

U.S. EPA Region III
Regional Center for Environmental
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1650 Arch Street (3PM52)
Philadelphia, PA 19103

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January 1981

ASSESSMENT AND UPDATING OF PARTICULATE EMISSIONS DATA
FOR THE SOUTHWEST PENNSYLVANIA INTRASTATE AIR
QUALITY CONTROL REGION

VOLUME II

APPENDIX D
DETAILS OF THE HI-VOL FILTER ANALYSIS PROGRAM

H. E. Cramer, H. V. Geary and S. F. Saterlie

Prepared for

U. S. ENVIRONMENTAL PROTECTION AGENCY
Region III
Philadelphia, Pennsylvania 19106

Contract No. 68-02-1387
Task Order No. 3

H. E. Cramer company, inc.

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APPENDIX D

ADDITIONAL DETAILS OF THE HI-VOL FILTER ANALYSIS PROGRAM

D.1 DESCRIPTION OF THE SAMPLER LOCATIONS

The fifteen hi-vol monitoring sites selected for the particulate sampling program are listed in Table D-1. The locations of the monitoring sites are shown in Figure D-1. The site selection was made jointly by the H. E. Cramer Company and the EPA Project Officer after consultation with the Pennsylvania DER and the Allegheny County BAPC. The criteria used in site selection included, in addition to logistical factors, the need for obtaining particulate samples representative of industrial, urban, suburban and rural areas. The only sites considered were those currently operated by DER and BAPC as part of their regular monitoring programs for which a minimum of several years' records of particulate measurements are available. Logistical factors included:

- Availability of electrical power required to operate two hi-vols simultaneously (one hi-vol was required for the regular DER or BAPC filter sample and a second hi-vol was used for the special sampling program)
- The requirement that each site be accessible to operating personnel and observers on a 24-hour basis
- Availability of meteorological observations (the COPAMS and TM monitoring sites in Table D-1 have meteorological measurement capabilities)
- The requirement that the sites be grouped geographically so that all monitors could be serviced and periodic activity observations could be made at each site during each 24-hour sampling period

TABLE D-1
LIST OF HI-VOL MONITORING SITES

Site Number	Name	Agency	Classification
1	Baden (COPAMS)*	DER	Industrial
2	Beaver Falls (COPAMS)*	DER	Suburban
3	Koppel	DER	Industrial
4	Brighton Township	DER	Suburban
5	Midland	DER	Industrial
6	Elco	DER	Rural
7	Downtown	BACP	Urban
8	Central Lab	BACP	Urban
9	Hazelwood**	BACP	Industrial
10	North Braddock (TM)***	BACP	Industrial
11	Duquesne II	BACP	Industrial
12	Liberty Boro (TM)***	BACP	Industrial
13	Clairton	BACP	Industrial
14	Greater Pittsburgh Airport	BACP	Rural
15	South Fayette	BACP	Rural

*COPAMS - Commonwealth of Pennsylvania Air Monitoring System (DER telemetered data site)

**Hazelwood T, a TM site, is located approximately 0.5 kilometers south of the selected Hazelwood hi-vol site.

***TM - Allegheny County Bureau of Air Pollution telemetered site

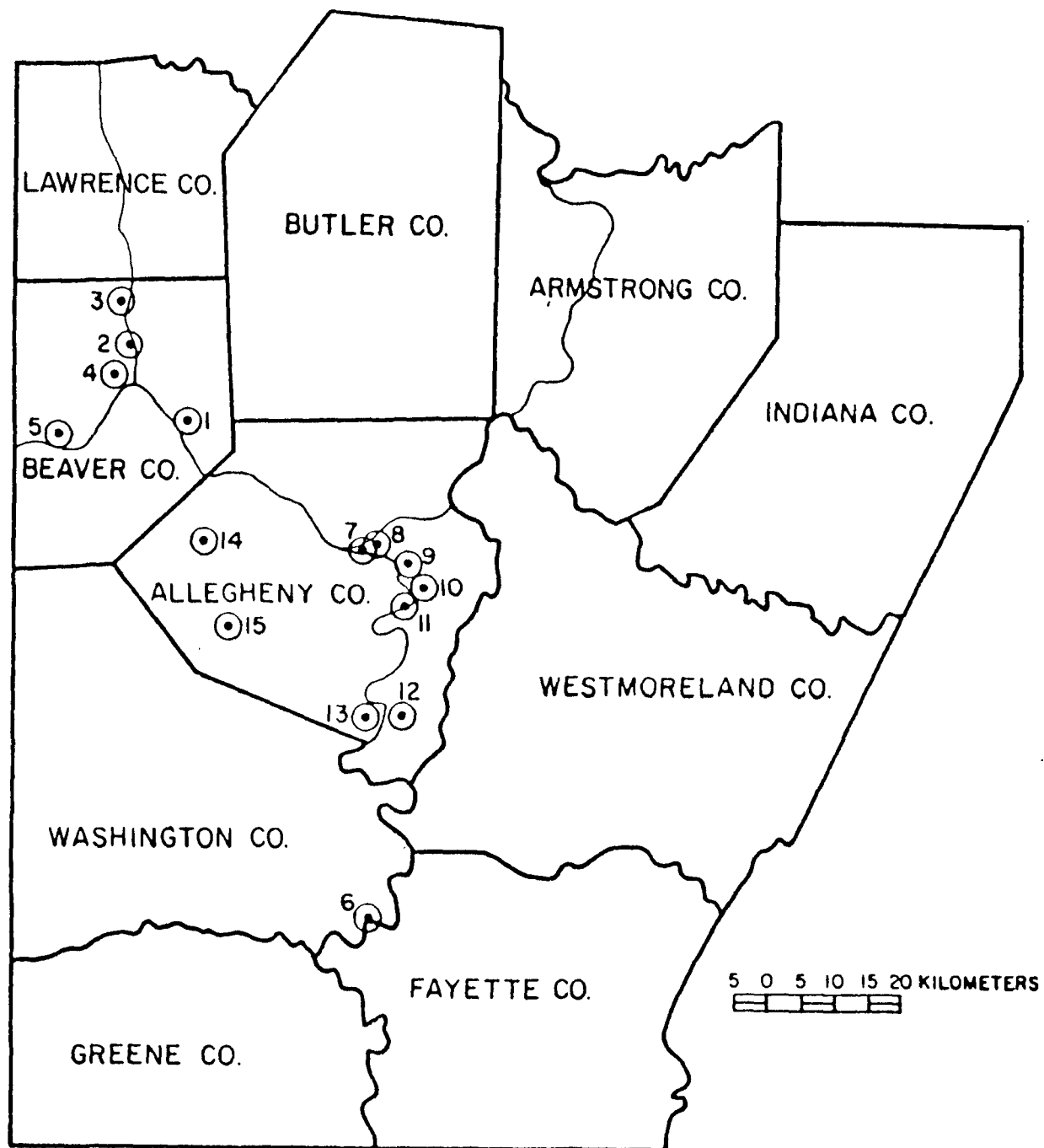


FIGURE D-1. Locations of hi-vol monitoring sites. The numbers refer to site names and other details given in Table D-1.

The site classifications given in Table D-1 are admittedly qualitative and are intended principally to serve as a basis for grouping the monitor locations according to the proximity of major industrial sources, population density and traffic density.

Figures D-2 through D-5 present 2-kilometer by 2-kilometer topographic maps showing the major roads, railroads and buildings in the areas surrounding the individual monitoring sites. The location of the monitor is shown by the ⊙ symbol at the center of each map. Terrain elevations in Figures D-2 through D-5 are in feet above mean sea level, and the contour interval is 100 feet (30.5 meters). A brief description of each monitor site is given below.

Site No. 1 - Baden (DER, COPAMS)

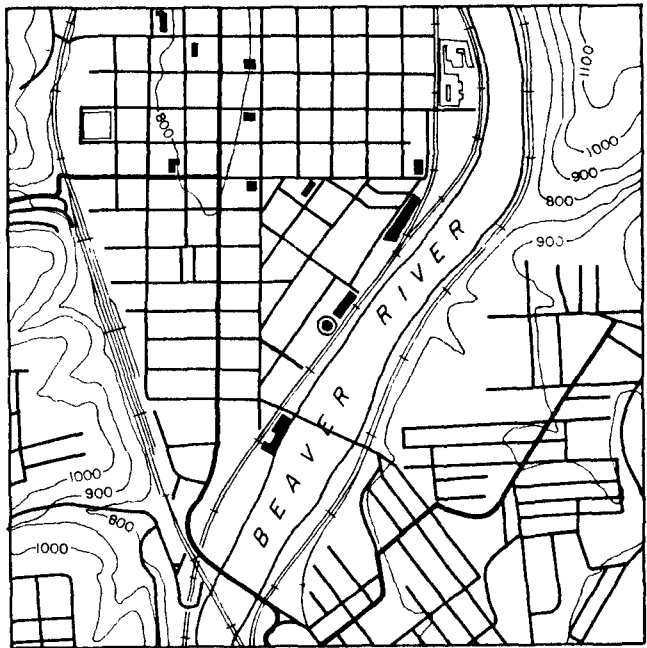
The Baden monitor is located on the north side of the Ohio River, immediately adjacent to the Ohio River Boulevard, on a slight rise approximately 6 meters above the level of the Boulevard. Vehicle traffic comprising passenger cars and trucks is typically moderate-to-heavy. Directly across the Ohio River Boulevard from the monitor site there are multiple railroad tracks leading to a switching yard complex and railroad car humping stations. Rail traffic is typically heavy and at low speed with much idle operation of the diesel switching engines. The Jones and Laughlin (J&L) Aliquippa Works is located on the south side of the Ohio River directly west of the Baden monitor site. Heavy particulate emissions are associated with the operation of the coke ovens and the new BOF shop which are the facilities closest to the monitor.

Site No. 2 - Beaver Falls (DER, COPAMS)

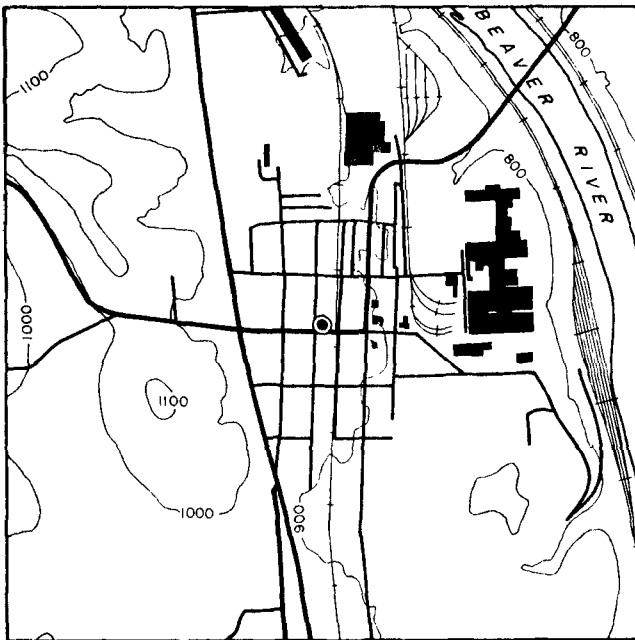
The Beaver Falls monitor is located near ground level immediately adjacent to a hard-packed earth parking lot and loading area for an industrial warehouse. Observations during the study showed that diesel



SITE NO 1 BADEN



SITE NO. 2 BEAVER FALLS

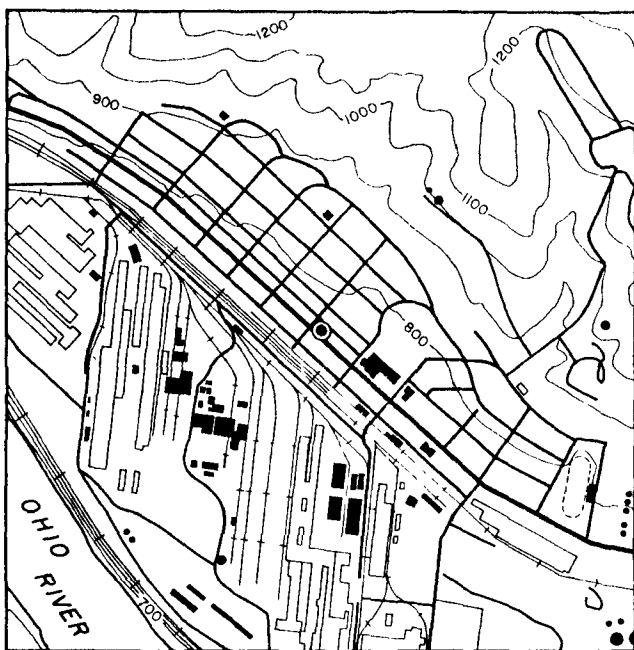


SITE NO 3 KOPPEL

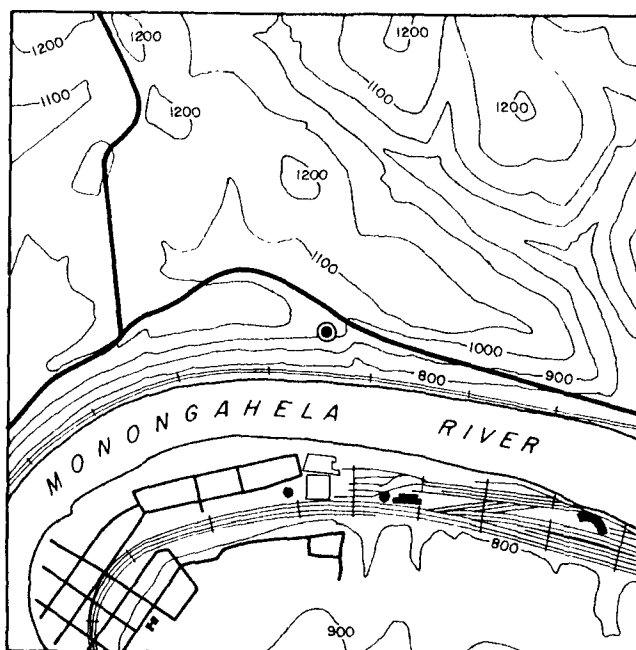


SITE NO 4 BRIGHTON TOWNSHIP

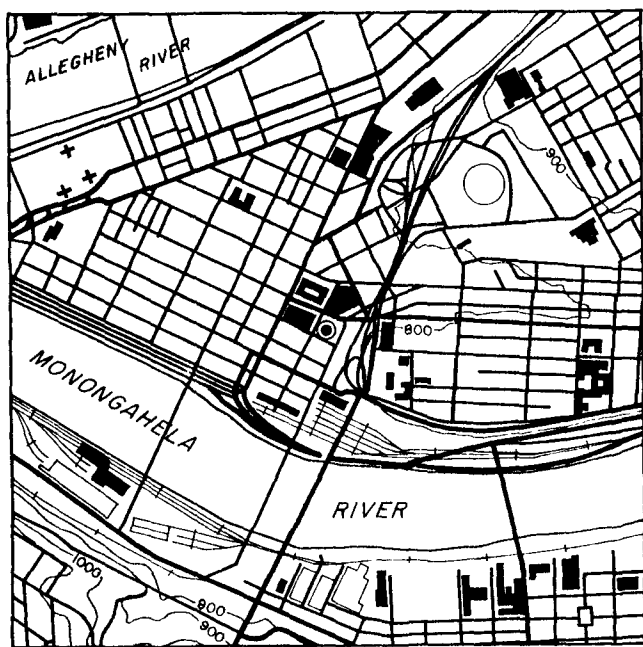
FIGURE D-2. Topographic maps of the areas surrounding the Baden, Beaver Falls, Koppel and Brighton Township monitoring sites.



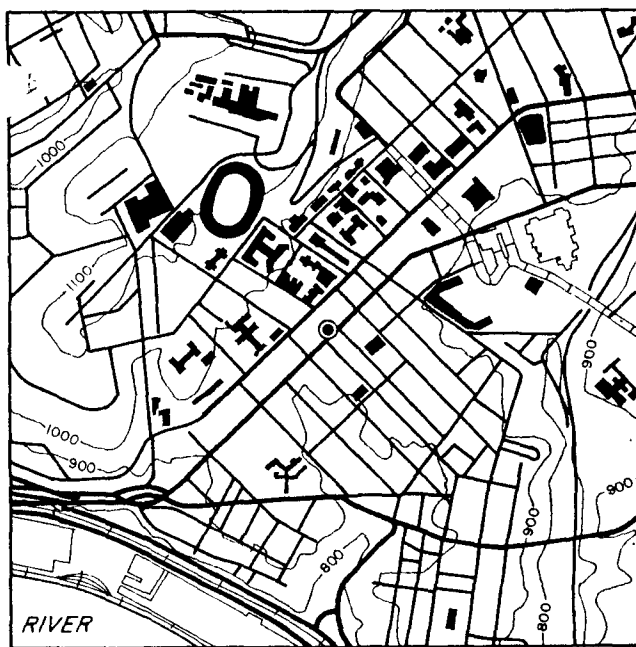
SITE NO. 5 MIDLAND



SITE NO. 6 ELCO



SITE NO. 7 DOWNTOWN

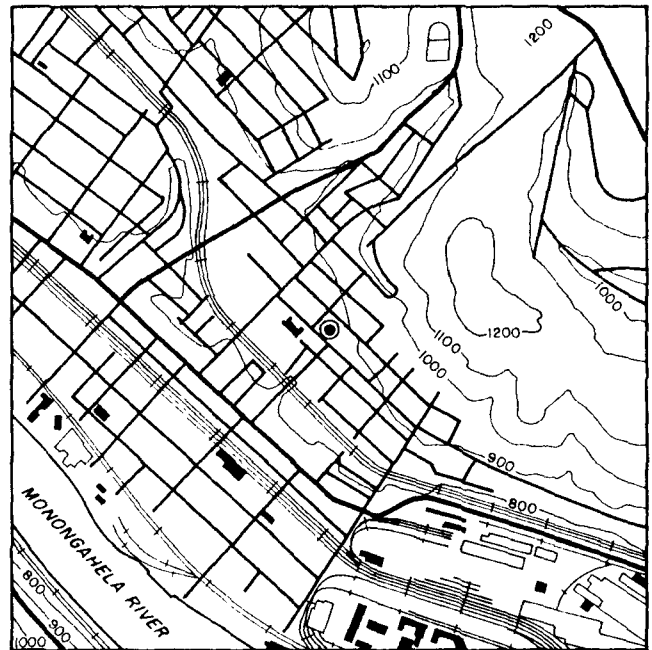


SITE NO. 8 CENTRAL LAB

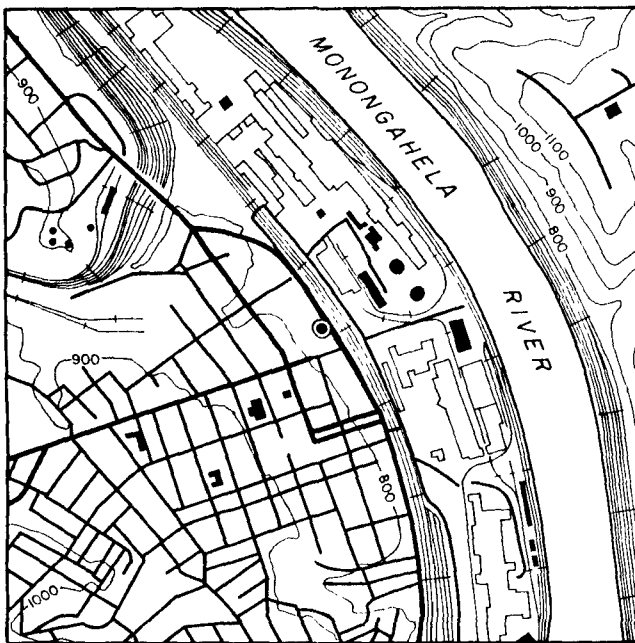
FIGURE D-3. Topographic maps of the areas surrounding the Midland, Elco, Downtown and Central Lab monitoring sites.



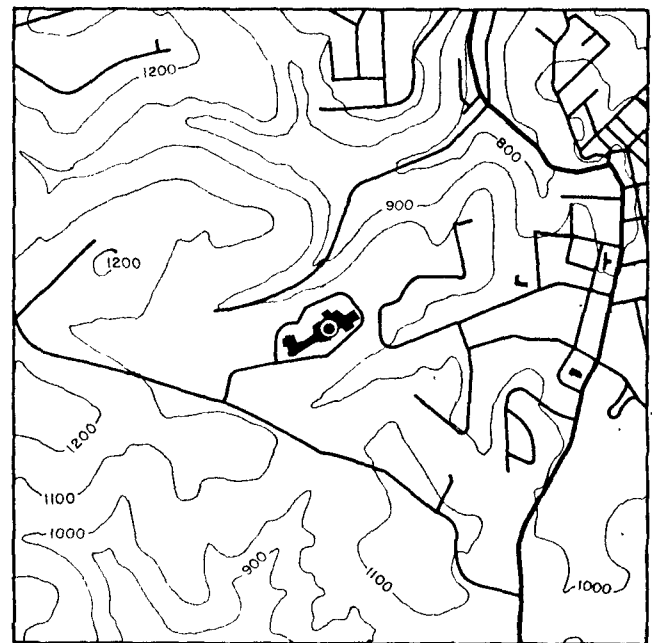
SITE NO 9 HAZELWOOD



SITE NO.10 NORTH BRADDOCK



SITE NO 11 DUQUESNE II

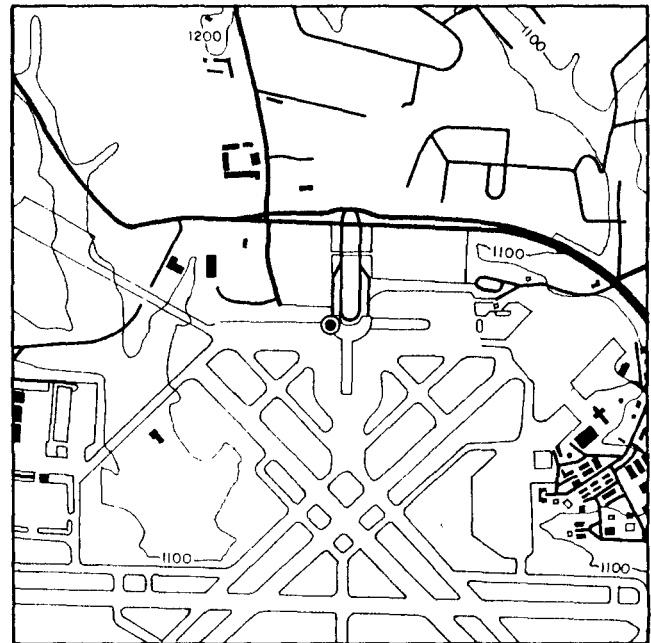


SITE NO 12 LIBERTY BOROUGH

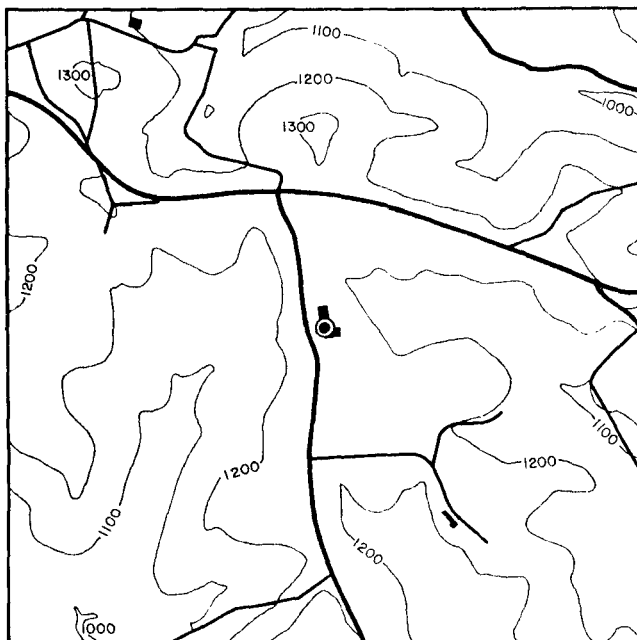
FIGURE D-4. Topographic maps of the areas surrounding the Hazelwood, North Braddock, Duquesne II and Liberty Borough monitoring sites.



SITE NO. 13 CLAIRTON



SITE NO 14 GREATER PITTSBURGH AIRPORT



SITE NO. 15 SOUTH FAYETTE

FIGURE D-5. Topographic maps of the areas surrounding the Clairton, Greater Pittsburgh Airport and South Fayette monitoring sites.

tractor-trailer traffic was continuous during the five-day work week and daylight hours. Only one loading dock was observed to be in use, and only one truck was in the yard at any one time. Trucks usually did not idle during loading operations. There is a railroad track on the far side of the loading yard. During each observation period, at least one diesel train passed by at slow speed, suggesting fairly continuous rail traffic. Except for the truck-loading and rail operations, the area surrounding the monitor appears to be typical of a suburban community.

Site No. 3 - Koppel (DER)

The Koppel monitor is on the roof of the municipal fire station, approximately 10 meters above street level. The Babcock and Wilcox (B & W) Koppel Plant is located approximately 0.5 kilometers east of the monitor. On Pennsylvania Route 351, used by diesel trucks hauling scrap to and products from the B & W Plant, the bumping of the trucks as they cross the tracks produces visible dust clouds. During the observation periods, the use of torches to cut the scrap was frequently noticed at the B & W Plant. According to the technician servicing the DER hi-vol at the Koppel site, this is a common occurrence. A small charcoal grill was noted on the roof of the fire station about 7 meters north of the hi-vol sampler. There was no evidence that the grill was used during any of the sampling days.

Site No. 4 - Brighton Township (DER)

The Brighton Township monitor site is in a grass field adjacent to the overflow parking lot for the Beaver County Hospital. The parking lot was vacant at the times the observers visited the site. The only particulate emissions noted were infrequent visible plumes from a small hospital incinerator stack located 200 meters north and 30 meters above the sampler.

Site No. 5 - Midland (DER)

The Midland hi-vol monitor is at an elevation of approximately 10 meters above street level on the roof of the Midland Post Office, which is directly across Midland's main downtown street (Pennsylvania Route 68) from the Crucible Steel Plant complex. While stack and fugitive emissions from Crucible Steel were dominant, the monitor was also impacted by emissions from heavy vehicle traffic on all days of the week except Sunday. The most noticeable emissions from Crucible Steel typically were from the vicinity of the strip mill and scarfer with south winds. All of the monitoring equipment as well as the roof of the building on which the monitor was located were coated with a rust-colored dust that appeared to adhere to the surfaces.

Site No. 6 - Elco (DER)

The Elco monitor is located on a hillside lawn of a private residence on Washington County Route 88 overlooking the Monongahela River, which is about 100 meters below the elevation of the monitor. Light vehicle traffic was observed on Route 88 on all sample days.

Site No. 7 - Downtown (BAPC)

The Downtown monitor is on the roof of the multistory County Office Building located in downtown Pittsburgh at an elevation of approximately 30 meters above ground level. Heavy car and truck traffic moving at slow speeds or idling was observed on all days except Sunday when the traffic was light. The industrial source complex most likely to affect this sampler is the Jones and Laughlin integrated steel plant located about 3 kilometers to the east.

Site No. 8 - Central Lab (BAPC)

The Central Lab monitor is located on a roof approximately 15 meters above ground level in the Oakland section of Pittsburgh. The traffic patterns are similar to those at the downtown monitor site. The Jones and Laughlin plant is only 1 kilometer from this monitor, and odors from the plant were frequently noted during the visits to the monitor.

Site No. 9 - Hazelwood (BAPC)

The Hazelwood monitor is located on the roof of an apartment building, approximately 15 meters above street level, on the main thoroughfare of the Hazelwood district. The hi-vol is about 500 meters south of the ACBAPC Hazelwood TM station and 200 meters east of the newest Jones and Laughlin coke batteries. Coking process emissions were typically present during observations, as were emissions from the trucks and cars on the heavily-traveled street below the monitor. Traffic patterns were typically heavy and slow moving on all days except Sunday.

Site No. 10 - North Braddock (BAPC)

The North Braddock monitor is situated on the roof of the North Braddock municipal building complex, approximately 5 meters above the level of the parking lot. It is some distance away from the heaviest downtown Braddock vehicle traffic, but is only 1 kilometer northwest of the United States Steel Edgar Thompson Plant.

Site No. 11 - Duquesne II (BAPC)

The Duquesne II monitor is located on the roof of a shopping center building, 5 meters above the level of the parking lot. Vehicle traffic in the lot consists principally of passenger cars. Allegheny County Route 837, the main riverside thoroughfare, is 100 meters to the east. The United States Steel Duquesne Plant is located directly across Route 837. Vehicle traffic in the shopping center and along the county route was heavy on all days except Sunday. Visible stack or fugitive emissions from the Duquesne Plant were generally not prominent.

Site No. 12 - Liberty Boro (BAPC)

The Liberty Boro monitor is located on a school roof approximately 10 meters above the ground. The school is 2.5 kilometers north-northeast of the United States Steel Clairton Works at a terrain elevation approximately 150 meters above the terrain elevation of the coke works. The school was in session only on the last sampling day and vehicle traffic was very light. Odors were typically present at the site and emissions from the Clairton Works were generally visible below the hills to the south-southeast.

Site No. 13 - Clairton (BAPC)

The Clairton monitor is mounted on the roof of the Clairton water treatment plant, approximately 10 meters above ground level, and only 300 meters southwest of the nearest coke battery of the United States Steel Clairton Works. Typical activity near the monitor included diesel truck traffic hauling slag to a nearby dump and heavy vehicle traffic on County Route 837, 100 meters to the northeast.

Site No. 14 - Greater Pittsburgh Airport

The Greater Pittsburgh Airport monitor is located on the airport terminal roof, approximately 20 meters above the ramp and loading areas. In addition to the aircraft operations, there was heavy vehicle traffic along the roadway leading to the airport and in the airport parking lots.

Site No. 15 - South Fayette (BAPC)

The South Fayette monitor is located on the roof of the South Fayette Township High School, approximately 10 meters above ground level. Vehicle traffic was very light except on the last sampling day which coincided with the opening of school.

Tables D-2 through D-7 give the hourly observations of wind speed, wind direction, ambient air temperature, Pasquill stability category (following the Turner (1964) definitions of the Pasquill stability categories) and "weather" at the Greater Pittsburgh Airport on the six sampling days (10, 16, 22 and 28 August 1976; 3 and 9 September 1976). The term "weather" is used to refer to observations of fog, haze, smoke and precipitation; the absence of an entry in the "weather" column for a given hour indicates that none of these conditions was reported. Table D-8 gives the 24-hour average wind speeds and precipitation data for the sampling days, and Table D-9 lists the mixing depths and vertical potential temperature gradients obtained from the twice-daily upper-air soundings made at the Greater Pittsburgh Airport before, during and after each sampling day. The mixing depths in Table D-9 were estimated using the procedures outlined in Section 3.3 of Cramer, *et al.* (1975); the potential temperature gradients are the average values for the surface mixing layer. Meteorological conditions on the individual sampling days are discussed below.

10 August 1976

A slow-moving surface high pressure system passed over the Pittsburgh area during the period 9 - 11 August 1976. Early morning ground fog cleared at the Greater Pittsburgh Airport by about 1200 EST on 10 August 1976, but broken middle clouds remained until about 1700 EST. Light-to-moderate northwest winds persisted throughout most of the day, with the wind becoming calm after about 2100 EST. Rawinsonde data for the Greater Pittsburgh Airport show relatively deep mixing depths at 0700 and 1900 EST, with a slightly stable potential temperature gradient at 0700 EST and an adiabatic potential temperature gradient at 1900 EST. However, the 0700 EST sounding on 11 August 1976 shows that, with clear skies, a strong surface-based inversion formed during the night of 10 - 11 August 1976.

TABLE D-2
HOURLY SURFACE WEATHER OBSERVATIONS
AT THE GREATER PITTSBURGH
AIRPORT ON 10 AUGUST 1976

Time (EST)	Wind Direction (deg)	Wind Speed (m/sec)	Ambient Air Temperature * (°K)	"Weather"	Pasquill Stability Category
0100	330	3.09	288 (59)	Ground fog	E
0200	300	3.09	288 (59)	Ground fog	D
0300	330	3.09	288 (59)	Ground fog	E
0400	300	2.06	288 (59)	Ground fog	E
0500	250	2.06	288 (59)	Ground fog	D
0600	280	2.06	288 (59)	Ground fog	D
0700	300	2.57	288 (58)	Ground fog	D
0800	320	3.09	289 (61)	Ground fog	D
0900	320	3.60	290 (63)	Fog	D
1000	330	4.12	291 (65)	Fog	D
1100	330	5.14	294 (69)	Fog	D
1200	030	2.57	295 (72)		D
1300	320	4.12	296 (73)		D
1400	330	3.09	297 (75)		D
1500	330	1.54	297 (75)		C
1600	320	2.57	297 (75)		D
1700	340	3.09	297 (75)		C
1800	330	2.06	297 (75)		D
1900	300	2.57	296 (73)		E
2000	220	1.54	294 (69)		E
2100	Calm	0.00	291 (64)		E
2200	Calm	0.00	290 (63)		E
2300	Calm	0.00	290 (62)		E
2400	Calm	0.00	289 (60)		E

*Temperatures in degrees Fahrenheit are enclosed by parentheses.

TABLE D-3
HOURLY SURFACE WEATHER OBSERVATIONS
AT THE GREATER PITTSBURGH
AIRPORT ON 16 AUGUST 1976

Time (EST)	Wind Direction (deg)	Wind Speed (m/sec)	Ambient Air Temperature* (°K)	"Weather"	Pasquill Stability Category
0100	310	2.06	286 (56)		E
0200	310	2.06	285 (54)		E
0300	320	2.57	285 (53)		E
0400	350	2.06	285 (54)		E
0500	280	2.06	285 (53)	Fog	E
0600	280	2.06	284 (51)	Fog	D
0700	310	2.06	285 (53)	Fog	C
0800	010	3.09	288 (58)	Haze	C
0900	010	3.09	289 (61)		B
1000	360	3.60	291 (61)		B
1100	350	4.63	292 (66)		D
1200	350	5.66	293 (67)		D
1300	340	5.14	293 (68)		D
1400	320	5.14	293 (68)		D
1500	340	6.17	294 (69)		D
1600	340	4.12	294 (69)		D
1700	340	5.14	294 (69)		D
1800	340	4.12	293 (68)		D
1900	340	4.12	292 (66)		E
2000	340	5.14	290 (62)		E
2100	360	4.12	289 (60)		E
2200	350	2.06	287 (57)		E
2300	010	1.54	286 (55)		E
2400	350	2.57	286 (55)		E

*Temperatures in degrees Fahrenheit are enclosed by parentheses.

TABLE D-4
HOURLY SURFACE WEATHER OBSERVATIONS
AT THE GREATER PITTSBURGH
AIRPORT ON 22 AUGUST 1976

Time (EST)	Wind Direction (deg)	Wind Speed (m/sec)	Ambient Air Temperature* (°K)	"Weather"	Pasquill Stability Category
0100	Calm	0.00	288 (58)	Haze & Smoke	E
0200	Calm	0.00	287 (57)	Haze & Smoke	E
0300	Calm	0.00	286 (55)	Haze & Smoke	E
0400	320	1.54	286 (55)	Haze & Smoke	E
0500	Calm	0.00	286 (55)	Haze & Smoke	E
0600	Calm	0.00	285 (54)	Haze & Smoke	C
0700	Calm	0.00	286 (56)	Haze & Smoke	B
0800	140	1.54	290 (62)	Haze & Smoke	B
0900	180	1.54	293 (68)	Haze & Smoke	B
1000	130	1.54	296 (73)		B
1100	360	1.54	298 (77)		B
1200	320	4.12	299 (78)		B
1300	320	2.57	300 (80)		B
1400	360	2.57	300 (81)		B
1500	360	2.57	300 (81)		B
1600	260	4.63	300 (81)		C
1700	280	4.12	300 (81)	Haze	C
1800	320	4.12	300 (80)	Haze	D
1900	310	2.57	298 (77)	Haze	E
2000	320	3.09	296 (73)	Haze	E
2100	300	2.06	294 (70)	Haze	E
2200	270	1.51	291 (65)	Haze	E
2300	310	2.06	291 (64)	Haze	E
2400	Calm	0.00	290 (62)	Haze	E

*Temperatures in degrees Fahrenheit are enclosed by parentheses.

TABLE D-5
HOURLY SURFACE WEATHER OBSERVATIONS
AT THE GREATER PITTSBURGH
AIRPORT ON 28 AUGUST 1976

Time (EST)	Wind Direction (deg)	Wind Speed (m/sec)	Ambient Air Temperature* (°K)	"Weather"	Pasquill Stability Category
0100	200	2.57	292 (66)	Haze	E
0200	230	2.57	292 (66)	Haze	E
0300	220	2.06	292 (66)	Haze	E
0400	170	1.54	290 (63)	Ground fog	E
0500	160	2.06	290 (63)	Fog	D
0600	240	2.57	291 (65)	Fog	D
0700	200	3.09	291 (65)	Fog	D
0800	200	2.57	291 (65)	Fog	D
0900	200	2.57	293 (67)	Fog	D
1000	170	2.57	294 (69)	Haze	D
1100	200	3.60	295 (71)	Haze	D
1200	170	4.12	295 (71)	Haze	D
1300	200	4.63	297 (75)	Haze	D
1400	220	6.69	298 (77)	Haze	D
1500	210	6.17	299 (79)	Haze	D
1600	230	5.14	299 (79)	Haze	D
1700	220	5.66	298 (76)	Haze	D
1800	190	4.12	296 (74)	Haze	D
1900	220	5.14	296 (73)	Haze	D
2000	230	1.63	295 (72)	Haze	D
2100	210	4.12	294 (70)	Light Shower; Haze	D
2200	210	4.12	294 (70)	Haze	D
2300	270	3.60	291 (70)	Haze	D
2400	300	3.60	294 (69)		D

*Temperatures in degrees Fahrenheit are enclosed by parentheses.

TABLE D-6
HOURLY SURFACE WEATHER OBSERVATIONS AT THE
GREATER PITTSBURGH AIRPORT ON
3 SEPTEMBER 1976

Time (EST)	Wind Direction (deg)	Wind Speed (m/sec)	Ambient Air Temperature* (°K)	"Weather"	Pasquill Stability Category
0100	Calm	0.00	284 (51)		E
0200	Calm	0.00	283 (50)	Ground fog	E
0300	Calm	0.00	282 (48)	Fog	D
0400	040	2.06	281 (47)	Dense fog	D
0500	Calm	0.00	280 (45)	Dense fog	D
0600	Calm	0.00	280 (44)	Dense fog	D
0700	130	2.06	280 (45)	Dense fog	D
0800	080	2.06	282 (48)	Dense fog	D
0900	090	2.06	283 (50)	Fog	D
1000	190	2.06	288 (58)		B
1100	150	2.06	291 (65)		B
1200	150	3.60	293 (68)		B
1300	160	3.60	294 (74)		B
1400	130	4.12	295 (72)		C
1500	190	5.14	296 (74)		C
1600	170	4.12	296 (74)		C
1700	180	4.63	296 (74)		C
1800	210	3.09	295 (72)		D
1900	200	2.57	293 (67)	Haze	E
2000	160	2.57	290 (63)	Haze	E
2100	200	2.06	289 (61)	Haze	E
2200	160	1.54	288 (59)	Haze	E
2300	140	1.54	288 (58)	Haze	E
2400	150	1.54	288 (59)	Haze	E

*Temperatures in degrees Fahrenheit are enclosed by parentheses.

TABLE D-7
HOURLY SURFACE WEATHER OBSERVATIONS AT THE
GREATER PITTSBURGH AIRPORT ON
9 SEPTEMBER 1976

Time (EST)	Wind Direction (deg)	Wind Speed (m/sec)	Ambient Air Temperature* (°K)	"Weather"	Pasquill Stability Category
0100	Calm	0.00	289 (61)		E
0200	Calm	0.00	289 (60)		E
0300	Calm	0.00	288 (59)		E
0400	Calm	0.00	287 (57)		E
0500	Calm	0.00	286 (56)		E
0600	150	1.54	286 (55)	Haze	C
0700	Calm	0.00	286 (56)	Haze	C
0800	180	2.06	289 (61)	Haze	C
0900	220	4.12	295 (71)	Haze	C
1000	230	5.14	297 (75)	Haze	C
1100	240	4.63	298 (77)	Haze	C
1200	200	5.14	300 (81)	Haze	C
1300	220	6.69	300 (81)	Haze	D
1400	230	6.17	301 (82)	Haze	D
1500	230	5.66	301 (82)	Haze	C
1600	210	7.72	300 (81)	Haze	D
1700	220	4.12	299 (79)	Haze	D
1800	230	4.12	298 (76)	Haze	D
1900	190	3.09	296 (74)	Light Showers, Haze	D
2000	210	3.09	295 (72)	Haze	E
2100	230	3.09	294 (69)	Light Showers, Haze	D
2200	190	4.12	292 (66)	Light Showers, Haze	D
2300	190	5.66	291 (65)	Light Showers, Fog	D
2400	300	10.29	291 (64)	Light Showers, Fog	D

*Temperatures in degrees Fahrenheit are enclosed by parentheses.

TABLE D-8
MEAN WIND SPEED AND PRECIPITATION
DATA FOR SAMPLE DAYS

Sample Date	Mean Wind Speed (m/sec)	Precipitation (inches)	
		Sample Day	Prior Day
10 August 1976	2.4	0.00	NA*
16 August 1976	3.5	0.00	0.48
22 August 1976	1.8	0.00	0.00
28 August 1976	3.7	Trace	Trace
3 September 1976	2.2	0.00	0.00
9 September 1976	3.6	0.28	0.00

*NA = not available.

TABLE D-9
MIXING DEPTHS AND POTENTIAL TEMPERATURE
GRADIENTS MEASURED AT THE GREATER
PITTSBURGH AIRPORT BEFORE,
DURING AND AFTER
SAMPLE DAYS

Date	Time (EST)	Mixing Depth (m)	Potential Temperature Gradient ($^{\circ}\text{K}/\text{m}$)
9 August 1976	1900	NA*	NA*
10 August 1976	0700	660	0.004
10 August 1976	1900	1450	0.000
11 August 1976	0700	125	0.059
15 August 1976	1900	1150	0.000
16 August 1976	0700	125	0.024
16 August 1976	1900	1500	0.000
17 August 1976	0700	125	0.058
21 August 1976	1900	1160	0.001
22 August 1976	0700	125	0.069
22 August 1976	1900	1100	0.002
23 August 1976	0700	125	0.040
27 August 1976	1900	>3000	0.001
28 August 1976	0700	340	0.006
28 August 1976	1900	700	0.001
29 August 1976	0700	1540	0.005
2 September 1976	1900	1650	0.001
3 September 1976	0700	200	0.009
3 September 1976	1900	980	0.000
4 September 1976	0700	125	0.021
8 September 1976	1900	1170	0.001
9 September 1976	0700	125	0.056
9 September 1976	1900	1250	0.000
10 September 1976	0700	1500	0.004

*NA = not available.

16 August 1976

A weak frontal system passed over the Pittsburgh area on the morning of 15 August 1976, with 12.2 millimeters (0.48 inches) of precipitation recorded at the Greater Pittsburgh Airport for the 24-hour period ending at midnight on 15 August. A surface high pressure system followed the front and remained over Pittsburgh on 16 August. Fog or haze was observed during the period 0500 to 0800 EST on 16 August, and broken middle clouds were observed during the period 1100 to 1600 EST. Winds were light-to-moderate and from the west-northwest through north. Upper-air soundings at the Greater Pittsburgh Airport indicate that:

- A shallow mixing layer with a moderate surface-based inversion developed during the night of 15 - 16 August
- A relatively deep mixing layer with an adiabatic lapse rate developed during the daylight hours on 16 August
- A strong surface-based inversion with a corresponding shallow mixing depth formed during the night of 16 - 17 August

22 August 1976

A surface high pressure system was approximately centered over the Pittsburgh area on 22 August 1976. With the exception of scattered to broken high cirrus clouds after 0800 EST, skies were clear in the Pittsburgh area on 22 August. At the Greater Pittsburgh Airport, haze and smoke were observed during the period 0100 to 0900 EST and haze was reported after 1700 EST. During the period 1200 to 2100 EST, light-to-moderate north-west and north winds were observed. The wind was calm or light and variable during the remaining hours of 22 August. Upper-air data for the Greater Pittsburgh Airport show that strong surface-based inversions devel-

oped during the nights of 21 - 22 August and 22 - 23 August. The 1900 EST sounding on 23 August shows a relatively deep mixing layer with a slightly stable lapse rate.

28 August 1976

A trace of precipitation was reported at the Greater Pittsburgh Airport on 27 August 1976 as a short-wave trough at 500 millibars passed over the Pittsburgh area. Similarly, a trace of precipitation was measured on 28 August as an advancing frontal system induced light rain showers at about 2100 EST. Broken to overcast low clouds covered the Pittsburgh area after 0500 EST on 28 August, and haze or ground fog was reported throughout the day. Upper-air soundings made at the Greater Pittsburgh Airport on 28 August indicate that the mixing depth varied from about 350 meters in the early morning hours to about 700 meters in the afternoon. The vertical potential temperature gradient within the surface mixing layer was approximately equal to the moist-adiabatic value during the period. Light-to-moderate south or southwest winds persisted from 0100 EST until about midnight when the wind shifted to the northwest, probably indicating a frontal passage.

3 September 1976

A surface high pressure system, centered over the Great Lakes on the morning of 2 September 1976, moved across the Pittsburgh area on 3 September. Calm winds and dense fog (visibility at or near zero) were observed at the Greater Pittsburgh Airport during the period 0100 to 0900 EST on 3 September. After the fog cleared, light-to-moderate surface wind speeds were measured, with the wind direction ranging from east through south-southwest. Rawinsonde measurements at the Greater Pittsburgh Airport show a shallow mixing layer with a slightly stable lapse rate at 1900 EST.

A surface-based inversion of moderate strength developed during the night of 3 - 4 September 1976.

9 September 1976

A weak cold front passed over the Greater Pittsburgh Airport at about midnight on 9 September 1976. The storm resulted in 7.1 millimeters (0.28 inches) of precipitation at the airport for the 24-hour period ending at midnight on 9 September. This precipitation occurred in the form of light rain showers during the period 1900 to 2400 EST. Skies were clear on 9 September until clouds in advance of the front moved into the Pittsburgh area at about 1600 EST. Haze was reported from 0600 EST until 2300 EST, when fog replaced haze as the major restriction to visibility. Winds were calm until moderate southwest winds developed at about 0900 EST. After the frontal passage at about 2400 EST, the wind direction shifted from southwest to northwest and the wind speed increased to over 10 meters per second. According to the 0700 EST upper-air sounding at the Greater Pittsburgh Airport, a strong-surface based inversion formed during the night of 8 - 9 September. However, a relatively deep surface mixing layer with an adiabatic lapse rate developed by 1900 EST on 9 September and continued throughout the night of 9 - 10 September.

D.3 OBSERVER'S LOGS FOR THE SAMPLING DAYS

The Observer's Logs for the six special sampling days are given in Tables D-10 through D-15. The logs include filter numbers, filter weights, air flows through the hi-vol samplers during the sampling period and 24-hour average particulate concentrations. The sampling sites were visited several times during each 24-hour sampling period, and the logs also contain notes by the observers of industrial or other activities in the vicinity of the sampling sites that could have affected the observed particulate concentrations. Some of the remarks, such as those referring to noticeable odors from a particular source, are subjective.

TABLE D-10
OBSERVER'S LOG FOR TUESDAY 10 AUGUST 1976

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
Baden	1110918	1110919	150	51.2	72	J&L ore pile handling fugitives.
Beaver Falls	1110914	1110915	80	46.4	42	Normal.
Koppel	1110940	1110944	134	51.1	64	B&W fugitives from scrap cutting. Spray painting 100m to southwest.
Brighton Twp	1110916	1110917	144	47.6	74	Normal.
Midland	1110920	1110921	174	47.2	90	Faulty wiring produced interrupted 24 hour run. Plume aligned along river.
Elco	-	-	-	-	-	Not yet installed.
Downtown	1110910	1110911	246	51.0	118	Normal.
Central Lab	1110908	1110909	173	51.0	83	J&L open hearth emissions visible. Local construction dust. Traffic odor.
Hazelwood	1110912	1110913	227	54.0	103	J&L coke plant plumes fanning near stacks. Wind from northwest.

TABLE D-10 (Continued)

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
North Braddock	1110924	1110925	172	49.0	86	USS-ET plume fanning near stack. Noticeable odor.
Duquesne II	1110926	1110927	240	45.0	131	USS-Duquesne low level dusts from BOP shop.
Liberty Boro	1110930	1110931	234	42.0	136	School pavement drilling dust source. USS-Irwin low level dust cloud.
Clairton	1110934	1110935	133	59.0	55	USS-Clairton plumes dispersing near stacks. Dust and quench steam at ground level. Notice- able odor.
Airport	1110906	1110907	142	49.0	71	Normal.
South Fayette	1110904	1110905	26	52.0	12	Normal. Questionable sample.

TABLE D-11

OBSERVER'S LOG FOR MONDAY 16 AUGUST 1976

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
Baden	1093219	1093220	164	46.6	86	Fog, wet terrain, diminishing during day.
Beaver Falls	1093221	1093222	152	43.2	86	Fog, wet terrain, diminishing during day.
Koppel	1093223	1093224	189	51.6	90	Fog, wet terrain, diminishing during day. Motorcycles in alley below sampler.
Brighton Twp	1093225	1093226	119	45.0	65	Fog, wet terrain, diminishing during day.
Midland	1093227	1093228	149	43.9	83	Re-roofing adjacent building at same level as sampler. Crucible low level dusts, smokes.
Elco	1093213	1093214	147	55.0	66	Light traffic.
Downtown	1093215	1093216	284	50.0	139	Normal.
Central Lab	1093241	1093242	224	50.0	110	J&L quenching plumes taking a long time to disperse.
Hazelwood	1093201	1093202	180	54.0	130	J&L coking smokes, red furnace smoke evident. Odor very noticeable. 15-hour run only.

TABLE D-11 (Continued)

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
North Braddock	1093203	1093204	155	48.0	79	Normal.
Duquesne II	1093205	1093206	231	39.0	145	Stack plumes evident.
Liberty Boro	1093209	1093210	181	39.0	114	Some smoke from Westinghouse plant. Work on school pavement dusty.
Clairton	1093211	1093212	125	59.0	52	Black, gray and bluish-white plumes near ground level, also dusts. Pushing emissions noticeable, yellow smoke and odor.
Airport	1093229	1093230	149	48.0	76	Haze, moisture AM.
South Fayette	1093239	1093240	140	50.0	69	Haze, moisture AM.

TABLE D-12

OBSERVER'S LOG FOR SUNDAY 22 AUGUST 1976

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
Baden	1093263	1093264	285	47.8	146	J&L coking and quenching plumes heavy, BOF low levels evident. Odor strong to the south.
Beaver Falls	1093261	1093262	180	41.8	106	Warehouse closed. No truck traffic. Hazier in PM. Light train traffic.
Koppel	1093234	1093233	250	50.1	122	Asphalt smell evident but no visibles. Hazier in PM. No truck traffic.
Brighton Twp	1110936	1110937	235	45.5	127	Dense black smoke from hospital incinerator in AM.
Midland	1093231	1093207	25	static	-	4 day static sample.
Midland	1110932	1110933	339	42.9	194	Crucible low level emissions evident. Yellow smoke near BF. West wind.
Elco	1093251	1093252	178	54.0	81	Normal.
Downtown	1093255	1093256	464	49.5	230	Normal.
Central Lab	1093259	1093260	349	48.0	178	J&L red smoke evident. Haze noticeable.

TABLE D-12 (Continued)

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
Hazelwood	1093257	1093258	602	55.0	269	J&L heavy emissions, red, black, gray smokes. Heavy low level emissions.
North Braddock	1093243	1093244	508	45.0	277	USS-ET normal. Gray, brown and brown-orange plumes visible.
Duquesne II	1093245	1093246	412	41.0	246	USS-Duquesne normal. White, gray, pale yellow smoke visible.
Liberty Boro	1093247	1093248	433	39.0	272	USS-Clairton coking, quenching odors strong.
Clairton	1093249	1093250	250	60.0	102	Normal coking emissions.
Airport	1093237	1093238	310	47.0	162	Normal.
South Fayette	1093235	1093236	308	49.0	154	No vehicle traffic at school on Sunday.

TABLE D-13

OBSERVER'S LOG FOR SATURDAY 28 AUGUST 1976

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
Baden	1093290	1093291	374	45.2	203	J&L quenching heavy. BOF low levels evident. Moderate to heavy train traffic. Fog and haze.
Beaver Falls	1093288	1093289	277	41.4	164	Warehouse closed, no truck traffic. Haze
Koppel	1093286	1093287	256	47.2	133	No B&W truck traffic. Haze.
Brighton Twp	1093284	1093285	258	42.4	149	Hospital incinerator smoke AM and PM. Haze.
Midland	1093282	1093283	479	43.9	268	Crucible plumes, low levels dispersing directly toward sampler. Haze.
Elco	1106306	1106307	91	52.0	43	Normal.
Downtown	1093296	1093297	193	47.0	101	Heavy traffic. Haze.
Central Lab	1093253	1093254	233	48.0	119	Red and gray smokes, low levels give J&L a hazy look.
Hazelwood	1106308	1106309	151	52.0	71	J&L black, brown and gray smokes. Brown low levels. Haze

TABLE D-13 (Continued)

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
North Braddock	1093298	1093299	289	46.5	153	USS-ET red low level emissions from BOP shop heavier than normal. Haze.
Duquesne II	1106300	1106301	68	static	-	2 day static sample.
Liberty Boro	1106302	1106303	207	39.0	130	USS-Clairton coking and quenching odors very prominent. Haze. Small corner of filter missing.
Clairton	1106304	1106305	147	59.0	61	USS-Clairton unusually heavy emissions. Brownish-orange low level emissions evident together with stack plumes. Haze.
Airport	1093280	1093281	210	47.0	110	Normal. Haze.
South Fayette	1093278	1093279	174	47.0	91	No vehicle traffic. Haze.

