					0.410	
	gamma	pCi/g					09.20	
Uranium-235 @143.8	gamma	pCi/g					0.0600	

Stream: Bed Ash Collection Method: Grab Composite Sample Type: Bottom Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Rua 2	Com 2	Run 3	Com 3
Mercury	CVAA	mg/kg	ND (0.012)		ND (0.012)		ND (0.012)	
1,2,4-Trichlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene	GCMS GCMS GCMS GCMS	8/8n 8/8n 8/8n 8/8n	ND (0.0064) ND (0.021) ND (0.024) ND (0.023)		ND (0.0063) ND (0.021) ND (0.024) ND (0.024)		ND (0.0064) ND (0.021) ND (0.024) ND (0.023)	

Analytical Data Used In Calculations

Stream: Bed Ash Collection Method: Grab Composite Sample Type: Bottom Ash

enol Genol Go ol Go ol Go ol Go ol					Kun 2	7 1100	Cunw	2
lo Io								
- To _		3/ฮก	(610:0) QN		(0:019) AN		(0.019) QN	
		8/8n	ND (0.016)		(910:0) QN		(0.016) (0.016)	
		ng/g	(610:0) QN		ND (0.019)		(610:0) QN	
		ug/g	ND (0.042)		ND (0.042)		ND (0.042)	
12 4-Dinitrophenol		ug/g	ND (0.086)		ND (0.085)			
		18/8n	ND (0.025)		ND (0.025)			
	•	ug/g	ND (0.035)		ND (0.035)		_	
ii.		ug/g	ND (0.030)		ND (0.030)			
		ng/g	ND (0.011)		ND (0.011)		_	
alene		ng/g	ND (0.020)		ND (0.020)			
•		ug/g	ND (0.026)		ND (0.026)		_	
		ug/g	ND (0.026)		ND (0.026)		_	
		ug/g	ND (0.014)		ND (0.014)		ND (0.014)	•
enzidine		ug/g	ND (0.036)	-	ND (0:036)			
		ug/g	ND (0.011)		ND (0.011)		ND (0.011)	
methylphenol		ug/g	ND (0.024)		ND (0.024)			
		ug/g	ND (0.020)		ND (0.020)			
		ug/g	ND (0.015)		ND (0.015)			
ıer	•	ng/g	ND (0.024)		ND (0.024)		ND (0.024)	
4-Methylphenol/3-Methylphenol GCMS		g/gn	ND (0.041)		ND (0.041)	_ =		
		ng/g	ND (0.020)		ND (0.020)		ND (0.020)	
4-Nitrophenol GCMS	S	ng/g	ND (0.021)		ND (0.021)			
Acenaphthene	S	ng/g	ND (0.016)		ND (0.016)			
9	£S	ng/g	ND (0.022)		ND (0.022)			
	S	ug/g	ND (0.018)		ND (0.018)		ND (0.018)	
Benz(a)anthracene GCMS	ts	ng/g	ND (0.011)		ND (0.011)		ND (0.011)	
	S	ng/g	ND (0.018)		ND (0.018)		ND (0.018)	
nthene	S	ug/g	ND (0.032)		ND (0.032)		ND (0.032)	
	fS fS	g/gn	ND (0.018)		ND (0.018)		ND (0.018)	,
41	SI	8/8n	ND (0.027)		ND (0.027)		ND (0.027)	
		g/gn	(660.0) QN		(660:0) QN		(0.09) ON	
. 10		ng/g	ND (0.048)		ND (0.048)		ND (0.048)	
Butylbenzylphthalate GCMS		ng/g	ND (0.025)		ND (0.025)	٠	ND (0.025)	

Analytical Data Used In Calculations

Stream: Bed Ash Collection Method: Grab Composite Sample Type: Bottom Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Chrysene	GCMS	a/an	(610.0) QN		(610:0) QN		(0.019) ND	
Di-n-butylphthalate	GCMS	8/8n	ND (0.010)		ND (0.010)			
Di-n-octylphthalate	GCMS	ng/g	ND (0.019)		ND (0.019)		ND (0.019)	
Dibenz(a,h)anthracene	GCMS	ng/g	ND (0.023)		ND (0.022)		ND (0.023)	
Dibenzofuran	GCMS	ng/g	ND (0.013)		ND (0.013)		ND (0.013)	
Diethylphthalate	GCMS	ng/g	ND (0.012)		ND (0.012)		ND (0.012)	
Dimethylphthalate	GCMS	3/3n	ND (0.016)		ND (0.015)		ND (0.016)	
Diphenylamine/N-NitrosoDPA	GCMS	g/gn	ND (0.025)		ND (0.025)		ND (0.025)	
Fluoranthene	GCMS	3/3 n	ND (0.014)		ND (0.014)		ND (0.014)	
Fluorene	GCMS	g/gn	ND (0.011)		ND (0.011)		ND (0.011)	
Hexachlorobenzene	GCMS	ng/g	ND (0.018)		(710.0) QN		ND (0.018)	
Hexachlorobutadiene	GCMS	ug/g	ND (0.022)		ND (0.022)		ND (0.022)	
Hexachlorocyclopentadiene	GCMS	ng/g	ND (0.054)		ND (0.054)		ND (0.054)	
Hexachloroethane	GCMS	8/8n	ND (0.033)		ND (0.033)		ND (0.033)	
Indeno(1,2,3-cd)pyrene	GCMS	g/gn	ND (0.016)		ND (0.016)		ND (0.016)	
Isophorone	GCMS	ag/g	ND (0.010)		ND (0.0100)		ND (0.010)	
N-Nitroso-di-n-propylamine	GCMS	a/gn	ND (0.026)		ND (0.026)		ND (0.026)	
Naphthalene	GCMS	ng/g	ND (0.022)		ND (0.022)		ND (0.022)	
Nitrobenzene	GCMS	g/gn	ND (0.013)		ND (0.013)		ND (0.013)	
Pentachlorophenol	GCMS	a/8n	ND (0.0064)		ND (0.0063)		ND (0.0064)	
Phenanthrene	GCMS	a/gn	ND (0.018)		ND (0.018)		ND (0.018)	
Phenol	GCMS	ng/g	ND (0.033)		ND (0.033)			
Pyrene	GCMS	ng/g	ND (0.015)				ND (0.015)	
bis(2-Chloroethoxy)methane	GCMS	8/8n	ND (0.011)	•				
bis(2-Chloroethyl)ether	GCMS	a/gn	ND (0.015)		ND (0.015)		ND (0.015)	
bis(2-Chloroisopropyl)ether	GCMS	g/gn	(610:0) QN		(0.019) QN		ND (0.019)	
bis(2-Ethylhexyl)phthalate	GCMS	ng/8	ND (0.054)	•	ND (0.054)		ND (0.054)	
p-Chloroaniline	GCMS	ag/gn	ND (0.032)		ND (0.032)		ND (0.033)	
Arsenic	IGFAA	me/ke	67.8	B	82.6	B	61.2	B
Cadmin	GFAA	mg/kg	ND (1.6)	. 60	ND (0,22)	. 60	ND (0.23)	
Lead	GFAA	mg/kg	6.26		5.06		3.65	
Selenium	GFAA	mg/kg	5.27		4.25	В	4.33	В

Analytical Data Used In Calculations

Stream: Bed Ash Collection Method: Grab Composite Sample Type: Bottom Ash

Analyte	Analytical Technical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	remindee							
Aluminum	ICAP	mg/kg	810778	B	12500 B	B	1690 B	В
Antimony	ICAP	mg/kg	ND (46)		ND (54)		(05) QN	
Barium	ICAP:	mg/kg	26.1		45.8		31.0	
Beryllium	ICAP	mg/kg	0.510		0.877		0.570	
Calcium	ICAP	mg/kg	160000 B	8	166000 B	æ	166000	æ
Chromium	ICAP	mg/kg	19.5	В	21.8	В	17.1	8
Cobalt	ICAP	mg/kg	11.1	В	15.0	<u>B</u>	11.4	<u> </u>
Copper	ICAP	mg/kg	(9.6) UN		ND (4.6)		ND (4.3)	
Iron	ICAP	mg/kg	11300		21600		13000	
Magnesium	ICAP	mg/kg	120000	В	133000	В	121000	В
Manganese	ICAP	mg/kg	96.3	æ	611	Д	97.6	_
Molybdenum	ICAP	mg/kg	ND (3.0)		ND (3.5)		ND (3.3)	
Nickel	ICAP	mg/kg	9,30	В	ND(II)	Ω	ND (9.7)	В
Phosphorus	ICAP	mg/kg	(0L) QN		(89) QN		(69) QN	
Potassium	ICAP	mg/kg	619		1460		968	-
Silver	ICAP	mg/kg	ND (3.5)		ND (4.1)		ND (3.8)	
Sodium	ICAP	mg/kg	210	<u>8</u>	198	В	248	B
Titanium	ICAP	mg/kg	373	В	999	В	417	В
Vanadium	ICAP	mg/kg	0.61		24.3		1.91	
Chloride	SIE	mg/kg	750		10501		998	
Fluoride	SIE	mg/kg	105	В	104 B	В	94.5	В

Ð Stream: Bed Ash Collection Method: Grab Composite Sample Type: Bottom Ash

Analyte Analytical Technique	Analytical Technique	Units	Jnits Run 1	Com 1	Com I Run 2	Com 2	m	Сош 3
Mercury		g					4	
1,2,4-Trichlorobenzene	GCMS	ng/g					I ND (0.0063)	
1,2-Dichlorobenzene	GCMS	ng/g					ND (0.021)	
1,3-Dichlorobenzene	GCMS	ng/g					ND (0.024)	
1,4-Dichlorobenzene	GCMS	g/gn	-				ND (0.023)	
2,4,5-Trichlorophenol	GCMS	ng/g					(610.0) QN	

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Stream: Bed Ash Collection Method: Grab Composite Sample Type: Bottom Ash

hlorophenol brothenol brot	Analyte Analyte Tec	Analytical (Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
nol I GCMS I GCMS II GCMS								(910 0) (IN	
ol GCMS ol GCM	_		20					(616.5) (617	
ol GCMS ne GCMS GCMS dine GCMS dine GCMS dylphenol GCMS enyl ether GCMS whenol GCMS enyl ether GCMS GCMS enyl ether GCMS			50					(810.0) CIN	
ne GCMS GCMS ine GCMS GCMS dine GCMS GCMS dine GCMS enyl ether GCMS enyl ether GCMS enyl ether GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS			50					ND (0.042)	
ne GCMS GCMS ine GCMS dine GCMS dine GCMS dine GCMS enyl ether GCMS enyl ether GCMS enyl ether GCMS GCMS enyl ether GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS			.00					ND (0.086)	
ne GCMS ne GCMS dine GCMS dine GCMS dine GCMS enyl ether GCMS ene GCMS			.50					ND (0.025)	
ne GCMS ine GCMS GCMS dine GCMS GCMS GCMS GCMS enyl ether GCMS enyl ether GCMS enyl ether GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS			.60					ND (0.035)	
GCMS GCMS GCMS GCMS GCMS GCMS Al ether GCMS GCMS Al ether GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ne ne		مه					ND (0.030)	
alene GCMS GCMS GCMS GCMS GCMS GCMS ethylphenol GCMS phenyl ether GCMS J3-Methylphenol GCMS GCMS GCMS GCMS GCMS GCMS GCMS ine GCMS GCMS GCMS ine GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS			. 00				-	(110.0) CIN	
actions and a composition of the	nalene		. 20					ND (0.020)	
GCMS OCMS ethylphenol phenyl ether GCMS phenyl ether GCMS phenyl ether GCMS A3-Methylphenol GCMS GCMS GCMS GCMS GCMS GCMS Athene GCMS GCMS GCMS Athene GCMS GCMS GCMS GCMS Athene GCMS GCMS Athene GCMS Athene GCMS			50					ND (0.026)	
enzidine GCMS methylphenol GCMS gloch GCMS styphenyl ether GCMS styphenyl ether GCMS ol/3-Methylphenol GCMS ne GCMS anthene GCMS			06.					ND (0.026)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS								ND (0.014)	
GCMS SCMS SCMS SCMS SCMS SCMS SCMS SCMS	- 11							ND (0.036)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS			.00				-	ND (0.011)	
enot GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS								ND (0.024)	
enot GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	_		.00					ND (0.020)	
enol GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS								ND (0.015)	
enot GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS			.00					ND (0.024)	
e GCMS e GCMS ene GCMS acene GCMS ranthene GCMS ortylene GCMS ol GCMS	enol		00				_	ND (0.041)	
of GCMS ere GCMS acene GCMS ranthene GCMS ranthene GCMS ranthene GCMS or GCMS	-		-60					ND (0.020)	
ene GCMS ene GCMS acene GCMS nranthene GCMS rearthene GCMS ord nranthene GCMS ord nranthene GCMS ord nranthene GCMS ord nranthene GCMS			مد					ND (0.021)	
ene GCMS acene GCMS nanthene GCMS ranthene GCMS ranthene GCMS or GCMS			مه					(0.016) MD (0.016)	
acene GCMS te GCMS ranthene GCMS ranthene GCMS ranthene GCMS ol GCMS ol GCMS			-00					ND (0.022)	
acene GCMS te GCMS ranthene GCMS octylene GCMS ranthene GCMS ol GCMS ol GCMS ol GCMS			-80					ND (0.018)	
ranthene GCMS restylene GCMS ranthene GCMS ol GCMS ol GCMS			-60					(110.0) CIN	
ranthene GCMS serylene GCMS vanthene GCMS ol GCMS			وه.					(810.0) QN	
perylene GCMS ranthene GCMS Ol GCMS otherwise GCMS		•	_60					ND (0.032)	
ranthene GCMS OI GCMS Other GCMS Other GCMS			.00					ND (0.018)	
ol GCMS GCMS GCMS GCMS	4		مد	-				ND (0.027)	
ol GCMS GCMS GCMS			. 20					(0.099) (IND)	
cylphthalate GCMS	10		.00					ND (0.048)	
			-00					ND (0.025)	
Chrysene GCMS ug/g			-00					(0.0) CIN	

Analytical Data Used In Calculations

Stream: Bed Ash Collection Method: Grab Composite Sample Type: Bottom Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Di-n-butylphthalate		a/an					(010) QN	
Di-n-octylphthalate		g/gn					ND (0.019)	
Dibenz(a,h)anthracene	GCMS	8/8n					ND (0.023)	
Dibenzofuran	GCMS	ng/g					ND (0.013)	
Diethylphthalate	GCMS	a/gn					ND (0.012)	
Dimethylphthalate	GCMS	ng/g					(910:0) QN	
Diphenylamine/N-NitrosoDPA	GCMS	ng/g					ND (0.025)	
Fluoranthene	GCMS	ng/g					ND (0.014)	
Fluorene	GCMS	g/gn					ND (0.011)	
Hexachlorobenzene	GCMS	n <i>g/g</i> n					ND (0.018)	
Hexachlorobutadiene	GCMS	ng/g					ND (0.022)	
Hexachlorocyclopentadiene	GCMS	ng/g					ND (0.054)	
Hexachloroethane	GCMS	a/gn					ND (0.033)	
Indeno(1,2,3-cd)pyrene	GCMS	ng/g					(910.0) GN	
Isophorone	GCMS	ng/g					ND (0.0100)	
N-Nitroso-di-n-propylamine	GCMS	ng/g					ND (0.026)	
Naphthalene	GCMS	ug/g					ND (0.022)	
Nitrobenzene ·	GCMS	a/gn					ND (0.013)	
Pentachlorophenol	GCMS	ng/g					ND (0.0063)	
Phenanthrene	GCMS	a/gn					ND (0.018)	
Phenol		a/gn					ND (0.033)	
Pyrene	•	a/gn					ND (0.015)	-
bis(2-Chloroethoxy)methane		ng/g					ND (0.011)	
bis(2-Chloroethyl)ether		a/an		-			ND (0.015)	
bis(2-Chloroisopropyl)ether		ng/g					ND (0.019)	
bis(2-Ethylhexyl)phthalate		ng/g					ND (0.054)	
p-Chloroaniline	GCMS	ng/g					ND (0.032)	
Arsenic	GFAA	mg/kg					0.19	l a
Cadmium	GFAA	mg/kg		-			0.336	· #
	GFAA	mg/kg					3.57	<u> </u>
Selenium	GFAA	mg/kg					3.20	В
Aluminum	ICAP	mg/kg					7270 B	В
		,						

Sample Type: Bottom Ash Collection Method: Grab Composite Stream: Bed Ash

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	Technique							
Antimony	ICAP	mg/kg					ND (46)	
Barium	ICAP	mg/kg					26.6	
Beryllium	ICAP	mg/kg					0.513	
Calcium	ICAP	mg/kg					146000 B	13
Chromium	ICAP	mg/kg					14.6	В
Cobalt	ICAP	mg/kg					7.91	æ
Copper	ICAP	mg/kg					ND (4.0)	
Iron	ICAP	mg/kg					13200	
Magnesium	ICAP	mg/kg					125000	8
Manganese	ICAP	mg/kg					B 101 B	В
Molybdenum	ICAP	mg/kg					ND (3.0)	
Nickel	ICAP	mg/kg					ND (9.0)	<u> </u>
Phosphorus	ICAP	mg/kg					ND (70)	
Potassium	ICAP	mg/kg					1100	
Silver	ICAP	mg/kg					ND (3.5)	
Sodium	ICAP	mg/kg					123	Œ
Titanium	ICAP	mg/kg					409	В
Vanadium	ICAP	mg/kg					18.3	
Caloride	SIE	mg/kg					930	
Fluoride	SIE	mg/kg			-		146 B	В

Sample Type: Filtered Solids Stream: Coal Paste Collection Method: Grab Composite

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
	CVAA	3/3n	0.160		0.155		0.130	
		8/8n	120		0.66		120	
Chlorine	D4208	a/an	066		1260		1230	
Cadmium . Lead	GFAA GFAA	g/gn g/gn	0.0800		0.0600		0.190	

Analytical Data Used In Calculations

Stream: Coal Past Collection Method: Grab Composit Sample Type: Filtered Solid

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	Technique							
Barium	ICAP	ng/g	49.0		51.0		0.19	
u	ICAP	g/gn	1.70		1.50		1.55	
	ICAP	g/gn	79.0		83.0		ND (3.0)	ir er
Calcium	ICAP	8/8n	1100		1400		1400	·
Chromium	ICAP	a/gn	15.0		17.0		0.7.5	
Copper	ICAP	g/gn	98.9		6.70		7.40	
ium	ICAP	g/gn	840		820		916	
	ICAP	g/gn	90.06		97.0		99.5	
	ICAP	ng/g	680		089		720	
Aluminum	NAA	a/gn	14800		15300		16800	
	NAA	g/gn	0.441		0.469		0.518	
	NAA	3/ 3 n	37.5		50.4		47.6	
	NAA	ng/g	3.69		3.85		4.20	
	NAA	8/8n	20200		17200		23200	
ganese	NAA	ng/g	21.8		25.9			
n	NAA	g/gn	1.19		0.304		ND (0.51)	
	NAA	ng/g	12.3		8.48		17.9	
um	NAA	ng/g	5040		4310		3540	
Silver	NAA	g/gn	0.799		0.437		0.644	
Sodium	NAA	g/gn	310		407		297	
Vanadium	NAA	ng/g	24.8		21.2		25.8	
Fixed Carbon	Proximate	%	53.0		53.2		50.8	
HHV		Btu/lb	12900		12700		12600	
Volatile		%	35.8		34.9		35.1	
Ash	Ultimate	%	11.2		11.8		14.1	
Carbon		%	72.3		71.7		70.3	
Hydrogen	Ultimate	%	4.62		4.55		4.68	
Moisture		%	3.20		4.17		2.80	
Nitrogen		%	1.58		1.35		1.37	
Oxygen		% &	7.15		7.21		5.98 5.98	
Sulfur	Ultunate	°	3.11		3.35		70.0	

Stream: Coal Past Collection Method: Grab Composit Sample Type: Filtered Solid

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1 Actinium 278 @318	loamma	DCi/g	ND (0.010)		0.146		0.206	
Actinium-228 @911	eamtha	DCi/g	0.145		0.146		0.0720	
Actinium-228 @968	gamma	oCi/g	0.155		ND (0.021)		0.216	
Bismuth-212 @727	gamina	pCi/g	0.475		ND (0.31)		0.113	
Ricmuth-214 @1120.4	gamma	2C.%	0.0207		0.0939		166.0	
Bismuth-214 @1764.7	gamma	pCi/g	0.279		0.0522		0.0103	
Bismuth-214 @609.4	gamma	CK,	0.217		0.271		0.278	
K-40 @1460	gamma	pCi/g	1.34		1.57		1.95	
1.ead-210 @46	gamma	PCi/g	0.878		0.0939		0.494	
Lead-212 @238	gamma	pCi/g	0.0826	-	0.115		0.298	
Lead-214 @295.2	gamma	pCi/g	0.165		0.230		0.144	
Lead-214 @352.0	gamma	pCi/g	0.341		0.323		0.154	
Radium-226 @186.0	gamma	pCi/g	0.186		0.616		ND (0.10)	
Thallium-208 @583	gamma	pCi/g	0.0413		0.0522		0.0412	
Thallium-208 @860	gamma	pCi/g	ND (0.14)		0.104		0.0514	
Thorium-234 @63.3	gamma	pCi/g	0.0207		ND (0.10)		0.607	
Thorium-234 @92.6	gamma	pCi/g	ND (0.10)		0.219		ND (0.082)	
Uranium-235@143.8	gamma	pCi/g	0.0103	;	0.0417		ND (0.010)	

G Sample Type: Filtered Solids Stream: Coal Paste Collection Method: Grab Composite

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury	CVAA	a/an					0.270	
Fluorine	D3761	ng/g					120	
Chlorine	D4208	8/8n					1080	
	GFAA GFAA	8/3n 8/3n					0.120 7.00	
Barium Beryllium Boron	ICAP ICAP ICAP	8/8n 8/8n					58.0 1.50 80.0	

Analytical Data Used In Calculations

Stream: Coal Past Collection Method: Grab Composit Sample Type: Filtered Solid

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Calcium	ICAP	8/8n					1600	
Chromium	ICAP	a/gn					16.(
Copper	ICAP	g/gn					7.30	
Magnesium	CAP	g/8n)00I	
Phosphorus	ICAP	g/gn						
Titanium	ICAP	a/gn					710	
Aluminum		ue/e					16500	
Antimony	NAA	ng/g					0.431	
Arsenic		ng/g					45.3	
Cobalt		g/gn					4.42	
		g/gn					23100	
		8/8n					33.1	
denum		8/8n					1.47	
		g/gn					15.9	
ium		g/gn					1130	
	NAA	8/8n					0.622	
		8/8n					329	
Vanadium		g/gn	;				25.5	
Fixed Carbon	Drovimate	J					C 1.7	
		Pm/lb		·		•	7.15	
Volatile		%					35.5	
1 A AL		<u> </u>						
		8 3					13.3	
U.d.o.		% 3					70.5	
nywogen		% ?					4.74	
inional in the state of the sta		% ;					2.91	<u> </u>
		%					1.37	
C		%				_	6.79	
Sulfur	Ultimate	%					3.34	
Actinium-228 @338	gamma	pCi/g					7510	
		pCi/g		-			0.113	
Actinium-228 @968		pCi/g		,			0.227	-

Ð Collection Method: Grab Composit Sample Type: Filtered Solid Stream: Coal Past

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	recilialque							
Bismuth-212 @727	gamma	pCi/g					0.330	
Bismuth-214 @1120.4	gamma	pCi/g					0.0515	
Bismuth-214 @1764.7	gamma	pCi/g					0.247	
Bismuth-214 @609.4	gamma	pCi/g					0.175	
K-40 @1460	gamma	pCi/g					2.68	
1. ead-210 @46	gamma	pCi/g				-	0.257	
Lead-212 @238	gamma	pCi/g					0.288	
1.ead-214 (@295.2	gamma	pCi/g					0.257	
Lead-214 @352.0	gamma	pCi/g					0.206	
Radium-226 (@186.0	gamma	pCi/g					0.402	
Thallium-208 @583	gamma	pCi/g		,			0.0515	
Thallium-208 @860	gamma	pCi/g					0.196	
Thorium-234 (263.3	gamma	pCi/g					ND (0.22)	
Thorium-234 @92.6	gamma	pCi/g					0.200	
Uranium-235 @143.8	gamma	pCi/g					0.0206	İ

Sample Type: Ash + Mg + Ca Stream: Cyclone Ash Collection Method: Grab Composite

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сот 3
Boron	ICAP	8/8n	0.66		120		100	
Carbon Sulfur	Ultimate Ultimate	%	5.16 3.82		5.47 4.07		5.24 3.86	
Actinium-228 @338	gamma	pCi/g	0.650		0.590		0.800	
Actinium-228 @911	gamma	pCi/g	0.550		0.520		009'0	
Actinium-228 @968	gamma	pCi/g	0.500	_	0.850		0.460	
Bismuth-212 @727	gamma	pCi/g	1.40		0.470		0.250	
Bismuth-214 @1120.4	gamma	pCi/g	1.20		1.00		1.10	
Bismuth-214 @1764.7	gamma	pCi/g	1.00		1.10		0.800	
Bismuth-214 @609.4	gamma	pCi/g	00:1		1.00		096.0	
K-40 @1460	gamma	pCi/g	7.30		6.70		5.80	
Lead-210 @46	gamma	pCi/g	1.00		0.660		2.00	

Analytical Data Used In Calculations

Stream: Cyclone As Collection Method: Grab Composit Sample Type: Ash + Mg + C

Com ND (0.44) 0.720 0.180 1.40 0.200 Run Com 2 0.590 0.990 1.00 2.30 0.200 0.320 0.470 0.950 Run 2 Com 1.00 1.20 2.30 0.250 0.380 0.300 0.140 Run 1 Units PCVE PCVE PCVE PCVE PCVE PCi/g Analytical Technique gamma gamma gamma gamma gamma gamma gamma gamma gamma Analyte Lead-214 @295.2 Lead-214 @352.0 Radium-226 @186.0 Thallium-208 @583 Thallium-208 @860 Thorium-234 @63.3 Thorium-234 @92.6 Uranium-235 @143.8 .ead-212 @238

9 Sample Type: Ash + Mg + Ca Collection Method: Grab Composite Stream: Cyclone Ash

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	Techandae							
Boron	ICAP	3/8n					87.5	
	11111	,					5.30	
Carbon		° %					3.57	
							0170	
Actinium-228 @338	gamma	pCi/g					010.0	
Actinium-228 @911	gamma	pCi/g					0.730	
Actinium-228 @968	gamma	pCi/g					067.0	
Bismuth-212 @727	gamma	pCi/g				-	0.520	
Bismuth-214 @1120.4	gamma	pCi/g					0.50	
Bismuth-214 @1764.7	gamma	pCi/g					0.000	
Bismuth-214 @609.4	gamma	pCi/g					01.1	_
K-40 @1460		pCi/g					6.50	
Lead-210 @46	gamma	pCi/g					0.610	
Lead-212 @238	gamma	pCi/g					05/:0	
Lead-214 @295.2	gamma	pCi/g					01:1 01:1	
1 cad-214 @352.0		pCi/g					1.10	
Dodium 226 @186 0		oCi/g					1.70	
The Him 200 @ 583		nCi/g					0.200	
1 Hantum 200 @ 960		nCi/g					0.430	
1 Hallium 1-200 (6000)								

Collection Method: Grab Composit Sample Type: Ash + Mg + C Stream: Cyclone As

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2 Co	Com 2	Run 3	Com 3
Thorium-234 (263.3	gamma	pCi/g					1.40	
Thorium-234 @92.6	gamma	pCi/g					0.730	
11ranium-235 @143 8	gamma	pCi/g					0.100	
	6	``.		7 				

Stream: Cyclone Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury	CVAA	mg/kg	ND (0.012)		ND (0.012)		ND (0.012)	
1 2 4. Trichlorobenzene	GCMS	a/an	ND (0.0064)		ND (0.0064)		ND (0.0064)	
1,2,7- Inclinio conscinc	GCMS	ug/g	ND (0.021)		ND (0.021)		ND (0.021)	
1,2 Dichlorobenzene	GCMS	3/3n	ND (0.024)		ND (0.024)		ND (0.024)	
1.4-Dichlorobenzene	GCMS	8/8n			ND (0.024)		ND (0.024)	
2.4.5-Trichlorophenol	GCMS	a/an	ND (0.019)		(0.0) QN		(610.0) QN	
2.4.6-Trichlorophenol	GCMS	g/gn	(910'0) QN		ND (0:016)		(910'0) QN	·· -
2.4-Dichlorophenol	GCMS	g/gn	ND (0.019)		(610:0) QN		(610.0) CIN	
2.4-Dimethylphenol	GCMS	8/8n	ND (0.042)		ND (0.042)		ND (0.042)	
2.4-Dinitrophenol	GCMS	g/gn	ND (0.086)		ND (0.086)		(980'0) GN	
2,4-Dinitrotoluene	GCMS	ng/g	ND (0.025)		ND (0.026)		ND (0.026)	
2.6-Dinitrotoluene	GCMS	ng/g	ND (0.035)		ND (0.035)		ND (0.035)	
2-Chloronaphthalene	GCMS	g/an	ND (0.030)		ND (0.030)		ND (0:030)	
2-Chlorophenol	GCMS	a/an	ND (0.011)		ND (0.011)		(110:0) QN	_
2-Methylnaphthalene	GCMS	g/gn	ND (0.020)		ND (0.020)		ND (0.020)	
2-Methylphenol	GCMS	8/8n	ND (0.026)		ND (0.026)		ND (0.026)	
2-Nitroaniline	GCMS	8/8n	ND (0.026)		ND (0.027)		ND (0.027)	
2-Nitrophenol	GCMS	g/gn	ND (0.014)		ND (0.014)		ND (0.014)	
3,3'-Dichlorobenzidine	GCMS	8/8n	ND (0.036)		ND (0.036)		ND (0.036)	
3-Nitroaniline	GCMS	g/gn	(110.0) ON		ND (0.011)		ND (0.011)	
4,6-Dinitro-2-methylphenol	GCMS	g/gn	ND (0.024)		ND (0.024)		ND (0.024)	
4-Bromophenylphenyl ether	GCMS	a/an	ND (0.020)		ND (0.020)		ND (0.020)	
4-Chloro-3-methylphenol	GCMS	g/gn	ND (0.015)		ND (0.015)		ND (0.015)	
4-Chlorophenylphenyl ether	GCMS	ng/g	ND (0.024)		ND (0.024)		ND (0.024)	

Analytical Data Used In Calculations

Stream: Cyclone As Collection Method: Grab Composit Sample Type: Fly As

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
4-Methylphenol/3-Methylphenol	GCMS	ug/g	ND (0.041)		ND (0.041)		ND (0.041)	
	GCMS	a/an	ND (0.020)		ND (0.020)			
4-Nitrophenol	GCMS	g/gn	ND (0.021)		ND (0.021)			
Acenaphthene	GCMS	ng/g	ND (0.016)		ND (0.016)			-
Acenaphthylene	GCMS	g/gn			ND (0.022)		_	
Anthracene	GCMS	g/gn			ND (0.018)			
Benz(a)anthracene	GCMS	g/an	ND (0.011)		ND (0.012)			
Benz(a)pyrene	GCMS	a/gn	ND (0.018)		ND (0.018)		_	
Benzo(b)fluoranthene	GCMS	ng/g			ND (0.032)			
Benzo(g,h,i)perylene	GCMS	g/gn	ND (0.018)		ND (0.018)			··· · · ·
Benzo(k)fluoranthene	GCMS	g/gn	ND (0.027)		ND (0.027)			
Benzoic acid	GCMS	3/8n			ND (0.100)			
Benzyl alcohol	GCMS	a/gn			ND (0.048)			
Butylbenzylphthalate	GCMS	g/gn			ND (0.025)			
Chrysene	GCMS	a/gn	ND (0:019)		ND (0.019)			
Di-n-butylphthalate	GCMS	a/an	ND (0.010)					
Di-n-octylphthalate	GCMS	g/gn			(610.0) QN			
Dibenz(a,h)anthracene	GCMS	8/8n	ND (0.023)		ND (0.023)		ND (0.023)	-
Dibenzofuran	GCMS	ng/g	ND (0.013)		ND (0.013)		(0.013) AIX (0.013)	
Diethylphthalate	GCMS	a/gn	ND (0.012)		ND (0.012)		ND (0.012)	
Dimethylphthalate	GCMS	ng/g	ND (0.016)		ND (0.016)			*
Diphenylamine/N-NitrosoDPA	GCMS	g/gn			ND (0.025)			
Fluoranthene	GCMS	8/8n			ND (0.014)			
Fluorene	GCMS	a/gu			ND (0.011)			
Hexachlorobenzene	GCMS	a/gn			ND (0.018)			
Hexachlorobutadiene	GCMS	a/gn					_	
Hexachlorocyclopentadiene	GCMS	a/an			ND (0.055)			
Hexachloroethane	GCMS	ng/g	ND (0.033)		ND (0.033)			
Indeno(1,2,3-cd)pyrene	GCMS	a/an	(0:010) QN		(910:0) QN			
Isophorone	GCMS	g/gn			(010:0) QN			
N-Nitroso-di-n-propylamine	GCMS	g/an	ND (0.026)		ND (0.026)		ND (0.026)	
Naphthalene	GCMS	a/gn						
Nitrobenzene	GCMS	ug/g	ND (0.013)		ND (0.013)		ND (0.013)	

Stream: Cyclone As Collection Method: Grab Composit Sample Type: Fly As

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
			(1/0V 0/ VI)		עיאטעיטיי עויע		(AAO) (A) CIN	
Pentachlorophenol	GCMS	g/gn	ND (0.0064)		(0.0004)		(0100) (114	
Phenanthrene	GCMS	a/gn	(810.0) CIN		(910.0) CIN		VD (0.018)	
Phenol	GCMS	a/an	ND (0.034)		ND (0.034)		(4.034) (4.034)	
Pyrene	GCMS	g/gn	ND (0.015)		(C10.0) CN		(C10.0) CIN	
bis(2-Chloroethoxy)methane	GCMS	ng/g	ND (0.011)		ND (0.011)		(110.0) CN	
his 2. Chloroethyl ether	GCMS	ng/g	ND (0.015)		ND (0.015)		ND (0.015)	
his(2-Chloroisopronyl)ether	GCMS	ug/g	ND (0.019)		ND (0.019)		(0.019) ON	
his/2-Ethylhexyllphthalate	GCMS	ng/g	ND (0.054)		ND (0.055)		ND (0.054)	
p-Chloroaniline	GCMS	g/gn	ND (0.033)		ND (0.033)		ND (0.033)	
Areance	IGFAA	me/ke	87.0	В	001	В	93.1	В
Cadmium	GFAA	mg/kg	0.284	8	0.442	В	0.320 B	B
I ead	GFAA	mg/kg	17.7		21.3		19.7	
Selenium	GFAA	mg/kg	1.65		2.95		7.46	
1 2 3 4 6 7 8 Harrin	HR GCMS	pot	(0.90) ON		ND (0.90)		(08.0) (ND	
1,4,5,4,0,7,8-11PODD	HR GCMS	מנ	ND (0.50)		0.510		ND (0.40)	
1 2 3 4 7 8 9-HnCDF	HR GCMS	ppt	ND (0.80)		ND (0.80)		(0.70) QN	
1.2.3.4.7.8-HxCDD	HR GCMS	ppt	ND (0.80)		ND (0.70)		ND (0.70)	
1,2,3,4,7,8-HxCDF	HR GCMS	bbt	ND (0.40)		ND (0.40)		ND (0.40)	
1,2,3,6,7,8-HxCDD	HR GCMS	bbt	(09.0) QN		ND (0.60)		ND (0.60)	
1,2,3,6,7,8-HxCDF	HR GCMS	ppt	ND (0.30)		ND (0.30)		ND (0.30)	
1,2,3,7,8,9-HxCDD	HR GCMS	ppt	ND (0.70)		ND (0.60)		ND (0.60)	
1,2,3,7,8,9-HxCDF	HR GCMS	ppt	ND (0.50)		ND (0.50)		ND (0.40)	
1,2,3,7,8-PeCDD	HR GCMS	ppt			ND (0.70)		(0.50) (0.50)	
1,2,3,7,8-PeCDF	HR GCMS	ppt	ND (0.40)		ND (0.40)		ND (0.30)	
2,3,4,6,7,8-HxCDF	HR GCMS	ppt	0.280		ND (0.40)		ND (0.40)	
2,3,4,7,8-PeCDF	HR GCMS	ppt	ND (0.40)		ND (0.40)		ND (0.30)	
2,3,7,8-TCDD	HR GCMS	ppt	ND (0.40)		ND (0:30)		ND (0.20)	
2,3,7,8-TCDF	HR GCMS	ppt	ND (0:30)		ND (0.30)		ND (0.20)	
ocop	HR GCMS	ppt	(9:1) QN		(9:1) QN		ND(1.5)	
OCDF	HR GCMS	ppt	ND (1.3)		ND (1.4)		ND (1.3)	
Total HpCDD	HR GCMS	ppt	ND (0.90)		(0.90) QN		ND (0.80)	
Total HpCDF	HR GCMS	ppt	ND (0.60)	ĺ	0.630		ND (0.50)	

Analytical Data Used In Calculations

Stream: Cyclone As Collection Method: Grab Composit Sample Type: Fly As

Analyte	Technique	Onits	Kun I		7 IIIV		C IIIV	
Political Booth	HR GCMS	lont	ND (0.70)		(0.70) UN		(09:0) ON	
I Otal HXCDF	HR GCMS	bot Do	0.280		ND (0.40)		ND (0.40)	
	HR GCMS	ppt	(0.70) ON		(0.70) QN		ND (0.50)	
Total PeCDF	HR GCMS	ppt	ND (0.40)		ND (0.40)		ND (0.30)	
	HR GCMS	ppt	ND (0.40)		ND (0:30)		ND (0.20)	
	HR GCMS	ppt	ND (0.30)		ND (0.30)		ND (0.20)	
Aluminum	ICAP	mg/kg	32400 B	B	30600 B	В	32700 B	8
Antimony	ICAP	mg/kg	ND (43)		ND (43)		ND (40)	
	ICAP	mg/kg	142		144		154	
	ICAP	mg/kg	4.39			ı	3.48	- 6
Calcium	ICAP	mg/kg	127000	В	_	മ	120000	<u>m</u>
Chromium	ICAP	mg/kg		Д		В	45.6	<u> </u>
	ICAP	mg/kg	10.8	В		В	14.6	a
	ICAP	mg/kg	(7.E) QN		ND (3.7)		ND (3.4)	
	ICAP	mg/kg					49800	. 1
Magnesium	ICAP	mg/kg	19900	<u> </u>	79300	m ;	00/8/	2 0 (
0	ICAP	mg/kg		Ø		m	211	20
Molybdenum	ICAP	mg/kg	ND (2.8)			· · · ·	3.18	
	ICAP	mg/kg	28.2	9	_	2	9.90	20
Phosphorus	ICAP	mg/kg	(L9) QN		(0 <i>L</i>) ON		(19) QN	
Potassium	ICAP	mg/kg	6310		2980		6750	
	ICAP	mg/kg	ND (3.3)		ND (3.3)		ND (3.0)	
	ICAP	mg/kg	1040	В	898	2	981	<u> </u>
	ICAP	mg/kg	1740	В		В	1660	g
Vanadium	ICAP	mg/kg	59.2		49.8		55.4	
	SIE	mg/kg	313		365		400	
	SIE	mo/ko	75.5	ď	150 B	В	104	æ

Stream: Cyclone Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury	CVAA	mg/kg					ND (0.012)	
							17 XX XX XX	
1,2,4-Trichlorobenzene	GCMS	g/gn		•			ND (0.0064)	
1,2-Dichlorobenzene	GCMS	ng/g					(170.0) UN	
1,3-Dichlorobenzene	GCMS	8/8n					(970.0) CN	
1,4-Dichlorobenzene	GCMS	ng/g					ND (0.024)	
2,4,5-Trichlorophenol	GCMS	ng/g					(0.019) AD	
2,4,6-Trichlorophenol	GCMS	ng/g					ND (0.016)	
2,4-Dichlorophenol	GCMS	a/gn					ND (0.019)	
2,4-Dimethylphenol	GCMS	a/gn					ND (0.042)	
2,4-Dinitrophenol	GCMS	8/3n					ND (0.086)	
2,4-Dinitrotoluene	GCMS	ng/g					ND (0.026)	
2,6-Dinitrotoluene	GCMS	g/gn					ND (0.035)	
2-Chloronaphthalene	GCMS	a/gn					ND (0:030)	
2-Chlorophenol	GCMS	8/8n					ND (0.011)	
2-Methylnaphthalene	GCMS	ng/g			السابات السابات		ND (0.020)	
2-Methylphenol	GCMS	a/gn					ND (0.026)	
2-Nitroaniline	GCMS	g/gn					ND (0.027)	
2-Nitrophenol	GCMS	ng/g					ND (0.014)	
3,3'-Dichlorobenzidine	GCMS	a/gn					ND (0.036)	
3-Nitroaniline	GCMS	ng/g					ND (0.011)	
4,6-Dinitro-2-methylphenol	GCMS	a/gn					ND (0.024)	
4-Bromophenylphenyl ether	GCMS	g/gn					ND (0.020)	
4-Chloro-3-methylphenol	GCMS	ng/g					ND (0.015)	
4-Chlorophenylphenyl ether	GCMS	ng/g		_			ND (0.024)	
4-Methylphenol/3-Methylphenol	GCMS	ng/g					ND (0.041)	· · · · ·
4-Nitroaniline	GCMS	g/gn					ND (0.020)	
4-Nitrophenol	GCMS	ng/g					ND (0.021)	
Acenaphthene	GCMS	g/gn				-	ND (0.016)	
Acenaphthylene	GCMS	g/gn					ND (0.022)	
Anthracene	GCMS	ng/g					ND (0.018)	
Benz(a)anthracene	GCMS	g/gn					ND (0.012)	
Benz(a)pyrene	GCMS	g/gn		-			ND (0.018)	
Benzo(b)Huoranthene	GCMS	ug/g					ND (0.032)	

Analytical Data Used In Calculations

Stream: Cyclone Ash Collection Method: Grab Composite Sample Type: Fly Ash

erylene GCMS anthene GCMS anthalate GCMS halate GCMS halate GCMS halate GCMS halate GCMS halate GCMS alate GCMS alate GCMS action GCMS act	න න න න න න න න න න න න න න න				ND (0.018) ND (0.018) ND (0.027) ND (0.019) ND (0.019) ND (0.019) ND (0.019) ND (0.019) ND (0.013) ND (0.013)	
ne GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	9 99 99 99 99 99 99 99 99 99 99 99 99 9				ND (0.027) ND (0.027) ND (0.048) ND (0.019) ND (0.019) ND (0.013) ND (0.013) ND (0.013)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	න න න න න න න න න න න න න න න න න න න න				ND (0.025) ND (0.025) ND (0.019) ND (0.019) ND (0.013) ND (0.013) ND (0.013)	
te GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	න න න න න න න න න න න න				ND (0.013) ND (0.019) ND (0.019) ND (0.019) ND (0.013) ND (0.013)	
te GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	නා නා නා නා නා නා නා නා නා නා නා නා නා නා නා නා නා නා නා නා				ND (0.019) ND (0.019) ND (0.019) ND (0.013) ND (0.013) ND (0.013)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	या का का का का का का का का का का का का का का का का का				ND (0.013) ND (0.013) ND (0.013) ND (0.013) ND (0.013)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	න න න න න න න න න න න න න න න න න න				ND (0.019) ND (0.019) ND (0.013) ND (0.013) ND (0.013)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS AitrosoDPA GCMS GCMS Ace GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	න න න න න න න න න න න න න න න න				ND (0.023) ND (0.023) ND (0.013) ND (0.016) ND (0.025)	
ene GCMS GCMS GCMS GCMS GCMS GCMS AitrosoDPA GCMS GCMS ntadiene GCMS GCMS rene GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	න න න න න න න න න න න න				ND (0.023) ND (0.013) ND (0.012) ND (0.016)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	න න න න න න න න න න න න	· · · · · · · · · · · · · · · · · · ·			ND (0.013) ND (0.012) ND (0.016) ND (0.025)	
te GCMS W-NitrosoDPA GCMS GCMS GCMS GCMS GCMS liene GCMS he GCMS he GCMS he GCMS he GCMS horopylamine GCMS GCMS GCMS horopylamine GCMS GCMS GCMS	න න න න න න න න				ND (0.012) ND (0.016) ND (0.025)	
NitrosoDPA GCMS GCMS GCMS GCMS ane GCMS GCMS Arene GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	30 50 50 50 br>50 5				ND (0.016) ND (0.025)	-
NitrosoDPA GCMS GCMS GCMS and GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	90 90 90 br>90 9			_	ND (0.025)	·
GCMS GCMS GCMS utadiene GCMS GCMS thane GCMS -cd)pyrene GCMS -cd)pyrene GCMS -n-propylamine GCMS GCMS -n-propylamine GCMS GCMS GCMS -n-propylamine GCMS GCMS	8/8					
enzene GCMS utadiene GCMS yclopentadiene GCMS thane GCMS -cd)pyrene GCMS -n-propylamine GCMS GCMS -n-propylamine GCMS GCMS henol	- v/e		•		10.00 UNI	
enzene GCMS utadiene GCMS yclopentadiene GCMS thane GCMS -cd)pyrene GCMS -n-propylamine GCMS GCMS -n-propylamine GCMS forms GCMS forms forms	8/8				ND (0.011)	-
yclopentadiene GCMS yclopentadiene GCMS thane GCMS -cd)pyrene GCMS -n-propylamine GCMS GCMS -henol GCMS	8/8				ND (0.018)	
yclopentadiene GCMS thane GCMS -cd)pyrene GCMS -n-propylamine GCMS GCMS -n-propylamine GCMS GCMS henol	8/8	<u>.</u>		-	ND (0.022)	
thane GCMS -cd)pyrene GCMS -n-propylamine GCMS GCMS -henol	8/8				ND (0.055)	
-cd)pyrene GCMS -n-propylamine GCMS GCMS GCMS henol	8/8				ND (0.033)	
GCMS -n-propylamine GCMS GCMS henol	8/8				ND (0.016)	
-n-propylamine GCMS GCMS GCMS henol	8/8				ND (0.010)	
GCMS GCMS henol	8/8			÷	ND (0.026)	
GCMS	8/8				ND (0.022)	
GCMS	8/8				ND (0.013)	
* ()	8/8				ND (0.0064)	
Phenanthrene GCMS ug/g	3/8				ND (0.018)	
GCMS	8/8				ND (0.034)	- "
	9/60				ND (0.015)	
hloroethoxy)methane	9/60				ND (0.011)	£
	9/8		•		ND (0.015)	
bis(2-Chloroisopropyl)ether GCMS ug/g	8/8				(610:0) QN	••••
bis(2-Ethylhexyl)phthalate GCMS ug/g	8/8				ND (0.055)	
p-Chloroaniline ug/g	8/8				ND (0.033)	<u>.</u>

Analytical Data Used In Calculations

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Stream: Cyclone Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Сош 2	Run 3	Сош 3
	CEA A	mo//o					93.0 B	B
Arsenic Cadmium	GFAA	mg/kg		-			0.419	В
Lead	GFAA	mg/kg		_			16.0	
Selenium	GFAA	mg/kg					3.93	
1234.67.8-HpCDD	HR GCMS	ppt		_			(E.1) UN	
1,2,3,4,6,7,8-HpCDF	HR GCMS	bbt		_			ND (0.60)	
1,2,3,4,7,8,9-HpCDF	HR GCMS	ppt		_			(0.1) ON	
1,2,3,4,7,8-HxCDD	HR GCMS	bbt					(06:0) CN	ا رسان
1,2,3,4,7,8-HxCDF	HR GCMS	ppt					(05.0) CN	ارسات
1,2,3,6,7,8-HxCDD	HR GCMS	ppt		_			(0.80) (0.80) (0.80) (0.80)	
1,2,3,6,7,8-HxCDF	HR GCMS	ppt		_	·		ND (0.40)	
1,2,3,7,8,9-HxCDD	HR GCMS	bbt		_			(0.90) UN	
11,2,3,7,8,9-HxCDF	HR GCMS	ppt		_			(00.0) UN (07.0) UN	
1,2,3,7,8-PeCDD	HR GCMS	bbt					(0.5) UN (0.5) UN (0.5) UN	
1,2,3,7,8-PeCDF	HR GCMS	ppt				-	ND (0.40)	
[2,3,4,6,7,8-HxCDF	HR GCMS	ppt					(05.0) CN	
2,3,4,7,8-PeCDF	HR GCMS	ppt					ND (0.40)	
2,3,7,8-TCDD	HR GCMS	ppt					(0:30) CN	
2,3,7,8-TCDF	HR GCMS	ppt					(07:0) CIN	
ocop	HR GCMS	bbt			-		ND (2.1)	
OCDF	HR GCMS	ppt					(8:1) QX	
Total HpCDD	HR GCMS	ppt					(E.1)UN	الکائرات الکائرات
Total HpCDF	HR GCMS	ppt		_			(0.80) ON	
Total HxCDD	HR GCMS	PPt			-		(06'0) CIN	
Total HxCDF	HR GCMS	ppt			,		ND (0.50)	
Total PeCDD	HR GCMS	ppt		_			ND (0.70)	
Total PeCDF	HR GCMS	ppt					ND (0.40)	
Total TCDD	HR GCMS	ppt					ND (0:30)	
Total TCDF	HR GCMS	ppt					ND (0.20)	
Aluminum	ICAP	mg/kg					33500	B
Antimony	ICAP	mg/kg		,			ND (45)	
Barium	ICAP	mg/kg					165	
			بدون بين بين من من المنابكة					

Analytical Data Used In Calculations

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Stream: Cyclone Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
	27.72						3.76	
Beryllium	ICAL	III BYKE					12800/	ď
Calcium	ICAP	mg/kg					200021) (
Chromium	ICAP	mg/kg				-	45.5	Ω (
Cobalt	ICAP	mg/kg					14.2	B
Conner	ICAP	me/kg					ND (3.9	
	ICAP	me/ke					21100	_
Meanstirm	ICAP	me/ka					7940(B
	יייי						11:	8
Manganese	יייי	2 V V					ND CIN	
Molybdenum	ICAP	mg/kg					() () () () () () () () () () () () () (٥
Nickel	ICAP	mg/kg					*.02 	۵
Phosphorus	ICAP	mg/kg					I) ON	
Potassium	ICAP	mg/kg					6370	
Silver	ICAP	mg/kg					AD (3.4	
Sodium	ICAP	mg/kg					104 104	2
Titaninm	ICAP	mg/kg					1690	<u>B</u>
Vanadium	ICAP	mg/kg					55.2	
Chloride	SIE	mg/kg					382	
Fluoride	SIE	mg/kg)EI	130 B
								4

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury	CVAA	mg/kg	ND (0.012)		ND (0.012)		ND (0.012)	
1.2.4-Trichlorobenzene	GCMS	8/3n	ND (0.0064)		ND (0.0064)		ND (0.0064)	
	GCMS	g/gn	ND (0.021)		ND (0.021)	•	ND (0.021)	
1,3-Dichlorobenzene	GCMS	ug/g	ND (0.024)		ND (0.024)		ND (0.024)	•
1.4-Dichlorobenzene	GCMS	ng/g	ND (0.024)		ND (0.024)		ND (0.024)	•
2,4,5-Trichlorophenol	GCMS	g/gn	(610:0) QN		(610.0) QN		ND (0.019)	
2,4,6-Trichlorophenol	GCMS	ng/g	ND (0.016)		(910:0) QN		(910.0) QN	
2,4-Dichlorophenol	GCMS	ng/g	ND (0.019)		(610:0) QN		(610.0) QN	
	GCMS	ng/g	ND (0.042)		ND (0.042)		ND (0.042)	

Analytical Data Used In Calculations

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

Technique	Units			7 IIIVI	7 III 7	Kun 3 Com 3
g/gn		(980.0) QN		ND (0.086)		ND (0.086)
g/gn		ND (0.026)		ND (0.026)		ND (0.035)
8/8n		ND (0:030)		ND (0.030)		
g/gn		ND (0.011)			-	_
g/gn		ND (0.020)		ND (0.020)		_
g/8n						
a/gn				ND (0.027)		
g/gn		ND (0.014)	·			_
ng/g						
g/gn						
ng/g		_		ND (0.024)		
g/gn						
ng/g		ND (0:015)			-	_
3/3n						_
g/an						ND (0.041)
g/gn		_		(0.020) MD (0.020)		(0.020) (0.020) (1.00) (1.00)
8/8n		(170.0) UN				
9/90						_
a/an						_
ng/g		ND (0.012)		ND (0.012)	-	ND (0.012)
g/an		ND (0.018)		ND (0.018)	-	
g/gn						_
a/an					_	
g/gn					•	_
8/dn						
8/8n		ND (0.048)	_	ND (0.048)		
g/dn		ND (0.025)	***	ND (0.025)		ND (0.025)
g/an		ND (0.019)	_	ND (0.019)		ND (0.019)
ng/g		ND (0.010)		ND (0.010)		ND (0.010)
g/an		(610.0) QN		ND (0.019)		ND (0.019)
ng/g		ND (0.023)		ND (0.023)		ND (0.023)

Analytical Data Used In Calculations

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Dibenzofuran	GCMS	a/gn	(610.0) DN		(£10.0) QN		ND (0.013)	
Diethylphthalate	GCMS	g/gn	ND (0.012)		ND (0.012)	•		
Dimethylphthalate	GCMS	g/gn	ND (0.016)		ND (0.016)		ND (0.016)	
Diphenylamine/N-NitrosoDPA	GCMS	g/gn	ND (0.025)		ND (0.025)			
Fluoranthene	GCMS	8/8n	ND (0.014)		ND (0.014)		ND (0.014)	
Fluorene	GCMS	g/gn	ND (0:011)		ND (0.011)		ND (0.011)	
Hexachlorobenzene	GCMS	ng/g	ND (0.018)		ND (0.018)		ND (0.018)	
Hexachlorobutadiene	GCMS	ng/g	ND (0.022)		ND (0.022)		ND (0.022)	
Hexachlorocyclopentadiene	GCMS	ng/g	ND (0.055)		ND (0.055)		ND (0.054)	-
Hexachloroethane	GCMS	g/gn	ND (0.033)		ND (0.033)		ND (0.033)	
Indeno(1,2,3-cd)pyrene	GCMS	g/gn	ND (0.016)		ND (0.016)		ND (0.016)	
Isophorone	GCMS	g/gn	ND (0.010)		(010'0) QN		ND (0.010)	
N-Nitroso-di-n-propylamine	GCMS	g/gn	ND (0.026)		ND (0.026)	•	ND (0.026)	
Naphthalene	GCMS	g/8n	ND (0.022)		ND (0.022)		ND (0.022)	
Nitrobenzene	GCMS	ng/g	ND (0.013)		ND (0.013)		ND (0.013)	
Pentachlorophenol	GCMS	ng/g	ND (0.0064)		ND (0.0064)	حديد	ND (0.0064)	
Phenanthrene	GCMS	g/gn	ND (0.018)		ND (0.018)		ND (0.018)	
Phenol	GCMS	ng/g	ND (0.034)		ND (0.034)		ND (0.034)	
Pyrene	GCMS	ng/g	ND (0.015)		ND (0.015)		ND (0.015)	
bis(2-Chloroethoxy)methane	GCMS	g/gn	(110.0) QN		ND (0.011)		ND (0.011)	
bis(2-Chloroethyl)ether	GCMS	ng/g			ND (0.015)		ND (0.015)	
bis(2-Chloroisopropyl)ether	GCMS	g/gn	(610.0) QN		(610'0) QN		ND (0.019)	
bis(2-Ethylhexyl)phthalate	GCMS	ng/g	0.0573		0.204		0.753	
p-Chloroaniline	GCMS	g/gn	ND (0.033)		ND (0.033)		ND (0.033)	
Arsenic	GFAA	mg/kg	354	В	403	В	388	В
Cadmium	GFAA	mg/kg		В	1.79	В	1.96	В
Lead	GFAA	mg/kg	. 63.7		85.7		102	
Selenium	GFAA	mg/kg	.5.38		4.41		4.92	
1,2,3,4,6,7,8-HpCDD	HR GCMS	ppt	1.30		1.00		1.80	
11,2,3,4,6,7,8-HpCDF	HR GCMS	ppt	ND (0.50)		(I.I) QN	·	ND (0.50)	,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>
1,2,3,4,7,8,9-HpCDF	HR GCMS	ppt	(06'0) QN		こ		ND (0.80)	
1,2,3,4,7,8-HxCDD	HR GCMS	ppt	ND (0.80)		ND (1.5)		ND (0.70)	
								25