TABLE D-14

OBSERVER'S LOG FOR FRIDAY (HOLIDAY) 3 SEPTEMBER 1976

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
Baden	1106341	1106342	173	49.5	86	Adjacent parking lot was resurfaced with asphalt during 3 Sept. 50 meters to the south, 1/4 acre area. J&L large low level emissions, but drift away from sampler. Haze.
Beaver Falls	1106343	1106344	219	42.7	126	Steady truck and train traffic.
Koppel	1106347	1106348	175	51.1	84	B&W scrap cutting with oxy-acet. torch. Steady truck traffic.
Brighton Twp	1106349	1106350	161	44.5	89	Normal.
Midland	1106351	1106352	226	43.4	128	Crucible large low level yellow fugitives from hot strip mill and scarfer.
Elco	1093265	1093266	114	51.5	54	Filter shows spotting as if by moisture or acid droplets.
Downtown	1106339	1106340	265	51.0	128	Low level haze.
Central Lab	1106333	1106334	256	51.0	123	J&L orange plumes visible. Low level haze.

TABLE D-14 (Continued)

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
Hazelwood	1106325	1106326	265	50.5	129	J&L plumes rising vertically. No odor.
North Braddock	1106315	1106316	289	50.5	140	Haze.
Duquesne II	1106321	1106322	262	43.0	150	USS-Duquesne low level dusts, sulfur odor. Haze.
Liberty Boro	1106329	1106330	119	40.0	73	USS-Clairton plumes visible.
Clairton	1106331	1106332	207	56.5	90	USS-Clairton low level emissions drifting to the west toward sampler. Odor noticeable. Trucks driving to slag pile south of monitor.
Airport	1106335	1106336	171	48.5	87	Normal.
South Fayette	1106337	1106338	164	51.0	79	Normal.

TABLE D-15
OBSERVER'S LOG FOR 9 SEPTEMBER 1976

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
Baden	1093271	1093272	386	45.7	207	J&L low level BOF emissions. Haze.
Beaver Falls	1093269	1093270	387	40.9	232	Haze.
Koppel	1093267	1093268	296	45.3	156	Trash burning 100 meters to north of sampler. Haze.
Brighton Twp	1110928	1110929	338	46.6	178	Normal.
Midland	1093292	1093293	667	40.5	404	Crucible multiple stack and low level emissions; coking, BF odors strong; wind blowing toward sampler.
Elco	1106379	1106380	187	55.0	84	Allied Chemical plume visible but dispersing away from sampler. Haze.
Downtown	1106323	1106324	6	static	-	2 day static sample.
Central Lab	1106327	1106328	429	48.0	219	J&L gray, orange and white plumes visible.
Hazelwood	1106353	1106354	280	50.0	137	Haze.

TABLE D-15 (Continued)

Site	Filter Numbers		Weight (mg)	Flow (acfm)	Concentration ($\mu\text{g}/\text{m}^3$)	Observer's Remarks
	Installed	Spare				
North Braddock	1106386	1106385	474	47.0	248	Normal.
Duquesne II	1106383	1106384	423	43.0	242	Haze.
Liberty Boro	1106388	1106387	470	40.0	289	USS-Clairton plume visible coming over hill. Strong odor. Haze. School in session.
Clairton	1106381	1106382	293	56.5	127	USS Clairton green pushes. Charging, quenching, stacks all very active. Plumes oriented up over hill to northeast. Graders and dozers working in dirt area 50 meters to north of monitor. Large clouds of low level dust result therefrom. Haze.
Airport	1093294	1093295	177	48.0	207	10.5 hour flow, questionable.
South Fayette	1106310	1106311	278	47.0	145	School in session.

D.4 FILTER ANALYSIS RESULTS

This section presents the results of the optical microscopy, scanning electron microscopy (SEM) and energy-dispersive X-ray (EDAX) analyses of the hi-vol filter samples from the fifteen monitor locations described in Section D.1. Although filter samples were collected on six days, three of the sampling days were determined to be unsuitable for detailed analyses because of the frequent occurrence of calm or light and variable winds during the 24-hour sampling period. The three sample days selected for hi-vol filter analysis are 16 August, 28 August and 9 September 1976. (SEM results are also given for the Liberty Boro monitor on 22 August 1976.)

Tables D-16 through D-88 give the results of the particle count analyses performed by optical microscopy. Each table lists, for the primary filter alone, the cover filter alone or the primary and cover filters in combination, the filter number(s), the monitor location, the sample day, the particulate loading on the filter(s) as determined by the Coors Spectro-Chemical Laboratory and the 24-hour average particulate concentration. Each table also gives the concurrent filter particulate loading and 24-hour average particulate concentration for the colocated monitor operator by the Pennsylvania Department of Environmental Resources (DER) or the Allegheny County Bureau of Air Pollution Control (BAPC). In the optical microscopy analysis, the particulates were classified according to six generic categories: (1) flyash, (2) iron oxide, (3) magnetic iron oxide, (4) quartz, (5) biologicals and (6) CaCo_3 . The particle counts in the tables refer to a filter segment with an area of 0.00968 square centimeters. As explained in Section 3.6, the particle counts in each generic category and size range were used with the particle densities assigned to each generic category to calculate the particulate mass on this filter segment. Under the assumption of uniform particulate loading on the filter, the total particulate mass on the entire filter was obtained by multiplying the mass of the filter

segment by the ratio of the total filter area to the area of the filter segment. Both the calculated mass and the total measured mass determined by the filter weight are entered at the top right of each table.

Tables D-89 through D-167 give the results of the SEM filter analyses. The format for Tables D-89 through D-167 is the same as for Tables D-16 through D-88 except that, in the SEM analysis, the particles were classified according to the following three generic categories: (1) spheres, (2) irregularly-shaped particles, and (3) agglomerates. The particle counts in Tables D-89 through D-167 refer to a filter segment with an area of 0.02053 square centimeters. As a consistency check, two separate SEM filter analyses were performed on the filter from the Central Laboratory monitor for 9 September 1976, the North Braddock monitor for 9 September 1976 and the Liberty Boro monitor for 28 August 1976. The results of both analyses are included in the tables (for example, see Tables D-148 and D-149).

The results of both the optical microscopy and SEM analyses were used to estimate the distributions of mass by particle diameter. For each filter and for each particle size category, the combined mass of particles in the six (optical microscopy) or three (SEM) generic particle categories was calculated using the procedures outlined in Section 3.6. These results were then combined to form the cumulative mass distributions by particle diameter shown in Figures D-6 through D-11. (The contributions of biological particles are removed from the optical microscopy results in Figures D-6 through D-8.) Each figure contains fifteen cumulative mass distributions, corresponding to the fifteen particulate monitoring sites. The mass distributions in each figure are identified by the monitor site number given in Table D-1.

On the basis of the hourly wind speeds and wind directions for the sampling days as well as the monitor locations, the filters were assigned to one of three categories: (1) industrial, (2) urban, or

(3) rural. The industrial filters were Baden, Midland, Hazelwood and Clairton on 16 August 1976 and Baden, Midland, North Braddock and Liberty Boro on both 28 August and 9 September 1976. The Downtown and Central Laboratory filters were placed in the urban classification on all three sampling days. Similarly, the Brighton Township, Elco, Greater Pittsburgh Airport and South Fayette filters were placed in the rural classification on all three sampling days.

Figure D-12 shows the cumulative mass distribution by particle diameter for all of the filters analyzed by optical microscopy which have a calculated filter loading greater than or equal to 100 milligrams. The industrial, urban and rural cumulative mass distributions derived from these filters are plotted respectively in Figures D-13, D-14 and D-15. Similarly, Figure D-15 shows the cumulative mass distribution by particle diameter for all of the filters analyzed by SEM techniques which have a calculated filter loading greater than or equal to 100 milligrams. The corresponding industrial, urban and rural cumulative mass distributions are plotted respectively in Figures D-17, D-18 and D-19.

Energy-dispersive X-ray (EDAX) analyses were performed on a number of filters. The surface of each SEM filter stub analyzed by EDAX scan was made of the entire surface. The height of each integral energy peak recorded during the EDAX scan was divided by the height of the integral energy peak of gold to obtain a ratio which was essentially free of the effects of any discrepancies between filters in counting rates, beam intensities, etc. With the exception of copper, mercury, arsenic and lead, the threshold energy ratio for elements present in larger than trace quantities was arbitrarily set at 0.10, and the elements were ranked according to descending magnitude of the energy ratio. The threshold ratio for the trace elements of copper, mercury, arsenic and lead was set equal to 0.03. The results of the EDAX analyses for 16 August, 18 August and 9 September 1976 are given respectively in Tables D-168, D-169 and D-170. Elements with an energy peak much larger than the normal peaks are underlined in the tables.

For a selected subset of the filters, an SEM-EDAX analysis was performed for twelve to twenty particles on each filter. Tables D-171 through D-216 summarize the results of these analyses. For each particle, the elements which comprise the particle are listed in descending order of the ratio of the integral energy peak of the element to the integral energy peak of gold. Elements with energy peaks much larger than the usual peaks, are underlined in the tables. Tables D-171 through D-216 also give, for each particle, the particle diameter in microns (micrometers), the particle description (spherical, irregularly-shaped or agglomerate) and a tentative identification of the particle type or origin. We point out that all of the particles considered in Tables D-171 through D-216 had diameters larger than 5 micrometers. SEM photographs of some of the selected filters are shown in Figures D-20 through D-30.

A number of large particles with diameters greater than 40 micrometers observed on the filters were analyzed using the SEM-EDAX techniques described above. The results of these analyses of selected large particles are presented in Tables D-217 through D-224, and photomicrographs containing these particles are shown in Figures D-31 through D-86. Five very large particles with diameters greater than 100 micrometers were also analyzed. The elemental analysis of these particles is presented in Table D-225, the descriptions and possible identifications are given in Table D-226, and photomicrographs are shown in Figures D-87 through D-91.

Slag produced by the steel industry is found throughout southwest Pennsylvania in slag dumps and has been extensively used in road and building construction. Therefore, slag particles are likely to be a primary constituent of non-traditional fugitive emissions. We therefore performed an analysis of samples of the different types of slag found in the area to determine the correlation between the elemental compositions of these slag samples and the compositions of some of the particles found on the hi-vol filters.

Tables D-227 through D-229 give the results of the elemental analyses of the slag samples. The particles from the samples were divided into two groups, one containing large particles (diameters of the order of 100 micrometers) and one containing small particles (diameters of the order of 10 micrometers). Table D-227A gives the results of the analysis of large particles contained in slag samples from an electric arc furnace and Table D-227B gives the results of the analysis of some of the small particles found on the surface of these large slag particles. Photomicrographs of these samples are shown in Figures D-92 through D-101. Similarly, Table D-227C gives the results of the analysis of the small particulates contained in slag samples from an electric arc furnace and Table D-227D gives the results of the analysis of some of the smaller particles found on the surface of these small slag particles. Photomicrographs of these samples are shown in Figures D-102 through D-112. The analyses of large particles from a blast furnace and the small particles found on their surfaces are summarized in Tables D-228A and D-229B. The photomicrographs of these particles are shown in Figures D-113 and D-114. The elemental analyses of large slag particles from a basic oxygen furnace and the smaller particles found on their surfaces are summarized in Tables D-229A and D-229B. Figures D-115 and D-116 show the corresponding photomicrographs.

Walter C. McCrone Associates, Inc. used optical microscopy to analyze six selected filters as a check on the validity of the SEM and Coors optical microscopy analyses. Tables D-230 through D-236 summarize the results of the McCrone analyses. These tables give the percent by number of particles within various size ranges for three general particle categories: (1) combustion products, (2) minerals, and (3) biological materials.

TABLE D-16 through D-88 - RESULTS OF OPTICAL PARTICLE COUNTS

TABLE D-16

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093219			Total Mass of Particulates (mg):	
			Coors: 164 Agency: 139	
Monitor Location: Baden			Calculated Mass (mg): 261	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$):	
			Coors: 86 Agency: 67	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	300	52.3	1.8	2.8
10-20 μ	78	13.6	3.8	5.7
20-50 μ	23	4.0	15.3	22.9
50-75 μ	3	0.5	10.0	14.9
>75 μ	4	0.7	35.9	53.6
Totals	408	71.1	66.9	100
<u>Iron Oxide</u>				
5-10 μ	34	5.9	0.7	27.9
10-20 μ	11	1.9	1.8	72.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	45	7.8	2.4	100
<u>Magnetic Iron</u>				
5-10 μ	31	5.4	0.6	7.1
10-20 μ	10	1.7	1.6	18.4
20-50 μ	3	0.5	6.5	74.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	44	7.7	8.8	100

TABLE D-16
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093219 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	15	2.6	0.2	1.0
10-20 μ	1	0.2	0.08	0.5
20-50 μ	9	1.6	10.0	63.3
50-75 μ	1	0.2	5.6	35.2
>75 μ	0	0	0	0
Totals	26	4.5	15.8	100
<u>Biological</u>				
5-10 μ	11	1.9	0.04	2.6
10-20 μ	10	1.7	0.3	19.2
20-50 μ	3	0.5	1.3	78.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	24	4.2	1.7	100
<u>CaCO₃</u>				
5-10 μ	18	3.1	0.2	4.6
10-20 μ	6	1.0	0.5	12.3
20-50 μ	3	0.5	3.6	83.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	27	4.7	4.3	100
TOTALS (All Categories)	574	100	100	

TABLE D-17
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093221			Total Mass of Particulates (mg): Coors: 152 Agency: 127	
Monitor Location: Beaver Falls			Calculated Mass (mg): 246	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 86 Agency: 61	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	278	64.8	1.8	2.4
10-20 μ	47	11.0	2.5	3.3
20-50 μ	13	3.0	9.2	12.4
50-75 μ	1	0.2	3.5	4.8
>75 μ	6	1.4	57.2	77.1
Totals	345	80.4	74.2	100
<u>Iron Oxide</u>				
5-10 μ	10	2.3	0.2	55.6
10-20 μ	1	0.2	0.2	44.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	2.6	0.4	100
<u>Magnetic Iron</u>				
5-10 μ	8	1.9	0.2	50.0
10-20 μ	1	0.2	0.2	50.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	9	2.1	0.4	100

TABLE D-17
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093221 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	15	3.5	0.2	4.0
10-20 μ	4	0.9	0.3	8.6
20-50 μ	3	0.7	3.5	87.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	22	5.1	4.0	100
<u>Biological</u>				
5-10 μ	8	1.9	0.03	0.2
10-20 μ	6	1.4	0.2	1.0
20-50 μ	3	0.7	1.4	6.8
50-75 μ	0	0	0	0
>75 μ	3	0.7	19.1	92.0
Totals	20	4.7	20.7	100
<u>CaCO₃</u>				
5-10 μ	22	5.1	0.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	22	5.1	0.2	100
TOTALS (All Categories)	429	100	100	

TABLE D-18
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093223			Total Mass of Particulates (mg): Coors: 189 Agency: 161	
Monitor Location: Koppel			Calculated Mass (mg): 277	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 90 Agency: 86	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	240	53.1	1.4	1.5
10-20 μ	56	12.4	2.6	2.9
20-50 μ	26	5.8	16.3	18.2
50-75 μ	6	1.3	18.9	21.0
>75 μ	6	1.3	50.8	56.4
Totals	334	73.9	90.0	100
<u>Iron Oxide</u>				
5-10 μ	32	7.1	0.6	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	32	7.1	0.6	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-18
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093223 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	11	2.4	0.1	4.0
10-20 μ	6	1.3	0.5	17.4
20-50 μ	2	0.4	2.1	78.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	19	4.2	2.7	100
<u>Biological</u>				
5-10 μ	10	2.2	0.04	0.6
10-20 μ	14	3.1	0.4	7.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	1	0.2	5.6	92.3
Totals	25	5.5	6.1	100
<u>CaCO₃</u>				
5-10 μ	40	8.8	0.4	71.4
10-20 μ	2	0.4	0.2	28.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	42	9.3	0.6	100
TOTALS (All Categories)	452	100	100	

TABLE D-19
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093225			Total Mass of Particulates (mg): Coors: 119 Agency: 162	
Monitor Location: Brighton Township			Calculated Mass (mg): 79	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 65 Agency: 87	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	190	48.8	3.8	4.7
10-20 μ	40	10.3	6.5	8.0
20-50 μ	14	3.6	30.7	37.6
50-75 μ	1	0.2	11.0	13.4
>75 μ	1	0.2	29.6	36.2
Totals	246	63.2	81.7	100
<u>Iron Oxide</u>				
5-10 μ	34	8.7	2.2	68.0
10-20 μ	2	0.5	1.1	32.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	36	9.2	3.3	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-19
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093225 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	19	4.9	0.6	6.7
10-20 μ	6	1.5	1.6	16.9
20-50 μ	2	0.5	7.3	76.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	27	6.9	9.6	100
<u>Biological</u>				
5-10 μ	28	7.2	0.4	10.3
10-20 μ	17	4.4	1.8	50.0
20-50 μ	1	0.2	1.5	39.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	46	11.8	3.7	100
<u>CaCO₃</u>				
5-10 μ	32	8.2	1.2	66.7
10-20 μ	2	0.5	0.6	33.3
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	34	8.7	1.8	100
TOTALS (All Categories)	389	100	100	

TABLE D-20
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093227			Total Mass of Particulates (mg): Coors: 149 Agency: 166	
Monitor Location: Midland			Calculated Mass (mg): 306	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 83 Agency: 80	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	259	55.7	1.4	4.0
10-20 μ	62	13.3	2.6	7.6
20-50 μ	16	3.4	9.1	26.7
50-75 μ	2	0.4	5.7	16.7
>75 μ	2	0.4	15.3	45.0
Totals	341	73.3	34.1	100
<u>Iron Oxide</u>				
5-10 μ	15	3.2	0.2	15.8
10-20 μ	10	2.2	1.4	84.2
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	25	5.4	1.6	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-20
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093227 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	19	4.1	0.2	0.8
10-20 μ	15	3.2	1.0	4.8
20-50 μ	12	2.6	11.4	51.5
50-75 μ	2	0.4	9.5	43.0
>75 μ	0	0	0	0
Totals	48	10.3	22.1	100
<u>Biological</u>				
5-10 μ	19	4.1	0.07	0.2
10-20 μ	2	0.4	0.06	0.1
20-50 μ	1	0.2	0.4	0.9
50-75 μ	3	0.6	5.7	13.6
>75 μ	7	1.5	35.8	85.2
Totals	32	6.9	42.0	100
<u>CaCO₃</u>				
5-10 μ	18	3.9	0.2	69.2
10-20 μ	1	0.2	0.08	30.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	19	4.1	0.2	100
TOTALS (All Categories)	465	100	100	

TABLE D-21
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093228 (Cover Filter)			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Midland			Calculated Mass (mg): 166	
Date of Sample: 8/16/76 (Cover Filter for 1093227)			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	108	42.8	1.0	2.2
10-20 μ	43	17.1	3.3	6.9
20-50 μ	10	4.0	10.5	21.7
50-75 μ	1	0.4	5.2	10.8
>75 μ	2	0.8	28.2	58.4
Totals	164	65.1	48.3	100
<u>Iron Oxide</u>				
5-10 μ	5	2.0	0.2	4.3
10-20 μ	14	5.6	3.5	95.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	19	7.5	3.7	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-21
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) (Continued) 1093228				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	16	6.3	0.2	1.9
10-20 μ	8	3.2	1.0	7.6
20-50 μ	7	2.8	12.2	90.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	31	12.3	13.5	100
<u>Biological</u>				
5-10 μ	10	4.0	0.06	0.2
10-20 μ	10	4.0	0.5	1.5
20-50 μ	3	1.2	2.1	6.1
50-75 μ	1	0.4	3.5	10.2
>75 μ	3	1.2	28.2	82.1
Totals	27	10.7	34.4	100
<u>CaCO₃</u>				
5-10 μ	11	4.4	0.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	4.4	0.2	100
TOTALS (All Categories)	252	100	100	

TABLE D-22
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093213			Total Mass of Particulates (mg): Coors: 147 Agency: 100	
Monitor Location: Elco			Calculated Mass (mg): 143	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 66 Agency: 46	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	186	57.0	2.1	3.1
10-20 μ	36	11.0	3.2	4.8
20-50 μ	18	5.5	21.9	32.2
50-75 μ	4	1.2	24.4	35.8
>75 μ	1	0.3	16.4	24.1
Totals	245	75.2	68.0	100
<u>Iron Oxide</u>				
5-10 μ	5	1.5	0.2	17.2
10-20 μ	3	0.9	0.9	82.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	8	2.4	1.1	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-22
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093213 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	11	3.4	0.2	7.3
10-20 μ	4	1.2	0.6	21.2
20-50 μ	1	0.3	2.0	71.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	16	4.9	2.8	100
<u>Biological</u>				
5-10 μ	35	10.7	0.3	0.9
10-20 μ	18	5.5	1.1	3.8
20-50 μ	1	0.3	0.8	2.9
50-75 μ	1	0.3	4.1	14.5
>75 μ	2	0.6	21.9	77.9
Totals	57	17.5	28.1	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	326	100	100	

TABLE D-23
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093215			Total Mass of Particulates (mg): Coors: 284 Agency: 241	
Monitor Location: Downtown			Calculated Mass (mg): 222	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 139 Agency: 110	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	333	57.2	2.4	8.5
10-20 μ	83	14.3	4.8	16.9
20-50 μ	22	3.8	17.3	60.7
50-75 μ	1	0.2	3.9	13.8
>75 μ	0	0	0	0
Totals	439	75.4	28.4	100
<u>Iron Oxide</u>				
5-10 μ	21	3.6	0.5	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	21	3.6	0.5	100
<u>Magnetic Iron</u>				
5-10 μ	24	4.1	0.6	27.2
10-20 μ	8	1.4	1.5	72.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	32	5.5	2.1	100

TABLE D-23
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093215 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	17	2.9	0.2	0.3
10-20 μ	26	4.5	2.5	3.8
20-50 μ	11	1.9	14.4	22.0
50-75 μ	2	0.3	13.1	20.0
>75 μ	2	0.3	35.3	53.8
Totals	58	10.0	65.5	100
<u>Biological</u>				
5-10 μ	10	1.7	0.05	1.4
10-20 μ	21	3.6	0.8	23.4
20-50 μ	0	0	0	0
50-75 μ	1	0.2	2.6	75.2
>75 μ	0	0	0	0
Totals	32	5.5	3.5	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	582	100	100	

TABLE D-24
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093241			Total Mass of Particulates (mg): Coors: 234 Agency: 202	
Monitor Location: Central Lab			Calculated Mass (mg): 155	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 110 Agency: 97	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	229	46.3	2.4	4.0
10-20 μ	81	16.4	6.7	11.4
20-50 μ	26	5.2	29.1	49.4
50-75 μ	1	0.2	5.6	9.5
>75 μ	1	0.2	15.1	25.6
Totals	338	68.3	58.9	100
<u>Iron Oxide</u>				
5-10 μ	42	8.5	1.4	46.7
10-20 μ	6	1.2	1.6	53.3
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	48	9.7	3.0	100
<u>Magnetic Iron</u>				
5-10 μ	15	3.0	0.5	6.4
10-20 μ	14	2.8	3.8	47.6
20-50 μ	1	0.2	3.7	46.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	30	6.1	8.0	100

TABLE D-24
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093241 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	15	3.0	0.2	1.5
10-20 μ	5	1.0	0.7	3.9
20-50 μ	4	0.8	7.5	42.0
50-75 μ	1	0.2	9.3	52.6
>75 μ	0	0	0	0
Totals	25	5.0	17.8	100
<u>Biological</u>				
5-10 μ	2	0.4	0.1	0.2
10-20 μ	7	1.4	0.4	4.9
20-50 μ	5	1.0	3.7	47.4
50-75 μ	1	0.2	3.7	47.5
>75 μ	0	0	0	0
Totals	15	3.0	7.9	100
<u>CaCO₃</u>				
5-10 μ	25	5.0	0.5	10.5
10-20 μ	13	2.6	1.9	43.8
20-50 μ	1	0.2	2.0	45.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	39	7.9	4.4	100
TOTALS (All Categories)	495	100	100	

TABLE D-25
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093201			Total Mass of Particulates (mg): Coors: 180 Agency: 191	
Monitor Location: Hazelwood			Calculated Mass (mg): 218	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 131 Agency: 105	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	480	72.6	3.5	4.1
10-20 μ	78	11.8	4.6	5.3
20-50 μ	15	2.3	12.0	13.7
50-75 μ	6	0.9	23.9	27.5
>75 μ	4	0.6	43.0	49.4
Totals	583	88.2	87.0	100
<u>Iron Oxide</u>				
5-10 μ	29	4.4	0.7	13.9
10-20 μ	9	1.4	1.7	34.4
20-50 μ	1	0.2	2.6	51.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	39	5.9	5.0	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-25
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093201 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	14	2.1	0.2	2.3
10-20 μ	7	1.0	0.7	9.2
20-50 μ	0	0	0	0
50-75 μ	1	0.2	6.6	88.5
>75 μ	0	0	0	0
Totals	22	3.3	7.5	100
<u>Biological</u>				
5-10 μ	3	0.4	0.01	8.6
10-20 μ	4	0.6	0.2	91.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	7	1.0	0.2	100
<u>CaCO₃</u>				
5-10 μ	8	1.2	0.1	33.3
10-20 μ	2	0.3	0.2	66.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	10	1.5	0.3	100
TOTALS (All Categories)	661	100	100	

TABLE D-26
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093203			Total Mass of Particulates (mg): Coors: 155 Agency: 126	
Monitor Location: North Braddock			Calculated Mass (mg): 317	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 79 Agency: 63	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	229	53.9	1.2	2.3
10-20 μ	40	9.4	1.6	3.2
20-50 μ	15	3.5	8.2	16.3
50-75 μ	9	2.1	24.7	48.9
>75 μ	2	0.5	14.8	29.3
Totals	295	69.4	50.6	100
<u>Iron Oxide</u>				
5-10 μ	26	6.1	0.4	61.9
10-20 μ	2	0.5	0.3	38.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	28	6.6	0.7	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-26
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093203 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	16	3.8	0.1	6.4
10-20 μ	2	0.5	0.1	6.4
20-50 μ	2	0.5	1.8	87.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	20	4.7	2.1	100
<u>Biological</u>				
5-10 μ	15	3.5	0.05	0.1
10-20 μ	27	6.4	0.07	1.6
20-50 μ	14	3.3	5.1	11.0
50-75 μ	6	1.4	11.0	23.6
>75 μ	6	1.4	29.6	63.6
Totals	68	16.0	46.5	100
<u>CaCO₃</u>				
5-10 μ	14	3.3	0.1	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	14	3.3	0.1	100
TOTALS (All Categories)	425	100	100	

TABLE D-27
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093205			Total Mass of Particulates (mg): Coors: 231 Agency: 211	
Monitor Location: Duquesne II			Calculated Mass (mg): 157	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 145 Agency: 107	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	248	48.8	2.5	4.6
10-20 μ	75	14.8	6.2	11.0
20-50 μ	19	3.7	21.1	37.8
50-75 μ	2	0.4	11.1	19.9
>75 μ	1	0.2	14.9	26.8
Totals	345	67.9	55.8	100
<u>Iron Oxide</u>				
5-10 μ	56	11.0	1.9	58.5
10-20 μ	5	1.0	1.3	41.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	61	12.0	3.2	100
<u>Magnetic Iron</u>				
5-10 μ	24	4.7	0.8	3.2
10-20 μ	9	1.8	2.4	9.7
20-50 μ	6	1.2	21.7	86.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	39	7.7	25.0	100

TABLE D-27
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093205 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	16	3.1	0.3	5.9
10-20 μ	5	1.0	0.7	14.7
20-50 μ	2	0.4	3.7	79.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	23	4.5	4.6	100
<u>Biological</u>				
5-10 μ	21	4.1	0.1	1.3
10-20 μ	3	0.6	0.2	1.5
20-50 μ	1	0.2	0.7	6.7
50-75 μ	0	0	0	0
>75 μ	1	0.2	10.0	90.5
Totals	26	5.1	11.0	100
<u>CaCO₃</u>				
5-10 μ	13	2.6	0.2	61.9
10-20 μ	1	0.2	0.1	38.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	14	2.8	0.4	100
TOTALS (All Categories)	508	100	100	

TABLE D-28
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093209			Total Mass of Particulates (mg): Coors: 181 Agency: --	
Monitor Location: Liberty Boro			Calculated Mass (mg): 251	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 114 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	447	59.0	2.9	3.9
10-20 μ	187	24.7	9.6	12.9
20-50 μ	37	48.9	25.7	34.6
50-75 μ	5	0.7	17.4	23.4
>75 μ	2	0.3	18.7	25.2
Totals	678	89.6	74.2	100
<u>Iron Oxide</u>				
5-10 μ	11	1.4	0.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	1.4	0.2	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-28
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093209 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	9	1.2	0.1	3.0
10-20 μ	9	1.2	0.8	24.2
20-50 μ	2	0.3	2.3	72.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	20	2.6	3.2	100
<u>Biological</u>				
5-10 μ	4	0.5	0.02	0.09
10-20 μ	7	0.9	0.2	1.2
20-50 μ	1	0.1	0.5	2.4
50-75 μ	0	0	0	0
>75 μ	3	0.4	18.7	96.3
Totals	15	2.0	19.4	100
<u>CaCO₃</u>				
5-10 μ	15	2.0	0.2	5.8
10-20 μ	17	2.2	1.6	52.5
20-50 μ	1	0.1	1.2	41.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	33	4.4	3.0	100
TOTALS (All Categories)	757	100	100	

TABLE D-29
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093211			Total Mass of Particulates (mg): Coors: 125 Agency: 150	
Monitor Location: Clairton			Calculated Mass (mg): 182	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 52 Agency: 76	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	199	54.7	1.8	2.0
10-20 μ	62	17.0	4.4	5.1
20-50 μ	18	4.9	17.2	20.0
50-75 μ	5	1.4	23.9	27.8
>75 μ	3	0.8	38.7	45.0
Totals	287	78.8	86.0	100
<u>Iron Oxide</u>				
5-10 μ	34	9.3	1.0	81.0
10-20 μ	1	0.3	0.2	19.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	35	9.6	1.2	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-29
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093211 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	9	2.5	0.1	7.2
10-20 μ	1	0.3	0.1	6.4
20-50 μ	1	0.3	1.6	86.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	3.0	1.8	100
<u>Biological</u>				
5-10 μ	11	3.0	0.06	0.6
10-20 μ	3	0.8	0.1	1.3
20-50 μ	3	0.8	1.9	17.9
50-75 μ	0	0	0	0
>75 μ	1	0.3	8.6	80.2
Totals	18	4.9	10.7	100
<u>CaCO₃</u>				
5-10 μ	13	3.6	0.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	13	3.6	0.2	100
TOTALS (All Categories)	364	100	100	

TABLE D-30
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093229			Total Mass of Particulates (mg): Coors: 149 Agency: 151	
Monitor Location: Airport			Calculated Mass (mg): 130	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 76 Agency: 72	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	186	55.7	2.3	5.2
10-20 μ	41	12.3	4.0	9.2
20-50 μ	8	2.4	10.7	24.4
50-75 μ	4	1.2	26.8	61.1
>75 μ	0	0	0	0
Totals	239	71.6	43.8	100
<u>Iron Oxide</u>				
5-10 μ	14	4.2	0.6	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	14	4.2	0.6	100
<u>Magnetic Iron</u>				
5-10 μ	9	2.7	0.4	36.0
10-20 μ	2	0.6	0.6	64.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	3.3	1.0	100

TABLE D-30
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093229 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	22	6.6	0.4	1.4
10-20 μ	9	2.7	1.5	4.5
20-50 μ	4	1.2	8.9	26.9
50-75 μ	2	0.6	22.3	67.3
>75 μ	0	0	0	0
Totals	37	11.1	33.2	100
<u>Biological</u>				
5-10 μ	11	3.3	0.09	0.4
10-20 μ	1	0.3	0.06	0.3
20-50 μ	5	1.5	4.4	21.1
50-75 μ	1	0.3	4.5	21.2
>75 μ	1	0.3	12.0	57.0
Totals	19	5.7	21.1	100
<u>CaCO₃</u>				
5-10 μ	14	4.2	0.3	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	14	4.2	0.3	100
TOTALS (All Categories)	334	100	100	

TABLE D-31
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1093230			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Airport			Calculated Mass (mg): 64	
Date of Sample: 8/16/76 (Cover Filter for 1093229)			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	161	51.4	4.1	10.8
10-20 μ	44	14.0	8.9	23.7
20-50 μ	9	2.9	24.6	65.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	214	68.4	37.5	100
<u>Iron Oxide</u>				
5-10 μ	16	5.1	1.3	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	16	5.1	1.3	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-31
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) (Continued) 1093230				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	22	7.0	0.9	3.7
10-20 μ	4	1.3	1.3	5.4
20-50 μ	5	1.6	22.7	90.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	31	9.9	25.0	100
<u>Biological</u>				
5-10 μ	16	5.1	0.3	0.8
10-20 μ	10	3.2	1.3	3.8
20-50 μ	5	1.6	9.1	25.8
50-75 μ	0	0	0	0
>75 μ	1	0.3	24.5	69.6
Totals	32	10.2	35.2	100
<u>CaCO₃</u>				
5-10 μ	20	6.4	0.9	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	20	6.4	0.9	100
TOTALS (All Categories)	313	100	100	

TABLE D-32
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093239			Total Mass of Particulates (mg): Coors: 140 Agency: 90	
Monitor Location: South Fayette			Calculated Mass (mg): 33	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 69 Agency: 41	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	126	55.5	6.1	9.1
10-20 μ	22	9.7	8.5	12.7
20-50 μ	10	4.4	52.1	78.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	158	69.6	66.6	100
<u>Iron Oxide</u>				
5-10 μ	8	3.5	1.2	33.3
10-20 μ	2	0.9	2.5	66.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	10	4.4	3.7	100
<u>Magnetic Iron</u>				
5-10 μ	9	4.0	1.4	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	9	4.0	1.4	100

TABLE D-32
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093239 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	12	5.3	1.0	4.3
10-20 μ	6	2.6	3.8	17.4
20-50 μ	2	0.9	17.4	78.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	20	8.8	22.2	100
<u>Biological</u>				
5-10 μ	11	4.8	0.4	9.2
10-20 μ	0	0	0	0
20-50 μ	1	0.4	3.5	90.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	12	5.3	3.8	100
<u>CaCO₃</u>				
5-10 μ	17	7.5	1.5	68.0
10-20 μ	1	0.4	0.7	32.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	18	7.9	2.2	100
TOTALS (All Categories)	227	100	100	

TABLE D-33
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1093240		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: South Fayette		Calculated Mass (mg): 37		
Date of Sample: 8/16/76 (Cover Filter for 1093239)		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	128	53.8	5.6	17.3
10-20 μ	36	15.1	12.6	38.9
20-50 μ	3	1.3	14.2	43.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	167	70.2	32.4	100
<u>Iron Oxide</u>				
5-10 μ	8	3.4	1.1	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	8	3.4	1.1	100
<u>Magnetic Iron</u>				
5-10 μ	8	3.4	1.1	25.0
10-20 μ	3	1.3	3.4	75.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	4.6	4.5	100

TABLE D-33
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) 1093240 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	7	2.9	0.5	5.0
10-20 μ	3	1.3	1.8	17.2
20-50 μ	1	0.4	7.9	77.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	4.6	10.2	100
<u>Biological</u>				
5-10 μ	10	4.2	0.3	0.6
10-20 μ	22	9.2	5.1	10.0
20-50 μ	1	0.4	3.2	6.2
50-75 μ	0	0	0	0
>75 μ	1	0.4	42.5	83.2
Totals	34	14.3	51.1	100
<u>CaCO₃</u>				
5-10 μ	7	2.9	0.6	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	7	2.9	0.6	100
TOTALS (All Categories)	238	100	100	

TABLE D-34
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093290			Total Mass of Particulates (mg): Coors: 374 Agency: 351	
Monitor Location: Baden			Calculated Mass (mg): 66	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 203 Agency: 183	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	375	68.8	9.2	11.3
10-20 μ	71	13.0	13.9	17.1
20-50 μ	12	2.2	31.7	39.0
50-75 μ	2	0.4	26.4	32.6
>75 μ	0	0	0	0
Totals	460	84.4	81.2	100
<u>Iron Oxide</u>				
5-10 μ	13	2.4	1.0	61.9
10-20 μ	1	0.2	0.6	38.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	14	2.6	1.6	100
<u>Magnetic Iron</u>				
5-10 μ	12	2.2	1.0	60.0
10-20 μ	1	0.2	0.6	40.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	13	2.4	1.6	100

TABLE D-34
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093290 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	11	2.0	0.4	4.5
10-20 μ	2	0.4	0.7	6.6
20-50 μ	2	0.4	8.8	88.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	15	2.8	9.9	100
<u>Biological</u>				
5-10 μ	19	3.5	0.3	6.2
10-20 μ	9	1.6	1.2	23.4
20-50 μ	2	0.4	3.5	70.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	30	5.5	5.0	100
<u>CaCO₃</u>				
5-10 μ	13	2.4	0.6	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	13	2.4	0.6	100
TOTALS (All Categories)	545	100	100	

TABLE D-35
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1093291			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Baden			Calculated Mass (mg): 192	
Date of Sample: 8/28/76 (Cover Filter for 1093290)			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	198	46.0	1.6	2.2
10-20 μ	76	17.7	5.1	6.8
20-50 μ	28	6.5	25.3	34.0
50-75 μ	4	0.9	18.1	24.3
>75 μ	2	0.5	24.4	32.7
Totals	308	71.6	74.6	100
<u>Iron Oxide</u>				
5-10 μ	30	7.0	0.8	29.4
10-20 μ	9	2.1	2.0	70.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	39	9.1	2.8	100
<u>Magnetic Iron</u>				
5-10 μ	14	3.2	0.4	17.9
10-20 μ	8	1.9	1.7	82.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	22	5.1	2.1	100

TABLE D-35

RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) (Continued) 1093291				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	11	2.6	0.2	1.8
10-20 μ	5	1.2	0.6	6.8
20-50 μ	5	1.2	7.5	91.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	21	4.9	8.2	100
<u>Biological</u>				
5-10 μ	14	3.2	0.08	0.6
10-20 μ	10	2.3	0.4	3.7
20-50 μ	4	0.9	2.4	20.1
50-75 μ	3	0.7	9.0	75.5
>75 μ	0	0	0	0
Totals	31	7.2	12.0	100
<u>CaCO₃</u>				
5-10 μ	8	1.9	0.1	50.0
10-20 μ	1	0.2	0.1	50.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	9	2.1	0.2	100
TOTALS (All Categories)	430	100	100	

TABLE D-36

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093288			Total Mass of Particulates (mg):	
			Coors: 277 Agency: 266	
Monitor Location: Beaver Falls			Calculated Mass (mg): 182	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$):	
			Coors: 164 Agency: 137	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	352	62.8	3.1	5.6
10-20 μ	57	10.2	4.0	7.3
20-50 μ	17	3.0	16.2	29.3
50-75 μ	4	0.7	19.1	34.5
>75 μ	1	0.2	12.9	23.2
Totals	431	77.0	55.4	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-36
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093288 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	12	2.1	0.2	10.0
10-20 μ	0	0	0	0
20-50 μ	1	0.2	1.6	90.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	13	2.3	1.8	100
<u>Biological</u>				
5-10 μ	38	6.8	0.2	0.5
10-20 μ	47	8.4	2.2	5.2
20-50 μ	25	4.5	15.9	37.1
50-75 μ	5	0.9	15.9	37.2
>75 μ	1	0.2	8.6	20.0
Totals	116	20.7	42.9	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	560	100	100	

TABLE D-37

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1093289			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Beaver Falls			Calculated Mass (mg): 132	
Date of Sample: 8/28/76 (Cover Filter for 1093288)			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	92	42.0	1.1	1.9
10-20 μ	39	17.8	3.8	6.4
20-50 μ	4	1.8	5.3	9.0
50-75 μ	2	0.9	13.2	22.4
>75 μ	2	0.9	35.6	60.3
Totals	139	63.5	59.0	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-37
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) (Continued) 1093289				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	2	0.9	0.04	0.4
10-20 μ	6	2.7	1.0	9.9
20-50 μ	4	1.8	8.8	89.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	12	5.5	9.8	100
<u>Biological</u>				
5-10 μ	10	4.6	0.08	0.3
10-20 μ	38	17.4	2.5	7.9
20-50 μ	19	8.7	16.7	53.7
50-75 μ	0	0	0	0
>75 μ	1	0.4	11.9	38.1
Totals	68	31.0	31.2	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	219	100	100	

TABLE D-38
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093286			Total Mass of Particulates (mg): Coors: 256 Agency: --	
Monitor Location: Koppel			Calculated Mass (mg): 340	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 133 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	260	56.6	1.2	1.5
10-20 μ	72	15.7	2.7	3.4
20-50 μ	16	3.5	8.2	10.1
50-75 μ	8	1.7	20.5	25.3
>75 μ	7	1.5	48.4	59.7
Totals	363	79.1	81.0	100
<u>Iron Oxide</u>				
5-10 μ	20	4.4	0.3	11.9
10-20 μ	5	1.1	0.6	23.8
20-50 μ	1	0.2	1.7	64.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	26	5.7	2.6	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-38
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093286 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	23	5.0	0.2	2.7
10-20 μ	8	1.7	0.5	7.6
20-50 μ	7	1.5	6.0	89.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	38	8.3	6.7	100
<u>Biological</u>				
5-10 μ	5	1.1	0.02	0.2
10-20 μ	15	3.3	0.4	3.9
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	2	0.4	9.2	95.9
Totals	22	4.8	9.6	100
<u>CaCO₃</u>				
5-10 μ	10	2.2	0.08	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	10	2.2	0.08	100
TOTALS (All Categories)	459	100	100	

TABLE D-39
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093284			Total Mass of Particulates (mg): Coors: 258 Agency: 274	
Monitor Location: Brighton Township			Calculated Mass (mg): 125	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 149 Agency: 151	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	196	46.2	2.5	4.7
10-20 μ	56	13.2	5.8	10.8
20-50 μ	4	0.9	5.6	10.4
50-75 μ	3	0.7	20.9	39.0
>75 μ	1	0.2	18.8	35.0
Totals	260	61.3	53.5	100
<u>Iron Oxide</u>				
5-10 μ	19	4.5	0.8	19.2
10-20 μ	10	2.4	3.4	80.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	29	6.9	4.2	100
<u>Magnetic Iron</u>				
5-10 μ	3	0.7	0.1	11.6
10-20 μ	3	0.7	1.0	88.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	6	1.4	1.1	100

TABLE D-39
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093284 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	53	12.5	1.1	3.0
10-20 μ	39	9.2	6.7	17.6
20-50 μ	13	3.1	30.2	79.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	105	24.8	38.0	100
<u>Biological</u>				
5-10 μ	1	0.2	0.008	0.3
10-20 μ	12	2.8	0.8	30.6
20-50 μ	2	0.5	1.8	69.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	15	3.5	2.7	100
<u>CaCO₃</u>				
5-10 μ	7	1.6	0.2	30.4
10-20 μ	2	0.5	0.4	69.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	9	2.1	0.5	100
TOTALS (All Categories)	424	100	100	

TABLE D-40
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093282			Total Mass of Particulates (mg): Coors: 479 Agency: 501	
Monitor Location: Midland			Calculated Mass (mg): 338	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 268 Agency: 248	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	208	37.3	1.0	1.2
10-20 μ	97	17.4	3.7	4.5
20-50 μ	38	6.8	19.6	24.0
50-75 μ	6	1.1	15.5	19.0
>75 μ	6	1.1	41.7	51.2
Totals	355	63.6	81.5	100
<u>Iron Oxide</u>				
5-10 μ	56	10.0	0.9	11.1
10-20 μ	29	5.2	3.6	46.0
20-50 μ	2	0.4	3.4	42.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	87	15.6	7.9	100
<u>Magnetic Iron</u>				
5-10 μ	21	3.8	0.3	13.4
10-20 μ	17	3.0	2.1	86.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	38	6.8	2.4	100

TABLE D-40
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093282 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	23	4.1	0.2	2.7
10-20 μ	9	1.6	0.6	8.4
20-50 μ	7	1.2	6.0	88.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	39	69.9	6.8	100
<u>Biological</u>				
5-10 μ	6	1.1	0.02	2.5
10-20 μ	2	0.4	0.05	6.7
20-50 μ	2	0.4	0.7	90.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	10	1.8	0.8	100
<u>CaCO₃</u>				
5-10 μ	22	3.9	0.2	28.2
10-20 μ	7	1.2	0.5	71.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	29	5.2	0.7	100
TOTALS (All Categories)	558	100	100	

TABLE D-41
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106306		Total Mass of Particulates (mg): Coors: 91 Agency: 98		
Monitor Location: Elco		Calculated Mass (mg): 107		
Date of Sample: 8/28/76		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 43 Agency: 40		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	136	26.9	2.0	4.2
10-20 μ	52	10.3	6.2	12.8
20-50 μ	25	5.0	40.5	83.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	213	42.2	48.8	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-41
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106306 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	68	13.5	1.7	16.2
10-20 μ	20	4.0	4.0	14.6
20-50 μ	8	1.6	21.6	79.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	96	19.0	27.3	100
<u>Biological</u>				
5-10 μ	112	22.2	1.1	4.7
10-20 μ	68	13.5	5.4	22.8
20-50 μ	16	3.2	17.2	72.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	196	38.8	23.8	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	505	100	100	

TABLE D-42
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093296			Total Mass of Particulates (mg): Coors: 193 Agency: 149	
Monitor Location: Downtown			Calculated Mass (mg): 246	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 101 Agency: 70	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	153	42.7	1.0	1.5
10-20 μ	15	4.2	0.8	1.2
20-50 μ	9	2.5	6.4	9.8
50-75 μ	8	2.2	28.3	43.5
>75 μ	3	0.8	28.6	43.9
Totals	188	52.5	65.0	100
<u>Iron Oxide</u>				
5-10 μ	4	1.1	0.08	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	4	1.1	0.08	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-42
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093296 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	13	3.6	0.1	2.8
10-20 μ	16	4.5	1.4	27.5
20-50 μ	3	0.8	3.5	69.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	32	8.9	5.1	100
<u>Biological</u>				
5-10 μ	121	33.8	0.5	1.8
10-20 μ	5	1.4	0.2	0.6
20-50 μ	3	0.8	1.4	4.7
50-75 μ	1	0.3	2.4	7.9
>75 μ	4	1.1	25.4	85.0
Totals	134	37.4	29.8	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	358	100	100	

TABLE D-43
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093253			Total Mass of Particulates (mg): Coors: 233 Agency: --	
Monitor Location: Central Lab			Calculated Mass (mg): 156	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 119 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	262	49.3	2.7	3.2
10-20 μ	73	13.7	6.0	7.1
20-50 μ	18	3.4	20.1	23.6
50-75 μ	2	0.4	11.2	13.1
>75 μ	3	0.6	45.2	53.0
Totals	358	67.4	85.2	100
<u>Iron Oxide</u>				
5-10 μ	44	8.3	1.5	52.4
10-20 μ	5	0.9	1.3	47.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	49	9.2	2.8	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-43
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093253 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	26	4.9	0.4	5.2
10-20 μ	19	3.6	2.6	30.2
20-50 μ	3	0.6	5.6	64.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	48	9.0	8.6	100
<u>Biological</u>				
5-10 μ	40	7.5	0.3	11.6
10-20 μ	11	2.1	0.6	25.6
20-50 μ	2	0.4	1.5	62.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	53	10.0	2.4	100
<u>CaCO₃</u>				
5-10 μ	19	3.6	0.4	37.2
10-20 μ	4	0.8	0.6	62.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	23	4.3	0.9	100
TOTALS (All Categories)	531	100	100	

TABLE D-44

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106308			Total Mass of Particulates (mg):	
			Coors: 151 Agency: 143	
Monitor Location: Hazelwood			Calculated Mass (mg): 87	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$):	
			Coors: 71 Agency: 76	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	191	47.0	3.5	7.3
10-20 μ	48	11.8	7.1	14.6
20-50 μ	9	2.2	18.0	37.0
50-75 μ	2	0.5	20.0	41.1
>75 μ	0	0	0	0
Totals	250	61.6	48.6	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-44

RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106308 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	7	1.7	0.2	46.7
10-20 μ	1	0.2	0.2	53.3
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	8	2.0	0.5	100
<u>Biological</u>				
5-10 μ	94	23.2	1.2	2.3
10-20 μ	24	5.9	2.4	4.7
20-50 μ	8	2.0	10.6	21.3
50-75 μ	0	0	0	0
>75 μ	2	0.5	35.9	71.7
Totals	128	31.5	50.0	100
<u>CaCO₃</u>				
5-10 μ	19	4.7	0.6	70.4
10-20 μ	1	0.2	0.3	29.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	20	4.9	0.9	100
TOTALS (All Categories)	406	100	100	

TABLE D-45

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1106309			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Hazelwood			Calculated Mass (mg): 70	
Date of Sample: 8/28/76 (Cover Filter for 1106308)			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	77	38.9	1.8	2.8
10-20 μ	21	10.6	3.8	6.1
20-50 μ	18	9.1	44.7	71.2
50-75 μ	1	0.5	12.4	19.8
>75 μ	0	0	0	0
Totals	117	59.1	62.8	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-45
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) (Continued) 1106309				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	6	3.0	0.2	2.0
10-20 μ	10	5.1	3.1	26.5
20-50 μ	2	1.0	8.3	71.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	18	9.1	11.6	100
<u>Biological</u>				
5-10 μ	36	18.2	0.6	2.2
10-20 μ	9	4.5	1.1	4.4
20-50 μ	4	2.0	6.6	26.6
50-75 μ	2	2.0	16.6	66.7
>75 μ	0	0	0	0
Totals	51	26.7	24.8	100
<u>CaCO₃</u>				
5-10 μ	11	5.6	0.5	57.9
10-20 μ	1	0.5	0.3	42.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	12	6.1	0.8	100
TOTALS (All Categories)	198	100	100	

TABLE D-46
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093298			Total Mass of Particulates (mg): Coors: 289 Agency: 214	
Monitor Location: North Braddock			Calculated Mass (mg): 113	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 153 Agency: 108	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	283	56.6	4.0	7.5
10-20 μ	50	10.0	5.7	10.6
20-50 μ	15	3.0	23.1	43.1
50-75 μ	0	0	0	0
>75 μ	1	0.2	20.8	38.7
Totals	349	69.8	53.6	100
<u>Iron Oxide</u>				
5-10 μ	51	10.2	2.4	47.7
10-20 μ	7	1.4	2.6	52.3
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	58	11.6	5.0	100
<u>Magnetic Iron</u>				
5-10 μ	22	4.4	1.0	40.8
10-20 μ	4	0.8	1.5	59.3
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	26	5.2	2.5	100

TABLE D-46
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093298 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	6	1.2	0.1	1.1
10-20 μ	11	2.2	2.1	16.7
20-50 μ	4	0.8	10.3	82.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	21	4.2	12.5	100
<u>Biological</u>				
5-10 μ	8	1.6	0.08	0.3
10-20 μ	0	0	0	0
20-50 μ	6	1.2	6.2	24.4
50-75 μ	1	0.2	5.1	20.4
>75 μ	1	0.2	13.8	54.9
Totals	16	3.2	25.2	100
<u>CaCO₃</u>				
5-10 μ	28	5.6	0.7	63.6
10-20 μ	2	0.4	0.4	36.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	30	6.0	1.1	100
TOTALS (All Categories)	500	100	100	

TABLE D-47
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1093299		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: North Braddock		Calculated Mass (mg): 292		
Date of Sample: 8/28/76 (Cover Filter for 1093298)		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	279	52.7	1.5	2.8
10-20 μ	67	12.7	3.0	5.4
20-50 μ	13	2.4	7.8	14.3
50-75 μ	6	1.1	17.9	33.0
>75 μ	3	0.6	24.1	44.4
Totals	368	69.6	54.3	100
<u>Iron Oxide</u>				
5-10 μ	35	6.6	0.6	42.2
10-20 μ	6	1.1	0.9	57.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	41	7.7	1.5	100
<u>Magnetic Iron</u>				
5-10 μ	24	4.5	0.4	5.7
10-20 μ	23	4.3	3.3	43.4
20-50 μ	2	0.4	3.9	51.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	49	9.3	7.6	100

TABLE D-47

RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) (Continued) 1093299				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	9	1.7	0.08	0.3
10-20 μ	3	0.6	0.2	0.9
20-50 μ	6	1.1	6.0	24.2
50-75 μ	1	0.2	5.0	20.2
>75 μ	1	0.2	13.4	54.4
Totals	20	3.8	24.6	100
<u>Biological</u>				
5-10 μ	12	2.3	0.04	0.4
10-20 μ	15	2.8	0.4	3.9
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	2	0.4	10.7	95.7
Totals	29	5.5	11.2	100
<u>CaCO₃</u>				
5-10 μ	15	2.8	0.1	21.1
10-20 μ	7	1.3	0.6	78.9
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	22	4.2	0.7	100
TOTALS (All Categories)	529	100	100	

TABLE D-48
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106300			Total Mass of Particulates (mg): Coors: 68 Agency: --	
Monitor Location: Duquesne II			Calculated Mass (mg): 10	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	18	43.9	2.8	12.0
10-20 μ	3	7.3	3.7	16.0
20-50 μ	1	2.4	16.6	72.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	22	53.6	23.0	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-48
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106300 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	3	7.3	0.8	27.3
10-20 μ	1	2.4	2.0	72.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	4	9.8	2.8	100
<u>Biological</u>				
5-10 μ	4	9.8	0.4	0.6
10-20 μ	9	22.0	7.4	9.9
20-50 μ	1	2.4	11.0	14.9
50-75 μ	1	2.4	55.3	74.6
>75 μ	0	0	0	0
Totals	15	36.6	74.2	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	41	100	100	

TABLE D-49

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1106301		Total Mass of Particulates (mg): Coors: — Agency: --		
Monitor Location: Duquesne II		Calculated Mass (mg): 30		
Date of Sample: 8/28/76 (Cover Filter for 1106300)		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	3	11.5	0.2	0.2
10-20 μ	5	19.2	2.2	2.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	1	3.8	79.1	97.1
Totals	9	34.6	81.5	97.1
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-49
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter)(Continued) 1106301				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	2	7.7	0.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	2	7.7	0.2	100
<u>Biological</u>				
5-10 μ	2	7.7	0.07	0.4
10-20 μ	9	34.6	2.6	14.2
20-50 μ	4	15.4	15.7	85.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	15	57.7	18.3	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	26	100	100	

TABLE D-50
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106302		Total Mass of Particulates (mg): Coors: 207 Agency: 271		
Monitor Location: Liberty Boro		Calculated Mass (mg): 209		
Date of Sample: 8/28/76		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 130 Agency: 136		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	276	57.0	2.1	2.2
10-20 μ	118	24.4	7.3	7.7
20-50 μ	20	4.1	16.6	17.6
50-75 μ	3	0.6	12.5	13.2
>75 μ	5	1.0	56.1	59.3
Totals	422	87.2	94.6	100
<u>Iron Oxide</u>				
5-10 μ	12	2.5	0.3	23.1
10-20 μ	5	1.0	1.0	76.9
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	17	3.5	1.3	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-50
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106302 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	9	1.8	0.1	5.7
10-20 μ	5	1.0	0.5	25.4
20-50 μ	1	0.2	1.4	68.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	15	3.1	2.0	100
<u>Biological</u>				
5-10 μ	5	1.0	0.02	1.5
10-20 μ	14	2.9	0.6	33.6
20-50 μ	2	0.4	1.1	64.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	21	4.3	1.7	100
<u>CaCO₃</u>				
5-10 μ	7	1.4	0.1	30.4
10-20 μ	2	0.4	0.2	69.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	9	1.8	0.3	100
TOTALS (All Categories)	484	100	100	

TABLE D-51

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1106303		Total Mass of Particulates (mg): Coors: — Agency: —		
Monitor Location: Liberty Boro		Calculated Mass (mg): 17		
Date of Sample: 8/28/76 (Cover Filter for 1106302)		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	191	61.0	17.6	19.7
10-20 μ	70	22.4	51.7	57.9
20-50 μ	2	0.6	20.0	22.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	263	84.0	89.3	100
<u>Iron Oxide</u>				
5-10 μ	12	3.8	3.6	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	12	3.8	3.6	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-51
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) (Continued) 1106303				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	11	3.5	1.7	57.9
10-20 μ	1	0.3	1.2	42.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	12	3.8	2.9	100
<u>Biological</u>				
5-10 μ	14	4.5	0.9	30.4
10-20 μ	4	1.3	2.0	69.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	18	5.8	2.8	100
<u>CaCO₃</u>				
5-10 μ	8	2.6	1.3	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	8	2.6	1.3	100
TOTALS (All Categories)	313	100	100	

TABLE D-52
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106304			Total Mass of Particulates (mg): Coors: 147 Agency: 215	
Monitor Location: Clairton			Calculated Mass (mg): 126	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 61 Agency: 115	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	183	52.4	2.3	4.8
10-20 μ	44	12.6	4.5	9.2
20-50 μ	12	3.4	16.6	33.9
50-75 μ	1	0.3	6.9	14.1
>75 μ	1	0.3	18.6	38.0
Totals	241	69.0	49.0	100
<u>Iron Oxide</u>				
5-10 μ	16	4.6	0.7	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	16	4.6	0.7	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-52
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106304 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	9	2.6	0.2	1.3
10-20 μ	17	4.9	2.9	19.8
20-50 μ	5	1.4	11.5	78.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	31	8.9	14.6	100
<u>Biological</u>				
5-10 μ	20	5.7	0.2	0.5
10-20 μ	24	6.9	1.6	4.6
20-50 μ	3	0.8	2.8	7.8
50-75 μ	4	1.1	18.5	52.0
>75 μ	1	0.3	12.4	35.0
Totals	52	14.9	35.5	100
<u>CaCO₃</u>				
5-10 μ	9	2.6	0.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	9	2.6	0.2	100
TOTALS (All Categories)	349	100	100	

TABLE D-53
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093280			Total Mass of Particulates (mg): Coors: 210 Agency: 202	
Monitor Location: Airport			Calculated Mass (mg): 168	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 110 Agency: 97	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	145	36.6	1.4	8.0
10-20 μ	47	11.9	3.6	20.7
20-50 μ	12	3.0	12.4	71.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	204	51.5	17.4	100
<u>Iron Oxide</u>				
5-10 μ	24	6.1	0.8	42.8
10-20 μ	4	1.0	1.0	57.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	28	7.1	1.8	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-53
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093280 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	46	11.6	0.7	1.4
10-20 μ	18	4.5	2.3	4.5
20-50 μ	13	3.3	22.4	43.7
50-75 μ	3	0.8	25.9	50.4
>75 μ	0	0	0	0
Totals	80	20.2	51.4	100
<u>Biological</u>				
5-10 μ	10	2.5	0.06	0.2
10-20 μ	30	7.6	1.5	5.2
20-50 μ	40	10.1	27.6	94.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	80	20.2	29.2	100
<u>CaCO₃</u>				
5-10 μ	3	0.8	0.05	27.3
10-20 μ	1	0.2	0.1	72.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	4	1.0	0.2	100
TOTALS (All Categories)	396	100	100	

TABLE D-54
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093278			Total Mass of Particulates (mg): Coors: 174 Agency: 120	
Monitor Location: South Fayette			Calculated Mass (mg): 80	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 91 Agency: 59	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	83	27.1	1.7	11.9
10-20 μ	23	7.5	3.7	26.3
20-50 μ	4	1.3	8.7	61.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	110	35.9	14.1	100
<u>Iron Oxide</u>				
5-10 μ	21	6.9	1.4	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	21	6.9	1.4	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-54
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093278 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	10	3.3	0.3	0.7
10-20 μ	10	3.3	2.7	5.7
20-50 μ	12	3.9	43.7	93.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	32	10.4	46.7	100
<u>Biological</u>				
5-10 μ	41	13.4	0.6	1.5
10-20 μ	74	24.2	8.0	22.0
20-50 μ	4	1.3	5.8	16.1
50-75 μ	3	1.0	21.9	60.4
>75 μ	0	0	0	0
Totals	122	39.9	36.2	100
<u>CaCO₃</u>				
5-10 μ	18	5.9	0.6	42.8
10-20 μ	3	1.0	0.9	57.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	21	6.9	1.5	100
TOTALS (All Categories)	306	100	100	

TABLE D-55
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093271			Total Mass of Particulates (mg): Coors: 386 Agency: 355	
Monitor Location: Baden			Calculated Mass (mg): 561	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 207 Agency: 185	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	281	46.8	0.8	1.9
10-20 μ	121	20.2	2.8	6.6
20-50 μ	26	4.3	8.1	19.3
50-75 μ	6	1.0	9.3	22.2
>75 μ	5	0.8	20.9	49.9
Totals	439	73.2	41.9	100
<u>Iron Oxide</u>				
5-10 μ	37	6.2	0.3	22.4
10-20 μ	16	2.7	1.2	77.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	53	8.8	1.5	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-55
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093271 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	29	4.8	0.1	8.1
10-20 μ	14	2.3	0.5	31.3
20-50 μ	2	0.3	1.0	60.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	45	7.5	1.7	100
<u>Biological</u>				
5-10 μ	5	0.8	0.01	0.2
10-20 μ	29	4.8	0.4	0.8
20-50 μ	2	0.3	0.4	0.8
50-75 μ	1	0.2	1.0	1.9
>75 μ	19	3.2	52.9	96.5
Totals	56	9.3	54.8	100
<u>CaCO₃</u>				
5-10 μ	7	1.2	0.04	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	7	1.2	0.04	100
TOTALS (All Categories)	600	100	100	

TABLE D-56
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093269			Total Mass of Particulates (mg): Coors: 387 Agency: 339	
Monitor Location: Beaver Falls			Calculated Mass (mg): 271	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 232 Agency: 168	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	277	54.1	1.6	2.7
10-20 μ	65	12.7	3.1	5.1
20-50 μ	17	3.3	10.9	17.9
50-75 μ	6	1.2	19.3	31.7
>75 μ	3	0.6	26.0	42.6
Totals	368	71.9	61.0	100
<u>Iron Oxide</u>				
5-10 μ	21	4.1	0.4	20.8
10-20 μ	10	2.0	1.6	79.2
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	31	6.0	2.0	100
<u>Magnetic Iron</u>				
5-10 μ	1	0.2	0.02	0.5
10-20 μ	12	2.3	1.9	46.8
20-50 μ	1	0.2	2.1	52.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	14	2.7	4.0	100

TABLE D-56
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093269 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	14	2.7	0.1	1.6
10-20 μ	16	3.1	1.3	14.2
20-50 μ	2	0.4	2.1	24.0
50-75 μ	1	0.2	5.4	60.2
>75 μ	0	0	0	0
Totals	33	6.4	8.9	100
<u>Biological</u>				
5-10 μ	10	2.0	0.04	0.2
10-20 μ	27	5.3	0.8	3.8
20-50 μ	7	1.4	3.0	13.3
50-75 μ	6	1.2	12.9	57.1
>75 μ	1	0.2	5.8	25.6
Totals	51	10.0	22.6	100
<u>CaCO₃</u>				
5-10 μ	11	2.1	0.1	7.7
10-20 μ	3	0.6	0.2	16.8
20-50 μ	1	0.2	1.2	75.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	15	2.9	1.5	100
TOTALS (All Categories)	512	100	100	

TABLE D-57
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093267		Total Mass of Particulates (mg): Coors: 296 Agency: 330		
Monitor Location: Koppel		Calculated Mass (mg): 239		
Date of Sample: 9/9/76		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 156 Agency: 174		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	292	59.8	2.0	2.6
10-20 μ	71	14.5	3.8	5.0
20-50 μ	21	4.3	15.3	20.1
50-75 μ	7	1.4	25.5	33.6
>75 μ	3	0.6	29.5	38.7
Totals	394	80.7	76.1	100
<u>Iron Oxide</u>				
5-10 μ	15	3.1	0.3	65.2
10-20 μ	1	0.2	0.2	34.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	16	3.3	0.5	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-57
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093267 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	25	5.1	0.3	1.9
10-20 μ	14	2.9	1.2	8.4
20-50 μ	6	1.2	7.3	48.9
50-75 μ	1	0.2	6.1	40.8
>75 μ	0	0	0	0
Totals	46	9.4	14.9	100
<u>Biological</u>				
5-10 μ	18	3.7	0.08	1.0
10-20 μ	5	1.0	0.2	2.2
20-50 μ	3	0.6	1.4	17.6
50-75 μ	0	0	0	0
>75 μ	1	0.2	6.5	79.2
Totals	27	5.5	8.3	100
<u>CaCO₃</u>				
5-10 μ	3	0.6	0.04	15.8
10-20 μ	2	0.4	0.2	84.2
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	5	1.0	0.2	100
TOTALS (All Categories)	488	100	100	

TABLE D-58
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1110928			Total Mass of Particulates (mg): Coors: 338 Agency: 287	
Monitor Location: Brighton Township			Calculated Mass (mg): 341	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 178 Agency: 160	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	55	49.1	28.1	84.6
50-75 μ	2	1.8	5.1	15.4
>75 μ	0	0	0	0
Totals	57	50.9	33.2	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-58
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1110928 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	47	42.0	40.0	61.0
50-75 μ	6	5.4	25.6	39.0
>75 μ	0	0	0	0
Totals	53	47.3	65.5	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	1	0.9	0.3	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1	0.9	0.3	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	1	0.9	0.9	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1	0.9	0.9	100
TOTALS (All Categories)	112	100	100	

TABLE D-59
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1110929		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Brighton Township		Calculated Mass (mg): 180		
Date of Sample: 9/9/76 (Cover Filter to 1110928)		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	14	36.8	13.5	37.4
50-75 μ	2	5.3	9.6	26.7
>75 μ	1	2.6	13.0	35.9
Totals	17	44.7	36.2	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-59
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) 1110929 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	15	39.5	24.1	39.0
50-75 μ	2	5.3	16.1	26.0
>75 μ	1	2.6	21.7	35.0
Totals	18	47.4	61.9	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	3	7.9	1.9	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	3	7.9	1.9	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	38	100	100	

TABLE D-60
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093292			Total Mass of Particulates (mg): Coors: 667 Agency: 688	
Monitor Location: Midland			Calculated Mass (mg): 473	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 404 Agency: 341	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	56	55.4	20.6	39.0
50-75 μ	4	4.0	7.4	14.0
>75 μ	5	5.0	24.8	47.0
Totals	65	64.4	52.8	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	10	9.9	12.0	40.0
50-75 μ	3	3.0	18.1	60.0
>75 μ	0	0	0	0
Totals	13	12.9	30.1	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-60
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093292 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	15	14.8	9.2	75.0
50-75 μ	1	1.0	3.1	25.0
>75 μ	0	0	0	0
Totals	16	15.8	12.3	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	6	5.9	1.5	30.8
50-75 μ	0	0	0	0
>75 μ	1	1.0	3.3	69.2
Totals	7	6.9	4.8	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	101	100	100	

TABLE D-61
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1093293		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Midland		Calculated Mass (mg): 328		
Date of Sample: 9/9/76 (Cover Filter to 1093292)		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	42	61.8	22.3	80.8
50-75 μ	2	2.9	5.3	19.2
>75 μ	0	0	0	0
Totals	44	64.7	27.6	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-61
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) 1093293 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	7	10.3	6.2	34.2
50-75 μ	0	0	0	0
>75 μ	1	1.5	11.9	65.8
Totals	8	11.8	18.1	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	5	7.4	1.8	3.3
50-75 μ	0	0	0	0
>75 μ	11	16.2	52.5	96.7
Totals	16	23.5	54.2	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	68	100	100	

TABLE D-62

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106379			Total Mass of Particulates (mg): Coors: 187 Agency: --	
Monitor Location: Elco			Calculated Mass (mg): 229	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 84 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	25	39.1	19.0	50.0
50-75 μ	5	7.8	19.0	50.0
>75 μ	0	0	0	0
Totals	30	46.9	38.0	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	3	4.7	7.4	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	3	4.7	7.4	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-62
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106379 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	14	21.9	17.7	58.3
50-75 μ	2	3.1	12.7	41.7
>75 μ	0	0	0	0
Totals	16	25.0	30.4	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	9	14.1	4.6	19.0
50-75 μ	5	7.8	12.7	52.7
>75 μ	1	1.6	6.8	28.4
Totals	15	23.4	24.1	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	64	100	100	

TABLE D-63
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106323			Total Mass of Particulates (mg): Coors: 5.7 Agency: 337	
Monitor Location: Downtown			Calculated Mass (mg): 23.7	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: 159	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	17	43.6	1.2	2.1
10-20 μ	3	7.7	1.6	3.0
20-50 μ	2	5.1	14.7	27.1
50-75 μ	1	2.6	36.7	67.8
>75 μ	0	0	0	0
Totals	23	59.0	54.2	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	1	2.6	1.8	100
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1	2.6	1.8	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-63
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106323 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	6	15.4	0.7	4.6
10-20 μ	2	5.1	1.8	12.3
20-50 μ	1	2.6	12.2	83.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	9	23.1	14.7	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	6	15.4	29.3	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	6	15.4	29.3	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	39	100	100	

TABLE D-64
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106327			Total Mass of Particulates (mg): Coors: 429 Agency: 428	
Monitor Location: Central Lab			Calculated Mass (mg): 203	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 219 Agency: 235	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	326	58.1	2.6	3.3
10-20 μ	107	19.1	6.8	8.6
20-50 μ	21	3.7	18.0	22.7
50-75 μ	4	0.7	17.2	21.7
>75 μ	3	0.5	34.7	43.8
Totals	461	82.2	79.2	100
<u>Iron Oxide</u>				
5-10 μ	23	4.1	0.6	29.1
10-20 μ	7	1.2	1.4	70.9
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	30	5.3	2.0	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-64
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106327 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	13	2.3	0.2	1.2
10-20 μ	12	2.1	1.3	8.9
20-50 μ	9	1.6	12.9	89.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	34	6.1	14.3	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	12	2.1	0.5	12.9
20-50 μ	6	1.1	3.4	87.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	18	3.2	3.9	100
<u>CaCO₃</u>				
5-10 μ	16	2.8	0.2	50.0
10-20 μ	2	0.4	0.2	50.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	18	3.2	3.9	100
TOTALS (All Categories)	561	100	100	

TABLE D-65
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1106328			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Central Lab			Calculated Mass (mg): 357	
Date of Sample: 9/9/76 (Cover Filter for 1106327)			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	264	56.5	1.2	1.6
10-20 μ	76	16.3	2.7	3.6
20-50 μ	25	5.4	12.2	15.9
50-75 μ	6	1.3	14.6	19.1
>75 μ	7	1.5	46.0	59.9
Totals	378	80.9	76.8	100
<u>Iron Oxide</u>				
5-10 μ	12	2.6	0.2	9.1
10-20 μ	15	3.2	1.8	90.9
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	27	5.8	1.9	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-65
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) 1106328 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	21	4.5	0.2	1.1
10-20 μ	6	1.3	0.4	2.4
20-50 μ	4	0.8	3.2	22.1
50-75 μ	0	0	0	0
>75 μ	1	0.2	11.0	74.4
Totals	32	6.8	14.7	100
<u>Biological</u>				
5-10 μ	1	0.2	0.003	0.05
10-20 μ	8	1.7	0.2	3.0
20-50 μ	4	0.8	1.3	20.4
50-75 μ	3	0.6	4.9	76.5
>75 μ	0	0	0	0
Totals	16	3.4	6.4	100
<u>CaCO₃</u>				
5-10 μ	14	3.0	0.1	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	14	3.0	0.1	100
TOTALS (All Categories)	467	100	100	

TABLE D-66
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106353			Total Mass of Particulates (mg): Coors: 280 Agency: 238	
Monitor Location: Hazelwood			Calculated Mass (mg): 232	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 137 Agency: 140	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	424	55.8	2.9	4.3
10-20 μ	128	16.8	7.1	10.4
20-50 μ	14	1.8	10.5	15.3
50-75 μ	2	0.3	7.5	11.0
>75 μ	4	0.5	40.5	59.0
Totals	572	75.3	68.6	100
<u>Iron Oxide</u>				
5-10 μ	52	6.8	1.2	10.6
10-20 μ	14	1.8	2.5	22.9
20-50 μ	3	0.4	7.4	66.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	69	9.1	11.1	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-66
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106353 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	56	7.4	0.6	3.8
10-20 μ	14	1.8	1.3	7.6
20-50 μ	2	0.3	2.5	14.7
50-75 μ	2	0.3	12.5	73.8
>75 μ	0	0	0	0
Totals	74	9.7	17.0	100
<u>Biological</u>				
5-10 μ	16	2.1	0.07	2.6
10-20 μ	6	0.8	0.2	7.9
20-50 μ	0	0	0	0
50-75 μ	1	0.1	2.5	89.4
>75 μ	0	0	0	0
Totals	23	3.0	2.8	100
<u>CaCO₃</u>				
5-10 μ	20	2.6	0.2	55.6
10-20 μ	2	0.3	0.4	44.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	22	2.9	0.4	100
TOTALS (All Categories)	760	100	100	

TABLE D-67
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106386			Total Mass of Particulates (mg): Coors: 474 Agency: 532	
Monitor Location: North Braddock			Calculated Mass (mg): 304	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 248 Agency: 272	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	349	54.0	1.8	2.1
10-20 μ	70	10.8	3.0	3.3
20-50 μ	15	2.3	8.6	9.6
50-75 μ	5	0.8	14.3	16.0
>75 μ	8	1.2	61.6	69.0
Totals	447	69.2	89.4	100
<u>Iron Oxide</u>				
5-10 μ	79	12.2	1.4	55.2
10-20 μ	8	1.2	1.1	44.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	87	13.5	2.5	100
<u>Magnetic Iron</u>				
5-10 μ	9	1.4	0.2	36.0
10-20 μ	2	0.3	0.3	64.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	1.7	0.4	100

TABLE D-67
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106386 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	40	6.2	0.4	4.9
10-20 μ	15	2.3	1.0	14.8
20-50 μ	6	0.9	5.7	80.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	61	9.4	7.1	100
<u>Biological</u>				
5-10 μ	7	1.1	0.02	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	7	1.1	0.02	100
<u>CaCO₃</u>				
5-10 μ	29	4.5	0.3	47.5
10-20 μ	4	0.6	0.3	52.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	33	5.1	0.6	100
TOTALS (All Categories)	646	100	100	

TABLE D-68

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106383			Total Mass of Particulates (mg): Coors: 423 Agency: 524	
Monitor Location: Duquesne II			Calculated Mass (mg): 195	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 242 Agency: 260	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	312	52.3	2.6	3.8
10-20 μ	93	15.6	6.2	9.0
20-50 μ	35	5.9	31.3	45.6
50-75 μ	1	0.2	4.5	6.5
>75 μ	2	0.3	24.1	35.1
Totals	443	74.2	68.6	100
<u>Iron Oxide</u>				
5-10 μ	66	11.0	1.8	40.7
10-20 μ	12	2.0	2.6	59.2
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	78	13.1	4.4	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-68
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106383 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	30	5.0	0.4	18.1
10-20 μ	17	2.8	1.9	81.9
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	47	2.9	2.3	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	7	1.2	0.3	1.3
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	3	0.5	24.1	98.7
Totals	19	1.7	24.4	100
<u>CaCO₃</u>				
5-10 μ	19	3.2	0.3	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	19	3.2	0.3	100
TOTALS (All Categories)	597	100	100	

TABLE D-69
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106388			Total Mass of Particulates (mg): Coors: 470 Agency: 582	
Monitor Location: Liberty Boro			Calculated Mass (mg): 607	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 289 Agency: 315	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	84	70.0	24.1	25.4
50-75 μ	17	14.2	24.4	25.7
>75 μ	12	10.0	46.4	48.9
Totals	113	94.2	94.9	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	5	4.2	4.7	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	5	4.2	4.7	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-69
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106388 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	2	1.7	0.4	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	2	1.7	0.4	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	120	100	100	

TABLE D-70
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) (Filter Redone) 1106387		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Liberty Boro		Calculated Mass (mg): 246		
Date of Sample: 9/9/76 (Cover Filter for 1106388)		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	239	46.0	1.6	2.3
10-20 μ	78	15.0	4.1	6.0
20-50 μ	16	3.1	11.3	16.6
50-75 μ	1	0.2	3.5	5.2
>75 μ	5	1.0	47.6	69.9
Totals	339	65.3	68.2	100
<u>Iron Oxide</u>				
5-10 μ	53	10.2	1.1	15.2
10-20 μ	10	1.9	1.7	22.9
20-50 μ	2	0.4	4.6	61.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	65	12.5	7.5	100
<u>Magnetic Iron</u>				
5-10 μ	14	2.7	0.3	20.0
10-20 μ	7	1.3	1.2	80.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	21	4.0	1.5	100

TABLE D-70
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) 1106387 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	20	3.8	0.2	2.4
10-20 μ	6	1.2	0.5	5.8
20-50 μ	7	1.3	8.2	91.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	33	6.4	9.0	100
<u>Biological</u>				
5-10 μ	3	0.6	0.01	0.1
10-20 μ	4	0.8	0.1	1.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	2	0.4	12.7	98.8
Totals	9	1.7	12.9	100
<u>CaCO₃</u>				
5-10 μ	47	9.0	0.6	54.0
10-20 μ	5	1.0	0.5	46.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	52	10.0	1.0	100
TOTALS (All Categories)	519	100	100	

TABLE D-71
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106381			Total Mass of Particulates (mg): Coors: 293 Agency: 330	
Monitor Location: Clairton			Calculated Mass (mg): 295	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 127 Agency: 178	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	66	72.5	38.9	53.7
50-75 μ	6	6.6	17.7	24.4
>75 μ	2	2.2	15.9	21.9
Totals	74	81.3	72.6	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	3	3.3	5.8	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	3	3.3	5.8	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-71
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106381 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	9	9.9	8.8	64.3
50-75 μ	1	1.1	4.9	35.7
>75 μ	0	0	0	0
Totals	10	11.0	13.8	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	4	4.4	7.9	100
>75 μ	0	0	0	0
Totals	4	4.4	7.9	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	91	100	100	

TABLE D-72
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: (Cover Filter) 1106382			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Clairton			Calculated Mass (mg): 175	
Date of Sample: 9/9/76 (Cover Filter to 1106381)			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	19	48.7	18.9	34.0
50-75 μ	2	5.1	10.0	17.9
>75 μ	2	5.1	26.8	48.2
Totals	23	59.0	55.7	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	2	5.1	6.5	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	2	5.1	6.5	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-72
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: (Cover Filter) 1106382 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	5	12.8	8.3	33.3
50-75 μ	2	5.1	16.6	66.7
>75 μ	0	0	0	0
Totals	7	17.9	24.9	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	6	15.4	4.0	30.8
50-75 μ	0	0	0	0
>75 μ	1	2.6	8.9	69.2
Totals	7	17.9	12.9	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	39	100	100	

TABLE D-73
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093294			Total Mass of Particulates (mg): Coors: 177 Agency: 294	
Monitor Location: Airport			Calculated Mass (mg): 213	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 207 Agency: 147	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	403	65.8	3.0	6.6
10-20 μ	61	10.0	3.7	8.0
20-50 μ	25	4.1	20.4	44.1
50-75 μ	2	0.3	8.2	17.6
>75 μ	1	0.2	11.0	23.8
Totals	492	80.4	46.4	100
<u>Iron Oxide</u>				
5-10 μ	27	4.4	0.7	25.2
10-20 μ	10	1.6	2.0	74.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	37	6.0	2.6	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-73
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093294 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	21	3.4	0.2	5.9
10-20 μ	1	0.2	0.1	2.3
20-50 μ	3	0.5	4.1	91.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	25	4.1	4.4	100
<u>Biological</u>				
5-10 μ	12	2.0	0.06	0.1
10-20 μ	4	0.6	0.2	0.3
20-50 μ	11	1.8	6.0	13.0
50-75 μ	12	2.0	32.7	70.7
>75 μ	1	0.2	7.3	15.9
Totals	40	6.5	46.3	100
<u>CaCO₃</u>				
5-10 μ	18	2.9	0.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	18	2.9	0.2	100
TOTALS (All Categories)	612	100	100	

TABLE D-74
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106310			Total Mass of Particulates (mg): Coors: 278 Agency: 214	
Monitor Location: South Fayette			Calculated Mass (mg): 571	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 145 Agency: 107	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	139	34.1	0.4	1.6
10-20 μ	30	7.4	0.7	2.7
20-50 μ	16	3.9	4.9	19.6
50-75 μ	7	1.7	10.7	43.0
>75 μ	2	0.5	8.2	33.1
Totals	194	47.5	24.8	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-74
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106310 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	8	2.0	0.04	5.7
10-20 μ	3	0.7	0.1	17.1
20-50 μ	1	0.2	0.5	77.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	12	2.9	0.6	100
<u>Biological</u>				
5-10 μ	138	33.8	0.2	0.3
10-20 μ	14	3.4	0.2	0.3
20-50 μ	16	3.9	3.2	4.4
50-75 μ	13	3.2	13.2	17.8
>75 μ	21	5.1	57.5	77.2
Totals	202	49.5	74.5	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	408	100	100	

TABLE D-75

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093227 & 1093228 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 149 Agency: 166	
Monitor Location: Midland			Calculated Mass (mg): 473	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 83 Agency: 80	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	367	51.2	1.2	3.2
10-20 μ	105	14.6	2.9	7.3
20-50 μ	26	3.6	9.6	24.5
50-75 μ	3	0.4	5.5	14.2
>75 μ	4	0.6	19.8	50.8
Totals	505	70.4	39.1	100
<u>Iron Oxide</u>				
5-10 μ	20	2.8	0.2	9.4
10-20 μ	24	3.3	2.1	90.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	44	6.1	2.4	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-75
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093227 & 1093228 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	35	4.9	0.2	1.0
10-20 μ	23	3.2	1.0	5.5
20-50 μ	19	2.6	11.7	61.2
50-75 μ	2	0.3	6.1	32.2
>75 μ	0	0	0	0
Totals	79	11.0	19.0	100
<u>Biological</u>				
5-10 μ	29	4.0	0.06	0.2
10-20 μ	12	1.7	0.2	0.6
20-50 μ	4	0.6	1.0	2.5
50-75 μ	4	0.6	4.9	12.5
>75 μ	10	1.4	33.1	84.2
Totals	59	8.2	39.3	100
<u>CaCO₃</u>				
5-10 μ	29	4.0	0.2	78.4
10-20 μ	1	0.1	0.05	21.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	30	4.2	0.2	100
TOTALS (All Categories)	717	100	100	

TABLE D-76

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093229 & 1093230 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 149 Agency: 151	
Monitor Location: Airport			Calculated Mass (mg): 194	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 76 Agency: 72	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	347	53.6	2.9	6.9
10-20 μ	85	13.1	5.6	13.5
20-50 μ	17	2.6	15.3	36.6
50-75 μ	4	0.6	18.0	43.0
>75 μ	0	0	0	0
Totals	453	70.0	41.8	100
<u>Iron Oxide</u>				
5-10 μ	30	4.6	0.8	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	30	4.6	0.8	100
<u>Magnetic Iron</u>				
5-10 μ	9	1.4	0.2	36.0
10-20 μ	2	0.3	0.4	64.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	11	1.7	0.6	100

TABLE D-76
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093229 & 1093230 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	44	6.8	0.6	2.0
10-20 μ	13	2.0	1.4	4.7
20-50 μ	9	1.4	13.5	44.2
50-75 μ	2	0.3	15.0	49.1
>75 μ	0	0	0	0
Totals	68	10.5	30.5	100
<u>Biological</u>				
5-10 μ	27	4.2	0.1	0.6
10-20 μ	11	1.7	0.5	1.9
20-50 μ	10	1.5	6.0	23.2
50-75 μ	1	0.2	3.0	11.6
>75 μ	2	0.3	16.1	62.6
Totals	51	7.9	25.7	100
<u>CaCO₃</u>				
5-10 μ	34	5.2	0.5	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	34	5.2	0.5	100
TOTALS (All Categories)	647	100	100	

TABLE D-77
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093239 & 1093240 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 140 Agency: 90	
Monitor Location: South Fayette			Calculated Mass (mg): 70	
Date of Sample: 8/16/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 69 Agency: 41	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	254	53.5	5.8	12.0
10-20 μ	58	12.2	10.6	21.8
20-50 μ	13	2.7	32.1	66.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	325	68.4	48.5	100
<u>Iron Oxide</u>				
5-10 μ	16	3.3	1.2	50.0
10-20 μ	2	0.4	1.2	50.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	18	3.8	2.4	100
<u>Magnetic Iron</u>				
5-10 μ	17	3.6	1.3	41.5
10-20 μ	3	0.6	1.8	58.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	20	4.2	3.1	100

TABLE D-77
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093239 & 1093240 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	19	4.0	0.7	4.6
10-20 μ	9	1.9	2.7	17.3
20-50 μ	3	0.6	12.4	78.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	31	6.5	15.8	100
<u>Biological</u>				
5-10 μ	21	4.4	0.3	1.1
10-20 μ	22	4.6	2.7	9.4
20-50 μ	2	0.4	3.3	11.6
50-75 μ	0	0	0	0
>75 μ	1	0.2	22.2	77.9
Totals	46	9.7	28.5	100
<u>CaCO₃</u>				
5-10 μ	34	7.2	1.4	81.0
10-20 μ	1	0.2	0.3	19.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	35	7.4	1.7	100
TOTALS (All Categories)	465	100	100	

TABLE D-78
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093290 & 1093291 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 374 Agency: 351	
Monitor Location: Baden			Calculated Mass (mg): 258	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 203 Agency: 183	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	573	58.8	3.6	4.7
10-20 μ	147	15.1	7.3	9.6
20-50 μ	40	4.1	27.0	35.4
50-75 μ	6	0.6	20.2	26.5
>75 μ	2	0.2	18.2	23.8
Totals	768	78.8	76.3	100
<u>Iron Oxide</u>				
5-10 μ	43	4.4	0.9	35.0
10-20 μ	10	1.0	1.6	65.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	53	5.4	2.5	100
<u>Magnetic Iron</u>				
5-10 μ	26	2.7	0.5	26.5
10-20 μ	9	0.9	1.5	73.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	35	3.6	2.0	100

TABLE D-78
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093290 & 1093291 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	22	2.2	0.2	2.6
10-20 μ	7	0.7	0.6	6.7
20-50 μ	7	0.7	7.9	90.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	36	3.7	8.7	100
<u>Biological</u>				
5-10 μ	33	3.4	0.1	1.3
10-20 μ	19	1.9	0.6	6.2
20-50 μ	6	0.6	2.7	26.4
50-75 μ	3	0.3	6.7	66.1
>75 μ	0	0	0	0
Totals	61	6.2	10.2	100
<u>CaCO₃</u>				
5-10 μ	21	2.2	0.2	72.4
10-20 μ	1	0.1	0.09	27.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	22	2.2	0.3	100
TOTALS (All Categories)	975	100	100	

TABLE D-79
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093288 & 1093289 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 277 Agency: 266	
Monitor Location: Beaver Falls			Calculated Mass (mg): 314	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 164 Agency: 137	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	444	57.0	2.3	4.0
10-20 μ	96	12.3	3.9	6.9
20-50 μ	21	2.7	11.6	20.4
50-75 μ	6	0.8	16.6	29.2
>75 μ	3	0.4	22.4	39.4
Totals	570	73.2	56.9	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-79
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093288 & 1093289 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	14	1.8	0.1	2.3
10-20 μ	6	0.8	0.4	8.0
20-50 μ	5	0.6	4.6	89.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	25	3.2	5.1	100
<u>Biological</u>				
5-10 μ	48	6.2	0.2	0.4
10-20 μ	85	10.9	2.3	6.1
20-50 μ	44	5.6	16.2	42.8
50-75 μ	5	0.6	9.2	24.4
>75 μ	2	0.2	10.0	26.2
Totals	184	23.6	38.0	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	779	100	100	

TABLE D-80
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106308 & 1106309 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 151 Agency: 143	
Monitor Location: Hazelwood			Calculated Mass (mg): 157	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 71 Agency: 76	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	268	44.4	2.7	5.0
10-20 μ	69	11.4	5.6	10.3
20-50 μ	27	4.5	29.9	54.4
50-75 μ	3	0.5	16.6	30.3
>75 μ	0	0	0	0
Totals	367	60.8	54.9	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-80
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106308 & 1106309 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	13	2.2	0.2	4.1
10-20 μ	11	1.8	1.5	27.7
20-50 μ	2	0.3	3.7	68.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	26	4.3	5.4	100
<u>Biological</u>				
5-10 μ	130	21.5	0.9	2.3
10-20 μ	33	5.5	1.8	4.6
20-50 μ	12	2.0	8.8	22.8
50-75 μ	2	0.3	7.4	19.0
>75 μ	2	0.3	19.9	51.2
Totals	179	29.6	38.8	100
<u>CaCO₃</u>				
5-10 μ	30	5.0	0.6	65.3
10-20 μ	2	0.3	0.3	34.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	32	5.3	0.8	100
TOTALS (All Categories)	604	100	100	

TABLE D-81
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093298 & 1093299 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 289 Agency: 214	
Monitor Location: North Braddock			Calculated Mass (mg): 405	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 153 Agency: 108	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	562	54.6	2.2	4.1
10-20 μ	117	11.4	3.7	6.9
20-50 μ	28	2.7	12.0	22.3
50-75 μ	6	0.6	12.9	23.9
>75 μ	4	0.4	23.2	42.8
Totals	717	69.7	54.1	100
<u>Iron Oxide</u>				
5-10 μ	86	8.3	1.1	7.6
10-20 μ	13	1.3	1.4	92.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	99	9.6	2.5	100
<u>Magnetic Iron</u>				
5-10 μ	46	4.5	0.6	9.6
10-20 μ	27	2.6	2.8	45.2
20-50 μ	2	0.2	2.8	45.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	75	7.3	6.2	100

TABLE D-81
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093298 & 1093299 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	15	1.4	0.1	0.5
10-20 μ	14	1.4	0.7	3.5
20-50 μ	10	1.0	7.2	33.7
50-75 μ	1	0.1	3.6	16.9
>75 μ	1	0.1	9.7	45.4
Totals	41	4.0	21.3	100
<u>Biological</u>				
5-10 μ	20	1.9	0.05	0.4
10-20 μ	15	1.4	0.3	2.1
20-50 μ	6	0.6	1.7	11.4
50-75 μ	1	0.1	1.4	9.5
>75 μ	3	0.3	11.6	76.7
Totals	45	4.4	15.1	100
<u>CaCO₃</u>				
5-10 μ	43	4.2	0.3	37.4
10-20 μ	9	0.9	0.5	62.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	52	5.0	0.8	100
TOTALS (All Categories)	1029	100	100	

TABLE D-82
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106300 & 1106301 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 68 Agency: --	
Monitor Location: Duquesne II			Calculated Mass (mg): 40	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	21	31.3	0.8	1.3
10-20 μ	8	11.9	2.6	3.9
20-50 μ	1	1.5	4.3	6.6
50-75 μ	0	0	0	0
>75 μ	1	1.5	58.4	88.3
Totals	31	46.3	66.2	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-82
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106300 & 1106301 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	5	7.5	0.3	38.5
10-20 μ	1	1.5	0.5	61.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	6	9.0	0.9	100
<u>Biological</u>				
5-10 μ	6	9.0	0.2	0.5
10-20 μ	18	26.9	3.8	11.7
20-50 μ	5	7.5	14.4	43.9
50-75 μ	1	1.5	14.5	43.9
>75 μ	0	0	0	0
Totals	30	44.8	32.9	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	67	100	100	

TABLE D-83
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106302 & 1106303 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 207 Agency: 271	
Monitor Location: Liberty Boro			Calculated Mass (mg): 227	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 130 Agency: 136	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	467	58.6	3.3	3.5
10-20 μ	188	23.6	10.7	11.3
20-50 μ	22	2.8	16.9	17.9
50-75 μ	3	0.4	11.5	12.2
>75 μ	5	0.6	51.8	54.9
Totals	685	85.9	94.2	100
<u>Iron Oxide</u>				
5-10 μ	24	3.0	0.6	37.5
10-20 μ	5	0.6	0.9	62.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	29	3.6	1.5	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-83
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106302 & 1106303 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	20	2.5	0.2	11.4
10-20 μ	6	0.8	0.6	27.2
20-50 μ	1	0.1	1.3	61.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	27	3.4	2.1	100
<u>Biological</u>				
5-10 μ	19	2.4	0.09	5.0
10-20 μ	18	2.2	0.7	38.0
20-50 μ	2	0.2	1.0	57.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	39	4.9	1.8	100
<u>CaCO₃</u>				
5-10 μ	15	1.9	0.2	48.4
10-20 μ	2	0.2	0.2	51.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	17	2.1	0.4	100
TOTALS (All Categories)	797	100	100	

TABLE D-84

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1110928 & 1110929 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 338 Agency: 287	
Monitor Location: Brighton Township			Calculated Mass (mg): 522	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 178 Agency: 160	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	69	46.0	23.0	67.3
50-75 μ	4	2.7	6.7	19.5
>75 μ	1	0.7	4.5	13.1
Totals	74	49.3	34.2	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-84
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1110928 & 1110929 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	62	41.3	34.5	53.7
50-75 μ	8	5.3	22.3	34.6
>75 μ	1	0.7	7.5	11.7
Totals	71	47.3	64.3	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	4	2.7	0.9	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	4	2.7	0.9	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	1	0.7	0.6	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1	0.7	0.6	100
TOTALS (All Categories)	150	100	100	

TABLE D-85

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1093292 & 1093293 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 667 Agency: 688	
Monitor Location: Midland			Calculated Mass (mg): 801	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 404 Agency: 341	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	98	58.0	21.3	50.2
50-75 μ	6	3.6	6.5	15.4
>75 μ	5	3.0	14.6	34.5
Totals	109	64.5	42.5	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	10	5.9	7.1	40.0
50-75 μ	3	1.8	10.7	60.0
>75 μ	0	0	0	0
Totals	13	7.7	17.8	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-85
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1093292 & 1093293 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	22	13.0	8.0	54.4
50-75 μ	1	0.6	1.8	12.4
>75 μ	1	0.6	4.9	33.3
Totals	24	14.2	14.7	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	11	6.5	1.6	6.4
50-75 μ	0	0	0	0
>75 μ	12	7.1	23.4	93.6
Totals	23	13.6	25.0	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	169	100	100	

TABLE D-86

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106327 & 1106328 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 429 Agency: 428	
Monitor Location: Central Lab			Calculated Mass (mg): 560	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 219 Agency: 235	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	590	57.4	1.7	2.2
10-20 μ	183	17.8	4.2	5.4
20-50 μ	46	4.5	14.3	18.4
50-75 μ	10	1.0	15.6	20.0
>75 μ	10	1.0	41.9	53.9
Totals	839	81.6	77.7	100
<u>Iron Oxide</u>				
5-10 μ	35	3.4	0.3	16.6
10-20 μ	22	2.1	1.6	83.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	57	5.5	2.0	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-86
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106327 & 1106328 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	34	3.3	0.2	1.1
10-20 μ	18	1.8	0.7	4.7
20-50 μ	13	1.3	6.7	46.2
50-75 μ	0	0	0	0
>75 μ	1	0.1	7.0	47.9
Totals	66	6.4	14.6	100
<u>Biological</u>				
5-10 μ	1	0.1	0.002	0.03
10-20 μ	20	1.9	0.3	5.6
20-50 μ	10	1.0	2.1	37.7
50-75 μ	3	0.3	3.1	56.6
>75 μ	0	0	0	0
Totals	34	3.3	5.5	100
<u>CaCO₃</u>				
5-10 μ	30	2.9	0.2	65.2
10-20 μ	2	0.2	0.08	34.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	32	3.1	0.2	100
TOTALS (All Categories)	1028	100	100	

TABLE D-87

RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106388 & 1106387 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 470 Agency: 582	
Monitor Location: Liberty Boro			Calculated Mass (mg): 853	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 289 Agency: 315	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	239	37.4	0.4	0.5
10-20 μ	78	12.2	1.2	1.4
20-50 μ	100	15.6	20.4	23.4
50-75 μ	18	2.8	18.4	21.1
>75 μ	17	2.7	46.8	53.6
Totals	452	70.7	87.2	100
<u>Iron Oxide</u>				
5-10 μ	53	8.3	0.3	6.0
10-20 μ	10	1.6	0.5	9.0
20-50 μ	7	1.1	4.7	85.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	70	11.0	5.5	100
<u>Magnetic Iron</u>				
5-10 μ	14	2.2	0.09	20.0
10-20 μ	7	1.1	0.3	80.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	21	3.2	0.4	100

TABLE D-87
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106388 & 1106387 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	20	3.1	0.06	2.4
10-20 μ	6	0.9	0.2	5.8
20-50 μ	7	1.1	2.4	91.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	33	5.2	2.6	100
<u>Biological</u>				
5-10 μ	3	0.5	0.004	0.09
10-20 μ	4	0.6	0.04	1.0
20-50 μ	2	0.3	0.3	6.8
50-75 μ	0	0	0	0
>75 μ	2	0.3	3.7	92.1
Totals	11	1.7	4.0	100
<u>CaCO₃</u>				
5-10 μ	47	7.4	0.2	54.0
10-20 μ	5	0.8	0.1	46.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	52	1.7	0.3	100
TOTALS (All Categories)	639	100	100	

TABLE D-88
RESULTS OF OPTICAL PARTICLE COUNTS

Filter Number: 1106381 & 1106382 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 293 Agency: 330	
Monitor Location: Clairton			Calculated Mass (mg): 470	
Date of Sample: 9/9/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 127 Agency: 178	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Flyash</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	85	65.4	31.5	47.5
50-75 μ	8	6.2	14.8	22.4
>75 μ	4	3.1	20.0	30.1
Totals	97	74.6	66.3	100
<u>Iron Oxide</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	5	3.8	6.0	100
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	5	3.8	6.0	100
<u>Magnetic Iron</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0

TABLE D-88
RESULTS OF OPTICAL PARTICLE COUNTS
(Continued)

Filter Number: 1106381 & 1106382 (Continued)				
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Quartz</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	14	10.8	8.6	48.2
50-75 μ	3	2.3	9.3	51.7
>75 μ	0	0	0	0
Totals	17	13.1	17.9	100
<u>Biological</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	6	4.6	1.5	15.2
50-75 μ	4	3.1	4.9	50.7
>75 μ	1	0.8	3.3	34.1
Totals	11	8.5	9.8	100
<u>CaCO₃</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
TOTALS (All Categories)	130	100	100	

TABLE D-89 THROUGH D-167 - RESULTS OF SEM PARTICLE COUNTS

TABLE D-89
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093219		Total Mass of Particulates (mg): Coors: 164 Agency: 139		
Monitor Location: Baden		Calculated Mass (mg): 193		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 86 Agency: 67		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	225	7.9	1.4	27.3
10-20 μ	75	2.6	3.8	72.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	300	10.5	5.2	100
<u>Irregular</u>				
5-10 μ	1075	37.6	7.6	10.8
10-20 μ	300	10.5	17.0	24.1
20-50 μ	60	2.1	46.0	65.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1435	50.2	70.6	100
<u>Agglomerate</u>				
5-10 μ	825	28.8	3.2	13.4
10-20 μ	275	9.6	8.6	35.7
20-50 μ	24	0.8	10.2	42.1
50-75 μ	10	0.03	2.1	8.8
>75 μ	0	0	0	0
Totals	1125	39.3	24.2	100
TOTALS (All Categories)	2860	100	100	

TABLE D-90

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093221		Total Mass of Particulates (mg): Coors: 152 Agency: 127		
Monitor Location: Beaver Falls		Calculated Mass (mg): 124		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 86 Agency: 61		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	50	4.5	0.5	20
10-20 μ	25	2.3	2.0	80
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	75	6.8	2.4	100
<u>Irregular</u>				
5-10 μ	275	24.9	3.0	6.8
10-20 μ	150	13.6	13.3	29.5
20-50 μ	24	2.2	28.7	63.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	449	40.7	45.0	100
<u>Agglomerate</u>				
5-10 μ	425	38.5	2.6	5.0
10-20 μ	125	11.3	6.1	11.7
20-50 μ	24	2.2	15.9	30.3
50-75 μ	3	0.3	10.0	19.0
>75 μ	2	0.2	17.9	34.0
Totals	579	52.5	52.6	100
TOTALS (All Categories)	1103	100	100	

TABLE D-91
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093223		Total Mass of Particulates (mg): Coors: 189 Agency: 161		
Monitor Location: Koppel		Calculated Mass (mg): 86		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 90 Agency: 86		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	50	3.6	0.7	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	50	3.6	0.7	100
<u>Irregular</u>				
5-10 μ	325	23.2	5.2	12.5
10-20 μ	175	12.5	22.4	54.0
20-50 μ	8	0.6	13.8	33.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	508	36.3	41.4	100
<u>Agglomerate</u>				
5-10 μ	600	42.9	5.3	9.2
10-20 μ	200	14.3	14.2	24.5
20-50 μ	40	2.9	38.4	66.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	840	60.1	57.9	100
TOTALS (All Categories)	1398	100	100	

TABLE D-92
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093225			Total Mass of Particulates (mg): Coors: 119 Agency: 162	
Monitor Location: Brighton Township			Calculated Mass (mg): 67	
Date of Sample: 8/16/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 65 Agency: 87	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	125	9.4	2.3	38.5
10-20 μ	25	1.9	3.6	61.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	150	11.3	5.9	100
<u>Irregular</u>				
5-10 μ	575	43.3	11.8	16.1
10-20 μ	50	3.8	8.2	11.2
20-50 μ	24	1.8	53.2	72.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	649	48.9	73.2	100
<u>Agglomerate</u>				
5-10 μ	400	30.0	4.6	21.8
10-20 μ	125	9.4	11.4	54.6
20-50 μ	4	0.3	4.9	23.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	529	39.8	20.9	100
TOTALS (All Categories)	1328	100	100	

TABLE D-93
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093227			Total Mass of Particulates (mg): Coors: 149 Agency: 166	
Monitor Location: Midland			Calculated Mass (mg): 150	
Date of Sample: 8/16/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 83 Agency: 80	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	225	7.0	1.8	17.9
10-20 μ	75	2.3	4.9	47.7
20-50 μ	4	0.1	3.5	34.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	304	9.4	10.2	100
<u>Irregular</u>				
5-10 μ	1300	40.2	11.8	19.5
10-20 μ	225	7.0	16.4	27.0
20-50 μ	28	0.9	27.6	45.4
50-75 μ	1	0.03	4.9	8.1
>75 μ	0	0	0	0
Totals	1554	48.0	60.8	100
<u>Agglomerate</u>				
5-10 μ	1250	38.6	6.3	21.8
10-20 μ	100	3.1	4.0	14.0
20-50 μ	24	0.7	13.1	45.3
50-75 μ	2	0.06	5.5	18.9
>75 μ	0	0	0	0
Totals	1376	42.5	29.0	100
TOTALS (All Categories)	3234	100	100	

TABLE D-94
RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1093228		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Midland		Calculated Mass (mg): 91.6		
Date of Sample: 8/16/76 (Cover Filter for 1093227)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	275	13.7	3.6	30.3
10-20 μ	25	1.2	2.6	22.0
20-50 μ	4	0.2	5.7	47.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	304	15.2	12.0	100
<u>Irregular</u>				
5-10 μ	875	43.7	13.0	18.7
10-20 μ	125	6.2	14.9	21.3
20-50 μ	16	0.8	25.8	36.9
50-75 μ	2	0.1	16.1	23.1
>75 μ	0	0	0	0
Totals	1018	50.8	69.9	100
<u>Agglomerate</u>				
5-10 μ	600	30.0	5.0	27.6
10-20 μ	75	3.7	5.0	27.6
20-50 μ	4	0.2	3.6	19.9
50-75 μ	1	0.05	4.5	24.9
>75 μ	0	0	0	0
Totals	680	34.0	18.0	100
TOTALS (All Categories)	2002	100	100	

MARIE D-95

TABLE D-95

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093213		Total Mass of Particulates (mg):		
		Coors: 147 Agency: 100		
Monitor Location: Elco		Calculated Mass (mg): 126		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$):		
		Coors: 66 Agency: 46		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	100	6.1	1.0	20
10-20 μ	50	3.0	3.9	80
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	150	9.1	4.8	100
<u>Irregular</u>				
5-10 μ	675	41.0	7.3	18.9
10-20 μ	200	12.2	17.4	44.8
20-50 μ	12	0.7	14.1	36.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	887	53.9	38.9	100
<u>Agglomerate</u>				
5-10 μ	450	27.4	2.7	4.8
10-20 μ	100	6.1	4.8	8.6
20-50 μ	56	3.4	36.6	65.1
50-75 μ	1	0.06	3.3	5.8
>75 μ	1	0.06	8.8	15.7
Totals	608	37.0	56.3	100
TOTALS (All Categories)	1645	100	100	

TABLE D-96
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093215			Total Mass of Particulates (mg): Coors: 284 Agency: 241	
Monitor Location: Downtown			Calculated Mass (mg): 139	
Date of Sample: 8/16/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 139 Agency: 110	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	75	2.7	0.6	27.3
10-20 μ	25	0.9	1.7	72.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	100	3.6	2.4	100
<u>Irregular</u>				
5-10 μ	525	18.7	5.2	11.5
10-20 μ	125	4.4	9.8	22.0
20-50 μ	28	1.0	29.7	66.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	678	24.2	44.7	100
<u>Agglomerate</u>				
5-10 μ	1675	59.7	9.1	17.3
10-20 μ	300	10.7	13.1	24.7
20-50 μ	52	1.8	30.7	58.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	2027	72.3	52.9	100
TOTALS (All Categories)	2805	100	100	

TABLE D-97

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093241		Total Mass of Particulates (mg): Coors: 224 Agency: 202		
Monitor Location: Central Lab		Calculated Mass (mg): 73		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 110 Agency: 97		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	50	3.4	0.8	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	50	3.4	0.8	100
<u>Irregular</u>				
5-10 μ	700	48.0	13.1	19.3
10-20 μ	150	10.3	22.5	33.0
20-50 μ	16	1.1	32.5	47.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	866	59.4	68.2	100
<u>Agglomerate</u>				
5-10 μ	500	34.3	5.2	16.8
10-20 μ	25	1.7	2.1	6.7
20-50 μ	16	1.1	18.0	58.2
50-75 μ	1	0.07	5.6	18.2
>75 μ	0	0	0	0
Totals	542	37.2	31.0	100
TOTALS (All Categories)	1458	100	100	