Analytical Data Used In Calculations

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

			ND (0.90) ND (0.70) ND (1.3) ND (1.4) ND (1.2) ND (0.80) ND (0.60) ND (0.60) ND (0.60) ND (0.50) ND (0.50) ND (0.50) ND (0.50) ND (0.70) ND (0.70) ND (0.70) ND (0.70) ND (1.3) ND (1.3)	ND (0.40) ND (0.30) ND (0.60) ND (0.60) ND (0.60) ND (0.30) ND (0.30) ND (0.30) ND (0.30) ND (0.30) ND (0.30) ND (0.40) ND (0.40) ND (0.40) ND (0.40) ND (0.40)	(0.40) (0.500 (0.60) (0.60) (0.40) (0.30) (0.30) (0.30) (0.30) (0.30) (0.30) (0.30) (0.30) (0.40) (0.40) (0.40) (0.40) (0.40)
HR GCMS PPH R G-MS PPH R G-MS PPH HR GCMS PPH CDP HR GCMS PPH HR G			ND (1.3) ND (0.70) ND (0.90) ND (0.60) ND (0.60) ND (0.60) ND (0.40) ND (0.40) ND (0.40) ND (3.5) ND (3.5) ND (3.5) ND (3.5)		500 600 600 600 1200 1200 1200 1200 1200
7.8-HXCDF HR GCMS ppt B.9-HXCDD HR GCMS ppt HR GCMS ppt HR GCMS ppt HR GCMS ppt TCDD HR GCMS ppt CDD HR GCMS ppt HR GCMS ppt HR GCMS ppt HR GCMS ppt CDD HR GCMS ppt HR GCMS ppt CDD HR GCMS ppt HR GCMS ppt CDD HR GCMS ppt HR GCMS ppt HR GCMS ppt CDD HR GCMS ppt CDD HR GCMS ppt HR GC			ND (0.70) ND (1.4) ND (1.2) ND (0.80) ND (0.60) ND (0.60) ND (0.50) ND (0.40) ND (3.5) ND (1.3) 2.50		60) 60) 70) 70) 70) 70) 70) 70)
8.9-HxCDD HR GCMS Ppt HR GCMS			ND (1.4) ND (0.90) ND (0.60) ND (0.60) ND (0.60) ND (0.60) ND (0.40) ND (3.5) ND (3.5) ND (3.5) ND (3.5)		60) 60) 60) 70) 70) 60) 60)
8.9-HXCDF HR GCMS PPt HR GCMS			ND (0.30) ND (1.2) ND (0.60) ND (0.60) ND (0.50) ND (0.40) ND (3.5) ND (3.5) ND (3.5) ND (3.5)		60) 130) 130) 1.60) 1.80
R-PeCDD HR GCMS Ppt T-8-HxCDF HR GCMS Ppt HR GCMS Ppt TCDD HR GCMS Ppt HR GCMS			ND (1.2) ND (0.60) ND (0.60) ND (0.50) ND (0.40) ND (3.5) ND (3.5) ND (3.5) ND (3.5) ND (3.5)		60) 100 11.40 12.00 12.00 13.00 14.00 16.00
HR GCMS PPt T.8-HxCDF HR GCMS Ppt TCDD HR GCMS Ppt TCDD HR GCMS Ppt TCDF HR GCMS Ppt CDF HR GCMS Ppt HR GCMS Ppt HR GCMS Ppt HR GCMS Ppt CDF HR GCMS Ppt HR GC			ND (0.60) ND (0.80) ND (0.60) ND (0.50) ND (0.40) ND (3.5) ND (3.5) ND (3.0) 2.50 ND (1.3)		30) 30) 1. (6) 1. (6) (60)
T.8-HXCDF HR GCMS PPt TCDD HR GCMS Ppt TCDD HR GCMS Ppt CDD HR GCMS Ppt HR GCM	O O O O O O O O O O O O O O O O O O O		ND (0.80) ND (0.60) ND (0.50) ND (0.40) ND (3.5) ND (3.0) 2.50 ND (1.3)		40) 30) 120 160) 60)
HR GCMS PPt TCDD HR GCMS PPt H	O ON		ND (0.60) ND (0.50) ND (0.40) ND (3.5) ND (3.0) 2.50 ND (1.3) 5.00		30) 210 1.60 1.80 60)
TCDD HR GCMS PPt H	O ON SON SON SON SON SON SON SON SON SON		ND (0.50) ND (0.40) ND (3.5) ND (3.0) 2.50 ND (1.3) 5.00	D) QN O O O O O O O O O O	30) 210 1.60 1.80 60)
TCDF HR GCMS ppt HR GCMS ppt HR GCMS ppt HR GCMS ppt CDF HR GCMS ppt HR GCMS ppt HR GCMS ppt HR GCMS ppt CDD HR GCMS ppt	OON Jaka		ND (0.40) ND (3.5) ND (3.0) 2.50 ND (1.3) 5.00	O QN))QN	210 [.60 [.4) (60)
HR GCMS PPt HR GCMS PPt HR GCMS PPt ACDD HR GCMS PPt H	ON DIAM		ND (3.5) ND (3.0) 2.50 ND (1.3) 5.00)) QN	.60 (60) (60)
HR GCMS ppt PCDD HR GCMS ppt MR GCMS ppt HR GCMS ppt	ON Jada		ND (3.0) 2.50 ND (1.3) 5.00) QN	[.4) (60) (40
PCDD HR GCMS PPt H	D) QN Jdd		2.50 ND (1.3) 5.00	S) QN	.80 .60) .40
PCDF HR GCMS PPt HR GCMS P	D) QN tidd		ND (1.3) 5.00) QN	.60) (40
ACDD HR GCMS ppt ACDF HR GCMS ppt	ppd		5.00		. 40
ACDF HR GCMS ppt ECDD HR GCMS ppt HR GCMP mg/kg my ICAP mg/kg mm ICAP mg/kg	ţ.				-
HR GCMS ppt HR GCMP mg/kg my ICAP mg/kg			ND (0.80)	ND (0.40)	.40)
HR GCMS ppt HR GCMS ppt HR GCMS ppt CDF HR GCMS ppt HR GCMS ppt HR GCMS ppt ICAP mg/kg my ICAP mg/kg	ppt		5.30		4.20
CDD HR GCMS ppt CDF HR GCMS ppt um ICAP mg/kg ny ICAP mg/kg n ICAP mg/kg n ICAP mg/kg nm ICAP mg/kg ICAP mg/kg ICAP ICAP mg/kg ICAP ICAP mg/kg ICAP) QN jdd		ND (0.60)	ND (0.30)	30)
Um ICAP mg/kg my ICAP mg/kg my ICAP mg/kg mm ICAP mg/kg mg/kg m ICAP mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	ppt		3.30		3.50
um ICAP mg/kg ny ICAP mg/kg ICAP mg/kg nm ICAP mg/kg n ICAP mg/kg um ICAP mg/kg ICAP mg/kg ICAP mg/kg			ND (0.40)	0	0.210
ny ICAP mg/kg	mg/kg 62900 B	В	55700 B	79	62600 B
ICAP ICAP ICAP ICAP ICAP ICAP ICAP ICAP	mg/kg ND (59)		ND (57)	ND (57,	(22)
um ICAP ICAP ICAP ICAP ICAP ICAP ICAP ICAP	mg/kg 231	_	209		226
ICAP ICAP ICAP ICAP	_		7.36		7.62
n ICAP ICAP ICAP					
um ICAP ICAP	<u> </u>	<u>B</u>	83100 B		91200 B
ICAP			89.7 B		
ICAP		В	20.2 B		20.3 B
	· · · ·		ND (4.8)		8.52
ICAP	27		26200	·	28100
ICAP	mg/kg 47700 B	a c	43100[B		46100 B
Manganese ICAP Img/kg		2	al/or		11318

Analytical Data Used In Calculations

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

orus 100 um 100	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	ND (3.8) 60.3 B ND (70) 15800 ND (4.4)		ND (3.7) 32.6 B	<u></u>		ءِ
denum horus ium um iium de de	ngkg ngkg ngkg ngkg ngkg ngkg ngkg	ND (3.8) 80.3 E ND (70) ND (4.4) 7600 F		32.6 E			٢
horus ium m ium ide de	ng/kg ng/kg ng/kg ng/kg mg/kg mg/kg	00.3 ND (70) 15800 ND (4.4)	¢	0.26		57.3	2
horus ium um lium de	ng/kg ng/kg ng/kg ng/kg mg/kg	ND (4.4) ND (4.4)	Ď	1111	,	(89) UN	
ium um lium ide de	ng/kg ng/kg ng/kg ng/kg ng/kg	ND (4.4)		00871		15600	
n um lium ide de	ng/kg ng/kg ng/kg ng/kg ng/kg	ND (4.4)		(C 1) CIN		ND (4.3)	
um lium Ide de	ng/kg ng/kg ng/kg mg/kg	10092		(6.4) (JN)		0950	œ
e e	ng/kg ng/kg mg/kg mg/kg		n (0007		3700	, ca
ll de la companya de	ng/kg mg/kg mg/kg	10265		2000			,
Je Je	mg/kg mg/kg	123					
ie G	mg/kg	(8 <i>L)</i> (0N		(8 <i>L</i>) GN		ND (78)	;
			В	109 B	æ	69.5 B	В
		The state of the s				1072 U	
	%	0.335			_		
	%	13.6				7.01	
				101.		1.20	
Actinium-228 @338	pCi/g	07.1		01:1		0.970	
Actinium-228 @911	pCi/g	97.		0.00		0.850	
Actinium-228 @968 gamma	pCi/g	1.10		1.30		0.030	
Bismuth-212 @727	pCi/g	00.1		07.		2 00	
Bismuth-214 @1120.4	pCi/g	07.1		1.00		09:	
Bismuth-214 @1764.7	pCi/g	09:1				02.1	
	pCi/g	96.1		26.1			
	pCi/g	0.11		0.11		7.30	
It ead 210 @46	pCi/g	0.40		0.690		0.30	
	pCi/g	1.00		3/5:0		0.940	
	pCi/g	1.90		08.1		00.1	
	pCi/g	2.00		08.1		1.80	
-	nCi/e	3.10		2.50	-	2.20	
	PC:/9	0.360		0.310		0.420	
	PC.8	0360		0.220		0.330	
	pcvg O:/-	0.200		0.860		1.60	
Thorium-234 @63.3 gamma	PCIVB	07.7				0.440	
	pCvg	0.330		051.0		0.140	
Uranium-235 @143.8 gamma	pCvg	0.190		00.10		21.10	

FD

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury	CVAA	mg/kg					ND (0.012)	
1 2 4-Trichlorobenzene	GCMS	ug/g					ND (0.0063)	
1,2-Dichlorobenzene	GCMS	ng/g					ND (0.021)	
1,3-Dichlorobenzene	GCMS	g/gn					ND (0.023)	
1,4-Dichlorobenzene	GCMS	a/an		·			ND (0.023)	
2,4,5-Trichlorophenol	GCMS	ng/g					ND (0.019)	
2,4,6-Trichlorophenol	GCMS	a/an		<u> </u>			(910.0) CN	
2,4-Dichlorophenol	GCMS	a/gn	•				ND (0.019)	
2,4-Dimethylphenol	GCMS	ng/g					ND (0.041)	
2,4-Dinitrophenol	GCMS	ng/g					ND (0.084)	
2,4-Dinitrotoluene	GCMS	ng/g					(CZ0.0) CIN	
2,6-Dinitrotoluene	GCMS	ng/g	•				ND (0.034)	
2-Chloronaphthalene	GCMS	ng/g		_			(670.0) CIN	
2-Chlorophenol	GCMS	ng/g					ND (0.011)	
2-Methylnaphthalene	GCMS	a/an					ND (0.020)	
2-Methylphenol	GCMS	ng/g					ND (0.026)	
2-Nitroaniline	GCMS	ng/g					ND (0.026)	
2-Nitrophenol	GCMS	ng/g				اوروا	ND (0.014)	
3,3'-Dichlorobenzidine	GCMS	ng/g					ND (0.035)	
3-Nitroaniline	GCIMS	a/gn					ND (0.011)	
4,6-Dinitro-2-methylphenol	GCMS	ug/g					ND (0.024)	
4-Bromophenylphenyl ether	GCMS	ng/g					ND (0.020)	
4-Chloro-3-methylphenol	GCMS	g/gn					ND (0.015)	
4-Chlorophenylphenyl ether	GCMS	a/gn						
4-Methylphenol/3-Methylphenol	GCMS	ng/g						
4-Nitroaniline	GCMS	ng/g					ND (0.019)	
4-Nitrophenol	GCMS	ng/g					ND (0.021)	-
Acenaphthene	GCMS	g/gn					ND (0.016)	
Acenaphthylene	GCMS	a/gn					ND (0.021)	
Anthracene	GCMS	g/gn					ND (0.018)	
Benz(a)anthracene	GCMS	g/gn					ND (0.011)	-
Benz(a)pyrene	GCMS	a/gn					ND (0.018)	-
Benzo(b)fluoranthene	GCMS	ng/g					ND (0.031)	

Analytical Data Used In Calculations

G

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
		,					(A) (A) (A)	
Benzo(g,h,i)perylene	GCMS	ng/g					(0.016) (170 (0.016)	
Benzo(k)fluoranthene	GCMS	g/gn					(120.0) CIN	
Benzoic acid	GCMS	g/gn					(160.0) UN	
Benzyl alcohol	GCMS	ng/g					ND (0.047)	
Rutylhenzylphthalate	GCMS	ng/g					ND (0.025)	
Chrysene	GCMS	ng/g					ND (0.019)	
Di-n-butviohthalate	GCMS	ug/g					ND (0.010)	
Di-n-octylohthalate	GCMS	ug/g					ND (0.019)	
Dibenz(a,h)anthracene	GCMS	a/gn				·	ND (0.022)	
Dibenzofuran	GCMS	ng/g					ND (0.013)	
Diethylphthalate	GCMS	ng/g			-	-	ND (0.012)	
Dimethylphthalate	GCMS	ng/g					ND (0.015)	
Diphenylamine/N-NitrosoDPA	GCMS	ng/g					ND (0.025)	
Fluoranthene	GCMS	g/gn					ND (0.014)	
Fluorene	GCMS	a/gn					ND (0.011)	
Hexachlorobenzene	GCMS	a/gn					ND (0.017)	
Hexachlorobutadiene	GCMS	a/gn					ND (0.021)	
Hexachlorocyclopentadiene	GCMS	8/8n					ND (0.033)	
Hexachloroethane	GCMS	ng/g					ND (0.033)	
Indeno(1,2,3-cd)pyrene	GCMS	ng/g					ND (0.016)	
Isophorone	GCMS	a/an					ND (0.0098)	
N-Nitroso-di-n-propylamine	GCMS	a/gn					ND (0.026)	
Naphthalene	GCMS	a/gn					ND (0.022)	
Nitrobenzene	GCMS	a/gn					ND (0.013)	
Pentachlorophenol	GCMS	a/gn				·	ND (0.0063)	_
Phenanthrene	GCMS	ng/g				-	ND (0.018)	
Phenol	GCMS	ng/g					ND (0.033)	•
Pyrene	GCMS	ng/g	٠				ND (0.015)	
bis(2-Chloroethoxy)methane	GCMS	g/gn					ND (0.011)	
bis(2-Chloroethyl)ether	GCMS	ng/g					_	
bis(2-Chloroisopropyl)ether	GCMS	a/an					(610:0) QN	
bis(2-Ethylhexyl)phthalate	GCMS	a/gn					0.632	
p-Chloroaniline	GCMS	a/gn					ND (0.032)	

Analytical Data Used In Calculations

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

HE GCMS HPCDD HPCDD HR GCMS HPCDF HR GCMS KCDD HR GCMS KCDD HR GCMS KCDF HR GCMS	mg/kg mg/kg mg/kg mg/kg ppt ppt ppt ppt ppt				388 1.92 94.7 94.7 ND (0.40) ND (0.70) ND (0.70) ND (0.60) ND (0.60) ND (0.60) ND (0.60) ND (0.60)	B B
itium GFAA itium GFAA itium GFAA itium GFAA HR GCMS 4,7,8-HpCDD HR GCMS 4,7,8-HxCDF HR GCMS 4,7,8-HxCDF HR GCMS 4,7,8-HxCDF HR GCMS 4,7,8-PeCDF HR GCMS 4,7,8-PeCDF HR GCMS 4,7,8-PeCDF HR GCMS	mg/kg mg/kg mg/kg ppt ppt ppt ppt ppt					
GFAA GFAA GFAA GFAA GFAA GFAA GFAA GFAA GFAA HR GCMS 4,7,8-HpCDF HR GCMS HR GCMS 6,7,8-HxCDF HR GCMS 6,7,8-HxCDF HR GCMS 7,8,9-HxCDF HR GCMS 7,8,9-HxCDF HR GCMS HR GCMS 6,7,8-HxCDF HR GCMS 1,7,8-PeCDF HR GCMS 1,7,8-PeCDF HR GCMS HR GCMS 1,8-TCDF HR GCMS	mg/kg mg/kg ppi ppt ppt ppt ppt ppt				94.7 4.67 ND (0.40) ND (0.70) ND (0.70) ND (0.60) ND (0.60) ND (0.60) ND (0.60)	
GFAA 6,7,8-HpCDD HR GCMS 7,8-HpCDF HR GCMS 7,8-HxCDF HR GCMS 7,8-HxCDF HR GCMS 7,8-HxCDF HR GCMS 7,8-HxCDF HR GCMS 8,9-HxCDF HR GCMS 8,9-HxCDF HR GCMS 7,8-HxCDF HR GCMS 7,8-HxCDF HR GCMS 7,8-HxCDF HR GCMS 1,0-HxCDF HR GCMS 1,0-	mg/kg ppt ppt ppt ppt ppt ppt ppt ppt ppt pp				4.6) ND (0.40) ND (0.70) ND (0.40) ND (0.60) ND (0.60) ND (0.60) ND (0.60)	
6,7,8-HpCDD HR GCMS 7,8-HpCDD HR GCMS 7,8-HpCDD HR GCMS 7,8-HxCDD HR GCMS 7,8-HxCDD HR GCMS 7,8-HxCDD HR GCMS 7,8-HxCDF HR GCMS 8,9-HxCDF HR GCMS 8,9-HxCDF HR GCMS 7,8-FcCDF HR GCMS 7,8-FcCDF HR GCMS 7,8-FcCDF HR GCMS 6,6-FcCDF HR GCMS 7,8-FcCDF HR GCMS 7,8-FcCDF HR GCMS 6,8-FcCDF	300 30d 30d 30d 30d 30d 30d 30d	·			1.40 ND (0.40) ND (0.70) ND (0.70) ND (0.60) ND (0.60) ND (0.60) ND (0.60)	
HR GCMS 7,8-HpCDF HR GCMS 7,8-HxCDD HR GCMS 7,8-HxCDF HR GCMS 7,8-HxCDF HR GCMS 7,8-HxCDF HR GCMS 8,9-HxCDF HR GCMS 8,9-HxCDF HR GCMS 7,8-PeCDF HR GCMS 7,8-PeCDF HR GCMS 7,8-PeCDF HR GCMS PR GCMS P	pod bot bot bot bot bot				ND (0.40) ND (0.70) ND (0.70) ND (0.60) ND (0.60) ND (0.60)	
1,8,9-HpCDF HR GCMS 1,8-HxCDD HR GCMS 1,8-HxCDF HR GCMS 1,8-HxCDF HR GCMS 1,8-HxCDF HR GCMS 1,8-PeCDF	phi by phi phi phi phi phi phi phi phi phi phi				ND (6.70) ND (6.70) ND (6.40) ND (6.60) ND (6.60) ND (6.60)	
17.8-HxCDD 17.8-HxCDF 17.8-HxCDF 17.8-HxCDF 17.8-HxCDF 17.8-HxCDF 18.9-HxCDF 18.9-HxCDS 19.9-HxCDS 19.9-HxCCMS 19.9-HxCDS 19.9-HxGCMS 19.9-HxCDS 19.9-HxCD	jdd jdd jdd				ND (0.40) ND (0.60) ND (0.60) ND (0.60) ND (0.60)	
17.8-HXCDF HR GCMS 17.8-HXCDD HR GCMS 17.8-HXCDF HR GCMS 18.9-HXCDF HR GCMS 17.8-HXCDF HR GCMS 18.9-HXCDF HR GCMS	jdd.				ND (0.30) ND (0.30) ND (0.30) (0.40)	
17.8-HXCDD HR GCMS 17.8-HXCDF HR GCMS 18.9-HXCDD HR GCMS 18.9-HXCDF HR GCMS 17.8-PCCDF HR GCMS 18.8-PCCMS 18.8-PCCMS 19.8-PCCMS 19.8-PCC	jdd.				ND (0.50) ND (0.50) ND (0.60)	
1,8-HxCDF HR GCMS 8,9-HxCDD HR GCMS 8,9-ECDD HR GCMS 1,8-ECDF HR GCMS 1,8-ECDF HR GCMS 1,18-ECDF HR GCMS 1,18-ECDF HR GCMS 1,18-ECDF HR GCMS KCDD HR GCMS HR GCMS KCDF HR GCMS					ND (0.60)	
8.9-HXCDF HR GCMS 8.9-HXCDF HR GCMS 7.8-HXCDF HR GCMS 7.8-PCCDF HR GCMS TCDP HR GCMS	50				ND (0.40)	
8-PecDD HR GCMS 7,8-HxCDF HR GCMS -1,2-HxCDF HR GCMS -1CDD HR GCMS						
8-PeCDF HR GCMS 7,8-ECDF HR GCMS -TCDD HR GCMS -TCDF HR GCMS KCDD HR GCMS HR GCMS KCDD HR GCMS KCDD HR GCMS HR GCMS KCDD HR GCMS KCDD HR GCMS KCDD HR GCMS					ND (0.50)	•
1,8-PcDF HR GCMS TCDD HR GCMS TCDF HR GCMS KCDD HR GCMS HR GCMS KCDF HR GCMS HR GCMS KCDF HR GCMS HR GCMS KCDF HR GCMS HR GCMS					ND (0.30)	
HR GCMS TCDD HR GCMS TCDF HR GCMS KCDD HR GCMS HR GCMS KCDD HR GCMS HR GCMS HR GCMS	ppt				0.350	
-TCDD -TCDF -TCDF -TCDF -TCDF -TCDF -TCDF -TR GCMS -TCDD -TR GCMS	ppt		•		ND (0.30)	
HR GCMS HR GCMS HR GCMS HR GCMS HR GCMS KCDD KCDF HR GCMS HR GCMS KCDF HR GCMS HR GCMS HR GCMS HR GCMS	ppt				ND (0.30)	
HR GCMS HR GCMS HR GCMS HR GCMS KCDD KCDD HR GCMS KCDF HR GCMS KCDF HR GCMS HR GCMS	ppt				ND (0.30)	
HR GCMS HR GCMS HR GCMS HR GCMS KCDD KCDD HR GCMS HR GCMS KCDF HR GCMS	ppt				2.20	
HR GCMS HR GCMS HR GCMS HR GCMS HR GCMS HR GCMS	þdd				ND (1.4)	
HR GCMS HR GCMS HR GCMS HR GCMS HR GCMS	þþt				2.90	
HR GCMS HR GCMS HR GCMS HR GCMS	ppt		•		ND (0.60)	
HR GCMS HR GCMS	jdd	_			8.00	
HR GCMS	bbt			_	0,540	
	pht				0.00	
THE COMP	bbt				(0:30) (0:30)	
HR GCMS	bbt			-	3.60	
Total TCDF Ppt	ppt				ND (0.30)	
Aluminum ICAP mg/kg	mg/kg				61300 B	B
ny ICAP	mg/kg				ND (52)	
Barium	mg/kg				C17	

Analytical Data Used In Calculations

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash FD

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Beryllium Boron Calcium Chromium Cobalt Copper Iron Magnesium Manganese Molybdenum Nickel Phosphorus Potassium Silver Sodium Titanium	ICAP ICAP ICAP ICAP ICAP ICAP ICAP ICAP	ug/kg ug/kg mg/kg mg/kg mg/kg mg/kg mg/kg			001		7.51 90.0 89200 B 93.4 B 15.4 B 7.90 45300 B 45300 B 107 B ND (3.4) 28.7 B ND (3.4) 14400 ND (3.9) 8350 B	
Chloride Fluoride Carbon	SIE SIE Ultimate	mg/kg mg/kg %			0.320		277 94.9 0.340	В
Sulfur Actinium-228 @338 Actinium-228 @911 Actinium-228 @968 Bismuth-212 @727 Bismuth-214 @1120.4 Bismuth-214 @169.4 K-40 @1460 Lead-212 @238	Ultimate gamma gamma gamma gamma gamma gamma gamma gamma	% PCV8 PCV8 PCV8 PCV8 PCV8 PCV8 PCV8 PCV8			12.6		13.7 1.00 0.970 0.970 0.70 1.50 1.70 1.70 1.00 1.00 1.00	

3

Analytical Data Used In Calculations

Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash FD

	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Kun 3	C III S
•	Technique							
[Fead-2]14 @352.0	gamma	pCVR					1.80	
Radium-226 @186.0		pCi/g					2.40	
Thallium-208 @583		pCi/g				المادي محس	0.330	_
Thallium-208 @860		pCi/g					0.380	
Thorium-234 (263 3		DCi/e					1.20	_
		pCi/e					1,30	_
•		oCi/g					0.150	

Sample Type: Ammonia Impinger Collection Method: Ammonia/Cyanide Stream: ESP Inle

mmonia - Distilled distil ug/Nm3 164 B 94.7 B 119 B			L	
	distil ug/Nm.	164 B		9 B

Stream: ESP Inle Collection Method: Ammonia/Cyanide Sample Type: Impingers

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	<u> </u>	om 2	Kun 3	
				ı					
anide	tot CN	ug/Nm3	028	_		614		ř.	392

Stream: ESP Inlet Collection Method: Anions Train Sample Type: Impingers + TLR

Analyte	lytical hnique	C		Com 1	Run 2 Com 2	Com 2	Run 3 Con	Com 3
Chloride Sulfate)))	ug/Nm3 ug/Nm3	68300 795000				73690 784000	
Fluoride	SIE	ug/Nm3	7000	В	6340	В	9969	8

Analytical Data Used In Calculations

Stream: ESP Inlet Collection Method: Anions/Ammonia/Cyanide/Aldehydes Sample Type: M5 Filter + Solids

Chloride IC ug/N 852 1020 481 Chloride IC ug/N 9440000 9150000 9260000 Sulfate IC ug/N 516000 5210000 518000 Fluoride SIE ug/N 4100 C 3170 C 2330 C Fluoride SIE ug/R 2240 C 1800 C 1300 C	Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
SIE ug/Nm3 4100 C 3170 C SIE ug/g 2240 C 1800 C	Chloride Chloride Sulfate Sulfate		ug/Nm3 ug/g ug/Nm3 ug/k	1560 852 9440000 5160000		1790 1020 9150000 5210000		861 481 9260000 5180000	
	Fluoride Fluoride	SIE SIE	ug/Nm3 ug/g	4100 2240	၁	3170 1800	၁ ၁	2330 1300	ပပ

Stream: ESP Inlet Collection Method: M0011a Sample Type: Impingers + MeCl2

Stream: ESP Inlet Collection Method: MM5 Sample Type: MeCl2 PNR/MM5 Filter

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1.2.4-Trichlorobenzene	IGCMS	ug/Nm3	(2.9) ND		ND (2.4)		ND (2.7)	
1.2-Dichlorobenzene	GCMS	ug/Nm3	ND (2.8)		ND (2.3)		ND (2.5)	
1,3-Dichlorobenzene	GCMS	ug/Nm3	ND (2.7)		ND (2.2)		ND (2.4)	
1,4-Dichlorobenzene	GCMS	ug/Nm3	ND (2.6)		ND (2.1)		ND (2.3)	-
2,4,5-Trichlorophenol	GCMS	ug/Nm3	ND (4.4)		ND (3.7)		ND (4.0)	11
2,4,6-Trichlorophenol	GCMS	ug/Nm3	ND (4.7)		ND (4.0)		ND (4.3)	
2,4-Dichlorophenol	GCMS	ug/Nm3	ND (3.4)		ND (2.9)		ND (3.1)	
2,4-Dimethylphenol	GCMS	ug/Nm3	(6:E) QN		ND (3.2)		ND (3.5)	
2,4-Dinitrophenol	GCMS	ug/Nm3	ND (13)		(II) QN		ND (12)	
2,4-Dinitrotoluene	GCMS	ug/Nm3	ND (4.3)		(9.6) QN		(6:E) QN	
2,6-Dinitrotoluene	GCMS	ug/Nm3	(19) QN		ND (5.2)		(9.5) QN	
2-Chloronaphthalene	GCMS	ug/Nm3	ND (1.8)		(S:1) QN		(9:1) QN	
2-Chlorophenol	GCMS	ug/Nm3	ND (2.9)		ND (2.4)		ND (2.6)	
2-Methylnaphthalene	GCMS	ug/Nm3	(1.1) ON		ND (1.4)		ND (1.5)	
2-Methylphenol	GCMS	ug/Nm3	ND (3.5)		ND (2.9)		ND (3.2)	

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Analytical Data Used In Calculations

Stream: ESP Inlet Collection Method: MM5 Sample Type: MeCl2 PNR/MM5 Filter

ine GCMS GCMS GCMS Iphenol GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ND (6.2) ND (6.3)	ND (5.2) ND (4.4) ND (2.5) ND (4.6) ND (1.5) ND (1.5) ND (1.7) ND (1.7) ND (1.9) ND (1.9) ND (1.9) ND (1.9) ND (1.9) ND (1.9)		ND (3.5) ND (4.8) ND (4.9) ND (1.9) ND (1.1) ND (2.1) ND (2.1) ND (2.1)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (5.2) ND (4.4) ND (2.5) ND (7.0) ND (1.5) ND (1.5) ND (1.7) ND (1.7) ND (1.9) ND (1.9) ND (1.9) ND (1.9) ND (1.9)		ND (2.5) ND (4.5) ND (4.5) ND (4.5) ND (4.5) ND (4.5) ND (4.5) ND (4.5) ND (4.5) ND (4.5) ND (4.5)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (4.4) ND (2.5) ND (4.6)		ND ND ND ND (4.5) ND (4.5)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (2.5) ND (4.6) ND (7.0) ND (1.5) ND (1.5) ND (1.7) ND (0.94) ND (1.9) ND (1.9) ND (1.9) ND (1.9)		ND ND ND (4.5) ND (4.5) ND (1.6) ND (1.6) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5) ND (2.5)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (4.6) ND (7.0) ND (1.5) ND (4.3) ND (1.5) ND (1.5) ND (1.7) ND (1.7) ND (1.9) ND (1.9) ND (1.9) ND (1.9)		ND ND (1.6) ND (1.6) ND (1.6) ND (1.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (7.0) ND (1.5) ND (3.2) ND (4.3) ND (1.3) ND (0.94) ND (1.0) ND (1.0) ND (1.0)		N N N N N (4.5)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (1.5) ND (3.2) ND (4.3) ND (10) ND (10) ND (10) ND (1.9) ND (1.9) ND (1.9) ND (1.9)		ND ND (3.5) ND (3.5) ND (3.5) ND (2.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6)	
ethylphenol GCMS GCMS GCMS GCMS GCMS GCMS anthene GCMS GCMS anthene GCMS GCMS anthene GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	~	ND (3.2) ND (4.3) ND (1.3) ND (1.7) ND (0.94) ND (2.3) ND (1.9) ND (1.9) ND (1.9)		ND (3.5) ND (4.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6) ND (2.6)	
ocms ocms ocms ocms ocms ocms ocms ocms		ND (4.3) ND (10) ND (1.7) ND (0.94) ND (2.3) ND (1.9) ND (1.9) ND (1.9) ND (1.9)		M M M M M M M M M M M M M M M M M M M	
GCMS GCMS GCMS GCMS anthene GCMS GCMS arthene GCMS GCMS anthalate GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (10) ND (0.94) ND (0.94) ND (1.9) ND (1.9) ND (1.9) ND (1.9)		ND (C)	
ne GCMS GCMS GCMS anthene GCMS GCMS anthene GCMS GCMS anthene GCMS GCMS anthene GCMS GCMS Athalate GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (1.7) ND (0.94) ND (2.3) ND (1.9) ND (1.0) ND (1.0)		ND ND (1:3)	
anthene GCMS GCMS GCMS GCMS anthene GCMS anthene GCMS in GCMS ithalate GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		ND (0.94) ND (2.3) ND (1.9) ND (1.0) ND (1.0)		ND (1.9) ND (2.19) ND (2.19) ND (1.19)	
oranthene GCMS		ND (2.3) ND (1.9) ND (1.0) ND (1.7)		ND (2.6)	
GCMS GCMS GCMS Oranthene GCMS Oranthene GCMS d GCMS hol GCMS GCMS A GCMS		ND (1.9) ND (1.0) ND (1.0)		ND (2,1)	
GCMS GCMS Joerylene GCMS Joerylene GCMS d GCMS hol GCMS GCMS GCMS GCMS A GCMS GCMS A GCMS GCMS A GCMS A GCMS A GCMS	,	ND (1.0) ND (1.7)	_	(1:1) (1:1) (1:1)	
oranthene GCMS)perylene GCMS oranthene GCMS d GCMS hol GCMS hol GCMS hol GCMS		(1.7) ON	-	16 CCN	
GCMS GCMS GCMS GCMS GCMS	_		_	アイン(こ	
GCMS GCMS GCMS GCMS		ND (0.64)		ND (0.74)	
GCMS GCMS GCMS GCMS		ND (0.62)		ND (0.72)	
GCMS GCMS GCMS		(69.0) QN		ND (0.79)	, · ·
GCMS GCMS GCMS	13 ND(11)	(0.9) UN		(8.6) QN	
GCMS GCMS	رور سائر	ND (4.3)		ND (4.8)	
GCMS		ND (1.2)		ND (1.3)	
		ND (0.70)		ND (0.78)	**
		ND (0.56)	_	ND (0.64)	
		ND (0.75)		ND (0.86)	
Dibenzofuran GCMS ug/Nm3		CI.DCN		(1.1) ON	_
Diethylphthalate GCMS ug/Nm3		ND (1.2)		ND (1.3)	·
		ND (1.4)		ND (1.5)	
Fluoranthene GCMS ug/Nm3	_	ND (0.80)		ND (0.83)	-
GCMS	Q _	ND (1.4)		ND (1.5)	
	2		_	ND (3.4)	_
		ND (4.1)		ND (4.4)	
	2	_		ND (5.9)	
Hexachloroethane GCMS ug/Nm3	13 ND (5.3)	ND (4.3)		ND (4.8)	

Analytical Data Used In Calculations

Stream: ESP Inlet Collection Method: MM5 Sample Type: MeCl2 PNR/MM5 Filter

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
Indeno(1,2,3-cd)pyrene	GCMS	ug/Nm3	(69.0) UN		(95.0) UN		ND (0.64)	
Isophorone	GCMS	ug/Nm3	(L.1) QN		ND (1.5)		(9:1) QN	
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (5.3)		ND (4.3)		ND (4.8)	
Naphthalene	GCMS	ug/Nm3	5.34	_	ND (0.92)		(0.1) QN	
Nitrobenzene	GCMS	ug/Nm3	ND (3.0)		ND (2.5)		ND (2.7)	
Pentachloronitrobenzene	GCMS	ug/Nm3	(L1) QN		(S1) QN		(SI) QN	t es
Pentachlorophenol	GCMS	ug/Nm3	ND (8.7)		ND (7.4)		(1.1) QN	
Phenanthrene	GCMS	ug/Nm3	ND (1.2)	•	ND (1.0)		(0:1) QN	
Phenol	GCMS	ug/Nm3	ND (2.4)		ND (2.0)		ND (2.2)	
Pyrene	GCMS	ug/Nm3	(69.0) CIN		ND (0.60)		ND (0.67)	
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3	ND (2.6)		ND (2.2)		ND (2.4)	
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	ND (3.2)		ND (2.6)		ND (2.8)	
bis(2-Ethythexyl)phthalate	GCMS	ug/Nm3	8.54	В	4.68 BJ	BJ	5.46 BJ	B

Sample Type: MeCl2 PNR/MMS Filter 1:2 dil Collection Method: MM5 Stream: ESP Inlet

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ylan	alate
.	Hara Carlo
	Di-n-butylphthalate GCMS
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Sample Type: XAD Resin/Impingers + MeCl2 Stream: ESP Inlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
1,2,4-Trichlorobenzene	GCMS	ug/Nm3	(06'0) ON		ND (0.98)		ND (1.0)	
1,2-Dichlorobenzene	GCMS	ug/Nm3	ND (0.78)		ND (0.86)		ND (0.91)	
1,3-Dichlorobenzene	GCMS	ug/Nm3	ND (0.73)		ND (0.81)		ND (0.85)	-
1,4-Dichlorobenzene	GCMS	ug/Nm3	ND (0.72)		ND (0.79)		ND (0.83)	
2,4,5-Trichlorophenol	GCMS	ug/Nm3	(III) ON		ND (I.I)		ND (1.3)	
2,4,6-Trichlorophenol	GCMS	ug/Nm3	ND (1.2)		ND (1.2)		ADCK 450K	
2,4-Dichlorophenol	GCMS	ug/Nm3	ND (0.49)		ND (0.53)		(95 0) QN	
2,4-Dimethylphenol	GCMS	ug/Nm3	ND (0.83)		ND (0.90)		(26.0) CIN	
2,4-Dinitrophenol	GCMS	ug/Nm3	ND (2.7)		ND (2.8)		ND (3.2)	-

Analytical Data Used In Calculations

Sample Type: XAD Resin/Impingers + MeCl2 Stream: ESP Inlet Collection Method: MM5

2,4-Dinitrotoluene GCMS ug 2,6-Dinitrotoluene GCMS ug 2-Chlorophenol GCMS ug 2-Methylphenol GCMS ug 2-Methylphenol GCMS ug 2-Mitroaniline GCMS ug 3,3-Dichlorobenzidine GCMS ug 3,3-Dichlorobenzidine GCMS ug 4,6-Dinitro-2-methylphenol GCMS ug 4-Chloro-3-methylphenol GCMS ug 4-Nitroaniline GCMS ug 4-Nitroaniline GCMS ug 4-Nitroaniline GCMS ug	ug/Nm3	ND (1.0) ND (0.45) ND (0.79) ND (0.47) ND (0.90) ND (1.1) ND (1.3) ND (1.3) ND (1.3)		ND (1.1) ND (1.6) ND (0.48) ND (0.87) ND (0.50) ND (1.2) ND (1.2)		ND (1.2)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.45) ND (0.45) ND (0.47) ND (0.90) ND (1.1) ND (1.3) ND (1.3) ND (1.3)		ND (1.6) ND (0.48) ND (0.87) ND (1.0) ND (1.2) ND (1.2)		(C) (C)	_
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.45) ND (0.79) ND (0.90) ND (1.1) ND (1.3) ND (1.3) ND (1.3) ND (1.3)		ND (0.48) ND (0.87) ND (0.50) ND (1.0) ND (1.2)		(8.1) (N)	ė i
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.79) ND (0.47) ND (0.90) ND (1.1) ND (1.3) ND (1.3) ND (1.3) ND (1.3)		ND (0.87) ND (0.50) ND (1.0) ND (1.2) ND (1.4)		ND (0.55)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (0.47) ND (0.90) ND (1.1) ND (1.3) ND (1.3) ND (1.3)		ND (0.50) ND (1.0) ND (1.2) ND (1.4)		ND (0.92)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (6.90) ND (1.1) ND (1.3) ND (1.3) ND (1.3) ND (1.3)		ND (1.0) ND (1.2) ND (1.4)			
GCMS GCMS GCMS ethylphenol GCMS GCMS hylphenol GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (1.1) ND (1.3) ND (1.3) ND (1.3) ND (1.8)		ND (1.2) ND (1.4)		•	
GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (1.3) ND (1.3) ND (1.3) ND (1.8)		ND (1.4)		_	
GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (1.3) ND (1.3) ND (1.8)		\c :\ \(\)			
GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ND (1.3) ND (1.8)		ND (1.3)	-	(S.1) QN	
GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3	ND (1:8)		ND (1.3)		ND (1.5)	
GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3			ND (1.8)		ND (2.0)	
GCMS GCMS GCMS	ug/Nm3 ug/Nm3	ND (0.45)	-	ND (0.45)		ND (0.48)	
GCMS	ue/Nm3	ND (0.87)		ND (0.95)		ND(1.0)	
GCMS		(I.I) ON	_	ND (1.2)		ND(1.4)	-
	ug/Nm3	ND (1.7)		0.469	_	ND (2.0)	
GCMS	ug/Nm3	ND (0.47)		ND (0.50)		ND (0.57)	
GCMS	ug/Nm3	ND (0.27)	•	ND (0.28)		ND (0.32)	
GCMS	ug/Nm3	4.13		4.67	_	2.46	
GCMS	ug/Nm3	ND (0.99)		(I.I) QN		(I.I) ON	
	ug/Nm3	ND (0.27)		(72.0) QN		ND (0.29)	
GCMS	ng/Nm3	ND (0.74)		ND (0.79)		(98.0) QN	~
Benzo(b)fluoranthene GCMS ug	ug/Nm3	ND (0.51)		ND (0.53)		ND (1.2)	
GCMS	ng/Nm3	ND (0.56)		ND (0.58)		ND (1.3)	
GCMS	ug/Nm3	ND (0.54)	-	ND (0.56)		(C.1.) ON	
GCMS	ug/Nm3	ND (1.4)		(9.1) QN		ND (1.7)	_
thalate GCMS	ug/Nm3	969.0		ND (0.44)		ND (0.48)	
GCMS	ug/Nm3	ND (0.37)		ND (0.39)		ND (0.42)	
Iphthalate GCMS	ug/Nm3	8.01	•	1.95	<u>-</u>	28.9	
GCMS	ug/Nm3	ND (0.30)		0.185	_	ND (0.70)	-
GCMS	ug/Nm3	ND (0.63)		ND (0.65)		ND (1.5)	
GCMS	ug/Nm3	ND (0.30)		ND (0.32)		ND (0.36)	
ate GCMS	ug/Nm3	0.770		0.966	_	ND (0.35)	
Dimethylphthalate GCMS ug	ug/Nm3	ND (0.37)		ND (0.39)		ND (0.44)	

Analytical Data Used In Calculations

Sample Type: XAD Resin/Impingers + MeCl2 Stream: ESP Inlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Ringranthene	GCMS	lig/Nm3	ND (0.26)		ND (0.26)		ND (0.28)	
	CMS	mo/Nm3	ND (0.37)		ND (0.39)		ND (0.44)	
Lincocklonden	CMS	No.	33.8		ND (1.3)		ND (1.4)	
Havachlorobutadiene	COMS	LEANING I	ND (1.5)		ND (1.6)	-:-	ND (1.7)	
Hexachlorocyclonentadiene	GCMS	ue/Nm3	ND (1.3)		ND (1.4)		ND (1.6)	
Hexachloroethane	GCMS	ug/Nm3	ND (1.5)		ND (1.7)		(7.1) QN	
Indeno(1,2,3-cd)pyrene	GCMS	ug/Nm3	ND (0.49)		ND (0.50)		(I.I) ON	-
Isophorone	GCMS	ug/Nm3	ND (0.39)		6.82	_	11.2	
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (1.1)		ND (1.3)		ND (1.3)	
Naphthalene	GCMS	ug/Nm3	0.668	B	0.729	<u>B</u> J	ND (0.34)	
Nitrobenzene	GCMS	ug/Nm3	ND (0.68)		ND (0.73)		ND (0.78)	
Pentachloronitrobenzene	GCMS	ug/Nm3	ND (2.7)		ND (2.7)		ND (2.9)	
Pentachlorophenol	GCMS	ug/Nm3	ND (2.7)		ND (2.7)		ND (2.9)	
Phenanthrene	GCMS	ug/Nm3	ND (0.27)		ND (0.27)		(0.29) ND	
Phenol	GCMS	ug/Nm3	2.80	_	3.00	_	1.66	-,
Pyrene	GCMS	ug/Nm3	ND (0.23)		ND (0.24)		ND (0.26)	
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3	ND (0.72)		ND (0.78)		ND (0.82)	
bis(2-Chloroethy1)ether	GCMS	ug/Nm3	ND (0.92)		ND (1.0)		ND (1.1)	• , ,=====

Sample Type: XAD Resin/Impingers + MeCl2 1:10 dil Collection Method: MM5 Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3 Com.	Com 3
)phthalate	JMS JMS	ug/Nm3 ug/Nm3	89	_				
	J		A series of the					

Sample Type: XAD Resin/Impingers + MeCl2 1:2 dil Stream: ESP Inlet Collection Method: MM5

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Analyte Analytical Unit		GCMS ug	

Sample Type: XAD Resin/Impingers + MeCl2 1:4 dil Stream: ESP Inlet Collection Method: MM5

Com 3	
2 Run 3	-
Com 2	216
Run 2	
Com 1	
Run 1	
Units	Ng gg
Analytical Technique	GCMS
Analyte	Benzoic acid

Sample Type: Mercury Impingers Collection Method: Multimetals Train Stream: ESP Inlet

Com 3	1.75
2 Run 3	
E	1 1
Run 2 CC	
Com 1	3.40
Run 1	
Units	ug/Nm3
E 2	CVAA
Analyte Analyti Techniq	Mercury

Sample Type: Nitric Acid Impingers + TL Collection Method: Multimetals Trai Stream: ESP Inle

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
Mercury	CVAA	ug/Nm3	11.8		14.3		13.3	
Alicenter	ICAP	ug/Nm3	36.5 BC	BC	43.3/BC	BC	65.6	65.6 BC
Authorn Barins	ICAP	ue/Nm3	0.459 BC	BC	0.728 BC	BC	0.836	BC
	ICAP	ug/Nm3	197 BC	BC	206 BC	BC	186 BC	BC
\$	ICAP	ug/Nm3	182	BC	259	BC	366	BC
	ICAP	ug/Nm3	30.6	BC	30.1	BC	178	ရွင
Maonesium	ICAP	ug/Nm3	26.3	၁	27.5	ပ	58.0	ပ
	ICAP	ug/Nm3	(61) QN		(61) QN		ND (17)	
	ICAP	ug/Nm3	ND (250)	BC	ND (250)	BC	ND (230)	ည္ထ
	ICAP	ug/Nm3	ND (1.6) B	В	ND (1.6) B	æ	ND (1.4) B	В
E	ICAP	ug/Nm3	207 BC	BC	294 BC	BC	250	250 BC
	ICAP	ug/Nm3	1.23		1.56		2.97	
Antimony	ICPMS	ug/Nm3	0,0163 C	၁	0.0162 C	၁	0.0169	၁
Arsenic	ICPMS	ug/Nm3	0.389 C	Ü	0.255	၁	0.361	ပ
Barium	ICPMS	ug/Nm3	ND (0.0053) C	ပ	ND (0.0053)	ပ	ND (0.0048)	ပ
Beryllium	ICPMS	ug/Nm3	ND (0.0048)	ပ	ND (0.0048) C	ပ	0.0262 C	Ü
Cadmium	ICPMS	ug/Nm3	1.08 C	ပ	0.226	ပ	0.154	ပ
Chromium	ICPMS	ug/Nm3	3.78 C	ပ	0.770 C	ပ ပ	26.2	ပ
Cobalt	ICPMS	ng/Nm3	0.0186 C	ပ	0.0185 C	ບ່	1.13	ပ

Analytical Data Used In Calculations

Collection Method: Multimetals Train Sample Type: Nitric Acid Impingers + TLR Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run I	Com 1	Run 2	Com 2	Run 3	Com 3
							000	
Conner	ICPMS	ug/Nm3	0.630 C	ပ	0.232 C	<u>ن</u>	7.38 C	ي
	ICPMS	ug/Nm3	ND (0.0051) C	ပ	ND (0.0050) C	ပ	ND (0.0046) C	ر ن
	TODAY.	(NIm.)	7 7 1	ر	<u> </u>	٠	3.32 IC	ت
Manganese	ICEMS			<u> </u>)		_
Molyhdennm	ICPMS	ue/Nm3	0.143 C	<u>۔</u>	ND (0.0078) C	<u>ပ</u>	3.32 C	ာ
	LODAGO	no/Mm3	154	Ç	0.204 C	۲	29.31	ပ
Nickel	ICLIMO	CINIAN	1000))	7	
Selenium	ICPMS	ug/Nm3	20.2		13.9		C/1	
Vanadium	ICPMS	ug/Nm3	1.46 C	ပ	0.837 C	ပ	0.940 C	ပ
	£		<u> </u>					

Sample Type: Filtered Solids/Solvent Rinses/XAD Resin Collection Method: PCDD/PCDF for Dioxins and Furans (M23) Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1234678-HpCDD	Meth 23X	ug/Nm3	0.00000641	B	0.00000638 B	B	0.00000345 BF	BF
1234678-HpCDF	Meth 23X	ug/Nm3	0.00000200		0.000000490 F	Œ,	0.00000179	뇬
123478-HxCDD	Meth 23X	ug/Nm3	ND (0.0000044)		ND (0.0000041)		(C0000007)	
123478-HxCDF	Meth 23X	ug/Nm3	0.00000200	В	0.00000686	BF	0.00000116	ВF
1234789-HpCDF	Meth 23X	ug/Nm3	ND (0.0000041)		ND (0.0000045)		ND (0.0000043)	
123678-HxCDD	Meth 23X	ug/Nm3	ND (0.0000037)		ND (0.0000034)		ND (0.0000020)	
123678-HxCDF	Meth 23X	ug/Nm3	ND (0.0000020)		0.00000220	•	ND (0.0000017)	
12378-PeCDD	Meth 23X	ug/Nm3	ND (0.0000027)		ND (0.0000026)		ND (0.0000013)	
12378-PeCDF	Meth 23X	ug/Nm3	ND (0.0000017)		0.00000116	Ľ.	(0.0000009) QN	
123789-HxCDD	Meth 23X	ug/Nm3	ND (0.0000041)	_	ND (0.0000037)		ND (0.0000023)	
123789-HxCDF	Meth 23X	ug/Nm3	ND (0.0000031)		ND (0.0000030)		ND (0.0000023)	
234678-HxCDF	Meth 23X	ug/Nm3	0.00000295	B	0.00000440	BF	0.00000394	ВF
23478-PeCDF	Meth 23X	ug/Nm3	ND (0.0000017)		ND (0.0000015)		(0.0000009) ND	
2378-TCDD	Meth 23X	ug/Nm3	ND (0.0000015)		ND (0.0000017)		ND (0.0000013)	_
2378-TCDF	Meth 23X	ug/Nm3	ND (0.0000015)		ND (0.0000017)		0.000000810 F	Œ,
OCDD	Meth 23X	ug/Nm3	0.0000425	В	0.0000565	В	0.0000340 B	æ
OCDF	Meth 23X	ug/Nm3	0.00000519		0.00000836		ND (0.0000043)	
TOTAL HPCDD	Meth 23X	ug/Nm3	0.0000105		0.00000638		0.00000365	
TOTAL HPCDF	Meth 23X	ug/Nm3	0.00000258	-	0.00000291	ı,	0.00000441	14
TOTAL HXCDD	Meth 23X	ug/Nm3	0.00000237	[<u>1</u> ,	0.00000201	ír,	0.00000235	
TOTAL HxCDF	Meth 23X	ug/Nm3	0.00000634		0.00000720		0.00000507	ᄕ

Collection Method: PCDD/PCDF for Dioxins and Furans (M23) Sample Type: Filtered Solids/Solvent Rinses/XAD Resin Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
TOTAL PeCDD	Meth 23X	ug/Nm3	0.00000217		ND (0.0000026)		11661000000	_
TOTAL B. C. C.	Made 22V	na/Nim3	71200000		0.00000537		0.000001031F	Į,
I O I A L FECUR	VC7 Inami	CHINIGH	0.000000		CC20000			_
TOTAL TODD	Meth 23X	lue/Nm3	0.00000509IF	بد)	(0.0000017)		0.00000159	
			(3100000 0) CIX		72100000 07 CIX		2 101 80000000	ŭ
TOTAL TCDF	Melh 23X	ng/nm2	(C100000.0) UN		(100000.0) GM		0.000000010	.,
								1

Sample Type: Tenax-Tenax + Charcoal A Collection Method: VOST Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1.1.1-Trichloroethane	GCMS	ug/Nm3	(0.53) (ND		ND (0.53)		(95:0) QN	
1,1,2,2-Tetrachloroethane	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		(95.0) QN	
1,1,2-Trichloroethane	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
1,1-Dichloroethane	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		(95.0) QN	
1,1-Dichloroethene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		(95.0) QN	
1,2-Dichlorobenzene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		(95.0) QN	
1,2-Dichloroethane	GCMS	ug/Nm3	2.76		ND (0.53)		ND (0.56)	
1,2-Dichloropropane	GCMS	ug/Nm3	ND (0.53)		ND (0.53)	_	(95.0) QN	
1,3-Dichlorobenzene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
1,4-Dichlorobenzene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		(9S:0) QN	
2-Butanone	GCMS	ug/Nm3	ND (2.7)		ND (2.7)		ND (2.8)	
2-Hexanone	GCMS	ug/Nm3	ND (2.7)	_	ND (2.7)		ND (2.8)	
4-Methyl-2-Pentanone	GCMS	ug/Nm3	ND(2.7)		ND (2.7)		ND (2.8)	
Acetone	GCMS	ug/Nm3	ND (2.7)		ND (2.7)		ND (2.8)	
Benzene	GCMS	ug/Nm3	5.84		13.4		6.70	
Bromodichloromethane	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Bromoform	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Bromomethane	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	-
Carbon Disulfide	GCMS	ug/Nm3	0.584		1.23		1.23	-
Carbon Tetrachloride	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Chlorobenzene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Chloroethane	GCMS	ug/Nm3	0.903	g	ND (0.53)		ND (0.56)	
Chloroform	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Chloromethane	GCMS	ng/Nm3	2.12		2.46		1.95	

Analytical Data Used In Calculations

Sample Type: Tenax-Tenax + Charcoal A Stream: ESP Inlet Collection Method: VOST

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	anhumaa							
Dibromochloromethane	GCMS	ug/Nm3	(65.0) QN		ND (0.53)		ND (0.56)	
Ethyl Benzene		ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Methylene Chloride	GCMS	ug/Nm3	0.531		2.24		2.57	
Styrene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		(95.0) QN	
Terrachloroethene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Tolliene	GCMS	ug/Nm3	ND (0.53)		1.60		1.23	
Trichloroethene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Trichlorofluoromethane	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
Vinyl Acetate	GCMS	ug/Nm3	ND (2.7)		ND (2.7)		ND (2.8)	
Vinyl Chloride	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	"
cis-1.3-Dichloropropene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
m n-Xviene	GCMS	ug/Nm3	ND (0.53)		0.748		ND (0.56)	
na, r. J. Carrollo-Xvlene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		(0.56) ND (0.56)	
trans-1.2-Dichloroethene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	
trans-1,3-Dichloropropene	GCMS	ug/Nm3	ND (0.53)		ND (0.53)		ND (0.56)	

Sample Type: Tenax-Tenax + Charcoal B Stream: ESP Inlet Collection Method: VOST

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
1.1.1-Trichloroethane	GCMS	ug/Nm3	(I.I) ON				(SS.0) ON	
1,1,2,2-Tetrachloroethane	GCMS	ug/Nm3	(I.I) UN				ND (0.55)	
1,1,2-Trichloroethane	GCMS	ug/Nm3	(I.I) dN				ND (0.55)	
1,1-Dichloroethane	GCMS	ug/Nm3	(I.I) ON				ND (0.55)	
1,1-Dichloroethene	GCMS	ug/Nm3	(I.I) ON	٠			ND (0.55)	
1,2-Dichlorobenzene	GCMS	ug/Nm3	(I.I) ON				ND (0.55)	
1,2-Dichloroethane	GCMS	ug/Nm3	1.19				ND (0.55)	
1,2-Dichloropropane	GCMS	ug/Nm3	(I.I) dN				ND (0.55)	
1,3-Dichlorobenzene	GCMS	ug/Nm3	(I.I) ON				ND (0.55)	
1,4-Dichlorobenzene	GCMS	ug/Nm3	(I.I) ON				ND (0.55)	
2-Butanone	GCMS	ug/Nm3	ND (5.4)				ND (2.8)	
2-Hexanone	GCMS	ug/Nm3	ND (5.4)				ND (2.8)	-
4-Methyl-2-Pentanone	GCMS	ug/Nm3	ND (5.4)				ND (2.8)	

Stream: ESP Outlet Collection Method: MM5 Sample Type: MeCi2 PNR/MM5 Filter

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
							(0 // CII.)	
Hexachlorocyclopentadiene	GCMS	ug/Nm3	ND (3.4)		ND (3.4)		(0.0) UN	
Hexachloroethane	GCMS	ug/Nm3	ND (3.1)		ND (3.2)	76.00	ND (4.3)	
Indepo(1 2 3-cd)nyrene		ue/Nm3	ND (0.36)		ND (0.39)		ND (0.84)	
Isophorone		ug/Nm3	ND (1.0)		(0.1) dN		ND (1.4)	
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (2.8)		ND (2.9)		ND (4.0)	
Nanhthalene	GCMS	ug/Nm3	ND (0.65)		ND (0.67)		ND (0.94)	
Nitrohenzene	GCMS	ug/Nm3	(1.7) UN		(8.1) QN		ND (2.4)	
Pentachloronitrobenzene	GCMS	ug/Nm3	ND (8.1)		(9.8) QN		ND (13)	· · · · · · · · · · · · · · · · · · ·
Pentachloronhenol	GCMS	ug/Nm3	ND (5.3)		ND (5.7)		(6.7) ON	
Phenanthrene	GCMS	ug/Nm3	ND (0.63)		ND (0.67)	,	(96.0) QN	
Phenol	GCMS	ug/Nm3	ND(1.3)		(4:1) QN		ND (2.0)	
Pyrene	GCMS	ug/Nm3	ND (0.41)		ND (0.44)		ND (0.66)	
his/2-Chloroethoxy)methane	GCMS	ug/Nm3	ND (1.5)		(9.1) DN		ND (2.2)	-
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	ND (1.8)		ND (1.8)		ND (2.6)	-
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3	1.45	вл	ND (0.61)		0.638	ВЈ
			,					

Sample Type: XAD Resin/Impingers + MeCl2 Collection Method: MM5 Stream: ESP Outlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Сош 2	Run 3	Com 3
1.2.4-Trichlorobenzene	GCMS	ug/Nm3	(68.0) QN		ND (0.92)		(I.1) dN	
1,2-Dichlorobenzene	GCMS	ug/Nm3	(LL) (0.77)		ND (0.81)		ND (0.87)	
1,3-Dichlorobenzene	GCMS	ug/Nm3	ND (0.72)		ND (0.76)		ND (0.81)	
1,4-Dichlorobenzene	GCMS	ug/Nm3	ND (0.71)		ND (0.75)		ND (0.80)	
2,4,5-Trichlorophenol	GCMS	ug/Nm3	ND (1.4)		(I.I) QN		ND (5.4)	
2.4.6-Trichlorophenol	GCMS	ug/Nm3	(9:1) QN		ND (1.2)		ND (5.8)	-
2,4-Dichlorophenol	GCMS	ug/Nm3	ND (0.49)		ND (0.50)		(19:0) QN	
2,4-Dimethylphenol	GCMS	ug/Nm3	ND (0.82)		ND (0.84)		(0.1) ON	
2,4-Dinitrophenol	GCMS	ug/Nm3	ND (3.6)		ND (2.7)		ND (13)	
2,4-Dinitrotoluene	GCMS	ug/Nm3	ND(1.4)		(0.1) QN		ND (5.0)	
2,6-Dinitrotoluene	GCMS	ug/Nm3	ND (2.0)		(5.1) QN		ND (7.3)	
2-Chloronaphthalene	GCMS	ug/Nm3	(09.0) QN		ND (0.46)		ND (2.2)	
2-Chlorophenol	GCMS	ug/Nm3	ND (0.78)		ND (0.82)		ND (0.88)	

Analytical Data Used In Calculations

Sample Type: XAD Resin/Impingers + MeCl2 Stream: ESP Outlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 5
2-Methylnaphthalene	GCMS	ug/Nm3	ND (0.46)		ND (0.48)		ND (0.58)	
2-Methylphenol		ug/Nm3	(0.89) ND		ND (0.94)		ND (1.0)	
2-Nitroaniline		ug/Nm3	(S.1) QN		ND (1.2)		ND (5.6)	
2-Nitrophenol		ng/Nm3	ND (1.2)		ND (1.3)		(9:1) QN	
3,3'-Dichlorobenzidine	GCMS	ug/Nm3	=		(I.3) ND (I.3)		ND (8.8)	
3-Nitroaniline	GCMS	ug/Nm3	(1.1) dn		ND (1.3)		ND (6.2)	
4,6-Dinitro-2-methylphenol		ug/Nm3	(8.1) dN		ND(1.8)		ND (4.0)	
4-Aminobiphenyl	GCMS	ug/Nm3	ND (0.43)		ND (0.44)		(06.0) QN	
4-Chloro-3-methylphenol	GCMS	ug/Nm3	ND (0.86)		(0.89) ND (0.89)		(I:I) ND (I:I)	
4-Nitroaniline		ug/Nm3	(5.1) DN		(I.1) DN		ND (5.6)	
4-Nitrophenol	GCMS	ug/Nm3	ND (2.2)		(7.1) ON		ND (8.2)	
Acenaphthene	GCMS	ug/Nm3	ND (0.63)	,	ND (0.48)		ND (2.3)	
Acenaphthylene	GCMS	ug/Nm3	ND (0.36)		ND (0.27)		ND (1.3)	
Acetophenone	GCMS	ug/Nm3	2.97	_	2.71	_	3.77	
Aniline	GCMS	ug/Nm3	ND (0.98)		(0.1) QN		(I.I) ON	
Anthracene	GCMS	ug/Nm3	ND (0.26)		ND (0.26)		ND (0.59)	
Benzidine	GCMS	ug/Nm3	(I.I) ON		ND (0.74)		ND (5.2)	
Benzo(b)fluoranthene	GCMS	ug/Nm3	(9'9) QN		ND (0.55)		(75.0) ON	
Benzo(g,h,i)perylene	GCMS	ug/Nm3	ND (7.2)		(09.0) QN		ND (0.40)	
Benzo(k)fluoranthene	GCMS	ng/Nm3	(0.7) QN		ND (0.58)		(65.0) QN	
Benzyl alcohol	GCMS	ug/Nm3	(4.1) UN		ND (1.5)		(9.1) QN	
Butylbenzylphthalate	GCMS	ng/Nm3	ND (0.63)		ND (0.42)		ND (2.9)	
Chrysene	GCMS	ug/Nm3	(95.0) QN		ND (0.37)		ND (2.6)	
Di-n-butylphthalate	GCMS	ng/Nm3	1.61		67.9		13.7	
Di-n-octylphthalate		ng/Nm3	ND (3.9)		ND (0.32)		ND (0.22)	
Dibenz(a,h)anthracene		ug/Nm3	ND (8.2)		ND (0.68)		ND (0.45)	
Dibenzofuran	GCMS	ug/Nm3	0.0789	_	ND (0.30)		ND (1.5)	
Diethylphthalate		ug/Nm3	3.26	J	ND (0.30)		(1 .1) ON	
Dimethylphthalate	GCMS	ug/Nm3	ND (0.49)		ND (0.37)		(8.1) QN	
Fluoranthene		ug/Nm3	ND (0.25)	•	ND (0.26)		ND (0.58)	
Fluorene	GCMS	ug/Nm3	ND (0.49)		ND (0.37)	-	(8.1) QN	
Hexachlorobenzene	GCMS	ug/Nm3	ND (1.2)		ND (1.2)		ND (2.8)	
Hexachlorobutadiene	GCMS	ug/Nm3	(5.1) dN		(S:1) QN		(6.1) QN	

Sample Type: XAD Resin/Impingers + McCl2 Stream: ESP Outlet Collection Method: MM5

	Technique							
	CCMS	11º/Nm3	ND (1.7)		ND (1.3)		ND (6.4)	
		ug/Nm3	(C.1) UN		(9.1) QN		(L.1) DN	
d Light	COMS	ue/Nm3	ND (6.3)		ND (0.52)		ND (0.35)	
	CMS	ue/Nm3	20.2		ND (0.39)		31.4	
i-n-propylamine	GCMS	ug/Nm3	ND (1.1)		ND (1.2)		ND (1.3)	
	CCMS	ug/Nm3	777.0	BJ	0.441 BJ	B	0.916 BJ	E
	GCMS	ug/Nm3	ND (0.67)		(69.0) QN		ND (0.84)	
trobenzene	GCMS	ue/Nm3	ND (2.6)		ND (2.6)		(6.5) QN	
	GCMS	ug/Nm3	ND (2.6)		ND (2.6)		(6:5) QIN	
	GCMS	ue/Nm3	ND (0.26)		ND (0.26)		ND (0.60)	
	·	ue/Nm3	1.22		1.25	_	ND (0.74)	
		ug/Nm3	ND (0.34)		ND (0.23)		(9:1) QN	
hloroethoxv)methane	GCMS	ug/Nm3	ND (0.71)	,	ND (0.73)		(0.89) (0.89)	
	GCMS	ug/Nm3	ND (0.91)		(96.0) QN		(0.1) ON	-
ate	GCMS	ug/Nm3	22.2		1.63	_	14.2	

Sample Type: XAD Resin/Impingers + MeCl2 1:2 dil Collection Method: MM5 Stream: ESP Outlet

		3
- III 2		
7 mm 7	146	
Kun 1	111	
Cuits	ug/Nm3	
Analytical Technique	GCMS	
Analyte	Benzoic acid	

Stream; ESP Outlet Collection Method: MM5 Sample Type: XAD Resin/Impingers + MeCl2 1:4 dil

Analyte	Analytical Technique	RI Units Rur	X	-	Com 1	lun 2	<u>ರ</u>	om 2	Run	Com 1 Run 2 Com 2 Run 3 Com 3	Com 3
	,										
Benzoic acid	GCMS	ug/Nm3					-			135	

Analytical Data Used In Calculations

Stream: ESP Outlet Collection Method: Multimetals Train Sample Type: Acetone PNR/Nitric PNR/M5 Filter + Solids

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury Mercury	CVAA	ug/Nm3 ug/g	0.00416 C 0.0675 C	သ	0.00446 C 0.540 C	ပပ	ND (0.0082) C ND (0.15) C	ပပ
					10 1 10 10 10 10 10 10 10 10 10 10 10 10		JUCZ V	
Arsenic	GFAA	ug/Nm3	0.7.0	ر	CO.I	، ر	670.0	ر د
Arsenic	GFAA	3∕8n	12.6	ပ	128	၂ (0.11	، ر
Cadmium	GFAA	ug/Nm3	699'0 ·	ပ	0.274	ပ	0.381	ر د
Cadmium	GFAA	ng/g	10.9		33.2	ပ	66.9	၁
Lead	GFAA	ug/Nm3	1.40	ပ	ND (0.027)	ပ	ND (0.13)	
Lead	GFAA	ug/g	. 22.8	ပ	ND (3.3) C	ပ	ND (2.4)	
Selenium	GFAA	ug/Nm3	. 18.6	ပ	19.2	ပ	18.8	ပ
Selenium	GFAA	ng/g	302	၁	2330 C	၁	344 C	၁
Aliminim	TICAP	ue/Nm3	138 C	၁	1 55.8 C	ျ	29.4 C	၁
Aluminum	ICAP	ng/gn	2250	ပ	09/9	ပ	239 C	ပ
Antimony	ICAP	ug/Nm3	ND (2.0)		ND (2.1)		ND (2.0)	-
Antimony	ICAP	ng/g	ND (33)		ND (250)		ND (37)	
Barium	ICAP	ug/Nm3	1.92	ပ	0.193	ပ	0.110	ပ
Barium	ICAP	g/gn	31.2		23.4	ပ		ပ
Beryllium	ICAP	ug/Nm3	ND (0.011)		ND (0.012)		ND (0.011)	
Beryllium	ICAP	a/gn	ND (0.18)	_	ND (1.4)		ND (0.21)	
Calcium	ICAP	ug/Nm3	274		227	ပ	152	ပ (
Calcium	ICAP .	g/gn	4460		27500		2800	ပ
Chromium	ICAP	ng/Nm3	1.70		1.79	ပ	0.756	ပ (
Chromium	ICAP	g/gn	27.6		217	၁ ^ရ	13.9	ပ ၊
Cobalt	ICAP	ug/Nm3	(61.0) QN	ပ	(61.0) ON	ပ	ND (0.18)	ပ
Cobalt	ICAP	9/8n	ND (3.0)		ND (23)	ပ	ND (3.4)	ပ
Copper	ICAP	ug/Nm3	1.64		2.29	,	0.700	
Copper	ICAP	g/gn	26.7		277		13.0	
Iron	ICAP	ug/Nm3	221		705	ပ	91.8	ပ
Iron	ICAP	ng/g	3890		85400		1680	ပ
Magnesium	ICAP	ug/Nm3	110	၁	93.7	ပ	61.2	ر ن
Magnesium	ICAP	9/8n	1790	ပ	11300	ပ	1120	၂
Manganese	ICAP	ug/Nm3	2.37		7.44	ပ	1.02	ာ
Manganese	ICAP	g/gn	38.5	ပ	106	ပ	8.8	ပ

Stream: ESP Outlet Collection Method: Multimetals Train Sample Type: Acetone PNR/Nitric PNR/M5 Filter + Solids

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Molubelanim	ICAP	110/Nm3	0.3171C	ပ	ND (0.13) (<u></u>	0.371 C	ပ
		,	71.3	, (MDUN	ر	08.9	ز
Molybdenum	ICAP	g/gn	2.10	ر	(OI) CIN	ו נ) (
Nickel	ICAP	ug/Nm3	0.980 C	U	8.85	ပ	1.35	ပ
Nickel exict	ICAP	ug/g	15.9 C	ပ	1070	ာ	24.8	ပ
Phosphoris	ICAP	ue/Nm3	3.35	ပ	3.77	ပ	3.13	ပ
Dhoenhouse	ICAP	<i>a/s</i> n	54.4	ပ	457	ပ	57.4	<u>ပ</u>
Potassium	ICAP	ue/Nm3	38.7 C	ပ	24.0	Ü	18.4 C	ပ
Potassium	ICAP	a/an	629	ပ	2900	ပ	338	ပ
Silver	- 1-2-1	ug/Nm3	ND (0.15)	ပ	1.05	ر د	ND (0.15)	ပ
Silver Silver		ug/gn	ND (2.5)	ပ	127	ပ	ND (2.8)	ပ
Sodium	ICAP	ug/Nm3	77.3	ບ	47.9	ပ	35.7	ပ
Sodium	ICAP	ug/g	1250	ပ	5800	၁	959	ပ
Titaniım	ICAP	ug/Nm3	16.3	ပ	5.86	ပ	3.98	ပ
Titanium	ICAP	ug/g	264	ပ	710	ပ	73.0	ပ
Vanadium	ICAP	ug/Nm3	0.238	ပ	0.184	ပ	0.141 C	ပ
Vanadium	ICAP	g/gn	3.87	ပ ပ	22.2 C	ပ	2.60	ပ

Collection Method: Multimetals Train Sample Type: Mercury Impingers Stream: ESP Outlet

Collection Method: Multimetals Train Sample Type: Nitric Acid Impingers + TLR Stream: ESP Outlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury		ug/Nm3	13.1		13.9		12.4	12.4
Aluminum Barium Boron Calcium	ICAP ICAP ICAP ICAP	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	38.1 BC 0.504 BC 173 BC 213 BC	BC BC BC	42.2 BC 0.533 BC 163 BC 256 BC	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	52.6 BC 0.848 BC 159 BC 342 BC	8 8 8 8 8

Analytical Data Used In Calculations

Stream: ESP Outlet Collection Method: Multimetals Train Sample Type: Nitric Acid Impingers + TLR

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Tron	TICAP	ue/Nm3	41.7/BC	BC	47.7 BC	BC	61.0]BC	<u> </u>
Maonesium	ICAP	ug/Nm3	24.6 C	Ü	15.9 C	ပ	29.9	ပ
Phosphorus	ICAP	ug/Nm3	(91) QN		(61) QN		ND (15)	
Potassium	ICAP	ug/Nm3	ND (210)	BC	ND (250) BC	ВС	ND (210) BC	BC
Silver	ICAP	ug/Nm3	ND (1.3) B	В	(9:1) QN	82	ND (1.3)	B
Sodium	ICAP	ug/Nm3	287 BC	BC	308	BC	338	BC
Titanium		ug/Nm3	1.23		1.60		1.84	
Antimony	ITCPMS	IIP/Nm3	0.01311	C	0.0165	ပ	0.0233 C	၁
Amenio		ne/Nm3	0.162	ت	0.240	ပ	0.264	ပ
Ratium	ICPMS	me/Nm3	ND (0.0044)	Ü	ND (0.0053)	ပ	ND (0.0044)	ပ
Recellin	ICPMS	ug/Nm3	ND (0.0040)	ບ	ND (0.0048)	ပ	0.0485	ပ
Cadmium	ICPMS	ug/Nm3	ND (0.0053)	ပ	0.551	ပ	3.51	ပ
Chromium	ICPMS	ug/Nm3	1.35	ပ	0.887	၁	4.67	ပ
Cobalt	ICPMS	ug/Nm3	0.0210	ပ	0.0477	၁	0.0654	ပ
Copper	ICPMS	ug/Nm3	0.456	ပ	2.18	၁	4.90	ပ
Lead	ICPMS	ug/Nm3	ND (0.0042)	ပ	0.427	ပ	0.527	ပ
Manganese	ICPMS	ug/Nm3	ND (0.0059)	ပ	1.03	ပ	8.69	၁
Molybdenum	ICPMS	ug/Nm3	ND (0.0065)	ပ	ND (0.0078)	ပ	0.0711	ပ
Nickel	ICPMS	ug/Nm3	0.709	ပ	1.31	ن	4.85	ပ
Selenium	ICPMS	ug/Nm3	13.1		18.6	•	29.6	
Vanadium	ICPMS	ug/Nm3	129'0	ပ	0.849 C	၁	1.03 C	၁

Sample Type: Filtered Solids/Solvent Rinses/XAD Resin Collection Method: PCDD/PCDF for Dioxins and Furans (M23) Stream: ESP Outlet

ıte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
[1234678-HpCDD] Meth 23 X	Meth 23X	ug/Nm3	0.00000193 BF	BF	0.00000531 B	В	0.0000106 B	В
1234678-HpCDF	Meth 23X	ug/Nm3	0.00000598	ĮĮ,	ND (0.0000016)		0.00000595 F	بتنا
123478-HxCDD	Meth 23X	ug/Nm3	ND (0.0000036)		ND (0.0000031)		ND (0.0000039)	
123478-HxCDF	Meth 23X	ug/Nm3	0.0000102	В	0.00000193 BF	BF	0.00000145 BF	BF
1234789-HpCDF	Meth 23X	ug/Nm3	ND (0.0000040)		ND (0.0000028)		ND (0.0000039)	
123678-HxCDD Meth 23X	Meth 23X	ug/Nm3	ND (0.0000029)		ND (0.0000025)	-	ND (0.0000032)	

Sample Type: Filtered Solids/Solvent Rinses/XAD Resin Stream: ESP Outlet Collection Method: PCDD/PCDF for Dioxins and Furans (M23)

Analyte	Analytical	Units	Run 1 Com 1	Com 1	Run 2 Com 2	Com 2	Run 3	Com 3
	Technique							
(111679 UVCDE	Meth 23X	Tue/Nm3	0.00000237		ND (0.0000012)		ND (0.0000018)	
1230/0114(D)		III N/MI	ND (0.0000018)		ND (0.0000019)		ND (0.0000028)	
123/0-recubb	Meth 23X	me/Nm3		Ĺ	ND (0.0000012)		ND (0.0000018)	
123/8-FCCDI	Moth 23 X	no/Nm3	ND (0.0000033)		ND (0.0000028)		ND (0.0000035)	
123769-0XCDD	Meth 23X	ug/Nm3	ND (0.0000026)		ND (0.0000022)		ND (0.0000028)	
73.6678-HvCDF	Meth 23X	ue/Nm3		В	0.00000264	BF	0.00000389 B	В
23478-PECDF	Meth 23X	ug/Nm3	0.00000135 F	ţs.	ND (0.0000012)		ND (0.0000018)	
2378-TCDD	Meth 23X	ug/Nm3	ND (0.0000015)		ND (0.0000012)		ND (0.0000016)	
2378-TCDF	Meth 23X	ug/Nm3	0,00000248	<u></u>	ND (0.0000012)		ND (0.0000016)	
OCDD	Meth 23X	ug/Nm3	0.0000278 BF	BF	0.0000475 B	<u>a</u>	0.000109	B
OCDF	Meth 23X	ug/Nm3	ND (0.0000062)		0.00000612		0.0000205	
TOTAL HoCDD	Meth 23X	ug/Nm3	0.00000394		0.0000106		0.0000197	
TOTAL HCDF	Meth 23X	ug/Nm3	0.00000237		ND (0.0000019)		0.00000750	
TOTAL HXCDD	Meth 23X	ug/Nm3	ND (0.0000033)		ND (0.0000028)		0.00000273 F	(۲.
TOTAL HxCDF	Meth 23X	ug/Nm3	0.0000216		0.00000593	Ľ.	0.00000644	
TOTAL PeCDD	Meth 23X	ug/Nm3	ND (0.0000018)		0.00000134	ഥ	ND (0.0000028)	
TOTAL PeCDF	Meth 23X	ug/Nm3	0.0000067		ND (0.0000012)		0.00000319	
TOTAL TCDD	Meth 23X	ug/Nm3	ND (0.0000015)		ND (0.0000012)		0.000000800	
TOTAL TCDF	Meth 23X	ug/Nm3	0.00000248 F	Ŀ	0.00000106	ĹĽ,	ND (0.0000016)	
IOIAL ICDF	VCZ Imalal	Cinuxi An	0.00000		001000000			

Sample Type: Tenax-Tenax + Charcoal A Collection Method: VOST Stream: ESP Outlet

ane	ug/Nm3 ug/Nm3 ug/Nm3	0.671 ND (0.52) ND (0.52)					
ane	ug/Nm3	ND (0.52) ND (0.52)		0.966		36.8	
	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
I.I.2-Trichloroethane				ND (0.51)		ND (0.53)	
1.1-Dichloroethane GCMS	ug/Nm3	ND (0.52)		ND (0.51)	_	ND (0.53)	
1.1-Dichloroethene	ug/Nm3	ND (0.52)	-	ND (0.51)		ND (0.53)	
1.2-Dichlorobenzene GCMS	ug/Nm3	ND (0.52)	-	ND (0.51)	_	ND (0.53)	
1.2-Dichloroethane GCMS	ug/Nm3	15.0		4.12		2.53	
1,2-Dichloropropane GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
1,3-Dichlorobenzene GCMS	ug/Nm3	ND (0.52)	-:-	ND (0.51)		ND (0.53)	<u>-</u>

Analytical Data Used In Calculations

Sample Type: Tenax-Tenax + Charcoal A Stream: ESP Outlet Collection Method: VOST

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1 4-Dichlorobenzene	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
2-Butanone	GCMS	ug/Nm3	ND (2:0)		ND (2.5)		ND (2.6)	-
2-Hexanone	GCMS.	ug/Nm3	ND (2.6)		ND (2.5)		ND (2.6)	
4-Methyl-2-Pentanone	GCMS	ug/Nm3	ND (2.6)		ND (2.5)		ND (2.6)	
Acetone	GCMS	ug/Nm3	ND (2.6)		ND (2.5)		ND (2.6)	
Benzene	GCMS	ug/Nm3	2.63		19.9		6.84	
Bromodichloromethane	GCMS	ug/Nm3	0.619		ND (0.51)		ND (0.53)	
Вготобот	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
Bromomethane	GCMS	ug/Nm3	0.774		199.0		ND (0.53)	
Carbon Disulfide	GCMS	ug/Nm3	61.19		0.762		0.737	
Carbon Tetrachloride	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
Chlorobenzene	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	<u></u>
Chloroethane	GCMS	ug/Nm3	96:1	ŋ	ND (0.51)		ND (0.53)	
Chloroform	GCMS	ug/Nm3	ND (0.52)		0.813		ND (0.53)	
Chloromethane	GCMS	ug/Nm3	9.80		ND (0.51)		3.68	-11-
Dibromochloromethane	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
Ethyl Benzene	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
Methylene Chloride	GCMS	ug/Nm3	1.24		0.762		5.79	-
Styrene	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
Tetrachloroethene	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
Toluene	GCMS	ug/Nm3	1.03		2.54		0.894	
Trichloroethene	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
Trichlorofluoromethane	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	
Vinyl Acetate	GCMS	ug/Nm3	ND (2.6)		ND (2.5)		ND (2.6)	
Vinyl Chloride	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	-
cis-1,3-Dichloropropene	GCMS	ug/Nm3	ND (0.52)		(15.0) QN		ND (0.53)	
m,p-Xylene	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		0.631	
o-Xylene	GCMS	ug/Nm3	ND (0.52)		(15.0) QN		ND (0.53)	
trans-1,2-Dichloroethene	GCMS	ug/Nm3	ND (0.52)		(15:0) QN			
rrans-1,3-Dichloropropene	GCMS	ug/Nm3	ND (0.52)		ND (0.51)		ND (0.53)	

Sample Type: Tenax-Tenax + Charcoal B Collection Method: VOST Stream: ESP Outlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1,1,1-Trichloroethane	GCMS	ug/Nm3	0.701		ND (0.49)			_
1,1,2,2-Tetrachloroethane	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
1,1,2-Trichloroethane	GCMS	ng/Nm3	ND (0.54)		ND (0.49)			
1,1-Dichloroethane	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
1,1-Dichloroethene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
1,2-Dichlorobenzene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
1,2-Dichloroethane	GCMS	ug/Nm3	17.3		0.829			
1,2-Dichloropropane	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
1,3-Dichlorobenzene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
1,4-Dichlorobenzene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
2-Butanone	GCMS	ug/Nm3	(L.C) QN		ND (2.4)			
2-Hexanone	GCMS	ug/Nm3	(7.2) QN		ND (2.4)			
4-Methyl-2-Pentanone	GCMS	ug/Nm3	ND (2.7)		ND (2.4)			
Acetone	GCMS	ug/Nm3	(7.2) QN		ND (2.4)			
Benzene	GCMS	ug/Nm3	5.02		4.29			
Bromodichloromethane	GCMS	ug/Nm3	0.593		ND (0.49)			
Вготобот	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Bromomethane	GCMS	ug/Nm3	0.593		ND (0.49)			
Carbon Disulfide	GCMS	ug/Nm3	0.863		0.683			
Carbon Tetrachloride	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Chłorobenzene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Chloroethane	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Chloroform	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Chloromethane	GCMS	ug/Nm3	3.56		ND (0.49)			
Dibromochloromethane	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Ethyl Benzene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Methylene Chloride	GCMS	ug/Nm3	2.97		0.878	 -		
Styrene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Tetrachloroethene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)	· .		
Toluene	GCMS	ug/Nm3	0.863		0.780	_		
Trichloroethene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
Trichlorofluoromethane	GCMS	ug/Nm3	ND (0.54)		ND (0.49)	-		
Vinyl Acetate	GCMS	ug/Nm3	ND (2.7)		ND (2.4)			
		֭֓֞֜֞֜֜֜֝֜֜֓֓֓֓֓֟֜֜֟֓֓֓֓֓֟֜֟֓֓֓֓֓֓֟֜֜֟֓֓֓֓֟֓֓֓֡֓֓֡֓֡֓֡֓֡				1		4

Analytical Data Used In Calculations

Sample Type: Tenax-Tenax + Charcoal B Stream: ESP Outlet Collection Method: VOST

Analyte	Analytical Technique	Units	Run 1	Com 1	Kun 2	Com 2	Kun 3	Com 3
н.								1
[Vinvl Chloride	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
	COMS	ne/Nm3	ND (0.54)		ND (0.49)			ر عاد
	GCMS	no/Nm3	ND (0.54)		ND (0.49)			ميكندية
m,p-Aylene		C	(P) () (I)		(07 C) CIN			5-
o-Xylene	CCMS	ugynma	(+C.D) CIVI		(CEO) CAI			
trans-1 2-Dichloroethene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			
trans-1,3-Dichloropropene	GCMS	ug/Nm3	ND (0.54)		ND (0.49)			

Stream: Service Water Collection Method: Grab Sample Type: Not Specified

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury	CVAA	mg/L	ND (0.000033)		ND (0.000033)		ND (0.000033)	
Arsenic	GFAA	mg/L	ND (0.00065)		0.00113		0.00171	
u		mg/L	ND (0.00027)		ND (0.00027)	ا	ND (0.00027)	
		mg/L	0.00626 B	В	0.0124	m .	0.0125	m
_ uni		mg/L	ND (0.0018)		ND (0.0018)		ND (0.0018)	
Chloride	IC	mg/L	11.5		11.6		12.4	
Sulfate	IC	mg/L	59.2		58.3		47.1	
Aluminum	ICAP	mg/L	1.25 B	В	2.20 B	В	1.89 B	В
Antimony	ICAP	mg/L	ND (0.076)		(9100) ON	В	(920) ON	В
Barium	ICAP	mg/L	0.0494	æ	1690'0	В	0.0659	В
Beryllium	ICAP	mg/L	0.00156		0.000540		0.00458	
Boron	ICAP	mg/L	0.0427	æ	0.0410	В	0.0417 B	Д
Calcium	ICAP	mg/L	23.9	m	25.8	В	21.8	В
Chromium	ICAP	mg/L	ND (0.0052)		ND (0.0052)		0.00788	
Cobalt	ICAP	mg/L	0.00713	<u>a</u>	0.00460	Д	ND (0.0041)	Д
Copper	ICAP	mg/L	0.0128	m	0.0173 B	æ	0.0212	В
Iron	ICAP	mg/L	3.00	•	4.70		4.52	
Magnesium	ICAP	mg/L	6.27	<u>m</u>	11.9	В	5.75	я
Manganese	ICAP	mg/L	0.286		0.438		0.432	-
Molybdenum	ICAP	mg/L	ND (0.0074) B	æ	ND (0.0074) B	B	0.0115	М

Analytical Data Used In Calculations

Stream: Service Water Collection Method: Grab Sample Type: Not Specified

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
Nickel	IICAP	mg/L	ND (0.014)		ND (0.014)		0.0145	
Phosphorus		mg/L	ND (0.061)		ND (0.061)		ND (0.061)	
Potassium	ICAP	mg/L	1.62		1.76		1.84	
Silver	ICAP	mg/L	ND (0.0052)		ND (0.0052)		ND (0.0052)	
Sodium	ICAP	mg/L	10.4 B	B	10.9	В	10.1 B	В
Titanium	ICAP	mg/L	0.0139	В	0.0229	B	0.0251	<u>B</u>
Vanadium		mg/L	0.00532 B	В	ND (0.0045) B	60	0.00757	В
Finoride	SIE	mø/L	0.114IB	В	0.120IB	В	0.116IB	E
							, , , , , , , , , , , , , , , , , , , ,	
Total phosphate	tot P	mg/L	ND (0.020)		ND (0.020)		0.0331	
Stream: Service Water Collection	Collection Method: Grab	Sample 1	Sample Type: Not Specified	ED				
						i		
Analyte	Analytical	Units	Run !	Com 1	Run 2	Com 2	Run 3	Com 3

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com
	CVAA	mg/L					ND (0.000033)	
	GFAA	mg/L					0.00218	
	GFAA	mg/L					ND (0.00027)	ć
	GFAA	mg/L mg/L					ND (0.0018)	ņ
		mg/L					12.1	
	<u>ာ</u>	mg/L					46.9	
	ICAP	mg/L					2.35	2.35 B
	ICAP	mg/L					ND (0.076)	8
	ICAP	mg/L					0.0669	æ
	ICAP	mg/L					ND (0.00051)	
Boron	ICAP	mg/L					0.0364 B	æ
	ICAP	mg/L					23.0	B
mm	ICAP	mg/L	•				ND (0.0052)	
	ICAP	mg/L					0.00480	<u>m</u>
Copper	ICAP	mg/L					0.0163 B	В

Analytical Data Used In Calculations

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Stream: Service Water Collection Method: Grab Sample Type: Not Specified

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
				,			00.3	
Iron	ICAP	mg/L					3.69	6
Magnesium	ICAP	mg/L					0.02	מ
Manganese	ICAP	mg/L					0.460	ſ
Molyhdenum	ICAP	mg/L					ND (0.00/4)	n
Zickel	ICAP	mg/L					0.0160	
Phoenhorus	ICAP	me/L					ND (0.061)	
Detection	ICAP	mø/l.					1.87	
rotasium.	ICAD						ND (0.0052)	
Silver	ולאן נסנה	, A					10.3	<u>~</u>
Sodium	ICAP	mg/L					10000	۵ ۵
Titanium	ICAP	mg/L					0.0261	Ω Ω
Vanadium	ICAP	mg/L					0.00619	Ω
							7.00	
Fluoride	SIE	mg/L					0.117	Б
	tot D	Imo/I					0.0242	
Total phosphate		76						

Stream: Sorbent Collection Method; Grab Composite Sample Type: Dolomite

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Mercury	CVAA	mg/kg	ND (0.012)		ND (0.012)		ND (0.012)	
Arsenic	GFAA	mg/kg	2.19		2.12		1.24	
Cadmium	GFAA	mg/kg	0.140		0.173		0.0929	-
Lead	GFAA	mg/kg	7.30 B	æ	6.15	ഇ	7.22 B	В
Selenium	GFAA	mg/kg	0.903		0.475		0.982	
Sulfate	IC	mg/kg	6420		6370		6460	
[Aluminum	ICAP	mg/kg	659		662		632	
Antimony	ICAP	mg/kg	ND (4.9)		ND (5.5)		ND (5.5)	-
Barium	ICAP	mg/kg	3.45	a	3.50	8	3.43	В
Beryllium	ICAP	mg/kg	0.0492		ND (0.031)		ND (0.031)	
Boron	ICAP	mg/kg	32.9 B	В	31.0 <mark>B</mark>	<u>a</u>	33.7	Ω
Calcium	ICAP	mg/kg	193000 B	В	192000 B	В	193000 B	В

Analytical Data Used In Calculations

Stream: Sorbent Collection Method: Grab Composit Sample Type: Dolomite

Analyte	Analytical Technique	Units	Run 1	Com i	Run 2	Com 2	Run 3	Com 3
Chromium	ICAP	mg/kg	2.79 B	В	2.88 B	B	2.86 B	B
Cobalt		mg/kg	0.461	В	ND (0.50)	8	ND (0.50)	В
Copper	ICAP	mg/kg	ND (0.42)		ND (0.47)		ND (0.47)	
Iron	ICAP	mg/kg	2130	В	2430	В	2160	В
Magnesium	ICAP	mg/kg	106000		106000		106000	
Manganese	ICAP	mg/kg	72.0		72.9		71.9	
Molybdenum	ICAP	mg/kg	1.42	B	1.34	В	1.62	Ø
Nickel	ICAP	mg/kg	9.61	В	16.8 B	В	0.524	Ø
Phosphorus	ICAP	mg/kg	ND (6.1)		ND (6.8)		ND (6.8)	
Potassium	ICAP	mg/kg	240	B	218		255	<u>m</u>
Silver	ICAP	mg/kg	ND (0.37)		ND (0.41)		ND (0.41)	
Sodium	ICAP	mg/kg	194	В	861	В	202	æ
Titanium	ICAP	mg/kg	7.49 B	Ф	10.9	8	9.65	В
Vanadium	ICAP	mg/kg	4.75		4.88		5.17	
Chloride	SIE	me/kg	369		336		246	
Fluoride	SIE	mg/kg	297 B	В	208 B	В	136 B	В

Stream: Sorbent Collection Method: Grab Composite Sample Type: Dolomite FD

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
Mercury	CVAA	mg/kg					ND (0.012)	
Arsenic	GFAA	mg/kg					2.09	L
Cadmium	GFAA	mg/kg					0.164	
Lead	GFAA	mg/kg					69'9	B
Selenium	GFAA	mg/kg					1.10	<u></u>
31.0	<u> </u>							
Sulfate). 	твукв					6420	i
Aluminum	ICAP	mg/kg					647	
Antimony	ICAP	mg/kg					ND (5.8)	
Barium	ICAP	mg/kg					4.14	В
Recolling .	ICAD	mo/ko					ND (0.033)	!

Analytical Data Used In Calculations

Stream: Sorbent Collection Method: Grab Composit Sample Type: Dolomite FD

I ecunidae		Well &	C0111 4		Comp
ICAP mg/kg				33.3 B	B
		•		194000	œ.
				2.84	œ
ICAP mg/kg				ND (0.53) B	<u>a</u>
			-	ND (0.50)	
				2160	<u> </u>
_				107000	
_				72.7	
				1.54	m
7				1.71	8
_				ND (7.2)	
_				247	Ω
_				ND (0.44)	
_				200	B
					<u>m</u>
				5.35	
				321	
				385	В
SIE mg/kg SIE mg/kg					321 385

Appendix B: Detailed Analytical Data

DATA NOT USED IN CALCULATIONS

Stream: APF As Collection Method: Grab Composit Sample Type: Fly As

Com 2 Run 3 Com 3	309 ND (3.2) 69.2 B
Run 2	291 4.41 65.5 ND (49)
Com 1	2 B
Run 1	272 ND (2.9) 32.2 B ND (45)
Units	mg/kg mg/kg mg/kg mg/kg
Analytical Technique	ICAP ICAP ICAP ICAP
Analyte	Arsenic Cadmium Lead Selenium

Sample Type: Fly Ash Stream: APF Ash Collection Method: Grab Composite

Com 2 Run 3 Com 3	307 ND (2.6) 98.4 B	ND (41)
تق		
Run 2		
Com 1		
Run 1		
Units	mg/kg mg/kg mg/kg mg/kg	
Analytical Technique	ICAP ICAP ICAP	
Analyte	Arsenic Cadmium Lead Selenium	

Stream: APF Inlet Collection Method: M29 Sample Type: Filtered Solids

Run 3 Com 3		1310	ND (14) C	315 C	ND (020) CN	
Com 2		,	ပ	ပ	ပ	
Run 2		1390	ND(17) C	308	ND (270) C	
Com 1		ζ	ر د	ا د	<u>၂</u>	
Run 1	030	(C) UN	(12) (N)	/07 /07	OKI) CIN	
Units	ue/Nm3	ue/Nm3	no/Nm3	ug/Mm3	CHILLIAN	
Analytical Technique	ICAP	ICAP	ICAP	ICAP		
Analyte	Arsenic	Cadmium	Lead	Selenium		

Collection Method: Multimetals Train Sample Type: Nitric Acid Impingers + TLR Stream: APF Inlet

Analytical Data Not Used In Calculations

Sample Type: Nitric Acid Impingers + TL Collection Method: Multimetals Trai Stream: APF Inle

Analyte	Analytical Technique	Units	Run 1 C	Com 1	Run 2	Com 2	Run 3	Com 3
Arsenic	IICAP	ug/Nm3	ND (13)		ND (14)		(E1) QN	
Beryllium	ICAP	ug/Nm3	ND (0.14)		ND (0.16)		ND (0.14)	
Cadmium		ug/Nm3	ND(1.1) C	_	ND (1.2) C	၁	ND (1.0) C	ပ
Chromium		ug/Nm3	39.0 C		2.52	ပ	13.7	ပ
Cobalt		ug/Nm3	ND (1.1) BC	ن ن	ND (1.3)	BC	ND (1.1) BC	BC
Conner	ICAP	ug/Nm3	166 B	_	9.21	BC	52.8	BC
Lead	ICAP	ug/Nm3	7.14 B	ပ	8.55 BC	BC	8.46 BC	BC
Manganese	ICAP	ug/Nm3	33.4 B	ر ن	11.3	BC	4.31	BC
Molyhdenum	ICAP	ug/Nm3	4.97		ND (2.3)		ND (2.0)	
Nickel	ICAP	ug/Nm3	57.1 C	-	20.8 C	၁	30.0 C	ပ
Selenium	ICAP	ug/Nm3	ND (24) B		ND (27) B	В	ND (24) B	я
Vanadium	ICAP	ug/Nm3	ND (1.2) C		2.57 C	C	ND (1.2)	၁
Mercury	TICPMS	lug/Nm3	30.9[C		29.2	ာ	32.7	೦

Stream: APF Outlet Collection Method: M29 Sample Type: 47 mm Filter + Solids

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Arsenic	ICAP	ug/Nm3	0:200		ND (0.21)		ND (0.16)	
Cadmium	ICAP	ug/Nm3	ND (0.021)		ND (0.023)		ND (0.017)	لننسا
Lead	ICAP	ug/Nm3	ND (0.12)		0.165	-	ND (0.095)	,
Selenium	ICAP	ug/Nm3	ND (0.32)		ND (0.36) C	C	ND (0.26)	

Stream: APF Outlet Collection Method: MM5 Sample Type: 47 mm Filter 1:4 dil

	Analytical Technique	Units	Units Run 1 Com 1	Com 1	Run 2	Com	2 Run 3 Com	Com 3
1,2,4-Trichlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2,4,5-Trichlorophenol	GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3					ND (1.3) ND (1.1) ND (1.0) ND (0.98) (7.1) ON	

Analytical Data Not Used In Calculations

Stream: APF Outle Collection Method: MM5 Sample Type: 47 mm Filte 1:4 di

ophenol GCMS henol GCMS enol GCMS enol GCMS uene GCMS thalene GCMS ol GCMS ol GCMS ol GCMS entralene GCMS ol GCMS ethylphenol GCMS ethylphenol GCMS anthene GCMS anthene GCMS for GCMS					
ol GCMS GCMS GCMS GCMS GCMS GCMS GCMS ine GCMS GCMS henol GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				10 1/ 11/	
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GCMS GCMS GCMS GCMS GCMS ine GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		_		(7:1) QN	
ne GCMS GCMS ane GCMS dine GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				ND (4.3)	
ne GCMS ine GCMS dine GCMS dine GCMS GCMS dylphenol GCMS GCMS ene GCMS GCMS ene GCMS GCMS ene GCMS GCMS ene GCMS				 (9:1) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				ND (2.4)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				ND (0.71)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS		_		ND (1.2)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				(29.0) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				ND (1.4)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				(r.1) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				(6:1) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				ND (2.3)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				ND (2.1)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				ND (2.7)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS		-		ND (1.3)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS				(L.C) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS				ND (1.8)	
GCMS S S S S S S S S S S S S S S S S S S				(11.0) ON	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS			-	ND (0.43)	
GCMS GCMS GCMS GCMS GCMS GCMS				ND (0.39)	-
GCMS GCMS GCMS GCMS GCMS GCMS				ND (0.60)	-
GCMS GCMS GCMS GCMS GCMS				ND (0.65)	_
ol GCMS ol GCMS olthalate GCMS thalate GCMS thalate GCMS ofthracene GCMS				ND (0.62)	
ol GCMS hthalate GCMS GCMS thalate GCMS dCMS hthalate GCMS dCMS nthracene GCMS				22.6	
cylphthalate GCMS GCMS iphthalate GCMS iphthalate GCMS h)anthracene GCMS				ND (2.4)	
GCMS iphthalate GCMS iphthalate GCMS h)anthracene GCMS				ND (0.58)	
iphthalate GCMS iphthalate GCMS h)anthracene GCMS				ND (0.48)	
GCMS	_			15.4	-
GCMS				ND (0.36)	
27.50				ND (0.73)	
				ND (0.46)	
Diethylphthalate GCMS ug/Nm3		-		ND (0.44)	

Analytical Data Not Used In Calculations

Stream: APF Outle Collection Method: MM5 Sample Type: 47 mm Filte 1:4 di

Analyte	Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
•	Technique							
Dimethylphthalate	GCMS	ug/Nm3					ND (0.57)	
Fluoranthene	GCMS	ug/Nm3					ND (0.34)	
Fluorene	GCMS	ug/Nm3					ND (0.56)	
Hexachlorobenzene	GCMS	ug/Nm3					ND (1.8)	
Hexachlorobutadiene	GCMS	ug/Nm3					ND (1.8)	
Hexachlorocyclopentadiene	GCMS	ug/Nm3					(1.1) ON	
Hexachloroethane	GCMS	ug/Nm3					(6:1) QN	
Indeno(1,2,3-cd)pyrene	GCMS	ug/Nm3					ND (0.55)	
Isophorone	GCMS	ug/Nm3					ND (0.54)	
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3					(9:1) QN	
Naphthalene	GCMS	ug/Nm3					ND (0.44)	
Nitrobenzene	GCMS	ug/Nm3					(16.0) GN	
Pentachlorophenol	GCMS	ug/Nm3					ND (3.4)	
Phenanthrene	GCMS	ug/Nm3					(0.39) UN	
Phenol	GCMS	ug/Nm3					ND(1.0)	
Pyrene	GCMS	ug/Nm3					ND (0.31)	
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3					ND (1.1)	· ·
bis(2-Chloroethyl)ether	GCMS	ug/Nm3					ND (1.4)	
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3					1.58	_

Sample Type: Nitric Acid Impingers + TLR Collection Method: Multimetals Train Stream: APF Outlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Arsenic	GFAA	ug/Nm3	2.82		3.99		4.89	
Cadmium	GFAA	ug/Nm3	0.108 C	ပ	ND (0.066) C	၁	ND (0.054) C	ပ
Lead	GFAA	ug/Nm3	ND (0.62) BC	BC	ND (0.71) BC	BC	0.650	BC
Selenium	GFAA	ug/Nm3	22.0	ပ	53.5 C	ນ	48.1 C	ပ
Antimony	ICAP	ug/Nm3	ND (23) B	В	(9Z) QN	В	ND (22)	B
Arsenic	ICAP	ug/Nm3	ND(14)		(91) QN		ND (13)	
Beryllium	ICAP	ug/Nm3	ND (0.15)	-	ND (0.18)		ND (0,15)	
Cadmium	ICAP	ng/Nm3	ND (1.2) C	ပ	ND (1.3) C	ပ	ND (1.1) C	၁

Sample Type: Nitric Acid Impingers + TL Collection Method: Multimetals Trai Stream: APF Outle

Analyte	Analytical Technique	Units	Run 1	Com I	Run 2	Com 2	Run 3	Сош 3
Chromium	IICAP	ue/Nm3	2.79 C	ပ	ND (1.8) C	၁	191	၁
Cobalt	ICAP	ug/Nm3	ND (1.2)	BC	ND (1.4)	BC	ND (1.2)	BC
Conner		ug/Nm3	ND (2.8)	BC	ND (3.2)	ВС	ND (2.6)	BC
Lead	ICAP	ug/Nm3	ND (6.5) BC	BC	ND (7.4) BC	BC	ND (6.1) BC	BC
Manganese	ICAP	ug/Nm3	1.68	BC	1.95	BC	25.6	BC
Molybdenum	ICAP	ug/Nm3	6.10		ND (2.5)		2.54	
Nickel	ICAP	ug/Nm3	61.0	ပ	7.97	ပ	8.66	<u>ပ</u>
Selenium	ICAP	ug/Nm3	61.3 B	B	53.0 B	ш	48.6	<u>a</u>
Vanadium	ICAP	ug/Nm3	ND (1.4) C	င	ND (1.6) C	၁	ND (1.3) C	ပ
Mercury	ICPMS	ug/Nm3	1.61	၁	24.4 C	C	18.6 C	၁

Stream: Bed Ash Collection Method: Grab Composite Sample Type: Bottom Ash

Analyte	[<u> </u>	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Arsenic IC	TICAP	mg/kg	8.09		75.9		ND (30	
Cadmium	ICAP	mg/kg	ND (2.9)		ND (3.4)		ND (3.2)	
Lead	ICAP	mg/kg	(71) QN	В	32.1 B	В	ND (18)	<u>B</u>
Selenium	ICAP	mg/kg	ND (46)		ND (54)		(0S) QN	
Camera Del at Collection Making Cont. Commonity Common Ash	Machael Cash Com	S. Sai	unle Tunes Dottom		ED.			

9 Sample Type: Bottom Ash Collection Method: Grab Composite Stream: Bed Ash

Analyte	Analytical Technique	Units	s Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
	ICAP ICAP ICAP ICAP	mg/kg mg/kg mg/kg mg/kg					59.6 ND (2.9) ND (17) B ND (46)	В

Analytical Data Not Used In Calculations

Stream: Coal Past Collection Method: Grab Composit Sample Type: Filtered Solid

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3 C	Com 3
							1010	
Arsenic Selenium	GFAA GFAA	9/8n ng/8	21.0 ND (0.50)		0.67		1.00	
Molybdenum	ICAP	ng/g	ND (3.0)		ND (3.0)		83.0	
			V 00		[7]		82.5	
Barium	A V	ug/g /a	15.5		191		15.1	
Bromine	NAA V	3/2n	O ON		ND (2.7)		ND (2.2)	
Cadmium	NAN AAN	u8/8 ue/e	1200		1500		1300	
Carcium	¥¥X	ug/g	13.9		14.2		15.3	
Cesium	NAA	g/gn	1.45		1.57		1.57	-
Chlorine	X Y Y	g/gn	848		873		838	
Chromium	NAA	8/Bn	17.8		19.7		18.2	
Copper	NAA	ng/g	14.3		14.3		12.9	
Europium	NAA	ng/g	0.289		0.314		0.325	
Hafnium	NAA	g/gn	0.785		0.804		0.913	
Iodine	NAA	ng/g	1.90		88.1		7.58	
Lanthanum	NAA	8/8n	9.65		8.09		00.7	
Lutetium	NAA	ng/g	0.135		0.137		0.108	
Magnesium	NAA	ng/g	627		745		///	
Mercury	NAA	a/gn	0.0474		0.110		0.0292	
Neodymium	NAA	ag/gn	9.34		7.34		6.59	
Rubidium	NAA	a/gn	26.1		19.7		0.61	
Samarium	NAA	ng/g	1.41		1.46		1.52	
Scandium	NAA	ng/g	3.21		3.31		3.41	
Selenium	NAA	g/gn	1.59		17.1		16.1	· •
Strontium	NAA	ng/g	18.9		51.6	-	49.7	
Tantalum	NAA	a/gn	0.236		0.200		0.243	
Terbium	NAA	a/gn	0.161		0.166		0.174	
Thorium	NAA	a/gn	2.28		2.35		2.44	•
Tin	NAA	ng/g	(<i>1.1</i>) ON		ND (7.8)	-	(1.7) QN	
Titanium	NAA	g/gn]	808	-	829	-	696	
Tungsten	NAA	ng/g	56.0		65.2		77.6	
Uranium	NAA	g/gn	0.836		0.719		869.0	
								2

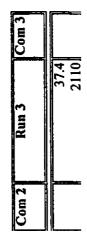
Analytical Data Not Used In Calculations

Sample Type: Filtered Solid Collection Method: Grab Composit Stream: Coal Past

Analyte		Analytical Technique	Units	Run 1	Com 1	11 Run 2	Com 2	Com 2 Run 3	Com 3
Ytterbium Zinc Ziconium	NAA NAA NAA		a/an a/an a/an		0.547 7.72 28.0			0.420 11.1 36.3	ā
Stream: Coal Paste Collection Method: Grab (Collection Method:	d: Grab Com	Composite S	Sample Type: Filtered Solids	Filtered Solid	FD			

Analyte	Analytical	Units	Run I	Com 1	Run 2	Com 2	Run 3	Com 3
	Technique							
Amenic	IGFAA	6/611					27.0	
=	GFAA	g/gn					ND (0.50)	
Molybdenum	ICAP	a/an	٠				ND (3.0)	
Rarinm	NAA	ug/g					101	
Bromine	NAA	s/sn			-		15.9	
Cadmium	NAA	a/gn					ND (2.6)	
Calcium	NAA	3/3n					0101	
Cerium	NAA	8/8n					16.5	
Cesium	NAA	ng/g					E7.13	
Chlorine	NAA	ng/g					CIL	
Chromium	NAA	ug/g					20.1	
Copper	NAA	a/gn					13.3	
Europium	NAA	ng/g					0.353	
Hafnium	NAA	ng/g					986.0	
lodine	NAA	a/gn					2.02	
Lanthanum	NAA	8/8n					7.74	
Lutetium	NAA	a/gn					0.127	
Magnesium	NAA	ng/g					820	
Mercury	NAA	8/8n					0.0811	
Neodymium	NAA	ng/g					7.07	
Rubidium	NAA	8/8n					20.6	
Samarium	NAA	a/gn					1.57	
Scandium		a/gn					3.68	
Selenium		ng/g					2.03	
								,

Appendix B: Detailed



Stream: ESP Ash Collection Method: Grab Composite Sample Type: Fly Ash

Analyte Ans Tec	Analytical Technique	Units	its Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Vicenty	IICAP	ma/ka	TANA		052		411	
	4101	G.A.	E 63 EV		0000		C C CIN	
Cadmium	ICAR	mg/kg	(V.C) (N.V)		(0.C) GN		(0.C) (JN)	ينا
Lead	ICAP	mg/kg	80.6 B	æ	94.2 B	<u> </u>	122	22 B
Selenium	ICAP	mg/kg	ND (58)		(95) QN		ND (57)	_

Stream: ESP As Collection Method: Grab Composit Sample Type: Fly As FD

		Units	Run 1	Com 1	R	Com 2	Run 3	Сош 3
Arsenic Cadmium Lead Selenium 1C/	4 4 4 4 4 4 4 4	mg/kg mg/kg mg/kg mg/kg					ND (3	550 (1.3) (52)

Sample Type: MeCl2 PNR/MM5 Filter Collection Method: MM5 Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	1 Run 2	Com 2	Run 3	Com 3
Di-n-butylphthalate	GCMS	ug/Nm3		18 BE				

Sample Type: MeCl2 PNR/MM5 Filter 1:2 dil Collection Method: MM5 Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1,2,4-Trichlorobenzene	GCMS	ug/Nm3	ND (4.8)					
1,2-Dichlorobenzene	GCMS	ug/Nm3	ND (4.2)					
1,3-Dichlorobenzene	GCMS	ug/Nm3	ND (4.0)					
1,4-Dichlorobenzene	GCMS	ug/Nm3	ND (3.8)					•
2,4,5-Trichlorophenol		ug/Nm3	ND (7.1)					
2,4,6-Trichlorophenol		ug/Nm3	ND (7.4)					
2,4-Dichlorophenol	GCMS	ug/Nm3	ND (5.4)					
2,4-Dimethylphenol	GCMS	ug/Nm3	ND (5.3)					

Analytical Data Not Used In Calculations

Sample Type: MeCi2 PNR/MMS Filter 1:2 dil Stream: ESP Inlet Collection Method: MM5

Technique GCMS	Anslyte	J Analytical	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
ne GCMS ug/Nm3		Technique							
GCMS	[2.4-Dinitrophenol	GCMS	ug/Nm3	ND (20)					
ne GCMS ug/Nm3	2,4-Dinitrotoluene	GCMS	ug/Nm3	(9.9) QN					
ne GCMS ug/m³	2,6-Dinitrotoluene	GCMS	ug/Nm3	(9.6) QN					
alene GCMS ug/Nm3	2-Chloronaphthalene	GCMS	ug/Nm3	ND (2.7)					
alene GCMS ug/Nm3	2-Chlorophenol	GCMS	ug/Nm3	ND (4.2)					
cetry lphenol GCMS ug/Nm3	2-Methylnaphthalene	GCMS	ug/Nm3	ND (2.7)					• • •
GCMS ug/Nm3 GCMS ug/Nm3 chylphenol GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 ug/Nm3 thene GCMS ug/Nm3 ug/Nm3 thene GCMS ug/Nm3 ug/Nm3 thene GCMS ug/Nm3 ug/Nm3 thene GCMS hene GCMS thene	2-Methylphenol	GCMS	ug/Nm3	ND (5.1)					
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2-Nitroaniline	GCMS	ug/Nm3	ND (8.4)	-				
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2-Nitrophenol	GCMS	ug/Nm3	ND (8.0)					
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	3,3'-Dichlorobenzidine	GCMS	ug/Nm3	ND (3.6)			-		
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	3-Nitroaniline	GCMS	ug/Nm3	ND (8.2)					
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	4,6-Dinitro-2-methylphenol	GCMS	ug/Nm3	ND(12)					
GCMS ug/Nm3 GCMS ug/Nm3 anthene GCMS ug/Nm3 anthene GCMS ug/Nm3	4-Chloro-3-methylphenol	GCMS	ug/Nm3	ND (5.9)					
GCMS ug/Nm3 GCMS ug/Nm3 anthene GCMS ug/Nm3 erylene GCMS ug/Nm3	4-Nitroaniline	GCMS	ug/Nm3	ND (7.3)					
ne GCMS ug/Nm3 anthene GCMS ug/Nm3 anthene GCMS ug/Nm3 anthene GCMS ug/Nm3 anthene GCMS ug/Nm3 thalate GCMS ug/Nm3 thracene GCMS ug/Nm3 ate GCMS ug/Nm3 GCMS ug/Nm3 ate GCMS ug/Nm3	4-Nitrophenol	GCMS	ug/Nm3	(81)QN					
GCMS	Acenaphthene	GCMS	ug/Nm3	ND (3.0)					
GCMS	Acenaphthylene	GCMS	ug/Nm3	(7.1) QN					
GCMS	Anthracene	GCMS	ug/Nm3	(7.1) ON		-	-		
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	Benzo(b)fluoranthene	GCMS	ug/Nm3	(0.1) dn					
GCMS GCMS GCMS GCMS GCMS Ug/Nm3	Benzo(g,h,i)perylene	GCMS	ug/Nm3	ND(1.1)					
GCMS GCMS GCMS GCMS GCMS GCMS GCMS Ug/Nm3	Benzo(k)fluoranthene	GCMS	ug/Nm3	(1.1) DN					
GCMS Ug/Nm3	Benzoic acid	GCMS	ug/Nm3	(91) QN					
GCMS Ug/Nm3	Benzyl alcohol	GCMS	ng/Nm3	ND (7.8)					
GCMS ug/Nm3	Butylbenzylphthalate	GCMS	ug/Nm3	(6:1) QN					
GCMS ug/nm3	Chrysene	GCMS	ug/Nm3	ND (1.2)					
GCMS	Di-n-octylphthalate	GCMS	ng/Nm3	(6.79) QN					
GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3	Dibenz(a,h)anthracene	GCMS	ug/Nm3	ND (1.3)					
GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3	Dibenzofuran	GCMS	ug/Nm3	(6:1) QN					
GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3	Diethylphthalate	GCMS	ug/Nm3	ND (2.3)			,		
GCMS ug/Nm3 GCMS ug/Nm3 GCMS ug/Nm3	Dimethylphthalate	GCMS	ug/Nm3	ND (2.5)					
GCMS ug/Nm3 GCMS ug/Nm3	Fluoranthene	GCMS	ug/Nm3	ND (1.2)		_	-		
GCMS [ug/Nm3	Fluorene	GCMS	ug/Nm3	ND (2.6)					
	Hexachlorobenzene	GCMS	ug/Nm3	ND (5.7)					