TABLE D-98
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093201			Total Mass of Particulates (mg): Coors: 180 Agency:	
Monitor Location: Hazelwood			Calculated Mass (mg): 307	
Date of Sample: 8/16/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 131 Agency: 105	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	75	1.1	0.3	10.6
10-20 μ	25	0.4	0.8	28.3
20-50 μ	4	0.06	1.7	61.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	104	1.5	2.8	100
<u>Irregular</u>				
5-10 μ	1975	28.7	8.8	18.0
10-20 μ	350	5.1	12.4	25.5
20-50 μ	44	0.6	21.2	43.3
50-75 μ	0	0	0	0
>75 μ	1	0.01	6.5	13.2
Totals	2370	34.5	48.8	100
<u>Agglomerate</u>				
5-10 μ	3600	52.4	8.9	18.4
10-20 μ	700	10.2	13.8	28.6
20-50 μ	96	1.4	25.6	53.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	4396	64.0	48.4	100
TOTALS (All Categories)	6870	100	100	

TABLE D-99
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093203		Total Mass of Particulates (mg): Coors: 155 Agency: 126		
Monitor Location: North Braddock		Calculated Mass (mg): 157		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 79 Agency: 63		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	200	8.5	1.5	31.6
10-20 μ	0	0	0	0
20-50 μ	4	0.2	3.3	68.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	204	8.7	4.9	100
<u>Irregular</u>				
5-10 μ	750	31.9	6.5	9.0
10-20 μ	225	9.6	15.7	21.7
20-50 μ	48	2.0	45.2	62.7
50-75 μ	1	0.04	4.7	6.5
>75 μ	0	0	0	0
Totals	1024	43.5	72.1	100
<u>Agglomerate</u>				
5-10 μ	1025	43.6	5.0	21.5
10-20 μ	75	3.2	2.9	12.6
20-50 μ	24	1.0	12.6	54.5
50-75 μ	1	0.04	2.6	11.4
>75 μ	0	0	0	0
Totals	1125	47.8	23.0	100
TOTALS (All Categories)	2353	100	100	

TABLE D-100
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093205		Total Mass of Particulates (mg): Coors: 231 Agency: 211		
Monitor Location: Duquesne II		Calculated Mass (mg): 270		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 145 Agency: 107		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	175	3.5	0.8	46.7
10-20 μ	25	0.5	0.9	53.3
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	200	4.0	1.7	100
<u>Irregular</u>				
5-10 μ	1825	36.5	9.2	17.1
10-20 μ	500	10.0	20.2	37.4
20-50 μ	40	0.8	21.9	40.5
50-75 μ	1	0.02	2.7	5.1
>75 μ	0	0	0	0
Totals	2366	47.3	54.1	100
<u>Agglomerate</u>				
5-10 μ	2050	41.0	5.8	13.0
10-20 μ	300	6.0	6.8	15.3
20-50 μ	84	1.7	25.6	57.9
50-75 μ	4	0.08	6.1	13.8
>75 μ	0	0	0	0
Totals	2438	48.7	44.2	100
TOTALS (All Categories)	5004	100	100	

TABLE D-101
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093209		Total Mass of Particulates (mg): Coors: 181 Agency: --		
Monitor Location: Liberty Boro		Calculated Mass (mg): 150		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 114 Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	75	2.5	0.6	14.8
10-20 μ	0	0	0	0
20-50 μ	4	0.1	3.5	85.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	79	2.6	4.1	100
<u>Irregular</u>				
5-10 μ	650	21.8	5.9	12.6
10-20 μ	150	5.0	11.0	23.3
20-50 μ	12	0.4	11.8	25.2
50-75 μ	1	0.03	4.9	10.5
>75 μ	1	0.03	13.3	28.3
Totals	814	27.2	47.0	100
<u>Agglomerate</u>				
5-10 μ	1725	57.7	8.8	17.9
10-20 μ	325	10.9	13.2	27.0
20-50 μ	44	1.5	24.2	49.4
50-75 μ	1	0.03	2.7	5.6
>75 μ	0	0	0	0
Totals	2095	70.1	48.8	100
TOTALS (All Categories)	2988	100	100	

TABLE D-102
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093211		Total Mass of Particulates (mg): Coors: 125 Agency: 150		
Monitor Location: Clairton		Calculated Mass (mg): 106		
Date of Sample: 8/16/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 52 Agency: 76		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	50	4.4	0.6	20
10-20 μ	25	2.2	2.3	80
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	75	6.6	2.8	100
<u>Irregular</u>				
5-10 μ	550	48.8	7.0	9.8
10-20 μ	75	6.6	7.7	10.6
20-50 μ	28	2.5	38.8	53.7
50-75 μ	0	0	0	0
>75 μ	1	0.09	18.7	25.8
Totals	654	58.0	72.2	100
<u>Agglomerate</u>				
5-10 μ	300	26.6	2.1	8.6
10-20 μ	75	6.6	4.3	17.2
20-50 μ	24	2.1	18.5	74.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	399	35.4	24.9	100
TOTALS (All Categories)	1128	100	100	

TABLE D-103
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093229			Total Mass of Particulates (mg): Coors: 149 Agency: 151	
Monitor Location: Airport			Calculated Mass (mg): 97	
Date of Sample: 8/16/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 76 Agency: 72	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	50	1.9	0.6	3.3
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	1	0.04	18.3	96.7
Totals	51	1.9	18.9	100
<u>Irregular</u>				
5-10 μ	750	28.2	10.6	20.0
10-20 μ	200	7.5	22.6	42.6
20-50 μ	8	0.3	12.2	23.0
50-75 μ	1	0.04	7.6	14.4
>75 μ	0	0	0	0
Totals	959	36.0	53.0	100
<u>Agglomerate</u>				
5-10 μ	1375	51.7	10.8	38.5
10-20 μ	275	10.3	17.2	61.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1650	62.0	28.0	100
TOTALS (All Categories)	2660	100	100	

TABLE D-104
RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1093230		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Airport		Calculated Mass (mg): 140		
Date of Sample: 8/16/76 (Cover Filter for 1093229)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	100	4.5	0.8	18.8
10-20 μ	0	0	0	0
20-50 μ	4	0.2	3.7	81.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	104	4.7	4.6	100
<u>Irregular</u>				
5-10 μ	975	44.0	9.5	16.6
10-20 μ	150	6.8	11.7	20.5
20-50 μ	24	1.1	25.2	44.3
50-75 μ	2	0.09	10.5	18.5
>75 μ	0	0	0	0
Totals	1151	51.9	56.9	100
<u>Agglomerate</u>				
5-10 μ	750	33.8	4.0	10.5
10-20 μ	175	7.9	7.6	19.6
20-50 μ	36	1.6	21.0	54.6
50-75 μ	2	0.09	5.8	15.2
>75 μ	0	0	0	0
Totals	963	43.4	38.5	100
TOTALS (All Categories)	2218	100	100	

TABLE D-105
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093239			Total Mass of Particulates (mg): Coors: 140 Agency: 90	
Monitor Location: South Fayette			Calculated Mass (mg): 49	
Date of Sample: 8/16/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 69 Agency: 41	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	125	7.1	3.1	38.5
10-20 μ	25	1.4	4.9	61.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	150	8.5	8.0	100
<u>Irregular</u>				
5-10 μ	775	44.1	21.4	35.1
10-20 μ	125	7.1	27.7	45.3
20-50 μ	4	0.2	12.0	19.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	904	51.4	61.1	100
<u>Agglomerate</u>				
5-10 μ	575	32.7	8.8	28.6
10-20 μ	125	7.1	15.4	49.8
20-50 μ	4	0.2	6.6	21.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	704	40.0	30.9	100
TOTALS (All Categories)	1758	100	100	

TABLE D-106
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093247			Total Mass of Particulates (mg): Coors: 433 Agency: --	
Monitor Location: Liberty Boro			Calculated Mass (mg): 922	
Date of Sample: 8/22/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 272 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	250	3.4	0.3	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	250	3.4	0.3	100
<u>Irregular</u>				
5-10 μ	2200	29.7	3.3	7.9
10-20 μ	725	9.8	8.6	20.9
20-50 μ	148	2.0	23.7	57.6
50-75 μ	7	0.09	5.6	13.6
>75 μ	0	0	0	0
Totals	3080	41.6	41.2	100
<u>Agglomerate</u>				
5-10 μ	2650	35.8	2.2	3.7
10-20 μ	1050	14.2	6.9	11.8
20-50 μ	324	4.4	28.8	49.3
50-75 μ	38	0.5	16.9	29.0
>75 μ	3	0.04	3.6	6.2
Totals	4065	55.0	58.5	100
TOTALS (All Categories)	7395	100	100	

TABLE D-107

RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1093248		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Liberty Boro		Calculated Mass (mg): 104		
Date of Sample: 8/22/76 (Cover Filter for 1093247)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	25	1.9	0.3	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	25	1.9	0.3	100
<u>Irregular</u>				
5-10 μ	350	26.8	4.6	8.2
10-20 μ	150	11.5	15.8	28.2
20-50 μ	20	1.5	28.5	50.8
50-75 μ	1	0.08	7.1	12.7
>75 μ	0	0	0	0
Totals	521	40.0	56.1	100
<u>Agglomerate</u>				
5-10 μ	550	42.2	4.0	9.2
10-20 μ	175	13.4	10.2	23.5
20-50 μ	32	2.4	25.4	58.1
50-75 μ	1	0.08	4.0	9.1
>75 μ	0	0	0	0
Totals	758	58.1	43.6	100
TOTALS (All Categories)	1304	100	100	

TABLE D-108

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093290		Total Mass of Particulates (mg): Coors: 374 Agency: 351		
Monitor Location: Baden		Calculated Mass (mg): 490		
Date of Sample: 8/28/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 203 Agency: 183		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	275	7.0	0.7	25.6
10-20 μ	100	2.5	2.0	74.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	375	9.5	2.7	100
<u>Irregular</u>				
5-10 μ	1275	32.3	3.6	9.5
10-20 μ	450	11.4	10.0	26.9
20-50 μ	40	1.0	12.1	32.4
50-75 μ	5	0.1	7.5	20.2
>75 μ	1	0.02	4.1	10.9
Totals	1771	44.8	37.3	100
<u>Agglomerate</u>				
5-10 μ	1050	26.6	1.6	2.7
10-20 μ	650	16.4	8.0	13.4
20-50 μ	60	1.5	10.0	16.7
50-75 μ	40	1.0	33.5	55.8
>75 μ	3	0.08	6.8	11.3
Totals	1803	45.6	60.0	100
TOTALS (All Categories)	3949	100	100	

TABLE D-109

RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1093291			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Baden			Calculated Mass (mg): 581	
Date of Sample: 8/28/76 (Cover Filter For 1093290)			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	275	7.1	0.6	8.0
10-20 μ	125	3.2	2.1	29.1
20-50 μ	20	0.5	4.5	62.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	420	10.9	7.2	100
<u>Irregular</u>				
5-10 μ	1000	26.0	2.4	6.3
10-20 μ	350	9.1	6.6	17.6
20-50 μ	112	2.9	28.5	76.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1462	38.0	37.4	100
<u>Agglomerate</u>				
5-10 μ	1200	31.2	1.6	2.8
10-20 μ	550	14.3	5.7	10.4
20-50 μ	188	4.9	26.6	48.0
50-75 μ	25	0.6	17.7	31.9
>75 μ	2	0.05	3.8	6.9
Totals	1965	51.1	55.4	100
TOTALS (All Categories)	3847	100	100	

TABLE D-110
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093288			Total Mass of Particulates (mg): Coors: 277 Agency: 266	
Monitor Location: Beaver Falls			Calculated Mass (mg): 321	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 16.4 Agency: 137	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	750	13.4	2.8	37.8
10-20 μ	100	1.8	3.0	40.4
20-50 μ	4	0.07	1.6	21.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	854	15.2	7.5	100
<u>Irregular</u>				
5-10 μ	1750	31.2	7.4	17.5
10-20 μ	325	5.8	11.1	26.1
20-50 μ	32	0.6	14.7	34.7
50-75 μ	4	0.07	9.2	21.7
>75 μ	0	0	0	0
Totals	2111	37.6	42.5	100
<u>Agglomerate</u>				
5-10 μ	2150	38.3	5.1	10.2
10-20 μ	375	6.7	7.1	14.2
20-50 μ	116	2.1	29.7	59.3
50-75 μ	1	0.02	1.3	2.6
>75 μ	2	0.04	6.9	13.8
Totals	2644	47.1	50.0	100
TOTALS (All Categories)	5609	100	100	

TABLE D-111

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093286			Total Mass of Particulates (mg):	
			Coors: 256 Agency: --	
Monitor Location: Koppel			Calculated Mass (mg): 166	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$):	
			Coors: 133 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	100	4.8	0.7	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	100	4.8	0.7	100
<u>Irregular</u>				
5-10 μ	800	38.7	6.6	8.7
10-20 μ	175	8.5	11.6	15.2
20-50 μ	36	1.7	32.1	42.4
50-75 μ	3	0.1	13.4	17.7
>75 μ	1	0.05	12.0	15.9
Totals	1015	49.1	75.7	100
<u>Agglomerate</u>				
5-10 μ	850	41.1	3.9	16.6
10-20 μ	75	3.6	2.8	11.7
20-50 μ	24	1.2	11.9	50.6
50-75 μ	2	0.1	5.0	21.1
>75 μ	0	0	0	0
Totals	951	46.0	23.5	100
TOTALS (All Categories)	2066	100	100	

TABLE D-112
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093284			Total Mass of Particulates (mg): Coors: 258 Agency: 274	
Monitor Location: Brighton Township			Calculated Mass (mg): 150	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 149 Agency: 151	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	150	7.3	1.2	10.6
10-20 μ	50	2.4	3.2	28.3
20-50 μ	8	0.4	7.0	61.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	208	10.1	11.5	100
<u>Irregular</u>				
5-10 μ	900	43.8	8.2	16.0
10-20 μ	225	11.0	16.4	32.0
20-50 μ	12	0.6	11.8	23.1
50-75 μ	3	0.1	14.8	28.9
>75 μ	0	0	0	0
Totals	1140	55.5	51.3	100
<u>Agglomerate</u>				
5-10 μ	475	23.1	2.4	6.4
10-20 μ	225	11.0	9.1	24.5
20-50 μ	0	0	0	0
50-75 μ	4	0.2	11.0	29.4
>75 μ	2	0.1	14.8	39.6
Totals	706	34.4	37.3	100
TOTALS (All Categories)	2054	100	100	

TABLE D-113
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093282			Total Mass of Particulates (mg): Coors: 479 Agency: 501	
Monitor Location: Midland			Calculated Mass (mg): 238	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 268 Agency: 248	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	400	11.5	2.0	28.6
10-20 μ	125	3.6	5.1	71.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	525	15.1	7.2	100
<u>Irregular</u>				
5-10 μ	475	13.6	2.7	20.6
10-20 μ	175	5.0	8.0	60.7
20-50 μ	4	0.1	2.5	18.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	654	18.8	13.3	100
<u>Agglomerate</u>				
5-10 μ	1600	45.9	5.1	6.4
10-20 μ	625	17.9	16.0	20.0
20-50 μ	64	1.8	22.1	27.8
50-75 μ	13	0.4	22.5	28.2
>75 μ	3	0.09	14.0	17.5
Totals	2305	66.2	79.6	100
TOTALS (All Categories)	3484	100	100	

TABLE D-114
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106306			Total Mass of Particulates (mg): Coors: 91 Agency: 98	
Monitor Location: Elco			Calculated Mass (mg): 173	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 43 Agency: 40	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	225	16.1	1.6	22.0
10-20 μ	100	7.2	5.6	78.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	325	23.3	7.2	100
<u>Irregular</u>				
5-10 μ	250	17.9	2.0	3.2
10-20 μ	125	9.0	7.9	12.6
20-50 μ	28	2.0	23.9	38.3
50-75 μ	4	0.3	17.0	27.4
>75 μ	1	0.07	11.4	18.4
Totals	408	29.2	62.2	100
<u>Agglomerate</u>				
5-10 μ	350	25.1	1.5	5.0
10-20 μ	275	19.7	9.6	31.5
20-50 μ	36	2.6	17.0	55.7
50-75 μ	1	0.07	2.4	7.7
>75 μ	0	0	0	0
Totals	662	47.4	30.6	100
TOTALS (All Categories)	1395	100	100	

TABLE D-115
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093296			Total Mass of Particulates (mg): Coors: 193 Agency: 149	
Monitor Location: Downtown			Calculated Mass (mg): 92	
Date of Sample: 8/28/77			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 101 Agency: 70	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	450	23.1	5.9	51.0
10-20 μ	0	0	0	0
20-50 μ	4	0.2	5.7	49.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	454	23.3	11.6	100
<u>Irregular</u>				
5-10 μ	675	34.7	10.0	22.1
10-20 μ	175	9.0	20.7	45.9
20-50 μ	4	0.2	6.4	14.2
50-75 μ	1	0.05	8.0	17.8
>75 μ	0	0	0	0
Totals	855	44.0	45.1	100
<u>Agglomerate</u>				
5-10 μ	450	23.1	3.7	8.6
10-20 μ	175	9.0	11.5	26.6
20-50 μ	8	0.4	7.1	16.5
50-75 μ	2	0.1	8.9	20.6
>75 μ	1	0.05	12.0	27.7
Totals	636	32.7	43.2	100
TOTALS (All Categories)	1945	100	100	

TABLE D-116
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093253			Total Mass of Particulates (mg): Coors: 233 Agency: --	
Monitor Location: Central Lab			Calculated Mass (mg): 111	
Date of Sample: 8/28/76			Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 119 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	325	14.9	3.6	61.9
10-20 μ	25	1.1	2.2	38.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
-----	-----	-----	-----	-----
Totals	350	16.0	5.7	100
<u>Irregular</u>				
5-10 μ	975	44.7	12.0	23.8
10-20 μ	200	9.2	19.7	39.1
20-50 μ	4	0.2	5.3	10.6
50-75 μ	2	0.1	13.3	26.5
>75 μ	0	0	0	0
-----	-----	-----	-----	-----
Totals	1181	54.1	50.3	100
<u>Agglomerate</u>				
5-10 μ	375	17.2	2.6	5.8
10-20 μ	250	11.5	13.7	31.1
20-50 μ	24	1.1	17.7	40.4
50-75 μ	0	0	0	0
>75 μ	1	0.04	10.0	22.7
-----	-----	-----	-----	-----
Totals	650	29.8	43.9	100
TOTALS (All Categories)	2181	100	100	

TABLE D-117
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106308			Total Mass of Particulates (mg): Coors: 151 Agency: 143	
Monitor Location: Hazelwood			Calculated Mass (mg): 50.7	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 71 Agency: 76	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	150	11.6	3.6	25.7
10-20 μ	0	0	0	0
20-50 μ	4	0.3	10.4	74.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	154	11.9	13.9	100
<u>Irregular</u>				
5-10 μ	550	42.6	14.8	19.3
10-20 μ	125	9.7	26.9	35.1
20-50 μ	12	0.9	35.0	45.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	687	53.2	76.7	100
<u>Agglomerate</u>				
5-10 μ	425	32.9	6.4	68.0
10-20 μ	25	1.9	3.0	32.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	450	34.8	9.4	100
TOTALS (All Categories)	1291	100	100	

TABLE D-118
RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1106309			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Hazelwood			Calculated Mass (mg): 30.2	
Date of Sample: 8/28/76 (Cover Filter For 1106308)			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	75	9.6	3.0	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	75	9.6	3.0	100
<u>Irregular</u>				
5-10 μ	250	32.1	11.3	13.3
10-20 μ	150	19.2	54.2	63.7
20-50 μ	4	0.5	19.5	23.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	404	51.9	85.1	100
<u>Agglomerate</u>				
5-10 μ	275	35.3	6.9	57.9
10-20 μ	25	3.2	5.0	42.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	300	38.5	11.9	100
TOTALS (All Categories)	779	100	100	

TABLE D-119
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093298		Total Mass of Particulates (mg): Coors: 289 Agency: 214		
Monitor Location: North Braddock		Calculated Mass (mg): 246		
Date of Sample: 8/28/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 153 Agency: 108		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	200	7.8	1.0	14.0
10-20 μ	100	3.9	3.9	55.8
20-50 μ	4	0.2	2.1	30.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	304	11.8	7.1	100
<u>Irregular</u>				
5-10 μ	900	35.0	5.0	9.2
10-20 μ	100	3.9	4.4	8.2
20-50 μ	16	0.6	9.6	17.7
50-75 μ	9	0.4	27.0	49.9
>75 μ	1	0.04	8.1	14.9
Totals	1026	39.9	54.1	100
<u>Agglomerate</u>				
5-10 μ	1025	39.9	3.2	8.1
10-20 μ	175	6.8	4.3	11.1
20-50 μ	32	1.2	10.7	27.5
50-75 μ	7	0.3	11.7	30.1
>75 μ	2	0.08	9.0	23.2
Totals	1241	48.3	38.8	100
TOTALS (All Categories)	2571	100	100	

TABLE D-120

RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1093299		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: North Braddock		Calculated Mass (mg): 140		
Date of Sample: 8/28/76 (Cover Filter for 1093298)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	350	13.5	3.0	35.6
10-20 μ	25	1.0	1.7	20.4
20-50 μ	4	0.2	3.7	44.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	379	14.6	8.5	100
<u>Irregular</u>				
5-10 μ	725	28.0	7.1	18.2
10-20 μ	300	11.6	23.4	60.1
20-50 μ	8	0.3	8.4	21.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1033	39.9	38.9	100
<u>Agglomerate</u>				
5-10 μ	950	36.7	5.1	9.8
10-20 μ	175	6.8	7.6	14.4
20-50 μ	48	1.8	28.1	53.5
50-75 μ	4	0.2	11.7	22.3
>75 μ	0	0	0	0
Totals	1177	45.5	52.6	100
TOTALS (All Categories)	2589	100	100	

TABLE D-121
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106300			Total Mass of Particulates (mg): Coors: 68 Agency: --	
Monitor Location: Duquesne II			Calculated Mass (mg): 54.1	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Irregular</u>				
5-10 μ	200	39.7	5.0	6.2
10-20 μ	50	9.9	10.1	12.5
20-50 μ	24	4.8	65.6	81.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	274	54.4	80.7	100
<u>Agglomerate</u>				
5-10 μ	200	39.7	2.8	14.6
10-20 μ	250	5.0	2.8	14.6
20-50 μ	4	0.8	6.1	31.5
50-75 μ	1	0.2	7.6	39.4
>75 μ	0	0	0	0
Totals	230	45.6	19.3	100
TOTALS (All Categories)	504	100	100	

TABLE D-122
RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1106301			Total Mass of Particulates (mg): Coors: -- Agency: --	
Monitor Location: Duquesne II			Calculated Mass (mg): 4.2	
Date of Sample: 8/28/76 (Cover Filter for 1106300)			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Irregular</u>				
5-10 μ	250	71.4	81.8	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	250	71.4	81.8	100
<u>Agglomerate</u>				
5-10 μ	100	28.6	18.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	100	28.6	18.2	100
TOTALS (All Categories)	350	100	100	

TABLE D-123
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106302			Total Mass of Particulates (mg): Coors: 207 Agency: 271	
Monitor Location: Liberty Boro			Calculated Mass (mg): 214	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 130 Agency: 136	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	775	14.2	4.4	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	775	14.2	4.4	100
<u>Irregular</u>				
5-10 μ	1100	20.1	7.0	14.3
10-20 μ	250	4.6	12.8	26.0
20-50 μ	24	0.4	16.6	33.7
50-75 μ	1	0.02	3.4	7.0
>75 μ	1	0.02	9.3	18.9
Totals	1376	25.2	49.1	100
<u>Agglomerate</u>				
5-10 μ	2625	48.0	9.3	20.0
10-20 μ	650	11.9	18.4	39.6
20-50 μ	44	0.8	16.9	36.2
50-75 μ	1	0.02	1.9	4.1
>75 μ	0	0	0	0
Totals	3320	60.7	46.5	100
TOTALS (All Categories)	5471	100	100	

TABLE D-124

RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1106303		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Liberty Boro		Calculated Mass (mg): 110		
Date of Sample: 8/28/76 (Cover Filter for 1106302)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	150	9.0	1.6	27.3
10-20 μ	50	3.0	4.4	72.7
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	200	12.1	6.0	100
<u>Irregular</u>				
5-10 μ	600	36.2	7.4	14.2
10-20 μ	75	4.5	7.4	14.2
20-50 μ	28	1.7	37.4	71.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	703	42.4	52.3	100
<u>Agglomerate</u>				
5-10 μ	550	33.2	3.8	9.1
10-20 μ	175	10.6	9.6	23.1
20-50 μ	28	1.7	20.8	50.0
50-75 μ	2	0.1	7.4	17.8
>75 μ	0	0	0	0
Totals	755	45.5	41.6	100
TOTALS (All Categories)	1658	100	100	

TABLE D-125
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106304		Total Mass of Particulates (mg): Coors: 147 Agency: 215		
Monitor Location: Clairton		Calculated Mass (mg): 79		
Date of Sample: August 28, 1976		Air Concentration ($\mu\text{g}/\text{m}^3$): Coors: 61 Agency: 115		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	525	26.6	8.1	38.7
10-20 μ	50	25.4	6.1	29.5
20-50 μ	4	0.2	6.6	31.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	579	29.4	20.9	100
<u>Irregular</u>				
5-10 μ	700	35.5	12.1	22.3
10-20 μ	250	12.7	34.6	63.8
20-50 μ	4	0.2	7.5	13.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	954	48.4	54.2	100
<u>Agglomerate</u>				
5-10 μ	300	15.2	2.9	11.5
10-20 μ	125	6.3	9.6	38.5
20-50 μ	12	0.6	12.5	50.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	437	22.2	25.0	100
TOTALS (All Categories)	1970	100	100	

TABLE D-126
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093280			Total Mass of Particulates (mg): Coors: 211 Agency: 202	
Monitor Location: Airport			Calculated Mass (mg): 120	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 110 Agency: 97	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	225	10.4	2.3	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	225	10.4	2.3	100
<u>Irregular</u>				
5-10 μ	600	27.9	6.8	10.9
10-20 μ	175	8.1	15.9	25.4
20-50 μ	4	0.2	4.9	7.8
50-75 μ	3	0.1	18.4	29.4
>75 μ	1	0.05	16.6	26.4
Totals	784	36.4	62.6	100
<u>Agglomerate</u>				
5-10 μ	800	37.2	5.0	14.4
10-20 μ	325	15.1	16.4	46.7
20-50 μ	20	0.9	13.6	38.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1145	53.2	35.1	100
TOTALS (All Categories)	2154	100	100	

TABLE D-127
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093278		Total Mass of Particulates (mg): Coors: 174 Agency: 120		
Monitor Location: South Fayette		Calculated Mass (mg): 166		
Date of Sample: 8/28/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 91 Agency: 59		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	1050	29.7	7.7	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1050	29.7	7.7	100
<u>Irregular</u>				
5-10 μ	1350	38.2	11.1	15.1
10-20 μ	600	17.0	39.6	53.6
20-50 μ	16	0.4	14.3	19.3
50-75 μ	2	0.06	8.9	12.1
>75 μ	0	0	0	0
Totals	1968	55.6	73.9	100
<u>Agglomerate</u>				
5-10 μ	400	11.3	1.8	10.0
10-20 μ	100	2.8	3.7	19.9
20-50 μ	16	0.4	7.9	43.1
50-75 μ	2	0.06	5.0	27.0
>75 μ	0	0	0	0
Totals	518	14.6	18.4	100
TOTALS (All Categories)	3536	100	100	

TABLE D-128
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106351			Total Mass of Particulates (mg): Coors: 226 Agency: 254	
Monitor Location: Midland			Calculated Mass (mg): 205	
Date of Sample: 9/3/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 128 Agency: 127	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	175	4.0	1.0	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	175	4.0	1.0	100
<u>Irregular</u>				
5-10 μ	525	11.9	3.5	15.6
10-20 μ	125	2.8	6.6	29.7
20-50 μ	12	0.3	8.6	38.6
50-75 μ	1	0.02	3.6	16.1
>75 μ	0	0	0	0
Totals	663	15.0	22.4	100
<u>Agglomerate</u>				
5-10 μ	2525	57.3	9.3	12.2
10-20 μ	950	21.6	28.1	36.7
20-50 μ	88	2.0	35.2	45.9
50-75 μ	2	0.04	4.0	5.2
>75 μ	0	0	0	0
Totals	3565	81.0	76.6	100
TOTALS (All Categories)	4403	100	100	

TABLE D-129
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093265		Total Mass of Particulates (mg): Coors: 114 Agency: 136		
Monitor Location: Elco		Calculated Mass (mg): 108		
Date of Sample: 9/3/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 54 Agency: 59		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	50	4.8	0.6	5.5
10-20 μ	0	0	0	0
20-50 μ	8	0.8	9.7	94.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	58	5.6	10.2	100
<u>Irregular</u>				
5-10 μ	250	24.1	3.1	6.6
10-20 μ	175	16.8	17.6	36.7
20-50 μ	20	1.9	27.2	56.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	445	42.8	48.0	100
<u>Agglomerate</u>				
5-10 μ	275	26.5	1.9	4.6
10-20 μ	225	21.6	12.6	30.2
20-50 μ	36	3.5	27.2	65.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	536	51.6	41.7	100
TOTALS (All Categories)	1039	100	100	

TABLE D-130
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106333		Total Mass of Particulates (mg): Coors: 256 Agency: 248		
Monitor Location: Central Lab		Calculated Mass (mg): 152		
Date of Sample: 9/3/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 123 Agency: 132		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	200	9.3	1.6	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	200	9.3	1.6	100
<u>Irregular</u>				
5-10 μ	175	8.1	1.6	3.1
10-20 μ	125	5.8	9.0	17.5
20-50 μ	32	1.5	31.1	60.5
50-75 μ	2	0.09	9.7	18.9
>75 μ	0	0	0	0
Totals	335	15.5	51.4	100
<u>Agglomerate</u>				
5-10 μ	1150	53.5	5.7	12.2
10-20 μ	425	19.8	17.0	36.1
20-50 μ	40	1.9	21.6	45.9
50-75 μ	1	0.05	2.7	5.7
>75 μ	0	0	0	0
Totals	1616	75.2	47.0	100
TOTALS (All Categories)	2151	100	100	

TABLE D-131
RESULTS OF SFM PARTICLE COUNTS

Filter Number: 1106325			Total Mass of Particulates (mg): Coors: 265 Agency: 234	
Monitor Location: Hazelwood			Calculated Mass (mg): 151	
Date of Sample: 9/3/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 129 Agency: 134	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	100	4.4	0.8	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	100	4.4	0.8	100
<u>Irregular</u>				
5-10 μ	400	17.7	3.6	7.8
10-20 μ	250	11.1	18.1	39.2
20-50 μ	20	0.9	19.5	42.4
50-75 μ	1	0.04	4.9	10.6
>75 μ	0	0	0	0
Totals	671	29.7	46.1	100
<u>Agglomerate</u>				
5-10 μ	1200	53.1	6.0	11.4
10-20 μ	225	10.0	9.0	17.0
20-50 μ	60	2.6	32.6	61.4
50-75 μ	2	0.09	5.4	10.2
>75 μ	0	0	0	0
Totals	1487	65.8	53.1	100
TOTALS (All Categories)	2258	100	100	

TABLE D-132
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106315		Total Mass of Particulates (mg): Coors: 289 Agency: 308		
Monitor Location: North Braddock		Calculated Mass (mg): 115		
Date of Sample: 9/3/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 140 Agency: 148		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	325	11.8	3.4	61.9
10-20 μ	25	0.9	2.1	38.1
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	350	12.7	5.6	100
<u>Irregular</u>				
5-10 μ	375	13.6	4.5	15.2
10-20 μ	100	3.6	9.5	32.4
20-50 μ	12	0.4	15.5	52.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	487	17.7	29.5	100
<u>Agglomerate</u>				
5-10 μ	1375	50.0	9.1	14.0
10-20 μ	500	18.2	26.5	40.8
20-50 μ	36	1.3	25.8	39.7
50-75 μ	1	0.04	3.6	5.5
>75 μ	0	0	0	0
Totals	1912	69.6	65.0	100
TOTALS (All Categories)	2749	100	100	

TABLE D-133
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106321		Total Mass of Particulates (mg): Coors: 263 Agency: 319		
Monitor Location: Duquesne II		Calculated Mass (mg): 126		
Date of Sample: 9/3/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 150 Agency: 157		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	75	3.5	0.7	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	75	3.5	0.7	100
<u>Irregular</u>				
5-10 μ	225	10.5	2.4	6.4
10-20 μ	125	5.8	10.8	28.6
20-50 μ	16	0.7	18.7	49.5
50-75 μ	1	0.05	5.8	15.5
>75 μ	0	0	0	0
Totals	367	17.1	37.8	100
<u>Agglomerate</u>				
5-10 μ	1100	51.1	6.6	10.7
10-20 μ	575	26.7	27.6	44.9
20-50 μ	32	1.5	20.8	23.8
50-75 μ	2	0.09	6.5	10.6
>75 μ	0	0	0	0
Totals	1709	79.4	61.5	100
TOTALS (All Categories)	2151	100	100	

TABLE D-134

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106329			Total Mass of Particulates (mg): Coors: 119 Agency: 123	
Monitor Location: Liberty Boro			Calculated Mass (mg): 152	
Date of Sample: 9/3/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 73 Agency: 60	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	125	5.4	1.0	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	125	5.4	1.0	100
<u>Irregular</u>				
5-10 μ	550	24.0	5.0	12.1
10-20 μ	200	8.7	14.4	35.3
20-50 μ	12	0.5	11.7	28.6
50-75 μ	2	0.09	9.8	23.9
>75 μ	0	0	0	0
Totals	764	33.3	40.8	100
<u>Agglomerate</u>				
5-10 μ	825	35.9	4.1	7.1
10-20 μ	525	22.9	21.0	36.1
20-50 μ	56	2.4	30.3	52.1
50-75 μ	1	0.04	2.7	4.6
>75 μ	0	0	0	0
Totals	1407	61.3	58.2	100
TOTALS (All Categories)	2296	100	100	

TABLE D-135
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106331			Total Mass of Particulates (mg): Coors: 207 Agency: 224	
Monitor Location: Clairton			Calculated Mass (mg): 245	
Date of Sample: 9/3/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 90 Agency: 115	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	375	12.7	1.8	65.2
10-20 μ	25	0.8	1.0	34.8
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	400	13.6	2.8	100
<u>Irregular</u>				
5-10 μ	350	11.9	2.0	5.2
10-20 μ	200	6.8	8.9	23.8
20-50 μ	44	1.5	26.5	70.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	594	20.2	37.4	100
<u>Agglomerate</u>				
5-10 μ	1075	36.5	3.3	5.6
10-20 μ	775	26.3	19.2	32.2
20-50 μ	96	3.3	32.2	53.8
50-75 μ	3	0.1	5.0	8.4
>75 μ	0	0	0	0
Totals	1949	66.2	59.7	100
TOTALS (All Categories)	2943	100	100	

TABLE D-136
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106337			Total Mass of Particulates (mg): Coors: 164 Agency: 134	
Monitor Location: South Fayette			Calculated Mass (mg): 153	
Date of Sample: 9/3/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 79 Agency: 65	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	150	7.4	1.2	25.7
10-20 μ	0	0	0	0
20-50 μ	4	0.2	3.4	74.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	154	7.6	4.6	100
<u>Irregular</u>				
5-10 μ	525	26.0	4.7	11.1
10-20 μ	175	8.6	12.5	29.5
20-50 μ	16	0.8	15.5	36.5
50-75 μ	2	0.1	9.7	22.8
>75 μ	0	0	0	0
Totals	718	35.5	42.4	100
<u>Agglomerate</u>				
5-10 μ	800	39.6	4.0	7.5
10-20 μ	300	14.8	11.9	22.5
20-50 μ	44	2.2	23.6	44.6
50-75 μ	5	0.2	13.4	25.4
>75 μ	0	0	0	0
Totals	1149	56.8	53.0	100
TOTALS (All Categories)	2021	100	100	

TABLE D-137
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093271		Total Mass of Particulates (mg): Coors: 386 Agency: 355		
Monitor Location: Baden		Calculated Mass (mg): 287		
Date of Sample: 9/9/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 207 Agency: 185		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	750	24.3	3.2	47.4
10-20 μ	50	1.6	1.7	25.3
20-50 μ	4	0.1	1.8	27.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	804	26.1	6.7	100
<u>Irregular</u>				
5-10 μ	550	17.8	2.6	5.7
10-20 μ	400	13.0	15.2	33.4
20-50 μ	44	1.4	22.6	49.6
50-75 μ	2	0.06	5.1	11.3
>75 μ	0	0	0	0
Totals	996	32.3	45.6	100
<u>Agglomerate</u>				
5-10 μ	600	19.5	1.6	3.3
10-20 μ	575	18.6	12.1	25.4
20-50 μ	104	3.4	29.7	62.2
50-75 μ	3	0.1	4.3	9.0
>75 μ	0	0	0	0
Totals	1282	41.6	47.7	100
TOTALS (All Categories)	3082	100	100	

TABLE D-138
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093269			Total Mass of Particulates (mg): Coors: 387 Agency: 339	
Monitor Location: Beaver Falls			Calculated Mass (mg): 160	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 232 Agency: 168	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	50	2.8	0.4	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	50	2.8	0.4	100
<u>Irregular</u>				
5-10 μ	375	20.7	3.2	5.0
10-20 μ	250	13.8	17.1	26.4
20-50 μ	28	1.5	25.9	40.0
50-75 μ	4	0.2	18.5	28.6
>75 μ	0	0	0	0
Totals	657	36.2	64.7	100
<u>Agglomerate</u>				
5-10 μ	750	41.3	3.6	10.2
10-20 μ	325	17.9	12.3	35.4
20-50 μ	32	1.8	16.4	47.1
50-75 μ	1	0.06	2.6	7.4
>75 μ	0	0	0	0
Totals	1108	61.0	34.9	100
TOTALS (All Categories)	1815	100	100	

TABLE D-139
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093267			Total Mass of Particulates (mg): Coors: 296 Agency: 330	
Monitor Location: Koppel			Calculated Mass (mg): 211	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 156 Agency: 174	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	200	7.4	1.2	50.0
10-20 μ	25	0.9	1.2	50.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	225	8.4	2.3	100
<u>Irregular</u>				
5-10 μ	500	18.6	3.2	6.8
10-20 μ	300	11.2	15.5	32.5
20-50 μ	28	1.0	19.6	41.0
50-75 μ	0	0	0	0
>75 μ	1	0.04	9.4	19.7
Totals	829	30.9	47.8	100
<u>Agglomerate</u>				
5-10 μ	1025	38.2	3.7	7.4
10-20 μ	550	20.5	15.8	31.7
20-50 μ	48	1.8	18.7	37.4
50-75 μ	6	0.2	11.7	23.4
>75 μ	0	0	0	0
Totals	1629	60.7	49.9	100
TOTALS (All Categories)	2683	100	100	

TABLE D-140
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1110928		Total Mass of Particulates (mg): Coors: 338 Agency: 287		
Monitor Location: Brighton Township		Calculated Mass (mg): 114		
Date of Sample: 9/9/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 178 Agency: 160		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	200	12.8	2.1	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	200	12.8	2.1	100
<u>Irregular</u>				
5-10 μ	325	20.9	3.9	7.2
10-20 μ	200	12.8	19.2	35.4
20-50 μ	24	1.5	31.1	57.4
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	549	35.3	54.3	100
<u>Agglomerate</u>				
5-10 μ	525	33.7	3.5	8.0
10-20 μ	250	16.0	13.3	30.6
20-50 μ	32	2.0	23.1	53.0
50-75 μ	1	0.06	3.6	8.3
>75 μ	0	0	0	0
Totals	808	51.9	43.6	100
TOTALS (All Categories)	1557	100	100	

TABLE D-141
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093292			Total Mass of Particulates (mg): Coors: 667 Agency: 688	
Monitor Location: Midland			Calculated Mass (mg): 185	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 404 Agency: 341	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	100	5.3	0.7	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	100	5.3	0.7	100
<u>Irregular</u>				
5-10 μ	225	12.0	1.6	4.6
10-20 μ	150	8.0	8.8	23.8
20-50 μ	20	1.1	16.0	42.9
50-75 μ	0	0	0	0
>75 μ	1	0.05	10.7	28.9
Totals	396	21.0	37.2	100
<u>Agglomerate</u>				
5-10 μ	600	31.9	2.4	4.0
10-20 μ	725	38.5	23.8	38.2
20-50 μ	56	3.0	24.8	39.9
50-75 μ	5	0.3	11.1	17.8
>75 μ	0	0	0	0
Totals	1386	73.6	62.1	100
TOTALS (All Categories)	1882	100	100	

TABLE D-142
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106379			Total Mass of Particulates (mg): Coors: 187 Agency: --	
Monitor Location: Elco			Calculated Mass (mg): 132	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 84 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	300	11.1	2.8	60.0
10-20 μ	25	0.9	1.8	40.0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	325	12.1	4.6	100
<u>Irregular</u>				
5-10 μ	900	33.4	9.3	18.9
10-20 μ	375	13.9	31.0	63.0
20-50 μ	8	0.3	8.9	18.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1283	47.6	49.2	100
<u>Agglomerate</u>				
5-10 μ	775	28.8	4.4	9.6
10-20 μ	275	10.2	12.6	27.3
20-50 μ	32	1.2	19.8	42.9
50-75 μ	3	0.1	9.3	20.1
>75 μ	0	0	0	0
Totals	1085	40.3	46.2	100
TOTALS (All Categories)	2693	100	100	

TABLE D-143
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106323			Total Mass of Particulates (mg): Coors: 5.7 Agency: 337	
Monitor Location: Downtown			Calculated Mass (mg): 15.2	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: 159	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	25	12.2	2.0	5.5
10-20 μ	0	0	0	0
20-50 μ	4	2.0	34.6	94.5
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	29	14.1	36.6	100
<u>Irregular</u>				
5-10 μ	150	73.2	13.5	21.7
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	1	0.5	48.7	78.3
>75 μ	0	0	0	0
Totals	151	73.6	62.2	100
<u>Agglomerate</u>				
5-10 μ	25	12.2	1.2	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	25	12.2	1.2	100
TOTALS (All Categories)	205	100	100	

TABLE D-144
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106327			Total Mass of Particulates (mg): Coors: 429 Agency: 428	
Monitor Location: Central Lab			Calculated Mass (mg): 419	
Date of Sample: 9/9/76 (First Examination)			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 219 Agency: 235	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	500	6.8	1.4	45.4
10-20 μ	75	1.0	1.7	54.5
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	575	7.8	3.2	100
<u>Irregular</u>				
5-10 μ	2050	28.0	6.7	18.7
10-20 μ	625	8.5	16.3	45.7
20-50 μ	36	0.5	12.7	35.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	2711	37.0	35.7	100
<u>Agglomerate</u>				
5-10 μ	2950	40.2	5.3	8.7
10-20 μ	900	12.3	13.0	21.3
20-50 μ	188	2.6	36.8	60.3
50-75 μ	6	0.08	5.9	9.6
>75 μ	0	0	0	0
Totals	4044	55.2	61.1	100
TOTALS (All Categories)	7330	100	100	

TABLE D-145
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106327		Total Mass of Particulates (mg): Coors: 429 Agency: 428		
Monitor Location: Central Lab		Calculated Mass (mg): 231		
Date of Sample: 9/9/76 (Second Examination)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 219 Agency: 235		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	75	2.7	0.4	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	75	2.7	0.4	100
<u>Irregular</u>				
5-10 μ	950	34.4	5.6	14.6
10-20 μ	250	9.1	11.8	30.7
20-50 μ	28	1.0	17.9	46.4
50-75 μ	1	0.04	3.2	8.3
>75 μ	0	0	0	0
Totals	1229	44.6	38.6	100
<u>Agglomerate</u>				
5-10 μ	1050	38.1	3.4	5.7
10-20 μ	300	10.9	7.9	12.9
20-50 μ	96	3.5	34.2	56.0
50-75 μ	6	0.2	10.7	17.5
>75 μ	1	0.04	4.8	7.9
Totals	1453	52.7	61.0	100
TOTALS (All Categories)	2757	100	100	

TABLE D-146
RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1106328		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Central Lab		Calculated Mass (mg): 219		
Date of Sample: 9/9/76 (Cover Filter for 1106327)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	100	3.5	0.6	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	100	3.5	0.6	100
<u>Irregular</u>				
5-10 μ	825	29.2	5.1	11.4
10-20 μ	300	10.6	15.0	33.2
20-50 μ	32	1.1	21.6	47.9
50-75 μ	1	0.04	3.4	7.5
>75 μ	0	0	0	0
Totals	1158	41.0	45.0	100
<u>Agglomerate</u>				
5-10 μ	1175	41.6	4.1	7.5
10-20 μ	325	11.5	9.0	16.5
20-50 μ	60	2.1	22.5	41.3
50-75 μ	2	0.07	3.7	6.9
>75 μ	3	0.1	15.1	27.8
Totals	1565	55.4	54.4	100
TOTALS (All Categories)	2823	100	100	

TABLE D-147
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106353			Total Mass of Particulates (mg): Coors: 280 Agency: 238	
Monitor Location: Hazelwood			Calculated Mass (mg): 161	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 137 Agency: 140	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	625	20.6	4.7	75.8
10-20 μ	25	0.8	1.5	24.2
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	650	21.4	6.2	100
<u>Irregular</u>				
5-10 μ	250	8.2	2.1	8.6
10-20 μ	100	3.3	6.8	27.7
20-50 μ	12	0.4	11.0	44.9
50-75 μ	1	0.3	4.6	18.7
>75 μ	0	0	0	0
Totals	363	12.0	24.5	100
<u>Agglomerate</u>				
5-10 μ	1275	42.1	6.0	8.7
10-20 μ	675	22.2	25.5	36.8
20-50 μ	64	2.1	32.6	47.2
50-75 μ	2	0.07	5.1	7.4
>75 μ	0	0	0	0
Totals	2016	66.6	69.2	100
TOTALS (All Categories)	3029	100	100	

TABLE D-148

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106386		Total Mass of Particulates (mg): Coors: 474 Agency: 532		
Monitor Location: North Braddock		Calculated Mass (mg): 259		
Date of Sample: 9/9/76 (First examination of stub)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 248 Agency: 272		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	725	21.3	3.4	30.3
10-20 μ	100	2.9	3.8	33.5
20-50 μ	8	0.2	4.1	36.2
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	833	24.5	11.2	100
<u>Irregular</u>				
5-10 μ	375	11.0	2.0	5.1
10-20 μ	200	5.9	8.4	21.8
20-50 μ	36	1.1	20.6	53.1
50-75 μ	0	0	0	0
>75 μ	1	0.03	7.7	19.9
Totals	612	18.0	38.7	100
<u>Agglomerate</u>				
5-10 μ	1125	33.1	3.3	6.6
10-20 μ	750	22.1	17.6	35.1
20-50 μ	72	2.1	22.8	45.6
50-75 μ	4	0.1	6.4	12.7
>75 μ	0	0	0	0
Totals	1951	57.4	50.1	100
TOTALS (All Categories)	3396	100	100	

TABLE D-149
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106386			Total Mass of Particulates (mg): Coors: 474 Agency: 532	
Monitor Location: North Braddock			Calculated Mass (mg): 575	
Date of Sample: 9/9/76 (Second examination of stub)			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 248 Agency: 272	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	275	4.2	0.6	21.0
10-20 μ	75	1.1	1.3	45.9
20-50 μ	4	0.06	0.9	33.1
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	354	5.4	2.8	100
<u>Irregular</u>				
5-10 μ	1850	28.0	4.4	10.7
10-20 μ	775	11.7	14.7	36.0
20-50 μ	80	1.2	20.6	50.2
50-75 μ	1	0.02	1.3	3.1
>75 μ	0	0	0	0
Totals	2706	41.0	41.0	100
<u>Agglomerate</u>				
5-10 μ	2175	32.9	2.9	5.1
10-20 μ	1125	17.0	11.9	21.1
20-50 μ	236	3.6	33.7	59.8
50-75 μ	11	0.2	7.8	14.0
>75 μ	0	0	0	0
Totals	3547	53.7	56.3	100
TOTALS (All Categories)	6607	100	100	

TABLE D-150

RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1106385		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: North Braddock		Calculated Mass (mg): 398		
Date of Sample: 9/9/76 (Cover Filter for 1106386)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	350	7.0	1.1	22.1
10-20 μ	100	2.0	2.4	50.5
20-50 μ	4	0.08	1.3	27.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	454	9.0	4.8	100
<u>Irregular</u>				
5-10 μ	1650	32.8	5.7	14.6
10-20 μ	475	9.4	13.0	33.6
20-50 μ	44	0.9	16.3	42.1
50-75 μ	2	0.04	3.7	9.6
>75 μ	0	0	0	0
Totals	2171	43.1	38.7	100
<u>Agglomerate</u>				
5-10 μ	1325	26.3	2.5	4.5
10-20 μ	925	18.4	14.1	25.0
20-50 μ	148	2.9	30.5	54.1
50-75 μ	9	0.2	9.3	16.4
>75 μ	0	0	0	0
Totals	2407	47.8	56.4	100
TOTALS (All Categories)	5032	100	100	

TABLE D-151
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106383			Total Mass of Particulates (mg): Coors: 423 Agency: 524	
Monitor Location: Duquesne II			Calculated Mass (mg): 204	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 242 Agency: 260	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	475	15.8	2.8	70.4
10-20 μ	25	0.8	1.2	29.6
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	500	16.7	4.0	100
<u>Irregular</u>				
5-10 μ	375	12.5	2.5	5.9
10-20 μ	400	13.3	21.4	50.1
20-50 μ	16	0.5	11.6	27.1
50-75 μ	2	0.07	7.2	16.9
>75 μ	0	0	0	0
Totals	793	26.4	42.7	100
<u>Agglomerate</u>				
5-10 μ	1025	34.2	3.8	7.1
10-20 μ	625	20.8	18.6	34.8
20-50 μ	52	1.7	20.9	39.2
50-75 μ	5	0.2	10.0	18.8
>75 μ	0	0	0	0
Totals	1707	56.9	53.3	100
TOTALS (All Categories)	3000	100	100	

TABLE D-152

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106388			Total Mass of Particulates (mg): Coors: 471 Agency: 582	
Monitor Location: Liberty Boro			Calculated Mass (mg): 274	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 289 Agency: 315	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	725	16.3	3.2	47.5
10-20 μ	100	2.2	3.5	52.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	825	18.6	6.8	100
<u>Irregular</u>				
5-10 μ	600	13.5	3.0	12.5
10-20 μ	175	3.9	7.0	29.1
20-50 μ	16	0.4	8.6	36.0
50-75 μ	2	0.04	5.4	22.5
>75 μ	0	0	0	0
Totals	793	17.8	24.0	100
<u>Agglomerate</u>				
5-10 μ	1825	41.1	5.0	7.3
10-20 μ	900	20.2	19.9	28.8
20-50 μ	88	2.0	26.3	38.0
50-75 μ	12	0.3	18.0	25.9
>75 μ	0	0	0	0
Totals	2825	63.6	69.3	100
TOTALS (All Categories)	4443	100	100	

TABLE D-153
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106381		Total Mass of Particulates (mg): Coors: 293 Agency: 330		
Monitor Location: Clairton		Calculated Mass (mg): 186		
Date of Sample: 9/9/76		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 127 Agency: 178		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	400	17.5	2.6	66.7
10-20 μ	25	1.1	1.3	33.3
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	425	18.6	3.9	100
<u>Irregular</u>				
5-10 μ	400	17.5	2.9	6.1
10-20 μ	300	13.2	17.6	36.4
20-50 μ	20	0.9	15.9	32.8
50-75 μ	3	0.1	11.9	24.6
>75 μ	0	0	0	0
Totals	723	31.7	48.3	100
<u>Agglomerate</u>				
5-10 μ	575	25.2	2.3	4.9
10-20 μ	500	21.9	16.3	34.1
20-50 μ	56	2.4	24.7	51.7
50-75 μ	2	0.09	4.4	9.2
>75 μ	0	0	0	0
Totals	1133	49.7	47.8	100
TOTALS (All Categories)	2281	100	100	

TABLE D-154
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093294			Total Mass of Particulates (mg): Coors: 177 Agency: 294	
Monitor Location: Airport			Calculated Mass (mg): 104	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 207 Agency: 147	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	75	4.3	0.9	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	75	4.3	0.9	100
<u>Irregular</u>				
5-10 μ	550	31.9	7.2	17.4
10-20 μ	150	8.7	15.8	38.0
20-50 μ	8	0.5	11.4	27.4
50-75 μ	1	0.06	7.1	17.1
>75 μ	0	0	0	0
Totals	709	41.1	41.4	100
<u>Agglomerate</u>				
5-10 μ	800	46.4	5.8	10.1
10-20 μ	125	7.2	7.3	12.6
20-50 μ	8	0.5	6.3	10.9
50-75 μ	7	0.4	27.6	47.9
>75 μ	1	0.06	10.6	18.4
Totals	941	54.6	57.7	100
TOTALS (All Categories)	1725	100	100	

TABLE D-155
RESULTS OF SEM PARTICLE COUNTS

Filter Number: (Cover Filter) 1093295		Total Mass of Particulates (mg): Coors: -- Agency: --		
Monitor Location: Airport		Calculated Mass (mg): 56.6		
Date of Sample: 9/9/76 (Cover Filter for 1093294)		Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --		
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	25	1.6	0.5	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	25	1.6	0.5	100
<u>Irregular</u>				
5-10 μ	575	37.9	13.9	26.0
10-20 μ	150	9.9	28.9	54.4
20-50 μ	4	0.3	10.4	19.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	729	48.1	53.2	100
<u>Agglomerate</u>				
5-10 μ	550	36.3	7.4	16.0
10-20 μ	200	13.2	21.4	46.4
20-50 μ	12	0.8	17.4	37.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	762	50.3	46.2	100
TOTALS (All Categories)	1516	100	100	

TABLE D-156
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106310			Total Mass of Particulates (mg): Coors: 278 Agency: 214	
Monitor Location: South Fayette			Calculated Mass (mg): 230	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 145 Agency: 107	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	575	15.5	3.0	25.7
10-20 μ	100	2.7	4.2	35.7
20-50 μ	8	0.2	4.6	38.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	683	18.4	11.8	100
<u>Irregular</u>				
5-10 μ	1150	30.9	6.8	13.9
10-20 μ	350	9.4	16.6	33.8
20-50 μ	40	1.1	25.7	52.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1540	41.4	49.2	100
<u>Agglomerate</u>				
5-10 μ	1050	28.2	3.5	8.9
10-20 μ	400	10.8	10.6	27.1
20-50 μ	40	1.1	14.3	36.6
50-75 μ	6	0.2	10.7	27.5
>75 μ	0	0	0	0
Totals	1496	40.2	39.0	100
TOTALS (All Categories)	3719	100	100	

TABLE D- 157

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093227 & 1093228 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 149 Agency: 166	
Monitor Location: Midland			Calculated Mass (mg): 236	
Date of Sample: 8/16/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 83 Agency: 80	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	500	9.6	2.6	28.8
10-20 μ	100	1.9	4.1	46.2
20-50 μ	4	0.08	2.2	25.0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	604	11.5	8.9	100
<u>Irregular</u>				
5-10 μ	2175	41.6	12.6	19.2
10-20 μ	350	6.7	16.2	24.6
20-50 μ	44	0.8	27.5	41.9
50-75 μ	3	0.06	9.4	14.3
>75 μ	0	0	0	0
Totals	2572	49.2	65.7	100
<u>Agglomerate</u>				
5-10 μ	1850	35.4	5.9	23.4
10-20 μ	175	3.3	4.5	17.7
20-50 μ	28	0.5	9.7	38.3
50-75 μ	3	0.06	5.2	20.5
>75 μ	0	0	0	0
Totals	2056	39.3	25.4	100
TOTALS (All Categories)	5232	100	100	

TABLE D-158

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093229 & 1093230 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 149 Agency: 151	
Monitor Location: Airport			Calculated Mass (mg): 237	
Date of Sample: 8/16/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 76 Agency: 72	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	150	3.1	0.8	7.4
10-20 μ	0	0	0	0
20-50 μ	4	0.08	2.2	21.2
50-75 μ	0	0	0	0
>75 μ	1	0.02	7.4	71.4
Totals	155	3.2	10.4	100
<u>Irregular</u>				
5-10 μ	1725	35.4	9.9	18.0
10-20 μ	350	7.2	16.1	29.1
20-50 μ	32	0.6	19.9	36.0
50-75 μ	3	0.06	9.3	16.9
>75 μ	0	0	0	0
Totals	2110	43.2	55.3	100
<u>Agglomerate</u>				
5-10 μ	2125	43.6	6.8	19.8
10-20 μ	450	9.2	11.5	33.6
20-50 μ	36	0.7	12.4	36.4
50-75 μ	2	0.04	3.5	10.1
>75 μ	0	0	0	0
Totals	2613	53.6	34.2	100
TOTALS (All Categories)	4878	100	100	

TABLE D-159

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093290 & 1093291 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 374 Agency: 351	
Monitor Location: Baden			Calculated Mass (mg): 1071	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 203 Agency: 183	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	550	7.0	0.6	12.2
10-20 μ	225	2.9	2.0	39.9
20-50 μ	20	0.2	2.4	47.9
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	795	10.2	5.1	100
<u>Irregular</u>				
5-10 μ	2275	29.2	2.9	7.8
10-20 μ	800	10.3	8.2	21.8
20-50 μ	152	1.9	21.0	56.2
50-75 μ	5	0.06	3.4	9.2
>75 μ	1	0.01	1.8	5.0
Totals	3233	41.5	37.4	100
<u>Agglomerate</u>				
5-10 μ	2250	28.9	1.6	2.8
10-20 μ	1200	15.4	6.8	11.8
20-50 μ	248	3.2	19.0	33.0
50-75 μ	65	0.8	24.9	43.4
>75 μ	5	0.06	5.2	9.0
Totals	3768	48.3	57.5	100
TOTALS (All Categories)	7796	100	100	

TABLE D-160

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093247 & 1093248 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 433 Agency: --	
Monitor Location: Liberty Boro			Calculated Mass (mg): 1026	
Date of Sample: 8/22/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 272 Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	275	3.2	0.3	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	275	3.2	0.3	100
<u>Irregular</u>				
5-10 μ	2550	29.3	3.4	8.0
10-20 μ	875	10.0	9.3	21.8
20-50 μ	168	1.9	24.2	56.7
50-75 μ	8	0.09	5.8	13.5
>75 μ	0	0	0	0
Totals	3601	41.4	42.7	100
<u>Agglomerate</u>				
5-10 μ	3200	36.8	2.4	4.2
10-20 μ	1225	14.1	7.2	12.7
20-50 μ	356	4.1	28.5	50.0
50-75 μ	39	0.4	15.6	27.4
>75 μ	3	0.03	3.2	5.7
Totals	4823	55.4	57.0	100
TOTALS (All Categories)	8699	100	100	

TABLE D-161
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106308 & 1106309 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 151 Agency: 143	
Monitor Location: Hazelwood			Calculated Mass (mg): 81	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 71 Agency: 76	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	225	10.9	3.4	34.2
10-20 μ	0	0	0	0
20-50 μ	4	0.2	6.5	65.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	229	11.1	9.9	100
<u>Irregular</u>				
5-10 μ	800	38.6	13.5	16.9
10-20 μ	275	13.3	37.1	46.5
20-50 μ	16	0.8	29.2	36.6
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1091	52.7	79.8	100
<u>Agglomerate</u>				
5-10 μ	700	33.8	6.6	63.6
10-20 μ	50	24.2	3.7	36.4
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	750	36.2	10.3	100
TOTALS (All Categories)	2070	100	100	

TABLE D-162
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093298 & 1093299 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 289 Agency: 214	
Monitor Location: North Braddock			Calculated Mass (mg): 386	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 153 Agency: 108	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	550	10.6	1.7	22.8
10-20 μ	125	2.4	3.1	41.4
20-50 μ	8	0.2	2.7	35.8
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	683	13.2	7.6	100
<u>Irregular</u>				
5-10 μ	1625	31.5	5.7	11.8
10-20 μ	400	7.8	11.3	23.3
20-50 μ	24	0.5	9.2	18.9
50-75 μ	9	0.2	17.2	35.4
>75 μ	1	0.02	5.2	10.6
Totals	2059	39.9	48.6	100
<u>Agglomerate</u>				
5-10 μ	1975	38.3	3.9	8.8
10-20 μ	350	6.8	5.5	12.6
20-50 μ	80	1.6	17.0	38.8
50-75 μ	11	0.2	11.7	26.7
>75 μ	2	0.04	5.7	13.1
Totals	2418	46.9	43.8	100
TOTALS (All Categories)	5160	100	100	

TABLE D-163
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106300 & 1106301 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 68 Agency: --	
Monitor Location: Duquesne II			Calculated Mass (mg): 72	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: -- Agency: --	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	0	0	0	0
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	0	0	0	0
<u>Irregular</u>				
5-10 μ	450	41.7	8.5	13.0
10-20 μ	50	4.6	7.6	11.6
20-50 μ	24	2.2	49.3	75.3
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	524	48.6	65.5	100
<u>Agglomerate</u>				
5-10 μ	300	27.8	3.2	9.2
10-20 μ	250	23.2	21.1	61.1
20-50 μ	4	0.4	4.6	13.2
50-75 μ	1	0.09	5.7	16.5
>75 μ	0	0	0	0
Totals	555	51.4	34.5	100
TOTALS (All Categories)	1079	100	100	

TABLE D-164

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106302 & 1106303 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 207 Agency: 271	
Monitor Location: Liberty Boro			Calculated Mass (mg): 325	
Date of Sample: 8/28/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 130 Agency: 136	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	925	13.0	3.5	69.8
10-20 μ	50	0.7	1.5	30.2
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	975	13.7	5.0	100
<u>Irregular</u>				
5-10 μ	1700	23.8	7.2	14.2
10-20 μ	325	4.6	10.9	21.8
20-50 μ	52	0.7	23.7	47.2
50-75 μ	1	0.01	2.3	4.5
>75 μ	1	0.01	6.1	12.2
Totals	2079	29.2	50.2	100
<u>Agglomerate</u>				
5-10 μ	3175	44.5	7.4	16.5
10-20 μ	825	11.6	15.4	34.4
20-50 μ	72	1.0	18.2	40.6
50-75 μ	3	0.04	3.8	8.5
>75 μ	0	0	0	0
Totals	4075	57.2	44.9	100
TOTALS (All Categories)	7129	100	100	

TABLE D- 165
RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106327 & 1106328 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 429 Agency: 428	
Monitor Location: Central Lab			Calculated Mass (mg): 450	
Date of Sample: 9/9/76 (second examination)			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 219 Agency: 235	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	175	3.1	0.5	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	175	3.1	0.5	100
<u>Irregular</u>				
5-10 μ	1775	31.8	5.4	12.9
10-20 μ	550	9.8	13.4	32.0
20-50 μ	60	1.1	19.7	47.2
50-75 μ	2	0.04	3.3	7.9
>75 μ	0	0	0	0
Totals	2387	42.8	41.7	100
<u>Agglomerate</u>				
5-10 μ	2225	39.9	3.8	6.5
10-20 μ	625	11.2	8.4	14.6
20-50 μ	156	2.8	28.5	49.2
50-75 μ	8	0.1	7.3	12.6
>75 μ	4	0.07	9.8	17.0
Totals	3018	54.1	57.8	100
TOTALS (All Categories)	5580	100	100	

TABLE D-166

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1106386 & 1106385 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 474 Agency: 532	
Monitor Location: North Braddock			Calculated Mass (mg): 657	
Date of Sample: 9/9/76 (first examination)			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 248 Agency: 272	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	1075	12.8	2.0	27.0
10-20 μ	200	2.4	3.0	40.3
20-50 μ	12	0.1	2.4	32.7
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	1287	15.3	7.3	100
<u>Irregular</u>				
5-10 μ	2025	24.0	4.2	10.9
10-20 μ	675	8.0	11.2	29.0
20-50 μ	80	0.9	18.0	46.5
50-75 μ	2	0.02	2.2	5.8
>75 μ	1	0.01	3.0	7.8
Totals	2783	33.0	38.7	100
<u>Agglomerate</u>				
5-10 μ	2450	29.1	2.8	5.2
10-20 μ	1675	19.9	15.5	28.7
20-50 μ	220	2.6	27.5	51.0
50-75 μ	13	0.2	8.1	15.1
>75 μ	0	0	0	0
Totals	4358	51.7	53.9	100
TOTALS (All Categories)	8428	100	100	

TABLE D-167

RESULTS OF SEM PARTICLE COUNTS

Filter Number: 1093294 & 1093295 (combined cover & primary filters)			Total Mass of Particulates (mg): Coors: 278 Agency: 274	
Monitor Location: Airport			Calculated Mass (mg): 161	
Date of Sample: 9/9/76			Air concentration ($\mu\text{g}/\text{m}^3$): Coors: 207 Agency: 147	
Category	Particle Count	Percent By Number	Percent By Mass	
			All Categories	Within Category
<u>Sphere</u>				
5-10 μ	100	3.1	0.8	100
10-20 μ	0	0	0	0
20-50 μ	0	0	0	0
50-75 μ	0	0	0	0
>75 μ	0	0	0	0
Totals	100	3.1	0.8	100
<u>Irregular</u>				
5-10 μ	1125	34.7	9.6	21.0
10-20 μ	300	9.2	20.4	44.7
20-50 μ	12	0.4	11.0	24.2
50-75 μ	1	0.03	4.6	10.1
>75 μ	0	0	0	0
Totals	1438	44.4	45.6	100
<u>Agglomerate</u>				
5-10 μ	1350	41.6	6.4	11.9
10-20 μ	325	10.0	12.3	22.9
20-50 μ	20	0.6	10.2	19.0
50-75 μ	7	0.2	17.9	33.4
>75 μ	1	0.03	6.9	12.8
Totals	1703	52.5	53.6	100
TOTALS (All Categories)	3241	100	100	

TABLE D-168 through TABLE D-170 - SUMMARY OF EDAX ELEMENTAL ANALYSIS

TABLE D- 168

SUMMARY OF EDAX ELEMENTAL ANALYSIS FOR 16 AUGUST 1976 FILTER
SAMPLES. ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Filter				
	Baden 1093219	Beaver Falls 1093221	Koppel 1093223	Brighton Twp 1093225	Midland 1093227
Na	0.00	0.00	0.00	0.14	0.25
Mg	0.00	0.00	0.00	0.00	0.10
Al	0.00	0.00	0.02	0.46	0.45
Si	1.48	1.75	2.13	6.76	4.04
Au	1.00	1.00	1.00	1.00	1.00
S	0.00	0.16	0.14	0.00	0.23
Cl	0.00	0.00	0.00	0.00	0.03
Cd	0.00	0.00	0.00	0.00	0.02
K	0.00	0.00	0.00	0.10	0.18
Ca	0.00	0.00	0.00	0.89	0.54
Ti	0.00	0.00	0.00	0.00	0.03
Cr	0.00	0.00	0.00	0.00	0.03
Mn	0.00	0.00	0.00	0.00	0.01
Fe	0.02	0.00	0.00	0.02	0.43
Co	0.00	0.00	0.00	0.00	0.00
Ni	0.00	0.00	0.00	0.00	0.00
Zn	0.00	0.00	0.00	0.00	0.00
Cu	0.00	0.00	0.00	0.00	0.00
Hg	0.00	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Si	Si, S	Si, S	Si, Ca, Al, Na, K	Si, Ca, Al, Fe, Na, S, K, Mg

TABLE D- 168 (Continued)

SUMMARY OF EDAX ELEMENTAL ANALYSIS FOR 16 AUGUST 1976 FILTER
SAMPLES. ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Filter				
	Midland 1093228 Cover Filter	Elco 1093213	Downtown 1093215	Central Lab 1093241	Hazelwood 1093201
Na	0.33	0.00	0.00	0.11	0.00
Mg	0.11	0.00	0.00	0.00	0.00
Al	0.47	0.00	0.00	0.37	0.08
Si	5.23	1.43	1.64	5.96	1.50
Au	1.00	1.00	1.00	1.00	1.00
S	0.15	0.00	0.01	0.22	0.08
Cl	0.07	0.00	0.00	0.00	0.00
Cd	0.03	0.00	0.00	0.00	0.00
K	0.22	0.00	0.00	0.11	0.04
Ca	0.67	0.00	0.00	0.75	0.22
Ti	0.05	0.00	0.00	0.00	0.00
Cr	0.04	0.00	0.00	0.00	0.00
Mn	0.01	0.00	0.00	0.00	0.00
Fe	0.45	0.00	0.01	0.04	0.05
Co	0.01	0.00	0.00	0.00	0.00
Ni	0.00	0.00	0.00	0.00	0.00
Zn	0.00	0.00	0.00	0.00	0.00
Cu	0.03	0.00	0.00	0.00	0.01
Hg	0.00	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Si, Ca, Al, Fe, Na, K, S, Mg, Cu	Si	Si	Si, Ca, Al, S, Na, K	Si, Ca

TABLE D-168 (Continued)

SUMMARY OF EDAX ELEMENTAL ANALYSIS FOR 16 AUGUST 1976 FILTER
SAMPLES. ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Filter				
	No. Braddock 1093203	Duquesne II 1093205	Liberty Boro 1093209	Clairton 1093211	Airport 1093229
Na	0.11	0.00	0.00	0.00	0.24
Mg	0.09	0.00	0.00	0.00	0.03
Al	0.24	0.07	0.07	0.00	0.32
Si	1.70	1.17	1.61	0.32	3.56
Au	1.00	1.00	1.00	1.00	1.00
S	0.24	0.12	0.09	0.00	0.26
Cl	0.09	0.00	0.00	0.00	0.06
Cd	0.08	0.00	0.00	0.00	0.05
K	0.13	0.04	0.05	0.00	0.17
Ca	0.31	0.26	0.28	0.04	0.51
Ti	0.07	0.00	0.00	0.00	0.06
Cr	0.08	0.00	0.00	0.00	0.02
Mn	0.06	0.00	0.00	0.00	0.01
Fe	0.10	0.13	0.05	0.19	0.45
Co	0.06	0.00	0.00	0.00	0.01
Ni	0.05	0.00	0.00	0.00	0.00
Zn	0.04	0.00	0.00	0.00	0.00
Cu	0.06	0.01	0.00	0.00	0.04
Hg	0.04	0.00	0.00	0.00	0.00
As	0.03	0.00	0.00	0.00	0.00
Pb	0.04	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Si, Ca, Al, S, K, Na, Fe, Cu, Hg, Pb, As, Cl, Cd, Cr, Ti	Si, Ca, Fe, S	Si, Ca	Si, Fe	Si, Ca, Fe, Al, S, Na, K, Cu

TABLE D-168 (Continued)

SUMMARY OF EDAX ELEMENTAL ANALYSIS FOR 16 AUGUST 1976 FILTER
 SAMPLES. ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
 TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Filter				
	Airport 1093230 Cover Filter	So. Fayette 1093239			
Na	0.14	0.00			
Mg	0.07	0.00			
Al	0.46	0.13			
Si	3.59	3.79			
Au	1.00	1.00			
S	0.15	0.03			
Cl	0.01	0.00			
Cd	0.01	0.00			
K	0.11	0.00			
Ca	0.55	0.48			
Ti	0.04	0.00			
Cr	0.05	0.00			
Mn	0.02	0.00			
Fe	0.27	0.00			
Co	0.00	0.00			
Ni	0.00	0.00			
Zn	0.00	0.00			
Cu	0.00	0.00			
Hg	0.00	0.00			
As	0.00	0.00			
Pb	0.00	0.00			
Important Elements In Rank Order	Si, Ca, Al, Fe S, Na, K	Si, Ca, Al			

TABLE D-169

SUMMARY OF EDAX ELEMENTAL ANALYSIS FOR 28 AUGUST 1976 FILTER
 SAMPLES. ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
 TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Filter				
	Brighton Twp 1093284	Hazelwood 1106308	Hazelwood 1106309 Cover Filter	No. Braddock 1093298	No. Braddock 1093299 Cover Filter
Na	0.08	0.22	0.24	0.20	0.18
Mg	0.00	0.10	0.10	0.06	0.09
Al	0.36	0.39	0.45	0.38	0.45
Si	5.36	3.58	4.71	3.32	3.83
Au	1.00	1.00	1.00	1.00	1.00
S	0.37	0.45	0.15	0.54	0.15
Cl	0.00	0.02	0.02	0.03	0.03
Cd	0.00	0.01	0.02	0.07	0.02
K	0.06	0.15	0.16	0.17	0.16
Ca	0.58	0.49	0.64	0.77	0.66
Ti	0.00	0.04	0.04	0.01	0.05
Cr	0.00	0.02	0.01	0.02	0.02
Mn	0.00	0.00	0.01	0.03	0.01
Fe	0.02	0.08	0.12	0.35	0.20
Co	0.00	0.00	0.00	0.02	0.00
Ni	0.00	0.00	0.00	0.01	0.00
Zn	0.00	0.00	0.00	0.01	0.00
Cu	0.00	0.01	0.01	0.01	0.02
Hg	0.00	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Si, Ca, S, Al	Si, Ca, S, Al, Na, K, Mg	Si, Ca, Al, Na, K, S, Fe, Mg	Si, Ca, S, Al, Fe, Na, K	Si, Ca, Al, Fe, Na, K, S

TABLE D-169 (Continued)

SUMMARY OF EDAX ELEMENTAL ANALYSIS FOR 28 AUGUST 1976 FILTER
SAMPLES. ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Filter				
	Duquesne II 1106300	Duquesne II 1106301 Cover Filter	Liberty Boro 1106302	Liberty Boro 1106303 Cover Filter	So. Fayette 1093278
Na	0.27	0.24	0.10	0.25	0.06
Mg	0.15	0.10	0.04	0.06	0.02
Al	0.58	0.48	0.44	0.41	0.37
Si	6.35	5.19	3.65	4.48	2.55
Au	1.00	1.00	1.00	1.00	1.00
S	0.12	0.08	0.45	0.13	0.43
Cl	0.10	0.04	0.02	0.05	0.01
Cd	0.08	0.00	0.03	0.03	0.00
K	0.30	0.20	0.19	0.18	0.14
Ca	0.87	0.60	0.53	0.59	0.34
Ti	0.07	0.04	0.06	0.05	0.03
Cr	0.06	0.03	0.04	0.02	0.01
Mn	0.05	0.01	0.03	0.02	0.01
Fe	0.08	0.14	0.14	0.43	0.19
Co	0.03	0.00	0.01	0.02	0.00
Ni	0.02	0.00	0.00	0.00	0.00
Zn	0.01	0.00	0.00	0.01	0.00
Cu	0.03	0.01	0.03	0.01	0.00
Hg	0.01	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Si, Ca, Al, K, Na, Mg, S, Cl, Cd, Ti, Cu	Si, Ca, Al, Na, K, Fe, Mg	Si, Ca, S, Al, K, Fe, Na, Cu	Si, Ca, Fe, Al, Na, K, S	Si, S, Al, Ca, Fe, K

TABLE D-170

SUMMARY OF EDAX ELEMENTAL ANALYSIS FOR 9 SEPTEMBER 1976 FILTER
SAMPLES. ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Filter				
	Downtown 1106323	Central Lab 1106327	Central Lab 1106328 Cover Filter	Airport 1093294	Airport 1093295 Cover Filter
Na	0.04	0.11	0.13	0.16	0.21
Mg	0.00	0.08	0.08	0.04	0.08
Al	0.32	0.41	0.47	0.35	0.44
Si	5.66	3.64	4.43	4.36	5.41
Au	1.00	1.00	1.00	1.00	1.00
S	0.00	0.67	0.27	0.28	0.16
Cl	0.00	0.06	0.07	0.00	0.13
Cd	0.00	0.09	0.05	0.21	0.00
K	0.02	0.23	0.22	0.70	0.26
Ca	0.62	0.87	1.00	0.06	0.90
Ti	0.00	0.10	0.07	0.00	0.11
Cr	0.00	0.02	0.07	0.06	0.06
Mn	0.00	0.08	0.07	0.05	0.05
Fe	0.00	0.35	0.24	0.17	0.16
Co	0.00	0.04	0.04	0.01	0.04
Ni	0.00	0.03	0.05	0.00	0.00
Zn	0.00	0.01	0.03	0.01	0.02
Cu	0.00	0.04	0.02	0.05	0.02
Hg	0.00	0.02	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Si, Ca, Al	Si, Ca, S, Al, Fe, K, Na, Ti, Cd, Cu	Si, Ca, Al, S, Fe, K, Na	Si, K, Al, S, Cd, Fe, Na, Cu	Si, Ca, Al, K, Na, S, Fe, Cl, Ti

TABLE D-170 (Continued)

SUMMARY OF EDAX ELEMENTAL ANALYSIS FOR 9 SEPTEMBER 1976 FILTER
SAMPLES. ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Filter				
	So. Fayette 1106310				
Na	0.31				
Mg	0.44				
Al	0.85				
Si	2.36				
Au	1.00				
S	0.67				
Cl	0.81				
Cd	0.64				
K	0.71				
Ca	0.59				
Ti	0.49				
Cr	0.31				
Mn	0.25				
Fe	0.41				
Co	0.23				
Ni	0.11				
Zn	0.15				
Cu	0.19				
Hg	0.09				
As	0.07				
Pb	0.09				
Important Elements In Rank Order	<u>Si</u> , <u>Al</u> , <u>Cl</u> , <u>K</u> , <u>S</u> , <u>Cd</u> , <u>Ca</u> , <u>Ti</u> , <u>Mg</u> , <u>Fe</u> , <u>Na</u> , <u>Cr</u> , <u>Mn</u> , <u>Co</u> , <u>Cu</u> , <u>Zn</u> , <u>Ni</u> , Hg, Pb, As				

TABLE D-171 THROUGH D-216 - PARTICLE ANALYSIS OF SELECTED FILTERS

TABLE D-171

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Baden		Date of Sample: 16 August 1976	
Filter Number: 1093219		Photomicrograph Stub Number: 46	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Ca, Fe, S, Mn (low level)	40 microns irregular	organic - coal
2	Si, S, Ca (low level)	12 microns irregular	organic - coal
3	Si, Ca (low level)	15 microns irregular	organic - coal
4	<u>Fe</u> , Ca, Si	10 microns irregular	organic - coal
5	Si, Ca, Al, S	10 microns irregular	organic - coal
6	S, Si, Cl, Ca (low level)	15 microns irregular	organic - coal
7	Ca, S (low level)	50 microns irregular	organic - rubber
8	Si, Ca, S (low level)	20 microns irregular	mineral
9	Si, Ca (low level)	12 microns irregular	organic
10	S, Si, Ca (low level)	7 microns irregular	organic
11	Si, Zn, Ca, S (low level)	10 microns irregular	organic - coal
12	Si, Fe, Ca, Al, S (low level)	10 microns irregular	organic - coal

* See Figure D-20

TABLE D- 172

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Beaver Falls Filter Number: 1093221		Date of Sample: 16 August 1977 Photomicrograph Stub Number: 47	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, S, Ca (low level)	55 microns agglomerate	organic-industrial particle
2	Si, S, Ca (low level)	15 microns irregular	organic
3	Si, Ca, S, Al (low level)	25 microns irregular	organic-industrial particle
4	S, Si, Ca, (low level)	20 microns irregular	insect part
5	Si, Al, S, Ca (low level)	15 microns irregular	organic
6	<u>Fe</u> , S, Si, Ca, Cl, K, Al	15 microns agglomerate	iron-oxide
7	Si, S, Ca (low level)	60 microns irregular	organic-coal
8	Si, S, Ca Fe	15 microns agglomerate	industrial particle
9	S, Si, Ca (low level)	12 microns irregular	sulfate
10	S, Si, Ca, (low level)	12 microns irregular	organic
11	Si, Al, S, Ca	15 microns irregular	soil dust
12	<u>Si</u> , S, Ca, Cl, Fe	20 microns irregular	soil dust

TABLE D-173

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Koppel *		Date of Sample: 16 August 1977	
Filter Number: 1093223		Photomicrograph Stub Number: 48	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, Al (low level)	45 microns irregular	organic
2	S, Ca, Si, Fe	15 microns irregular	industrial particle
3	S, Ca	25 microns agglomerate	organic-industrial particle
4	S, Ca, Si, Al, Fe	40 microns agglomerate	industrial particle
5	Si, Al, S, Ca	30 microns agglomerate	industrial particle
6	S, Ca, Si (low level)	15 microns irregular	industrial particle
7	Si, Ca, S	20 microns irregular	organic-coal
8	S, Si, Ca, K	15 microns irregular	industrial particle
9	Si, S, Ca, Cl, Fe	20 microns agglomerate	industrial particle
10	Si, S, Ca	30 microns irregular	organic-coal
11	S, Ca, Si, Fe	15 microns irregular	industrial particle
12	Si, Ca, S, K, Cl, Al, Fe	8 microns irregular	mineral

*Note: Observer noted that 20 meters to the north there was an hibachi grill at the same level as the monitor which could be a source of coal particulates.

TABLE D-174

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Brighton Twp Filter Number: 1093225		Date of Sample: 16 August 1977 Photomicrograph Stub Number: 49	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , Ca, Al, K	20 microns spherical	flyash
2	Si, Ca, Al, Fe, S, Ti, Cl	15 microns irregular	mineral
3	Si, S, Al, Cl, Ca, K	15 microns irregular	soil dust
4	Si, Ca, Al, S, K	15 microns irregular	industrial particle
5	<u>K</u> , Si, Al, Fe, Ca, S, Ti	8 microns spherical	industrial particle
6	Si, K, Al, S, Cl	20 microns irregular	industrial particle
7	Si, Ca, K, Al, S	10 microns irregular	soil dust
8	Si, Al, Cl, Ca, S	15 microns irregular	industrial particle
9	Si, Ca, S, Al, Fe	12 microns irregular	soil dust
10	<u>Fe</u> , Si, Ca, Ti, Al, K, Mn, S, Zn	15 microns irregular	industrial particle (iron-oxide)
11	Si, Fe, Ca, K, S, Al	6 microns irregular	mineral
12	<u>Si</u> , Ca, Al, Fe, S, K	8 microns spherical	flyash

TABLE D-175

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Midland Filter Number: 1093227		Date of Sample: 16 August 1977 Photomicrograph Stub Number: 50	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , <u>Al</u> , K, Fe, Ca, S	40 microns irregular	soil dust
2	<u>Si</u> , <u>Al</u> , <u>Ca</u> , Fe, Ti, Mg	10 microns spherical	flyash
3	<u>Si</u> , <u>Al</u> , Fe, Ca, K	15 microns agglomerate	industrial particle
4	Si, Fe, Al, S, Ca	10 microns irregular	soil dust
5	<u>Si</u> , Fe, Al	15 microns irregular	soil dust
6	<u>Si</u> , <u>Al</u> , Fe, K, S	10 microns spherical	flyash
7	<u>Si</u> , <u>Al</u> , Fe, Ca, K, S, Mg	10 microns spherical	flyash
8	<u>Si</u> , Fe, Al, S, Ca, K	20 microns irregular	soil dust
9	<u>Si</u> , <u>Al</u> , Ca, Fe, K, S	15 microns irregular	soil dust
10	Si, Fe, S (low level)	20 microns spherical	organic-coal
11	Si, Ca, S, Mg, Fe, Al, K	5 microns agglomerate	industrial particle
12	<u>Ca</u> , Si, Fe, Mg, S, K, Al, Cl	7 microns irregular	industrial particle

* See Figure D-21

TABLE D-176

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Midland (Cover Filter)		Date of Sample: 16 August 1977	
Filter Number: 1093228		Photomicrograph Stub Number: 50C	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, K, Fe, Ca, Al, S, Cl, Mg	30 x 18 microns irregular	industrial particle
2	<u>Ca</u> , Si, <u>Fe</u> , K, S, Al, Cl, Mg, Ti, Mn, Zn	20 microns irregular	industrial particle (limestone)
3	Si, <u>Al</u> , Fe, K, Ca	5 microns spherical	flyash
4	Si, Ca, Mg, Al, Fe, Ti, K, S	8 microns irregular	industrial particle
5	<u>Fe</u> , Si, S	8 microns spherical	flyash - iron oxide
6	<u>Si</u> , <u>Al</u> , Fe, K, Ca, Ti, S	5 microns spherical	flyash
7	<u>Si</u> , Fe, Al, Ca, Mg, K, S	20 microns irregular	soil dust
8	Si, <u>Al</u> , Fe, Ca, K	5 microns spherical	flyash
9	<u>Si</u> , <u>Al</u> , Fe, Ca, K, S, Na	12 microns irregular	mineral
10	Si, S, Fe, Al, Ca	10 microns irregular	soil dust
11	Si, Ca, Al, Fe, S	20 microns irregular	soil dust
12	Si, Fe, Ca, Al	15 microns irregular	soil dust

TABLE D-177

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Elco		Date of Sample: 16 August 1977	
Filter Number: 1093213		Photomicrograph Stub Number: 44	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Fe, Ca, Si, Mn, Zn, Ti	40 microns irregular	industrial particle
2	<u>Cl</u> , Si, Ca, S, Ti, K, Al, Mg	8 microns agglomerate	industrial particle
3	Si, Ca, Cl, S	25 microns agglomerate	industrial particle
4	S, Si, Ca	20 microns agglomerate	sulfate (?)
5	Si, Al, Fe, Ca, S	35 microns agglomerate	industrial particle
6	<u>Si</u> , <u>K</u> , <u>Al</u> , <u>Cl</u> , <u>Ca</u> , <u>Mg</u> , S, Ti, Fe, Mn	8 microns agglomerate	industrial particle
7	Si, S, Ca	12 microns spherical	organic
8	Ca, Cl, Si	20 microns irreg., square	CaCl_2
9	Ca (low level)	15 microns irregular	organic
10	Si, Al, Fe, Ca, K	10 microns spherical	industrial particle
11	organic	15 microns irregular	organic
12	Si, Al, S, Fe, Ca	5 microns irregular	industrial particle

* See Figure D-22

TABLE D-178

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Downtown		Date of Sample: 16 August 1976	
Filter Number: 1093215		Photomicrograph Stub Number: 45	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, S, Ca, Al	30 microns agglomerate	industrial particle
2	Si, Ca, S, Al	35 microns agglomerate	industrial particle
3	Si, Ca, S, Al	22 microns agglomerate	industrial particle
4	S, Ca, Si	15 microns agglomerate	industrial particle
5	S, K, Ca, Si	30 microns agglomerate	industrial particle
6	Si, Ca	15 microns irregular	organic
7	Si, Ca	20 microns irregular	soil dust
8	Si, Ca (low level)	8 microns spherical	flyash
9	S, Si, Ca, Fe	12 microns agglomerate	industrial particle
10	Si, Ca, S	20 microns irregular	organic-coal
11	Si, S, Ca, Fe	25 microns agglomerate	industrial particle
12	Si, Cl, Ca, S, Al, Fe	25 microns agglomerate	industrial particle

TABLE D-179

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Central Lab		Date of Sample: 16 August 1977	
Filter Number: 1093241		Photomicrograph Stub Number: 21	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, S, Ca (low level)	15 microns irregular	organic-coal
2	<u>Si</u> , <u>Al</u> , Ti, Ca, Fe, K	7 microns agglomerate	industrial particle
3	<u>Si</u> , <u>Ca</u> , <u>Mg</u> , Al, S, K, Cl, Mn, Ti, Zn	5 microns irregular	industrial particle
4	<u>Si</u> , Al, S, Ca, Fe, K	15 microns agglomerate	industrial particle
5	<u>Si</u> , Al, S, Ca, Cl, Fe	7 microns irregular	industrial particle
6	<u>Si</u> , <u>Al</u> , <u>K</u> , <u>Ca</u> , <u>Ti</u> , <u>Fe</u> , Cl, S, Mn, Zn	10 microns irregular	industrial particle
7	<u>Si</u> , Ca, S, Al, K	20 microns irregular	mineral (indus- trial origin)
8	Si, Ca, S, K	10 microns agglomerate	industrial particle
9	<u>Si</u> , <u>Fe</u> , Ca, K, Al, Ti, Mn	25 microns irregular	soil dust
10	Si, Ca, Fe, Al, S	20 microns agglomerate	industrial particle
11	<u>Si</u> , Ca, S, Al	15 microns agglomerate	industrial particle
12	<u>Si</u> , Al, Ca, Fe, S, K, Ti	10 microns agglomerate	industrial particle

* See Figure D-23a and 23-b

TABLE D-180

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Hazelwood Filter Number: 1093201		Date of Sample: 16 August 1977 Photomicrograph Stub Number: 39	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	organic	55 microns irregular	organic-coal
2	<u>Si</u> , Ca, S, Al	60 microns agglomerate	industrial particle
3	Si, Ca, Fe, S	35 microns agglomerate	industrial particle
4	organic	15 microns agglomerate	organic - rubber
5	Si (low level)	20 microns agglomerate	organic
6	Si, S	25 microns irregular	industrial particle
7	organic	50 microns irregular	organic - rubber
8	Si, Fe, Al	25 microns agglomerate	industrial particle
9	Si (low level)	15 microns irregular	soil dust
10	Ca, Si	35 microns irregular	soil dust
11	Si, Al, Mg, Fe	25 microns irregular	industrial particle
12	Al, Si	30 microns irregular	soil dust

* See Figure D-24a and 24-b

TABLE D-181

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: No. Braddock		Date of Sample: 16 August 1977	
Filter Number: 1093203		Photomicrograph Stub Number: 40	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, Al, Ca	35 microns irregular	soil dust
2	low level peaks	25 microns irregular	organic-coal
3	Si (low level)	20 microns agglomerate	industrial particle
4	Si, Ca, (low level)	25 microns agglomerate	industrial particle
5	low level peaks	20 microns agglomerate	organic - industrial particle
6	Si, Ca	30 microns irregular	industrial particle
7	low level peaks	25 microns spherical	organic
8	<u>Ca</u> , Si, S, Fe	15 microns irregular	soil dust
9	Si, S	15 microns agglomerate	soil dust
10	Cl	20 microns agglomerate	industrial particle
11	Si, Ca, S	25 microns irregular	soil dust
12	Ca	40 microns irregular	industrial particle

TABLE D-182

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Duquesne II		Date of Sample: 16 August 1977	
Filter Number: 1093205		Photomicrograph Stub Number: 41	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Ca, Si, S, Al	35 microns agglomerate	industrial particle
2	Ca, Fe, S, Mn, Cl	20 microns agglomerate	industrial particle
3	<u>S</u> , Si, Ca	25 microns agglomerate	industrial particle
4	<u>Si</u> , <u>Mg</u> , Ca	15 microns irregular	soil dust
5	Ca, Fe, S, Si	20 microns irregular	industrial particle
6	Si, Ca, S (low level)	10 microns spherical	flyash
7	Si, Ca	25 microns agglomerate	industrial particle
8	Si, Ca, S	6 microns spherical	flyash
9	Ca, Fe, Si	25 microns agglomerate	industrial particle
10	Si, S, Ca (low level)	15 microns irregular	organic-coal
11	Si, Ca, Fe, S, Al, K	12 microns irregular	industrial particle
12	<u>Si</u> , Al, Ca	20 microns irregular	soil dust

TABLE D-183

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Liberty Boro		Date of Sample: 16 August 1977	
Filter Number: 1093209		Photomicrograph Stub Number: 42	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, Mg, Ca	55 microns irregular	soil dust
2	Si, Ca	18 microns agglomerate	industrial particle
3	Si, Ca	8 microns irregular	industrial particle
4	Ca, S (low level)	10 microns agglomerate	coal or coke
5	Si, Ca	15 microns irregular	soil dust
6	Si, Ca	20 microns irregular	industrial particle
7	Si, Al, Mg, Ca	50 microns irregular	soil dust
8	Si, Ca	35 microns irregular	coal or coke
9	Fe, Si, Ca, Mn	10 microns agglomerate	industrial particle (iron oxide)
10	Si, Ca	20 microns spherical	flyash
11	Si, Al, Ti, Ca	30 microns irregular	industrial particle
12	Si, Ca	15 microns agglomerate	industrial particle

TABLE D-184

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Clairton		Date of Sample: 16 August 1976	
Filter Number: 1093211		Photomicrograph Stub Number: 43	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, Fe, Ca, S (low level)	15 microns irregular (long)	organic
2	Si, Fe, Ca (low level)	12 microns irregular	organic-coal
3	Si, Ca, Fe	20 microns irregular	mineral
4	<u>Fe</u> , Si, Ca, K, Al, Pb	20 microns irregular	iron oxide
5	Si, Fe, Ca (low level)	25 microns agglomerate	industrial particle
6	Si, Fe, Ca (low level)	20 microns irregular	organic-coal
7	Si, Mg, Ca (low level)	15 microns irregular	organic-coal
8	<u>S</u> , Si, Cl, Ca, Al, Na, K, Zn	15 microns irregular	industrial particle (sulfate?)
9	<u>Al</u> , Si, Ca	20 microns irregular (long)	industrial particle
10	Al, Si, S, Ca (low level)	15 microns irregular	organic-coal
11	Al, Ca (low level)	25 microns irregular	organic-coal
12	Si	8 microns irregular	organic-coal

TABLE D-185

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Airport		Date of Sample: 16 August 1976	
Filter Number: 1093229		Photomicrograph Stub Number: 51	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Ca</u> , <u>Si</u> , <u>Fe</u> , <u>S</u> , <u>Al</u> , K, Cl, Zn, Mn, Ti, Mg	25 microns irregular	industrial particle
2	<u>Si</u> , <u>Al</u> , <u>K</u> , <u>Fe</u> , <u>Mg</u> , Ca, Ti, Cl, S, Mn, Zn	10 microns spherical	flyash
3	Si, Al, Fe, K, S, Ca	15 microns irregular	industrial particle
4	<u>Si</u> , <u>Al</u> , Ca, S, Fe, K, Mg	15 microns agglomerate	industrial particle
5	Si, Ca, S, Fe, Al	6 microns irregular	industrial particle
6	<u>Si</u> , <u>Ca</u> , <u>Fe</u> , K, S, Al, Ti, Mn, Cl, Zn	50 microns irregular	industrial particle
7	Ca, S, Si, Fe	15 microns irregular	industrial particle
8	<u>Si</u> , <u>S</u> , Mn, Ca, Cl, Fe, Al, K, Zn	5 microns irregular	industrial particle
9	Si, Fe, Al, Ca, S, K, Cl	6 microns irregular	industrial particle
10	<u>Si</u> , <u>Al</u> , Fe, K, Ca, S	30 microns irregular	soil dust
11	Si, Al, Fe, S, Ca, K	10 microns irregular	soil dust
12	Si, S, Fe, Ca, Al, Zn, K	15 microns irregular	industrial particle

TABLE D-186

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Airport (Cover Filter) Date of Sample: 16 August 1976 Filter Number: 1093230 Photomicrograph Stub Number: 51C			
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , <u>Al</u> , <u>Ca</u> , <u>S</u> , <u>Fe</u> , <u>Mg</u> , <u>K</u> , Cd, Cl, Ti, Co, Na, Cr, Zn, Cu	30 microns irregular	industrial particle
2	Si, Ca, S, Fe, Al	20 microns agglomerate	industrial particle
3	<u>Ca</u> , <u>S</u> , Si, Fe, Al	30 microns agglomerate	industrial particle
4	<u>Ca</u> , <u>S</u> , Si, Al, Fe	20 microns spherical	industrial particle
5	Si, S, Fe	20 microns irregular	industrial particle
6	Si, Al, K, Fe, Ca	40 microns agglomerate	industrial particle
7	Si, S, Fe, Ca, Al	25 microns agglomerate	industrial particle
8	<u>Si</u> , <u>Al</u> , K, Ca, Fe, S, Mg	10 microns irregular	soil dust
9	<u>Si</u> , Fe, Al, S, Ca, K	25 microns agglomerate	industrial particle
10	<u>Si</u> , <u>Ca</u> , <u>Al</u> , <u>S</u> , <u>Fe</u> , <u>Mg</u> , Cl, Ti, Mn	25 microns agglomerate	industrial particle
11	<u>Si</u> , Ca, Al, Fe, S, K, Na	15 microns irregular	soil dust
12	<u>Si</u> , <u>Al</u> , Ca, K, Fe	25 microns irregular	industrial particle

TABLE D-187

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: So. Fayette		Date of Sample: 16 August 1976	
Filter Number: 1093239		Photomicrograph Stub Number: 52	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, Ca, Al, K, S	20 microns agglomerate	industrial particle
2	Si, Ca, K	15 microns spherical	flyash
3	<u>Si</u> , <u>Al</u> , K	8 microns spherical	flyash
4	Si, Ca, Al, S, Fe, K	10 microns irregular	soil dust
5	Si, K, S, Ca	15 microns irregular	industrial particle
6	Ca, Si, Al, K	20 microns agglomerate	industrial particle
7	Si, Al, K, Ca	10 microns irregular	soil dust
8	Si, Ca, S	12 microns agglomerate	industrial particle
9	Si, S	12 microns irregular	coal or coke
10	Si, Al, Ca, S, K, Fe	20 microns agglomerate	industrial particle
11	Si, Ca, S, K	10 microns agglomerate	industrial particle
12	Si, Ca, Al, S	12 microns agglomerate	industrial particle

TABLE D-188

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site:	Koppel	Date of Sample:	28 August 1976
Filter Number:	1093286	Photomicrograph Stub Number:	19
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	S, K	20 microns irregular	industrial particle
2	S, Si, Ca, Al, Fe	35 microns agglomerate	industrial particle
3	Si	12 microns irregular	soil dust
4	S, Si, Ca, Al, Fe	25 microns agglomerate	industrial particle

TABLE D- 189

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Brighton Twp		Date of Sample: 28 August 1976	
Filter Number: 1093284		Photomicrograph Stub Number: 16	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , <u>Al</u> , Ca, Fe, K, Ti, S, Mn, Zn, Cl	12 microns irregular	industrial particle
2	<u>Si</u> , Ca, Mg	30 microns irregular	soil dust
3	<u>S</u> , <u>Zn</u> , Si, K, Fe, Ca, Al, Ti, Mn	15 microns agglomerate	industrial particle (sulfate)
4	Si, Al, Fe, S, Ca, K	20 microns irregular	industrial particle
5	<u>S</u> , Si, Zn	20 microns irregular	industrial particle (sulfate)
6	Si, S, Ca, Al, K, Ti, Fe, Mg	20 microns agglomerate	industrial particle
7	Si, Ca, S, K, Al, Ti, Cl, Fe, Mg, Mn, Zn	10 microns agglomerate	industrial particle
8	Si, Mg, S, Ca	10 microns spherical	flyash
9	<u>Si</u> , Al, Mg, Ca, S, K, Fe, Mn, Cl, Ti, Zn	45 microns irregular	industrial particle
10	Si, S, Ca, Al	10 microns irregular	industrial particle
11	<u>Si</u> , <u>Al</u> , K, Fe, Ti, <u>Ca</u> , <u>S</u>	10 microns irregular	soil dust

TABLE D-190

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Midland		Date of Sample: 28 August 1976	
Filter Number: 1093282		Photomicrograph Stub Number: 12	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , <u>Fe</u> , <u>Al</u> , S, K, Ca, Na	50 microns agglomerate	industrial particle
2	Si, Al, Fe, Ca, Na	25 microns agglomerate	industrial particle
3	<u>Fe</u> , Si, S, Al, Ni, Cr, Na, Cl, K, Ca	25 microns irregular	industrial particle (iron oxide)
4	<u>S</u> , Ca, Si, Fe, Al, Mg	30 microns agglomerate	industrial particle (sulfate)
5	<u>Fe</u> (very large Fe peak)	15 microns spherical	flyash (iron oxide) steel-making process

TABLE D-191

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Elco Filter Number: 1106306		Date of Sample: 28 August 1976 Photomicrograph Stub Number: 18	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, Fe, Al	30 microns fused irreg- ular	soil dust
2	<u>Si</u> , Fe	15 microns irregular	soil dust
3	Si, Al, Fe, Ca	20x65 microns irregular	soil dust
4	Si, Ti, Fe	30 microns agglomerate	industrial particle

TABLE D-192

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Hazelwood Filter Number: 1106308		Date of Sample: 28 August 1976 Photomicrograph Stub Number: 58	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Ti</u> , Al, Si, S, Ca	22 microns spherical	flyash (titanium oxide)
2	<u>Si</u> , Ca, Al, Na, K, Cl, Mg, S, Fe	12 microns irregular	mineral (salt)
3	Si, Al, K, Fe, S	40 microns irregular	industrial particle
4	Si, S, Ca, Al	20 microns irregular	soil dust
5	Si, Al, S, Cl, K, Ca, Mg, Na, Ti, Fe, Mn	20 microns irregular	mineral (salt)
6	Si, Ca, Al, S, Mg, Fe	30 microns irregular	industrial particle
7	<u>S</u> , <u>Ca</u> , Si, Al, K, Fe	10 microns irregular	industrial particle
8	<u>Si</u> , <u>Al</u> , K, Fe, S, Ca, Mg	15 microns irregular	soil dust
9	<u>Ca</u> , Si, S, Al, K, Cd	15 microns irregular	industrial particle
10	<u>Fe</u> , S, Si, Ca	20 microns irregular	iron oxide
11	Si, S, Al	25 microns irregular	coal or coke
12	Si, Ca, Al, S, Fe, K	20 microns irregular	industrial particle

TABLE D-193

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Hazelwood (Cover Filter) Date of Sample: 28 August 1976 Filter Number: 1106309 Photomicrograph Stub Number: 58C			
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Ca</u> , Si, S, Al, Fe, K	85x30 microns irregular	industrial particle
2	Si, Ca, S, Al, Fe, K	10 microns irregular	soil particle
3	<u>K</u> , Ca, Si, S, Al	15 microns irregular	industrial particle
4	<u>Si</u> , Al, Ca, Na, K, Fe, S, Mg	22 microns agglomerate	industrial particle
5	Si, Ca, S (low peaks)	20 microns irregular	organic (biological)
6	Al, Fe, Si, Ca, Zn	30 microns agglomerate	industrial particle
7	<u>Si</u> , <u>Al</u> , K, Fe, Ca, S, Mg, Na	15 microns irregular	soil dust
8	Si, S	15 microns agglomerate	coal or coke
9	<u>Si</u> , <u>Al</u> , Ca, K	15 microns irregular	soil dust
10	<u>Si</u> , Ca, Al, K, S, Fe, Na, Cl, Mg	35 microns irregular	soil dust
11	<u>Ca</u> , Mg, Si, S, Fe, Al, K, Cd	15 microns agglomerate	industrial particle
12	Si, S, Ca	30 microns agglomerate	coal or coke

TABLE D- 194

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: No. Braddock		Date of Sample: 28 August 1976	
Filter Number: 1093298		Photomicrograph Stub Number: 57	
Particle Number on Photomicrograph *	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , <u>Al</u> , <u>K</u> , Fe, Ca, Ti, S	10 microns irregular	industrial particle
2	Si, Ca, Fe, Cl, S	15 microns irregular	industrial particle
3	<u>Si</u> , <u>Al</u> , Fe, K, Ca, Ti	25 microns irregular	industrial particle
4	Si, K, S, Ca, Al, Fe, Cl	12 microns spherical	flyash
5	<u>Si</u> , Al, Fe, S, K	30 microns agglomerate	industrial particle
6	<u>Si</u> , Ca, Al, Fe, S, Mg, K, Cl	35 microns irregular	soil dust
7	<u>Si</u> , <u>Al</u> , Ca, K, Fe, S	10 microns irregular	industrial particle
8	Si, Ca, S, Fe, Al	15 microns spherical	flyash
9	<u>Si</u> , <u>Al</u> , Fe, K, Ca, Ti, S	5 microns spherical	flyash
10	Si, Al, Fe, S, Ca, K	12 microns irregular	industrial particle
11	<u>Si</u> , <u>Ca</u> , S, Al, Fe, K	30 microns agglomerate	industrial particle
12	Si, Ca, S, Fe, Al (low level)	55 microns irregular	organic - rubber

* See Figure D-25

TABLE D-195

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: No. Braddock (Cover Filter) Date of Sample: 28 Aug 1976 Filter Number: 1093299 Photomicrograph Stub Number: 57C			
Particle Number on Photomicrograph*	Elements in Order of Spectral Height ¹	Dimension & Description	Probable Identification
1	<u>Fe</u> , S, Ca	20 microns spherical	flyash (iron oxide)
2	<u>Ca</u> , Si, Fe, S, Al Cl	20 microns irregular	soil dust - limestone
3	<u>Ca</u> , <u>S</u> , Si, Al	15 microns irregular	industrial particle
4	<u>Ca</u> , <u>S</u> , Si, Al	50 microns agglomerate	industrial particle
5	<u>Si</u> , Al, Ca, S, Fe, K, Mg	30 microns irregular	flyash
6	<u>Si</u> , <u>Ca</u> , <u>Ti</u> , Al, K Mn, Fe, S, Cl, Zn	15 microns spherical	flyash
7	<u>Si</u> , Al, K, Fe, Ca	10 microns irregular	flyash
8	<u>Si</u> , <u>Fe</u> , Ca, Al, K, S, Ti	20 microns agglomerate	industrial particle
9	S (low level)	45 microns irregular	organic - rubber
10	S, Si, Al, Fe, Ca (low level)	20 microns agglomerate	industrial particle
11	<u>Ca</u> , <u>S</u> , Si, Fe, Al	30 microns agglomerate	industrial particle
12	<u>Si</u> , Al, Fe, S, Ca, K	40 microns agglomerate	industrial particle
13	organic	15 microns spherical	pollen

* See Figure D-26

TABLE D-196

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Duquesne II		Date of Sample: 28 August 1976	
Filter Number: 1106300		Photomicrograph Stub Number: 59	
Particle Number on Photomicrograph	Elements in Order of Spectral Height ¹	Dimension & Description	Probable Identification
1	<u>Si</u> , Ca, Al, K, Mg, S	60 microns spherical with elongated end	industrial particle
2	<u>Si</u> , Ca, Al, K	20 microns irregular	soil dust
3	S, Si, Al	15 microns irregular	coal or coke
4	<u>Ca</u> , <u>S</u> , Si, Fe, Al, K	25 microns irregular	industrial particle
5	Si, Cl, K, S (low level)	50 microns irregular	coal or coke
6	Si, S, Al	35 microns agglomerate	industrial particle (coke)
7	<u>Si</u> , Ca, Al, K, S	25 microns irregular	industrial particle