Sample Type: MeCl2 PNR/MM5 Filter 1:2 dil Stream: ESP Inlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run I	Com 1	Run 2	Com 2	Run 3	Com 3
Heyachlorobutadiene	GCMS	ug/Nm3	(8.7) QN					
Hexachiorocyclopentadiene	GCMS	ug/Nm3	ND (9.2)					
Hexachloroethane	GCMS	ug/Nm3	ND (8.2)					
Indeno(1,2,3-cd)pyrene	GCMS	ug/Nm3	ND (0.95)					
Isophorone	GCMS	ug/Nm3	ND (2.6)					
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (7.4)	•				
Naphthalene	GCMS	ug/Nm3	4.88					
Nitrobenzene	GCMS	ug/Nm3	ND (4.5)					
Pentachlorophenol	GCMS	ug/Nm3	(SI) QN					
Phenanthrene	GCMS	ug/Nm3	(7.1) DN					
Phenol	GCMS	ug/Nm3	ND (3.5)					
Pyrene	GCMS	ug/Nm3	ND(1.1)					
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3	ND (4.0)					
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	ND (4.7)	•				
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3	7.28	BJ				

Sample Type: XAD Resin/Impingers + MeCl2 Collection Method: MM5 Stream: ESP Inlet

Analyte A	Analytical Technique	Units	Kun I	Com	Kun 2	Com 2	Kun Z Kun 3 Com 3	Com 3
Benzoic acid bis(2-Ethylbexyl)ohthalate GCM	8 8	g/Nm3	11.	119 E 469 E	28	Ξ		4 E

Sample Type: XAD Resin/Impingers + MeCl 1:10 di Collection Method: MM5 Stream: ESP Inle

Analyte	Analytical Technique	Units	Run I	Com 1	Run 2	Com 2	Run 3	Com 3
		A	<u> </u>					
11.2.4-Trichlorobenzene	GCMS	lug/Nm3	ND (22)					
1,2-Dichlorobenzene	GCMS	ug/Nm3	(61) QN					
1,3-Dichlorobenzene	GCMS	ug/Nm3	(81) QN					
1,4-Dichlorobenzene	GCMS	ug/Nm3	(LI) QN					
2,4,5-Trichlorophenol	GCMS	ug/Nm3	ND (30)					
2,4,6-Trichlorophenol	GCMS	ug/Nm3	ND (31)					
								2

Analytical Data Not Used In Calculations

Sample Type: XAD Resin/Impingers + MeCI2 1:10 dil Stream: ESP Inlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
			ICO UIX					
2,4-Dichlorophenol	CCMS	ugynms	(71) (17)					
2,4-Dimethylphenol	GCMS	ug/Nm3	(07) CN					
2,4-Dinitrophenol	GCMS	ug/Nm3	ND (/4)					
2,4-Dinitrotoluene	GCMS	ug/Nm3	ND (27)					
2,6-Dinitrotoluene	GCMS	ug/Nm3	ND (42)					
2-Chloronaphthalene	GCMS	ug/Nm3	ND (12)					•
2-Chlorophenol	GCMS	ug/Nm3	ND (20)				-	
2-Methylnaphthalene	GCMS	ug/Nm3	(II) QN					
2-Methylphenol	GCMS	ug/Nm3	ND (24)					
2-Nitroaniline	GCMS	ug/Nm3	(6Z) QN ·					
2-Nitrophenol	GCMS	ug/Nm3	ND (32)					
3.3'-Dichlorobenzidine	GCMS	ug/Nm3	ND (34)					
3-Nitroaniline	GCMS	ug/Nm3	ND (36)					
4,6-Dinitro-2-methylphenol	GCMS	ug/Nm3	ND (45)					
4-Chloro-3-methylphenol	GCMS	ug/Nm3	ND (22)					
4-Nitroaniline	GCMS	ug/Nm3	ND (29)		-			
4-Nitrophenol	GCMS	ug/Nm3	ND (31)					
Acenaphthene	GCMS	ug/Nm3	ND (13)					****
Acenaphthylene	GCMS	ug/Nm3	ND (7.5)					
Anthracene	GCMS	ug/Nm3	ND (6.5)					
Benzo(b)fluoranthene	GCMS	ug/Nm3	(6.6) QN					
Benzo(g,h,i)perylene	GCMS	ug/Nm3	(II) QN					
Benzo(k)fluoranthene	GCMS	ug/Nm3	(0E) CN					
Benzyl alcohol	GCMS	ug/Nm3	ND (42)					
Butylbenzylphthalate	GCMS	ug/Nm3	(9.8) QN					
Chrysene	GCMS	ug/Nm3	(I.7) ON					
Di-n-butylphthalate	GCMS	ug/Nm3	10.9					
Di-n-octylphthalate	GCMS	ug/Nm3	(0.9) QN					
Dibenz(a,h)anthracene	GCMS	ug/Nm3	ND (12)					
Dibenzofuran	GCMS	ug/Nm3	ND (8.0)					
Diethylphthalate	GCMS	ug/Nm3	(9.7) QN					
Dimethylphthalate	GCMS	ug/Nm3	ND (9.8)		•			
Fluoranthene	GCMS	ug/Nm3	(9.5) QN					

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Analytical Data Not Used In Calculations

Sample Type: XAD Resin/Impingers + MeCl2 1:10 dil Collection Method: MM5 Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
							الجسد والتكاوي والمواجع والمواجع	
Fluorene	GCMS	ug/Nm3	(2.6) QN					
Hexachlorobenzene	GCMS	ug/Nm3	27.7	_				-
Hexachlorobutadiene	GCMS	ug/Nm3	ND (31)		_			
Hexachlorocyclopentadiene	GCMS	ug/Nm3	ND (30)					
Hexachloroethane	GCMS	ug/Nm3	ND (34)					
Indeno(1,2,3-cd)pyrene	GCMS	ug/Nm3	ND (9.1)					
Isophorone	GCMS	ug/Nm3	ND (9.3)					
N-Nitroso-di-n-propylamine	GCMS	ug/Nm3	ND (27)					
Naphthalene	GCMS	ug/Nm3	ND (7.5)					
Nitrobenzene	GCMS	ug/Nm3	(91) QN					
Pentachlorophenol	GCMS	ug/Nm3	ND (57)					
Phenanthrene	GCMS	ug/Nm3	ND (6.6)					
Phenol	GCMS	ug/Nm3	(8I) QN	•				
Pyrene	GCMS	ug/Nm3	ND (4.6)					
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3	(61) QN					
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	ND (25)		-			

Sample Type: XAD Resin/Impingers + MeCl2 1:2 dil Collection Method: MM5 Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
1,2,4-Trichlorobenzene	GCMS	ug/Nm3					(0.5) QN	
1,2-Dichlorobenzene	GCMS	ug/Nm3					ND (4.3)	
1,3-Dichlorobenzene	GCMS	ug/Nm3					ND (4.1)	
1,4-Dichlorobenzene	GCMS	ug/Nm3					(6.6) QN	
2,4,5-Trichlorophenol	GCMS	ug/Nm3					ND (6.3)	
2,4,6-Trichlorophenol	GCMS	ug/Nm3					(9.9) QN	
2,4-Dichlorophenol	GCMS	ug/Nm3					ND (2.8)	
	GCMS	ug/Nm3					ND (4.6)	
2,4-Dinitrophenol	GCMS	ug/Nm3					(91) QN	
	GCMS	ug/Nm3					ND (5.8)	
2,6-Dinitrotoluene	GCMS	ug/Nm3					(6.8) QN	
2-Chioronaphthalene	GCMS	ug/Nm3					ND (2.6)	-

Sample Type: XAD Resin/Impingers + MeCl2 1:2 dil Stream: ESP Inlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
							C	
Isophorone	GCMS	ug/Nm3					5.11	_
i-n-propylamine	GCMS	ug/Nm3					ND (6.2)	
Nanhthalene	GCMS	ug/Nm3					(1.1) QN	
Nitrobenzene	GCMS	ug/Nm3		المساد			ND (3.6)	
Pentachlorophenol	GCMS	ug/Nm3					(11) QN	
Phenanthrene	GCMS	ug/Nm3					ND (1.3)	
Phenol	GCMS	ug/Nm3					1.68	_
Pyrene	GCMS	ug/Nm3	•				(I.I) ON	
his (2. Chloroethoxy) methane	GCMS	ug/Nm3				-	ND (4.4)	
his/2-Chloroethy/)ether	GCMS	ug/Nm3					ND (5.6)	
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3					ND (1.7)	

Sample Type: XAD Resin/Impingers + MeCl2 1:4 dil Stream: ESP Inlet Collection Method: MMS

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Сош 2	Run 3	Сош 3
1.2,4-Trichlorobenzene	GCMS	ug/Nm3			(1.6) QN			
1,2-Dichlorobenzene	GCMS	ug/Nm3			ND (8.0)			
1,3-Dichlorobenzene	GCMS	ug/Nm3			(9. <i>L</i>) QN			
I,4-Dichlorobenzene	GCMS	ug/Nm3			ND (7.2)			
2,4,5-Trichlorophenol	GCMS	ug/Nm3			ND (13)			
2,4,6-Trichlorophenol	GCMS	ug/Nm3			ND (14)			
2,4-Dichlorophenol	GCMS	ug/Nm3			ND (5.4)			-
2,4-Dimethylphenol	GCMS	ug/Nm3			(6.8) QN		-	
2,4-Dinitrophenol	GCMS	ug/Nm3			ND (33)			
2,4-Dinitrotoluene	GCMS	ug/Nm3			ND (12)			
2,6-Dinitrotoluene	GCMS	ug/Nm3			(61) QN			
2-Chloronaphthalene	GCMS	ug/Nm3			ND (5.4)			
2-Chlorophenol	GCMS	ug/Nm3			ND (8.5)			
2-Methylnaphthalene	GCMS	ug/Nm3			ND (5.1)			
2-Methylphenol	GCMS	ug/Nm3			(01) QN			
2-Nitroaniline	GCMS	ug/Nm3			ND (13)			
2-Nitrophenol	GCMS	ug/Nm3			ND (14)			

Analytical Data Not Used In Calculations

Sample Type: XAD Resin/Impingers + McCl2 1:4 dil Collection Method: MMS Stream: ESP Inlet

	LEVNM3		ND (16) CO (16			
ethylphenol GCMS sylphenol GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3		ND (16) ND (19) ND (19			<u>— A, A, — A————————————————————————————</u>
sthylphenol GCMS GCMS GCMS GCMS GCMS GCMS GCMS Ithene GCMS GCMS Ithene GCMS GCMS Ithene GCMS Itate GCMS	UGNM3 UGNM3 UGNM3 UGNM3 UGNM3 UGNM3 UGNM3 UGNM3 UGNM3		ND (19) ND (19) ND (14) ND (14) ND (14) ND (18) ND			
ylphenol GCMS GCMS GCMS GCMS GCMS GCMS Ithene GCMS GCMS Ithene GCMS Italiate GCMS GCMS Italiate GCMS GCMS Italiate GCMS	UG/Nm3 UG/Nm3 UG/Nm3 UG/Nm3 UG/Nm3 UG/Nm3 UG/Nm3 UG/Nm3		M N N N N N N N N N N N N N N N N N N N			<u> </u>
GCMS GCMS GCMS GCMS GCMS GCMS Ithene GCMS GCMS alate GCMS GCMS atte GCMS GCMS GCMS Atte GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3		ND (18) ND (19) ND (19) ND (18) ND (18) ND (19) ND (19) ND (19) ND (19) ND (19) ND (19)	· · · · · · · · · · · · · · · · · · ·		
GCMS GCMS GCMS GCMS GCMS Ithene GCMS GCMS Ithene GCMS GCMS Itate GCMS GCMS GCMS Itate GCMS Itate GCMS Itate GCMS Itate GCMS Itate GCMS Itate	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3		ND (16) ND (13) ND (13) ND (14) ND (16) ND (16) (10) (10) (10) (10) (10) (10) (10) (10	<u> </u>		
GCMS GCMS GCMS Ithene GCMS GCMS Ithene GCMS Italiate GCMS Italiate GCMS GCMS Italiate GCMS Italiate	ug/km3 ug/km3 ug/km3 ug/km3 ug/km3 ug/km3		ND (6.9) ND (7.8) ND (7.8) ND (7.8) ND (18) ND (18) ND (18)	<u></u>		
thene GCMS dene GCMS dene GCMS alate GCMS date GCMS atte GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3		ND (3.3) ND (4.2) ND (4.2) ND (4.6) ND (18) ND (18) ND (18)			
thene GCMS lene GCMS thene GCMS alate GCMS GCMS atte GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	ender en	ND (2.8) ND (4.2) ND (4.6) ND (18) ND (18)	<u> </u>	,	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	,	ND (4.2) ND (4.6) ND (4.4) ND (18) ND (18)	·		
GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	,	ND (4.6) ND (4.4) ND (18) ND (2.0) ND (3.3)			
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3	,	ND (4.4) ND (18) ND (4.0) ND (3.3)			
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3	 ,	ND (18) ND (4.0) ND (3.3)	<u></u>		
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3	,	ND (4.0) ND (3.3)			
GCMS GCMS GCMS GCMS GCMS GCMS	ug/Nm3	,	ND (3.3)			
GCMS GCMS GCMS GCMS GCMS	ug/Nm3	_	<	-		-
GCMS GCMS GCMS GCMS			3.79]			_
GCMS GCMS GCMS GCMS	ug/Nm3		ND (2.6)		-	
GCMS GCMS GCMS	ug/Nm3		ND (5.2)			
GCMS	ug/Nm3	-	(9.6) UN		-	=.
GCMS	ug/Nm3		ND (3.4)	_		
	ug/Nm3		ND (4.4)			-
	ug/Nm3		ND (2.4)	-		-
GCMS	ug/Nm3	•••	ND (4.3)			-
GCMS	ug/Nm3		ND (13)	_		
Hexachlorobutadiene GCMS ug	ug/Nm3		ND (14)			
	ug/Nm3	_	ND (13)			-
	ug/Nm3		ND (14)	-		
Indeno(1,2,3-cd)pyrene GCMS ug	ug/Nm3		(6.5) DN			-
GCMS	ug/Nm3		ND (4.1)			
il-n-propylamine GCMS	ug/Nm3	 	(II) QN			
Naphthalene GCMS ug	ug/Nm3		ND (3.3)	·		
Nitrobenzene GCMS ug	ug/Nm3		(6.9) QN			-
Pentachlorophenol GCMS ug	ug/Nm3		ND (24)			

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Analytical Data Not Used In Calculations

Sample Type: XAD Resin/Impingers + MeCt2 1:4 dil Stream: ESP Inlet Collection Method: MM5

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Phenanthrene Phenol Pyrene bis(2-Chloroethoxy)methane bis(2-Chloroethyl)ether bis(2-Ethylhexyl)phthalate	GCMS GCMS GCMS GCMS GCMS	ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3 ug/Nm3			ND (2.8) 2.84 ND (2.1) ND (8.5) ND (10)	. .		

Collection Method: Multimetals Train Sample Type: Nitric Acid Impingers + TLR Stream: ESP Inlet

Analyte	Analytical Technique	Units	Run I	Com 1	Run 2	Com 2	Run 3	Com 3
Arsenic	GFAA	ug/Nm3	ND (0.20)		ND (0.20)		ND (0.18)	
Cadmium	GFAA	ug/Nm3	0.621	ပ	0.165 C	ပ	0.267	၁
Lead	GFAA	ug/Nm3	ND (0.63) BC	BC	ND (0.63) BC	ВС	ND (0.57) BC	BC
Selenium	GFAA	ug/Nm3	12.0 C	C	10.9	С	15.6	ပ
Antimony	IICAP	ug/Nm3	ND (23) IB	В	ND (23) B	В	ND (21) B	<u>B</u>
Arsenic		ug/Nm3	ND (14)		ND (14)		ND (13)	•
Beryllium	ICAP	ug/Nm3	ND (0.16)		ND (0.16)		ND (0.14)	
Cadmium	ICAP	ug/Nm3	ND (1.2) C	ပ	ND (1.2) C	ပ	(I.I) ON	ပ
Chromium	ICAP	ug/Nm3	(9.1) QN	ပ	(9.1) QN	ပ	27.7	၁
Cobalt	ICAP	ug/Nm3	ND (1:3) BC	BC	ND (1.2)	ВС	(I.I) QN	BC
Copper	ICAP	ug/Nm3	2.95	BC	ND (2.8)	BC	2.62	ရှင
Lead	ICAP	ug/Nm3	ND (6.6) BC	BC	ND (6.6) BC	BC	ND (6.0) BC	BC
Manganese	ICAP	ug/Nm3	1.84	BC	3.21	BC	4.40 BC	BC
Molybdenum	ICAP	ug/Nm3	ND (2.3)		ND (2.3)		2.97	
Nickel	ICAP	ug/Nm3	ND (4.3)	ပ	ND (4.3)	င	29.7	၁
Selenium	ICAP	ug/Nm3	ND (27) B	В	ND (27) B	8	ND (25) B	В
Vanadium	ICAP	ug/Nm3	ND (1.4) C	၁	ND (1.4) C	C	ND (1.3)	C
Mercury	ICPMS	ug/Nm3	24.6 C	၁	26.9 C	ြ	24.9 C	ြ
	البيونيسية					,		

Analytical Data Not Used In Calculations

Stream: ESP Outlet Collection Method: MM5 Sample Type: XAD Resin/Impingers + MeCl2

Run 3 Com 3		215 E	
Com 2		ш	
Com 1 Run 2 Com 2		121	
Com 1	,	3	
Run 1		\$11	
Units		lug/Nm3	ķ
Analytical	and and a	IGCMS	
Analyte		orio acid	DOMESTIC ACTO

Benzoic acid	GCMS	ug/Nm3	नीटा।		J 171		7 017	
tream: ESP Outlet Collection Method: MM5	thod: MM5	Sample Tyl	Sample Type: XAD Resin/Impingers + MeCi2	gers + M	eCl2 1:2 dil			
Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
		1e/M/m3	IN A CAN		(4.4) (N	_		
36	CCMS	Cimalga	(CT) CN		(:) (::.			
1.2-Dichlorobenzene	GCMS	ug/Nm3	ND (3.9)		(5.6) CN			
1.3-Dichlorobenzene	GCMS	ug/Nm3	ND (3.7)		ND (3.4)			
1.4-Dichlorobenzene	GCMS	ug/Nm3	ND (3.5)		ND (3.3)			
2.4.5-Trichlorophenol	GCMS	ug/Nm3	ND (5.1)		ND (5.5)			
2.4.6-Trichlorophenol	GCMS	ug/Nm3	ND (5.4)		ND (5.8)	.*		
2.4-Dichlorophenol	GCMS	ug/Nm3	ND (2.4)		ND (2.4)			
2.4-Dimethylphenol	GCMS	ug/Nm3	ND (4.0)		ND (4.0)			
2.4-Dinitrophenol	GCMS	ug/Nm3	ND(13)		ND (14)			
2.4-Dinitrotoluene	GCMS	ug/Nm3	ND (4.7)					
2.6-Dinitrotoluene	GCMS	ug/Nm3	ND (7.2)					
2-Chloronaphthalene	GCMS	ug/Nm3	ND (2.1)					
2-Chlorophenol	GCMS	ug/Nm3	ND (4.1)					
2-Methylnaphthalene	GCMS	ug/Nm3	ND (2.3)		ND (2.3)			
2-Methylphenol	GCMS	ug/Nm3	ND (4.9)					
2-Nitroaniline	GCMS	ug/Nm3	ND (5.0)		ND (5.4)			
2-Nitrophenol	GCMS	ug/Nm3	ND (6.4)		ND (6.5)	_		
3,3'-Dichlorobenzidine	GCMS	ug/Nm3	ND (6.5)		(6.9) ND (6.9)	_		
3-Nitroaniline	GCMS	ug/Nm3	ND (6.2)		ND (6.7)			
4.6-Dinitro-2-methylphenol	GCMS	ug/Nm3	(0.C) QN		ND (8.2)	-		
4-Chloro-3-methylphenol	GCMS	ug/Nm3	ND (4.4)	-	ND (4.5)			-
4-Nitroaniline	GCMS	ug/Nm3	ND (5.0)					
4-Nitrophenol	GCMS	ug/Nm3	ND (5.4)					
Acenaphthene	GCMS	ug/Nm3	ND (2.3)					
Acenaphthylene	GCMS	ug/Nm3	ND(1.3)		ND (1.4)			
Anthracene	GCMS	ug/Nm3	(0.1) ON		ND (1.2)			
Benzo(b)fluoranthene	GCMS	ug/Nm3	ND (2.2)		(6:1) QN			
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Analytical Data Not Used In Calculations

Stream: ESP Outlet Collection Method: MM5 Sample Type: XAD Resin/Impingers + MeCl2 1:2 dil

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com S
Benzo(o h i)nervlene	GCMS	ug/Nm3	ND (2.4)		ND (2.0)			
Benzo(k)fluoranthene	GCMS	ug/Nm3	ND (2.3)		(6.1) dn			
Benzyl alcohol		ug/Nm3	ND (8.7)		ND (8.1)			
Butylbenzylphthalate	GCMS	ug/Nm3	(9.1) QN		(1.1) QN			
Chrysene	GCMS	ug/Nm3	ND (1.3)		ND (1.4)			
Di-n-butylohthalate	GCMS	ug/Nm3	9.71		5.86			-
Di-n-octylphthalate	GCMS	ug/Nm3	ND (1.3)		(I.I) ON			
Dibenz(a,h)anthracene		ug/Nm3	ND (2.7)		ND (2.3)			
Dibenzofuran	GCMS	ug/Nm3	ND (1.4)	•	(S.1) ON			*****
Diethylphthalate	GCMS	ug/Nm3	2.88	_	ND (1.4)			
Dimethylphthalate	GCMS	ug/Nm3	(L.1) QN	- -	(8.1) DN			
Fluoranthene	GCMS	ug/Nm3	ND (0.88)		(0.1) UN			
Fluorene	GCMS	ug/Nm3	(1.1) QN		(8.1) ON			
Hexachlorobenzene		ug/Nm3	ND (4.7)		ND (5.4)			
Hexachlorobutadiene	GCMS	ug/Nm3	ND (6.2)		ND (6.3)			
Hexachlorocyclopentadiene		ug/Nm3	ND (5.2)	•	(9.5) QN			
Hexachloroethane	GCMS	ug/Nm3	(6.9) QN		ND (6.4)			
Indeno(1,2,3-cd)pyrene		ug/Nm3	ND (2.0)		(L.1) ON			
Isophorone		ug/Nm3	21.7	-	(6.1) DN	•		
N-Nitroso-di-n-propylamine		ug/Nm3	ND (5.5)		ND (5.2)			
Naphthalene		ug/Nm3	ND (1.5)	•	ND (1.5)			
Nitrobenzene	GCMS	ug/Nm3			ND (3.1)			
Pentachlorophenol	GCMS	ug/Nm3	ND (9.0)		(01) QN			
Phenanthrene		ug/Nm3	(0.1) QN		ND (1.2)			
Phenol	GCMS	ug/Nm3	1.82	_	1.28			
Pyrene	GCMS	ug/Nm3	ND (0.87)	-	ND (0.92)			
bis(2-Chloroethoxy)methane	GCMS	ug/Nm3	ND (3.8)		(6:E) QN		•	
bis(2-Chloroethyl)ether	GCMS	ug/Nm3	ND (5.0)		ND (4.7)			
bis(2-Ethylhexyl)phthalate	GCMS	ug/Nm3	15.4		(S.1) DN			Amount

Analytical Data Not Used In Calculations

Sample Type: XAD Resin/Impingers + MeCl2 1:4 dil Stream: ESP Outlet Collection Method: MM5

e e GCMS ol GCMS ol GCMS ol GCMS ol GCMS ol GCMS GCMS GCMS ine GCMS GCMS ine GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	1.2.4-Trichlorobenzene	GCMS	ug/Nm3					(5:6) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	1,2-Dichlorobenzene	GCMS	ug/Nm3					ND (8.4)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	1,3-Dichlorobenzene	GCMS	ug/Nm3					(0.8) UN (8.0)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	1,4-Dichlorobenzene	GCMS	ug/Nm3					(9.7) UN (7.6)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2,4,5-Trichlorophenol	GCMS	ug/Nm3					ND (12)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2,4,6-Trichlorophenol	GCMS	ug/Nm3					ND (13)	
GCMS GCMS GCMS GCMS GCMS GCMS ine GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2,4-Dichlorophenol	GCMS	ug/Nm3					ND (5.3)	
GCMS GCMS GCMS GCMS ine GCMS GCMS ine GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2,4-Dimethylphenol	GCMS	ug/Nm3					ND (8.7)	
e GCMS e GCMS ene GCMS ene GCMS GCMS dCMS dCMS dCMS dCMS dCMS dCMS dCMS d	2,4-Dinitrophenol	GCMS	ug/Nm3					(16) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2,4-Dinitrotoluene	GCMS	ug/Nm3					(IE) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2,6-Dinitrotoluene	GCMS	ug/Nm3					(LE) CIN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2-Chloronaphthalene	GCMS	ug/Nm3				_	ND (5.1)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2-Chlorophenol	GCMS	ug/Nm3					ND (9.0)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2-Methylnaphthalene	GCMS	ug/Nm3					ND (5.0)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2-Methylphenol	GCMS	ug/Nm3		_			(11) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2-Nitroaniline	GCMS	ug/Nm3					ND (12)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	2-Nitrophenol	GCMS	ug/Nm3					ND (14)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	3,3'-Dichlorobenzidine	GCMS	ug/Nm3					(S1) CIN	•
GCMS GCMS GCMS GCMS GCMS GCMS GCMS	3-Nitroaniline	GCMS	ug/Nm3					(S1) QN	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS GCMS	4,6-Dinitro-2-methylphenol	GCMS	ug/Nm3					(11) CIN	
GCMS GCMS GCMS GCMS GCMS GCMS	4-Chloro-3-methylphenol	GCMS	ug/Nm3					ND (9.8)	
GCMS GCMS GCMS GCMS GCMS GCMS GCMS	4-Nitroaniline	GCMS	ug/Nm3					(21) QN	
GCMS GCMS GCMS GCMS GCMS GCMS	4-Nitrophenol	GCMS	ug/Nm3					ND (13)	
GCMS GCMS GCMS GCMS GCMS GCMS	Acenaphthene	GCMS	ug/Nm3					ND (5.6)	
GCMS GCMS GCMS GCMS GCMS	Acenaphthylene	GCMS	ug/Nm3					ND (3.1)	
GCMS GCMS GCMS GCMS GCMS	Anthracene	GCMS	ug/Nm3					ND (2.5)	
GCMS GCMS GCMS GCMS GCMS	Benzo(b)fluoranthene	GCMS	ug/Nm3					(01) CIN	
GCMS GCMS GCMS	Benzo(g,h,i)perylene	GCMS	ug/Nm3					(11)QN	
GCMS	Benzo(k)fluoranthene	GCMS	ug/Nm3					(01) QN	
GCMS	Benzyi alcohol	GCMS	ug/Nm3					(61) QN	
GCMS	Butylbenzylphthalate	CCMS	ug/Nm3					ND (3.7)	
	Chrysene	GCMS	ug/Nm3					ND (3.1)	
CCMS	Di-n-butylphthalate	GCMS	ug/Nm3					80.6	_

Analytical Data Not Used In Calculations

Stream: ESP Outlet Collection Method: Multimetals Train Sample Type: Acetone PNR/Nitric PNR/M5 Filter + Solids

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3 C	Com 3
	ICAP	no/o	ND (12)	U	(06) QN	ပ	(51) GN	
rean		,		c	7000	ر	0 01	
Selenium	ICAP	ug/Nm3	7 / 1.7	<u> </u>	7.07) (370	
Colonium	ICAP	ne/e	353 C	-	2440 C	ر	202	
		66						
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Sample Type: Nitric Acid Impingers + TL Stream: ESP Outle Collection Method: Multimetals Trai

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Arsenic	GFAA	ug/Nm3	(71.0) QN		ND (0.20)		ND (0.16)	
# H	GFAA	ug/Nm3	0.172 C	ပ	0.787 C	ပ	0.558	ن
	GFAA	ug/Nm3	ND (0.53) BC	ည္ထ	0.654 BC	BC	ND (0.52) BC	BC
mm	GFAA	ug/Nm3	13.5 C	၁	24.5 C	သ	22.0 C	သ
Antimony	IICAP	ug/Nm3	ND (20) (B	e e	ND (23) B	В	(61) QN	B
Arsenic	ICAP	ug/Nm3	ND (12)		ND (14)		ND (12)	
Beryllium	ICAP	ug/Nm3	ND (0.13)		(91.0) QN		ND (0.13)	
Cadmium	ICAP	ug/Nm3	(06.0) CIN	ပ	ND (1.2)	၁	(86.0) QN	ည
Chromium	ICAP	ug/Nm3	ND (1.3) C	ပ	(9.1) QN	၁	2.73 C	ပ
Cobalt	ICAP	ug/Nm3	(0:1) QN	BC	ND (1.2) BC	ဗ္ဗင	ND (1.0) BC	ည္က
Copper	ICAP	ug/Nm3	ND (2.4) BC	BC	ND (2.8)	BC	3.89	ည္ထ
Lead	ICAP	ug/Nm3	ND (5.6) BC	BC	(9.9) QN	BC	ND (5.5) BC	BC
Manganese	ICAP	ug/Nm3	0.970 BC	ВС	3.11	ВС	7.75	BC
Molybdenum	ICAP	ug/Nm3	(6:1) QN		ND (2.3)		(6.1) DN	
Nickel	ICAP	ug/Nm3	ND (3.6) C	ပ	ND (4.3) C	ပ	4.69	ပ
Selenium	ICAP	ug/Nm3	ND (23) B	8	ND (27) B	æ	ND (23) B	<u></u>
Vanadium	ICAP	ug/Nm3	ND (1.2) C	၁	ND (1.4) C	C	ND (1.2) C	C
Mercury	ICPMS	ug/Nm3	21.3 C	၁	26.8 C	၁	31.1][

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Stream: Service Water Collection Method: Grab Sample Type: Not Specified

Analyte	Analytical Technique	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Сош 3
Arsenic	ICAP	me/L	ND (0.047)		ND (0.047)		ND (0.047)	
Cadmium	ICAP	mg/L	0.00482 B	В	ND (0.0039) B	B	0.00500 B	æ
Lead	ICAP	mg/L	0.0377 B	В	ND (0.022)		0.0312 B	В
Selenium	ICAP	mg/L	ND (0.089)	В	ND (0.089)	В	(0.089) UN	

Stream: Service Water Collection Method: Grab Sample Type: Not Specified FD

Analyte	Analytical Technique	Units	Units Run I C	15 H	1 1 Run 2	Com 2	Run 3	Com 3
Arsenic		mg/L					ND (0.047)	
Cadmium	ICAP	mg/L				•	0.00446	æ
Lead	ICAP	mg/L					ND (0.022) B	В
Selenium ICAP mg/L	ICAP	mg/L					ND (0.089)	

Stream: Sorbent Collection Method: Grab Composite Sample Type: Dolomite

Analyte	¥ L	Units	Run 1	Com 1	Run 2	Com 2	Run 3	Com 3
Arsenic	ICAP	mg/kg	9 (6:7) QN	20	ND (3.2)	9	ND (3.2) B	<u> </u>
Cadmium	ICAP	mg/kg	0.589 B	В	0.552	В	0.922 B	B
Lead	ICAP	mg/kg	(8.1) dn		(II) QN		ND (2.0)	
Selenium	ICAP	mg/kg	(6.4) QN		ND (5.5)		ND (5.5)	

Stream: Sorbent Collection Method: Grab Composite Sample Type: Dolomite FD

Analyte An	alytical chaique	Units R	Com 1	u - I	ΠΕ I	Run 3 Com 3	Com 3
Arsenic		mg/kg			10) QN	3.4)IR
Cadmium	ICAP	mg/kg				0.763	3.5
Lead	ICAP	mg/kg				ND (2.1)	
Selenium	ICAP	mg/kg				ND (5.8)	`

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APPENDIX C: SOURCE SAMPLING DATA SUMMARY AND PSD PLOTS

Plant Name AEP Tidd Demonstration Plant Location ESP Inlet Train Aldehyde

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	•
Time Start	1946	1500	1452	-
Time Finish	2114	1624	1620	•
Operator	TJB	TJB	TJB	•
Initial Leak Rate	0.007	0.010	0.005	-
Final Leak Rate	0.005	0.010	0.004	-
Duct Dimensions (ft)	10 x 10	10 x 10	10 x 10	-
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	1.009	1.009	1.009	1.009
Nozzle Diameter (inches)	0.2460	0.2850	0.2850	-
Barometric Pressure ("Hg)	29.29	29.29	29.2	29.26
Static Pressure ("H2O)	2.8	2.8	2,8	2.8
Meter Volume (acf)	64.002	63.769	67.129	64.967
Average square root of delta p	0.7740	0.6860	0.7070	0.7223
Average delta H (* H2O)	1.40	1.95	2.00	1.78
Average Stack Temperature (F)	393	392	393	393
Average DGM Temp (F)	91.8	81.6	90.3	87.9
Test Duration (minutes)	89.0	84.0	88.0	87.0
Condensed Water (g)	140.4	151.9	121.3	137.9
% CO2	12.0	10.0	11.0	11.0
% O2	6.0	8.0	8.0	7.3
% N2	82.0	82.0	81.0	81.7
Meter Volume (dscf)	60.705	61.704	63.740	62.050
Flue Gas Moisture (%)	9.8	10.4	8.2	9.5
Gas Molecular Weight (Wet) (g/g-mole)	28.96	28.68	29.08	28.91
Absolute Stack Pressure (" Hg)	29.50	29.50	29.41	29.47
Absolute Stack Temperature (R)	853	852	853	853
Average Gas Velocity (f/sec)	55,54	49.43	50.71	51.90
Avg Flow Rate (acfm)	333,240	296,603	304,277	311,373
Avg Flow Rate (dscfm)	183,262	162,314	169,724	171,767
Isokinetic Sampling Rate (%)	112.78	102.17	96.35	103.77

Plant Name AEP Tidd Demonstration Plant Location ESP Inlet Train Ammonia/Hydrogen Cyanide

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	- [
Time Start	1815	1317	1304	-
Time Finish	1921	1446	1430	-
Operator	ТЈВ	TJB	TJB	-
Initial Leak Rate		0.010	0.007	•
Final Leak Rate		0.010	0.010	-
Duct Dimensions (ft)	10 x 10	10 x 10	10 x 10	-
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	1.009	1.009	1.009	1.009
Nozzle Diameter (inches)	0.2460	0.2850	0.2850	-
Barometric Pressure ("Hg)	29.29	29.26	29.2	29.25
Static Pressure ("H2O)	2.8	2.8	3.5	3.0
Meter Volume (acf)	42.280	66.953	65.822	58.352
Average square root of delta p	0.7750	0.6860	0.7090	0.7233
Average delta H (* H2O)	1.40	1.90	2.00	1.77
Average Stack Temperature (F)	397	391	392	393
Average DGM Temp (F)	87.2	81.1	86.3	84.9
Test Duration (minutes)	66.0	89.0	86.0	80.3
Condensed Water (g)	115.1	149.2	170.1	144.8
% CO2	12.0	10.0	11.0	11.0
% O2	6.0	8.0	8.0	7.3
% N2	82.0	82.0	81.0	81.7
Meter Volume (dscf)	40.439	64.770	62.957	56.055
Flue Gas Moisture (%)	11.8	9.8	11.3	11.0
Gas Molecular Weight (Wet) (g/g-mole)	28.72	28.75	28.71	28.73
Absolute Stack Pressure (* Hg)	29.50	29.47	29.46	29.47
Absolute Stack Temperature (R)	857	851	852	853
Average Gas Velocity (f/sec)	55.97	49.38	51.10	52.15
Avg Flow Rate (acfm)	335,827	296,260	306,599	312,895
Avg Flow Rate (dscfm)	179,784	163,187	165,843	169,605
Isokinetic Sampling Rate (%)	103.27	100.68	99,66	101.21

Plant Name AEP Tidd Demonstration Plant Location ESP Inlet Train Anions

Run No.	i	2	3	Average
Date	04-12-94	04-13-94	04-14-94	•
Time Start	1313	1157	1126	
Time Finish	1500	1304	1238	-
Operator	TJB	TJB	тлв	-
Initial Leak Rate	0.005	0.007	0.010	-
Final Leak Rate	0.010	0.010	0.010	_ <u>-</u>
Duct Dimensions (ft)	10 x 10	10 x 10	10 x 10	-
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	1.009	1.009	1.009	1.009
Nozzle Diameter (inches)	0.2460	0.2850	0.2850	.
Barometric Pressure ("Hg)	29.44	29.26	29.20	29.30
Static Pressure ("H2O)	2.5	2.8	3,5	2.9
Meter Volume (acf)	66,891	51.500	55.230	57.874
Average square root of delta p	0.7750	0.7230	0.7120	0.7367
Average delta H (* H2O)	1.36	2.09	2.10	1.85
Average Stack Temperature (F)	386	393	396	392
Average DGM Temp (F)	81.7	83.0	74,1	79.6
Test Duration (minutes)	107.0	67.0	72.0	82.0
Condensed Water (g)	38.8	183.2	120.6	114.2
Filter Weight Gain (g)	6.9959	7.0968	5,8575	6.6501
PNR Weight Gain (g)	1.0230	1.4225	2.6727	1.7061
% CO2	12.0	10.0	11.0	11.0
% O2	6.0	8.0	8.0	7.3
% N2	82.0	82.0	81.0	81.7
Meter Volume (dscf)	64,951	49.672	54.046	56.223
Particulate Meter Volume (dscf)	166.094	176,146	180.744	
Flue Gas Moisture (%)	2.7	14.8	9.5	9.0
Gas Molecular Weight (Wet) (g/g-mole)	29.83	28.15	28.93	28.97
Absolute Stack Pressure (* Hg)	29.62	29.47	29.46	29.52
Absolute Stack Temperature (R)	846]	856	852
Average Gas Velocity (f/sec)	54.46	1	51.24	52.78
Avg Flow Rate (acfm)	326,746	315,893	307,432	316,690
Avg Flow Rate (dscfm)	196,293	163,950	168,881	176,374
Isokinetic Sampling Rate (%)	93.71	102.09	100.35	
Particulate Concentration (gr/dscf)	7.45E-01	7.47E-01	7.28E-01	7.40E-01
Particulate Concentration (lbs/dscf)	1.06E-04	ł		1.06E-04
Particulate Emission (grams/sec)	157.97	į.		141.00
Particulate Emission (lbs/hour)	1253.79	1049.06	1054,47	1119.11

Plant Name AEP Tidd Demonstration Plant Location ESP Inlet Train Metals

Run No.	ı	2	3	Average
Date	04-12-94	04-13-94	04-14-94	•
Time Start	0903	0904	0938	
Time Finish	1315	1333	1349	•
Operator	TJB	ТЛВ	TJB	-
Initial Leak Rate	0.010	0.002	0.010	
Final Leak Rate	0.005	0.010	0.005	-
Duct Dimensions (ft)	10 x 10	10 x 10	10 x 10	
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	1.009	1.009	1.009	1.009
Nozzle Diameter (inches)	0.2360	0.2460	0.2500	-
Barometric Pressure ("Hg)	29.44	29.26	29.20	29.30
Static Pressure ("H2O)	2.5	2.8	3.5	2.9
Meter Volume (acf)	101.297	104.446	100.749	102.164
Average square root of delta p	0.7690	0.7590	0.6710	0.7330
Average delta H (" H2O)	1.14	1.27	1.06	1.16
Average Stack Temperature (F)	388	388	390	389
Average DGM Temp (F)	58.8	67.0	63.8	63.2
Test Duration (minutes)	175.0	175.0	175.0	175.0
Condensed Water (g)	247.9	238.6	223.8	236.8
Filter Weight Gain (g)	2.7063	3,1061	3.1091	2.9738
PNR Weight Gain (g)	1.2417	1.0874	0.8819	1.0703
% CO2	12.0	10.0	11.0	11.0
% O2	6.0	8.0	8.0	7.3
% N2	82.0	82.0	81.0	81.7
Meter Volume (dscf)	102.643	103.586	100.269	102.166
Flue Gas Moisture (%)	10.2	9.8	9.5	9.9
Gas Molecular Weight (Wet) (g/g-mole)	28.92	28.75	28.93	28.87
Absolute Stack Pressure (* Hg)	29.62	29.47	29.46	29.52
Absolute Stack Temperature (R)	848	848	850	849
Average Gas Velocity (f/sec)	54.95	54.54	48.14	52.54
Avg Flow Rate (acfm)	329,692	327,266	288,814	315,258
Avg Flow Rate (dscfm)	182,355	180,841	159,657	174,284
Isokinetic Sampling Rate (%)	105.90	99.19	105.30	103.46
Particulate Concentration (gr/dscf)	5.94E-01	6.25E-01	6.14E-01	6.11 E- 01
Particulate Concentration (lbs/dscf)	8.48E-05	8.93E-05	8.78E-05	8.73E-0 <i>5</i>
Particulate Emission (grams/sec)	116.92	122.04	105.93	114.96
Particulate Emission (lbs/hour)	927.95	968.57	840.75	912.42

Plant Name AEP Tidd Demonstration Plant Location ESP Inlet Train M23

Run No.	2	3	I	Average
Date	04-13-94	04-14-94	04-15-94	-
Time Start	1835	1750	0949	-
Time Finish	2203	2235	1325	•
Operator	TJB	TJB	TЉ	•
Initial Leak Rate	0,005	0.010	0.010	-
Final Leak Rate	0.010	0.010	0.010	•
Duct Dimensions (ft)	10 x 10	10 x 10	10 x 10	-
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	1.009	1.009	1.009	1.009
Nozzle Diameter (inches)	0.2500	0.2850	0.2770	-
Barometric Pressure ("Hg)	29.26	29.2	29.26	29.24
Static Pressure ("H2O)	2.8	2.8	3.1	2.9
Meter Volume (acf)	103.858	118.665	115.014	112.512
Average square root of delta p	0.7050	0.6460	0.6580	0.6697
Average delta H (" H2O)	1.24	2,59	1.46	1.76
Average Stack Temperature (F)	393	392	392	392
Average DGM Temp (F)	74.3	83.0	78.0	78.4
Test Duration (minutes)	175.0	175.0	175.0	175.0
Condensed Water (g)	221.0	289.7	248.6	253.1
% CO2	12.0	10.0	10.0	10.7
% O2	6.0	8.0	8.0	7.3
% N2	82.0	82.0	82.0	82.0
Meter Volume (dscf)	101.597	114.365	111.788	109.250
Flue Gas Moisture (%)	9.3	10.7	9.5	9.8
Gas Molecular Weight (Wet) (g/g-mole)	29.03	28.65	28,79	28.82
Absolute Stack Pressure (* Hg)	29.47	29.41	29,49	29.45
Absolute Stack Temperature (R)	853	852	852	852
Average Gas Velocity (f/sec)	50.55	46.65	47.34	48.18
Avg Flow Rate (acfm)	303,314	279,925	284,031	289,090
Avg Flow Rate (dscfm)	167,655	152,225	156,935	158,938
Isokinetic Sampling Rate (%)	101.60	96.92	97.28	98.60

Plant Name AEP Tidd Demonstration Plant Location ESP Inlet Train MM5

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	-
Time Start	1850	1530	1.458	•
Time Finish	2255	1917	1918	-
Operator	_ TJB	TJB	TJB	-
Initial Leak Rate	0.010	0.010	0.010	•
Final Leak Rate	0.010	0.010	0.010	•
Duct Dimensions (ft)	10 x 10	10 x 10	10 x 10	•
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	1.009	1,009	1.009	1.009
Nozzle Diameter (inches)	0.2460	0.2450	0.2770	•
Barometric Pressure ("Hg)	29.29	29.26	29.2	29.25
Static Pressure ("H2O)	2.8	2.8	2.8	2.8
Meter Volume (acf)	110.566	96.973	114.507	107.349
Average square root of delta p	0.7720	0.6880	0.6410	0.7003
Average delta H (" H2O)	1.42	1.10	1.54	1.35
Average Stack Temperature (F)	389	387	392	389
Average DGM Temp (F)	76.6	67.0	82.7	75.4
Test Duration (minutes)	175.0	175.0	175.0	175.0
Condensed Water (g)	184.3	201.0	236.7	207.3
% CO2	12.0	10.0	10.0	10.7
% O2	6.0	8.0	8.0	7.3
% N2	82.0	82.0	82.0	82.0
Meter Volume (dscf)	107.848	96,136	110.132	104.705
Flue Gas Moisture (%)	7.5	9.0	9.2	8.6
Gas Molecular Weight (Wet) (g/g-mole)	29.25	28.85	28.82	28.97
Absolute Stack Pressure (* Hg)	29.50	29.47	29.41	29.46
Absolute Stack Temperature (R)	849	847	852	849
Average Gas Velocity (f/sec)	55.00	49.31	46.15	50.16
Avg Flow Rate (acfm)	329,995	295,885	276,920	300,933
Avg Flow Rate (dscfm)	187,097	165,286	153,061	168,481
Isokinetic Sampling Rate (%)	99.81	101.54	98.27	99.87

Plant Name AEP Tidd Demonstration Plant Location ESP Inlet Train VOST

Run No.	1A	18	2A	2B	3A	3B	Average
Date	04-13-94	04-13-94	04-13-94	04-13-94	04-14-94	04-14-94	-
Time Start	0032	0120	2235	2320	2010	2120	-
Time Finish	0112	0140	2315	0000	2050	2200	-
Operator	ТЈВ	TJB	TJB	TJB	TJB	TJB	-
Initial Leak Rate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	-
Final Leak Rate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	-
Tenax Tube ID	30437A	30441A	30415A	30401A	30411A	30408A	-
Tenax/Charcoal Tube ID	30437B	30441B	30415B	30401B	30411B	30408B	-
Dry Gas Meter Calibration (Yd)	1.000	1.000	1.000	1,000	1.000	1,000	1.000
Barometric Pressure ("Hg)	29.29	29.29	29.26	29.26	29.2	29.2	29.25
Meter Volume (liters)	20.500	10.100	20.215	20.010	20.110	20.100	18.506
Average delta H (" H2O)	1.13	1.25	1.00	1.50	1.20	1.20	1.21
Average DGM Temp (F)	66.0	66.5	61.0	65.0	80.5	75.5	69. i
lst Condenser Temp (F)	63.5	60.5	46.5	60.0	47.0	50.5	54.7
2nd Condenser Temp (F)	63.0	61.5	59.5	47.5	47.5	52.0	55.2
Test Duration (minutes)	40.0	20.0	40.0	40.0	40.0	40.0	36.7
% CO2	12.0	12.0	11.0	11.0	11.0	11.0	11.3
% O2	6.0	6.0	8.0	8.0	8.0	8.0	7.3
% N2 ⁻	82.0	82.0	81.0	81.0	81.0	81.0	81.3
Meter Volume (dsL)	20.202	9.947	20.085	19.755	19.230	19.400	18.103

Plant Name AEP Tidd Demonstration Plant Location ESP Outlet Train Aldehyde

Run No.	1	2	3	Average
Date	04-12-94	04-13-93	04-14-94	•
Time Start	1950	1500	1520	-
Time Finish	2130	1640	1655	•
Operator	JEH	JEH	JEH	•
Initial Leak Rate	0.005	< 0.001	0.006	-
Final Leak Rate	0.009	0.007		-
Stack Diameter (ft)	10.0	10.0	10.0	-
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	0.997	0.997	0.997	0.997
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	-
Barometric Pressure ("Hg)	29.41	29.14	29.35	29.3
Static Pressure ("H2O)	1.6	1.5	1.6	1.566667
Meter Volume (acf)	64.455	69.285	66.305	66.682
Average square root of delta p	0.7810	0.8370	0.8310	0.8163
Average delta H (* H2O)	1.37	1.58	1.59	1.51
Average Stack Temperature (F)	389	387	388	388
Average DGM Temp (F)	87,2	83.3	99.7	90.1
Test Duration (minutes)	95.0	100.0	95.0	96.7
Condensed Water (g)	140.5	155.2	226.6	174.1
% CO2	12.0	12.0	11.0	11.7
% O2	6.0	7.0	8.0	7.0
% N2	82.0	81.0	81.0	81.3
Meter Volume (dscf)	61.158	65.648	61.417	62.741
Flue Gas Moisture (%)	9.8	10.0	14.8	11.6
Gas Molecular Weight (Wet) (g/g-mole)	28.97	28.98	28.29	28.74
Absolute Stack Pressure (" Hg)	29.53	29.25	29.47	29.42
Absolute Stack Temperature (R)	849	847	848	848
Average Gas Velocity (f/sec)	55.86	60.10	60.19	58.72
Avg Flow Rate (acfm)	263,252	283,205	283,634	276,697
Avg Flow Rate (dscfm)	145,759	155,149	148,076	149,661
Isokinetic Sampling Rate (%)	101.78	97.51	100.61	99.97

Plant Name AEP Tidd Demonstration Plant Location ESP Outlet Train Ammonia/Hydrogen Cyanide

Run No.	1	2	3	Ачегаде
Date	04-12-94	04-13-94	04-14-94	-
Time Start	1803	1325	1338	-
Time Finish	1923	1436	1508	•
Operator	ЈЕН	JEH	ЈЕН	-
Initial Leak Rate	0.009	0.010	0.007	
Final Leak Rate		0.007	0.014	•
Stack Diameter (ft)	10.0	10.0	10.0	-
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	0.997	0.997	0.997	0.997
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	•
Barometric Pressure ("Hg)	29.44	29.16	29.32	29.31
Static Pressure ("H2O)	1.5	1.4	2.0	1.6
Meter Volume (acf)	56.125	50.460	60.918	55.834
Average square root of delta p	0.8660	0.8440	0.8370	0.8490
Average delta H (" H2O)	1.68	1.59	1.55	1.61
Average Stack Temperature (F)	389	389	389	389
Average DGM Temp (F)	82.8	82.4	94.8	86.6
Test Duration (minutes)	80.0	76.0	90.0	82.0
Condensed Water (g)	145.8	117.8	133.4	132.3
% CO2	12.0	12.0	11.0	11.7
% O2	6.0	7.0	8.0	7.0
% N2	82.0	81.0	81.0	81.3
Meter Volume (dscf)	53,787	47.922	56.868	52.859
Flue Gas Moisture (%)	11.3	10.4	10.0	10.6
Gas Molecular Weight (Wet) (g/g-mole)	28.78	28.93	28.88	28.86
Absolute Stack Pressure (" Hg)	29.55	29.26	29.47	29,43
Absolute Stack Temperature (R)	849	849	849	849
Average Gas Velocity (f/sec)	62.13	60.69	60.03	60.95
Avg Flow Rate (acfm)	292,769	286,013	282,897	287,226
Avg Flow Rate (dscfm)	159,402	155,819	155,974	157,065
Isokinetic Sampling Rate (%)	97.20	93.25	93.35	94.60

Plant Name AEP Tidd Demonstration Plant Location ESP Outlet Train Anions

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	-
Time Start	1312	1148	1150	-
Time Finish	1427	1303	1313	-
Operator	ÆН	JEH	JEH	-
Initial Leak Rate	0.011	0.007	< 0.001	•
Final Leak Rate	0.012	0.010	< 0.001	
Stack Diameter (ft)	10.0	10.0	0.01	•
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	0.997	0.997	0.997	0.997
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	-
Barometric Pressure (*Hg)	29.5	29.18	29.35	29.34
Static Pressure (*H2O)	1.5	2.3	3.8	2.5
Meter Volume (acf)	53.946	50,345	56.165	53.485
Average square root of delta p	0.8540	0.7940	0.8370	0.8283
Average delta H (* H2O)	1.77	1.40	1.54	1.57
Average Stack Temperature (F)	388	390	389	389
Average DGM Temp (F)	77.0	1.08	84.0	80.4
Test Duration (minutes)	75.0	75.0	73.0	74.3
Condensed Water (g)	126.5	100.2	109.2	112.0
Filter Weight Gain (g)	0.1631	0.1426	0.1348	0.1468
PNR Weight Gain (g)	0.3358	0.0454	0.1711	0.1841
% CO2	12.0	12.0	11.0	11.7
% O2	6.0	7.0	8.0	7.0
% N2	82.0	81.0	81.0	81.3
Meter Volume (dscf)	52.370	48.022	53.520	51.304
Particulate Meter Volume, (dscf)	167.315	l	171.804	
Flue Gas Moisture (%)	10.2	9.0	8.8	9.3
Gas Molecular Weight (Wet) (g/g-mole)	28.92	29.11	29.02	29.01
Absolute Stack Pressure (* Hg)	29.61	29.35	29.63	29.53
Absolute Stack Temperature (R)	848	850	849	849
Average Gas Velocity (f/sec)	61.03	56.88	59.71	59.21
Avg Flow Rate (acfm)	287,610	268,025	281,375	279,004
Avg Flow Rate (dscfm)	159,023	148,613	158,097	155,244
Isokinetic Sampling Rate (%)	101.19	99.29	106.86	102.45
Particulate Concentration (gr/dscf)	4.60E-02	1.80E-02	2.75E-02	3.05E-02
Particulate Concentration (lbs/dscf)	6.57E-06	2.57E-06	3.93E-06	4.36E-06
Particulate Emission (grams/sec)	7.90	2.88	4.69	5.16
Particulate Emission (lbs/hour)	62.73	22.87	37.24	40.95

Plant Name AEP Tidd Demonstration Plant Location ESP Outlet Train Chrome IV

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	-
Time Start	1620	0840	0820	-
Time Finish	1740	1010	0945	-
Operator	JEH	JEH	JEH	-
Initial Leak Rate	0.011	< 0.001	0.005	•
Final Leak Rate	0.015	0.006		_
Stack Diameter (ft)	10.0	10.0	10.0	-
Pitot Tube Correction Factor (Cp)	0.84	0.84	0.84	0.84
Dry Gas Meter Calibration (Yd)	0.987	0.987	0.987	0.987
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	-
Barometric Pressure ("Hg)	29.5	29.26	29.38	29.38
Static Pressure ("H2O)	1.5	1.7	1.8	1.7
Meter Volume (acf)	49.100	57.450	52.460	53.003
Average square root of delta p	0.6630	0.7940	0.7680	0.7417
Average delta H (* H2O)	1.00	1.44	1,28	1.24
Average Stack Temperature (F)	388	390	389	389
Average DGM Temp (F)	79.3	73.4	66.2	72.9
Test Duration (minutes)	80.0	90.0	85.0	85.0
% CO2	12.0	12.0	11.0	11.7
% O2	6.0	7.0	8.0	7.0
% N2	82.0	81.0	81.0	81.3
Meter Volume (dscf)	46,901	55.090	51.184	51.058
Flue Gas Moisture (%)	10.0	10.0	10.0	10.0
Gas Molecular Weight (Wet) (g/g-mole)	28.94	28.98	28.87	28.93
Absolute Stack Pressure (* Hg)	29.61	29.39	29.51	29.50
Absolute Stack Temperature (R)	848	850	849	849
Average Gas Velocity (f/sec)	47.36	56.95	55.05	53.12
Avg Flow Rate (acfm)	223,176	268,365	259,424	250,322
Avg Flow Rate (dscfm)	123,718	147,377	143,169	138,088
Isokinetic Sampling Rate (%)	109.20	95.71	96.92	100.61

Plant Name AEP Tidd Demonstration Plant Location APF Inlet Train Aldehyde

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	-
Time Start	2025	1348	1600	-
Time Finish	0045	1538	2247	-
Operator	RVW	RVW	RVW	•
Initial Leak Rate	0.005	0.012	0.008	-
Final Leak Rate			0.006	•
Dry Gas Meter Calibration (Yd)	0.993	0.993	0.993	0.993
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	•
Barometric Pressure (*Hg)	29.44	29.14	29.35	29.31
Meter Volume (acf)	63.205	74.832	64.475	67.504
Average delta H (* H2O)	1.50	1.50	0.93	1.31
Average DGM Temp (F)	100.9	97,0	91.3	96.4
Test Duration (minutes)	95.0	110.0	119.0	108.0
Condensed Water (g).	180.4	165.2	142.5	162.7
% CO2	12.5	12.5	11.0	12.0
% O2	5.5	5,5	8.0	6.3
% N2	82.0	82.0	81.0	81.7
Meter Volume (dscf)	58.351	68.863	60.292	62.502
Flue Gas Moisture (%)	12.7	10.2	10.0	11.0
Gas Molecular Weight (Wet) (g/g-mole)	28.66	28.98	28.87	28.84

Plant Name AEP Tidd Demonstration Plant Location APF Inlet Train Ammonia/Hydrogen Cyanide

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	-
Time Start	1810	1345	1423	
Time Finish	1925	1455	1533	· .
Operator	RVW	RVW	RVW	•
Initial Leak Rate	0.006	0.010	0.004	•
Final Leak Rate	0.008	0.006	0.010	-
Dry Gas Meter Calibration (Yd)	0.993	1.018	1.018	1.010
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	•
Barometric Pressure ("Hg)	29.44	29.14	29.35	29.31
Meter Volume (acf)	48.540	47.521	44.682	46.914
Average delta H (* H2O)	1.50	1.51	1.50	1.50
Average DGM Temp (F)	105.3	89.5	92.9	95.9
Test Duration (minutes)	75.0	70.0	70.0	71.7
Condensed Water (g)	128.1	106.4	109.9	114.8
% CO2	12.5	12.5	11.0	12.0
% O2	5.5	5.5	8.0	6.3
% N2	82.0	82.0	81.0	81.7
Meter Volume (dscf)	44.464	45.444	42,772	44.227
Flue Gas Moisture (%)	12.0	10.0	10.8	10.9
Gas Molecular Weight (Wet) (g/g-mole)	28.76	29.00	28.77	28.84

Plant Name AEP Tidd Demonstration Plant Location APF Inlet Train Anions

Run No.	1	2	3	1	Average
Date	04-12-94	04-13-94	04-14-94	04-15-94	•
Time Start	1315	0908	1420	1627	•
Time Finish	1415	1018	1530	1735	-
Operator	RVW	R√W	RVW	RVW	•
Initial Leak Rate	0.006	0.005	0.008	0.007	•
Final Leak Rate		0.006	0.006	0.010	•
Dry Gas Meter Calibration (Yd)	1.018	1.018	0.993	0.993	1.006
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	0.2500	-
Barometric Pressure ("Hg)	29.44	29.14	29.35	29.41	29.34
Meter Volume (acf)	29.981	46,758	42.764	44.870	41.093
Average delta H (* H2O)	1.00	1.50	1.50	1.50	1.38
Average DGM Temp (F)	95.2	73.8	87.4	87.5	86.0
Test Duration (minutes)	55.0	70.0	70.0	68.0	65.8
Condensed Water (g)		108.4	100.7	105.9	105.0
% CO2	12.5	12.5	11.0	11.0	11.8
% O2	5.5	5.5	8.0	8.0	6.8
% N2	82.0	82.0	81.0	81.0	81.5
Meter Volume (dscf)	28.630	46.029	40.330	42.395	39.346
Flue Gas Moisture (%)	0.0	10.0	10.5	10.5	7.8
Gas Molecular Weight (Wet) (g/g-mole)	30.22	29.00	28.81	28.81	29.21

Plant Name AEP Tidd Demonstration Plant Location APF Inlet Train Metals

Run No.	1	2	3	4	Average
Date	04-12-94	04-13-94	04-14-94	04-15-94	-
Time Start	1322	0905	0955	2132	-
Time Finish	1417	1125	1215	2352	-
Operator	RVW	RVW	RVW	R∨W	
Initial Leak Rate	0.012	0.012	0.010	0.010	-
Final Leak Rate		0.014		0.012	-
Dry Gas Meter Calibration (Yd)	0.993	0.993	0.993	1.018	0.999
Nozzle Diameter (inches)	0,2500	0.2500	0.2500	0.2500	•
Barometric Pressure ("Hg)	29.44	29.14	29.35	29.41	29.335
Meter Volume (acf)	41.375	106.315	104.156	103.282	88.782
Average delta H (" H2O)	1.90	1.76	1.90	1.90	1.86
Average DGM Temp (F)	107.5	98.1	94.3	87.5	96.9
Test Duration (minutes)	55.0	140.0	140.0	140.0	118.8
Condensed Water (g)		158.3	118.5	266.1	181.0
% CO2	12.5	12.5	11.0	11.0	11.8
% O2	5.5	5.5	8.0	8.0	6.8
% N2	82.0	82.0	81.0	81.0	81.5
Meter Volume (dscf)	37.791	97.697	97.103	100.141	83.183
Flue Gas Moisture (%)	0.0	7.1	5.4	11.1	5.9
Gas Molecular Weight (Wet) (g/g-mole)	30.22	29.35	29.42	28.73	29.43

Plant Name AEP Tidd Demonstration Plant Location APF Inlet Train M23

Run No.	2	3	1	Average
Date	04-13-94	04-15-94	04-15-94	•
Time Start	1803	1043	2125	•
Time Finish	2233	1550	2350	-
Operator	RVW	RVW	RVW	•
Initial Leak Rate	0.009	0.003	0.009	•
Final Leak Rate	0.007	0.004	0.010	•
Dry Gas Meter Calibration (Yd)	0.993	0.993	1.016	1.001
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	-
Barometric Pressure ("Hg)	29.14	29.41	29.41	29.32
Meter Volume (acf)	107.555	111.103	108.501	109.053
Average delta H (" H2O)	0.93	1.22	1.90	1.35
Average DGM Temp (F)	93.9	89.8	95.7	93.1
Test Duration (minutes)	200.0	200.0	165.0	188.3
Condensed Water (g)	327.1	267.0	7.7	200.6
% CO2	12.5	11.0	11.0	11.5
% O2	8.5	8.0	8.0	8.2
% N2	79.0	81.0	81.0	80.3
Meter Volume (dscf)	99.387	104.471	103.449	102,435
Flue Gas Moisture (%)	13.4	10.8	0.4	8.2
Gas Molecular Weight (Wet) (g/g-mole)	28.68	28.78	30.04	29.17

Plant Name AEP Tidd Demonstration Plant Location APF Inlet Train MM5

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-15-94	- j
Time Start	1928	1805	1045	-
Time Finish	0103	2230	1553	•
Operator	RVW	RVW	RVW	
Initial Leak Rate	0.002	800,0	0.006	-
Final Leak Rate	0.010	0,005	0.006	•
Dry Gas Meter Calibration (Yd)	1.018	1.018	1.018	1.018
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	-
Barometric Pressure ("Hg)	29.44	29.14	29.41	29.33
Meter Volume (acf)	111.710	104.953	111.810	109.491
Average delta H (* H2O)	1.50	0.93	1.19	1.21
Average DGM Temp (F)	94.9	84.1	88.7	89.2
Test Duration (minutes)	150.0	200.0	200.0	183.3
Condensed Water (g)	256.6	231.0	248.5	245.4
% CO2	12.5	12.5	11.0	12.0
% O2	5.5	5.5	8.0	6.3
% N2	82.0	82.0	81.0	81.7
Meter Volume (dscf)	106.875	101.215	107.986	105.358
Flue Gas Moisture (%)	10.2	9.7	9.8	9.9
Gas Molecular Weight (Wet) (g/g-mole)	28.98	29.03	28.90	28.97

Plant Name AEP Tidd Demonstration Plant Location APF Inlet Train VOST

Run No.	2A	2B	3A	3B	1A	ΙB	Average
Date	04-13-94	04-13-94	04-14-94	04-14-94	04-15-94	04-15-94	-
Time Start	2252	2340	1642	2012	1624	1710	-
Time Finish	2332	0020	1722	2247	1704	1750	•
Operator	RVW	RVW	RVW	RVW	RVW	RVW	•
Initial Leak Rate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	•
Final Leak Rate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	-
Tenax Tube ID	30442A	30444A	30428A	30404A	30424A	30403a	•
Tenax/Charcoal Tube ID	30442B	30444B	30428B	30404B	30424B	30403B	-
Dry Gas Meter Calibration (Yd)	0.982	0.982	0.982	0.982	0.982	0.982	0.982
Barometric Pressure ("Hg)	29.14	29.14	29.41	29.41	29.41	29.41	29.32
Meter Volume (liters)	20.070	20.075	20.410	20.085	20.110	20.150	20.150
Average delta H (" H2O)	1.20	1.20	1.40	1.20	1.20	1.20	1.23
Average DGM Temp (F)	82.7	86.0	98.0	100.0	97.0	47.3	85.2
1st Condenser Temp (F)	46.7	47.3	50.7	47.7	57.7	47.3	49.6
2nd Condenser Temp (F)	50.3	48.3	57.3	55.7	60.3	51.0	53.8
Test Duration (minutes)	40.0	40.0	40.0	40.0	40.0	40.0	40.0
% CO2	12.5	12.5	11.0	11.0	11.0	11.0	11.5
% O2	5.5	5.5	. 8.0	8.0	8.0	8.0	7.2
% N2	82.0	82.0	81.0	81.0	81.0	81.0	81.3
Meter Volume (dsL)	18.733	18.623	18.707	18.334	18.456	20.303	18.859

Plant Name AEP Tidd Demonstration Plant Location APF Outlet Train Aldehyde

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	-
Time Start	1945	1345	1359	-
Time Finish	2141	1537	2041	-
Operator	DIA	DΙΛ	DΙΛ	•
Initial Leak Rate	< 0.001	< 0.001	< 0.001	-
Final Leak Rate	< 0.001	< 0.001	< 0.001	-
Dry Gas Meter Calibration (Yd)	1.016	1.003	1.003	1.007
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	•
Barometric Pressure ("Hg)	29.44	29.14	29.35	29.31
Meter Volume (acf)	62.303	62.505	61.873	62,227
Average delta H (* H2O)	0.93	0.93	0.93	0.93
Average DGM Temp (F)	106.1	101.6	108.1	105.2
Test Duration (minutes)	116.0	112.0	118.0	115.3
Condensed Water (g)	133.4	127.5	132.7	131.2
% CO2	12.0	12.0	12.0	12.0
% O2	6.0	6.0	6.0	6.0
% N2	82.0	82.0	82.0	82.0
Meter Volume (dscf)	58.227	57.544	56.713	57,495
Flue Gas Moisture (%)	9.8	9.5	9.9	9.7
Gas Molecular Weight (Wet) (g/g-mole)	28.97	29.01	28.95	28.98

Plant Name AEP Tidd Demonstration Plant Location APF Outlet Train Ammonia/Hydrogen Cyanide

Run No.	l	2	3	Average
Date	04-12-94	04-13-94	04-14-94	-
Time Start	1802	1346	1424	-
Time Finish	1917	1515	1542	-
Operator	DIV	DJV	DJV	-
Initial Leak Rate	< 0.001	0.005	< 0.001	•
Final Leak Rate	< 0.001	0.004	< 0.001	•
Dry Gas Meter Calibration (Yd)	1.003	1.016	1.003	1.007
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	-
Barometric Pressure ("Hg)	29.44	29.14	29.35	29.31
Meter Volume (acf)	40.628	42.319	42.829	41.925
Average delta H (* H2O)	0.95	0.93	. 0.93	0.94
Average DGM Temp (F)	101.6	90.1	101.1	97.6
Test Duration (minutes)	85.0	79.0	78.0	80.7
Condensed Water (g)	100.1	87.4	105.1	97.5
% CO2	12.0	12.0	12.0	12.0
% O2	6.0	6.0	6.0	6.0
% N2	82.0	82.0	82.0	82.0
Meter Volume (dscf)	37.784	40.287	39.744	39.272
Flue Gas Moisture (%)	11.1	9.3	11.1	10.5
Gas Molecular Weight (Wet) (g/g-mole)	28.81	29.03	28.81	28.88

Plant Name AEP Tidd Demonstration Plant Location APF Outlet Train Anions

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	_
Time Start	1315	0906	0953	-
Time Finish	1430	1025	1110	-
Operator	DJV	DIA	DJV	
Initial Leak Rate	< 0.001	< 0.001	0.002	-
Final Leak Rate	< 0.001	< 0.001	0.002	
Dry Gas Meter Calibration (Yd)	1.016	1.016	1.003	1.012
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	•
Barometric Pressure ("Hg)	29.44	29.14	29.35	29.31
Meter Volume (acf)	40.761	42.134	42.338	41.744
Average delta H (* H2O)	0.97	0.93	0.93	0.94
Average DGM Temp (F)	99.2	89.0	100.3	96.1
Test Duration (minutes)	85.0	79.0	77.0	80.3
Condensed Water (g)	97.5	93.6	91.2	94.1
% CO2	12.0	12.0	12.0	12,0
% O2	6.0	6.0	6.0	6.0
% N2	82.0	82.0	82.0	82.0
Meter Volume (dscf)	38.569	40.191	39.350	39.370
Flue Gas Moisture (%)	10.7	9.9	9.9	10.1
Gas Molecular Weight (Wet) (g/g-mole)	28.86	28.96	28.96	28.93

Plant Name AEP Tidd Demonstration Plant Location APF Outlet Train Metals

Run No.	1	2	3	Average
Date	04-12-94	04-13-94	04-14-94	•
Time Start	0909	0904	0952	-
Time Finish	1245	1140	1229	-
Operator	DJV	DJV	DIV	•
Initial Leak Rate	0.002	0.005	0.006	•
Final Leak Rate	0.002	0.003	0.004	•
Dry Gas Meter Calibration (Yd)	1.003	1.003	1.016	1.007
Nozzle Diameter (inches)	0,2500	0.2500	0.2500	-
Barometric Pressure (*Hg)	29.44	29.14	29.35	29.31
Meter Volume (acf)	100.626	103.896	103,459	102.660
Average delta H (* H2O)	1.46	1.40	1.40	1.42
Average DGM Temp (F)	110.4	98.1	93.8	100,8
Test Duration (minutes)	138.0	156.0	157.0	150.3
Condensed Water (g)	122.3	236.2	198.7	185.7
% CO2 · ·	12.0	12.0	12.0	12.0
% O2	6.0	6.0	6.0	6.0
% N2	82.0	82.0	82.0	82.0
Meter Volume (dscf)	92.265	96.351	98.657	95.758
Flue Gas Moisture (%)	5.9	10.4	8.7	8.3
Gas Molecular Weight (Wet) (g/g-mole)	29.44	28.90	29.10	29.15

Plant Name AEP Tidd Demonstration Plant Location APF Outlet Train M23

Run No.	2	3	i	Average
Date	04-13-94	04-15-94	04-15-94	-
Time Start	1800	1041	2058	•
Time Finish	2129	1541	2317	-
Operator	DJV	DJV	DJV	•
Initial Leak Rate	< 0.001	< 0.001	< 0.001	-
Final Leak Rate	< 0.001	< 0.001	< 0.001	-
Dry Gas Meter Calibration (Yd)	1.016	1.003	1.003	1.007
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	-
Barometric Pressure ("Hg)	29.14	29.41	29.41	29.32
Meter Volume (acf)	111.877	108.139	107.633	109.216
Average delta H (* H2O)	0.93	0.96	1.90	1.26
Average DGM Temp (F)	91.0	100.6	94.3	95.3
Test Duration (minutes)	229.0	193.0	139.0	187.0
Condensed Water (g)	239.2	244.1	241.9	241.7
% CO2	12.0	12.0	12.0	12.0
% O2	6.0	6.0	6.0	6.0
% N2	82.0	82.0	82.0	82.0
Meter Volume (dscf)	106.339	100.658	101.556	102.851
Flue Gas Moisture (%)	9.6	10.3	10.1	10.0
Gas Molecular Weight (Wet) (g/g-mole)	28.99	28.91	28.93	28.95

Plant Name AEP Tidd Demonstration Plant Location APF Outlet Train MM5

Run No.	ı	2	3	Average
Date	04-12-94	04-13-94	04-15-94	•
Time Start	1850	1801	1040	•
Time Finish	2155	2121	1542	•
Operator	DJV	DJV	DJV	_
Initial Leak Rate	0.005	< 0.001	< 0.001	-
Final Leak Rate	0.001	< 0.001	< 0.011	
Dry Gas Meter Calibration (Yd)	1.003	1.003	1.016	1.007
Nozzle Diameter (inches)	0.2500	0.2500	0.2500	-
Barometric Pressure ("Hg)	29.44	29.14	29.41	29.33
Meter Volume (acf)	107.349	110.284	106.209	107.947
Average delta H (* H2O)	0.93	0.93	0.96	0.94
Average DGM Temp (F)	111.8	100.1	94.5	102.1
Test Duration (minutes)	185.0	200.0	195.0	193.3
Condensed Water (g)	234.7	228.8	226.9	230.1
% CO2	12.0	12.0	12.0	12.0
% O2	6.0	6.0	6.0	6.0
% N2	82.0	82.0	82.0	82.0
Meter Volume (dscf)	98.052	101,797	101.249	100,366
Flue Gas Moisture (%)	10.2	9.6	9.6	9.8
Gas Molecular Weight (Wet) (g/g-mole)	28.93	28.99	29.00	28.97

Appendix C: Source Sampling Data Summary & PSD Plots

Plant Name AEP Tidd Demonstration Plant Location APF Outlet Train VOST

Run No.	1A	1B	2A	2B	3A	3B	Average
Date	04-12-94	04-13-94	04-13-94	04-13-94	04-14-94	04-14-94	-
Time Start	2325	0013	2241	2324	1645	2000	-
Time Finish	0005	0053	2315	0000	1725	2040	-
Operator	DIA	DJV	DJV	VIQ	, DJV	DJV	•
Initial Leak Rate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	-
Final Leak Rate	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	-
Tenax Tube ID	30418A	30435A	30414A	30416A	30420A	30430A	•
Tenax/Charcoal Tube ID	30418B	30435B	30414B	30416B	30420B	30430B	
Dry Gas Meter Calibration (Yd)	1.005	1.005	1.005	1.005	1.005	1.005	1.005
Barometric Pressure ("Hg)	29.44	29.44	29.14	29.14	29.41	29.41	29.33
Meter Volume (liters)	24.112	32.604	23.833	20.976	20.354	22.821	24.117
Average delta H (* H2O)	1.20	1.30	1.60	1.40	1.20	1.30	1.33
Average DGM Temp (F)	88.0	88.3	77.0	78.5	87.3	88.5	84.6
1st Condenser Temp (F)	44.8	45.0	50.0	50.0	46,0	44.3	46.7
2nd Condenser Temp (F)	55.0	52.0	54.5	53.0	53.7	52.5	53.4
Test Duration (minutes)	40,0	40.0	34.0	36.0	40.0	40.0	38.3
% CO2	12.0	12.0	12.0	12.0	12.0	12.0	12.0
% O2	6.0	6.0	6.0	6.0	6.0	6.0	6.0
% N2	82.0	82.0	82.0	82.0	82.0	82.0	82.0
Meter Volume (dsL)	23.042	31.151	23.029	20.202	19.456	21.772	23,109

				Sample			Orifice	2000	Zone 2	2096 3	Ber.
	Run			Time	Filer	Delta P	Тетр	Temp	Temp	Temp	Prost.
Location	S.	Dete	Time	(min)	2	CH20	đ	욘	a	묩	3
APP Inlet]-	67178	1255-1430	2	Q-1938	7.8	959	588	<u>.</u>	119	19.44
	. 3	04.12.94	1800-2052	7	Q-1940, Q-1944	2.8	3	597	73	919	29.44
	: 1	04.12-94	2306-0106	120	0-1950, 0-1946	2.6	563	\$15	535	S10	29.44
	. 72	04-13-94	0850-1120	150	0-1936, 0-1942	2.6	267	532	303	489	29.14
	: 7	04-13-94	1345-1540	S 11	Q-1946, Q-1950	2.6	570	534	808	498	29.14
	57	04.13.94	1800-2025	143	Q-1936, Q-1942	5.6	576	267	225	30	29.14
	7	04.13.94	2130-2422	17	0-1946, 0-1950	2.6	588	550	545	202	29.14
	; ;	04.14.94	0955-1225	150	Q-1942, Q-1936	7.7	20	8	511	495	29.41
	: 2	76 77 70	1418.172	2	0-1940, 0-1944	2.4	167	514	424	303	29.41
	: :	76.17.00	1040-1416	95.	Q-1946, Q-1944	2.4	497	203	542	546	29.41
	; ;	70.71	1,00,170	Ξ	0.19	2.3	89	468	161	164	29.41
	: :	76 11 00	2124.244	91	0.1940, 0.1944	7.6	864	308	531	518	29.41
	3	4	-	}	· · · · · · · · · · · · · · · · · · ·	i		ı			
1000	Maste	19.67	0900.1601	737	0-1966	2.5	361	25	898	310	29.44
Ar Ould	- Mc	04.12.04	1800-0059	Ę	0-1956	7.	518	302	998	159	29.44
	2 - Monels	04.13.94	0635-1538	3	0-1958	2.4	340	\$	898	158	29.14
	Oceanica	04.11.94	1640-0003	445	0-1962	2.4	497	234	212	143	29.14
	A March	04.14.94	0635-1729	534	0-1980	7.4	517	55	267	136	29.41
	1. Orașica	04.14.94	1857-2346	289	0-1954	7.4	£	495	549	\$	29.41
	4 - Orennica	04.15.94	0935-1554	£	0.1976	2.4	323	\$20	266	184	29.41
	5 - Orrenice	04-15-94	1645-2329	284	0.1970	7.4	497	\$25	555	8	29.41

% isokinetic based on process design flow rates and determined to be 3 scfm.

R isokinetic based on process design flow rates and determined to be 3 scfm.

S Particulate Particulate Isoking Mass Loading		50.2	33.5	47.4		36.8	36.8	36.8 34.4 5.95	36.48 4.48 4.48.83 8.54.83	3 5.4 3 4.4 45.5 3 5.4 3 5.5 3 5.5	2	3 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	36.4 4.4 4.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8.5 8	101 36.8 1.63 101 34.4 1.21 101 59.4 1.76 100 45.5 1.36 100 45.5 1.40 101 40.9 1.48	5.8 34.4 59.4 45.5 45.5 40.9 53.7 5.00246	36.8 34.4 45.5 45.5 40.9 53.7 53.7 6.00246	55.8 59.4 45.5 45.5 40.9 53.7 50.004 60.00548	56.8 34.4 45.5 45.5 46.9 53.7 5.00246 0.01031	36.8 34.4 45.5 45.5 40.9 6.00246 6.0033	55.8 34.4 45.5 45.5 40.9 53.7 50.00346 6.01031 6.01031	36.8 34.4 45.5 45.5 40.9 53.7 53.7 6.01031 0.0034 0.0033	36.8 34.4 45.5 45.5 40.9 53.7 6.00246 6.00739 6.00739 6.00739	36.8 34.4 59.4 45.5 38.5 45.5 40.9 53.7 6.00246 -7 6.00588 -7 6.00634 9.00739 6.00739 6.01652
_														11.59 13.71 11.59 11.16 11.23 11.22									
Ota Sample Volume	14kD 286.52	516.69	360.72	454.43	147.88		437.23	437.25	437.23 519.61 450.60	437.25 519.61 450.60 422.76	437.23 519.61 450.60 422.76	437.25 450.60 422.76 469.33	437.23 519.61 450.60 422.76 469.33 425.19	437.23 519.61 450.60 422.76 469.33 449.93	437.23 519-61 422.76 469.33 449.93	437.23 519.61 450.60 422.76 469.33 425.19 449.93	437.23 519.61 450.60 422.76 469.33 469.33 449.93 1259.91	437.23 519-61 450-60 469.33 469.33 449.93 1259.91 1249.23 1247.23	437.23 519.61 420.60 425.76 469.33 425.19 449.93 1249.23 1249.23 1341.68	437.23 519.61 450.60 422.76 469.33 449.93 1249.23 1249.23 1241.22 1241.68	437.23 519.61 450.60 422.76 469.33 425.19 449.93 1249.25 1247.22 1341.68 1593.19	437.23 519.61 450.60 422.76 469.33 469.33 449.33 1249.23 1341.66 1593.19 879.43	437.23 519.61 450.60 422.76 469.33 449.93 1249.25 1247.22 1341.68 1393.19 126.20
Gas Sampling Rate	(desfin)	3:00	3.006	3.030			3.023 4.016	3.016 3.016 3.014	3.024 3.024 5.024	3.016 3.024 3.004	3.021 3.021 3.021 3.064 5.000	3.0021 3.0024 3.004 3.006	3.016 3.016 3.004 3.006 3.016	3.025 3.024 3.004 3.006 3.006 3.000	3.025 3.024 3.024 3.026 3.026 3.026	3.002 3.004 3.004 3.006 3.006 2.97	3.025 3.024 3.024 3.006 3.006 2.979 2.979	3.025 3.016 3.024 3.006 3.016 3.016 2.979 2.949	3.025 3.024 3.024 3.006 3.006 2.979 3.049 3.049	3.022 3.024 3.024 3.036 3.036 3.036 2.949 2.949	3.025 3.024 3.024 3.006 3.006 3.016 2.979 2.982 2.949	3.045 3.004 3.004 3.006 3.006 2.949 3.043 3.043	3.025 3.024 3.024 3.026 3.026 2.937 2.943 2.943 2.943 2.943 2.943 2.943
	Line	1400-2052	7104.0104	0440-1120	277 777		1343-1340	1800-2025	1900-2025 2130-2422 2006-1726	1800-2025 2130-2422 0955-1225	1800-2025 2130-2422 0955-1225 1416-1728	1800-2023 2130-2422 0953-1223 1418-1728 1040-1316	1800-1250 2190-2023 2190-2022 955-1225 1418-1728 1640-1316	190-2023 2130-2023 0935-1223 1418-1728 1900-1730 2125-2335	1942-1540 1800-2023 2130-2422 0933-1233 1418-1728 1900-1730 2125-2333	1100-2025 21100-2025 21100-2025 0955-1728 1410-1728 1500-1750 2125-2355	1800-2023 2130-2422 0955-1223 1418-1728 1640-1316 2125-2353 1800-0653	1902-1202 2130-2422 0935-1223 1418-1728 1418-1728 1406-1316 1506-1730 2125-2333 1800-003 0835-1538	1100-2023 2110-2422 0935-1223 1410-1728 1410-1738 1410-1730 2125-2335 0900-1603 1410-0039	1842-1540 1800-2023 2130-2422 0955-1223 1416-1724 1800-1750 2123-2353 1800-0059 0835-1338	1800-2025 2130-2422 0955-1723 1418-1724 1400-1316 1500-1750 2125-2355 1800-0059 0835-1729 0835-1729	1100-2023 2110-2422 0955-1223 1418-1728 1640-1316 2125-2353 1800-0059 0835-1538 1840-0005 0835-2346	1804-2123 2130-2422 0955-1223 1418-1728 1804-1730 2125-2353 18040-0059 0835-1729 1857-2346 0835-1538
	Pate 1	12.00	10.51	13-94			70 60 00	Q4-13-94	6413.54 6413.5	04-13-94 04-13-94 04-14-94	04-13-94 04-13-94 04-14-94	04-13-94 04-13-94 04-14-94 04-14-94	04-13-94 04-13-94 04-14-94 04-14-94 04-13-94	04-13-94 04-13-94 04-14-94 04-14-94 04-15-94 04-15-94	04-11-34 04-11-34 04-11-34 04-11-34 04-11-34 04-11-34	04-13-94 04-13-94 04-13-94 04-13-94 04-13-94 04-13-94	04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34	04-15-34 04-15-34 04-15-34 04-15-34 04-15-34 04-15-34 04-15-34	04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34	04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34 04-13-34	0413.94 0413.94 0413.94 0413.94 0413.94 0413.94 0413.94 0413.94	04.13.54 04.13.54 04.13.54 04.13.54 04.13.54 04.13.54 04.13.54 04.13.54 04.13.54	04 13 34 64
France	원·	- :	2:	<u>.</u>	Ξ;		3 :	123	:57:	3222	1277	12222	22222	22222	227777	. Mead	2-3 2-4 3-1 3-2 4-1 4-1 4-2 4-3 4-3 1 - Metala 1 - Organica	2-3 2-4 2-4 3-1 3-2 4-1 4-1 4-2 4-3 4-3 1-Organica 2-Menda	2-3 2-4 3-1 3-2 4-1 4-1 4-1 4-2 4-3 4-3 4-3 2 - Metals	2-3 2-4 2-4 3-1 3-2 4-1 4-1 4-2 4-3 4-3 4-3 1-Organica 2-Metalo 2-Organica	2-3 2-4 2-4 3-1 3-2 4-1 4-1 4-2 4-3 1- Metalo 1- Organico 2- Organico 3- Metalo 3- Metalo	2-3 2-4 3-1 3-2 4-1 4-1 4-1 4-2 4-3 4-3 4-3 4-3 4-3 4-3 4-3 4-3 4-3 4-3	2-3 2-4 3-1 3-2 3-2 4-1 4-1 4-1 4-2 4-3 4-3 4-3 4-3 4-3 4-3 4-3 4-3 4-3 4-3
	Location	ह्य													į	Outle	Oule	Outlet	Outlet	Outlet	Outlet	Oulet	Outlet

APF Sampling Locations Data Summary

Run ID : Inlet 1
Plant & Unit : AEP PFBC
Sampling Location : ESP Inlet
Type of Sizing Device : UWVD
Run Date : 4/11/94
Start time : 21:30

REMARKS:

Average Flue Gas Temperature Flue Gas Pressure (Absolute) Flue Gas Static Pressure Flue Gas Molecular Weight (Wet) Flue Gas Viscosity Flue Gas Mean Free Path Flue Gas Percent Moisture Average Flue Gas Velocity Average Flue Gas Flowrate	374.0 30.14 3.00 27.26 .165E-04 .446E-05 10.00 64.6894 304842. 174904.	"Hg "H20 lb/lb-mole lb-sec/ft2 inch t fps acfm	190.0 76.56 7.620 27.2624 .246E-03 .113E-04 10.00 19.7173 8633. 4953.	cm Hg cm H20 g/g-mole Poise cm %
Volume Sampled (Dry, STP) Test Duration Total Catch Sampling Rate in Device Collection Temperature Percent Isokinetic Nominal Mass Concentration	26.8489 65. .135E-02 .720 374.0 80.9 .352E+00	acîm F	.7604 65. .612E+03 .020 190.0 80.9	m3 min mg m3/min C

Appendix C: Source Sampling Data Summary & PSD Plots

Run ID : Inlet 1
Plant & Unit : AEP PFBC
Sampling Location : ESP Inlet
Type of Sizing Device : UWVD

Run Date : 4/11/94 Start time : 21:30

Nominal Mass Concentration .352E+00 gr/dscf

.503E-04 lb/dscf

.805E+00 g/m3

Stage Number	Interval Endpoint (um)	Mass Fraction	Mass Fraction Less	Interval Geometric Midpoint	dM/d() Dry,	
	(cam)		Than	(um)	(gr/dscf)	(g/m3)
	100.00		1.000			
Rt Angle	:+1+2 11.51	.033	.967	33.92	.123E-01	.281E-01
3	4.93	.384	.583	7.53	.367E+00	.839E+00
4	2.42	.268	.315	3.46	.307E+00	.702E+00
5	21.2	.150		1.80	.203E+00	.465E+00
6	1.33	.086	.165	1.09	.174E+00	.399E+00
7	.89	.044	.079	.79	.140E+00	.321E+00
8	.69	.023	.035	.61	.704E-01	.161E+00
9	.53	.008	.013	.47	.251E-01	.575E-01
10	.41	.003	.004	.38	.123E-01	.281E-01
FILTER	.34	.002	.002	.19	.112E-02	.255E-02
	.10		.000			

Run ID : Inlet 2
Plant & Unit : AEP PFBC
Sampling Location : ESP Inlet
Type of Sizing Device : UWVD
Run Date : 4/13/94
Start time : 4: 0

REMARKS:

Average Flue Gas Temperature Flue Gas Pressure (Absolute) Flue Gas Static Pressure Flue Gas Molecular Weight (Wet) Flue Gas Viscosity Flue Gas Mean Free Path Flue Gas Percent Moisture Average Flue Gas Velocity Average Flue Gas Flowrate	385.0 30.14 3.00 27.26 .166E-04 .453E-05 10.00 51.4778 308867. 174905.	"Hg "H20 lb/lb-mole lb-sec/ft2 inch t	196.1 76.56 7.620 27.2624 .248E-03 .115E-04 10.00 15.6904 8747. 4953.	cm Hg cm H2O g/g-mole Poise cm
Volume Sampled (Dry, STP) Test Duration Total Catch Sampling Rate in Device Collection Temperature Percent Isokinetic Nominal Mass Concentration	20.3670 49. .788E-03 .734 385.0 103.7 .271E+00 .387E-04	acfm F	.5768 49. .357E+03 .021 196.1 103.7	m3 min mg m3/min C % g/m3

Appendix C: Source Sampling Data Summary & PSD Plots

Run ID : Inlet 2
Plant & Unit : AEP PFBC
Sampling Location : ESP Inlet
Type of Sizing Device : UWVD

Run Date : 4/13/94 Start time : 4:0

Nominal Mass Concentration

.271E+00 gr/dscf .387E-04 lb/dscf

.619E+00 g/m3

Number	Interval Endpoint	Mass Fraction	Mass Fraction	Interval Geometric	dM/d() Dry,	
	(um)		Less Than	Midpoint (um)	(gr/dscf)	(g/m3)
	100.00		1.000			
Rt Angle		.022		33.83	.642E-02	.147E-01
	11.44		.978			
3	4 00	.280		7.49	.206E+00	.470E+00
4	4.90	.321	. 698	3,44	.282E+00	.645E+00
4	2.41	.321	.377	2.44	.2026+00	.0456700
5	2.42	.185	• • • • • • • • • • • • • • • • • • • •	1,79	.192E+00	.439E+00
	1.32		.193	_,		• • • • • • • • • • • • • • • • • • •
6		.101		1.08	.157E+00	.359E+00
	.89		.092			
7		.053		.78	.128E+00	.294E+00
8	. 69	.023	.039	. 60	.550E-01	.126E+00
•	.53	.023	.016	. 60	.550E-01	.1265+00
9	, 55	.010	.010	.47	.245E-01	.560E-01
-	.41		.006	• •		
10		.006		.37	.195E-01	.445E-01
	.34		.000			
FILTER	.10	.000	.000	.18	.228E-03	.522E-03

Run ID : Inlet 3
Plant & Unit : AEP PFBC
Sampling Location : ESP Inlet
Type of Sizing Device : UWVD
Run Date : 4/14/94

Start time : 0:30

REMARKS:

Appendix C: Source Sampling Data Summary & PSD Plots

Run ID : Inlet 3 Plant & Unit : AEP PFBC
Sampling Location : ESP Inlet
Type of Sizing Device : UWVD Plant & Unit

Run Date 4/14/94 Start time : 0:30

Nominal Mass Concentration

.304E+00 gr/dscf .435E-04 lb/dscf

.696E+00 g/m3

Stage Number	Interval Endpoint	Mass Fraction	Mass Fraction	Interval Geometric	dM/d() Dry,	
	(um)		Less Than	Midpoint (um)	(gr/dscf)	(g/m3)
	100.00		1.000		·	
Rt Angle	+1+2	.020		33.63	.642E-02	.147E-01
_	11.31		.980			
3	4 04	.393	507	7.40	.324E+00	.741E+00
4	4.84	.287	.587	3.40	.284E+00	.649E+00
7	2.38	.297	.300	3.40	.2042+00	.0475700
5	4.55	.146	,,,,,	1.76	.171E+00	.391E+00
	1.31		.154			•
6		.081		1.07	.143E+00	.327E+00
_	.88	2.0	.072		1157100	0.600.00
7	.68	.042	.030	.77	.115E+00	.263E+00
8	.00	.018	.030	.60	.491E-01	.112E+00
•	. 52	****	.012			
9		.007		.46	.175E-01	.401E-01
	.40	_	.006	_		
10		.003	222	.37	.124E-01	.284E-01
FILTER	.34	.002	.002	.18	.135E-02	.310E-02
LLLIER	.10	.002	.000	• 10	. 1., , 5.	.51011-02

Run ID : Inlet 4
Plant & Unit : AEP PFBC
Sampling Location : ESP Inlet
Type of Sizing Device : UWVD
Run Date : 4/15/94
Start time : 1:10

REMARKS:

Average Flue Gas Temperature Flue Gas Pressure (Absolute) Flue Gas Static Pressure Flue Gas Molecular Weight (Wet) Flue Gas Viscosity Flue Gas Mean Free Path Flue Gas Percent Moisture Average Flue Gas Velocity Average Flue Gas Flowrate	3.00 27.26 .166E-04 .453E-05	"Hg "H20 lb/lb-mole lb-sec/ft2 inch t fps acfm	196.1 76.56 7.620 27.2624 .248E-03 .115E-04 10.00 16.0012 8920 5051.	cm Hg cm H2O g/g-mole Poise cm % m/s m3/min
Volume Sampled (Dry, STP) Test Duration Total Catch Sampling Rate in Device Collection Temperature Percent Isokinetic Nominal Mass Concentration	15.4589 39. .761E-03 .700 385.0 96.9 .344E+00	min lb acfm F	.4378 39. .345E+03 .020 196.1 96.9	min mg m3/min C

Appendix C: Source Sampling Data Summary & PSD Plots

Run ID : Inlet 4
Plant & Unit : AEP PFBC
Sampling Location : ESP Inlet
Type of Sizing Device : UWVD

Run Date : 4/15/94 Start time : 1:10

Nominal Mass Concentration

.344E+00 gr/dscf .492E-04 lb/dscf

.788E+00 g/m3

Stage Number	Interval Endpoint	Mass Fraction	Mass Fraction Less	Interval Geometric Midpoint	dM/d() Dry,	
	(um)	•	Than	(mm)	(gr/dscf)	(g/m3)
	100.00		1.000			
Rt Angle	+1+2	.026		34.24	.959E-02	.219E-01
_	11.72		.974			
3		.346		7.67	.324E+00	.741E+00
	5.02		.628			
4	A 45	.329	200	3.52	.368E+00	.841E+00
5	2.47	.161	.299	1.83	.213E+00	.487E+00
	1.36	* 101	.139	1.03	.2135700	.46/5700
6	1.30	.078	. 144	1.11	.156E+00	.356E+00
•	.91		.060			
7		.036		.80	.112E+00	.256E+00
	.71		.024			
8		.014	•	.62	.434E-01	.993E-01
	.55		.010			
9		.006		.48	.174E-01	.398E-01
	.42		.005	2.2		2257 21
10	3.6	.003	000	.38	.129E-01	.296E-01
FILTER	.35	.002	.002	.19	.103E-02	.235E-02
LITTER	.10	.002	.000	• 13	. TO3E-02	. 2336-02

Run ID : Outlet 1
Plant & Unit : AEP PFBC
Sampling Location : ESP Outlet
Type of Sizing Device : UWVD

Type of Sizing Device : UWVD
Run Date : 4/11/94
Start time : 20:55

REMARKS:

Average Flue Gas Temperature Flue Gas Pressure (Absolute) Flue Gas Static Pressure Flue Gas Molecular Weight (Wet) Flue Gas Viscosity Flue Gas Mean Free Path Flue Gas Percent Moisture Average Flue Gas Velocity Average Flue Gas Flowrate	382.0 29.92 3.00 27.26 .166E-04 .455E-05 10.00 61.0242 287569. 162233.	"Hg "H20 lb/lb-mole lb-sec/ft2 inch tps acfm	7.620	cm Hg cm H2O g/g-mole Poise cm % m/s m3/min
Volume Sampled (Dry, STP) Test Duration Total Catch Sampling Rate in Device Collection Temperature Percent Isokinetic	366.9825 1006. .123E-03 .647 382.0 94.6	min lb acfm F	10.3929 1006. .557E+02 .018 194.4 94.6	C *
Nominal Mass Concentration	.234E-02 .335E-06	gr/dscf lb/dscf	.536E-02	g/m3

Appendix C: Source Sampling Data Summary & PSD Plots

Run ID : Outlet 1 Plant & Unit Plant & Unit : AEP PFBC Sampling Location : ESP Outlet Type of Sizing Device : UWVD

Run Date : 4/11/94 Start time : 20:55

Nominal Mass Concentration

.234E-02 gr/dscf .335E-06 lb/dscf

.536E-02 g/m3

Stage Number	Interval Endpoint	int Fraction Fract	Mass Fraction Less	ion Geometric	<pre>dM/d(logD) Dry,STP</pre>	
	(um)		Than	(um)	(gr/dscf)	(g/m3)
	100.00		1.000		·	
Rt Angle	+1+2	.362		34.91	.929E~03	.213E-02
	12.19		.638			
3		.256	222	7.98	.163E-02	.373E-02
4	5.22	.157	.382	3.66	.120E-02	.274E-02
*	2.57	1137	.225	7.00	.1205-02	.2/45-02
5	2,0,	.058		1.91	.525E~03	.120E-02
	1.42		.166			
6		.052		1.16	.707E-03	.162E-02
7	.95	.024	.114	.84	.507E-03	.116E-02
,	.74	.024	.091	.04	.50/6-03	.11 0 E-02
8	•••	.018	.031	. 65	.382E-03	.875E-03
	. 57		.072			
9		.021		.50	.443E-03	.101E-02
	.44		.051		2457 00	
10	.37	.024	.027	.40	.715E-03	.164E-02
FILTER	/	.027	1027	.19	.112E-03	.257E-03
	.10	, , , ,	.000			

Run ID : Outlet 2
Plant & Unit : AEP PFBC
Sampling Location : ESP Outlet
Type of Sizing Device : UWVD

Type of Sizing Device : UWVD
Run Date : 4/13/94
Start time : 2:20

REMARKS:

Average Flue Gas Temperature Flue Gas Pressure (Absolute) Flue Gas Static Pressure Flue Gas Molecular Weight (Wet) Flue Gas Viscosity Flue Gas Mean Free Path Flue Gas Percent Moisture Average Flue Gas Velocity Average Flue Gas Flowrate	374.0 30.14 3.00 27.26 .165E-04 .446E-05 10.00 59.6407 281050. 161253.	"Hg "H20 lb/lb-mole lb-sec/ft2 inch tps acfm	190.0 76.56 7.620 27.2624 .246E-03 .113E-04 10.00 18.1785 7959. 4567.	cm Hg cm H2O g/g-mole Poise cm % m/s m3/min
Volume Sampled (Dry, STP) Test Duration Total Catch Sampling Rate in Device Collection Temperature Percent Isokinetic Nominal Mass Concentration	127.3540 347. .422E-04 .640 374.0 95.7 .232E-02	min lb acfm F	3.6067 347. .191E+02 .018 190.0 95.7	C

Appendix C: Source Sampling Data Summary & PSD Plots

Run ID : Outlet 2
Plant & Unit : AEP PFBC
Sampling Location : ESP Outlet
Type of Sizing Device : UWVD
Run Date

Run Date : 4/13/94 : 2:20 Start time

Nominal Mass Concentration

.232E-02 gr/dscf .332E-06 lb/dscf

.531E-02 g/m3

Stage Number	Interval Endpoint (um)	Mass Fraction	Mass Fraction Less Than	Interval Geometric Midpoint	dM/d(logD) Dry,STP	
·				(um)	(gr/dscf)	(g/m3)
	100.00		1.000			
Rt Angle	+1+2 12.22	.191	.809	34.95	.486E-03	.111E-02
3	5.23	.186	.622	8.00	.118E-02	.269E-02
4		.137	.485	3.67	.104E-02	.237E-02
5	2.58	.100	.385	1.91	.893E-03	.204E-02
6	1.42	.083		1.17	.111E-02	.254E-02
7	.96	.058	.303	.84	.122E-02	.280E-02
8	.74	.054	. 245	.65	.111E-02	.255E-02
9	.57	.056	.191	.50	.117E-02	.268E-02
10	.44	.080	.135	.40	.237E-02	.543E-02
FILTER	.37	.054	.054	.19	.222E-03	.508E-03
	.10		.000			

Run ID : Outlet 3
Plant & Unit : AEP PFBC
Sampling Location : ESP Outlet

Sampling Location : ESP Outle Type of Sizing Device : UWVD Run Date : 4/13/94 Start time : 23:55

REMARKS:

Average Flue Gas Temperature Flue Gas Pressure (Absolute) Flue Gas Static Pressure Flue Gas Molecular Weight (Wet) Flue Gas Viscosity Flue Gas Mean Free Path Flue Gas Percent Moisture Average Flue Gas Velocity Average Flue Gas Flowrate	374.0 30.14 3.00 27.26 .165E-04 .446E-05 10.00 51.1415 240998. 138273.	"Hg "H20 lb/lb-mole lb-sec/ft2 inch tps acfm	190.0 76.56 7.620 27.2624 .246E-03 .113E-04 10.00 15.5879 6825. 3916.	cm Hg cm H2O g/g-mole Poise cm % m/s m3/min
Volume Sampled (Dry, STP) Test Duration Total Catch Sampling Rate in Device Collection Temperature Percent Isokinetic Nominal Mass Concentration	194.4603 485. .407E-04 .699 374.0 122.0 .147E-02 .209E-06	min lb acfm F	5.5071 485. .185E+02 .020 190.0 122.0	

Appendix C: Source Sampling Data Summary & PSD Plots

: Outlet 3 Run ID riant & Unit : AEP PFBC Sampling Location : ESP Outlet Type of Sizing Device : UWVD Run Date

: 4/13/94 : 23:55 Run Date Start time

Nominal Mass Concentration

.147E-02 gr/dscf .209E-06 lb/dscf

.335E-02 g/m3

Stage Number	Interval Endpoint		Mass Fraction	Interval Geometric	dM/d(logD) Dry,STP	
	(um)		Less Than	Midpoint (um)	(gr/dscf)	(g/m3)
	100.00		1.000			
Rt Angle		.171		34.18	.269E-03	.615E-03
	11.68		.829			
3		.086		7.64	.340E-03	.779E-03
	5.00	152	.743	3.51	.588E-03	1255-02
4	2.46	.123	.620	3.51	.388E-03	.135E-02
5	2.40	.111	. 920	1.83	.626E-03	.143E-02
-	1.35		.509	2.00		12111 11
6		.100		1.11	.845E-03	.193E-02
	.91		.409			
7		.088		.80	.117E-02	.268E-02
•	.71	000	.321		1168.00	2442
8	.54	.089	.232	.62	.116E-02	.266E-02
9	. 54	.090	.232	.48	.117E-02	.268E-02
,	.42	.030	.142	. 10	.1175-02	.2005-02
10	* 3 4	.083	4.4.4	.38	.154E-02	.352E-02
	.35		.058			
FILTER		.058		.19	.158E-03	.360E-03
	.10		.000			

Run ID : Outlet 4
Plant & Unit : AEP PFBC
Sampling Location : ESP Outlet

Sampling Location : ESP Outle
Type of Sizing Device : UWVD
Run Date : 4/14/94
Start time : 22:28

REMARKS:

Average Flue Gas Temperature Flue Gas Pressure (Absolute) Flue Gas Static Pressure Flue Gas Molecular Weight (Wet) Flue Gas Viscosity Flue Gas Mean Free Path Flue Gas Percent Moisture Average Flue Gas Velocity Average Flue Gas Flowrate	374.0 29.54 1.80 27.26 .165E-04 .455E-05 10.00 61.1210 288026. 161976.	"Hg "H20 lb/lb-mole lb-sec/ft2 inch t fps acfm	190.0 75.04 4.572 27.2624 .246E-03 .116E-04 10.00 18.6297 8157. 4587.	cm Hg cm H2O g/g-mole Poise cm t m/s m3/min
Volume Sampled (Dry, STP) Test Duration Total Catch Sampling Rate in Device Collection Temperature Percent Isokinetic Nominal Mass Concentration	297.2570 747. .766E-04 .707 374.0 105.6 .180E-02 .258E-06	min lb acfm F	8.4183 747. .347E+02 .020 190.0 105.6	m3 min mg m3/min C %

Appendix C: Source Sampling Data Summary & PSD Plots

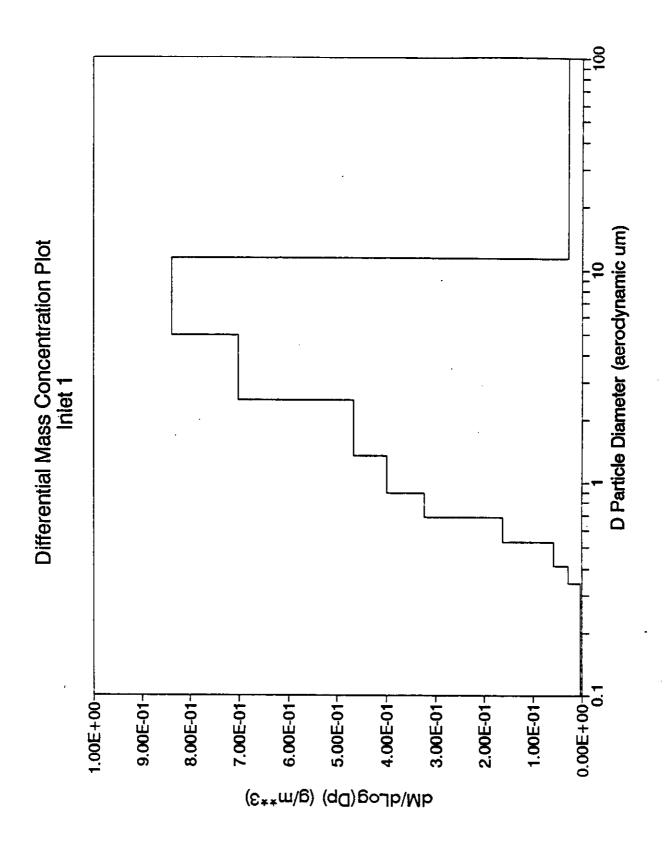
Run ID : Outlet 4
Plant & Unit : AEP PFBC
Sampling Location : ESP Outlet
Type of Sizing Device : UWVD

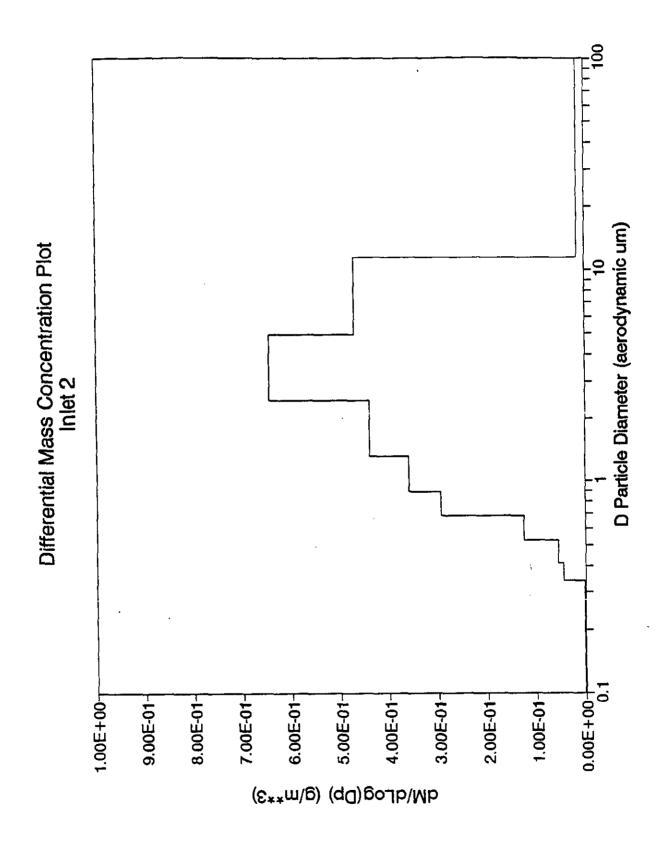
Type of Sizing Device: UWVD
Run Date: 4/14/94
Start time: 22:28

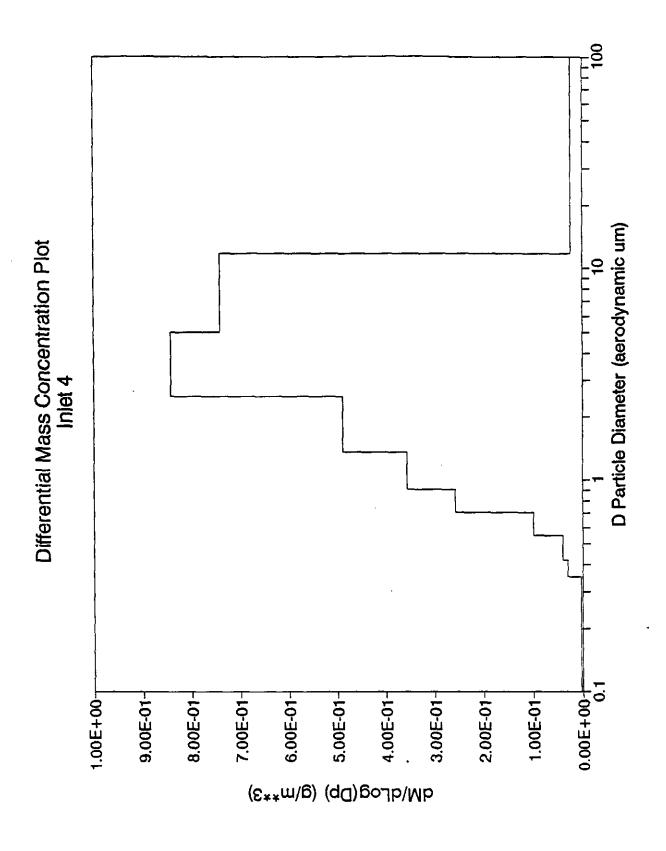
Nominal Mass Concentration

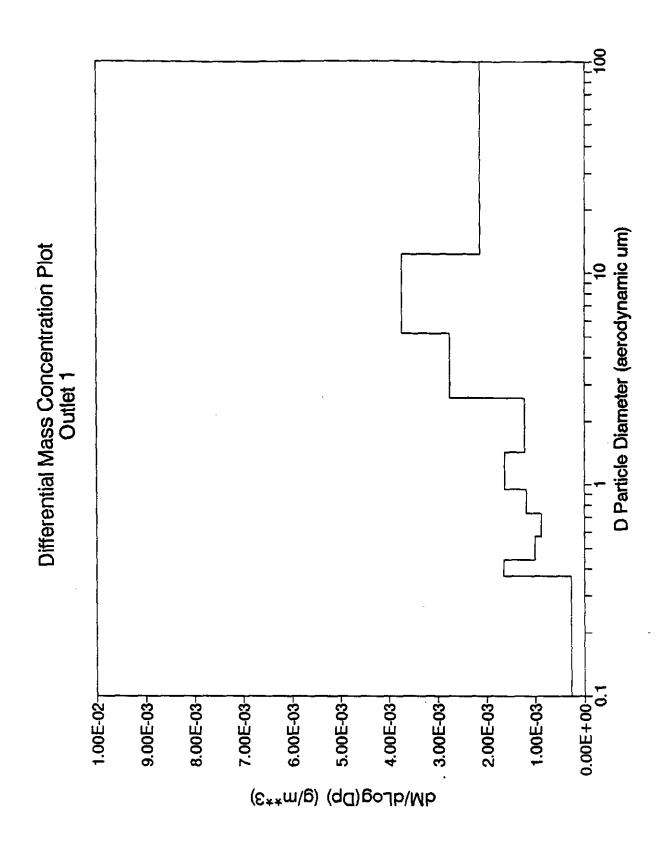
.180E-02 gr/dscf .258E-06 lb/dscf .413E-02 g/m3

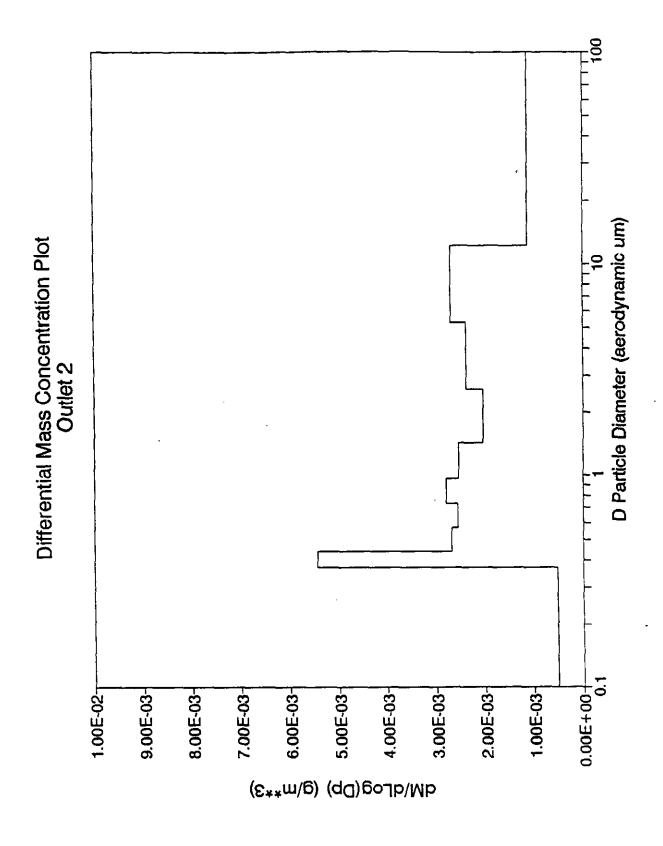
Stage Number	Interval Endpoint (um)	nt Fraction Fract:	Mass Fraction Less	Interval on Geometric Midpoint	dM/d(logD) Dry,STP	
	(Cm)		Than	· (um)	(gr/dscf)	(g/m3)
	100.00		1.000			
Rt Angle		.218		34.07	.420E-03	.961E-03
_	11.60		.782			
3	4.97	.284	.498	7.59	.139E-02	.318E-02
4	4.57	.160	. 470	3.48	.936E-03	.214E-02
•	2.44	1277	.338	• • • • • • • • • • • • • • • • • • • •		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
5		.097		1.81	.675E-03	.154E-02
6	1.34	061	.241		£200 02	1468 00
0	.90	.061	.180	1.10	.639E-03	.146E-02
7	• • • • • • • • • • • • • • • • • • • •	.038	1204	.79	.623E-03	.143E-02
	.70		.141			
8		.036		-61	.570E-03	.130E-02
9	. 54	.035	.106	.47	.566E+03	.130E-02
•	.42	.035	.070	• 4 /	.3665-03	.1305-02
10		.031		.38	.704E-03	.161E-02
	.35		.039			
FILTER	10	.039	000	.19	.131E-03	.300E-03
	.10		.000			