TABLE D-197

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Duquesne II (Cover Filter) Date of Sample: 28 Aug 1976 Filter Number: 1106301 Photomicrograph Stub Number: 59C			
Particle Number on Photomicrograph	Elements in Order of Spectral Height ¹	Dimension & Description	Probable Identification
1	Si, Fe, Al, S, Ca	60 microns irregular (broken sphere)	industrial particle
2	Si, Al, Ca, Fe	15 microns irregular	soil dust
3	<u>Si</u> , Ca, Al	5 microns spherical	flyash
4	<u>Si</u> , <u>Ca</u> , <u>Al</u> , K, Fe, Mg, Ti, S, Cl, Mn, Zn	25 microns irregular	industrial particle
5	Si, Al, Cl, Ca, K	20 microns irregular	mineral
6	<u>Si</u> , <u>Ca</u> , Al, Mg, S, Fe, K, Cl	6 microns irregular	industrial particle

TABLE D-198
PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Liberty Boro Filter Number: 1106302		Date of Sample: 28 August 1976 Photomicrograph Stub Number: 60	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , <u>S</u> , Ca, Al, Fe	20 microns agglomerate	industrial particle
2	Si, S, Fe, Ca	25 microns agglomerate	industrial particle
3	Si, S (low level)	30 microns irregular	organic-coal
4	Si, Al, Ca, S	15 microns spherical	flyash
5	<u>Si</u> , <u>Al</u> , K, Fe, Ca, S, Ti	15 microns spherical	flyash
6	Si, S, Al	20 microns agglomerate	industrial particle
7	Si, S, Al	15 microns irregular	industrial particle
8	<u>Si</u> , S, Al, K, Fe, Ca	25 microns agglomerate	industrial particle
9	<u>Si</u> , <u>S</u> , Al, Ca	25 microns agglomerate	industrial particle
10	<u>Si</u> , S, Al, K	20 microns agglomerate	industrial particle
11	<u>Si</u> , Fe, S, Ca, Al	15 microns irregular	industrial particle
12	Si, Al, S	30 microns agglomerate	industrial particle

* See Figure D-27

TABLE D-198 (Continued)

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Liberty Boro (continued) Filter Number: 1106302		Date of Sample: 28 August 1976 Photomicrograph Stub Number: 60	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height ¹	Dimension & Description	Probable Identification
13	<u>Si</u> , <u>Al</u> , Ca, K, Fe, S	35 microns agglomerate	industrial particle
14	<u>Si</u> , S, Al, K, Ca, Fe	10 microns agglomerate	industrial particle
15	<u>Si</u> , Al, Ca, K, Fe, S, Ti	10 microns irregular	industrial particle
16	<u>Si</u> , Al, S, Fe, K	10 microns irregular	industrial particle
17	Si, S (low level)	20 microns irregular	organic - coal
18	<u>Si</u> , <u>Al</u> , K, Fe, Ca, S	5 microns agglomerate	industrial particle
19	S, Si, Al, Ca, Fe, (low level)	15 microns irregular	organic
20	<u>Si</u> , S, Al, Fe, K, Ca	7 microns agglomerate	industrial particle

* See Figure D-27

TABLE D-199

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Liberty Boro (Cover Date of Sample: 28 August 1976 Filter Number: 1106303 Filter) Photomicrograph Stub Number: 60C			
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Fe, Si, S (low level)	50 microns irregular	organic-coal
2	Si, Fe, S, Al	30 microns agglomerate	industrial particle
3	<u>Si</u> , Fe, Al, Ca, S, K, Cl, Na	20 microns irregular	soil dust
4	Si, Ca, Fe, Cl, Ti, S	15 microns irregular	industrial particle
5	<u>Si</u> , Al, Fe, S, Ca	15 microns irregular	industrial particle
6	<u>Si</u> , Al, Ca, Fe, K, Mg, S	10 microns spherical	flyash
7	<u>Si</u> , Fe, Ca, Al, S	40 microns irregular	probable organic insect part
8	<u>Si</u> , Fe, Ca, Al, S	60 microns irregular	probable organic insect part
9	<u>Si</u> , S, Ca, Fe, Al, K	15 microns irregular	mineral
10	<u>Cl</u> , <u>Si</u> , <u>Na</u> , Fe, S, Al, Ca, K	20 microns irregular (square)	salt particle
11	Si, S, Al, Fe, Ca	20 microns agglomerate	industrial particle
12	<u>Si</u> , <u>Al</u> , <u>Fe</u> , Ca, K, Ti, S, Mn, Mg, Cl	10 microns agglomerate	industrial particle

* See Figure D-28a and 28b

TABLE D-199 (Continued)

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Liberty Boro (Cover Filter Number: 1106303 Filter) (Continued)		Date of Sample: 28 August 1976 Photomicrograph Stub Number: 60C	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
13	<u>Si</u> , <u>Fe</u> , Ca, K, Al, S, Ti, Mn	10 microns irregular	industrial particle
14	<u>Si</u> , Al, S	25 microns irregular	soil dust
15	<u>Si</u> , Ca, Fe, S, Al, Na	25 microns agglomerate	industrial particle
16	<u>Si</u> , Al, Fe, S, Ca, K	30 microns irregular	industrial particle
17	<u>Si</u> , Al, Fe, S, K, Ti	20 microns irregular	soil dust
18	<u>Si</u> , <u>Al</u> , Fe, Ca, K, S	10 microns irregular	soil dust
19	Si, Fe, Al, S, Ca	15 microns agglomerate	industrial particle
20	<u>Si</u> , Fe, S, Ca, K, Al	10 microns agglomerate	industrial particle

* See Figure D-28a and 28b

TABLE D-200

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Airport Filter Number: 1093280		Date of Sample: 28 August 1976 Photomicrograph Stub Number:10	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, Ca, Fe, Al, Mg	25 microns agglomerate	industrial particle
2	Si, Fe, Al, Cl, Mg, Na, Ca, K	20 microns irregular	mineral
3	Si, S, Ca, Al, Fe, Cu	25 microns agglomerate	industrial particle
4	Si, Fe, Al, Ca, Mg, (low level)	30 microns irregular	industrial particle

TABLE D- 201

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: South Fayette		Date of Sample: 28 August 1976	
Filter Number: 1093278		Photomicrograph Stub Number: 14	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, S, Ca, Fe, Al	65 microns irregular	soil dust
2	Si, S, Fe, Ca	30 microns irregular	soil dust
3	<u>Si</u> , <u>Al</u> , Fe, K, S	8 microns spherical	flyash
4	<u>Si</u> , <u>Al</u> , Fe, K	5 microns spherical	flyash
5	Si, S, Al, Fe	16 microns irregular	industrial particle
6	<u>Si</u> , <u>Al</u> , K, Fe, Ca, Ti, S	10 microns irregular	industrial particle
7	<u>S</u> , Si, Ca	20 microns agglomerate	industrial particle
8	<u>Si</u> , <u>Al</u> , Fe, S, K	6 microns spherical	flyash
9	<u>S</u> , Si, Al, Fe, K	10 microns irregular	industrial particle
10	Si, Fe, Al, S, Ca	25 microns irregular	soil dust
11	<u>Si</u> , <u>Al</u> , K, Fe, S, Ca	3 microns agglomerate	industrial particle
12	Si, Al, S, K, Fe	12 microns irregular	soil dust

TABLE D-202

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Midland		Date of Sample: 3 September 1976	
Filter Number: 1106351		Photomicrograph Stub Number: 1	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, Ca, S	35x15 microns irregular	soil dust
2	S, Si, Ca, Fe, K	20 microns irregular	industrial particle

TABLE D-203

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Central Lab		Date of Sample: 3 September 1976	
Filter Number: 1106333		Photomicrograph Stub Number: 5	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	S, Si, Fe, Ca	35 microns agglomerate	industrial particle
2	Si	30 microns spherical	industrial particle
3	Ca, Si, S, Fe	45 microns agglomerate	industrial particle (limestone)
4	Fe	55 microns irregular	iron oxide
5	Si, Fe, S, Mn	45x15 microns irregular	soil dust

TABLE D- 204

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Hazelwood		Date of Sample: 3 September 1976	
Filter Number: 1106325		Photomicrograph Stub Number: 17	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	S, Si, Ca, Fe	18 microns spherical	industrial particle
2	Fe, Ca, S, Si	20 microns irregular	iron oxide
3	Si, S, Fe, Al	20 microns agglomerate	industrial particle
4	Si, Al, S, K, Fe	30 microns irregular	soil dust

TABLE D-205

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: No. Braddock Filter Number: 1106315		Date of Sample: 3 September 1977 Photomicrograph Stub Number: 15	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Fe, Si, Al	30 microns fused irreg- ular	industrial particle
2	<u>Si</u> , Fe, Ca, S, K, Al	40 microns agglomerate	industrial particle
3	<u>Ca</u> , Si, Fe	20 microns spherical	industrial particle (limestone)
4	Ca, Si, Fe, Al, Mg	20 microns agglomerate	industrial particle

TABLE D-206

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Duquesne II		Date of Sample: 3 September 1976	
Filter Number: 1106321		Photomicrograph Stub Number: .13	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, S, Ca, K, Fe	25 microns spherical	flyash
2	Si, S, Ca, K	30 microns irregular	soil dust
3	Zn, S, Na	20 microns agglomerate	industrial particle
4	Mn, S, Si, Al, Ca, Fe	30 microns agglomerate	industrial partical
5	Fe, S, Si, Ca, Al	15 microns irregular	iron oxide

TABLE D- 207

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Liberty Boro		Date of Sample: 3 September 1976	
Filter Number: 1106329		Photomicrograph Stub Number: 9	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Cl, S, Si, K, Ca, Al	40 microns agglomerate	industrial particle
2	Si	40 microns Irregular	soil dust
3	Si, S, Ca, Mg	25 microns irregular	soil dust
4	Si, Al, S, Fe, Ca	20 microns agglomerate	industrial particle
5	S, Si, Al, Fe	45x20 microns irregular	industrial particle

TABLE D- 208

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Clairton		Date of Sample: 3 September 1976	
Filter Number: 1106331		Photomicrograph Stub Number: 11	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , Ca, Fe, Mg, Na	20 microns irregular	industrial particle
2	<u>S</u> , Ca, Si, Fe, Al	20 microns agglomerate	industrial particle (sulfate)
3	<u>S</u> , <u>Si</u> , Fe, Al, Ca, K, Mg	40 microns agglomerate	industrial particle (sulfate)
4	Si, Fe, K, Al, Cl, Ca, Mg, Na	10 microns spherical	flyash

TABLE D-209

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: South Fayette		Date of Sample: 3 September 1976	
Filter Number: 1106337		Photomicrograph Stub Number: 7	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	Si, S	45 microns agglomerate	industrial particle
2	Si, S, Ca, Fe	25 microns spherical	flyash
3	Si, Ca, S	50 microns irregular	soil dust
4	Si, Al, S, K, Fe	8 microns spherical	flyash
5	Fe	45 microns irregular	iron oxide
6	S	40 microns irregular	industrial particle (sulfate)

TABLE D-210

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Brighton Township		Date of Sample: 9 September 1976	
Filter Number: 1110928		Photomicrograph Stub Number: 23	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	S, Ca, Si, Zn, Fe	40 microns agglomerate	industrial particle
2	S, Zn, Si	30 microns irregular	industrial particle
3	S, Si, Ca, Zn, Fe	25 microns agglomerate	industrial particle
4	Si, K, Fe	20 microns agglomerate	industrial particle
5	Fe, S, Si	10 microns spherical	flyash (iron oxide)

TABLE D-211

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Downtown		Date of Sample: 9 September 1976	
Filter Number: 1106323		Photomicrograph Stub Number: 55	
Particle Number on Photomicrograph	Elements in Order of Spectral Height '	Dimension & Description	Probable Identification
1	low level peaks	20 microns spherical	organic - flyash
2	<u>Si</u> , <u>Al</u> , <u>Ca</u> , <u>K</u> , <u>Fe</u> , <u>Mg</u> , <u>S</u> , <u>Cl</u> , Ti, Mn, Zn	30 microns agglomerate	industrial particle

TABLE D-212

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Central Lab		Date of Sample: 9 September 1976	
Filter Number: 1106327		Photomicrograph Stub Number: 56	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , S, Al, Fe, Ca, K	35 microns irregular	industrial particle
2	<u>Si</u> , <u>Fe</u> , <u>Ti</u> , <u>Ca</u> , <u>S</u> , Al, K, Mn, Zn, Mg, Cl	25 microns irregular	industrial particle
3	<u>Ca</u> , Si, Fe, S, Al, K	25 microns agglomerate	industrial particle (limestone)
4	Si, Ca, S, Al, Fe, K	20 microns agglomerate	industrial particle
5	<u>Si</u> , <u>Ca</u> , S, Al, Fe, K, Ti, Cl	20 microns agglomerate	industrial particle
6	Si, S, Ca, Al, Fe, K	40 microns agglomerate	industrial particle
7	<u>Si</u> , <u>Al</u> , K, Ca, S, Fe, Cl	20 microns irregular	industrial particle
8	Si, S, Ca, Al	40 microns agglomerate	industrial particle
9	Si, S, Ca, Fe, Al, K	30 microns agglomerate	industrial particle
10	<u>Si</u> , Al, Fe, Ti, K, S	60x25 microns agglomerate	industrial particle
11	<u>Si</u> , <u>Al</u> , K, S, Fe, Ca, Ti	45 microns agglomerate	industrial particle
12	Si, S, Al, Cl, Ca, Fe, K (low level)	22 microns irregular	organic - coal

TABLE D- 213

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Central Lab Filter Number: (Cover Filter) 1106328		Date of Sample: 9 September 1976 Photomicrograph Stub Number: 56C	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Ca</u> , Si, S, Fe, K, Al, Cl	70 microns agglomerate	industrial particle (limestone)
2	<u>Si</u> , Al, Fe, K, Ca, S	6 microns irregular	soil dust
3	Si, Al, Ca, K, S, Fe, Mg	6 microns spherical	flyash
4	<u>Si</u> , <u>Ca</u> , <u>S</u> , <u>Al</u> , K, Fe, Mg, Cl	15 microns agglomerate	industrial particle
5	Si, Ca, S, Al, Fe, K	8 microns irregular	soil dust
6	<u>Ca</u> , Si, Al, Mn, S, Fe, K, Ti, Cl, Zn	15 microns irregular	industrial particle
7	Si, <u>Al</u> , K, Ca, S, Fe	30x10 microns irregular	mineral
8	Si, S, Ca, Al, Fe	8 microns irregular	soil dust
9	<u>Si</u> , <u>Al</u> , <u>K</u> , Ca, Fe, S, Ti, Mg, Cl, Mn, Zn	30 microns agglomerate	industrial particle
10	<u>Si</u> , Al, Fe, K, Ca, S	15 microns irregular	soil dust
11	Si, Ca, S, Al, K, Fe	10 microns irregular	soil dust
12	Si, Ca, Al, S, Fe, K	35 microns agglomerate	industrial particle

TABLE D-214

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Airport		Date of Sample: 9 September 1976	
Filter Number: 1093294		Photomicrograph Stub Number: 53	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , S, Ca, Al	15 microns irregular	soil dust - limestone
2	<u>Si</u> , Ca, Al, Fe, S, K	10 microns agglomerate	industrial particle
3	<u>Si</u> , Al, S, Ca, Fe, K	10 microns agglomerate	industrial particle
4	<u>Si</u> , Ca, Al, K, Mg	15 microns irregular	soil dust
5	<u>Ca</u> , <u>Fe</u> , S, Si, K, Mn	15 microns agglomerate	industrial particle
6	<u>Si</u> , <u>Al</u> , <u>Fe</u> , Ca, K, Ti	8 microns spherical	flyash
7	Si, S, Al	10 microns irregular	soil dust
8	<u>Si</u> , Al, S, Ca, Fe, K	12 microns agglomerate	industrial particle
9	<u>Ca</u> , <u>S</u> , <u>Fe</u> , <u>Si</u> , <u>K</u> , Al, Mg, Cl, Mn, Ti, Na, Zn	5 microns irregular	industrial particle
10	<u>Ca</u> , <u>S</u> , Si, Al, K, Fe	10 microns irregular	soil dust (sulfate?)
11	<u>Fe</u> , Si, Ca, S, Al, Ti	10 microns irregular	industrial particle (iron oxide)
12	<u>Si</u> , <u>Ca</u> , Al, Fe	7 microns spherical	flyash
13	<u>Si</u> , Ca, Al, S	10 microns agglomerate	industrial particle

* See Figure D-29a and 29b

TABLE D-215

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Airport Filter Number: 1093295		Date of Sample: 9 September 1976 Photomicrograph Stub Number: 53C	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>Si</u> , <u>Al</u> , <u>Ti</u> , Fe, K, Ca, S, Cl, Mg, Na	25 microns irregular	industrial particle
2	<u>Si</u> , Ca, Al, Mg, S, Fe, K	18x6 microns irregular	soil dust
3	<u>Si</u> , <u>Al</u> , <u>Ca</u> , <u>S</u> , K, Fe, Mg, Cl, Ti, Na, Mn, Zn	12 microns irregular	industrial particle
4	<u>Ca</u> , <u>Fe</u> , <u>S</u> , Si, Al, K, Mg, Ti, Mn, Zn	14 microns irregular	industrial particle
5	<u>Si</u> , <u>Al</u> , Ca, K, Fe, S, Mg, Na, Ti	8 microns agglomerate	industrial particle
6	<u>Si</u> , Al, Ca, S	6 microns irregular	soil dust
7	<u>Si</u> , <u>Al</u> , K, Fe, Ca, S, Ti, Mg	8 microns irregular	mineral
8	<u>Si</u> , <u>Al</u> , Fe, K, Ca, S, Mg	12 microns irregular	mineral
9	<u>Si</u> , Ca, Al, S, K	10 microns irregular	soil dust
10	<u>Si</u> , <u>Ca</u> , <u>S</u> , Al, K, Fe, Mg	10 microns agglomerate	industrial particle
11	<u>Si</u> , <u>Ca</u> , <u>S</u> , Al, K, Fe	8 microns irregular	industrial particle
12	<u>Si</u> , <u>Al</u> , <u>Ca</u> , <u>S</u> , <u>Fe</u> , K, Mg, Ti, Cl, Zn	12 microns agglomerate	industrial particle
13	<u>Ca</u> , <u>S</u> , Si, Al, Ti	8 microns irregular	soil dust

TABLE D-215 (Continued)
PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: Airport Filter Number: 1093295 (Continued)		Date of Sample: 9 September 1976 Photomicrograph Stub Number: 53C	
Particle Number on Photomicrograph	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
14	<u>Fe</u> , Si, S, Ca, K, Al, Ti	8 microns irregular	industrial particle (iron oxide)
15	<u>Si</u> , <u>Al</u> , Ca, K, Fe, Mg, S, Ti	8 microns agglomerate	industrial particle

TABLE D- 216

PARTICLE ANALYSIS OF SELECTED FILTERS

Monitor Site: South Fayette		Date of Sample: 9 September 1976	
Filter Number: 1106310		Photomicrograph Stub Number: 54	
Particle Number on Photomicrograph*	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1	<u>S</u> , <u>Ca</u> , Si, Fe, Ti, K, Al	25 microns irregular	industrial particle
2	<u>Ca</u> , S, Si, Al	20 microns agglomerate	industrial particle
3	<u>Si</u> , Al, Fe	20 microns irregular	soil dust
4	<u>Ca</u> , Si, S, Mg, Fe, Al, K	15 microns irregular	soil dust - limestone
5	<u>Si</u> , <u>S</u> , Al, Ca, K, Fe	12 microns agglomerate	industrial particle
6	<u>Si</u> , S, Al, Ca	15 microns agglomerate	industrial particle
7	Si, S, Al, Fe (low level)	10 microns irregular	organic
8	<u>Si</u> , Al, Fe, K, Ca, Mn, S, Ti	20 microns irregular	soil dust
9	<u>Si</u> , Al, S, Fe, K, Ca	10 microns spherical	flyash
10	<u>Si</u> , Al, K S, Fe, Ca, Ti	3 microns agglomerate	industrial particle
11	S, Si, Al	15 microns irregular	organic
12	<u>Si</u> , Al, S, Fe	15 microns spherical	pollen

* See Figure D-30

TABLE D-217 THROUGH D-224 - ANALYSIS OF SELECTED LARGE PARTICLES

TABLE D-217

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Brighton Township Date of Sample: 10 August 1976 Filter Number: 1110916			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
1 (Fig.D-31a)	S (low level peaks)	100x30 microns irregular	organic - coal
2 (Fig.D-31a)	Si, S (low level peaks)	75x20 microns irregular	organic - coal
3 (Fig.D-31a)	<u>Si</u> , <u>Zn</u> , <u>S</u> , Na, Fe	35 microns irregular	industrial particle
4 (Fig.D-31a)	<u>Si</u> , Ti, Cl, Al, Fe, Ca	40 microns elongated agglomerate	industrial particle
5 (Fig.D-31a)	<u>S</u> , Cl, K, Zn	35 microns irregular	industrial particle
7 (Fig.D-31b)	<u>Si</u> , <u>S</u> , Al, Fe, Zn, K, Ca	70 microns rough semi- spherical	industrial particle
8 (Fig.D-31b)	<u>Ca</u> , <u>S</u> , Si	50 microns agglomerate	industrial particle
1 (Fig.D-32)	<u>S</u> , <u>Fe</u> , <u>Zn</u> , <u>Al</u> , <u>Si</u> , K	40x20 micron agglomerate	industrial particle
2 (Fig.D-33)	<u>Fe</u> , Si, Cl, S	15 microns fused	iron oxide
4 (Fig.D-34)	<u>Si</u> , <u>Al</u> , Ti, Fe	25x15 micron irregular	soil dust
5 (Fig.D-35)	<u>Si</u> , <u>Fe</u> , <u>Zn</u> , <u>Al</u> , <u>S</u> , K, Ca	45x25 micron agglomerate	industrial particle

TABLE D-218

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Brighton Township Date of Sample: 10 August 1976 (Cover Filter) Filter Number: 1110917			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
1 (Fig.D-36)	The entire particle was not analyzed by EDAX but the following individual parts of it were	100 microns with particles attached agglomerate	industrial particle
1a (Fig.D-36)	<u>Cl</u> , <u>Si</u> , <u>K</u> , Fe	10 microns spherical protrusion from main particle	
1b (Fig.D-36)	<u>Si</u> , Fe, <u>S</u> , Al, Ca, K, Cl	15 microns fluffy irregular attached to main particle	
1c (Fig.D-36)	<u>Cl</u> , <u>Si</u> , <u>K</u> , Fe, Al, Ca	20 microns angular piece of main particle	
1d (Fig.D-36)	<u>Cl</u> , <u>K</u> , Si, Fe, Al	Area on right side of main particle	
1e (Fig.D-36)	<u>Si</u> , <u>Al</u> , Fe, K, Ti	5 microns sphere attached to main particle	

TABLE D-218

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Brighton Township Date of Sample: 10 August 1976 (Cover Filter) Filter Number: 1110917 (Continued)			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
1 (Fig.D-37)	Fe, Si + small peaks	45 microns sphere	plastic
2 (Fig.D-37)	Si, Cl, K, Fe, Zn, Al, Na + low peaks	35x15microns curved and flat	industrial particle
3 (Fig.D-38)	<u>Fe</u> , <u>Si</u> , S, K, Ca + low peaks	35x25microns agglomerate	industrial particle
1 (Fig.D-39)	<u>Al</u> , <u>Si</u> , Fe	65x45microns agglomerate	industrial particle
1 (Fig.D-40)	<u>Fe</u>	32 microns sphere with rough sur- face	iron oxide
2 (Fig.D-40)	<u>Si</u> , <u>Al</u> , K, Fe	35 microns fused	fused ash
3 (Fig.D-41)	<u>S</u> , Si, Cl, Ca, Fe, Na + low peaks	150 microns like crum- pled paper	ash
4 (Fig.D-42)	<u>Si</u> , <u>Ca</u> , Al, Fe, S, K	65 microns fused, rough	industrial particle
5 (Fig.D-43)	<u>Cl</u> , <u>K</u> , <u>S</u> , Si, Fe	150 microns flaky	industrial particle
6 (Fig.D-44)	<u>Ca</u> , <u>S</u>	25 microns agglomerate	limestone

TABLE D-218

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Brighton Township Date of Sample: 10 August 1976 (Cover Filter) (Continued) Filter Number: 1110917			
Particle Number (see Figures)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
7 (Fig.D-45)	<u>Mn</u> , <u>Fe</u> , <u>Si</u> , Ca, K + low peaks	25 microns sphere with many small attached particles	flyash
8a (Fig.D-46)	<u>Fe</u>	25 microns agglomerate	iron oxide
8b (Fig.D-46)	<u>Ca</u> , <u>Si</u> , <u>S</u> , Fe, Al + small peaks	15 microns irregular	soil dust
9 (Fig.D-47)	<u>K</u> , Fe, Si	35 microns agglomerate	industrial particle

TABLE D-219

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Central Lab Date of Sample: 10 August 1976 Filter Number: 1110908			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
1 (Fig.D-48)	<u>Ca</u>	50 microns agglomerate	limestone
2 (Fig.D-48)	<u>Ca</u> , <u>S</u> , Si, K	50 microns irregular	industrial particle
3 (Fig.D-48)	<u>Fe</u>	40 microns irregular	iron oxide
4 (Fig.D-48)	<u>Si</u> , <u>Fe</u> , Al	40 microns irregular	industrial particle

TABLE D-220

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Central Lab (Cover Filter)		Date of Sample: 10 August 1976	
Filter Number: 1110909			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
1 (Fig.D-49)	<u>Si</u> , Ca, Cl	30 microns irregular	soil dust
2 (Fig.D-49)	<u>Si</u> , <u>Al</u> , Ca, Fe, K	15 microns spherical	flyash
3 (Fig.D-49)	<u>Si</u> , S, Cl, Ca, K, Ti, Na, Fe	40 microns irregular	industrial particle
4 (Fig.D-49)	<u>Si</u> , <u>S</u> , Mn	25 microns irregular	industrial particle
1 (Fig.D-50)	<u>S</u> , Fe small peaks, may be organic	95 microns irregular, flat	organic
1 (Fig.D-51)	<u>Ca</u> , <u>Si</u> , S, Al, K, Cl	40 microns agglomerate	industrial particle
2 (Fig.D-52)	<u>Si</u> , <u>S</u> , <u>Cl</u> , <u>Ca</u> , K, Fe, Al	250x60 mic- rons angular agglomerate	industrial particle
1 (Fig.D-53)	<u>Ca</u> , Si, S	40 microns agglomerate	industrial par- ticle, limestone
2 (Fig.D-53)	<u>Si</u> , Ca	20 microns irregular	industrial particle
3 (Fig.D-53)	<u>Ca</u> , Ti, S	70 microns agglomerate	industrial particle
1 (Fig.D-54)	<u>Si</u> , S, Ca	30 microns agglomerate	soil dust
2 (Fig.D-54)	<u>S</u> , <u>Ca</u> , <u>Si</u> , K, Fe	30 microns agglomerate	industrial particle

TABLE D-220 (Continued)

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Central Lab (Cover Filter)		Date of Sample: 10 August 1976	
Filter Number 1110909		(Continued)	
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
3 (Fig.D-54)	<u>Si</u> , <u>Ca</u> , <u>Al</u> , <u>Fe</u> , S, K, Cl	15 microns almost spherical	industrial particle
9 (Fig.D-55)	<u>Si</u> , <u>Ca</u> , S, Cl, Fe	75x30microns irregular	industrial particle
10 (Fig.D-55)	<u>S</u> , Fe, low peaks	70 microns irregular	organic - coal
11 (Fig.D-55)	<u>Si</u> , <u>Ca</u> , Al, Fe, K	120 microns agglomerate	industrial particle
12 (Fig.D-55)	<u>Si</u> , <u>S</u> , <u>Ca</u> , Fe	40 microns irregular	soil dust
14 (Fig.D-56)	<u>Ca</u> , <u>Si</u>	50 microns irregular	industrial particle
15 (Fig.D-56)	<u>Si</u> , Al, Ca	100 microns fluffy agglomerate	industrial particle
16 (Fig.D-56)	low peaks	70 microns irregular	organic - coal
17 (Fig.D-56)	<u>Si</u> , <u>Ca</u> , S, Fe	50 microns agglomerate	industrial particle
18 (Fig.D-56)	<u>Ca</u> , <u>S</u>	50 microns irregular	gypsum
19 (Fig.D-56)	<u>Fe</u> , <u>Si</u> , Ca, Mn	50 microns spherical	industrial particle

TABLE D-221

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Duquesne II		Date of Sample: 10 August 1976	
Filter Number: 1110926			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
1 (Fig.D-57)	<u>Si</u> , <u>Al</u> , <u>Ca</u> , Fe, K, <u>Ti</u>	40x20 microns agglomerate with particles on surface	industrial particle
2 (Fig.D-58)	<u>Si</u> , Al, K, Fe	40 microns agglomerate	industrial particle
3a (Fig.D-59)	<u>Si</u> , <u>S</u> + small peaks, may be organic	25 microns crumpled	ash
3b (Fig.D-59)	<u>Si</u> , <u>Ca</u> , <u>Fe</u> , S, K spectra may come from attached parti- cles	40 microns irregular with particles attached	ash
4 (Fig.D-60)	<u>Fe</u>	25 microns sphere	iron oxide
5 (Fig.D-61)	<u>Zn</u> , <u>Cl</u> , Si, Na, Fe	32 microns agglomerate	zinc chloride
1 (Fig.D-62)	<u>Al</u>	80 microns irregular	industrial par- ticle (alumi- num oxide)
2 (Fig.D-62)	Si, Ca, Fe, + small peaks	50 microns irregular	coal
3 (Fig.D-62)	Si, Fe + small peaks	100x20microns angular	coal
5 (Fig.D-62)	<u>Si</u> , Al, Fe, K	30 microns irregular	soil dust

TABLE D-221 (Continued)

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site:		Duquesne II	Date of Sample:	10 August 1976
Filter Number:		1110926	(Continued)	
Particle Number (see Figure)		Elements in Order of Spectral Height	DimensionS& Description	Probable Identification
6	(Fig.D-62)	<u>Al</u> , Mg, Si, Fe, Ca	60 microns irregular	industrial particle
1	(Fig.D-63)	<u>Si</u> , Ca (particles 1, 2 and 6 may be joined into a single parti- cle)	55x30 microns irregular particles on surface	industrial particle
2	(Fig.D-63)	<u>Si</u> , <u>Ca</u> , Fe + small peaks	45 microns agglomerate, particles on surface	industrial particle
3	(Fig.D-63)	Si, S, Ca, Fe	20 microns spherical with parti- cles on its surface	industrial particle
4	(Fig.D-63)	<u>Fe</u> , Si	6 microns spherical	iron oxide
5	(Fig.D-63)	<u>Si</u> , <u>Ca</u> , Fe	20 microns particles on surface	industrial particle
6	(Fig.D-63)	<u>Ca</u>	12x17 microns triangular with parti- cles on the surface	limestone

TABLE D-222

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Duquesne II Date of Sample: 10 August 1976 Filter Number: (Cover Filter) 1110927			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
2 (Fig.D-64)	organic	35x15 micron lumpy	organic (rubber)
3 (Fig.D-65)	<u>Si</u> , <u>Al</u> , Ca, Fe	20 microns irregular like backbone	industrial particle
4a (Fig.D-66)	<u>Fe</u> + low peaks	25 microns irregular	iron oxide
4b (Fig.D-66)	<u>Ca</u> , <u>S</u>	20 microns irregular	industrial par- ticle (gypsum)
1 (Fig.D-67)	<u>Si</u> , <u>K</u> , <u>Cl</u> , S, Al	45 microns irregular	industrial particle
2 (Fig.D-67)	<u>Si</u> , Al	25 microns egg-shaped	soil dust
3 (Fig.D-67)	<u>Fe</u> , Cr, Si, Cu, Al	35 microns irregular	industrial par- ticle (iron oxide)
4 (Fig.D-67)	<u>Si</u> , <u>Ca</u> , S, Al, Fe, Mn	30 microns agglomerate	soil dust

TABLE D-223

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Central Laboratory Date of Sample: 16 August 1976 Filter Number: 1093241			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
14 (Fig.D-68)	<u>Fe</u>	230 microns cluster, angular agglomerate	iron oxide
15 (Fig.D-69)	S, Fe small peaks	160 microns angular, frothy	coke
16 (Fig.D-70)	S, Fe, Si	130 microns frothy	coke
17 (Fig.D-71)	small peaks	170 microns flake	organic coal
18 (Fig.D-72)	<u>Si</u> , Al, K, Fe	125 microns angular	fused clay
19 (Fig.D-73)	<u>Si</u> , <u>Al</u> , S, Ca, Fe	70 microns hollow fused	fused clay

TABLE D-224

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Brighton Township Date of Sample: 9 September 1976 Filter Number: 1110928			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
1 (Fig.D-74a & Fig.D-74b)	The entire particle was not analyzed by EDAX but the follow- ing parts of it were	370x160 microns angular flake	organic
1a (Fig.D-74b)	<u>Si</u> , Fe, Ca, K, Al, Cl	central 25% of particle	
1b (Fig.D-74b)	<u>Si</u> , <u>Ca</u> , Fe, Al, K, Cl	particulates on particle	
1c (Fig.D-74b)	Only small peaks	central area of main particle (smaller than 25%)	
2 (Fig.D-74a & Fig.D-75)	<u>Fe</u> , Ca, S	80 microns rough surface	iron oxide
3 (Fig.D-74a & Fig.D-76)	<u>Si</u> , S, Al, Fe, Zn, Ti	230 microns fused agglomerate	industrial par- ticle possibly coke
4 (Fig.D-74a & Fig.D-77)	<u>S</u> , <u>Ca</u> , <u>Fe</u> , Zn, Si	200x30 microns irregular rough	industrial par- ticle of gypsum
5 (Fig.D-78)	<u>Si</u> , <u>Al</u> , Fe, K, Ca	60 microns hollow sphere	flyash hollow

TABLE D-224 (Continued)

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Brighton Township Date of Sample: 9 September 1976 Filter Number: 1110928 (Continued)			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
6 (Fig.D-79)	<u>Si</u> , <u>Al</u> , <u>Fe</u> , Ca, K, Zn	55 microns agglomerate made up of many spheres	flyash cluster
7 (Fig.D-80)	<u>Si</u> , <u>Al</u> , Fe, Zn + low peaks	70 microns porous flake	coke
8 (Fig.D-81)	<u>Fe</u> , Si, Zn + low peaks	95 microns flaky agglomerate	coke
9 (Fig.D-82)	<u>Si</u> , <u>S</u> , Al, Fe, Zn, Ca	65 microns agglomerate	industrial par- ticle with flyash sphere
10 (Fig.D-83)	<u>Ti</u> , Si, Al, Fe, Cl	30 microns irregular, rough surface	rutile
11 (Fig.D-84)	<u>Si</u> , <u>Al</u>	70 microns lacy open structure	silicate
12 (Fig.D-85)	Si, Ca, Fe, Al, Zn	75x40 microns irregular flake with attached particles	ash
13 (Fig.D-86)	The entire particle was not analyzed by EDAX but the follow- ing parts of it were	35 microns rough sphere with parti- cles attached	industrial par- ticle mixed chloride

TABLE D-224 (Continued)

ANALYSIS OF SELECTED LARGE PARTICLES

Monitor Site: Brighton Township Date of Sample: 9 September 1976 Filter Number: 1110928 (Continued)			
Particle Number (see Figure)	Elements in Order of Spectral Height	Dimensions & Description	Probable Identification
13a (Fig.D-86)	<u>S</u> , <u>Cl</u> , <u>Zn</u> , Fe	central area	
13b (Fig.D-86)	<u>S</u> , <u>Zn</u> , Cl, Fe	particle in center	
13c (Fig.D-86)	<u>Si</u> , <u>S</u> , <u>Al</u> , <u>Cl</u> , Zn, Fe	attached sphere	
13d (Fig.D-86)	<u>Cl</u> , <u>Zn</u> , Fe, Al	particle surface	

TABLE D-225 and D-226 - ELEMENTAL ANALYSIS OF FIVE SELECTED LARGE
PARTICLES

TABLE D-225

ELEMENTAL ANALYSIS OF FIVE SELECTED LARGE PARTICLES
 ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS TO
 THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Particle Number				
	1	2	3	4	5
Na	0.00	0.00	0.00	0.00	0.00
Mg	0.00	0.00	0.00	0.00	0.00
Al	0.01	0.00	0.03	0.00	0.00
Si	0.10	0.12	0.00	0.01	0.00
Au	1.00	1.00	1.00	1.00	1.00
S	0.18	0.05	0.06	0.12	0.00
Cl	0.03	0.02	0.00	0.00	0.00
Cd	0.00	0.00	0.00	0.00	0.00
K	0.01	0.00	0.00	0.00	0.00
Ca	0.11	0.00	0.00	0.00	0.00
Ti	0.01	0.00	0.00	0.00	0.00
Cr	0.00	0.00	0.00	0.00	0.00
Mn	0.02	0.00	0.00	0.01	0.00
Fe	0.19	0.13	0.12	0.16	0.16
Co	0.00	0.00	0.00	0.00	0.00
Ni	0.00	0.00	0.00	0.00	0.00
Zn	0.00	0.00	0.00	0.00	0.00
Cu	0.00	0.00	0.00	0.00	0.00
Hg	0.00	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Fe, S, Ca, Si	Fe, Si	Fe	Fe, S	Fe

TABLE D-226

RESULTS OF ELEMENTAL ANALYSIS OF FIVE SELECTED
LARGE PARTICLES

Particle Number (See Figure)	Elements in Order of Spectral Height	Dimension & Description	Probable Identification
1 (Fig.D-87)	Fe, S, Ca, Si	100 microns lacy, agglomerate	plant particle
2 (Fig.D-88)	Fe, Si (low level peaks)	110 microns flat, irregular	industrial particle
3 (Fig.D-89)	Fe (low level peaks)	160 microns flat, irregular	organic, ash
4 (Fig.D-90)	Fe, S, (low level peaks)	140 microns agglomerate	plant particle (soot)
5 (Fig.D-91)	Fe (low level peaks)	150 microns angular, irregular	organic, coal

TABLE D-227A THROUGH D-229B - EDAX ELEMENTAL ANALYSIS OF LARGE
SLAG PARTICLES

TABLE D-227A

EDAX ELEMENTAL ANALYSIS OF LARGE PARTICLES WHICH WERE TAKEN
FROM SLAG SAMPLES PRODUCED BY AN ELECTRIC ARC FURNACE.
ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Particle				
	(Fig.D-92 and D-93)	(Fig. D-96 and D-97)	(Fig.D-100)	(Fig.D-101)	
	A	B	C	D	
Na	0.01	0.00	0.00	0.02	
Mg	0.67	0.00	0.07	0.07	
Al	0.02	0.03	0.17	0.18	
Si	0.26	0.99	0.82	1.31	
Au	1.00	1.00	1.00	1.00	
S	0.12	0.06	0.04	0.14	
Cl	0.00	0.04	0.01	0.05	
Cd	0.00	0.00	0.00	0.00	
K	0.00	0.05	0.08	0.07	
Ca	0.35	3.19	1.21	3.41	
Ti	0.05	0.01	0.02	0.02	
Cr	0.08	0.01	0.00	0.03	
Mn	0.34	0.07	0.00	0.06	
Fe	1.12	0.51	0.46	0.73	
Co	0.00	0.00	0.00	0.00	
Ni	0.00	0.00	0.00	0.00	
Zn	0.00	0.11	0.00	0.02	
Cu	0.00	0.04	0.00	0.00	
Hg	0.00	0.00	0.00	0.00	
As	0.00	0.00	0.00	0.00	
Pb	0.00	0.00	0.00	0.00	
Important Elements In Rank Order	Fe, Mg, Ca, Mn, Si, S, Cr, Ti	<u>Ca</u> , Si, Fe, Zn, Mn, Cu	Ca, Si, Fe, Al, K, Mg	<u>Ca</u> , Si, Fe, Al, S, Mg, K, Mn, Cl	

TABLE D- 227B

EDAX ELEMENTAL ANALYSIS OF SELECTED SURFACE PARTICLES FOUND
ON THE LARGE PARTICLES WHICH WERE TAKEN FROM SLAG
SAMPLES PRODUCED BY AN ELECTRIC ARC FURNACE
ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Particle				
	(Fig.D-94) A-1	(Fig.D-95) A-2	(Fig.D-98) B-1	(Fig.D-99) B-2	
Na	0.00	0.09	0.09	0.06	
Mg	0.00	0.07	0.12	0.00	
Al	0.00	0.07	0.12	0.07	
Si	0.35	2.25	1.68	1.04	
Au	1.00	1.00	1.00	1.00	
S	0.02	0.18	0.05	0.08	
Cl	0.04	0.19	0.11	0.10	
Cd	0.00	0.00	0.00	0.00	
K	0.00	0.31	0.13	0.07	
Ca	1.57	7.55	4.02	3.68	
Ti	0.00	0.14	0.06	0.05	
Cr	0.01	0.13	0.02	0.07	
Mn	0.00	0.31	0.09	0.08	
Fe	0.42	1.28	0.56	1.05	
Co	0.00	0.00	0.00	0.00	
Ni	0.00	0.00	0.00	0.00	
Zn	0.00	0.11	0.01	0.05	
Cu	0.00	0.04	0.02	0.05	
Hg	0.00	0.00	0.00	0.00	
As	0.00	0.00	0.00	0.00	
Pb	0.00	0.00	0.00	0.00	
Important Elements In Rank Order	Ca, Fe, Si	Ca, Si, Fe, Mn, K, Cl, S, Ti, Cr, Zn, Na, Mg, Al, Cu	Ca, Si, Fe,K, Mg, Al, Cl, Mn, Na, Ti	Ca, Fe, Si, Cl, Mn, S, Cr,Al, K, Na, Cu, Zn, Ti	

TABLE D- 227C

EDAX ELEMENTAL ANALYSIS OF SMALL PARTICLES WHICH WERE TAKEN
FROM SLAG SAMPLES PRODUCED BY AN ELECTRIC ARC FURNACE.
ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Particle				
	(Fig.D-102 and D-103) E	(Fig.D-106 and D-107) F	(Fig.D-111) G	(Fig.D-111) H	(Fig.D-112) I
Na	0.02	0.00	0.10	0.00	0.00
Mg	0.06	0.02	0.34	0.32	0.21
Al	0.15	0.07	4.45	3.81	0.55
Si	1.14	0.86	1.15	1.73	1.26
Au	1.00	1.00	1.00	1.00	1.00
S	0.13	0.10	0.24	0.18	0.10
Cl	0.06	0.03	0.33	0.15	0.01
Cd	0.00	0.00	0.00	0.00	0.00
K	0.11	0.10	0.46	0.31	0.04
Ca	4.18	3.80	19.76	5.20	2.27
Ti	0.07	0.09	0.46	0.08	0.07
Cr	0.21	0.26	0.74	0.19	0.06
Mn	0.09	0.33	0.72	0.26	0.05
Fe	0.26	1.04	2.62	1.08	0.10
Co	0.00	0.00	0.00	0.00	0.00
Ni	0.00	0.00	0.00	0.00	0.00
Zn	0.04	0.24	0.61	0.24	0.00
Cu	0.06	0.19	0.68	0.29	0.02
Hg	0.00	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Ca, Si, Fe, Cr, Al, K, Mn Ti, Cu, Mg	Ca, Fe, Si, Mn Cr, Zn, Cu, S, K	Ca, Al, Fe, Si Cr, Mn, Cu, Zn, Ti, K, Mg, Cl, S, Na	Ca, Al, Si, Fe, Mg, K, Cu Mn, Zn, Cr, S, Cl, Ti	Ca, Si, Al, Mg, Fe, S, Ti, Cr, Mn

TABLE D- 227D

EDAX ELEMENTAL ANALYSIS OF SELECTED SURFACE PARTICLES FOUND
ON THE SMALL PARTICLES WHICH WERE TAKEN FROM SLAG SAMPLES
PRODUCED BY AN ELECTRIC ARC FURNACE. ENTRIES ARE
RATIOS OF INTEGRAL ENERGY PEAKS TO THE
INTEGRAL ENERGY PEAK OF GOLD

Elements	Particle				
	(Fig.D-104) E-1	(Fig.D-105) E-2	(Fig.D-108) F-1	(Fig.D-109) F-2	(Fig.D-110) F-3
Na	0.03	0.00	0.00	0.15	0.05
Mg	0.10	0.03	0.30	0.42	0.00
Al	0.38	0.16	0.58	0.46	0.57
Si	1.14	0.94	1.53	3.02	1.67
Au	1.00	1.00	1.00	1.00	1.00
S	0.18	0.17	0.28	0.14	0.09
Cl	0.16	0.01	0.18	0.10	0.01
Cd	0.00	0.00	0.00	0.00	0.00
K	0.25	0.07	0.28	0.13	0.25
Ca	4.98	2.51	7.30	4.21	0.77
Ti	0.46	0.07	0.12	0.09	0.05
Cr	0.21	0.08	0.30	0.12	0.11
Mn	0.44	0.13	0.60	0.10	0.10
Fe	0.98	0.25	2.89	0.24	0.49
Co	0.00	0.00	0.00	0.00	0.00
Ni	0.00	0.00	0.00	0.00	0.00
Zn	0.12	0.00	0.53	0.03	0.04
Cu	0.23	0.04	0.67	0.03	0.07
Hg	0.00	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	<u>Ca</u> , Si, Fe, Ti, Mn, Al, K, Cu Cr, S, Cl, Zn, Mg	Ca, Si, Fe, S, Al, Mn, Cr, Ti K, Cu	<u>Ca</u> , <u>Fe</u> , Si, <u>Cu</u> , <u>Mn</u> , Al, <u>Zn</u> , Mg, Cr, S K, Cl, Ti	<u>Ca</u> , <u>Si</u> , Al, Mg Fe, Na, S, K, Cr, Mn, Cl, Ti	Si, Ca, Al, Fe, K, Cr, Mn, S, Cu

TABLE D-228A

EDAX ELEMENTAL ANALYSIS OF LARGE PARTICLES WHICH WERE TAKEN
FROM SLAG SAMPLES PRODUCED BY A BLAST FURNACE.
ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Particle				
	(Fig. D-113) A	(Fig. D-113) B	(Fig. D-113) C		
Na	0.01	0.02	0.05		
Mg	0.26	0.22	0.19		
Al	0.37	0.11	0.28		
Si	1.67	1.17	1.29		
Au	1.00	1.00	1.00		
S	0.14	0.13	0.19		
Cl	0.08	0.04	0.04		
Cd	0.00	0.00	0.00		
K	0.38	0.11	0.21		
Ca	3.20	1.91	2.54		
Ti	0.14	0.07	0.09		
Cr	0.08	0.06	0.04		
Mn	0.11	0.06	0.08		
Fe	0.61	0.35	0.30		
Co	0.00	0.00	0.00		
Ni	0.00	0.00	0.00		
Zn	0.07	0.04	0.03		
Cu	0.08	0.01	0.05		
Hg	0.00	0.00	0.00		
As	0.00	0.00	0.00		
Pb	0.00	0.00	0.00		
Important Elements In Rank Order	Ca, Si, Fe, K, Al, Mg, Ti, Mn Cu, Cr, Cl, Zn	Ca, Si, Fe, Mg, S, Al, Ti, Cr, Mn	Ca, Si, Fe, Al, K, Mg, S, Ti, Mn, Na, Cu		

TABLE D-228B

EDAX ELEMENTAL ANALYSIS OF SELECTED SURFACE PARTICLES FOUND
ON THE LARGE PARTICLES WHICH WERE TAKEN FROM SLAG SAM-
PLES PRODUCED BY A BLAST FURNACE. ENTRIES ARE
RATIOS OF INTEGRAL ENERGY PEAKS TO THE
INTEGRAL ENERGY PEAK OF GOLD

Elements	Particle				
	(Fig. D-114) A-1	(Fig. D-114) A-2	(Fig. D-114) A-3	(Fig. D-114) A-4	(Fig. D-114) A-5
Na	0.02	0.01	0.01	0.00	0.04
Mg	0.07	0.22	0.02	0.11	0.00
Al	0.28	0.32	0.15	0.40	0.27
Si	0.97	1.80	2.13	1.18	0.77
Au	1.00	1.00	1.00	1.00	1.00
S	0.09	0.08	0.12	0.12	0.08
Cl	0.05	0.04	0.09	0.01	0.01
Cd	0.00	0.00	0.00	0.00	0.00
K	0.05	0.06	0.18	0.10	0.20
Ca	1.87	2.36	6.14	2.78	2.40
Ti	0.02	0.06	0.07	0.04	0.14
Cr	0.01	0.01	0.05	0.10	0.03
Mn	0.01	0.02	0.06	0.05	0.01
Fe	0.11	0.10	0.33	0.30	0.28
Co	0.00	0.00	0.00	0.00	0.00
Ni	0.00	0.00	0.00	0.00	0.00
Zn	0.01	0.01	0.04	0.02	0.02
Cu	0.01	0.01	0.03	0.02	0.01
Hg	0.00	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	Ca, Si, Al, Fe S, Mg	Ca, Si, Al, Mg, Fe, S	Ca, Si, Fe, K, Al, S, Cl	Ca, Si, Al, Fe, S, Mg, Cr, K, Mn	Ca, Si, Fe, Al, K, Ti, S

TABLE D-229A

EDAX ELEMENTAL ANALYSIS OF LARGE PARTICLES WHICH WERE TAKEN
FROM SLAG SAMPLES PRODUCED BY A BASIC OXYGEN FURNACE.