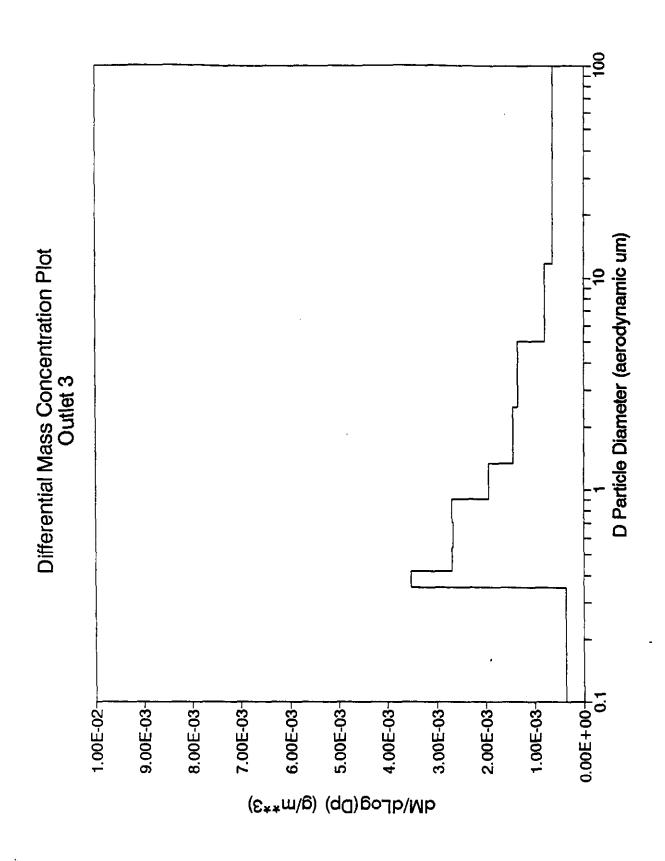


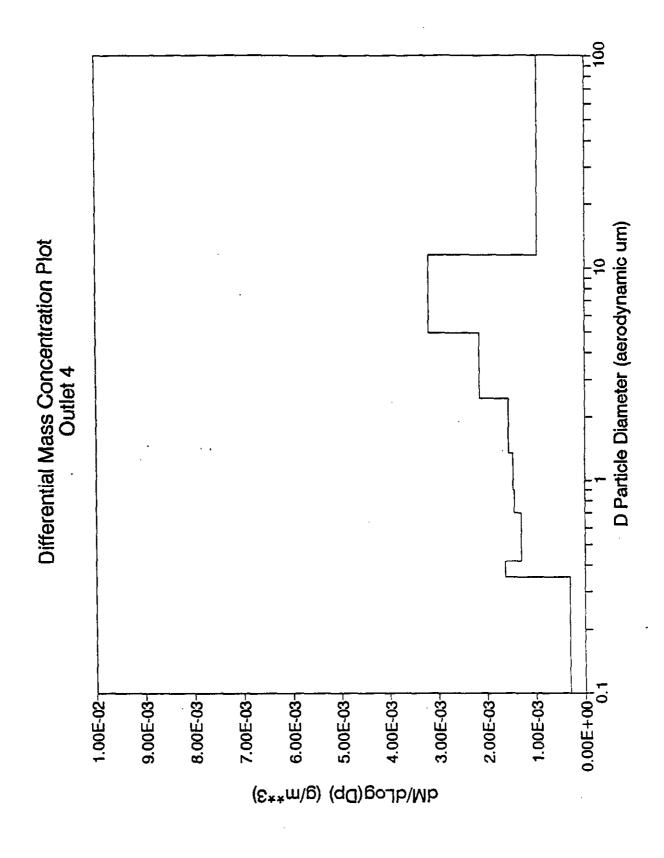


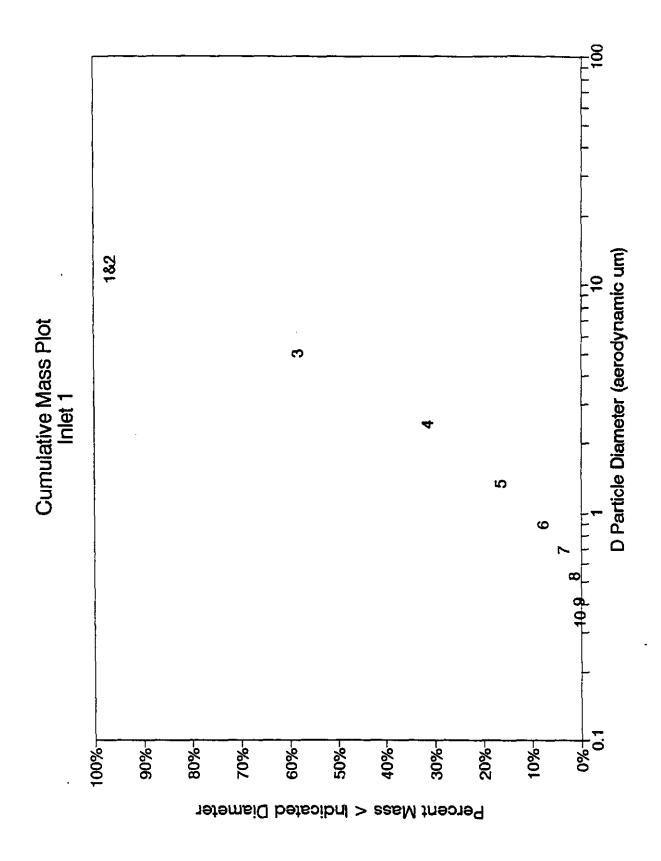


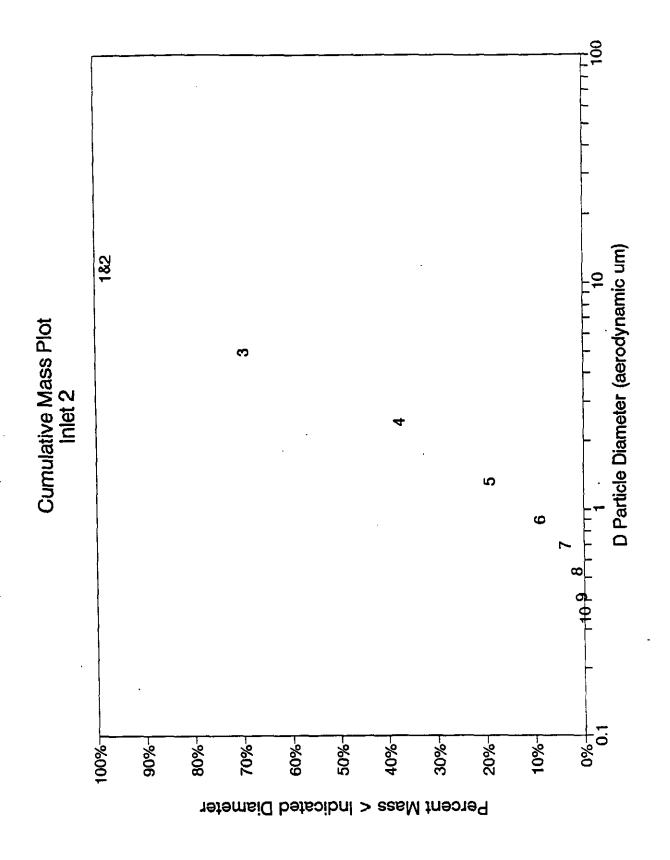


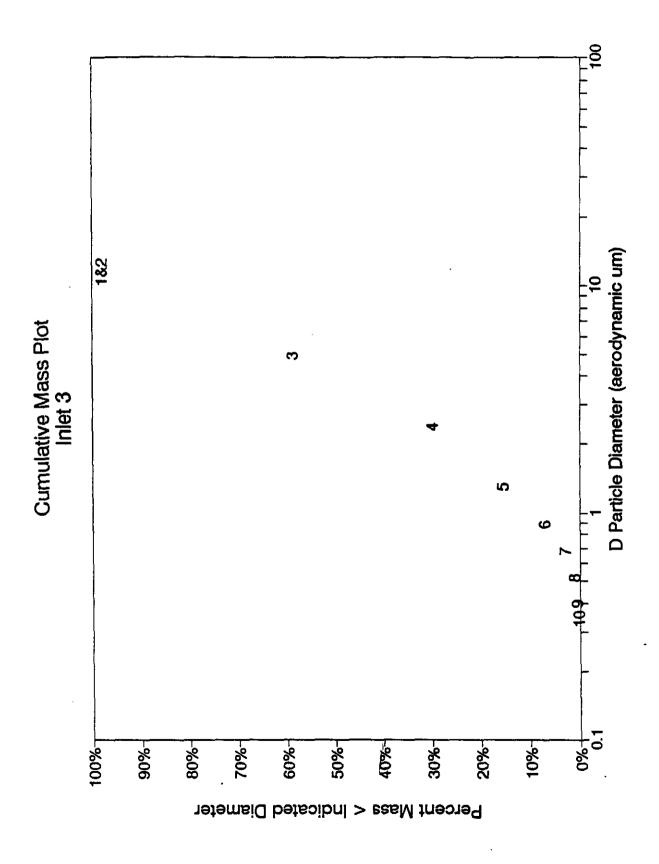


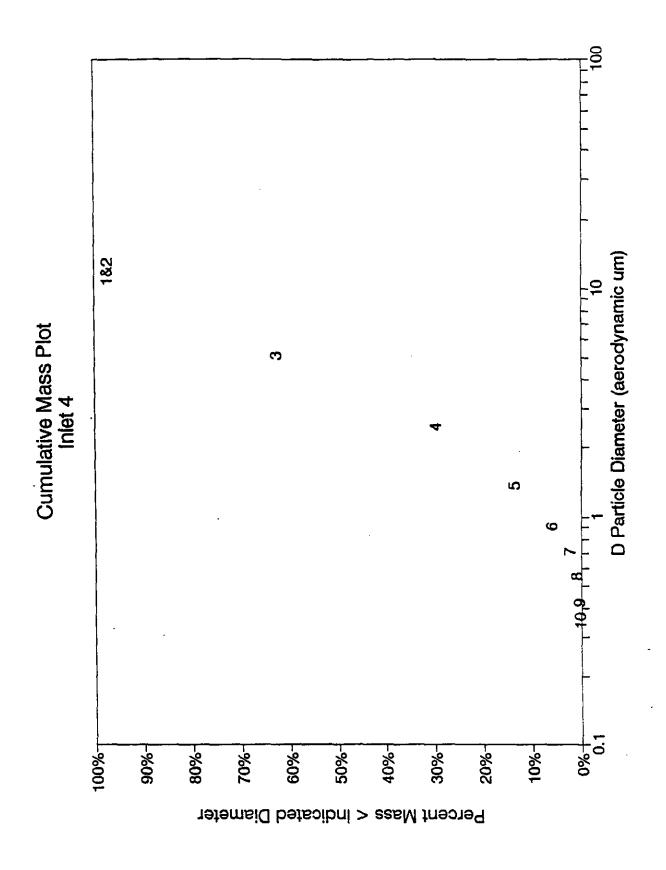


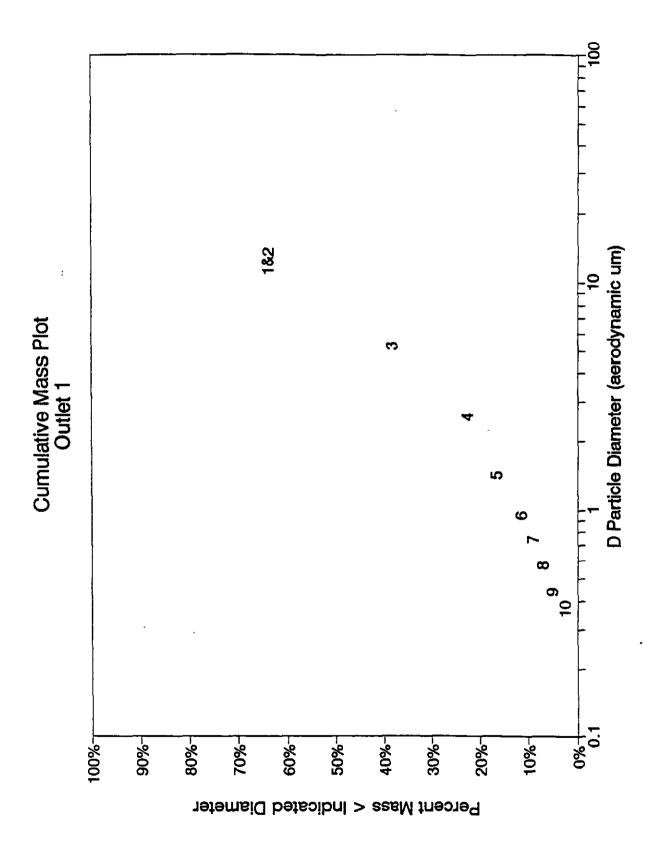


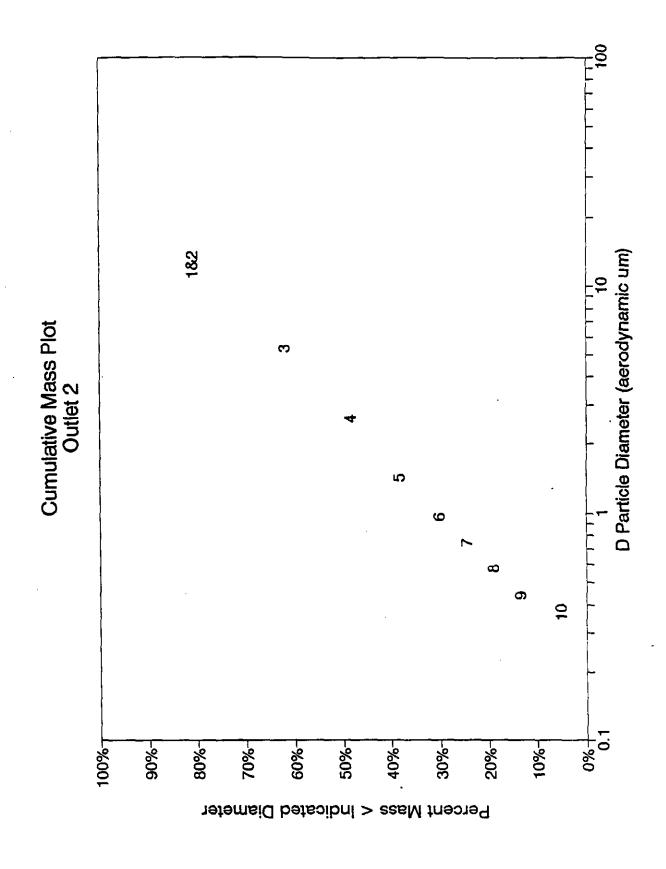


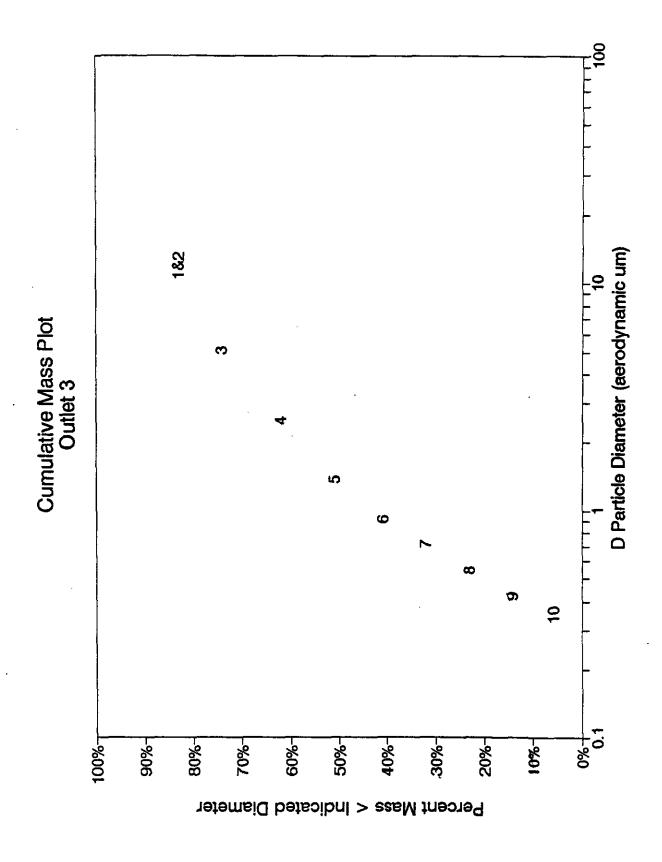


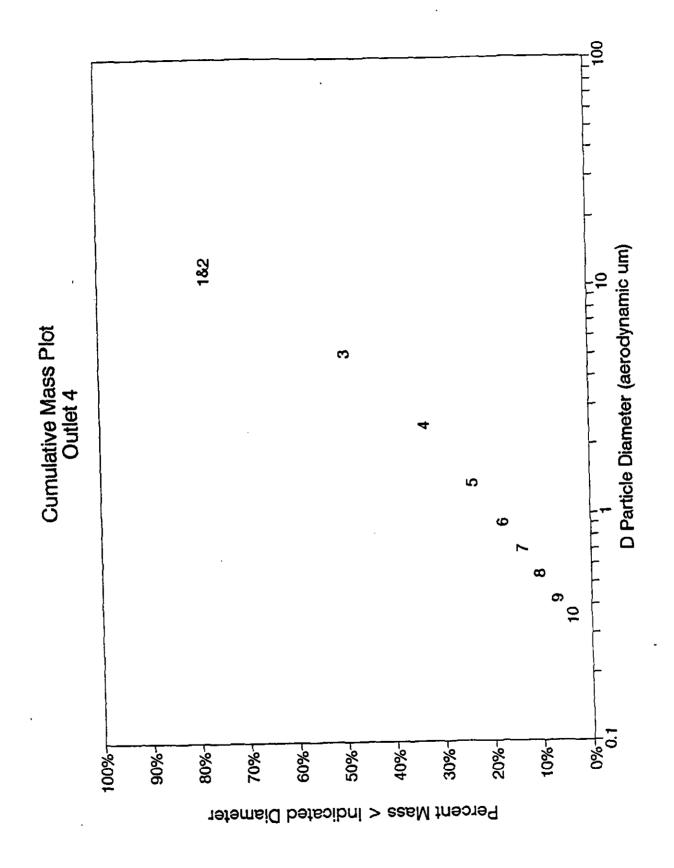


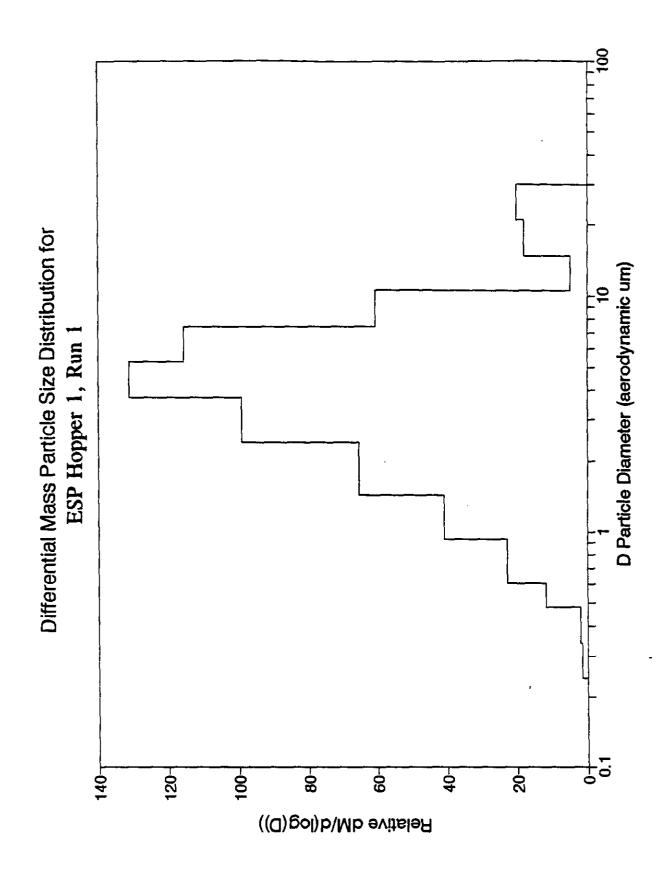


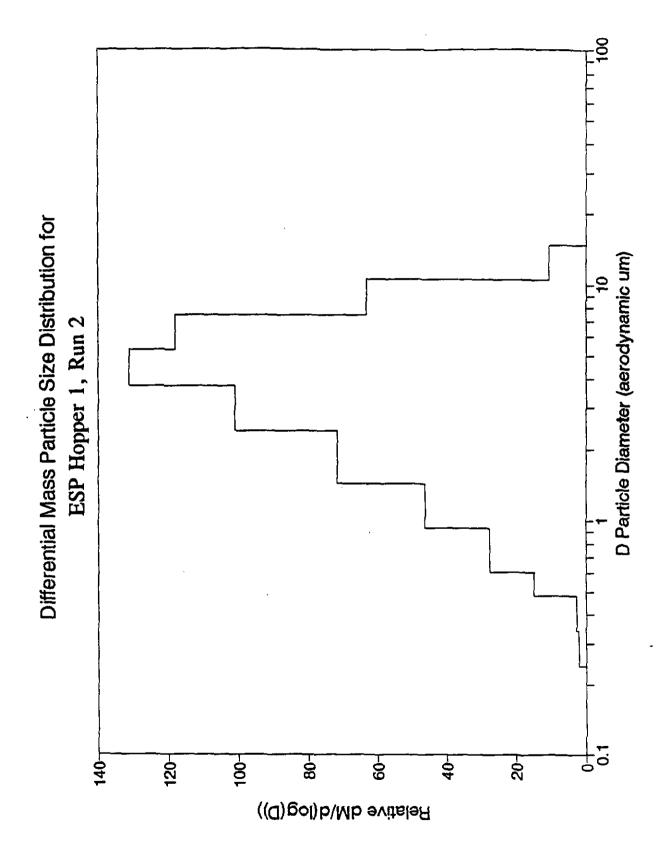


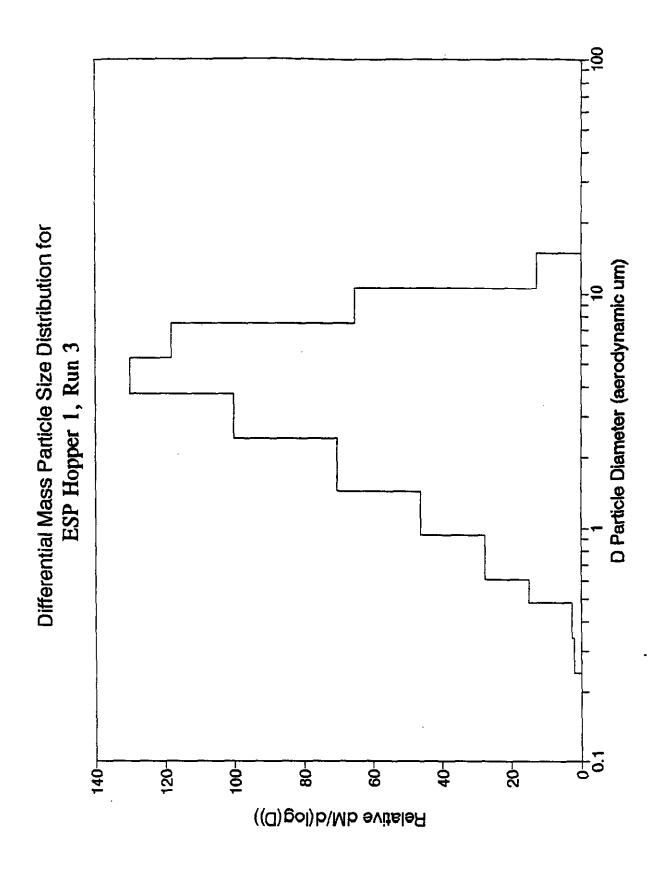


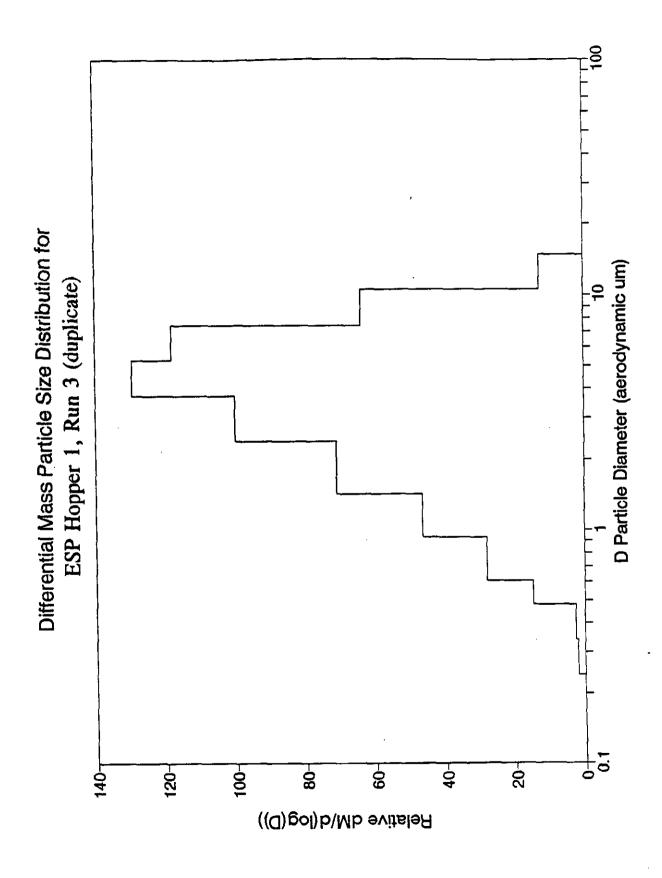


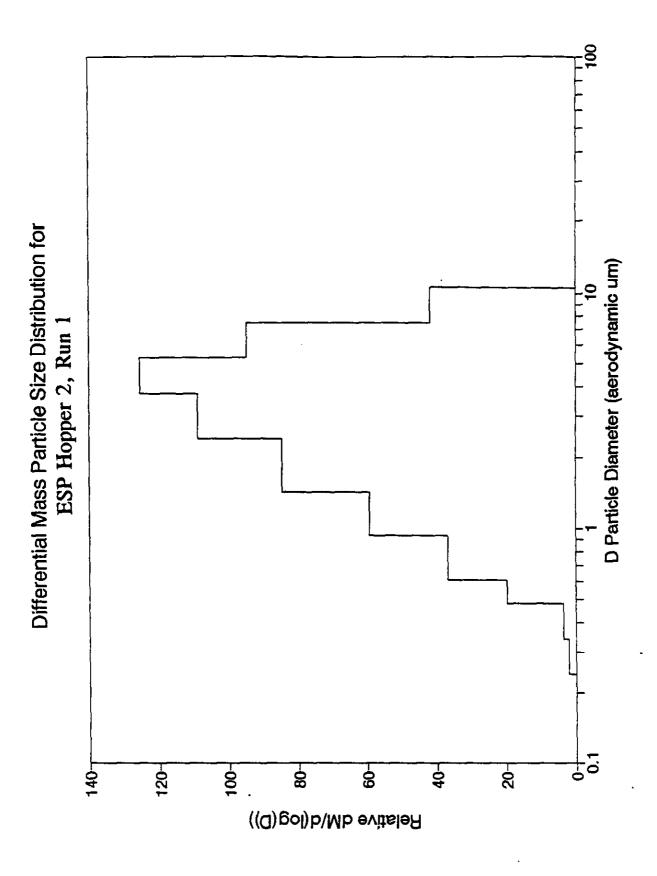


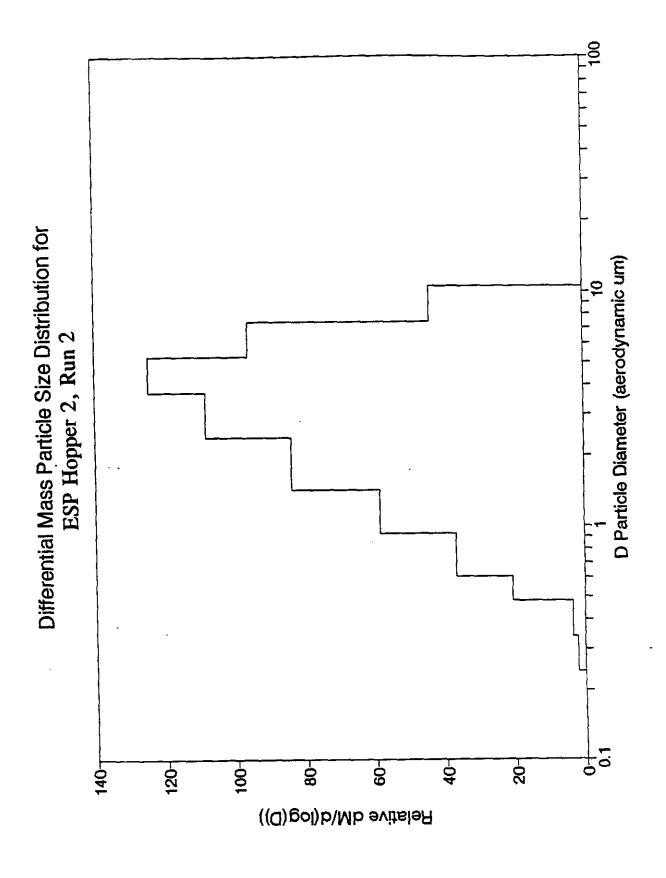


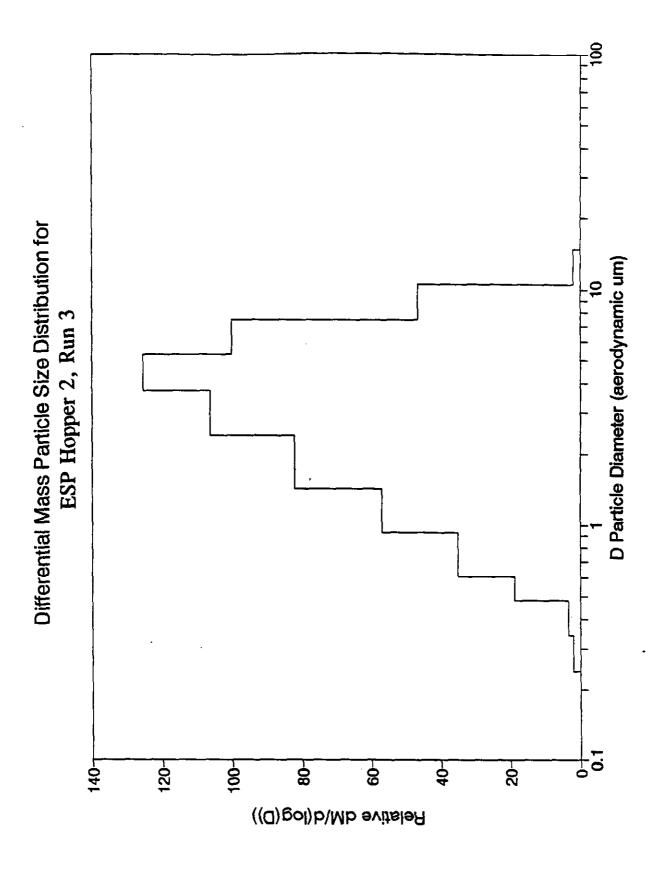


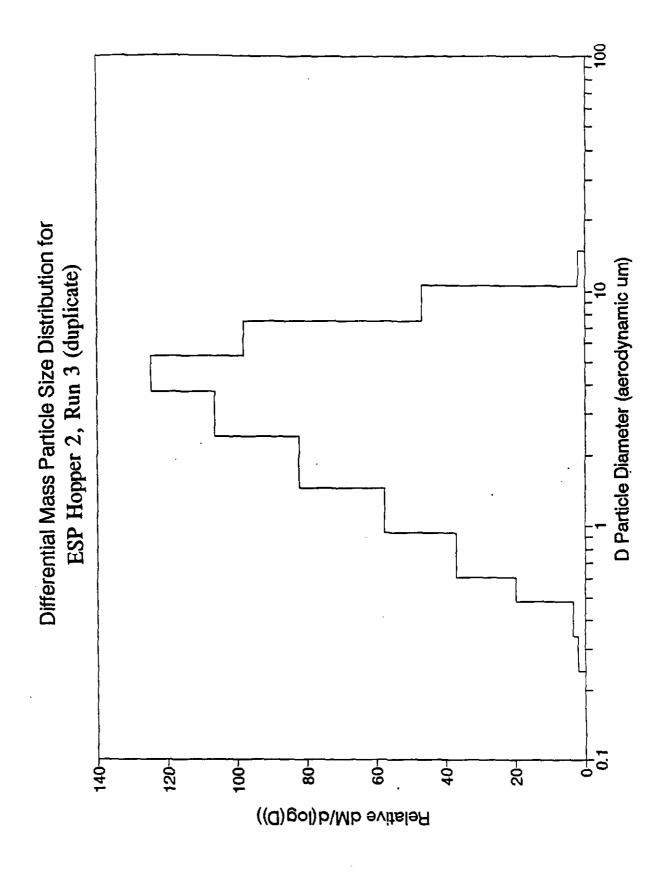


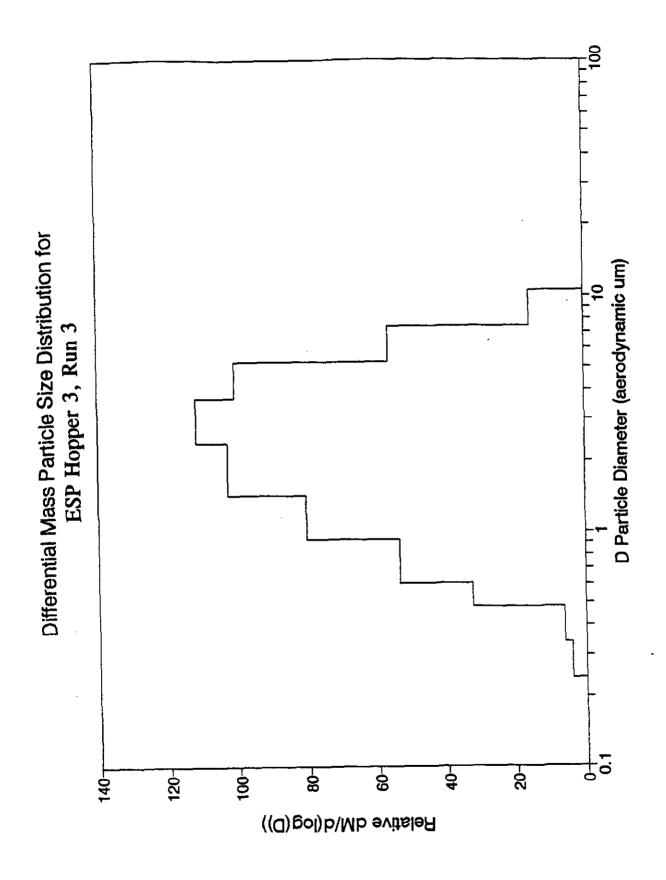


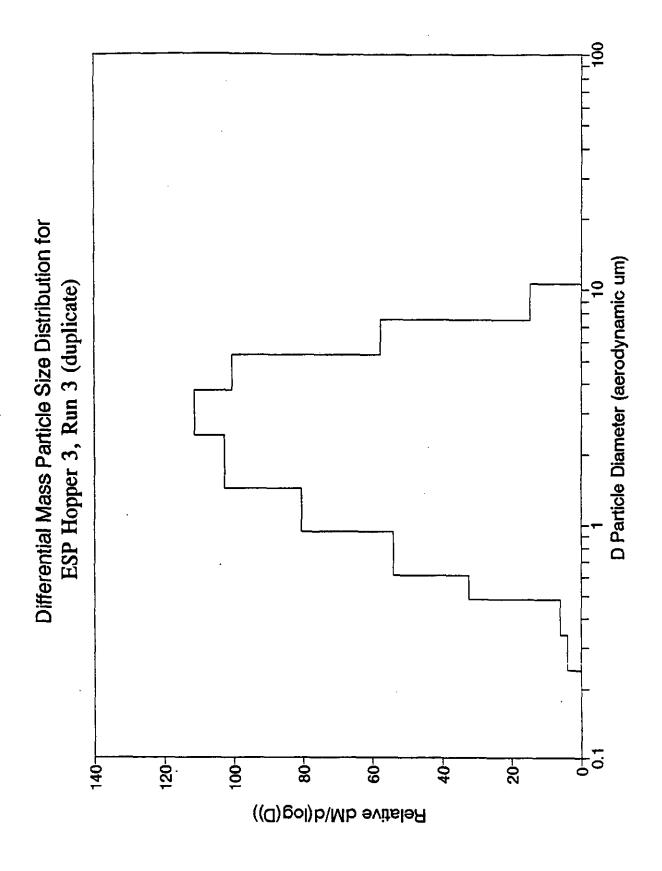


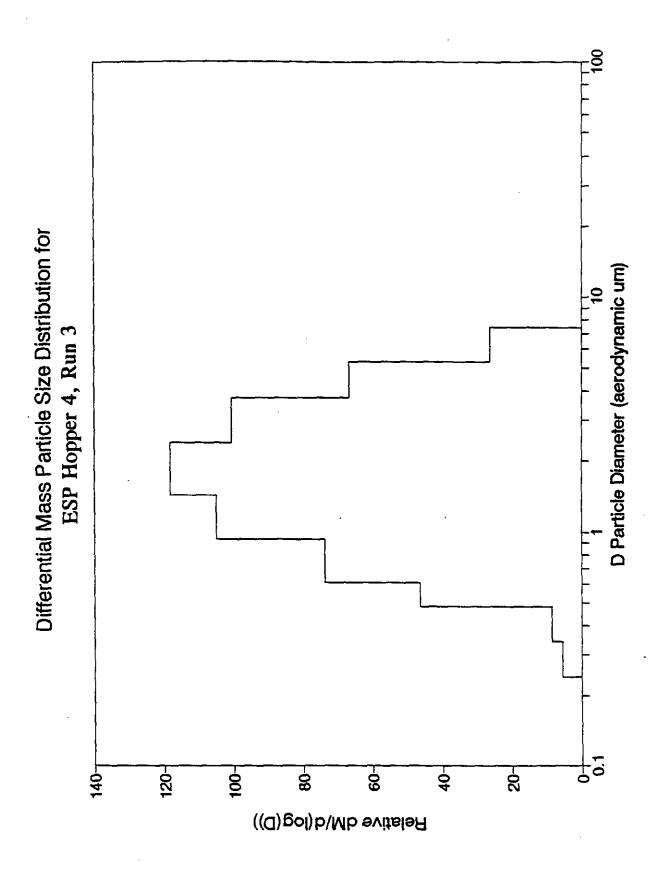


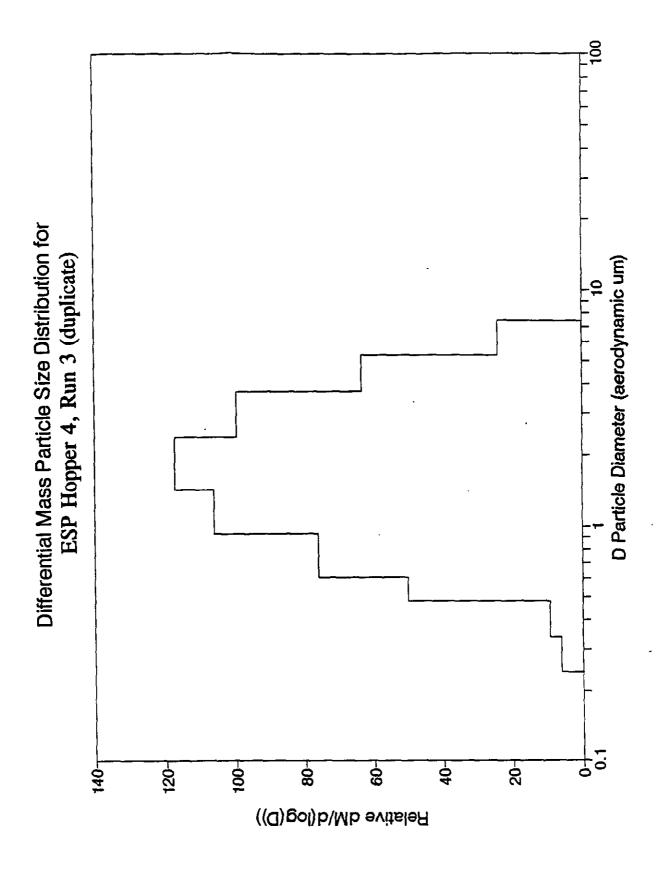












APPENDIX D: QUALITY ASSURANCE/QUALITY CONTROL RESULTS

Table D-1 Summary of Blank Sample Results

	Number of Blanks	Number of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ²	Limit
Laboratory Method Blanks - Filtered Solids, Acetone PNR				
ICP-AES Metals				
Aluminum	2	2	5.97-7.93 μg/g	27.6 μg/g
Antimony	2	0	ND	58.6 μg/g
Barium	2	1	ND-0.460 μg/g	0.697 μg/g
Beryllium	2	0	ND	0.329 μg/g
Calcium	2	2	18.4-26.6 μg/g	13.7 μg/g
Chromium	2	2	7.45-8.15 μg/g	1.97 μg/g
Cobalt	2	2	7.68-8.32 μg/g	5.38 μg/g
Copper	2	0	ND	5.02 μg/g
Iron	2	0	ND	
Magnesium	2	2	29.6-53.0 μg/g	96.3 μg/g
Manganese	2	2	0.490-1.99 μg/g	4.92 μg/g
Molybdenum	2	0	ND	3.84 µg/g
Nickel	2	1	ND-1.04 μg/g	11.4 μg/g
Phosphorus	2	2	7.67-15.4 µg/g	7.29 µg/g
Potassium	2	1	ND-122 μg/g	441 μg/g
Silver	2	1	ND-1.34 μg/g	4.43 μg/g
Sodium	2	1	ND-127 μg/g	30.5 μg/g
Titanium	2	. 2	0.970-2.43 μg/g	7.16 μg/g
Vanadium	2	1	ND-3.71 μg/g	2.92 μg/g
Laboratory Method Blanks - Nitric PNR	<u> </u>		<u> </u>	
ICP-AES Metals				
Aluminum	1	1	0.383 mg/L	0.0523 mg/L
Antimony	1	0	ND	0.076 mg/L
Barium	1	1	0.00023 mg/L	0.00086 mg/L
Beryllium	1	0	0.0 mg/L	0.00051 mg/L
Calcium	1	1	0.0306 mg/L	0.0175 mg/L
Chromium	1	0	ND	0.00524 mg/L
Cobalt	1	0	ND	0.00407 mg/L
Copper	1	1	0.0100 mg/L	0.00916 mg/L
Iron	1	1	0.0506 mg/L	0.00452 mg/L
Magnesium	1	0	ND	0.0479 mg/L
Manganese	1	1	0.00308 mg/L	0.00155 mg/L

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Molybdenum	1	0	ND	0.00739 mg/L
Nickel	1	1	0.00052 mg/L	0.0141 mg/L
Phosphorus	1	1	0.810 mg/L	0.061 mg/L
Potassium	1	0	ND	0.822 mg/L
Silver	1	ī	0.00497 mg/L	0.00519 mg/L
Sodium	1	1	0.00765 mg/L	0.0401 mg/L
Titanium	1	1	0.00129 mg/L	0.00159 mg/L
Vanadium	1	0	ND	0.00454 mg/L
Laboratory Method Blanks - Half Filter, Filters & PNRs				
ICP-AES Metals				
Aluminum	2	0	ND	2.76 μg
Antimony	2	0	ND	5.86 μg
Barium	2	0	ND	0.0697 μg
Beryllium	2	0	ND	0.0329 μg
Calcium	2	0	ND	1.37 μg
Chromium	2	2	0.360-0.440 μg	0.197 μg
Cobalt	2	2	0.140-0.230 μg	0.538 μg
Copper	2	0	ND	0.502 μg
Iron	2	1	ND-0.190 μg	-
Magnesium	2	1	ND-0.090 μg	9.63 μg
Manganese	2	0	ND	0.492 μg
Molybdenum	2	0	ND	0.384 μg
Nickel	2	2	1.01-1.08 μg	1.14 μg
Phosphorus	2	2	14.7-26.6 μg	7.29 μg
Potassium	2	0	ND	44.1 μg
Silver	2	0	ND	0.443 μg
Sodium	2	0_	ND	3.05 μg
Titanium	2	2	0.150-0.370 μg	0.716 μg
Vanadium	2	0	ND	0.292 µg
Laboratory Method Blanks - H ₂ O ₂ /HNO ₃ Impingers				
ICP-AES Metals				
Aluminum	2	2	0.00304-1.44 mg/L	0.0523 mg/L
Antimony	2	1	ND-0.00379 mg/L	0.076 mg/L
Barium	2	2	0.00014-0.00016 mg/L	0.00086 mg/L

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detecteda	Limit
Beryllium	2	0	ND	0.000510 mg/L
Calcium	2	2	0.0266-0.253 mg/L	0.0175 mg/L
Chromium	2	0	ND	0.00524 mg/L
Cobalt	2	ì	0-0.00206 mg/L	0.00407 mg/L
Copper	2	2	0.00358-0.0102 mg/L	0.00916 mg/L
Iron	2	1	ND-0.00393 mg/L	0.00452 mg/L
Magnesium	2	1	ND-0.00205 mg/L	0.0479 mg/L
Manganese	2	2	0.00115-0.0092 mg/L	0.00155 mg/L
Molybdenum	2	1	ND-0.00027 mg/L	0.00739 mg/L
Nickel	2	1	ND-0.00161 mg/L	0.0141 mg/L
Phosphorus	1	0	ND	0.0610 mg/L
Potassium	2	2	0.022-0.0523 mg/L	0.822 mg/L
Silver	2	1	0-0.00057 mg/L	0.00519 mg/L
Sodium	2	2	0.00424-0.0654 mg/L	0.0401 mg/L
Titenium	2	1	ND-0.00033 mg/L	0.00159 mg/L
Vanadium	2	0	ND	0.00454 mg/L
Field Blank - Half Filter - APF				
ICP-AES Metals				
Aluminum	1	1	90.8 μg	2.76 μg
Antimony	1	0	ND	5.86 μg
Barium	1	1	2.35 μg	0.0697 μg
Beryllium	1	0	ND	0.0329 μg
Calcium	1	1	172 μg	1.37 μg
Chromium	1	1	1.89 μg	0.197 μg
Cobalt	1	0.	ND	0.538 μg
Copper	1	0	ND	0.502 μg
Iron	1	1	12.7 µg	
Magnesium	1	1	63.0 µg	9.63 μg
Manganese	1	0	ND	0.492 μg
Molybdenum	1	1	2.22 μg	0.384 μg
Nickel	1	1	2.06	1.14 μg
Phosphorus	t	1	33.3 μg	7.29 µg
Potassium	1	1	25.4	44.1 μg
Silver	1	1	0.003 μg	0.443 μg
Sodium	1	1	459 μg	3.05 μg
Titanium	1	1	0.847 μg	0.716 μg
Vanadium	1	1	0.191 μg	0.292 μg

Table D-1 (Continued)

Analyte	Number of Blanks Analyzed	Number of Detects	Range of Compounds Detected ^a	Detection Limit
Field Blank - Filter & PNR - ESP			<u> </u>	
ICP-AES Metals		-		
Aluminum	1	1	437 μg	2.76 μg
Antimony	1	0	ND	5.86 μg
Barium	1	1	7.53 µg	0.0697 μg
Beryllium	1	1	0.016 μg	0.0329 μg
Calcium	1	1	661 μg	1.37 μg
Chromium	1	1	5.66 μg	0.197 μg
Cobalt	1	1	0.613 μg	0.538 μg
Copper	1	1	1.65 μg	0.502 μg
Iron	1	1	242 μg	
Magnesium	1	1	181 μg	9.63 μg
Manganese	1	1	1.96 μg	0.492 μg
Molybdenum	1	1	17.6 μg	0.384 μg
Nickel	1	1	2.98 μg	1.14 μg
Phosphorus	1	1	22.4 μg	7.29 μg
Potassium	1	1	86.4 μg	44.1 μg
Silver	i	1	0.174 μg	0.443 μg
Sodium	1	1	320 μg	3.05 μg
Titanium	1	1	26.5 μg	0.716 μg
Vanadium	1	1	1.15 μg	0.292 μg
Field Blank - H ₂ O ₂ /HNO ₃ Impingers - APF				
ICP-AES Metals				
Aluminum	1	1	0.0136 mg/L	0.0523 mg/L
Antimony	1	0	ND	0.076 mg/L
Barium	1	1	0.0004 mg/L	0.00086 mg/I
Beryllium	1	0	ND	0.00051 mg/l
Calcium	1	1	0.328 mg/L	0.0175 mg/L
Chromium	1	0	ND	0.00524 mg/I
Cobalt	1	0	ND	0.00407 mg/I
Copper	1	1	0.00183 mg/L	0.00916 mg/I
Iron	1	1	0.0212 mg/L	0.00452 mg/I
Magnesium	1	1	0.142 mg/L	0.0479 mg/L
Manganese	1	1	0.00281 mg/L	0.00155 mg/I

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Molybdenum	1	0	ND	0.00739 mg/L
Nickel	1 1	1	0.00229 mg/L	0.0141 mg/L
Phosphorus	1	0	ND	0.061 mg/L
Potassium	1	0	ND	0.822 mg/L
Silver	1	0	ND	0.00519 mg/L
Sodium	1	1_	0.672 mg/L	0.0401 mg/L
Titanium	1	1	0.00068 mg/L	0.00159 mg/L
Vanadium	1	0	ND	0.00454 mg/L
Field Blank - H ₂ O ₂ /HNO ₃ Impingers - ESP				
ICP-AES Metals				
Aluminum	1	1	0.0228 mg/L	0.0523 mg/L
Antimony	1	0	ND ·	0.076 mg/L
Barium	1	1	0.00048 mg/L	0.00086 mg/L
Beryllium	1	0	ND	0.00051 mg/L
Calcium	1	1	0.248 mg/L	0.0175 mg/L
Chromium	1	1	0.00065 mg/L	0.00524 mg/L
Cobalt	1	1	0.00078 mg/L	0.00407 mg/L
Copper	1	1	0.00344 mg/L	0.00916 mg/L
Iron	1	1	0.0413 mg/L	0.00452 mg/L
Magnesium	1	1	0.127 mg/L	0.0479 mg/L
Manganese	1	1	0.00704 mg/L	0.00155 mg/L
Molybdenum	1	1	0.00048 mg/L	0.00739 mg/L
Nickel	1	1	0.00246 mg/L	0.0141 mg/L
Phosphorus	1	0	ND	0.061 mg/L
Potassium	1	1	0.484 mg/L	0.822 mg/L
Silver	1	0	ND	0.00519 mg/L
Sodium	1	1	0.629 mg/L	0.0401 mg/L
Titanium	1	1	0.00046 mg/L	0.00159 mg/L
Vanadium	1	1	0.00083 mg/L	0.00454 mg/L
Reagent Blank - Filter & PNR		<u></u>	<u>*</u>	
ICP-AES Metals	7			
Aluminum	1	1	192 μg	2.76 μg
Antimony	1	0	ND	5.86 μg
Barium	1	1	6.21 μg	0.0697 μg
Beryllium	1	0	ND	0.0329 μg

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Calcium	1	1	133 μg	1.37 μg
Chromium	1	1	3.43 μg	0.197 μg
Cobalt	1	1	0.658 μg	0.538 μg
Copper	1	0.	ND	0.502 μg
Iron	1	1	77.5 μg	-
Magnesium	1	1	23.1 μg	9.63 μg
Manganese	i	1	0.657 μg	0.492 µg
Molybdenum	1	1	18.2 μg	0.384 μg
Nickel	1	1	1.57 μg	1.14 μg
Phosphorus	1	1	25.8 μg	7.29 µg
Potassium	1	1	34.7 μg	44.1 μg
Silver	1	1	0.134 μg	0.443 μg
Sodium	1	1	260 μg	3.05 μg
Titanium	1	1	8.13 μg	0.716 μg
Vanadium	1	I	0.782 μg	0.292 μg
Reagent Blank - Half Filter				
ICP-AES Metals				
Aluminum	1	1	90.6 μg	2.76 µg
Antimony	1	0	ND	5.86 μg
Barium	1	1	0.615 μg	0.0697 μg
Beryllium	I	0	ND	0.0329 μg
Calcium	1	1	173 μg	1.37 μg
Chromium	1	1	1.38 μg	0.197 μg
Cobalt	1	1	0.366 μg	0.538 μg
Copper	1	0	ND	0.502 μg
Iron	1	1	6.10 μg	
Magnesium	1	1	62.2 μg	9.63 µg
Manganese	1	0	ND	0.492 μg
Molybdenum	1	1	1.97 μg	0.384 μg
Nickel	1	1	1.21 μg	1.14 μg
Phosphorus	1	1	36.7 μg	7.29 µg
Potassium	1	1	29.3 μg	44.1 μg
Silver	1	0	ND	0.443 μg
Sodium	1	1	460 µg	3.05 μg
Titanium	1	1	0.909 μg	0.716 μg
Vanadium	1	1	0.161 μg	0.292 μg

Table D-1 (Continued)

Analyte	Number of Blanks Analyzed	Number of Detects	Range of Compounds Detected ^a	Detection Limit
Reagent Blank - HNO ₃ /H ₂ O ₂ Impingers	111111111111111111111111111111111111111	Dettects	Compounds Deacted	
ICP-AES Metals				
Aluminum	i	1	0.00891 mg/L	0.0523 mg/L
Antimony	1	0	ND	0.076 mg/L
Barium	i	1	0.00024 mg/L	0.00086 mg/L
Beryllium	1	0	0 mg/L	0.00051 mg/L
Calcium	1	1	0.299 mg/L	0.0175 mg/L
Chromium	1	1	0.00399 mg/L	0.00524 mg/L
Cobalt	1	1	0.00348 mg/L	0.00407 mg/L
Copper	1	1	0.00127 mg/L	0.00916 mg/L
Iron	1	1	0.0179 mg/L	0.00452 mg/L
Magnesium	1	1	0.0133 mg/L	0.0479 mg/L
Manganese	1	1	0.00141 mg/L	0.00155 mg/L
Molybdenum	1	0	ND	0.00739 mg/L
Nickel	1	1	0.00008 mg/L	0.0141 mg/L
Phosphorus	1 1	0	ND	0.061 mg/L
Potassium	1	1	0.264 mg/L	0.822 mg/L
Silver	1	0	ND	0.00519 mg/L
Sodium	1	1	0.513 mg/L	0.0401 mg/L
Titanium	1	0	ND	0.00159 mg/L
Vanadium	1	I	0.0002 mg/L	0.00454 mg/L
Laboratory Method Blank - Ash	./	<u> </u>	<u>*</u>	
ICP-AES Metals		,		
Aluminum	2	2	5.97-7.93 μg/g	27.6 μg/g
Antimony	2	0	ND	58.6 μg/g
Barium	2	1	ND-0.460 μg/g	0.697 μg/g
Beryllium	2	0	ND	0.329 μg/g
Calcium	2	2	18.4-26.6 μg/g	13.7 μg/g
Chromium	2	2	7.45-8.15 μg/g	1.97 μg/g
Cobalt	2	2	7.68-8.32 μg/g	5.38 μg/g
Copper	2	0	ND	5.02 μg/g
Iron	2	0	ND	-
Magnesium	2	2	29.6-53.0 μg/g	96.3 μg/g
Manganese	2	2	0.490-1.99 μg/g	4.92 μg/g
Molybdenum	2	0	ND	3.84 μg/g
Nickel	2	1	ND-1.04 μg/g	11.4 μg/g

Table D-1 (Continued)

Analyte	Number of Blanks Analyzed	Number of Detects	Range of Compounds Detected ^a	Detection Limit
Phosphorus	1	0	ND	7.29 μg/g
Potassium	2	1	ND-122 μg/g	441 μg/g
Silver	2	1	ND-1.34 μg/g	4.43 μg/g
Sodium	2	1	ND-127 μg/g	30.5 μg/g
Titanium	2	2	0.970-2.43 μg/g	7.16 µg/g
Vanadium	2	1	ND-3.71 μg/g	2.92 μg/g
Laboratory Method Blank - Sorbent	<u> </u>			
ICP-AES Metals	T			
Aluminum	1	0	ND	-
Antimony	1	0	ND	5.86 µg/g
Barium	1	1	0.014 μg/g	0.0697 μg/g
Beryllium	1	0	ND	0.0329 μg/g
Calcium	1	1	2.29 μg/g	39.8 μg/g
Chromium	1	1	.0.341 μg/g	0.197 μg/g
Cobalt	1	1	0.069 μg/g	0.538 μg/g
Copper	1	Ö	ND	0.502 μg/g
Iron	1	1	0.165 μg/g	
Magnesium	1	0	ND	9.63 μg/g
Manganese	1	0	ND	0.492 μg/g
Molybdenum	1	1	0.099 μg/g	0.384 μg/g
Nickel	1	1	0.75 μg/g	-
Phosphorus	1	0	ND	7.29 μg/g
Potassium	i	1	6.51 μg/g	44.1 μg/g
Silver	1	0	ND	0.443 μg/g
Sodium	1	1	0.076 μg/g	3.05 μg/g
Titanium	1	1	0.09 μg/g	0.716 μg/g
Vanadium	1	0	0 μg/g	0.292 μg/g
Laboratory Method Blank - Service Water				
ICP-AES Metals				
Aluminum	1	1	0.148 mg/L	0.0523 mg/L
Antimony	1	1	0.0566 mg/L	0.076 mg/L
Barium	1	1	0.00151 mg/L	0.00086 mg/L
Beryllium	1	0	ND	0.00051 mg/L
Calcium	1	1	0.238 mg/L	0.0175 mg/L
Chromium	1	0	ND	0.00524 mg/L
Cobalt	1	1	0.00177 mg/L	0.00407 mg/L