ENTRIES ARE RATIOS OF INTEGRAL ENERGY PEAKS
TO THE INTEGRAL ENERGY PEAK OF GOLD

Elements	Particle				
	(Fig. D-115) A	(Fig. D-115) B			
Na	0.10	0.00			
Mg	0.09	0.13			
Al	0.15	0.07			
Si	1.25	0.97			
Au	1.00	1.00			
S	0.20	0.09			
Cl	0.07	0.05			
Cd	0.00	0.00			
K	0.17	0.05			
Ca	6.19	3.60			
Ti	0.18	0.11			
Cr	0.16	0.09			
Mn	0.24	0.27			
Fe	1.20	0.80			
Co	0.00	0.00			
Ni	0.00	0.00			
Zn	0.12	0.05			
Cu	0.14	0.04			
Hg	0.00	0.00			
As	0.00	0.00			
Pb	0.00	0.00			
Important Elements In Rank Order	Ca, Si, Fe, Mn, S, Ti, K, Cr, Al, Cu, Zn, Mg, Cl	Ca, Si, Fe, Mn, Mg, Ti, Cr, S, Al			

TABLE D-229B

EDAX ELEMENTAL ANALYSIS OF SELECTED SURFACE PARTICLES FOUND
ON THE LARGE PARTICLES WHICH WERE FROM SLAG PRODUCED BY
A BASIC OXYGEN FURNACE. ENTRIES ARE RATIOS OF
INTEGRAL ENERGY PEAKS TO THE INTEGRAL
ENERGY PEAK OF GOLD

Elements	Particle				
	(Fig. D-116) A-1	(Fig. D-116) A-2	(Fig. D-116) A-3	(Fig. D-116) A-4	(Fig. D-116) A-5
Na	0.21	0.00	0.00	0.03	0.11
Mg	0.45	0.30	0.30	0.02	0.23
Al	0.91	0.29	0.77	0.34	0.36
Si	7.54	2.64	2.76	1.33	1.03
Au	1.00	1.00	1.00	1.00	1.00
S	0.97	0.36	0.37	0.21	0.23
Cl	0.50	0.26	0.17	0.07	0.17
Cd	0.00	0.00	0.00	0.00	0.00
K	0.71	0.41	0.34	0.22	0.20
Ca	29.20	12.50	0.78	3.87	10.23
Ti	0.38	0.23	0.14	0.09	0.69
Cr	0.24	0.23	0.08	0.07	0.65
Mn	0.71	0.93	0.11	0.08	2.34
Fe	2.38	2.45	0.67	0.51	6.72
Co	0.00	0.00	0.00	0.00	0.00
Ni	0.00	0.00	0.00	0.00	0.00
Zn	0.16	0.23	0.06	0.01	0.33
Cu	0.25	0.23	0.09	0.04	0.31
Hg	0.00	0.00	0.00	0.00	0.00
As	0.00	0.00	0.00	0.00	0.00
Pb	0.00	0.00	0.00	0.00	0.00
Important Elements In Rank Order	<u>Ca, Si, Fe, S,</u> Al, Mn, K, Cl, Mg, Ti, Cu, Cr Na, Zn	<u>Ca, Si, Fe,</u> Mn, K, S, Mg, Al, Cl, Ti, Cu, Cr, Zn	<u>Si, Ca, Al, Fe,</u> S, K, Mg, Cl, Ti, Mn, Cu, Cr, Zn	<u>Ca, Si, Fe, Al,</u> K, S, Ti, Mn, Cr, Cl	<u>Ca, Fe, Mn,</u> Si, Ti, Cr, Al, Zn, Cu, Mg, S K, Cl, Na

TABLE D-229B (Continued)

Elements	Particle				
	(Fig. D-116) A-6				
Na	0.00				
Mg	0.91				
Al	0.24				
Si	0.58				
Au	1.00				
S	0.13				
Cl	0.05				
Cd	0.00				
K	0.20				
Ca	1.94				
Ti	0.14				
Cr	0.51				
Mn	1.87				
Fe	4.70				
Co	0.00				
Ni	0.00				
Zn	0.14				
Cu	0.17				
Hg	0.00				
As	0.00				
Pb	0.00				
Important Elements In Rank Order	<u>Fe</u> , Ca, Mn, Mg, Si, Cr, Al, K, Cu, Zn, Ti, S				

TABLE D-230 THROUGH D-236 - OPTICAL MICROSCOPY ANALYSIS BY
McCRONE ASSOCIATES

TABLE D-230

OPTICAL MICROSCOPY ANALYSIS BY McCRONE ASSOCIATES
ON FILTER NUMBER 1093225

Location: Brighton Township		Date: 16 August 1976
Component	Percent By Number	Size Range (μm)
<u>Combustion Products</u>		
fused ash (glassy spheres)	18	10-40
unfused ash	30	20-100
magnetite spheres	2	20-40
oil soot	2	30-40
coked coal	<u>31</u>	20-100
Total Combustion Products	83	
<u>Minerals</u>		
iron oxide	6	10-100
quartz	7	20-60
calcite	<u>3</u>	10-50
Total Minerals	16	
<u>Biological Materials</u>	<u>Not Detected</u>	

TABLE D-231

OPTICAL MICROSCOPY ANALYSIS BY McCRONE ASSOCIATES
ON FILTER NUMBER 1093227

Location: Midland		Date: 16 August 1976
Component	Percent By Number	Size Range (μm)
<u>Combustion Products</u>		
oil soot	20	30-100
unfused ash	10	30-50
fused ash (glassy spheres)	5	4-12
coked coal	<u>35</u>	30-100
Total Combustion Products	70	
<u>Minerals</u>		
iron oxide	5	10-100
quartz	15	10-50
calcite	8	5-60
feldspars	<u>trace</u>	-
Total Minerals	28	
<u>Biological Materials</u>		
spores	trace	-
bark	trace	50
diatoms	trace	-
miscellaneous plant tissue	<u>trace</u>	-
Total Biological Materials	<1	

TABLE D-232

OPTICAL MICROSCOPY ANALYSIS BY McCrone Associates
ON FILTER NUMBER 1093205

Location: Duquesne II		Date: 16 August 1976
Component	Percent By Number	Size Range (μ m)
<u>Combustion Products</u>		
fused ash (glassy spheres)	4	10-20
unfused ash	37	10-100
magnetite spheres	1	40
coked coal	<u>25</u>	10-100
Total Combustion Products	67	
<u>Minerals</u>		
clay	8	10-40
iron oxide	5	15-30
quartz	7	10-80
feldspars	1	10-30
calcite	3	5-40
mica	2	20-40
carborundum	<u><1</u>	10-15
Total Minerals	27	
<u>Biological Materials</u>		
starch	trace	30
pollen	<1	18-28
spores	trace	15-25
bark	<u><1</u>	30
Total Biological Materials	<3	

TABLE D- 233

OPTICAL MICROSCOPY ANALYSIS BY McCrone Associates
ON FILTER NUMBER 1093209

Location: Liberty Boro		Date: 16 August 1976
Component	Percent By Number	Size Range (μ m)
<u>Combustion Products</u>		
coked coal	23	10-100
oil soot	13	4-40
fused ash (glassy spheres)	5	4-40
unfused ash	24	20-50
magnetite spheres	<1	10-40
coal (unburned)	<u>4</u>	30-40
Total Combustion Products	70	
<u>Minerals</u>		
feldspars	4	10-60
clay	8	16-30
quartz	4	5-20
calcite	8	3-40
iron oxide	<u>2</u>	10-20
Total Minerals	26	
<u>Biological Materials</u>		
pollen	<1	18-28
spores	trace	-
miscellaneous plant tissue	<u><1</u>	-
Total Biological Materials	<2	

TABLE D- 234

OPTICAL MICROSCOPY ANALYSIS BY McCRONE ASSOCIATES
ON FILTER NUMBER 1093239

Location: South Fayette		Date: 16 August 1976
Component	Percent By Number	Size Range (μm)
<u>Combustion Products</u>		
fused ash (glassy spheres)	2	5-20
unfused ash	35	10-50
magnetite spheres	1	30-40
coked coal	11	20-90
oil soot	<u>13</u>	20-90
Total Combustion Products	62	
<u>Minerals</u>		
iron oxide	30	10-50
quartz	5	6-15
calcite	<u>2</u>	3-5
Total Minerals	37	
<u>Biological Materials</u>	<u>Not Detected</u>	

TABLE D-235

OPTICAL MICROSCOPY ANALYSIS BY McCRONE ASSOCIATES
ON FILTER NUMBER 1093284

Location: Brighton Township		Date: 16 August 1976
Component	Percent By Number	Size Range (μm)
<u>Combustion Products</u>		
fused ash (glassy spheres)	28	8-40
unfused ash	2	10-50
coked coal	48	20-100
unburned coal	4	20-40
magnetite spheres	1	15-20
oil soot	<u>6</u>	20-40
Total Combustion Products	89	
<u>Minerals</u>		
iron oxide	2	5-30
mica	1	30-80
quartz	2	10-20
feldspars	1	40-50
calcite	<u>1</u>	15-20
Total Minerals	7	
<u>Biological Materials</u>		
pollen	1	18-25
spores	<1	18-30
bark	<1	90
miscellaneous plant tissue	<u>trace</u>	-
Total Biological Materials	3	

TABLE D-236
OPTICAL MICROSCOPY ANALYSIS DONE BY McCRONE ASSOCIATES
ON FILTER NUMBER 1093284

Location: Brighton Township Date: August 28, 1976		
Component	Percent by Number	Size Range (μm)
<u>Combustion Products</u>		
fused ash (glassy spheres)	28	8-40
unfused ash	2	10-50
coked coal	48	20-100
unburned coal	4	20-40
magnetite spheres	1	15-20
oil soot	<u>6</u>	20-40
Total Combustion Products	89	
<u>Minerals</u>		
iron oxide	2	5-30
mica	1	30-80
quartz	2	10-20
feldspars	1	40-50
calcite	<u>1</u>	15-20
Total Minerals	7	
<u>Biological Materials</u>		
pollen	1	18-25
spores	<1	18-30
bark	<1	90
miscellaneous plant tissue	<u>trace</u>	-
Total Biological Materials	3	

FIGURE D-6 THROUGH D-19 - CUMULATIVE MASS DISTRIBUTIONS FROM THE
OPTICAL AND SEM ANALYSES

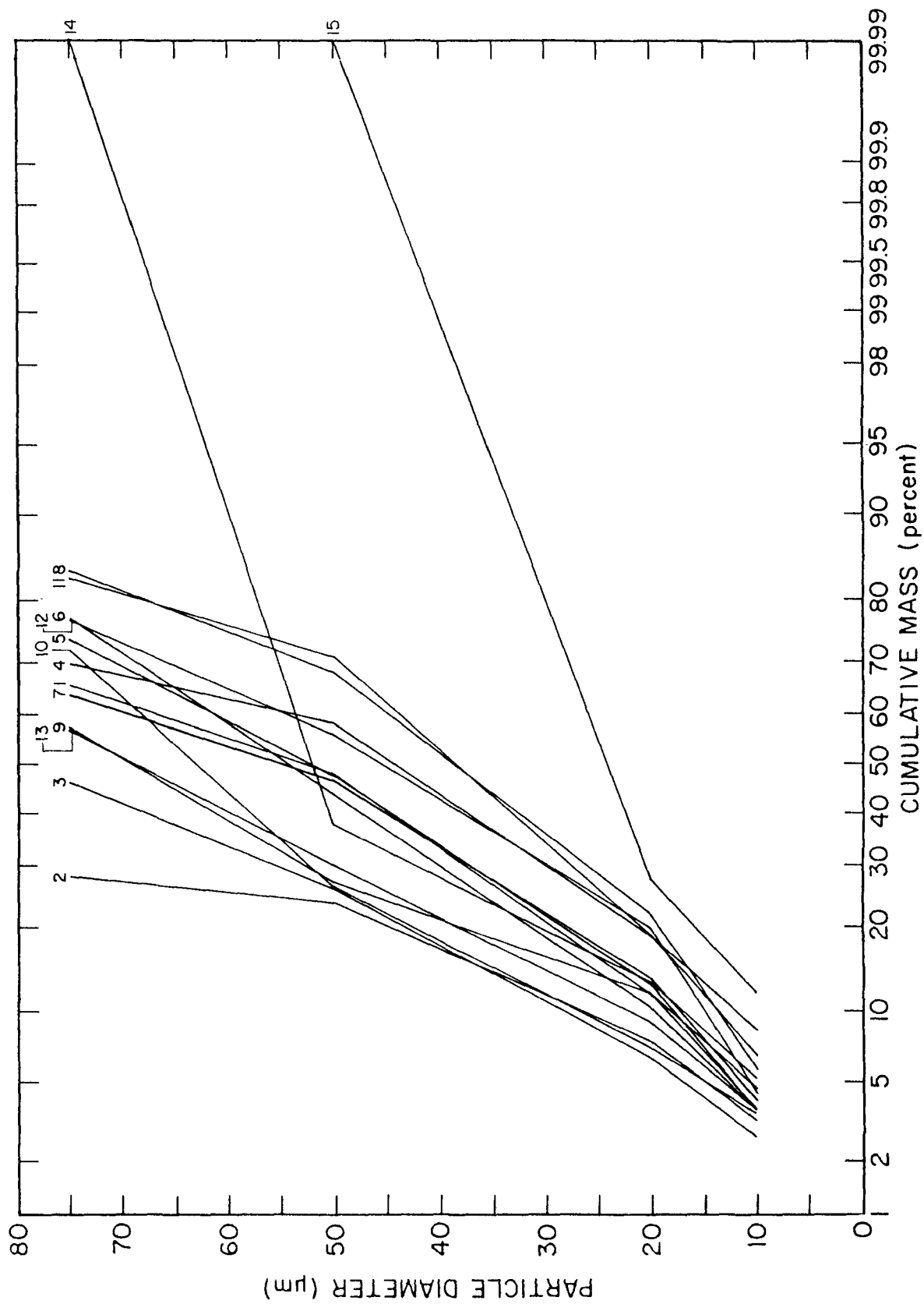


FIGURE D-6. Biologically adjusted size distribution for 16 August 1976.

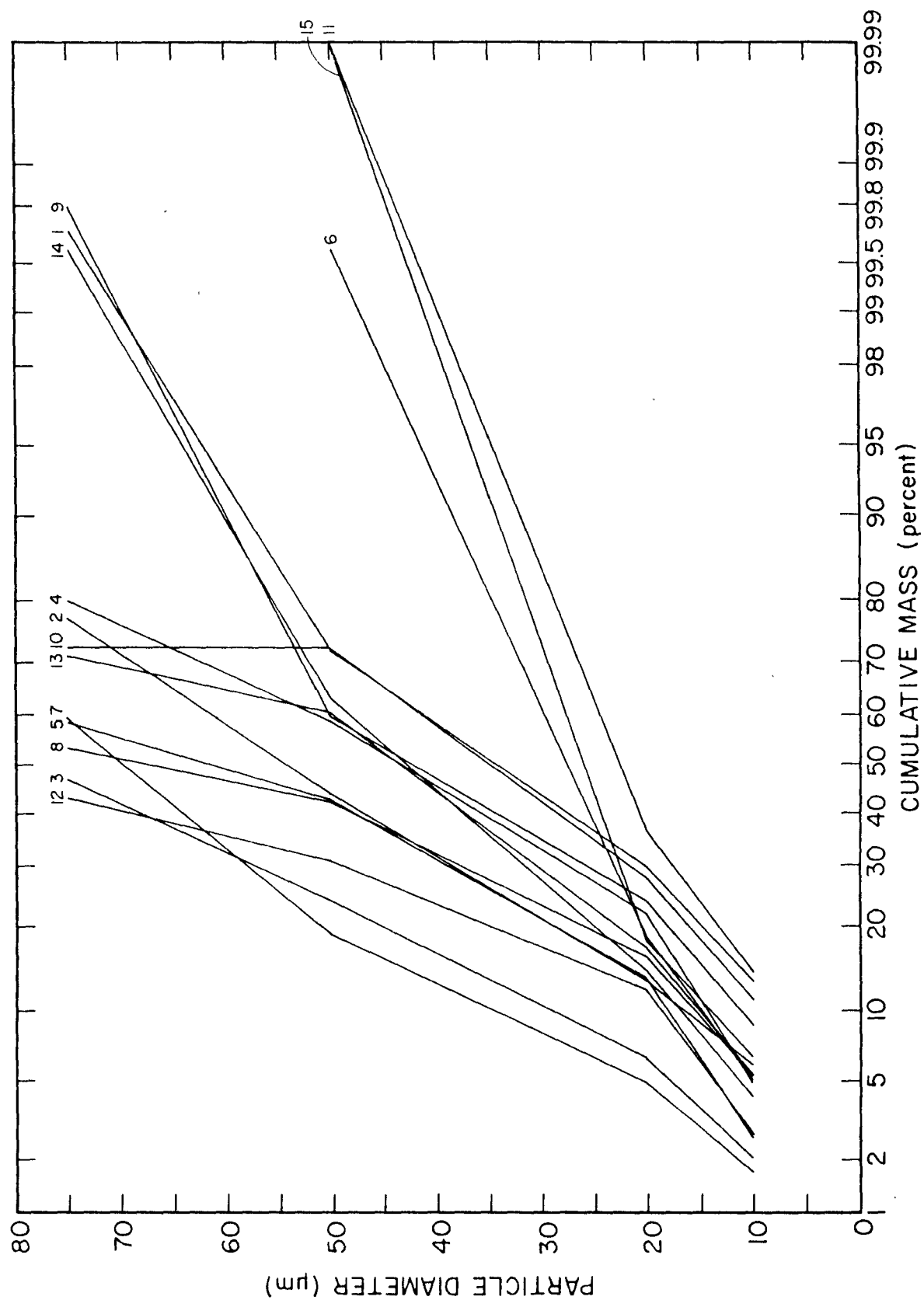


FIGURE D-7. Biologically adjusted size distribution for 28 August 1976.

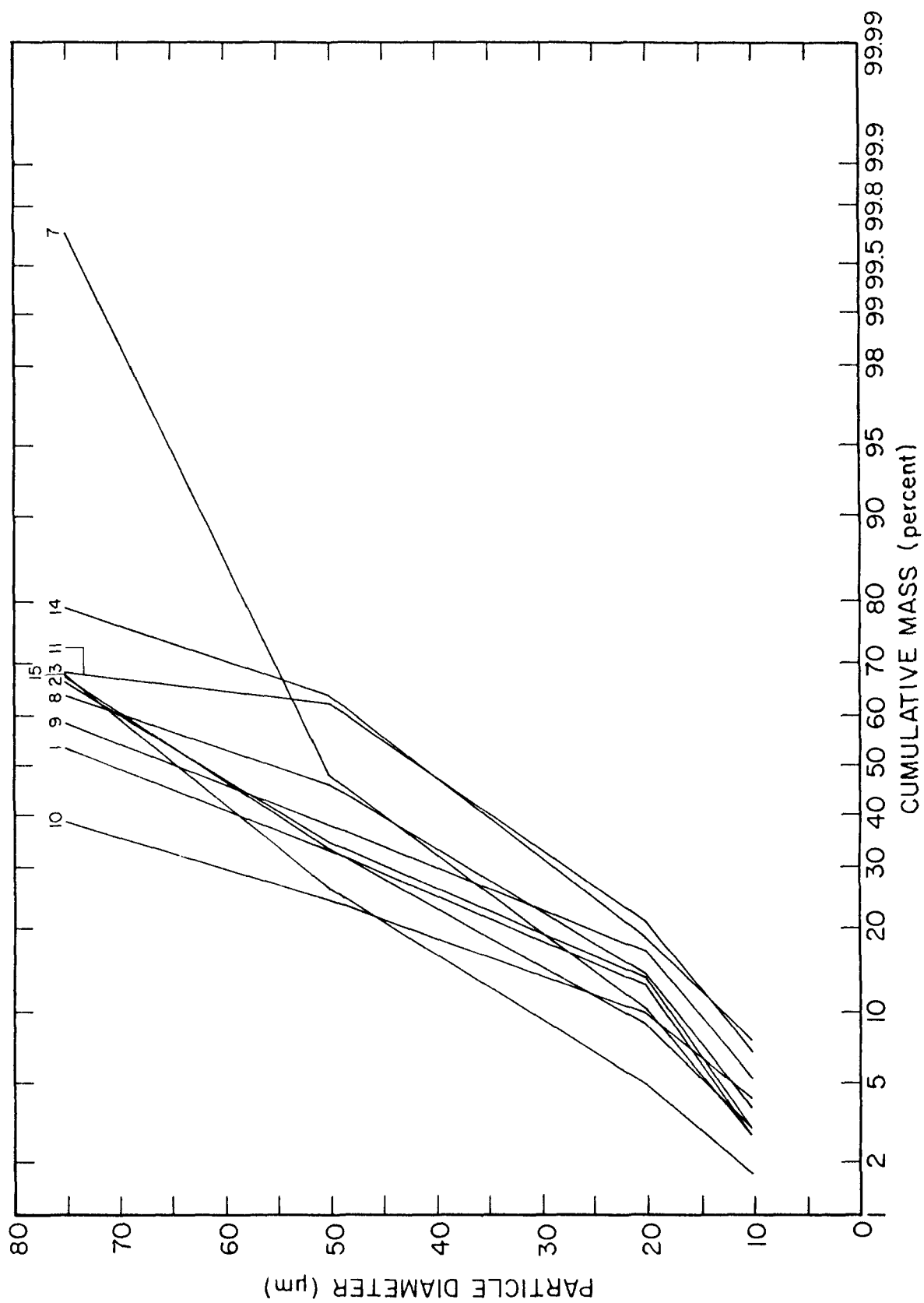


FIGURE D-8. Biologically adjusted size distribution for 9 September 1976.

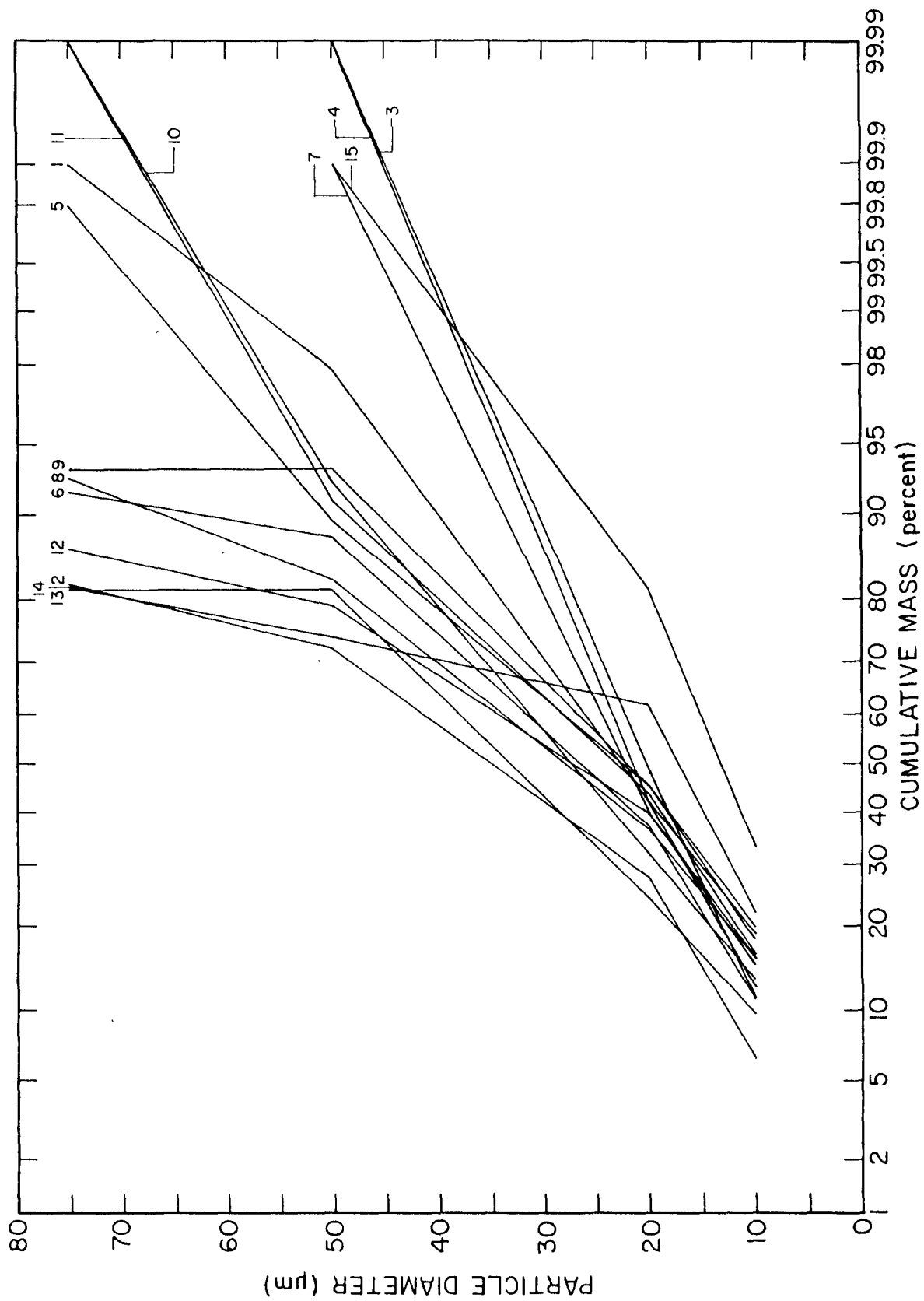


FIGURE D-9. SEM size distribution for 16 August 1976.

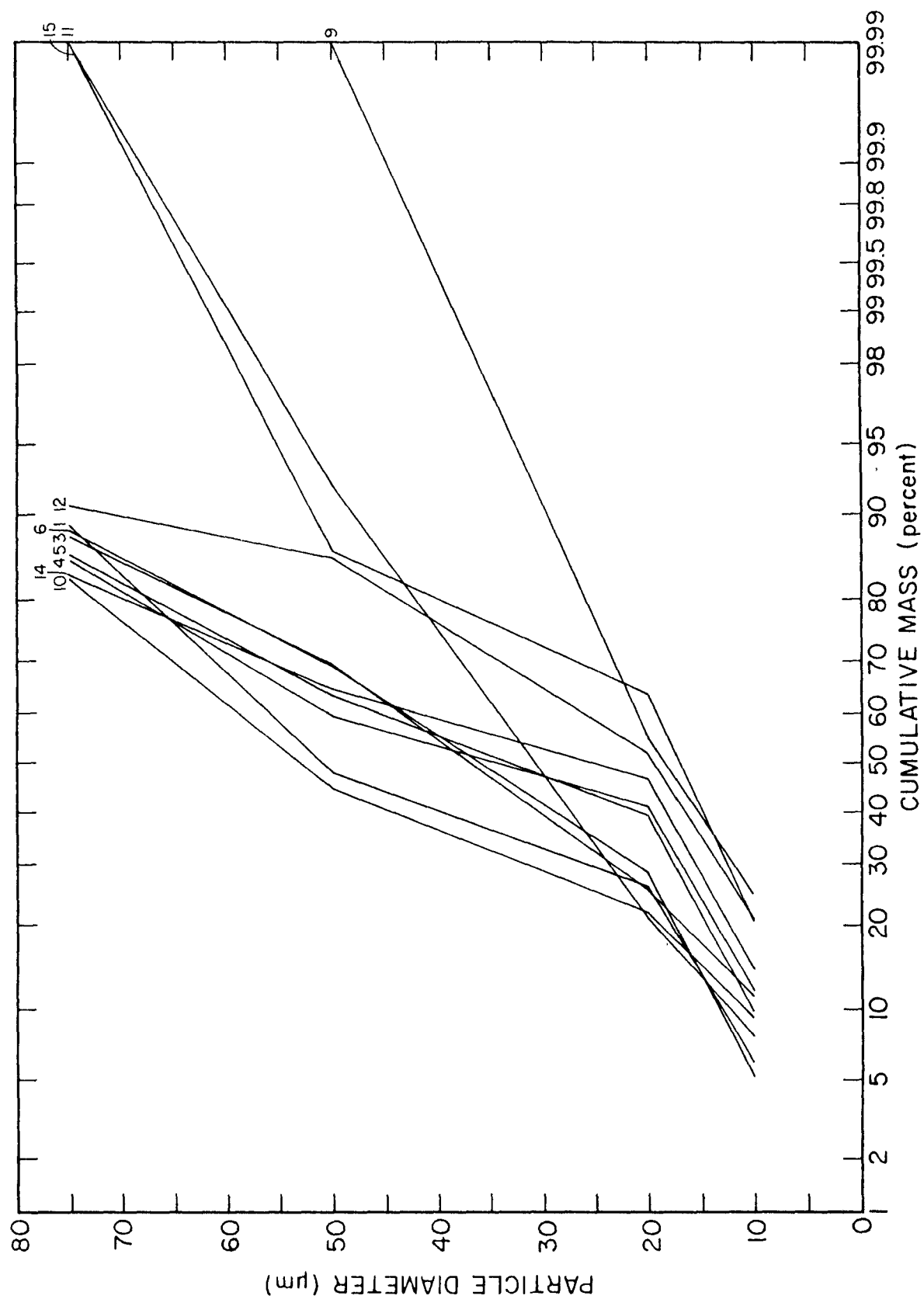


FIGURE D-10. SEM size distribution for 28 August 1976.

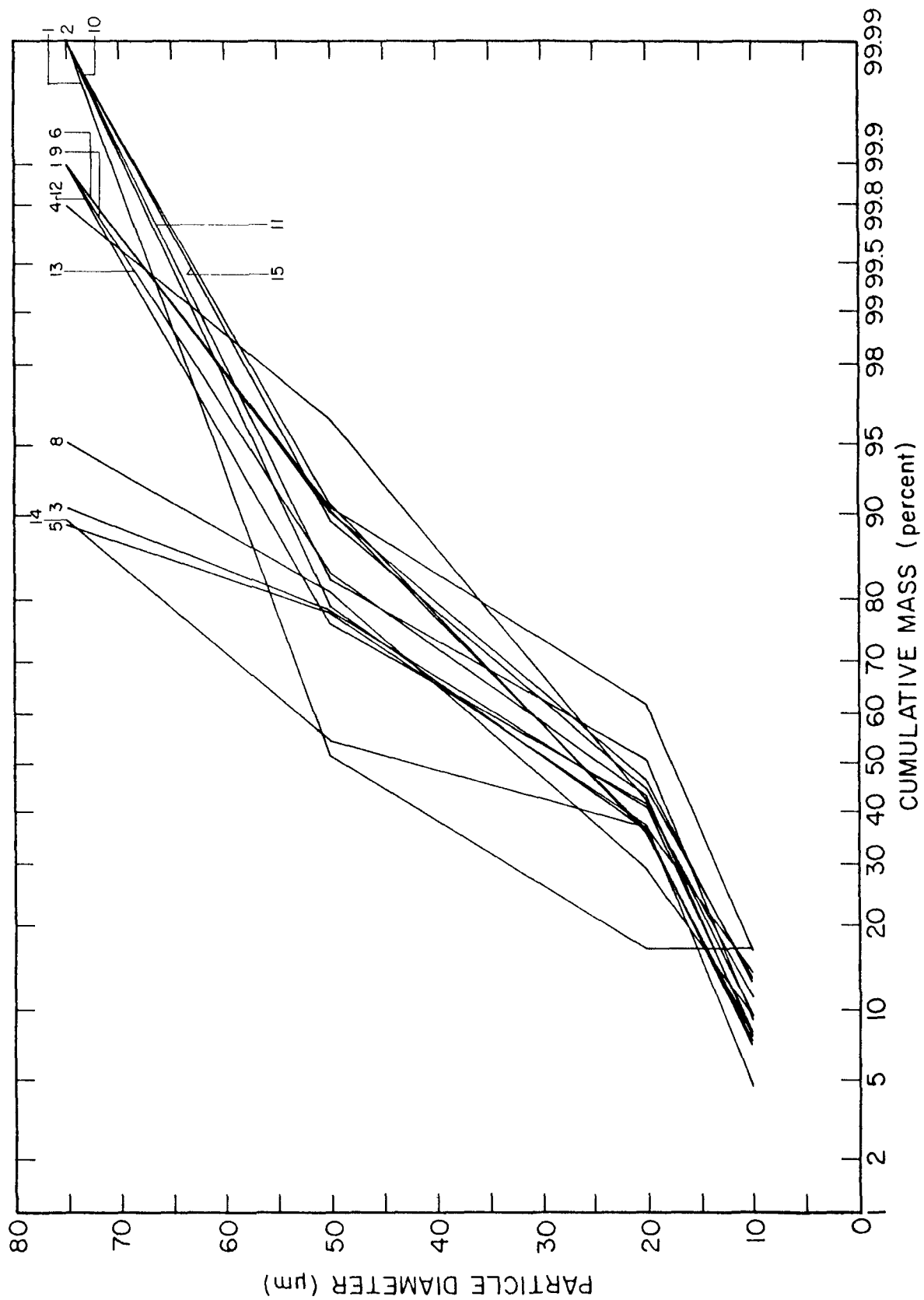


FIGURE D-11. SEM size distribution for 9 September 1976.

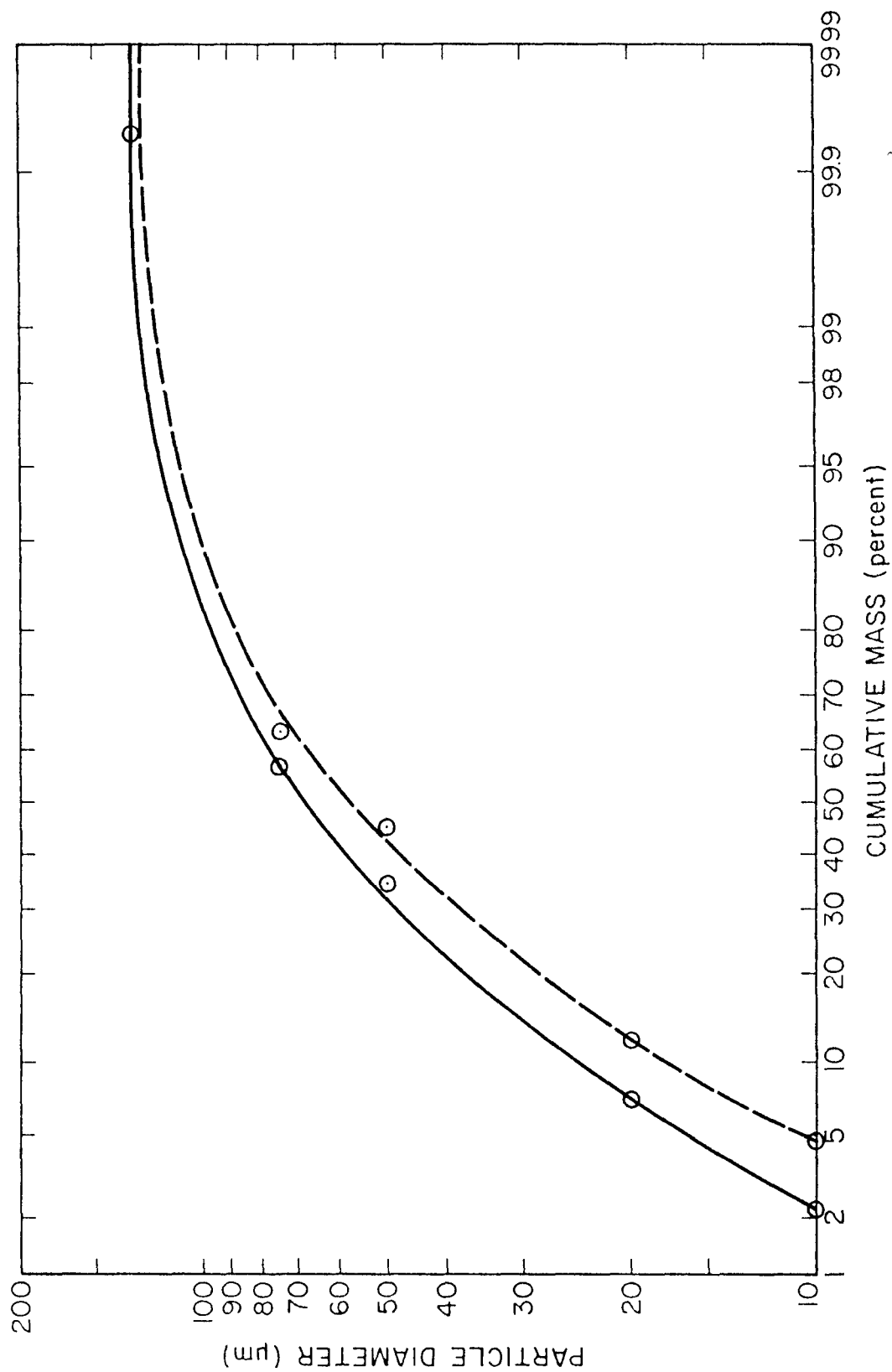


FIGURE D-12. Cumulative mass distribution on filters of mass greater than 100 mg for the optical microscopy data. The dashed line represents the cumulative mass distribution after the biological contributions had been removed from the filters.

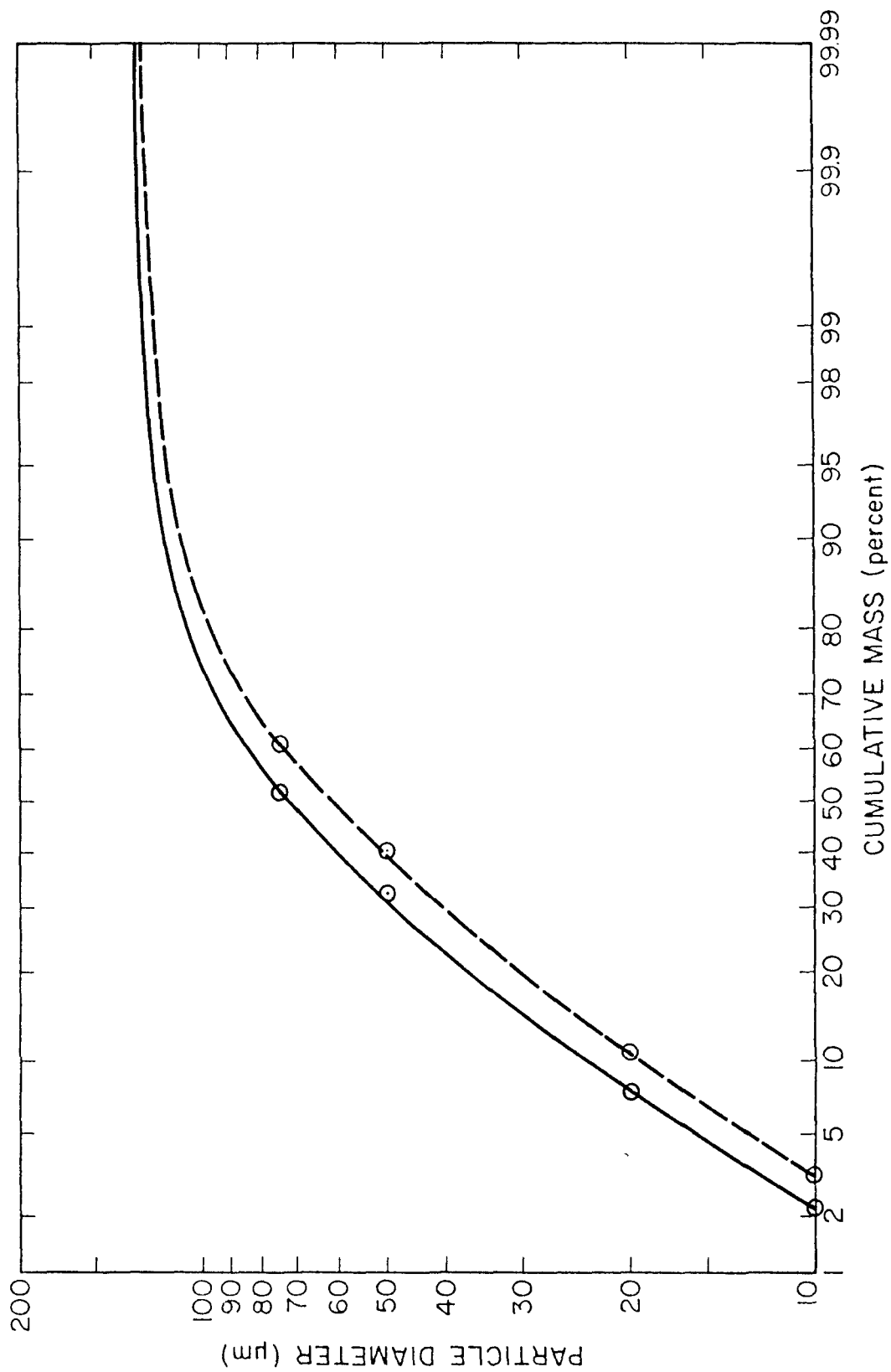


FIGURE D-13. Cumulative mass distribution of industrial filter sites for the optical microscopy data. The dashed line represents the cumulative mass distribution after the biological contribution had been removed from the filters.

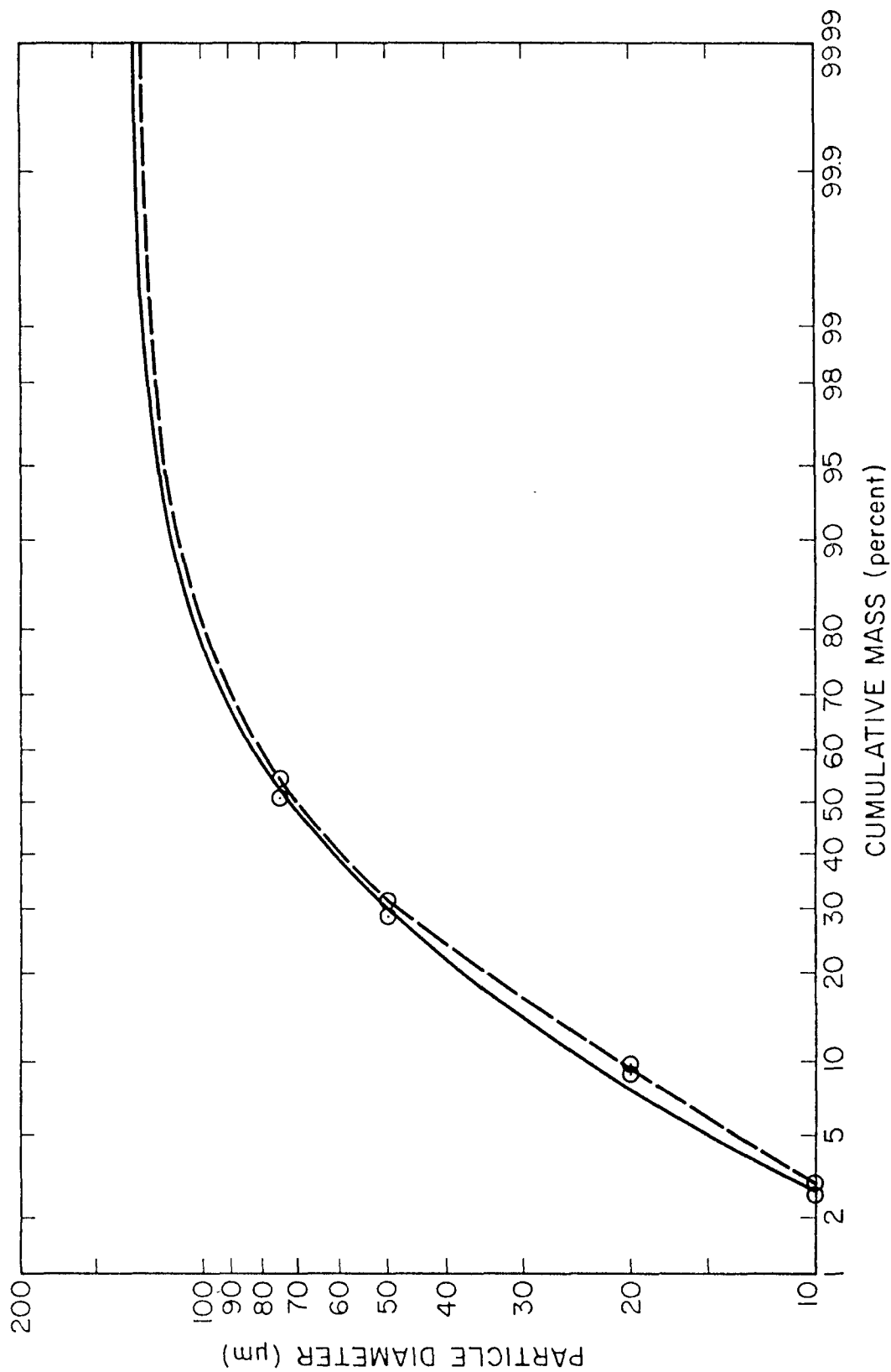


FIGURE D-14. Cumulative mass distribution of urban filter sites for the optical microscopy data. The dashed line represents the cumulative mass distribution after the biological contribution had been removed from the filters.

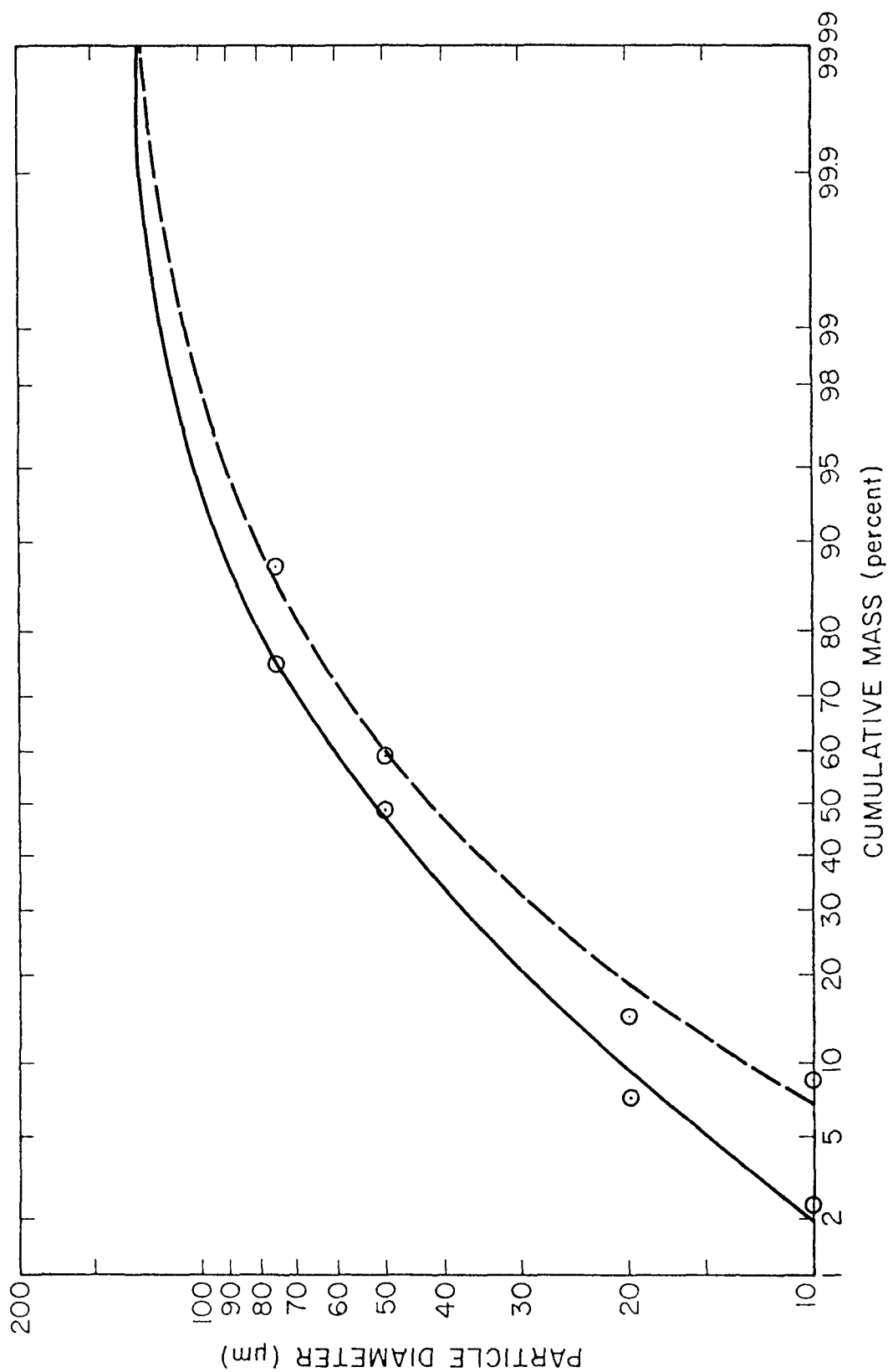


FIGURE D-15. Cumulative mass distribution of rural filter sites for the optical microscopy data. The dashed line represents the cumulative mass distribution after the biological contribution had been removed from the filters.

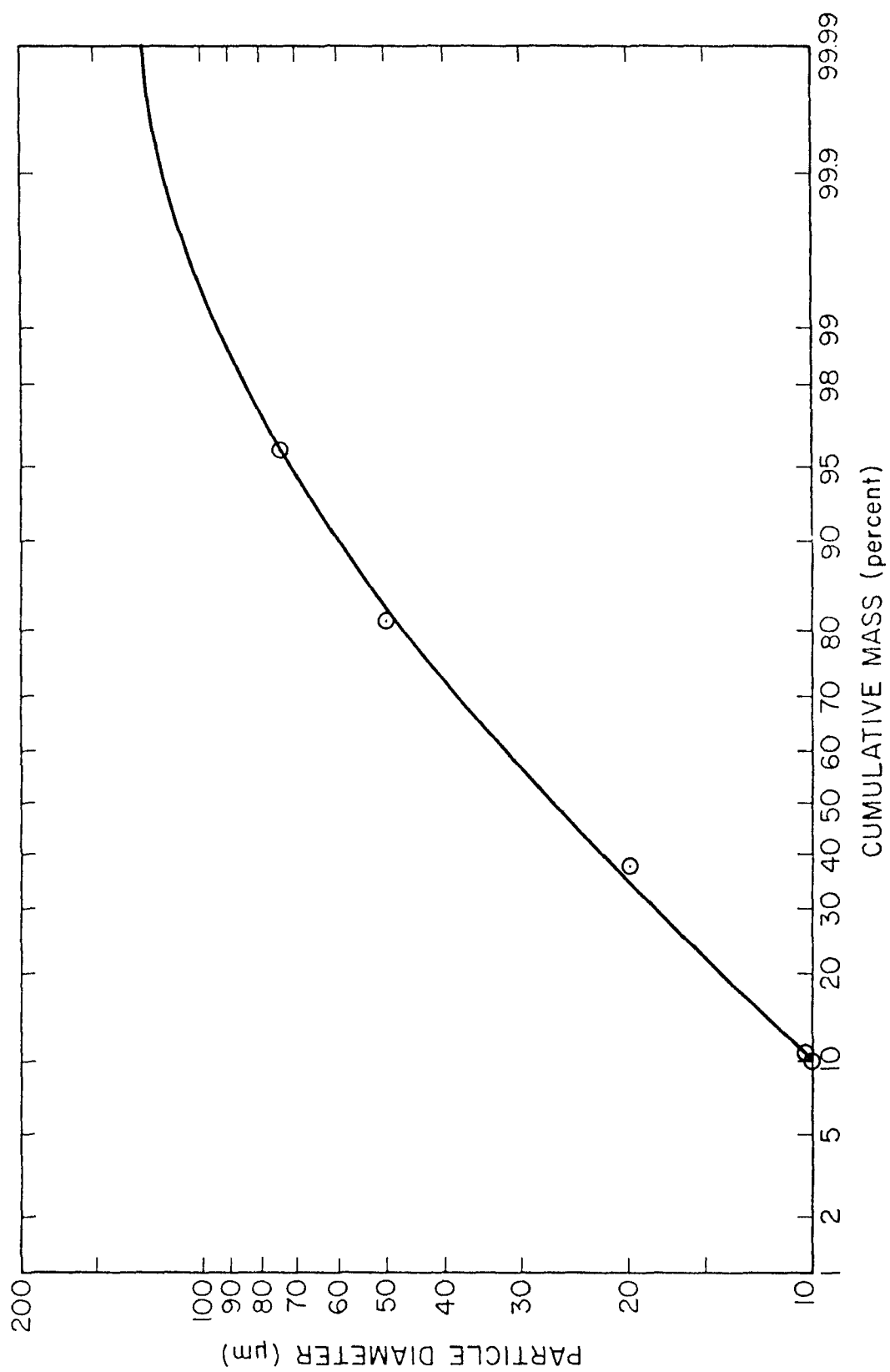


FIGURE D-16. Cumulative mass distribution on filters of mass greater than 100 mg for the SEM data.

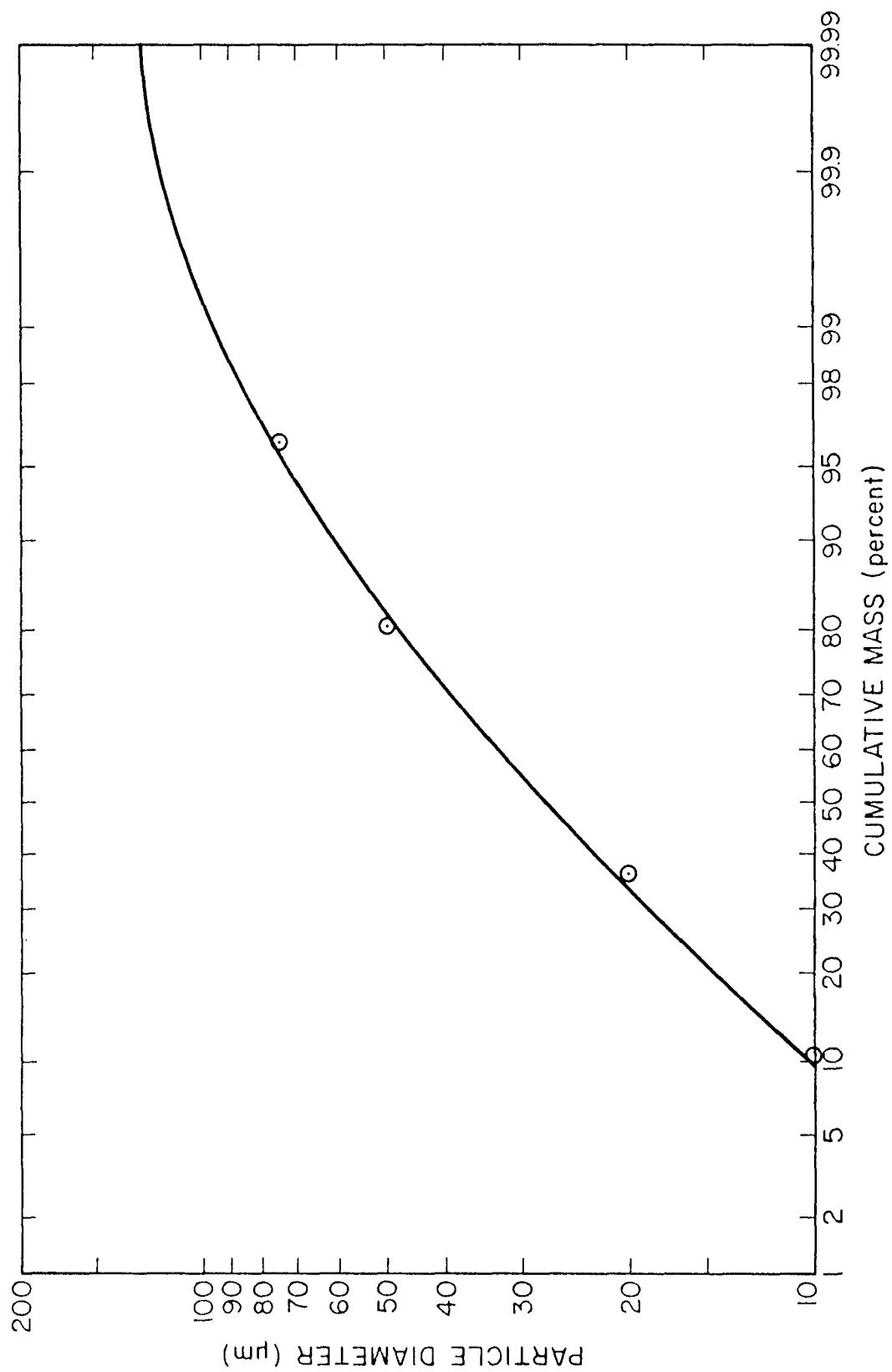


FIGURE D-17. Cumulative mass distribution of industrial filter sites for the SEM data.