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Copper	1	1	0.00324 mg/L	0.00916 mg/L
Iron	1	0	ND	0.00452 mg/L
Magnesium	1	1	0.019 mg/L	0.0479 mg/L
Manganese	1	0	ND	0.00155 mg/L
Molybdenum	1	1	0.00853 mg/L	0.00739 mg/L
Nickel	1	0	ND	0.0141 mg/L
Phosphorus	1	0	ND	0.061 mg/L
Potassium	1	0	ND	0.822 mg/L
Silver	Ī	0	0 mg/L	0.00519 mg/L
Sodium	1	1	0.0198 mg/L	0.0401 mg/L
Titanium	1	1	0.00082 mg/L	0.00159 mg/L
Vanadium	1	1	0.00187 mg/L	0.00454 mg/L
Field Blank - HNO ₃ /H ₂ O ₂ Impingers -				
APF	,		,	
ICP-MS Metals	ļ			
Antimony	1	1	0.13 μg/L	0.003 μg/L
Arsenic	1	1	0.09 μg/L	0.008 μg/L
Barium	1	1	3.57 μg/L	0.017 μg/L
Beryllium	11	1	0.01 μg/L	0.015 μg/L
Cadmium	1	1	0.49 μg/L	0.020 μg/L
Chromium	1	1	3.7 μg/L	0.020 μg/L
Cobalt	1	1	0.10 μg/L	0.003 μg/L
Copper	1	1	1.70 μg/L	0.106 μg/L
Lead	1	1	2.27 μg/L	0.016 μg/L
Manganese	1	1	2.02 μg/L	0.022 μg/L
Mercury	1	1	0.01 μg/L	0.021 μg/L
Molybdenum	1	1	0.46 μg/L	0.024 μg/L
Nickel	1	1	5.39 μg/L	0.024 μg/L
Selenium	1	0	<0.134 μg/L	0.134 μg/L
Vanadium	1	1	0.09 μg/L	0.006 μg/L
Field Blank - HNO ₃ /H ₂ O ₂		·	· ·	
Impingers - ESP	,	,		
ICP-MS Metals				
Antimony	1	1	0.04 μg/L	0.003 μg/L
Arsenic	1	1	0.10 μg/L	0.008 μg/L
Barium	1	1	3.87 μg/L	0.017 μg/L
Beryllium	1	1	0.02 μg/L	0.015 μg/L
Cadmium	1	1	0.46 μg/L	0.020 μg/L

Table D-1 (Continued)

	Number of	Number	<u> </u>	
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Chromium	1	1	2.9 μg/L	0.020 μg/L
Cobalt	1	1	0.09 μg/L	0.003 μg/L
Соррег	1	1	2.04 μg/L	0.106 μg/L
Lead	1	1	1.28 μg/L	0.016 μg/L
Manganese	1	1	5.63 μg/L	0.022 μg/L
Mercury	1	1	0.05 μg/L	0.021 μg/L
Molybdenum	1	1	0.68 μg/L	0.024 μg/L
Nickel	1	1	1.38 μg/L	0.024 μg/L
Selenium	1	0	<0.134 μg/L	0.134 μg/L
Vanadium	1	1	0.10 μg/L	0.006 μg/L
Reagent Blank - HNO ₃ /H ₂ O ₂ Impingers				
ICP-MS Metals	_			
Antimony	1	1	0.04 μg/L	0.003 μg/L
Arsenic	1	1	0.22 μg/L	0.008 μg/L
Barium	1	1	7.58 μg/L	0.017 μg/L
Beryllium	1	1	0.09 μg/L	0.015 μg/L
Cadmium	1	1	0.95 μg/L	0.020 μg/L
Chromium	1	1	3.79 μg/L	0.020 μg/L
Cobalt	1	1	0.05 μg/L	0.003 μg/L
Соррег	1	1	1.56 μg/L	0.106 μg/L
Lead	1	1	2.11 μg/L	0.016 μg/L
Manganese	1	1	1.80 μg/L	0.022 μg/L
Mercury	1	1	2.13 μg/L	0.021 μg/L
Molybdenum	1	1	0.47 μg/L	0.024 μg/l
Nickel	1	1	0.57 μg/L	0.024 μg/L
Selenium	1	0	<0.134 μg/L	0.134 μg/L
Vanadium	1	i	0.30 μg/L	0.006 μg/L
Laboratory Method Blank - Filtered Solids				
GFAAS and CVAAS Metals				
Arsenic	2	2	0.89-2.7 μg/g	1.82 μg/g
Cadmium	1	0	ND	0.238 μg/g
Lead	1	0	ND	0.0776 μg/g
Mercury	1	0	ND	0.012 μg/g
Selenium	1	1	0.121 μg/g	0.101 μg/g

Table D-1 (Continued)

	Number of	Number		
	Blanks	of_	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Laboratory Method Blank - Acetone PNR				
GFAAS and CVAAS Metals				
Arsenic	1	1	0.296 μg/g	0.182 μg/g
Cadmium	1	0	ND	0.783 μg/g
Lead	1	0	ND	0.776 μg/g
Mercury	1	1	0.015 μg/g	0.024 μg/g
Selenium	1	0	ND	0.0802 μg/g
Laboratory Method Blank - Nitric PN	R			
GFAAS and CVAAS Metals				
Arsenic	1	0	ND	0.00214 mg/L
Cadmium	1	0	ND	0.00027 mg/L
Lead	1	0	ND	0.000996 mg/L
Mercury	1	0	ND	0.000033 mg/L
Selenium	1	0	ND	0.000592 mg/L
Laboratory Method Blank - Half Filt	er		<u> </u>	
GFAAS and CVAAS Metals				
Arsenic	1	1	0.144 μg	0.182 μg
Cadmium	1	0	ND	0.0783 μg
Lead	1	0	ND	0.0776 μg
Mercury	1	1	0.002 μg	0.0048 μg
Selenium	1	1	0.066 μg	0.0802 μg
Laboratory Method Blank - Filter & PNRs				
GFAAS and CVAAS Metals				
Arsenic .	1	1	0.376 μg	0.182 μg
Cadmium	2	0	ND	0.0783 μg
Lead	1	0	ND	0.0776 μg
Mercury	1	1	0.008 μg	0.0048 μg
Selenium	1	0	ND	0.0802 μg
Laboratory Method Blank - HNO ₃ /H ₂ O ₂ Impingers				
GFAAS and CVAAS Metals				,
Arsenic	1	0	ND	0.000647 mg/L
Cadmium	1	0	ND	0.000191 mg/L
Lead	1	1	0.00047 mg/L	0.00205 mg/L
Mercury	1	0	ND	0.000048 mg/L
Selenium	2	0	ND	0.00177 mg/L

Table D-1 (Continued)

	Number of	Number	1	
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Field Blank - Half Filter - APF				
GFAAS and CVAAS Metals				
Arsenic	1	1	0.110 μg	0.182 μg
Cadmium	1	0	ND	0.0783 μg
Lead	1	0	ND	0.0776 μg
Mercury	1	1	0.016 μg	0.0048 μg
Selenium	1	1	0.113 μg	0.0802 μg
Field Blank - Filter & PNR - ESP				
GFAAS and CVAAS Metals				
Arsenic	1	1	2.36 μg	0.182 μg
Cadmium	1	1	2.02 μg	0.157 μg
Lead	. 1	1	0.884 μg	0.0776 μg
Mercury	1	1	0.033 μg	0.0048 μg
Selenium	1	1	0.373 μg	0.0802 μg
Field Blank - H ₂ O ₂ /HNO ₃ Impingers - APF				
GFAAS and CVAAS Metals				
Arsenic	1	0	ND	0.000647 mg/L
Cadmium	1	1	0.00054 mg/L	0.000191 mg/L
Lead	1	1	0.00168 m/L	0.00205 mg/L
Mercury	1	0	ND	0.00024 mg/L
Selenium	1	1	0.00183 mg/L	0.00177 mg/L
Field Blank - H ₂ O ₂ /HNO ₃ Impingers - ESP				
GFAAS and CVAAS Metals				
Arsenic	1	0	ND	0.000647 mg/L
Cadmium	1	1	0.00047 mg/L	0.000191 mg/L
Lead	1	1	0.00058 mg/L	0.00205 mg/L
Mercury	1	0	ND ,	0.00024 mg/L
Selenium	1	1	0.0019 mg/L	0.00177 mg/L
Reagent Blank - Half Filter				
GFAAS and CVAAS Metals				
Arsenic	1	1	0.453 μg	0.182 μg
Cadmium	1	0	ND	0.0783 μg
Lead	1	0	ND	0.0776 μg
Mercury	1	1	0.019 μg	0.0048 μg
Selenium	1	1	0.132 μg	0.0802 μg
Mercury				

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Reagent Blank - Filter & PNR				
GFAAS and CVAAS Metals		· !		
Arsenic	1	1	0.270 μg	0.182 μg
Cadmium	1	1	0.018 μg	0.0783 μg
Lead	1	11	1.17 μg	0.0776 μg
Mercury	1	1	0.022 μg	0.0048 μg
Selenium	1	1	0.127 μg	0.0802 μg
Reagent Blank - H ₂ O ₂ /HNO ₃ Impingers				
GFAAS and CVAAS Metals				
Arsenic	i	0	ND	0.000647 mg/L
Cadmium	1	1	0.00002 mg/L	0.000191 mg/L
Lead	1	1	0.00069 mg/L	0.00205 mg/L
Mercury	1	0	ND	0.00024 mg/L
Selenium	1	1	0.0014 mg/L	0.00177 mg/L
Laboratory Method Blank - KMNO ₄ Impingers				_
CVAAS Metals				
Mercury	1	0	ND	0.000033 mg/L
Field Blank - KMNO ₄ Impingers - APF				
CVAAS Metals				
Mercury	1	1	0.00018 mg/L	0.000033 mg/L
Field Blank - KMNO ₄ Impingers - ESP				
CVAAS Metals				
Mercury	1	1	0.00001 mg/L	0.000033 mg/L
Reagent Blank - KMNO ₄ Impingers			<u> </u>	
CVAAS Metals				
Mercury	1	0	ND	0.000033 mg/L
Laboratory Method Blank - Ash				
GFAAS and CVAAS Metals				
Arsenic	1	1 .	0.082 μg/g	0.118 μg/g
Cadmium	1	1	0.060 μg/g	0.238 μg/g
Lead	3	0	ND	0.999 μg/g
Mercury	1	0	ND	0.012 μg/g
Selenium	2	1 .	ND -0.31 μg/g	1.01 μg/g

Table D-1 (Continued)

	Number of	Number		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Laboratory Method Blank - Sorbent				
GFAAS and CVAAS Metals				
Arsenic	1	0	ND	0.118 μg/g
Cadmium	1	0	ND	0.0238 μg/g
Lead	1	1	0.016 μg/g	0.0999 μg/g
Mercury	1	0	ND	0.012 μg/g
Selenium	1	0	ND	0.101 μg/g
Laboratory Method Blank - Service Water				
GFAAS and CVAAS Metals				
Arsenic	1	0	ND	0.000647 mg/L
Cadmium	1	0	ND	0.00027 mg/L
Lead	1	1	0.00065 mg/L	0.0022 mg/L
Mercury	1	0	ND	0.000033 mg/L
Selenium	1	0	ND	0.00177 mg/L
Laboratory Method Blank - Ash and Sorbent				
Anions				
Chloride (Potentiometric)	2	0	0 μg/g	78.1 μg/g
Fluoride (EPA 340.2)	3	3	8.40-9.21 μg/g	11.8 μg/g
Sulfur (EPA 300)	2	1	0-4.03 mg/L	0.0471 mg/L
Laboratory Method Blank - Service Water				
Anions				
Chloride (EPA 300)	1	0_	0 mg/L	0.0281 mg/L
Fluoride (EPA 340.2)	1	1	0.0126 mg/L	0.00551 mg/L
Sulfate (EPA 300)	1	0	0 mg/L	0.0471 mg/L
Phosphate (EPA 365.2)	1	0	ND	0.0200 mg/L
Laboratory Method Blank - Half Filter, Filtered Solids, Filter & PNRs				
Anions				
Chloride (BIF)	2	0	0 mg/L	0.0225 mg/L
Fluoride (EPA 340.2)	1	1	0.0144 mg/L	0.00551 mg/L
Sulfate (EPA 300)	2	0	0 mg/L	0.0471 mg/L

Table D-1 (Continued)

Analyte						
Laboratory Method Blank - CO ₃ /H ₂ O ₃ Impingers Anions Chloride (EPA 300) 1 0 0 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 2 2 0 0 mg/L 0.0471 mg/L Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Field Blanks - Half Filter, Filter & PNR Anions Chloride (BIF) 2 2 0.062-0.401 mg/L 0.0225 mg/L Fluoride (EPA 340.2) 2 1 0-4.08 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 1 0-4.08 mg/L 0.0471 mg/L Field Blanks - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 2 1 0-4.08 mg/L 0.0471 mg/L Fluoride (EPA 340.2) 2 2 0.389-0.443 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 2 2 0.237-0.254 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Sulfate (EPA 300) 2 1 0.0471 mg/L Sulfate (EPA 340.2) 1 1 0.647 mg/L 0.00551 mg/L Fluoride (EPA 340.2) 1 1 0.647 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.647 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.0471 mg/L Reagent Blank - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 340.2) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.0471 mg/L Fluoride (EPA 340.2) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Fluoride (EPA 340.2) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Fluoride (EPA 340.2) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 0.00566 mg/L 0.00686 mg/L 0.00686 mg/L 0.00686 mg/L	Analyta	Blanks Analyzed	Of Detects	Range of	Detection Limit	
Impingers		Allayzeu	Detects	Compounds Detected	Lum	
Chloride (EPA 300)	Impingers					
Fluoride (EPA 340.2)	Anions					
Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Field Blanks - Half Filter, Filter & PNR Anions Chloride (BIF) 2 2 2 0.062-0.401 mg/L 0.0225 mg/L Fluoride (EPA 340.2) 2 2 0.0291-0.38 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 1 0-4.08 mg/L 0.0471 mg/L Field Blanks - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 2 2 0.389-0.443 mg/L 0.0221 mg/L Fluoride (EPA 300) 2 2 0.237-0.254 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Reagent Blank - Filter & PNR Anions Chloride (BIF) 1 1 0.278 mg/L 0.0225 mg/L Fluoride (EPA 340.2) 1 1 0.647 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 1.38 mg/L 0.0471 mg/L Reagent Blank - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.0471 mg/L Fluoride (EPA 340.2) 1 1 0.647 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.0471 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0166 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Chloride (EPA 300)	1	0	0 mg/L	0.0281 mg/L	
Field Blanks - Half Filter, Filter & PNR	Fluoride (EPA 340.2)	2	2	·0.0126-0.0143 mg/L	0.00551 mg/L	
Anions Chloride (BIF) 2 2 0.062-0.401 mg/L 0.0225 mg/L Fluoride (EPA 340.2) 2 2 0.0291-0.38 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 1 0-4.08 mg/L 0.0471 mg/L Filed Blanks - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 2 2 0.389-0.443 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 2 2 0.237-0.254 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Reagent Blank - Filter & PNR Anions Chloride (BIF) 1 1 0.278 mg/L 0.00255 mg/L Sulfate (EPA 340.2) 1 1 0.647 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 1.38 mg/L 0.0471 mg/L Reagent Blank - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 1 1 0.637 mg/L 0.0281 mg/L Fluoride (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.686 mg/L 0.00551 mg/L Sulfate (EPA 350.2) Ammonia 1 0.0686 mg/L 0.0166 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Sulfate (EPA 300)	2	0	0 mg/L,	0.0471 mg/L	
Chloride (BIF) 2 2 0.062-0.401 mg/L 0.0225 mg/L	Field Blanks - Half Filter, Filter & PNR					
Fluoride (EPA 340.2) 2 2 0.0291-0.38 mg/L 0.00551 mg/L	Anions					
Sulfate (EPA 300) 2 1 0-4.08 mg/L 0.0471 mg/L Field Blanks - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 2 2 0.389-0.443 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 2 2 0.237-0.254 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Reagent Blank - Filter & PNR Anions Chloride (BIF) 1 1 0.278 mg/L 0.0225 mg/L Fluoride (EPA 300) 1 1 0.647 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 1.38 mg/L 0.0471 mg/L Reagent Blank - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 1 1 0.637 mg/L 0.0471 mg/L Reagent Blank - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 1 1 0.637 mg/L 0.0281 mg/L Fluoride (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.686 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.0686 mg/L 0.0471 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Chloride (BIF)	2	2	0.062-0.401 mg/L	0.0225 mg/L	
Field Blanks - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 2 2 0.389-0.443 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 2 2 0.237-0.254 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Reagent Blank - Filter & PNR Anions Chloride (BIF) 1 1 0.278 mg/L 0.0225 mg/L Fluoride (EPA 340.2) 1 1 0.647 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 1.38 mg/L 0.0471 mg/L Reagent Blank - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 1 1 0.637 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 1 1 0.184 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.637 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 1 1 0.184 mg/L 0.00551 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/L Field Blanks - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Fluoride (EPA 340.2)	2	2	0.0291-0.38 mg/L	0.00551 mg/L	
Anions Chloride (EPA 300) 2 2 0.389-0.443 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 2 2 0.237-0.254 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Reagent Blank - Filter & PNR Anions Chloride (BIF) 1 1 0.278 mg/L 0.0225 mg/L Fluoride (EPA 340.2) 1 1 0.647 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 1.38 mg/L 0.0471 mg/L Reagent Blank - CO ₃ /H ₂ O ₂ Impingers Anions Chloride (EPA 300) 1 1 0.637 mg/L 0.0281 mg/L Fluoride (EPA 300) 1 1 0.0637 mg/L 0.0281 mg/L Fluoride (EPA 300) 1 1 0.184 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 0.184 mg/L 0.00551 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Suifate (EPA 300)	2	i	0-4.08 mg/L	0.0471 mg/L	
Chloride (EPA 300) 2 2 0.389-0.443 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 2 0 0.237-0.254 mg/L 0.00551 mg/L Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L Reagent Blank - Filter & PNR Anions	Field Blanks - CO ₃ /H ₂ O ₂ Impingers					
Fluoride (EPA 340.2) 2 2 0.237-0.254 mg/L 0.00551 mg/L	Anions					
Sulfate (EPA 300) 2 0 0 mg/L 0.0471 mg/L	Chloride (EPA 300)	2	2	0.389-0.443 mg/L	0.0281 mg/L	
Reagent Blank - Filter & PNR	Fluoride (EPA 340.2)	2	2	0.237-0.254 mg/L	0.00551 mg/L	
Chloride (BIF) 1	Sulfate (EPA 300)	2	0	0 mg/L	. 0.0471 mg/L	
Chloride (BIF)	Reagent Blank - Filter & PNR	<u> </u>		<u> </u>	<u> </u>	
Timeride (EPA 340.2) 1	Anions					
Sulfate (EPA 300) 1 1 1.38 mg/L 0.0471 mg/L Reagent Blank - CO ₃ /H ₂ O ₂ Impingers Anions Impingers Chloride (EPA 300) 1 1 0.637 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 1 1 0.184 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 2.25 mg/L 0.0471 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/l Field Blanks - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Chloride (BIF)	1	1	0.278 mg/L	0.0225 mg/L	
Reagent Blank - CO ₃ /H ₂ O ₂ Impingers	Fluoride (EPA 340.2)	1	1	0.647 mg/L	0.00551 mg/L	
Anions Chloride (EPA 300) 1 1 0.637 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 1 1 0.184 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 2.25 mg/L 0.0471 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/l Field Blanks - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Sulfate (EPA 300)	1	1	1.38 mg/L	0.0471 mg/L	
Chloride (EPA 300) 1 1 0.637 mg/L 0.0281 mg/L Fluoride (EPA 340.2) 1 1 0.184 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 2.25 mg/L 0.0471 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/l Field Blanks - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Reagent Blank - CO ₃ /H ₂ O ₂ Impingers	<u> </u>				
Fluoride (EPA 340.2) 1 1 0.184 mg/L 0.00551 mg/L Sulfate (EPA 300) 1 1 1 2.25 mg/L 0.0471 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/l Field Blanks - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Anions					
Sulfate (EPA 300) 1 1 2.25 mg/L 0.0471 mg/L Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) 1 1 0.0686 mg/L 0.0156 mg/l Field Blanks - Ammonia in Stack Gas (EPA 350.2) 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Chloride (EPA 300)	1	1	0.637 mg/L	0.0281 mg/L	
Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/l Field Blanks - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Fluoride (EPA 340.2)	1	1	0.184 mg/L	0.00551 mg/L	
Stack Gas (EPA 350.2) Ammonia 1 1 0.0686 mg/L 0.0156 mg/l Field Blanks - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Sulfate (EPA 300)	1	1	2.25 mg/L	0.0471 mg/L	
Field Blanks - Ammonia in Stack Gas (EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Laboratory Method Blank - Ammonia in Stack Gas (EPA 350.2)					
(EPA 350.2) Ammonia 2 2 0.167-0.169 mg/L 0.0468 mg/L Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Ammonia	i	1	0.0686 mg/L	0.0156 mg/l	
Reagent Blank - Ammonia in Stack Gas (EPA 350.2)	Field Blanks - Ammonia in Stack Gas (EPA 350.2)					
(EPA 350.2)	Ammonia	2	2	0.167-0.169 mg/L	0.0468 mg/L	
Ammonia 1 1 0.167 mg/L 0.0468 mg/L	Reagent Blank - Ammonia in Stack Gas					
, , , , , , , , , , , , , , , , , , ,	Ammonia	1	1	0.167 mg/L	0.0468 mg/L	

Table D-1 (Continued)

	Number of	Number			
	Blanks	of	Range of	Detection	
Analyte	Analyzed	Detects	Compounds Detecteda	Limit	
Laboratory Method Blank - Cyanide in Stack Gas (SW 9012)					
Cyanide	1	0	ND	0.00942 mg/L	
Field Blanks - Cyanide in Stack Gas (SW 9012)					
Cyanide	2	2	0.0014-0.0021 mg/L	0.00942 mg/L	
Reagent Blank - Cyanide in Stack Gas (SW 9012)					
Cyanide	1	1	0.0020 mg/L	0.00942 mg/L	
Field Blanks - Chromium VI in Stack Gas (Ion Chromatography		_			
Chromium VI (KOH Impingers)	1	1	0.00757 mg/L	0.0001 mg/L	
Reagent Blanks - Chromium VI in Stack Gas (Ion Chromatography)					
Chromium VI (KOH Impingers)	4	4	0.00743-0.00955 mg/L	0.0001 mg/L	
Laboratory Method Blank - Total Chromium in Stack Gas (SW 6010)					
Chromium (SW 6010)	1	1	0.00233 μg/g	0.00273 μg/g	
Field Blanks - Total Chromium in Stack Gas (SW 6010)					
Chromium (Nitric Rinse)	1	1	0.00618 mg/L	0.00524 mg/L	
Chromium (KOH Impinger)	1	1	0.0221 mg/L	0.00524 mg/L	
Reagent Blank - Total Chromium in Stack Gas (SW 6010)			*		
Chromium (KOH Impinger)	1	1	0.00684 mg/L	0.00524 mg/L	
Laboratory Method Blank - Formaldehyde in Stack Gas (BIF 0011)					
Formaldehyde	2	0	ND	0.50 μg	
Field Blanks - Formaldehyde in Stack Gas (BIF 0011)					
Formaldehyde	2	2	5.7-6.0 μg	0.50 μg	
Reagent Blanks - Formaldehyde in Stack Gas (BIF 0011)					
Formaldehyde	4	0	ND	0.50 μg	
Laboratory Method Blank - Volatile Organic Compounds in Stack Gas					
Chloromethane	6	0	ND	10 ng	
Vinyl Chloride	6	0	ND	10 ng	
Bromomethane	6	0	ND	10 ng	
Chloroethane	6	0	ND ·	10 ng	

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Trichlorofluoromethane	6	0	ND	10 ng
1,1-Dichloroethene	6	0	ND	10 ng
Carbon Disulfide	6	0	ND	10 ng
Acetone	6	0	ND	50 ng
Methylene Chloride	6	0	ND	10 ng
trans-1,2-Dichloroethene	6	0	ND	10 ng
1,1-Dichloroethane	6	0	ND	10 ng
Vinyl Acetate	6	0	ND	50 ng
2-Butanone	6	0	ND	50 ng
Chloroform	6	0	ND	10 ng
1,1,1-Trichloroethane	6	0	ND	10 ng
Carbon Tetrachloride	6	0	ND	10 ng
Benzene	6	0	ND	10 ng
1,2-Dichloroethane	6	0	ND	10 ng
Trichloroethene	6	0	ND	10 ng
1,2-Dichloropropane	6	0	ND	10 ng
Bromodichloromethane	6	0	ND	10 ng
trans-1,3-Dichloropropene	6	0	ND	. 10 пд
4-methyl-2-Pentanone	6	0	ND	50 ng
Toluene	6	0	ND	10 ng
cis-1,3-Dichloropropene	6	0	ND	10 ng
1,1,2-Trichloroethane	6	0	ND	10 ng
Tetrachloroethene	6	0	ND	10 ng
2-Hexanone	6	0	ND	50 ng
Dibromochloromethane	6	0	ND	10 ng
Chlorobenzene	6	0	ND	10 ng
Ethyl Benzene	6	0	ND	10 ng
m,p-Xylene	6	0	ND	10 ng
o-Xylene	6	0	ND	10 ng
Styrene	6	0	ND	10 ng
Bromoform	6	0	ND	10 ng
1,1,2,2-Tetrachioroethane	6	0	ND	10 ng
1,3-Dichlorobenzene	6	0	ND	10 ng
1,4-Dichlorobenzene	6	0	ND	10 ng
1,2-Dichlorobenzene	6	0	ND	10 ng

Table D-1 (Continued)

	Number of Blanks	Number of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Field Blanks - Volatile Organic				
Compounds in Stack Gas	,			·
Chloromethane	12	3	10-14 ng	10 ng
Vinyl Chloride	12	0	ND	10 ng
Bromomethane	12	0	ND	10 ng
Chloroethane	12	0	ND	10 ng
Trichlorofluoromethane	12	0	ND	10 ng
1,1-Dichloroethene	12	0	ND	10 ng
Carbon Disulfide	12	0	ND	10 ng
Acetone	12	0	ND	50 ng
Methylene Chloride	12	3	48-230 ng	10 ng
trans-1,2-Dichloroethene	12	0	ND	10 n g
1,1-Dichloroethane	12	0	ND	10 ng
Vinyl Acetate	12	0	ND	50 ng
2-Butanone	12	0	ND	50 ng
Chloroform	12	0	ND	10 ng
1,1,1-Trichloroethane	12	0	ND	10 ng
Carbon Tetrachloride	12	0	ND	10 ng
Benzene	12	0	ND	10 ng
1,2-Dichloroethane	12	0	ND	10 ng
Trichloroethene	12	0	ND	10 ng
1,2-Dichloropropane	12	0	ND	10 ng
Bromodichloromethane	12	0	ND	10 ng
trans-1,3-Dichloropropene	12	0	ND	10 ng
4-methyl-2-Pentanone	12	0	ND	50 ng
Toluene	12	1	37 ng	10 ng
cis-1,3-Dichloropropene	12	0	ND	10 ng
1,1,2-Trichloroethane	12	0	ND	10 ng
Tetrachloroethene	12	0	ND	10 ng
2-Hexanone	12	0	ND	50 ng
Dibromochloromethane	12	0	ND	10 ng
Chlorobenzene	12	0	ND	10 ng
Ethyl Benzene	12	0	ND	10 ng
m,p-Xylene	12	0	ND	10 ng
o-Xylene	12	0	ND	10 ng
Styrene	12	0	ND	10 ng
Bromoform	12	0	ND	10 ng
1,1,2,2-Tetrachloroethane	12	0	ND	10 ng

Table D-1 (Continued)

	Number of Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
1,3-Dichlorobenzene	12	0	ND	10 ng
1,4-Dichlorobenzene	12	0	ND	10 ng
1,2-Dichlorobenzene	12	0	ND	10 ng
Trip Blank - Volatile Organic Compounds in Stack Gas				
Chloromethane	1	0	ND	10 ng
Vinyl Chloride	1	0	ND	10 ng
Bromomethane	1	0	ND	10 ng
Chloroethane	1	0	ND	10 ng
Trichlorofluoromethane	1	0	ND	10 ng
1,1-Dichloroethene	1	0	ND	10 ng
Carbon Disulfide	1	0	ND	10 ng
Acetone	1	0	ND	50 ng
Methylene Chloride	1	0	ND	10 ng
trans-1,2-Dichloroethene	1	0	ND	10 ng
1,1-Dichloroethane	1	0	ND	10 ng
Vinyl Acetate	1	0	ND	50 ng
2-Butanone	1	0	ND	. 50 ng
Chloroform	1	0	ND	10 ng
1,1,1-Trichloroethane	1	0	ND	10 ng
Carbon Tetrachloride	1	0	ND	10 ng
Benzene	1	0	ND	10 ng
1,2-Dichloroethane	1	0	ND	10 ng
Trichloroethene	1	0	ND	10 ng
1,2-Dichloropropane	1	0	ND	10 ng
Bromodichloromethane	i	0	ND	10 ng
trans-1,3-Dichloropropene	1	0	ND	10 ng
4-methyl-2-Pentanone	1	0	ND	50 ng
Toluene	1	0	ND	10 ng
cis-1,3-Dichloropropene	1	0	ND	10 ng
1,1,2-Trichloroethane	1	0	ND	10 ng
Tetrachloroethene	i	0	ND	10 ng
2-Hexanone	1	0	ND	50 ng
Dibromochloromethane	ì	0	ND	10 ng
Chlorobenzene	1	0	ND	10 ng
Ethyl Benzene	i	0	ND	10 ng
m,p-Xylene	1	0	ND	10 ng
o-Xylene	1	0	ND	10 ng

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Styrene	1	0	ND	10 ng
Bromoform	1	0	ND	10 ng
1,1,2,2-Tetrachloroethane	1	0	ND	10 ng
1,3-Dichlorobenzene	1	0	ND	10 ng
1,4-Dichlorobenzene	1	0	ND	10 ng
1,2-Dichlorobenzene	1	0	ND	10 ng
Laboratory Method Blank - Semivolatile Compounds in Stack Gas		— · — · ·		
Acenaphthene	2	0	ND	1.49-6.07 μg
Acenaphthylene	2	0	ND	0.86-3.44 μg
Anthracene	2	0	ND	0.96-3.54 μg
Benz(a)anthracene	2	0	ND	1.16-3.12 μg
Benzo(b)fluoranthene	2	0	ND	1.29-2.99 μg
Benzo(e)pyrene	2	0	ND	1.38-3.33 μg
Benzo(g,h,i)perylene	2	0	ND	1.19-3.13 μg
Benzo(k)fluoranthene	2	0	ND	1.40-3.19 μg
Benzoic Acid	2	0	ND	5.18-43.22 μg
Benzyl alcohol	2	0	ND	3.52-16.84 μg
4-Bromophenylphenylether	2	0	ND	5.06-19.08 μg
Butylbenzylphthalate	2	0	ND	1.87-4.65 μg
4-Chloro-3-methylphenol	2	0	ND	2.76-11.21 μg
p-Chloroaniline	2	0	ND	2.17-8.42 μg
bis(2-Chloroethoxy)methane	2	0	ND	1.79-6.86 μg
bis(2-Chloroethyl)ether	2	0	ND	2.18-8.62 μg
bis(2-Chloroisopropyl)ether	2	0	ND	1.55-5.62 μg
2-Chloronaphthalene	2	0	ND	1.38-5.43 μg
2-Chlorophenol	2	0	ND	2.17-9.70 μg
4-Chlorophenylphenylether	2	0	ND	2.64-11.00 μg
Chrysene	2	0	ND	1.23-3.36 μg
Di-n-butylphthalate	2	1	1.47 μg	2.14 μg
Di-n-octylphthalate	2	0	ND	1.07-2.02 μg
Dibenz(a,h)anthracene	2	0	ND	1.34-3.73 μg
Dibenzofuran	2	0	ND	1.00-3.94 μg
1,2-Dichlorobenzene	2	0	ND	2.18-9.25 μg
1,3-Dichlorobenzene	2	0	ND	2.08-8.85 μg
1,4-Dichlorobenzene	2	0	ND	2.03-8.61 μg
3,3-Dichlorobenzidine	2	0	ND	3.79-10.54 μg
2,4-Dichlorophenol	2	0	ND	2.75-11.73 μg

Table D-1 (Continued)

	Number of	Number		
A a limba	Blanks	of Detects	Range of	Detection
Analyte Diethylphthalate	Analyzed 2	Detects 0	Compounds Detected* ND	Limit 1.15-4.65 μg
2,4-Dimethylphenol	2	0	ND	2.51-10.77 μg
Dimethylphthalate	2	0	ND	1.26-5.01 μg
4,6-Dinitro-2-methylphenol	2	0	ND	7.84-29.52 μg
2,4-Dinitro-2-menyiphenoi	2	0	ND	11.06-50.58 μg
2,4-Dinitrotoluene	2	0	ND	
	2	0	 	3.59-14.20 μg
2,6-Dinitrotoluene			ND	4.96-19.61 μg
Diphenylamine/N-Nitroso DPA	2	0	ND	2.18-8.13 μg
bis(2-Ethylhexyl)phthalate	2	1	0.90 μg	3.43 μg
Fluoranthene	2	0	ND	0.76-2.72 μg
Fluorene	2	0	ND	1.29-5.11 μg
Hexachlorobenzene	2	0	ND	3.58-13.40 μg
Hexachlorobutadiene	2	0	ND	4.45-18.56 µg
Hexachlorocyclopentadiene	2	0	ND	6.52-23.24 μg
Hexachloroethane	2	0	ND	4.21-16.31 μg
Indeno(1,2,3)pyrene	2	0	ND	1.02-2.80 μg
Isophorone	2	0	ND	1.12-4.32 μg
2-Methylnaphthalene	2	0	ND	1.39-5.63 μg
4-Methylphenol/3-Methylphenol	2	0	ND	2.29-10.07 μg
2-Methylphenol	2	0	ND	2.39-10.44 μg
N-Nitrosodipropylamine	2	. 0	ND	3.14-12.39 μg
Naphthalene	2	1	4.77 μg	0.87 μg
2-Nitrosniline	2	0	ND	3.61-13.26 μg
3-Nitroaniline	2	0	ND	4.45-17.05 μg
4-Nitroaniline	2	0	ND	3.81-14.86 μg
Nitrobenzene	2	0	ND	1.98-7.27 μg
2-Nitrophenol	2	0	ND	4.17-16.67 μg
4-Nitrophenol	2	0	ND	7.74-31.19 μg
Pentachlorophenol	2	0	ND	7.40-47.23 μg
Phenanthrene	2	0	ND	0.97-3.52 μg
Phenol	2	0	ND	1.62-6.97 μg
Pyrene	2	0	ND	1.08-2.90 μg
1,2,4-Trichlorobenzene	2	0	ND	2.50-10.01 μg
2,4,5-Trichlorophenol	2	0	ND	3.56-14.79 μg
2,4,6-Trichlorophenol	2	0	ND	3.79-16.54 μg

Table D-1 (Continued)

	Number of	Number	i i	
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected	Limit
Field Blanks - Semivolatile Compounds	· · · · · · · · · · · · · · · · · · ·		<u> </u>	
in Stack Gas				
Acenaphthene	4	0	ND	6.20-7.31 μg
Acenaphthylene	4	0	ND	3.51-4.14 µg
Anthracene	4	0	ND	3.71-4.34 μg
Benz(a)anthracene	4	0	ND	2.91-3.36 μg
Benzo(b)fluoranthene	4	0	ND	2.75-3.12 μg
Benzo(e)pyrene	4	0	ND	3.06-3.47 μg
Benzo(g,h,i)perylene	4	0	ND	2.87-3.26 μg
Benzo(k)fluoranthene	4	0	ND	2.93-3.32 μg
Benzoic Acid	4	0	ND	43.48-50.08 μg
Benzyl alcohol	4	0	ND	17.21-19.54 μg
4-Bromophenylphenylether	4	0	ND	20.00-23.42 μg
Butylbenzylphthalate	4	0	ND	4.34-5.00 μg
4-Chloro-3-methylphenol	4	0	ND	11.28-12.99 μg
p-Chloroaniline	4	0	ND	8.47-9.76 μg
bis(2-Chloroethoxy)methane	4	0	ND	6.90-7.95 μg
bis(2-Chloroethyl)ether	4	0	ND	8.80-10.0 μg
bis(2-Chloroisopropyl)ether	4	0	ND	5.74-6.52 μg
2-Chloronaphthalene	4	0	ND	5.54-6.53 μg
2-Chlorophenol	4	0	. ND	9.91-11.26 μg
4-Chlorophenylphenylether	4	0	ND	11.23-13.24 μg
Chrysene	4	0	ND	3.13-3.62 μg
Di-n-butylphthalate	4	4	5.08-10.97 μg	
Di-n-octylphthalate	4	0	ND	1.85-2.10 μg
Dibenz(a,h)anthracene	4	0	ND	3.42-3.88 μg
Dibenzofuran	4	0	ND	4.02-4.74 μg
1,2-Dichlorobenzene	4	0	ND	9.45-10.74 μg
1,3-Dichlorobenzene	4	0	ND	9.04-10.27 μg
1,4-Dichlorobenzene	4	0	ND	8.79-9.99 μg
3,3-Dichlorobenzidine	4	0	ND	9.84-11.35 μg
2,4-Dichlorophenol	4	0	ND	11.80-13.59 μg
Diethylphthalate	4	0	ND	4.75-5.60 µg
2,4-Dimethylphenol	4	0	ND	10.84-12.48 μg
Dimethylphthalate	4	0	ND	5.11-6.02 μg
4,6-Dinitro-2-methylphenol	4	0	ND	30.94-36.22
2,4-Dinitrophenol	4	0	ND	51.62-60.84 μg
2,4-Dinitrotoluene	4	0	ND	14.49-17.08 µg

Table D-1 (Continued)

	Number of	Number				
	Blanks	of	Range of	Detection		
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit		
2,6-Dinitrotoluene	4	0	ND	20.01-23.58 μg		
Diphenylamine/N-Nitroso DPA	4	0	ND	8.52-9.97 μg		
bis(2-Ethylhexyl)phthalate	4	2	2.54-3.51	3.40-3.69 μg		
Fluoranthene	4	0	ND	2.85-3.34 μg		
Fluorene	4	0	ND	5.22-6.15 μg		
Hexachlorobenzene	4	0	ND	14.04-16.44 μg		
Hexachlorobutadiene	4	0	ND	18.67 - 21.50 μg		
Hexachlorocyclopentadiene	4	0	ND	23.72-27.96 μg		
Hexachloroethane	4	0	ND	16.66-18.92 μg		
Indeno(1,2,3)pyrene	4	0	ND	2.57-2.91 μg		
Isophorone	4	0	ND	4.34-5.00 μg		
2-Methylnaphthalene	4	0	ND	5.67-6.53 μg		
4-Methylphenol/3-Methylphenol	4	0	ND	10.29-11.69 μg		
2-Methylphenol	4	0	ND	10.66-12.11 μg		
N-Nitrosodipropylamine	4	0	ND	12.66-14.38 μg		
Naphthalene	4	1	31.39 μg	3.52-4.05 μg		
2-Nitroaniline	4	0	ND	13.53-15.95 μg		
3-Nitroaniline	4	0	ND	17.40-20.51 μg		
4-Nitroaniline	4	0	. ND	15.17-17.88 μg		
Nitrobenzene	4	0	ND	7.31-8.42 μg		
2-Nitrophenol	4	0	ND	16.78-19.32 μg		
4-Nitrophenol	4	0	ND	31.83-37.52 μg		
Pentachiorophenol	4	0	ND	49.50-57.96 μg		
Phenanthrene	4	0	ND	3.69-4.33 μg		
Phenol	4	0	ND	7.12-8.09 μg		
Pyrene	4	0	ND	2.71-3.12 μg		
1,2,4-Trichlorobenzene	4	0	ND	10.08-11.60 μg		
2,4,5-Trichlorophenol	4	0	ND	15.09-17.79 μg		
2,4,6-Trichlorophenol	4	0	ND	16.87-19.89 μg		
Trip Blank - Semivolatile Compounds in Stack Gas						
Acenaphthene	1	0	ND	3.96 μg		
Acenaphthylene	1	0	ND	2.25 μg		
Anthracene	1	0 .	ND	2.18 μg		
Benz(a)anthracene	1	0	ND	1.53 μg		
Benzo(b)fluoranthene	1	0	ND	1.52 μg		
Benzo(e)pyrene	1	0	ND	1.66 μg		
Benzo(g,h,i)perylene	1	0	ND	1.59 μg		

Table D-1 (Continued)

Analyte	Number of Blanks Analyzed	Number of Detects	Range of Compounds Detected	Detection Limit
Benzo(k)fluoranthene	1	0	ND	1.56 μg
Benzoic Acid	1	0	ND	21.82 μg
Benzyl alcohol	1	0	ND	10.57 μg
4-Bromophenylphenylether	1	0	ND	10.36 μg
Butylbenzylphthalate	1	0	ND	2.73 μg
4-Chloro-3-methylphenol	1	0	ND	7.99 µg
p-Chloroaniline	1	0	ND	5.48 μg
bis(2-Chloroethoxy)methane	1	0	ND	5.40 μg
bis(2-Chloroethyl)ether	1	0	ND	6.32 μg
bis(2-Chloroisopropyl)ether	1	0	ND	4.82 μg
2-Chloronaphthalene	1	0	ND	3.54 μg
2-Chlorophenol	1	0	ND	5.70 μg
4-Chlorophenylphenylether	1	0	ND	6.62 μg
Chrysene	1	0	ND	1.64 μg
Di-n-butylphthalate	1	1	7.32 μg	
Di-n-octylphthalate	1	0	ND	1.17 μg
Dibenz(a,h)anthracene	1	0	ND	1.88 μg
Dibenzofuran	1	0	ND	2.56 μg
1,2-Dichlorobenzene	1	0	ND	5.65 μg
1,3-Dichlorobenzene	1	0	ND	5.35 μg
1,4-Dichlorobenzene	1	0	ND	5.20 μg
3,3-Dichlorobenzidine	1	0	ND	5.10 μg
2,4-Dichlorophenol	1	0	ND	7.25 μg
Diethylphthalate	1	0	ND	3.05 μg
2,4-Dimethylphenol	1	0	ND	7.07 μg
Dimethylphthalate	1	0	ND	3.32 μ g
4,6-Dinitro-2-methylphenol	1	0	ND	14.95 μg
2,4-Dinitrophenol	1	0	ND	26.89 μg
2,4-Dinitrotoluene	1	0	ND	8.79 μg
2,6-Dinitrotoluene	1	0	ND	12.73 μg
Diphenylamine/N-Nitroso DPA	1	0	ND	5.33 μg
bis(2-Ethylhexyl)phthalate	1	0	11.13 μg	
Fluoranthene	1	0	ND	1.54 μg
Fluorene	1	0	ND	3.40 μg
Hexachlorobenzene	1	0	ND	7.42 μg
Hexachlorobutadiene	1	0	ND	10.46 µg
Hexachlorocyclopentadiene	1	0	ND	12.17 μg
Hexachloroethane	1	0	ND	11.17 μg

Table D-1 (Continued)

	Number of Blanks	Number of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Indeno(1,2,3)pyrene	1	0	ND	1.39 μg
Isophorone	1	0	. ND	3.54 μg
2-Methylnaphthalene	1	0	ND	3.62 μg
4-Methylphenol/3-Methylphenol	1	0	ND	6.41 μg
2-Methylphenol	1	0	ND	6.89 μg
N-Nitrosodipropylamine	1	0	ND	9.96 μg
Naphthalene	1	0	ND	2.28 μg
2-Nitroaniline	1	0	ND	11.19 μg
3-Nitroaniline	1	0	ND	10.92 μg
4-Nitroaniline	1	0	ND	9.64 μg
Nitrobenzene	1	0	ND	6.07 μg
2-Nitrophenol	1	0	ND	10.79 μg
4-Nitrophenol	1	0	ND	23.71 μg
Pentachlorophenol	1	0	. ND	18.79 μg
Phenanthrene	1	0	ND	2.23 μg
Phenol	1	0	ND	4.73 μg
Pyrene	1	0	ND	1.57 μg
1,2,4-Trichlorobenzene	1	0	ND	6.46 μg
2,4,5-Trichlorophenol	1	0	ND	9.43 μg
2,4,6-Trichlorophenol	1	0	ND	9.82 μg
Laboratory Method Blank - Semivolatile Compounds in Ash				_
Acenaphthene	1	0	ND	0.0161 μg/g
Acenaphthylene	1	0	ND	0.0219 μg/g
Anthracene	1	0	ND	0.0180 μg/g
Benz(a)anthracene	1	0	ND	0.0116 μg/g
Benz(a)pyrene	1	0	ND	0.0180 μg/g
Benzo(b)fluoranthene	1	0	ND	$0.0320 \ \mu g/g$
Benzo(g,h,i)perylene	1	0	ND	0.0185 μg/g
Benzo(k)fluoranthene	1	0	ND	0.0273 μg/g
Benzoic Acid	1	0	ND	0,0 9 97 μg/g
Benzyl alcohol	1	0	ND	0,0480 μg/g
4-Bromophenylphenylether	1	0	ND	0.0203 μg/g
Butylbenzyiphthalate	1	0	ND	0.0250 μg/g
4-Chloro-3-methylphenol	1	0	ND	0.0153 μg/g
p-Chloroaniline	1	0	ND	0.0327 μg/g
bis(2-Chloroethoxy)methane	1	0	ND	0.0111 μg/g
bis(2-Chloroethyl)ether	1	0	ND	0.0155 μg/g

Table D-1 (Continued)

	Number of Blanks	Number of	Panes of	D-44'
Analyte	Analyzed	Detects	Range of Compounds Detected ^a	Detection Limit
bis(2-Chloroisopropyl)ether	1	0	ND	0.0190 μg/g
2-Chloronaphthalene	1	0	ND	0.0300 μg/g
2-Chlorophenol	1	0	ND	0.0109 μg/g
4-Chlorophenylphenylether	1	0	ND	0.0244 μg/g
Chrysene	1	0	- ND	0.0195 μg/g
Di-n-butylphthalate	1	0	ND	0.0103 μg/g
Di-n-octylphthalate	1	0	ND	0.0194 μg/g
Dibenz(a,h)anthracene	1	0	ND	0.0228 μg/g
Dibenzofuran	1	0	ND	0.0130 μg/g
1,2-Dichlorobenzene	1	0	ND	0.0214 μg/g
1,3-Dichlorobenzene	1	0	ND	0.0237 μg/g
1,4-Dichlorobenzene	1	0	ND	0.0236 μg/g
3,3-Dichlorobenzidine	1	0	ND	0.0363 μg/g
2,4-Dichlorophenol	1	0	ND	0.0194 μg/g
Diethylphthalate	1	0	ND	0.0123 μg/g
2,4-Dimethylphenol	1	0	ND	0.0423 μg/g
Dimethylphthalate	1	0	ND	0.0157 μg/g
4,6-Dinitro-2-methylphenol	1	0	ND	0.0244 μg/g
2,4-Dinitrophenol	1	0	ND	0.0863 μg/g
2,4-Dinitrotoluene	1	0	ND	0.0256 μg/g
2,6-Dinitrotoluene	1	0	ND	0.0350 μg/g
Diphenylamine/N-Nitroso DPA	1	0	ND	0.0255 μg/g
bis(2-Ethylhexyl)phthalate	1	0	ND	0.0547 μg/g
Fluoranthene	1	0	ND	0.0142 μg/g
Fluorene	1	0	ND	0.0115 μg/g
Hexachlorobenzene	1	0	ND	0.0176 μg/g
Hexachlorobutadiene	1	0	ND	0.0219 μg/g
Hexachlorocyclopentadiene	1	0	ND	0.0547 μg/g
Hexachloroethane	1	0	ND	0.0333 μg/g
Indeno(1,2,3)pyrene	1	0	ND	0.0160 μg/g
Isophorone	1	0	ND	0.0101 μg/g
2-methylnaphthalene	1	0	ND	0.0202 μg/g
4-Methylphenol/3-Methylphenol	1	0	ND	0.0413 μg/g
2-Methylphenol	1	0	ND	0.0263 μg/g
N-Nitrosodipropylamine	1	0	ND	0.0262 μg/g
Naphthalene	1	0	ND	0.0223 μg/g
2-Nitroaniline	1	0	ND	0.0266 μg/g
3-Nitroaniline	1	0	ND	0.0107 μg/g

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
4-Nitroaniline	1	0	ND	0.0200 μg/g
Nitrobenzene	1	0	ND	0.0130 μg/g
2-Nitrophenol	1	0	ND	0.0142 μg/g
4-Nitrophenol	1	0	ND	0.0210 μg/g
Pentachlorophenol	1	0	ND	0.00640 μg/g
Phenanthrene	1	0	ND	0.0185 μg/g
Phenol	1	0	ND	0.0337 μg/g
Pyrene	1	0	ND	0.0154 μg/g
1,2,4-Trichlorobenzene	1	0	ND	0.00640 μg/g
2,4,5-Trichlorophenol	1	0	ND	0.0195 μg/g
2,4,6-Trichlorophenol	1	0	ND	0.0162 μg/g
Laboratory Method Blank - PAHs in Stack Gas		· · · · · · · · · · · · · · · · · · ·		
Naphthalene	2	2	43.1-115 ng	
2-Methylnaphthalene	2	2	12.6-210 ng	
Acenaphthene	2	2	2.1-309 ng	
2-Chloronaphthalene	2	0	ND	0.07-0.09 ng
Acenaphthylene	2	2	0.69-2.6 ng	
Fluorene	2	2	8.3-86.8 ng	
Phenanthrene	2	2	33.4-59.6 ng	
Anthracene	2	2	1.5-1.6 ng	
Fluoranthene	2	2	5.5-11.4 ng	
Pyrene	2	2	4.7-13.3 ng	
Benzo(a)anthracene	2	2	0.56-0.67 ng	
Chrysene	2	2	1.1-1.4 ng	77-49
Perylene	2	2	0.13-0.40 ng	
Benzo(b)fluoranthene	2	2	1.4-1.8 ng	
Benzo(k)fluoranthene	2	2	0.41-0.83 ng	- -
Benzo(a)pyrene	2	2	0.56-0.77 ng	_
Benzo(e)pyrene	2	2	1.3-2.6 ng	
Benzo(g,h,i)perylene	2	2	2.7-3.2 ng	
Indeno(1,2,3-cd)pyrene	2	2	1.0-1.4 ng	
Dibenz(a,h)anthracene	2	2	0.34-0.94 ng	
Field Blanks - PAHs in Stack Gas				
Naphthalene	4	4	33.0-1050 ng	
2-Methylnaphthalene	4	4	11.4-110 ng	
Acenaphthene	4	4	2.1-29.5 ng	
2-Chloronaphthalene	4	3	0.06-0.38 ng	0.08 пд

Table D-1 (Continued)

	Number of	Number	I	
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Acenaphthalene	4	4	0.60-4.4 ng	-
Fluorene	4	4	7.9-17.9 ng	
Phenanthrene	4	4	35.8-54.9 ng	-
Anthracene	4	4	1.2-2.6 ng	-
Fluoranthene	4	4	5.5-20.0 ng	••
Pyrene	4	4	4.1-13.7 ng	
Benzo(a)anthracene	4	4	0.47-3.7 ng	_
Chrysene	4	4	0.75-10.0 ng	••
Perylene	4	3	0.16-1.5	0.5 ng
Benzo(b)fluoranthene	4	4	1.2-12.3 ng	-
Benzo(k)fluoranthene	4	4	0.24-3.6 ng	
Benzo(a)pyrene	4	4	0.47-4.7 ng	
Benzo(e)pyrene	4.	4	1.8-9.3 ng	_
Benzo(g,h,i)perylene	4	4	2.0-11.4 ng	-
Indeno(1,2,3-cd)pyrene	4	4	0.77-6.2 ng	_
Dibenz(a,h)anthracene	4	1	1.5	0.09-0.9 ng
Trip Blank - PAHs in Stack Gas				
Naphthalene	2	2	29.1-49.6 ng	
2-Methylnaphthalene	2	2	8.9-34.0 ng	_
Acenaphthene	2	2	1.7-8.9 ng	
2-Chloronaphthalene	2	0	ND	0.3-0.9 ng
Acenaphthalene	2	1	2.2 ng	0.8 ng
Fluorene	2	2	0.66-23.5 ng	
Phenanthrene	2	2	2.8-129 ng	
Anthracene	2	1	4.3 ng	0.8 ng
Fluoranthene	2	2	1.3-15.3 ng	
Pyrene	2	2	2.6-7.6 ng	
Benzo(a)anthracene	2	2	0.25-0.64 пд	-
Chrysene	2	2	0.34-1.5 ng	_
Perylene	2	1	0.21 ng	1.3 ng
Benzo(b)fluoranthene	2	2	0.53-2.0 ng	
Benzo(k)fluoranthene	2	2	0.19-0.59 ng	
Benzo(a)pyrene	2	1	0.77 ng	1.1 ng
Benzo(e)pyrene	2	2	0.81-3.3 ng	
Benzo(g,h,i)perylene	2	2	2.9 ng	-
Indeno(1,2,3-cd)pyrene	2	2	0.85-1.5 ng	

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
Dibenz(a,h)anthracene	2	1	0.28 ng	2.1 ng
Laboratory Method Blank - Dioxins/Furans in Stack Gas				
2,3,7,8-TCDF	2	0	ND	0.005-0.006 ng
2,3,7,8-TCDD	2	1	0.009 ng	0.006 ng
1,2,3,7,8-PeCDF	2	0	ND ND	0.006
2,3,4,7,8-PeCDF	2	0	ND ND	0.006
	2	0	ND ND	
1,2,3,7,8-PeCDD	 _			0.01 ng
1,2,3,4,7,8-HxCDF	2	2	0.007-0.01 ng	
1,2,3,6,7,8-HxCDF	2	0	ND	0.006-0.008 ng
2,3,4,6,7,8-HxCDF	2	1	0.01 ng	0.008 ng
1,2,3,7,8,9-HxCDF	2	0	ND	0.008-0.01 ng
1,2,3,4,7,8-HxCDD	2	0	ND	0.01-0.02 ng
1,2,3,6,7,8-HxCDD	2	0	ND	0.01-0.02 ng
1,2,3,7,8,9-HxCDD	2	0	ND	0.01-0.02 ng
1,2,3,4,6,7,8-HpCDF	2	1	0.008 ng	0.009 ng
1,2,3,4,7,8,9-HpCDF	2	0	ND	0.01-0.02 ng
1,2,3,4,6,7,8-HpCDD	2	1	0.008 ng	0.02 ng
OCDF	2	0	ND	0.02 ng
OCDD	2	2	0.03-0.04 ng	
Field Blanks - Dioxins/Furans in Stack Gas				
2,3,7,8-TCDF	3	1	0.004 ng	0.002-0.006 ng
2,3,7,8-TCDD	3	0	ND	0.002-0.007 ng
1,2,3,7,8-PeCDF	3	1	0.01 ng	0.002-0.005 ng
2,3,4,7,8-PeCDF	3	0	ND	0.002-0.006 ng
1,2,3,7,8-PeCDD	3	0	ND	0.004-0.01 ng
1,2,3,4,7,8-HxCDF	3	1	0.03 ng	0.002-0.009 ng
1,2,3,6,7,8-HxCDF	3	1	0.008 ng	0.002-0.007 ng
2,3,4,6,7,8-HxCDF	3	3	0.006-0.01 ng	
1,2,3,7,8,9-HxCDF	3	0	· ND	0.002-0.01 ng
1,2,3,4,7,8-HxCDD	3	0	ND	0.004-0.02 ng
1,2,3,6,7,8-HxCDD	3	1	0.01 ng	0.003-0.01 ng
1,2,3,7,8,9-HxCDD	3	1	0.007 ng	0.003-0.02 ng
1,2,3,4,6,7,8-HpCDF	3	3	0.005-0.03 ng	

Table D-1 (Continued)

	Number of	Number		
	Blanks	of	Range of	Detection
Analyte	Analyzed	Detects	Compounds Detected ^a	Limit
1,2,3,4,7,8,9-HpCDF	3	0	ND	0.004-0.02 ng
1,2,3,4,6,7,8-HpCDD	3	2	0.01-0.04 ng	0.004 ng
OCDF	3	1	0.09 ng	0.005-0.04 ng
OCDD	3	3	0.01-0.17 ng	
Trip Blank - Dioxins/Furans in Stack				
Gas	,		 _	
2,3,7,8-TCDF	1	0	ND	0.003 ng
2,3,7,8-TCDD	1	0	ND	0.004 ng
1,2,3,7,8-PeCDF	1	0	ND	0.003 ng
2,3,4,7,8-PeCDF	11	0	ND	0.003 ng
1,2,3,7,8-PeCDD	1	0	ND	0.004 ng
1,2,3,4,7,8-HxCDF	1	_1	0.004 ng	-
1,2,3,6,7,8-HxCDF	1	0	ND	0.003 ng
2,3,4,6,7,8-HxCDF	1	1	0.006 ng	-
1,2,3,7,8,9-HxCDF	1	0	ND	0.005 ng
1,2,3,4,7,8-HxCDD	1	0	ND	0.007 ng
1,2,3,6,7,8-HxCDD	1	0	ND	0.006 ng
1,2,3,7,8,9-HxCDD	1	0	ND	0.006 ng
1,2,3,4,6,7,8-HpCDF	1	0	ND	0.004 ng
1,2,3,4,7,8,9-HpCDF	1	0	ND	0.007 ng
1,2,3,4,6,7,8-HpCDD	1	0	ND	0.008 ng
OCDF	1	0	ND	0.01 ng
OCDD	1	1	0.01 ng	-
Laboratory Method Blank -			<u> </u>	
Dioxins/Furans in Ash				
2,3,7,8-TCDF	1	1	0.09 pg/g	
2,3,7,8-TCDD	1	0	ND	0.1 pg/g
1,2,3,7,8-PeCDF	1	0	ND	0.1 pg/g
2,3,4,7,8-PeCDF	1	0	ND	0.1 pg/g
1,2,3,7,8-PeCDD	1	0	ND	0.2 pg/g
1,2,3,4,7,8-HxCDF	1	0	ND	0.1 pg/g
1,2,3,6,7,8-HxCDF	1	0	ND	0.09 pg/g
2,3,4,6,7,8-HxCDF	1	1	0.29 pg/g	
1,2,3,7,8,9-HxCDF	1	0	ND	0.1 pg/g
1,2,3,4,7,8-HxCDD	1	0	ND	0.2 pg/g
1,2,3,6,7,8-HxCDD	1	0	ND	0.2 pg/g

Table D-1 (Continued)

Analyte	Number of Blanks Analyzed	Number of Detects	Range of Compounds Detected ^a	Detection Limit
1,2,3,7,8,9-HxCDD	1	0	ND	0.2 pg/g
1,2,3,4,6,7,8-HpCDF	1	1	0.16 pg/g	
1,2,3,4,7,8,9-HpCDF	1	0	ND	0.2 pg/g
1,2,3,4,6,7,8-HpCDD	1	0	ND	0.2 pg/g
OCDF	1	1	0.41 pg/g	
OCDD	1	1	0.40 pg/g	

^a All analytes reporting a detectable analytical signal have been reported. Analytes detected at levels below the stated detection limit are presented for information only and are not considered valid for the assessment of blank or background contamination.

ND = Not detected.

Table D-2
Precision and Accuracy Estimates

				Measured	nad med			Mess	Measured	
		ф) —	Objectives	Accı (% Rex	Accuracy (% Recovery)	Measured Precision	Audit Sample Accuracy	Accı (% Re	Accuracy (% Recovery)	Measured Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-1	MSD-2	(% RPD)
Metals in Gas Solid Phase - ICP-AES	ES									
Filtered Solids: APF, ESP Inlets Precision - Matrix-spiked Accuracy - Matrix-spiked	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample								-	
Aluminum		20	75-125	580	63 Q	8.3		58.0	930	8.3
Antimony		20	75-125	95	90	5.4		\$6	91	4.3
Berium		20	75-125	16	16	0		16	16	0
Beryllium		20	75-125	82	83	1.2		£ 9	83	0
Calcium		20	75-125	D 99	Q 69	4.4		0 99	0 69	4.4
Chromium			75-125	82	84	2.4		83	84	1.2
Cobalt		20	75-125	85	85	0		88	85	0
Copper		20	75-125	93	95	2.1		93	95	2.1
Iron		20	75-125	83	84	1.1		£3	84	1.2
Magnesium		20	75-125	085	60 Q	3.4		58.0	009	3.4
Manganese		20	75-125	84	84	0		84	84	0
Molybdenum		20	75-125	8.7	87	0		128	86	1.2
Nickel		20	75-125	87	86	1.2		88	98	1.2
Phosphorus		20	75-125	88	88	0				
Potassium		20	75-125	16	91	0		16	16	0
Silver		20	75-125	15 Q	18 Q	18		150	18 Q	18
Sodium		20	75-125	98	85	1.2		98	85	1.2
Titanium		20	75-125	93	89	4.4		93	88	5.5
Vanadjum		20	75-125	16	91	0		26	91	1.1

Table D-2 (Continued)

				Mea	Measured	Measured	Audit Sample	Measured	Measured	Measured
		ී ට	Objectives	(% Re	(% Recovery)	Precision	Accuracy	(% Re	(% Recovery)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-2	(% RPD)
Acetone PNR: ESP Inlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Aluminum		20	75-125	67.0	32.0	71.0		640	320	019
Animony		20	75-125	92	95	3.2		દ્ધ	. 28	5.6
Berium		20	75-125	89	18	2.3		88	88	0
Beryllium		20	75-125	81	80	1.2		81	81	0
Calcium		20	13-125	75	ð 65	340		710	520	32.0
Chromium		20	75-125	82	83	1.2		81	84	3.6
Cobalt		20	75-125	82	83	1.2		82	2	2.4
Соррег		20	75-125	92	93	1.1		92	2	2.2
fron		20	75-125	83	78	6.2		81	78	3.8
Magnesium		20	75-125	67.0	35 Q	Q 63		6 8 Q	35.0	0 09
Manganese		20	75-125	82	83	1.2		82	84	2.4
Molybdenum		20	75-125	85	98	1.2		84	87	3.5
Nickel		20	75-125	84	84	0		98	87	1.2
Phosphorus		20	75-125	87	89	2.3				
Polassium		20	75-125	88	88	0		88	88	٥
Silver		20	75-125	65 Q	O 89	4.5		63 Q	0 99	4.6
Sodium		20	75-125	86	79	8.5		84	79	6.1
Titanium		20	75-125	78	72.0	8		79	78	1.3
Vanadium		20	75-125	90	16	1'1		68	16	2.2

Table D-2 (Continued)

				Measured	nred			Measured	paun	
				Accu	Accuracy	Measured	Audit Sample	Accu	Accuracy	Measured
		OP	Objectives	(% Re	(% Recovery)	Precision	Accuracy	(% Re	(% Recovery)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	I-SW	MSD-1	(% RPD)	(% Весотету)	MS-1	MSD-2	(% RPD)
Nitric PNR: ESP Inlet	Precision - Matrix-spiked Duplicate Accurscy - Matrix-spiked Sample									
Aluminum		20	75-125	112	109	2.7				
Antimony		20	75-125	801	104	3.8				
Barium		20	75-125	104	105	96'0				
Beryllium		20	75-125	901	101	0.94				
Boron		20	74-125	011	601	16.0				
Calcium		20	75-125	108	111	2.7				
Chromium		20	75-125	104	\$01	96.0				
Cobalt		20	75-125	103	104	0.97				
Copper		20	75-125	801	110	1.8				
Iron		20	75-125	601	101	1.8				
Magnesium		20	75-125	901	107	0.94				
Manganese		20	75-125	104	501	96.0				
Molybdenum		20	75-125	501	105	0				
Nickel		20	75-125	501	104	96.0				
Phosphorus		20	75-125	66	66	0				
Potassium		20	75-125	011	110	0				
Silver		20	75-125	66	100	1				
Sodium		20	75-125	101	107	0				
Titanium		20	75-125	113	111	1.8				
Vanadium		20	75-125	901	107	0.94				

Table D-2 (Continued)

				Mea	Measured			Mea	Measured	
		3	Objectives	Acci (% Re	Accuracy (% Recovery)	Measured Precision	Audit Sample Accuracy	Acc S. Re	Accuracy (% Recovery)	Measured Precision
Messurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-1	(% RPD)
Fitter (Half): APF Outlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Aluminum		20	75-125	56	7 6	1.1		28	25	=
Antimony		07	75-125	66	- 26	0		8	103	5
Barium		70	75-125	98	96	0		ಜ	26	•
Beryllium		70	75-125	8	06	0		68	68	0
Calcium		07	75-125	×	96	0		æ	26	-
Chromium		07	75-125	83	82	1.2		83	08	3.7
Cobalt		97	75-125	83	68	0		\$	88	0
Copper		07	75-125	101	102	96.0		8	8	0
Iron		07	75-125	92	92	0		16	16	0
Magnesium		70	75-125	2	16	0		8	8	0
Manganese		70	75-125	06	16	1:1		8	8	0
Molybdenum		07	75-125	68	88	=		88	87	=
Nickel		70	75-125	89	06	=		88	8.8	0
Phosphorus		20	75-125	153 Q	ક્ષ	43.0				
Potassium		20	75-125	95	95	0		8	22	Ξ
Silver		20	75-125	08	81	1.2		2	08	4.9
Sodium		50	75-125	62	86	-		8	6	-
Titanium		92	75-125	95	95	0		8	8	1.1
Vanadium		20	75-125	56	56	0		2	93	Ξ

Table D-2 (Continued)

				Measured	nred			Meas	Measured	
			Ohiorfice	Accu (% Box	Accuracy (% Recovery)	Measured	Audit Sample	Accı	Accuracy (% Peconemy)	Measured
Meaturement Parameter	How Measured		S. Taraba	יאני איני	(6)		The same of the sa	W .		T TOTAL
		Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Весотегу)	MS-2	MSD-2	(% RPD)
Filter & PNRs: ESP Outlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Aluminum		20	75-125	90	87	3.4		88	68	1.1
Antimony		20	75-125	78	88	12		78	16	10
Barium		20	75-125	93	16	1.1		66	94	1.1
Beryllium		20	75-125	88	86	2.3		- 28	89	2.3
Calcium		20	75-125	94	16	3.2		16	93	2.2
Chromium		20	75-125	68	98	3.4		92	68	3.4
Cobalt		20	75-125	85	83	2.4		78	85	1.2
Соррег		20	75-125	103	66	•		101	103	2
Iron		20	75-125	89	87	2.3		28	88	1.1
Magnesium		20	75-125	83	80	3.7		08	82	2.5
Manganese		20	75-125	89	86	3.4		L8	68	2.3
Molybdenum		20	75-125	89	87	2.3		98	89	3.4
Nickel		20	75-125	85	84	1.2		82	87	5.9
Phosphorus		20	75-125	92	92	0				
Potassium		20	75-125	89	86	3.4		82	2	1:1
Silver		20	75-125	80	78	2.5		81	80	2.5
Sodium		20	75-125	93	26	1.1		۳	35	Ξ
Titanium		20	75-125	93	16	2.2		16	93	2.2
Vanadium		20	75-125	94	16	3.2		92	94	2.2

Table D-2 (Continued)

				Measured	ured			Measured	ured	
				Accu	Accuracy	Measured	Audit Sample	Accı	Accuracy	Measured
		Obj	Objectives	(% Rex	(% Recovery)	Precision	Accuracy	(% Re	% Recovery)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Весотегу)	MS-2	MSD-2	(% RPD)
Metals in Gas Vapor Phase - ICP-AES	AFS									
HNOy/H ₂ O ₂ impingers	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Ahminum		92	75-125	89	96	1.1		68	89	0
Antimony		20	75-125	16	18	12		94	79	17
Barium		20	75-125	94	94	0		94	94	0
Beryllium		20	75-125	91	16	0		91	91	0
Boron		20	75-125	- 16	93	2.2		92	63	1.1
Calcium		20	75-125	06	93	3.3		16	93	2.2
Chromium		20	75-125	88	68	1.1		68	68	0
Cobalt		20	75-125	88	89	1.1		68	89	0
Copper		20	75-125	92	26	0		93	91	2.2
Iron		20	75-125	68	16	2.2		8	06	0
Magnesium		20	75-125	86	87	1.2		18	28	0
Manganese		20	75-125	88	68	1.1		68	89	0.
Molybdenum		20	75-125	06	06	0		16	96	1.1
Nickel		20	75-125	06	68	1.1		16	68	2.2
Phosphorus		20	75-125	101	66	2				
Potassium		20	75-125	06	92	2.2		06	06	0
Silver		20	75-125	85	85	0		98	85	1.2
Sodium		R	75-125	92	93	1.1		92	92	0
Titanium		20	75-125	91	92	1.1		92	91	1.1
Vensdium		20	75-125	95	95	0		95	95	0

Table D-2 (Continued)

				Measured	nred			Measured	med	
				Accu	Accuracy	Measured	Audit Sample	Accuracy	racy	Measured
		op.	Objectives	(% Rec	(% Recovery)	Precision	Accuracy	(% Re	(% Recovery)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-2	(% RPD)
Metals in Coal - ICP-AES	Precision - Analytical Duplicate Accuracy - NA									
Barium		02	75-(25	NA	YN	NA				
Beryllium		20	75-125	5.1	1.6	6.5				
Boron		20	75-125	VV	٧V	NA				
Calcium		20	75-125	NA	٧N	٧٧				
Chromium		20	75-125	- 11	17	0				
Copper		20	75-125	٧V	٧N	NA				
Magnesium		20	75-125	NA	٧N	٧V				
Molybdenum		20	75-125	٧×	۲×	٧×				
Phosphorus		20	75-125	<u>8</u>	\$	-				
Titanivm		20	75-125	NA	٧N	Ϋ́Υ				Ì
Metals in Coal - ICP-AES	Precision - NA Accuracy - Standard Reference Material									
Beryllium (1633-c)		20	75-125				102			
Chromium (1932-a)		20	75-125		_		95			
Metals in Ash - ICP-AES	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample		_							
Aluminum		20	75-125	71.0	700	1.4		7.1	069	2.9
Antimony		20	75-125	98	85	1.2		91	93	2.2
Berium		20	75-125	8	91	1.1		8	8	
Beryllium		20	75-125	81	81	0		81	81	٥
Calcium		20	75-125	73.0	740	1.4		73.0	740	4:

Table D-2 (Continued)

				Measured	paun			Measured	peur	
				Accı	Accuracy	Measured	Audit Sample	Accu	Accuracy	Measured
		Op	Objectives	(% Re	(% Recovery)	Precision	Accuracy	& Re	% Recovery)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recevery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-2	(% RPD)
Chromium		92	75-125	83	84	1.2		83	84	1.2
Cobalt		20	75-125	84	84	0		82	83	1.2
Copper		92	75-125	93	26	1.1		93	92	1.1
Iron		20	75-125	84	85	1.2		83	84	1.2
Magnesium		20	75-125	65 Q	64 Q	1.6		650	63 Q	3.1
Manganese		20	75-125	83	84	1.2		83	84	1.2
Molybdenum		20	75-125	8.5	86	1.2		84	87	3.5
Nickel		20	75-125	86	85	1.2		82	82	0
Phosphorus		20	75-125	83	90	8.1				
Polassium		20	75-125	89	90	1.1		89	89	0
Silver		20	75-125	27.0	13 Q	70 Q		27.0	13 Q	70.0
Sodium		20	75-125	82	82	0		83	83	0
Tienium		20	75-125	85	83	2.4		82	82	0
Vanadium		20	75-125	91	91	0		90	16	1.1
Metals in Sorbent · ICP-AES	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Aluminum		20	75-125	87	84	3.5				
Antimony		20	75-125	8.1	89	9.4				
Banum		20	75-125	86	85	1.2				
Beryllium		20	75-125	78	78	0				
Boron		20	75-125	85	25	1.2				
Culcium		20	75-125	286 Q	286 Q	0		1740	274 Q	45 Q
Сһготіит		8	75-125	77	77	0				
Cobait		20	75-125	740	740	0				

Table D-2 (Continued)

				Meas	Measured			Measured	2	
		ô	Objectives	Accı (% Re	Accuracy (% Recovery)	Measured	Audit Sample Accuracy	Accuracy (% Recovery)	racy overy)	Measured
Measurement Parameter	How Measured	Precision (% RPD)	Acuracy (% Recovery)	MS.	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-2	(% RPD)
Copper		202	75-125	87	98	1.2				
Iron		20	75-125	75	740	1.3				
Magnesium		20	75-125	113	76	15				
Manganese		20	75-125	80	62	1.3				
Molybdenum		20	75-125	8.1	80	1.2				
Nickel		20	75-125	76	76	0				
Phosphorus		07	75-125	89	06	1.1				
Potassium		20	75-125	87	- 86	1.2				
Silver		20	75-125	85	83	2.4				
Sodium		20	75-125	89	88	1.1				
Titanium		20	75-125	85	84	1.2				
Vensdium		20	75-125	85	84	1.2				
Metals in Service Water - ICP-AES	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample								<u> </u>	
Aluminum		20	75-125	102	103	86.0				
Antimony		20	75-125	108	86	L'6				
Berium		20	75-125	103	104	0.97				
Beryllium		20	75-125	\$	101	2				
Boron		20	75-125	98	86	1				
Calcium		20	75-125	94	95	1.1				
Chromium		20	75-125	98	100	2				
Cobalt		20	75-125	94	96	2.1				
Copper		20	75-125	102	102	0				
Iron		20	75-125	98	66	1				
Magnesium		20	75-125	83	93	0				

Table D-2 (Continued)

				Measured	nred			Measured		
			-	Accuracy	racy	Measured	Audit Sample	Accuracy		Measured
	• !	GO.	Objectives	(% Recovery)	overy)	Precision	Accuracy	(% Recovery)	-	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recevery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-1 MS	MSD-1	(% RPD)
Manganese		20	75-125	- 26	66	2				
Molybdenum		20	75-125	93	93	0			-	
Nickel		20	75-125	95	97	2.1				
Phosphorus		20	75-125	86	98	0				
Potassium		20	75-125	101	101	0			1	
Silver		20	75-125	101	102	86.0				
Sodium		20	75-125	106	104	6'1				
Titanium		20	75-125	94	95	1.1				
Vanadium		20	75-125	- 26	98	1			-}	
Metals in Gas Vapor Phase -	Precision - NA									
ICP/MS	Accuracy - Matrix-spiked Sample								7	
HNO ₃ /H ₂ O ₂ Impingers									7	
Antimony		20	75-125	84					_	
Arsenic		20	75-125	78					}	
Barium		20	75-125	80						
Beryllium		20	75-125	95						
Cadmium		20	75-125	95						
Chromium		20	75-125	83					_	
Cobalt		20	75-125	76						
Copper		20	75-125	11						
Lead		20	75-125	121						
Mangancse		20	75-125	82						
Mercury		20	75-125	116						
Molybdenum		20	75-125	105						
Nickel		20	75-125	84						
Selenium		20	75-125	71.0						
Vanadium		20	75-125	79						

Table D-2 (Continued)

				Measured	and a			Measured	<u> </u>	
				Acc	Accuracy	Measured	Audit Sample	Accuracy	À	Measured
		O	Objectives	(% Re	% Recovery)	Precision	Accuracy	(% Recovery)	overy)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-2	(% RPD)
Metals in Coal - INAA	Precision - NA									
	Accuracy - Standard Reference Material (NIST 1632-A)									
Aluminum		20	75-125				101			
Antimony		20	75-125				66			
Arsenic		20	75-125				66			
Berium		20	75-125				101			
Calcium		20	75-125				103			
Cadmium		20	75-125				NC			
Chromium		20	75-125				66			
Cobalt		20	75-125				86			
Copper		20	75-125				100			
Iron		70	75-125				100			
Magnesium		20	75-125				101			
Manganese		20	75-125				26			
Mercury		20	75-125				NC			
Molybdemm		20	75-125				103			
Nickel		20	75-125				06	-		
Potassium		20	75-125				101			
Selenium		20	75-125				104			
Silver		20	75-125				111			
Sodium		20	75-125				101			
Titanium		20	75-125				101			
Venadium		20	75-125				111	·		

Table D-2 (Continued)

				Mea	Measured			Measured	ured	
			Objections	Acc (% R	Accuracy (% Recovery)	Measured	Audit Sample	Accı	Accuracy (% Becomeny)	Measured
Management Description	Il control of the con		200	2		a creating	Jane Williams		1	I Company
Messurement talaterer	non regular	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-2	(% RPD)
Metals in Gas Solid Phase - GFAAS & CVAAS	AS & CVAAS] 				
Filtered Solids: APF & ESP Inlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Arsenic		20	75-125	83	102	9.2				
Cadmium		20	75-125	105	102	2.9				
Lead		20	75-125	72.0	9/	5.4		710	92	8.8
Mercury		20	75-125	104	105	96.0				
Selenium		70	75-125	18	98	1.2				
Acetone PNR: ESP Intet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Arsenic		20	75-125	116	114	1.7				
Lend		20	75-125	82	79	3.7				
Mercury		20	75-125	106	<u>8</u>	0	,			
Selenium		20	75-125	069	0.09	2.9		73.0	67.0	8.6
Nitric PNR: ESP Inlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Mercury		20	75-125	100	86	2				
Filter (Half): APF Outlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample								-	
Arsenic		70	75-125	ᅙ	호	0				
Cedmium		70	75-125	93	24	13				
Lead		20	75-125	105	801	2.8				
Mercury		70	75-125	101	701	86.0			-	
Selenium		20	75-125	101	101	0			-	

Table D-2 (Continued)

				Meas	Measured			Mea	Measured	
				Accı	Accuracy	Measured	Audit Sample	Accı	Accuracy	Measured
		O	Objectives	(% Re	(% Recovery)	Precision	Accuracy	(% Re	(% Recovery)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-2	(% RPD)
Filter & PNRs: ESP Outlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Arsenic		20	75-125	501	111	5.6				
Cadmium		20	75-125	104	26	71				
Lead		20	75-125	110	100	9.5				
Mercury		20	25-125	111	111	0				
Selenium		20	75-125	28	68	8.2				
Cadmium (different Batch)		20	75-125	86	82	4.8		84	86	2.4
Mercury (different Batch)		20	75-125	112	113	0.89				
Metals in Gas Vapor Phase - GFAAS & CVAAS	AS & CVAAS									
HNOy/H ₂ O ₂ Impingers	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Amenic		20	75-125	103	102	86.0				
Cudmium		20	75-125	108	110	1.8				
Lead		20	75-125	66	100	1				
Mercury		20	75-125	96	96	0				
Schenium		20	75-125	38 Q	410	9.7		S6 Q	0 19	9.8
Selenium (Different Batch)		20	75-(25	4.6 Q	140	O 101				
KMmO ₄ Impingers	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample				!					
Mercury		20	75-125	9/	72.0	5.4		9/		

Table D-2 (Continued)

				Meas	Measured			Measured	mred	
				Acc	Accuracy	Measured	Audit Sample	Accu	Accuracy	Measured
		Obj	Objectives	(% Re	(% Recovery)	Precision	Accuracy	(% Re	(% Recovery)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	WS-2	MSD-2	(% RPD)
Metals in Coal - GFAAS & CVAAS	Precision - Analytical Duplicate Accuracy - NA									
Arsenic		70	75-125	27	31	14				
Cadmium		20	75-125	0.1	0.08	7.7				
Lead		20	75-125	7	7	0				
Mercury		20	75-125	0.15	0.16	6.5				
Selenium		70	75-125	8.0	0.8	0				
Selenium		70	75-125	9.0	9.0	0				
Metals in Coaf - GFAAS & CVAAS	Precision - NA Accuracy - Standard Reference Material] 					
Arsenic (1632-b)		97	75-125				76.0			
Cadmium (1632-b)		07	75-125				ð <i>11</i> 8			
Lead (1633-a)		70	75-125				201			
Mercury (SARM 20)		70	75-125				1 01			
Sclenium (1632-b)		70	75-125				108			
Metals in Ash - GFAAS & CVAAS	Precision - Matrix-apiked Duplicate Accuracy - Matrix-apiked Sample									
Arsenic		20	75-125	100	16	5. 6				
Cadmium		20	75-125	102	107	8.4				
Lead		20	75-125	26	66	7				
Mercury		20	75-125	06	95	5.4				
Selenium		70	75-125	84	87	3.5				
Lead (Different Batch)		20	75-125	92	90	2.2				
Selenium (Different Batch)		50	75-125	93	93	0				!

Table D-2 (Continued)

				Meas	Measured			Measured	paun	
		ਰੰ	Objectives	Accı (% Re	Accuracy (% Recovery)	Measured Precision	Audit Sample Accuracy	Accu (% Rec	Accuracy (% Recovery)	Measured Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-2	(% RPD)
Metals in Sorbent - GFAAS & CVAAS	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample			}	! !				-	
Arsenic		20	75-125	111	111	0				
Cadmium		20	75-125	113	114	0.88				
Lead		20	25.125	108	108	0				
Mercury		20	75-125	101	108	3.8				
Selenium		20	75-125	97	104	7				
Metals in Service Water - GFAAS & CVAAS	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Amenic		20	75-125	108	111	2.7				
Cadmium		20	251-25	105	103	1.9				
Lead		20	75-125	92	92	0				
Mercury		20	521-57	114	86	15				
Scienium		20	75-125	89	89	0				
Anions in Gas Particulate Phase										
Filter (Half): APF Outlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample			!						
Chloride		20	80-120	101	105	3.9				
Sulfate		20	80-120	82	80	2.5				
Chloride (Different Batch)		20	80-120	85	82	3.6				
Filter & PNRs: ESP Outlet	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Fluoride		20	80-120	00]	102	2				İ
Anions in Gas Vapor Phase										

Table D-2 (Continued)

Measurement Parameter								Moscurad	poembod	
Measurement Parameter				Accuracy	Acuracy	Measured	Audit Sample	Accuracy	uracy	Measured
Measurement Parameter		Op	Objectives	(% Re	(% Recovery)	Precision	Accuracy	% Re	% Recovery)	Precision
	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2	MSD-3	(% RPD)
CO ₃ /H ₂ O ₂ Impingers	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Chloride		20	80-120	66	95	4.1				\ _ _
Fluoride		20	80-120	901	110	3.7				
Fluoride (Different Batch)		20	80-120	76	95	=				
Sulfate		20	80-120	86	96	2.1				
in Coal	Precision - Analytical Duplicate Accuracy - None									
Chloride		20	80-120	066	066	0				.
Fluoride		20	\$0-120	120	120	0				
Autous in Coal	Precision - NA Accurscy - Standard Reference Malerial									
Chloride (NBS 1632-b)		20	80-120				101			
Chloride (RR 985)		20	80-120				87			
Fluoride (BCR 40)		20	80-120				110			
Anions in Ash	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Chloride		20	80-120	94	94	0				
Fluoride		90	80-120	320	250	250				
Fluoride (Different Batch)		20	80-120	30 Q	23.0	33.0				
Anious in Ash	Precision - Analytical Duplicate Accuracy - NA		<u>, </u>							
Sulfur		20	80-120	14.7	14.8	99.0				
Anions in Ash	Precision - NA Accuracy - Standard Reference Material									
Sulfur - DOMTAR CYP-C		20	80-120				103			
Suffar - USGS GXR-4		20	80-120				102			

Table D-2 (Continued)

				Mea	Measured			Mea	Measured	
			·	Acci	Accuracy	Measured	Audit Sample	Acci	Accuracy	Measured
		6 €	Objectives	(% Re	% Recovery)	Precision	Accuracy	(% Re	% Recovery)	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-1	MSD-2	(% RPD)
Anions in Sorbent	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Chloride		20	80-120	66	\$	0				
Fluoride		20	80-120	62 Q	80	25 Q				
Sulfate		70	80-120	83	82	1.2				
Anions in Service Water	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Chloride		20	80-120	801	105	2.8				
Fluoride		20	80-120	901	107	0.94				
Suffate		20	80-120	16	16	0				_
Phosphate		20	75-125	102	105	2.9				
Carbon & Boron in Ash	Precision - NA Accuracy - Standard Reference Material									
Carbon (DOMTAR CYP-C)		20	75-125				101			
Carbon (MRG-1)		20	75-125				77			
Boron (SARM 20)		20	75-125				101			
Carbon & Boron in Ash	Precision - Analytical Duplicate Accuracy - NA									
Carbon		20	75-125	90.0	0.06	0				
Carbon		20	75-125	5.18	5.14	0.78				
Carbon		20	75-125	0.35	0.32	6				
Boron		20	75-125	110	100	9.5				
Boron		20	75-125	81	94	14.9				
Boron		20	75-125	81	82	1.2				i
Aumonia in Gas Vapor Phase by 350.2	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Ammonia		20	80.120	65	108	11				

Table D-2 (Continued)

				Measured	arred			Measured		í
				Acce	Accuracy	Measured	Audit Sample	Accuracy		Measured
		ð	Objectives	(% Re	(% Recovery)	Precision	Accuracy	(% Recovery)	_	Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-1	MSD-1	(% RPD)	(% Recovery)	MS-2 MS	MSD-1	(% RPD)
Cyanide in Gas Vapor Phase by 335.2	Precision - Mairix-spiked Duplicate Accuracy - Mairix-spiked Sample								-	
Cyanide		20	75-125	001	86	2				
Chromium in Gas Vapor Phase	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Chromium (Nitric Rinse)		20	75-125	56	86	3.1				
Chromium (KOH Impinger)		20	75-125	92	101	9.3		-	\dashv	
Formaldehyde in Gas Vapor Phase	Precision - Analytical Duplicate Accuracy - NA									
Formaldehyde		10	70-130	260	270	3.8				
Formsidehyde		10	70-130	63	99	4.9			7	
Formaldehyde in Gas Vapor Phase	Precision - NA Accuracy - Trip Spike									
Formaldehyde		10	70-130	94						
Formaldehyde		10	70-130	74					1	
Formaldehyde in Gas Vapor Phase	Precision - NA Accuracy - Lab Spike					-		_		
Formaldehyde		10	70-130	92						
Formaldehyde		10	70-130	16					1	
Semivolatile Compounds in Ash	Precision - Matrix-spiked Duplicate Accuracy - Matrix-spiked Sample									
Acenaphthene		50	47-145	82	96	9.3				
4-Chloro-3-methylphenol		70	22-147	68	86	23				
2-Chlorophenol		99	23-134	75	88	17		-	1	
1,4-Dichlorobenzene		20	20-124	83	91	9.2		-	\dashv	

Table D-2 (Continued)

				Meas	Measured			Mea	Measured	
		6 0	Objectives	Accı (% Re	Accuracy (% Recovery)	Measured Precision	Measured Audit Sample Precision Accuracy	Accı (% Re	Accuracy (% Recovery)	Measured Precision
Measurement Parameter	How Measured	Precision (% RPD)	Accuracy (% Recovery)	MS-I	MSD-1	(% RPD)	MSD-1 (% RPD) (% Recovery) MS-2 MSD-2	MS.1	MSD-2	(% RPD)
2,4-Dinitrotoluene		\$0	39-139	11	98	=				
N-nitrosodipropylamine		130	D-230	102	108	5.7				
4-Nitrophenol		8	D-132	3.1	8.1	53				
Pentachlorophenol		06	14.176	Q.	1.10	NG				
Phenol		95	5-112	26	68	91				
Pyrene		0\$	52-115	49.0	59	81				
1,2,4-Trichlorobenzene		80	44-142	8	86	8.5				

NA = Not applicable.

NC = Not calculable.

ND = Not detected.

Q = Data flag indicating accuracy and precision results that do not meet the stated objectives.

Table D-3 Surrogate Spike Data

Measurement Parameter	How Measured	Objective (% Rec)	Range of Recovery (% Rec)	Number Analyzed	Number Outside Objective
Volatile Organics in Vapor Phase - APF Inlet	Precision - NA Accuracy - Surrogate Spike Recovery				
1,2-Dichloroethane-d4		51-145	92-104	6	0
Toluene d-8		77-122	90-99	6	0.
4-Bromofluorobenzene		60-128	87-96	6	0
Volatile Organics in Vapor Phase - APF Outlet	Precision - NA Accuracy - Surrogate Spike Recovery				
1,2-Dichloroethane-d4		51-145	73-104	6	0
Toluene d-8		77-122	87-98	6	0
4-Bromofluorobenzene		60-128	82-94	6	0
Volatile Organics in Vapor Phase - APF Field Blanks	Precision - NA Accuracy - Surrogate Spike Recovery				
1,2-Dichloroethane-d4		51-145	92-105	6	0
Toluene d-8		77-122	87-96	6	0
4-Bromofluorobenzene		60-128	84-95	6	0
Volatile Organics in Vapor Phase - ESP Inlet	Precision - NA Accuracy - Surrogate Spike Recovery	,			
1,2-Dichloroethane-d4		51-145	90-107	6	0
Toluene d-8		77-122	91-97	6	0
4-Bromofluorobenzene		60-128	86-93	6	0
Volatile Organics in Vapor Phase - ESP Outlet	Precision - NA Accuracy - Surrogate Spike Recovery				
1,2-Dichloroethane-d4		51-145	95-107	6	0
Toluene d-8		77-122	83-100	6	0
4-Bromofluorobenzene		60-128	74-94	6	0
Volatile Organics in Vapor Phase - ESP Field Blanks	Precision - NA Accuracy - Surrogate Spike Recovery				
1,2-Dichloroethane-d4		51-145	93-105	6	0
Toluene d-8		77-122	91-98	6	0
4-Bromofluorobenzene		60-128	91-98	6	0
Volatile Organics in Vapor Phase - Trip Blank	Precision - NA Accuracy - Surrogate Spike Recovery				
1,2-Dichloroethane-d4		51-145	105	1	0
Toluene d-8		77-122	97	1	0
4-Bromofluorobenzene		60-128	94	1	0

Table D-3 (Continued)

Measurement Parameter	How Measured	Objective (% Rec)	Range of Recovery (% Rec)	Number	Number Outside Objective
Semivolatile Organics in APF	Precision - NA				
Ash	Accuracy - Surrogate Spike Recovery	20.115	00.00		
2-Fluorobiphenyl		30-115	92-99	4	0
2-Fluorophenol		25-121	92-95	4	0
Nitrobenzene-d5		23-120	99-103	4	0
Phenol-d5		24-113	94-99	4	0
Terphenyl-d14		18-137	98-109	4	0
2,4,6-Tribromophenol		19-122	76-88	4	0
Semivolatile Organics in ESP Ash	Precision - NA Accuracy - Surrogate Spike Recovery				
2-Fluorobiphenyl		30-115	90-103	4	0
2-Fluorophenol		25-121	84-96	4	0
Nitrobenzene-d5		23-120	92-104	4	0
Phenol-d5		24-113	86-100	4	0
Terphenyl-d14		18-137	92-105	4	0
2,4,6-Tribromophenol		19-122	77-99	4	0
Semivolatile Organics in Bed Ash	Precision - NA Accuracy - Surrogate Spike Recovery				
2-Fluorobiphenyl		30-115	94-100	4	0
2-Fluorophenol		25-121	68-76	4	0
Nitrobenzene-d5		23-120	94-98	4	0
Phenol-d5		24-113	86-93	4	0
Terphenyl-d14		18-137	102-106	4	0
2,4,6-Tribromophenol		19-122	26-43	4	0
Semivolatile Organics in Cyclone Ash	Precision - NA Accuracy - Surrogate Spike Recovery				
2-Fluorobiphenyl		30-115	100-104	4	0
2-Fluorophenol		25-121	77-93	4	0
Nitrobenzene-d5		23-120	100-103	4	0
Phenoi-d5		24-113	96-100	4	0
Terphenyl-d14		18-137	72-85	4	0
2,4,6-Tribromophenol		19-122	10-36	4	2
Semivolatile Organics in Gas Solid Phase - APF Inlet	Precision - NA Accuracy - Surrogate Spike Recovery				
Phenol-d5		50-150	17-84	6	3
Nitrobenzene-d5		50-150	30-80	6	3
1,3,5-Trichlorobenzene-d3		50-150	23-84	6	3
1,4-Dibromobenzene-d4		50-150	44-90	6	1

Table D-3 (Continued)

Measurement Parameter	How Measured	Objective (% Rec)	Range of Recovery (% Rec)	Number	Number Outside Objective
		(% Rec)	(% Kec)	Anaiyzed	Objective
Semivolatile Organics in Gas Solid Phase - APF Outlet	Precision - NA Accuracy - Surrogate Spike Recovery				
Phenoi-d5		50-150	31-78	7	2
Nitrobenzene-d5		50-150	35-77	7	2
1,3,5-Trichlorobenzene-d3		50-150	33-78	7	2
1,4-Dibromobenzene-d4		50-150	52-96	7	0
Semivolatile Organics in Gas Solid Phase - ESP Inlet	Precision - NA Accuracy - Surrogate Spike Recovery				
Phenoi-d5		50-150	46-88	10	2
Nitrobenzene-d5		50-150	34-83	10	4
1,3,5-Trichlorobenzene-d3		50-150	29-82	9	3
1,4-Dibromobenzene-d4		50-150	70-115	10	0
Semivolatile Organics in Gas Solid Phase - ESP Outlet	Precision - NA Accuracy - Surrogate Spike Recovery				
Phenol-d5		50-150	2-99	8	4
Nitrobenzene-d5		50-150	44-80	9	2
1,3,5-Trichlorobenzene-d3		50-150	41-76	9	2
1,4-Dibromobenzene-d4		50-150	66-105	9	0
Semivolatile Organics in Gas Vapor Phase - APF Field Blanks	Precision - NA Accuracy - Surrogate Spike Recovery				
Phenoi-d5		50-150	71-102	2	0
Nitrobenzene-d5		50-150	52-96	2	0
1,3,5-Trichlorobenzene-d3		50-150	50-97	2	0
1,4-Dibromobenzene-d4		50-150	75-109	2	0
Semivolatile Organics in Gas Solid Phase - ESP Field Blanks	Precision - NA Accuracy - Surrogate Spike Recovery				
Phenol-d5		50-150	53-70	2	0
Nitrobenzene-d5		50-150	43-72	2	1
1,3,5-Trichlorobenzene-d3		50-150	43-74	2	1
1,4-Dibromobenzene-d4		50-150	56-88	2	0
Semivolatile Organics in Gas Vapor Phase - Trip Blank	Precision - NA Accuracy - Surrogate Spike Recovery				
Phenol-d5		50-150	60	1	0
Nitrobenzene-d5		50-150	60	1	0
1,3,5-Trichlorobenzene-d3		50-150	65	1	0
1,4-Dibromobenzene-d4		50-150	72	1	0

Table D-3 (Continued)

Measurement Parameter	How Measured	Objective (% Rec)	Range of Recovery (% Rec)	Number Analyzed	Number Outside Objective
PAH Organics in Gas Vapor Phase - APF Inlet	Precision - NA Accuracy - Surrogate Spike Recovery				
d10-Fluorene		50-150	94-96	3	0
d14-Terphenyl		50-150	103-121	3	0
PAH Organics in Gas Solid Phase - APF Outlet	Precision - NA Accuracy - Surrogate Spike Recovery				
d10-Fluorene		50-150	93-99	3	0
d14-Terphenyl		50-150	108-115	3	0
PAH Organics in Gas Solid Phase - ESP Inlet	Precision - NA Accuracy - Surrogate Spike Recovery				
d10-Fluorene		50-150	75-92	3	0
d14-Terphenyl		50-150	113-118	3	0
PAH Organics in Gas Solid Phase - ESP Outlet	Precision - NA Accuracy - Surrogate Spike Recovery				
d10-Fluorene		50-150	76-97	3	0
d14-Terphenyl		50-150	95-122	3	0
PAH Organics in Gas Solid Phase - APF Field Blank	Precision - NA Accuracy - Surrogate Spike Recovery				
d10-Fluorene		50-150	96	1	0
d14-Terphenyl		50-150	115	1	0
PAH Organics in Gas Vapor Phase - ESP Field Blank	Precision - NA Accuracy - Surrogate Spike Recovery				
d10-Fluorene		50-150	77	1	0
d14-Terphenyl		50-150	100	1	0
Dioxins/Furans in APF Ash	Precision - NA Accuracy - Surrogate Spike Recovery			.:	
37C14-2,3,7,8-TCDD		40-130	34-49	4	2
13C12-2,3,4,7,8-PeCDF		40-130	49-55	4	0
13C12-1,2,3,4,7,8-HxCDF		40-130	70-98	4	0
13C12-1,2,3,4,7,8-HxCDD		40-130	67-81	4	0
13C12-1,2,3,4,7,8,9-HpCDF		25-130	73-82	4	0
Dioxins/Furans in ESP Ash	Precision - NA Accuracy - Surrogate Spike Recovery			,	
37C14-2,3,7,8-TCDD		40-130	46-60	4	0
13C12-2,3,4,7,8-PeCDF	·	40-130	47-59	4	0
13C12-1,2,3,4,7,8-HxCDF		40-130	82-98	4	0
13C12-1,2,3,4,7,8-HxCDD		40-130	79-93	4	0
13C12-1,2,3,4,7,8,9-HpCDF		25-130	71-83	4	0

Table D-3 (Continued)

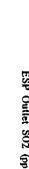
Measurement Parameter	How Measured	Objective (% Rec)	Range of Recovery (% Rec)	Number	Number Outside Objective
Dioxins/Furans in Cyclone Ash	Precision - NA Accuracy - Surrogate Spike Recovery				
37C14-2,3,7,8-TCDD		40-130	35-53	4	1
13C12-2,3,4,7,8-PeCDF		40-130	44-53	4	0
13C12-1,2,3,4,7,8-HxCDF		40-130	83-95	4	0
13C12-1,2,3,4,7,8-HxCDD		40-130	77-86	4	0
13C12-1,2,3,4,7,8,9-HpCDF		25-130	78-84	4	0
Dioxins/Furans in Gas: APF Inlet	Precision - NA Accuracy - Surrogate Spike Recovery				
37C14-2,3,7,8-TCDD		70-130	88-110	3	0
13C12-2,3,4,7,8-PeCDF		70-130	78-108	3	0
13C12-1,2,3,4,7,8-HxCDF		70-130	91-127	3	0
13C12-1,2,3,4,7,8-HxCDD		70-130	89-118	3	0
13C12-1,2,3,4,7,8,9-HpCDF		70-130	60-122	3	1
Dioxins/Furans in Gas: APF Outlet - PNR/XAD Only	Precision - NA Accuracy - Surrogate Spike Recovery				
37C14-2,3,7,8-TCDD		70-130	74-79	3	0
13C12-2,3,4,7,8-PeCDF		70-130	80-95	3	0
13C12-1,2,3,4,7,8-HxCDF		70-130	80-96	3	0
13C12-1,2,3,4,7,8-HxCDD		70-130	101-105	3	0
13C12-1,2,3,4,7,8,9-HpCDF		70-130	68-110	3	1
Dioxins/Furans in Gas: ESP Inlet	Precision - NA Accuracy - Surrogate Spike Recovery		! !		-
37C14-2,3,7,8-TCDD		70-130	85-88	3	0
13C12-2,3,4,7,8-PeCDF		70-130	89-96	3	0
13C12-1,2,3,4,7,8-HxCDF		70-130	82-108	3	0
13C12-1,2,3,4,7,8-HxCDD		70-130	97-106	3	0
13C12-1,2,3,4,7,8,9-HpCDF		70-130	99-110	3	0
Dioxins/Furans in Gas: ESP	Precision - NA				
Outlet	Accuracy - Surrogate Spike Recovery				
37C14-2,3,7,8-TCDD		70-130	85-89	3	0
13C12-2,3,4,7,8-PeCDF		70-130	90-94	3	0
13C12-1,2,3,4,7,8-HxCDF		70-130	94-112	3	0
13C12-1,2,3,4,7,8-HxCDD		70-130	99-105	3	0
13C12-1,2,3,4,7,8,9-HpCDF		70-130	83-112	3	0

Table D-3 (Continued)

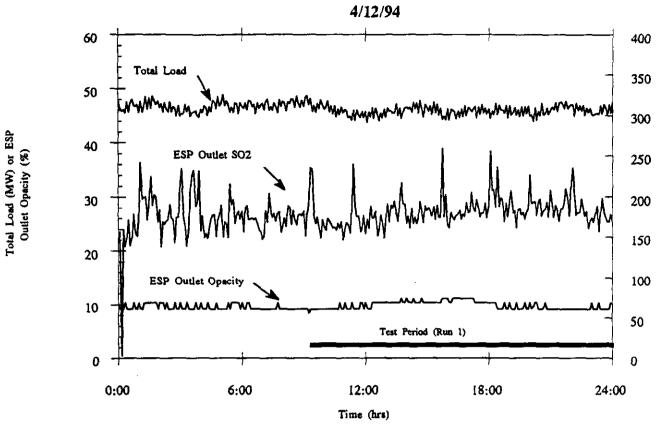
Measurement Parameter	How Measured	Objective (% Rec)	Range of Recovery (% Rec)	Number Analyzed	Number Outside Objective
Dioxins/Furans in Gas: APF Field Blank	Precision - NA Accuracy - Surrogate Spike Recovery				
37C14-2,3,7,8-TCDD		70-130	84	1	0
13C12-2,3,4,7,8-PeCDF		70-130	89	1	0
13C12-1,2,3,4,7,8-HxCDF		70-130	92	1	0
13C12-1,2,3,4,7,8-HxCDD		70-130	105	1	0
13C12-1,2,3,4,7,8,9-HpCDF		70-130	96	1	0
Dioxins/Furans in Gas: ESP Field Blank	Precision - NA Accuracy - Surrogate Spike Recovery				
37C14-2,3,7,8-TCDD		70-130	85	1	0
13C12-2,3,4,7,8-PeCDF		70-130	90	1	0
13C12-1,2,3,4,7,8-HxCDF		70-130	109	1	0
13C12-1,2,3,4,7,8-HxCDD		70-130	99	1	0
13C12-1,2,3,4,7,8,9-HpCDF		70-130	93	1	0

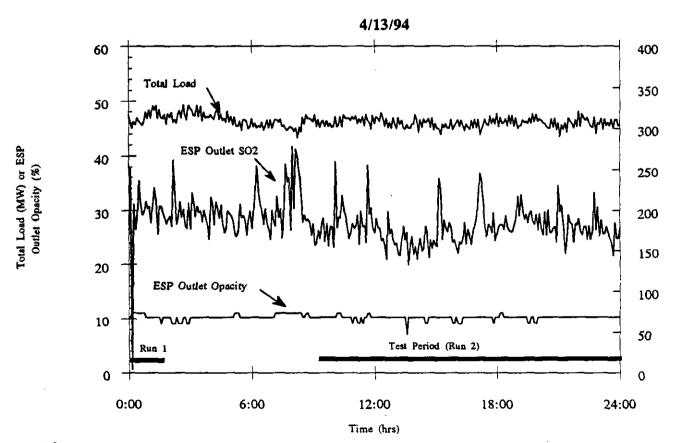
NA = Not applicable.

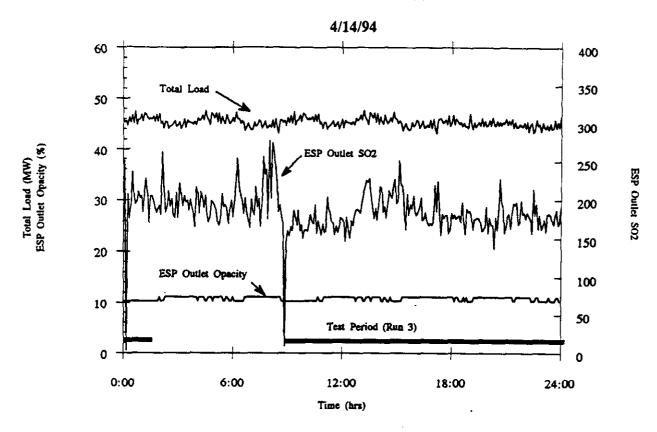
APPENDIX E: PROCESS DATA TREND PLOTS

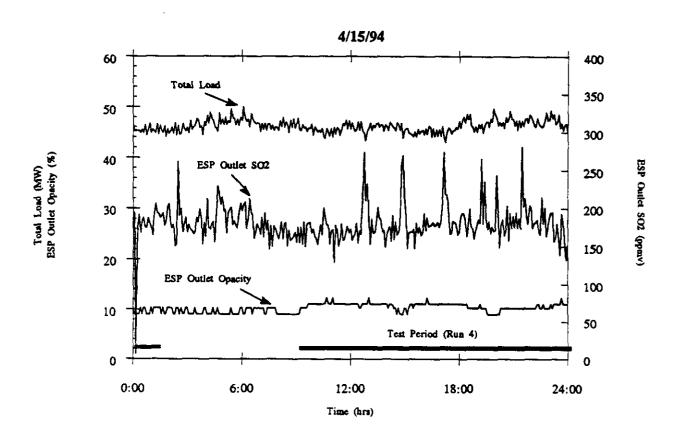


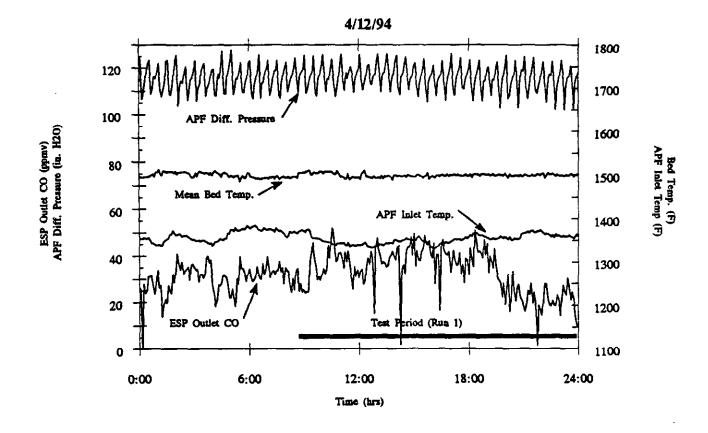
Appendix E: Process Data Trend Plots

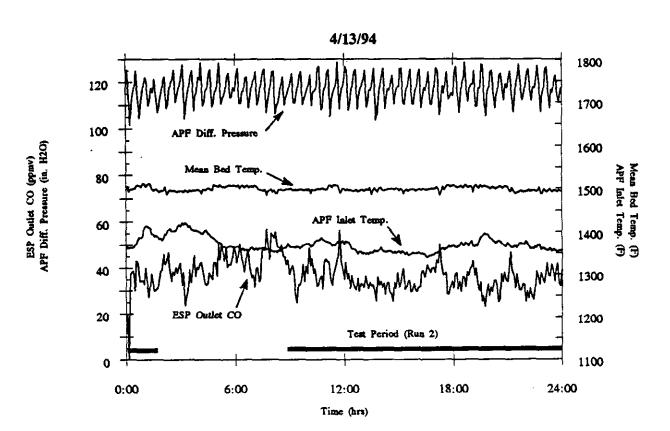


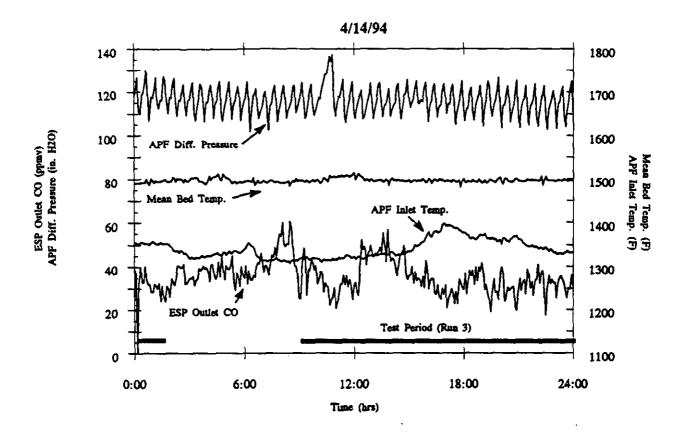


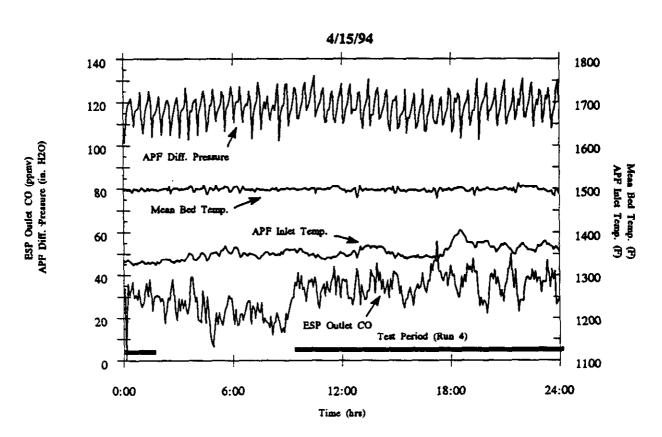












APPENDIX F: FIELD SAMPLING EQUIPMENT CALIBRATION RECORDS AND FIELD DATA SHEETS

On file at Radian Corporation.

APPENDIX G: UNCERTAINTY FORMULAS

Appendix G: Uncertainty Formulas

An error propagation analysis was performed on calculated results to determine the contribution of process, sampling, and analytical variability, and measurement bias, to the overall uncertainty in the result. This uncertainty was determined by propagating the bias and precision error of individual parameters through the calculation of the results. This uncertainty does not represent the total uncertainty in the result since many important bias errors are unknown and have been assigned a value of zero for this analysis. Also, this uncertainty is only for the period of time that the measurements were taken.

This method is based on ANSI/ASME PTC 19.1-1985, "Measurement Uncertainty."

Nomenciature

r = Calculated result;

 S_{pi} = Sample standard deviation of parameter i;

 θ_i = Sensitivity of the result to parameter i;

 β_{pi} = Bias error estimate for parameter i;

 $v_i = Degrees of freedom in parameter i;$

 $v_r = Degrees of freedom in result;$

 $S_r = Precision component of result uncertainty;$

 δ_r = Bias component of result uncertainty;

t = Student "t" factor (two-tailed distribution at 95% confidence);

 $U_r = U_r$ Uncertainty in r; and

 $N_i = Number of measurements of parameter i.$

For a result, r, the uncertainty in r is calculated as:

$$U_{t} = \sqrt{\beta_{t}^{2} + (S_{t} * t)^{2}}$$
 (eq. 1)

The components are calculated by combining the errors in the parameters used in the result calculation.

$$\beta_r = \sqrt{\sum_{i=1}^{j} (\theta_i * \beta_{\overrightarrow{p_i}})^2}$$
 (eq. 2)

$$S_r = \sqrt{\sum_{i=1}^{j} (\theta_i * S_{\vec{p}i})^2}$$
 (eq. 3)

The sensitivity of the result to each parameter is found from a Taylor series estimation method:

$$\theta_i = \frac{\partial r}{\partial pi}$$
 (eq. 4)

Or using a perturbation method (useful in computer applications):

$$\theta_i = \frac{r(P_i + \Delta P_i) - r(P_i)}{\Delta P_i}$$
 (eq. 5)

Equation 5 was applied to the calculations in this report. The perturbation selected for each parameter was the larger of the normalized standard deviation, S_{pi} , or the bias, β_{pi} .

The standard deviation of the average for each parameter is calculated as:

$$S_{\overline{pi}} = \frac{S_{pi}}{\sqrt{N}}$$
 (eq. 6)

The degrees of freedom for each parameter is found from

$$\mathbf{v}_{i} = \mathbf{N}_{i} - 1 \tag{eq. 7}$$

and the degrees of freedom for the result is found by weighing the sensitivity and precision error in each parameter.

$$\mathbf{v}_{r} = \frac{\mathbf{S}_{r}^{4}}{\sum_{i=1}^{j} \left[\frac{(\mathbf{S}_{pi} \times \mathbf{\theta}_{i})^{4}}{\mathbf{v}_{i}} \right]}$$
 (eq. 8)

The student "t" in Equation 1 is associated with the degrees of freedom in the result.

The precision error terms are easily generated from the collected data. The bias error terms are more difficult to quantify. The following conventions were used for this report:

- 5% bias on coal and ash flow rates.
- No bias in gas flow rates.
- No bias in analytical results if the result is greater than the detection limit. One-half of the detection limit is used for both the parameter value and its bias in calculations if the result is below the detection limit.

Assignment of the flow rate bias values is based on engineering judgment. No bias is assigned to the analytical results (above the detection limit) or gas flow rate since a good estimate for magnitude of these terms is unknown. These bias terms may be very large

(relative to the mean values of the parameters) and may represent a large amount of unaccounted uncertainty in each result. Analytical bias near the instrument detection limit may be especially large. The uncertainty values calculated for this report are, therefore, subject to these limitations.

The calculations assume that the population distribution of each measurement is normal and that the samples collected reflect the true population. Also, the uncertainty calculated is only for the average value over the sampling period. The uncertainty does not represent long-term process variations. In other words, the calculated uncertainty does not include a term to reflect the fact that the sampled system may not have been operating (and emitting) at conditions equivalent to the average conditions for that system over a longer period. Accounting for long-term system variability will require repeated sampling trips to the same location.