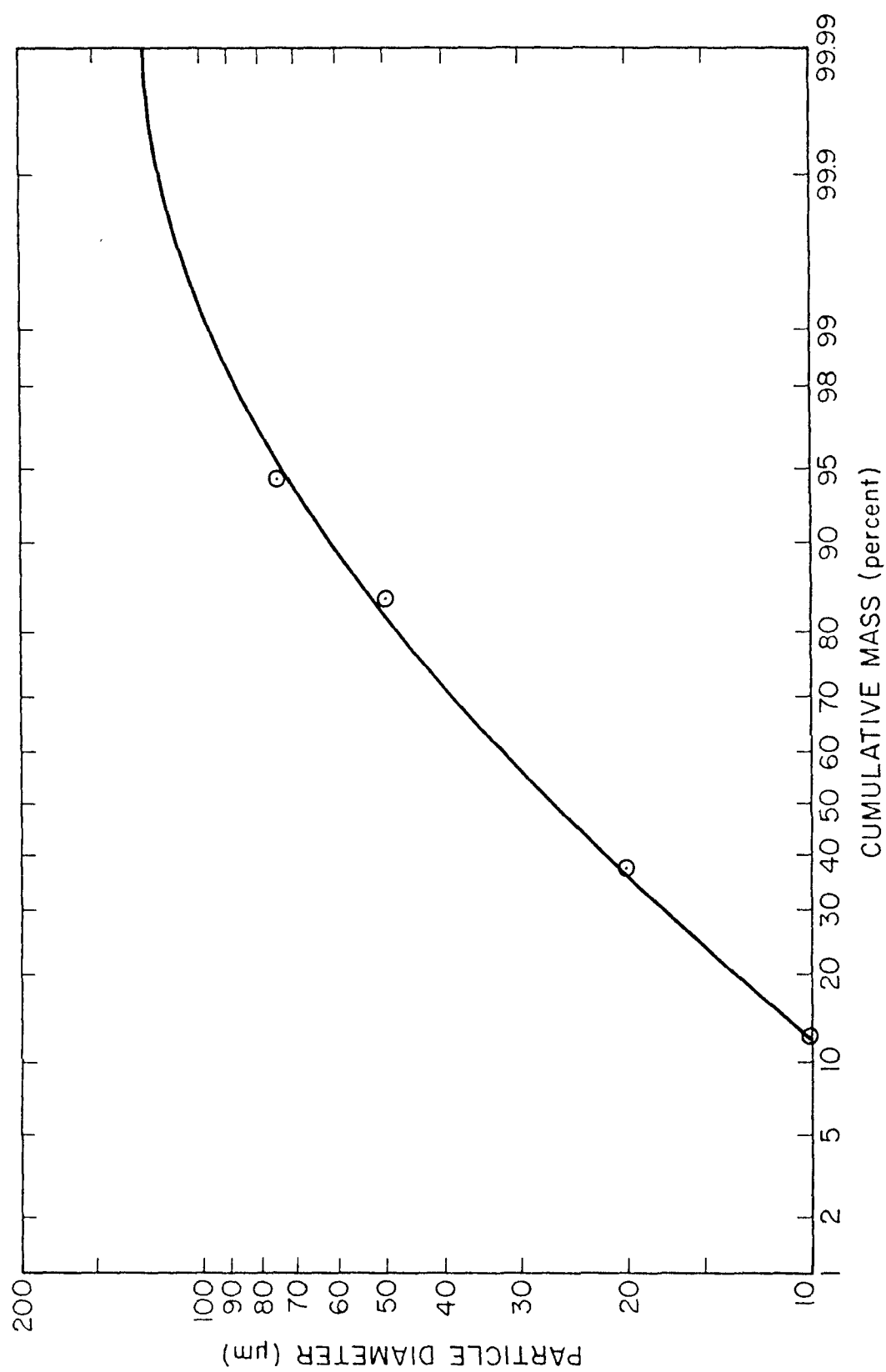


FIGURE D-18. Cumulative mass distribution of urban filter sites for the SEM data.

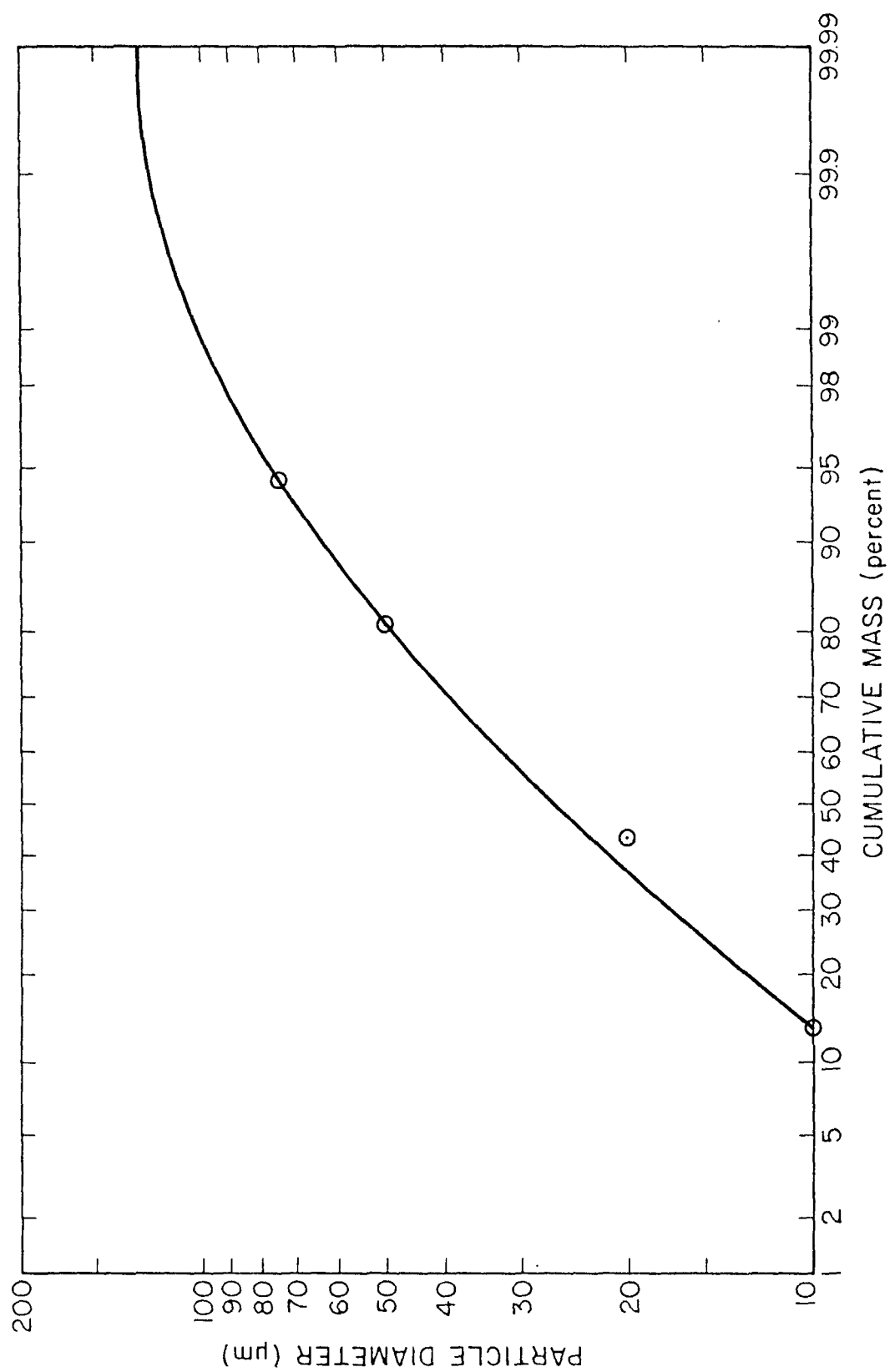


FIGURE D-19. Cumulative mass distribution of rural filter sites for the SEM data.

FIGURES D-20 THROUGH D-116 - PHOTOMICROGRAPHS

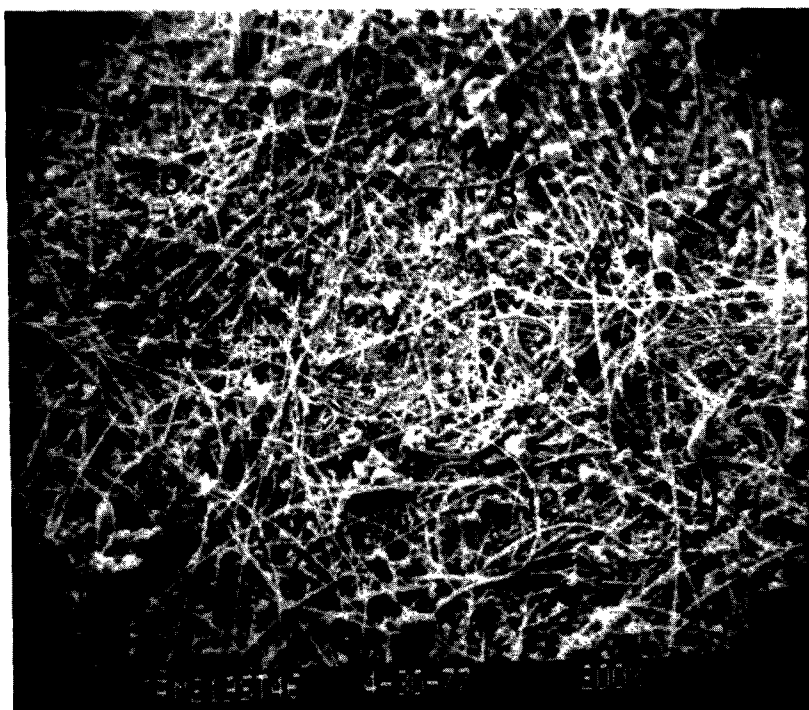


FIGURE D-20: Stub Number 46 which shows a magnified portion of the filter taken from the Baden Monitor on 8/16/76. (Refer to Table D-171)

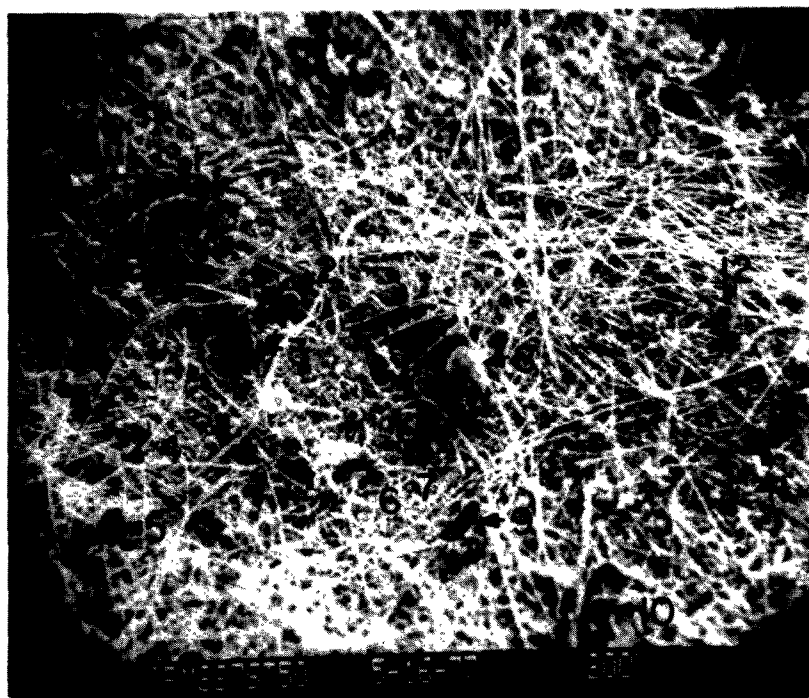


FIGURE D-21: Stub Number 46 which shows a magnified portion of the filter taken from the Midland Monitor on 8/16/76. (Refer to Table D-175)

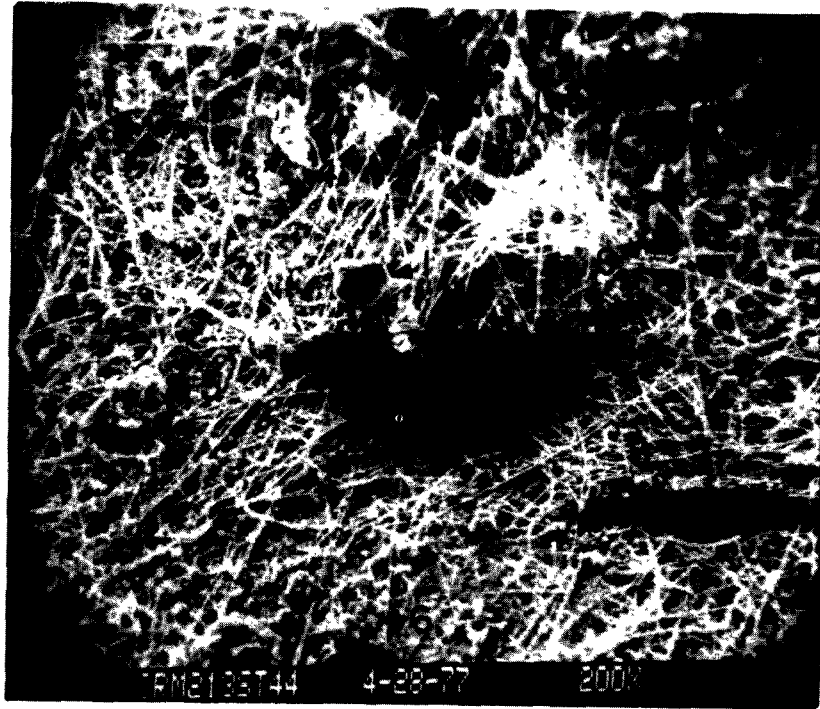


FIGURE D-22: Stub Number 44 which shows a magnified portion of the filter taken from the Elco monitor on 8/16/76. (Refer to Table D-177)

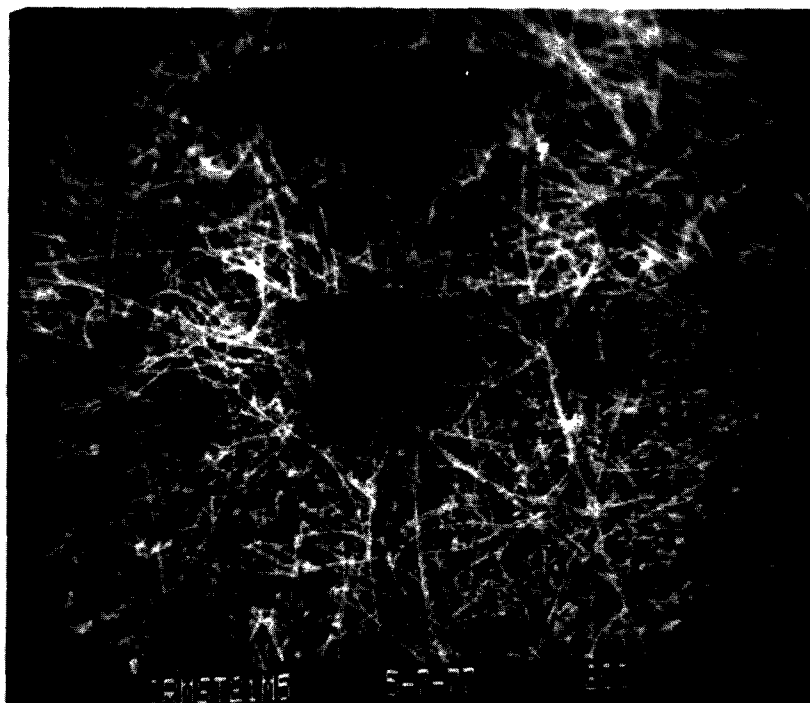


FIGURE D-23a: Stub Number 21 which shows a magnified portion of the filter taken from the Central Lab Monitor on 8/16/76. (Refer to Table D-179)

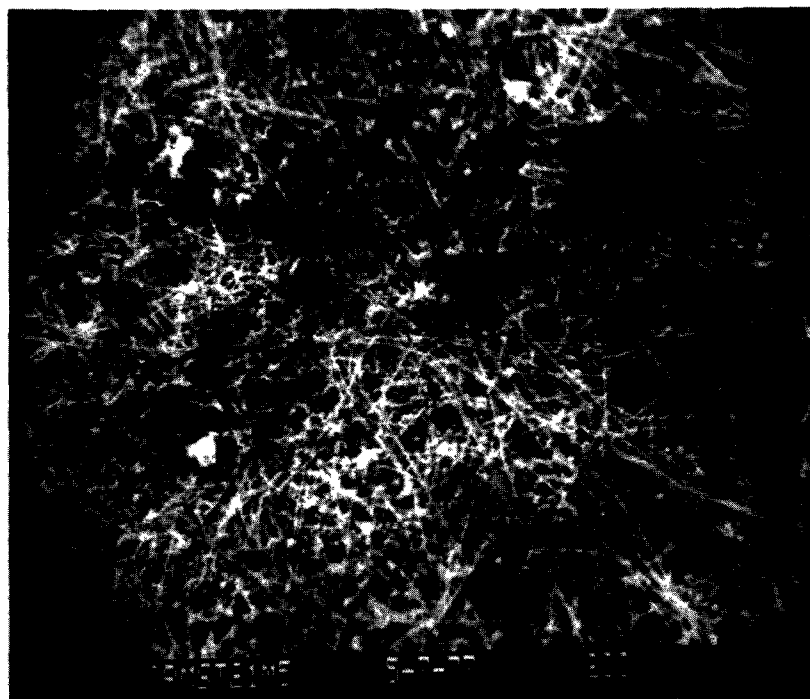


FIGURE D-23b: Stub Number 21 which shows a magnified portion of the filter taken from the Central Lab Monitor on 8/16/76. (Refer to Table D-179)

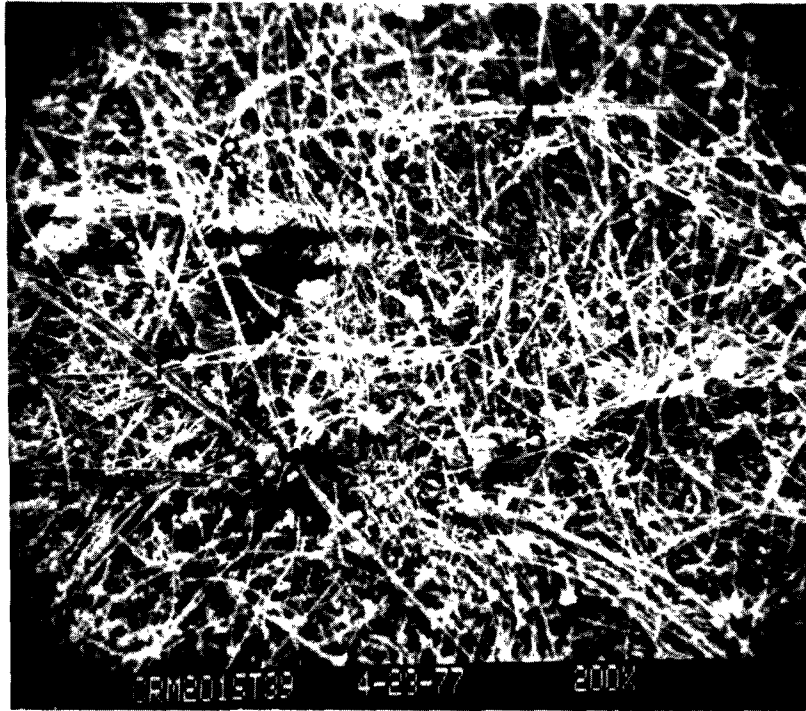


FIGURE D-24a: Stub Number 39 which shows a magnified portion of the filter taken from the Hazelwood Monitor on 8/16/76. (Refer to Table D-180)

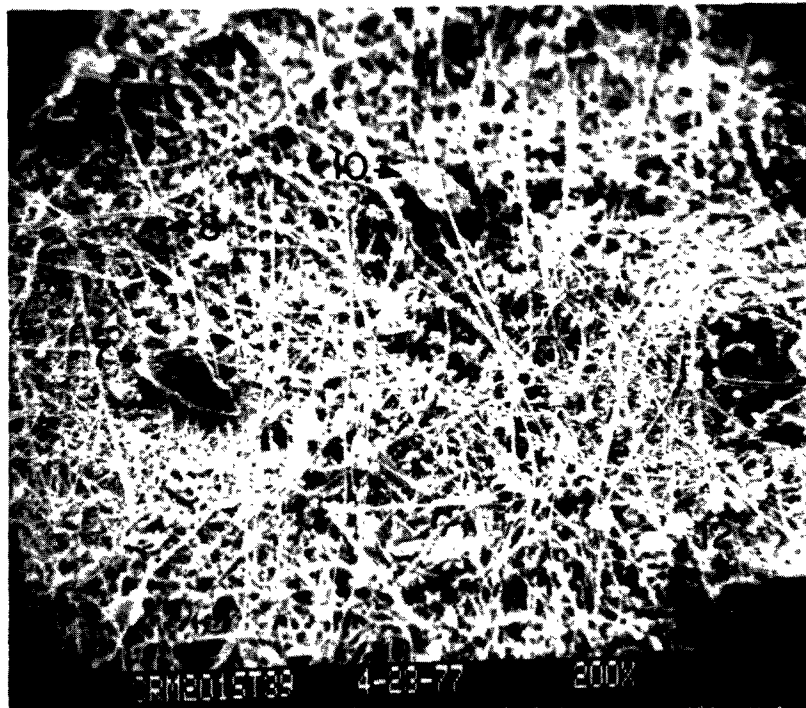


FIGURE D-24b: Stub Number 39 which shows a magnified portion of the filter taken from the Hazelwood monitor on 8/16/76. (Refer to Table D-180)

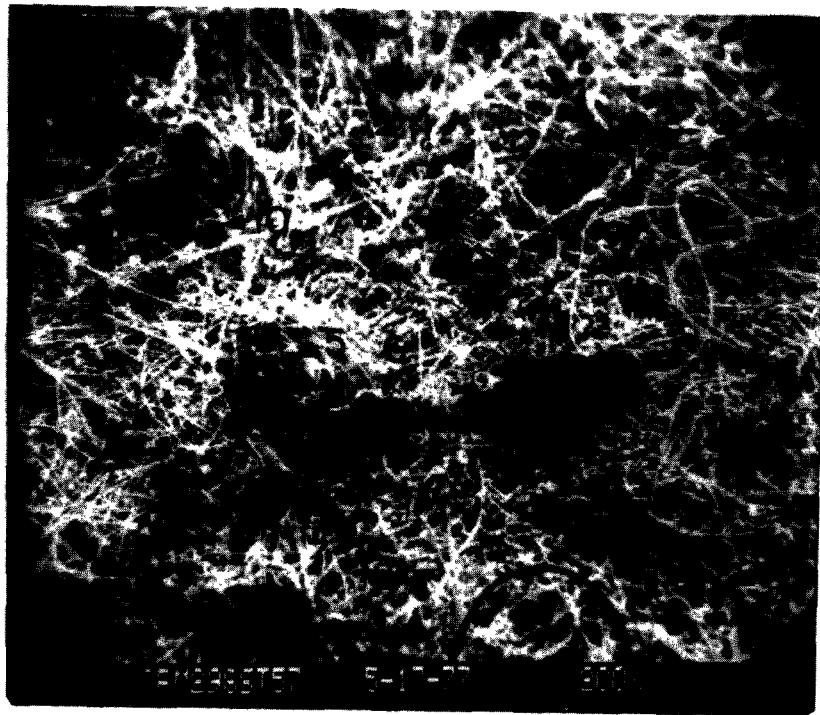


FIGURE D-25: Stub Number 57 which shows a magnified portion of the filter taken from the No. Braddock Monitor on 8/28/76. (Refer to Table D-194)

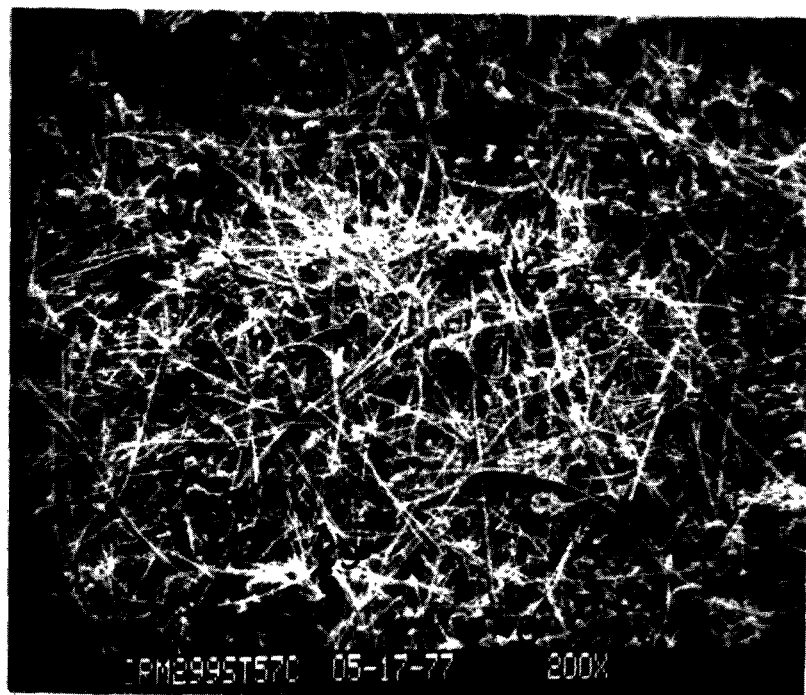


FIGURE D-26: Stub Number 57C which shows a magnified portion of the cover filter taken from the No. Braddock Monitor on 8/28/76. (Refer to Table D-195)

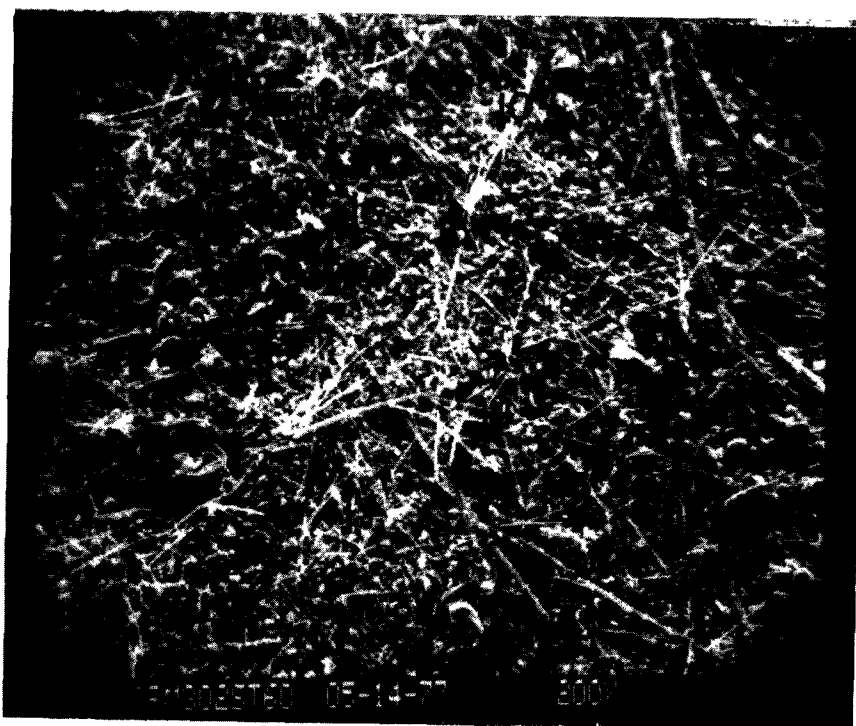


FIGURE D-27: Stub Number 60 which shows a magnified portion of the filter taken from the Liberty Boro Monitor on 8/28/76. (Refer to Table D-198)

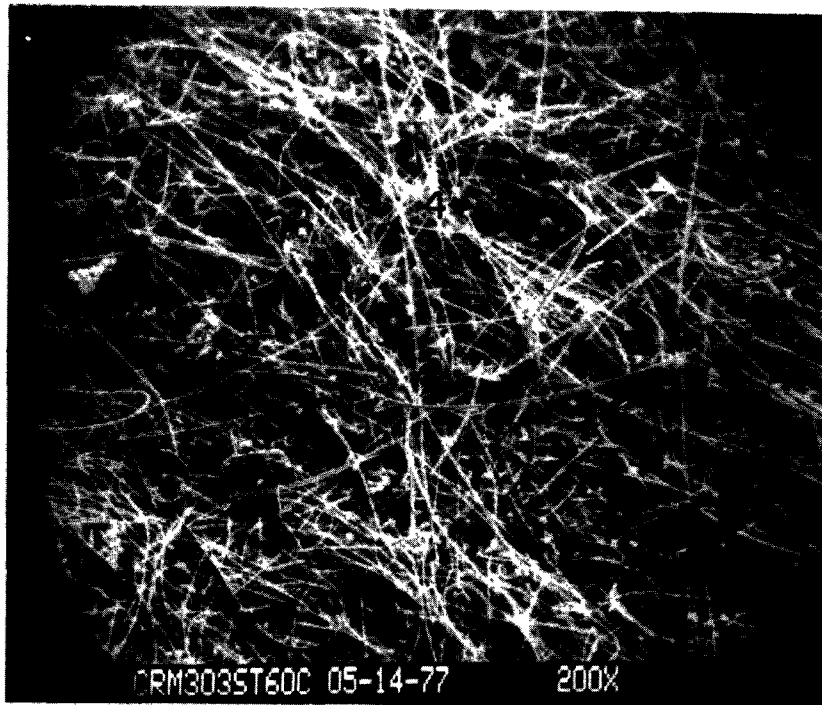


FIGURE D-28a: Stub Number 60C which shows a magnified portion of the cover filter taken from the Liberty Boro Monitor on 8/28/76. (Refer to Table D-199)

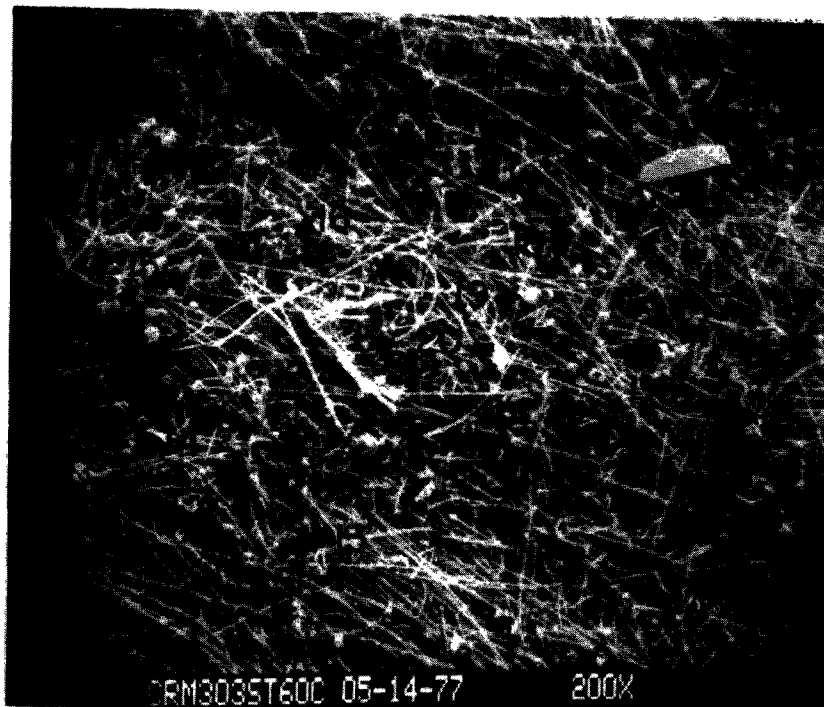


FIGURE D-28b: Stub Number 60C which shows a magnified portion of the cover filter taken from the Liberty Boro Monitor on 8/28/76. (Refer to Table D-199)

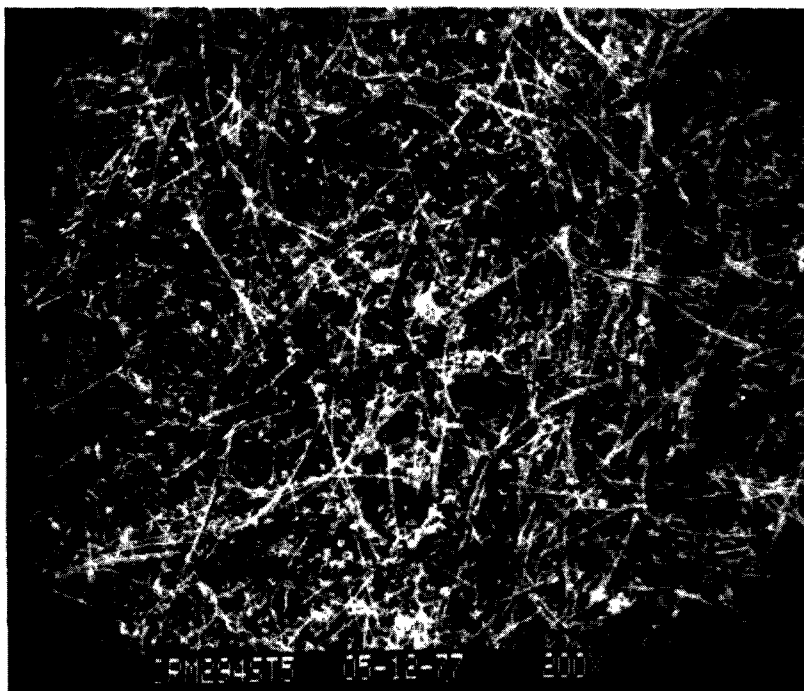


FIGURE D-29a: Stub Number 53 which shows a magnified portion of the filter taken from the Airport Monitor on 9/9/76. (Refer to Table D-214)

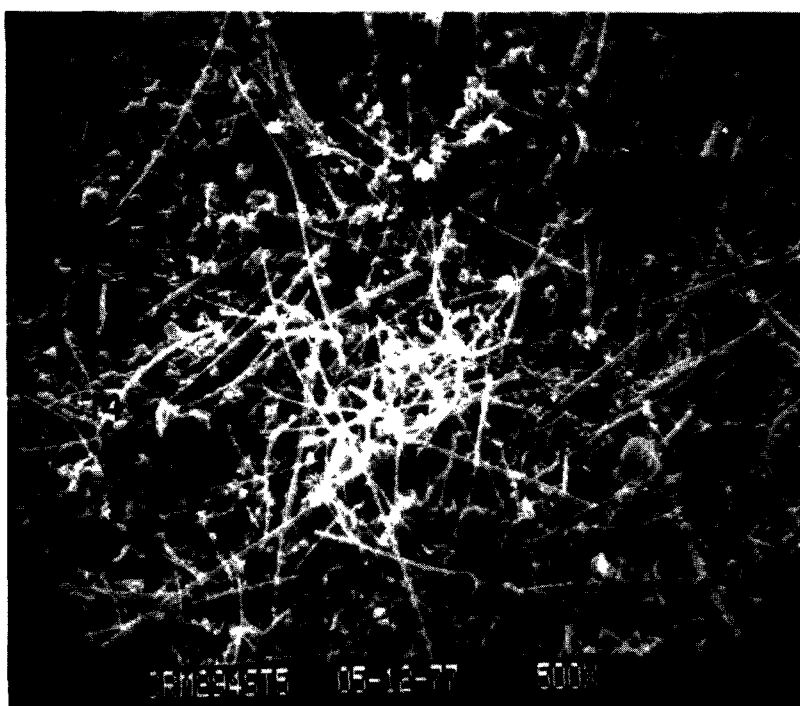


FIGURE D-29b: Stub Number 53 which shows a magnified portion of the filter taken from the Airport Monitor on 9/9/76. (Refer to Table D-214)

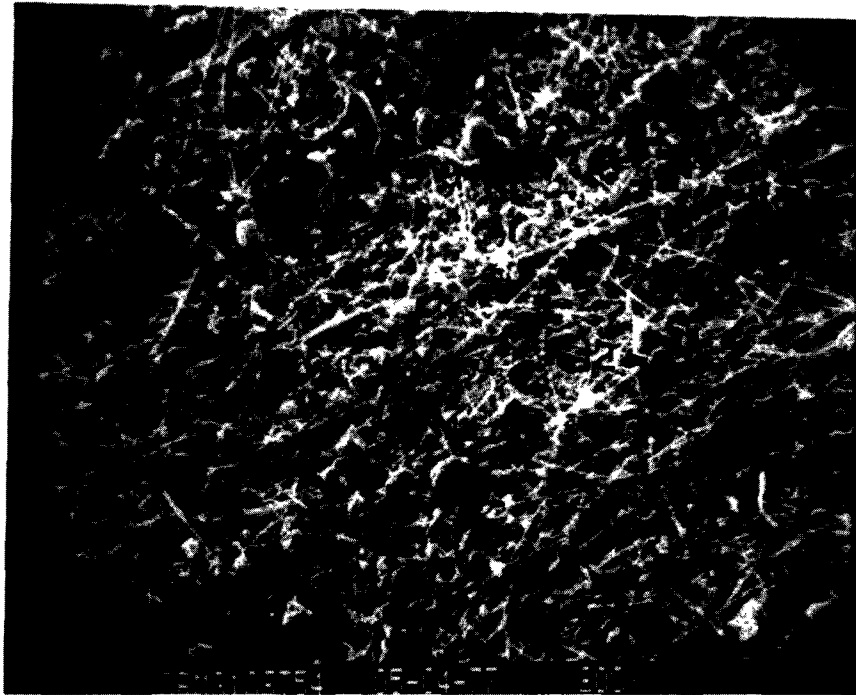


FIGURE D-30: Stub Number 54 which shows a magnified portion of the filter taken from the So. Fayette Monitor on 9/9/76. (Refer to Table D-21b)

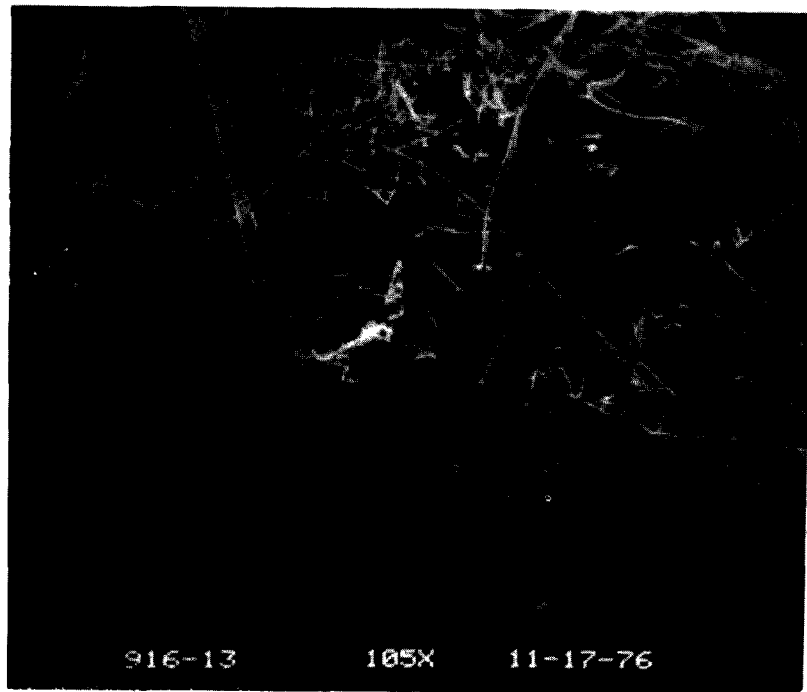


FIGURE D-31a: Selected large particles taken from the Brighton Twp filter which was exposed on 8/10/76. (Refer to Table D-217)

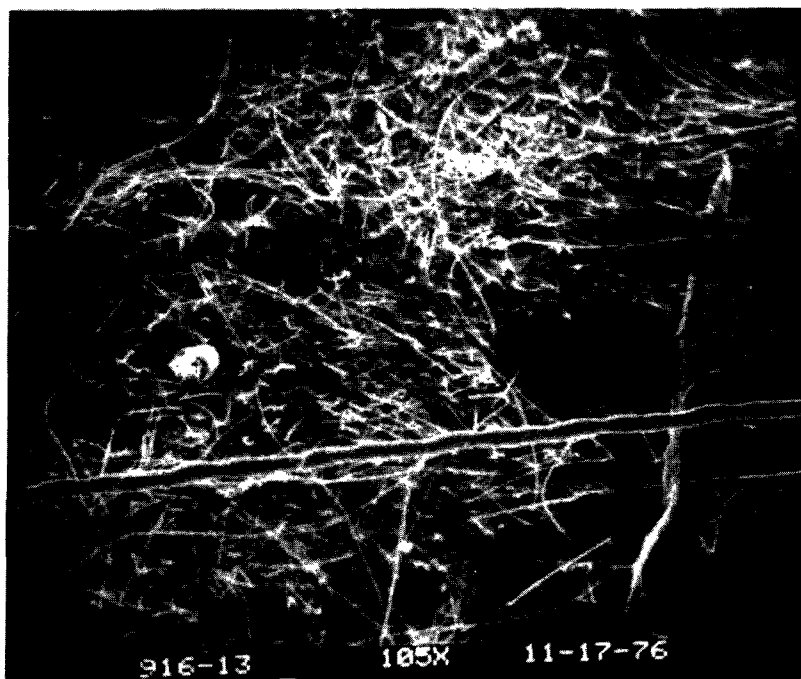


FIGURE D-31b: Selected large particles taken from the Brighton Twp filter which was exposed on 8/10/76. (Refer to Table D-217)

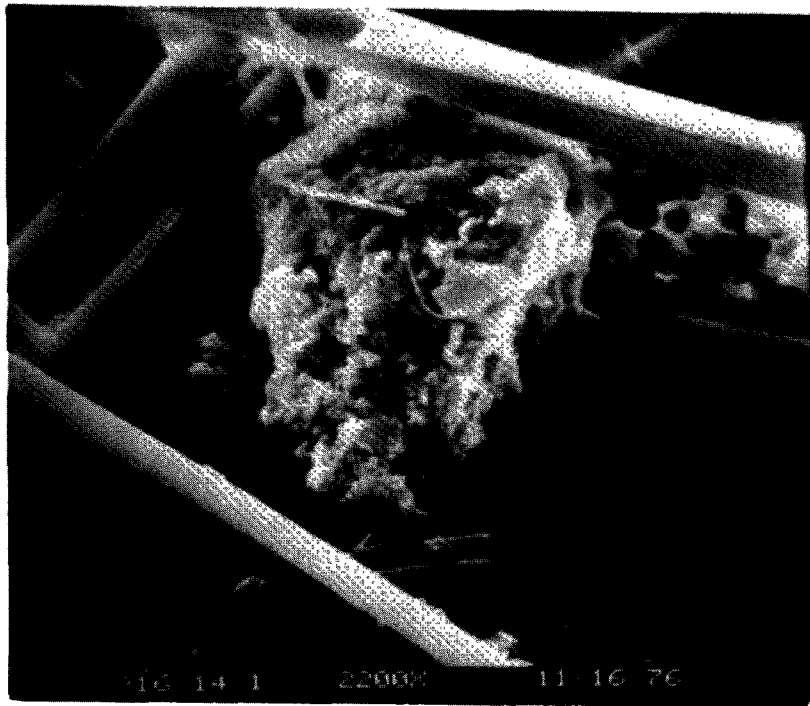


FIGURE D-32: Selected large particles taken from the Brighton Twp filter which was exposed on 8/10/76. (Refer to Table D-217)

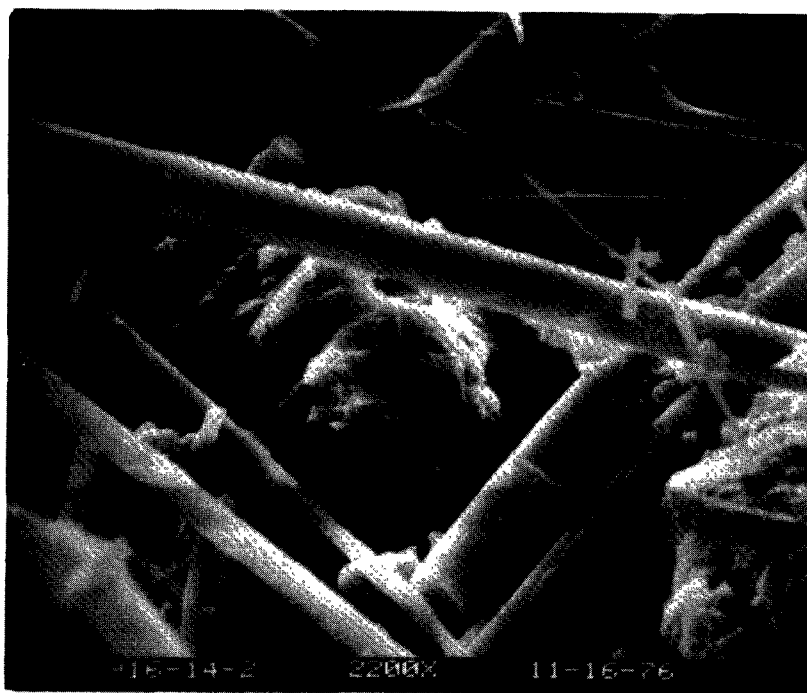


FIGURE D-33: Selected large particles taken from the Brighton Twp filter which was exposed on 8/10/76. (Refer to Table D-217)

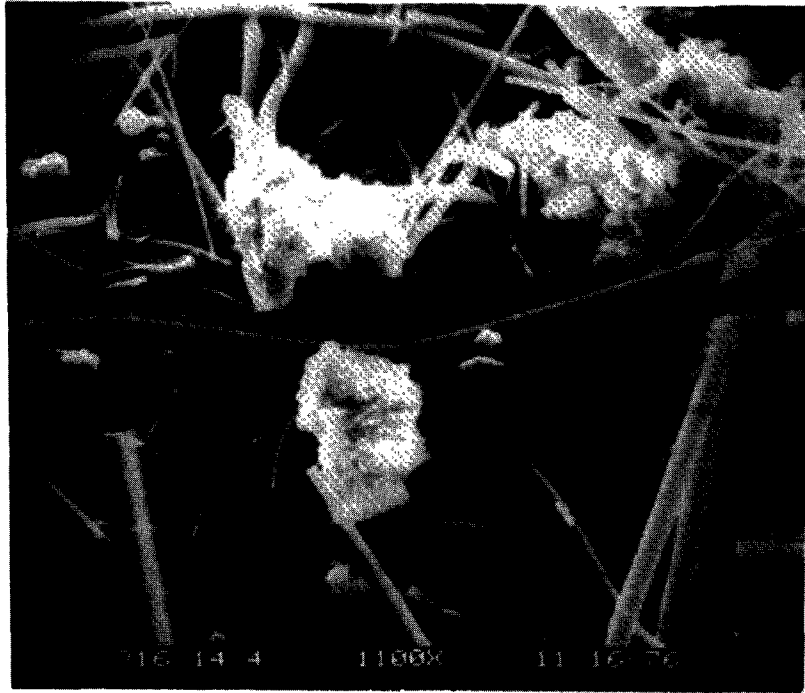


FIGURE D-34: Selected large particles taken from the Brighton Twp filter which was exposed on 8/10/76. (Refer to Table D-217)

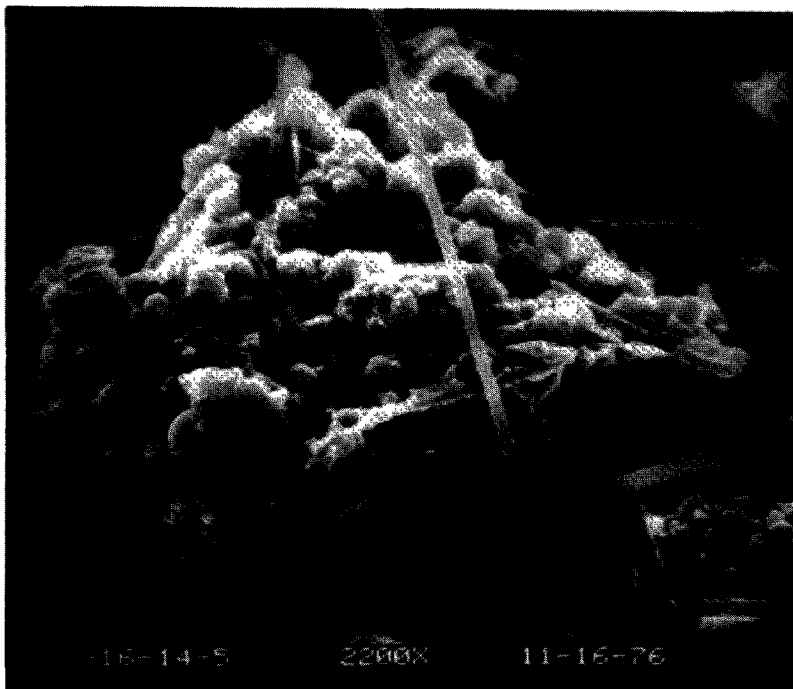


FIGURE D-35: Selected large particles taken from the Brighton Twp filter which was exposed on 8/10/76. (Refer to Table D-217)

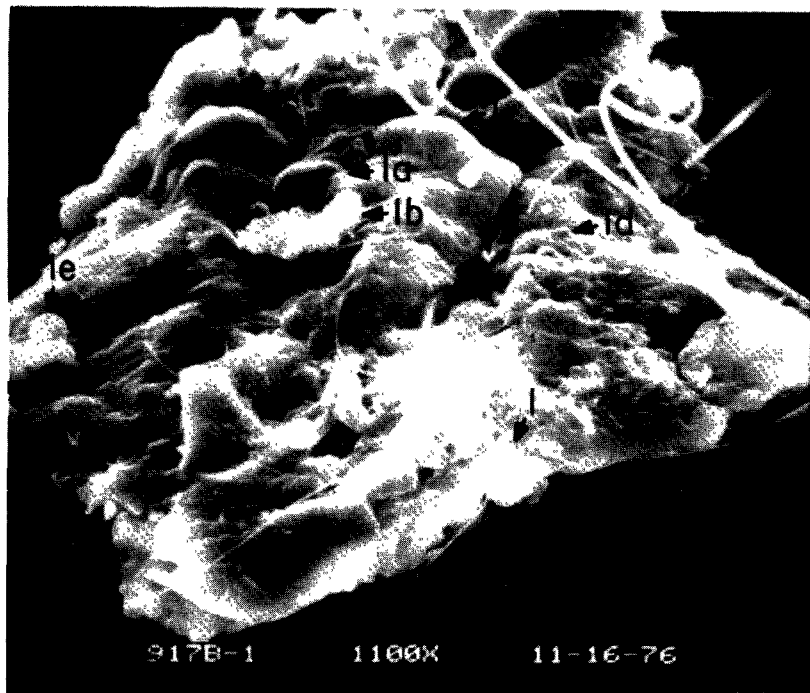


FIGURE D-36: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

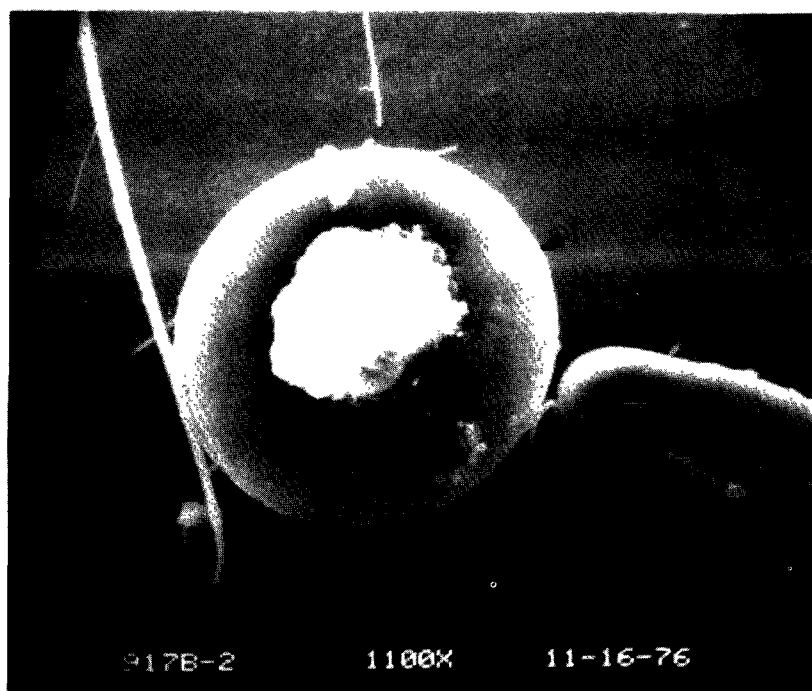


FIGURE D-37: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

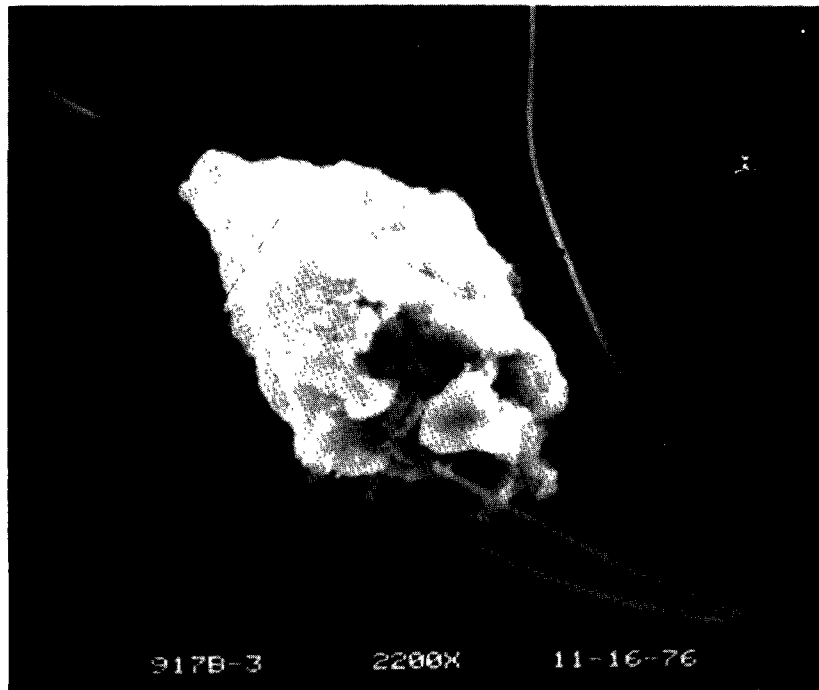


FIGURE D-38: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

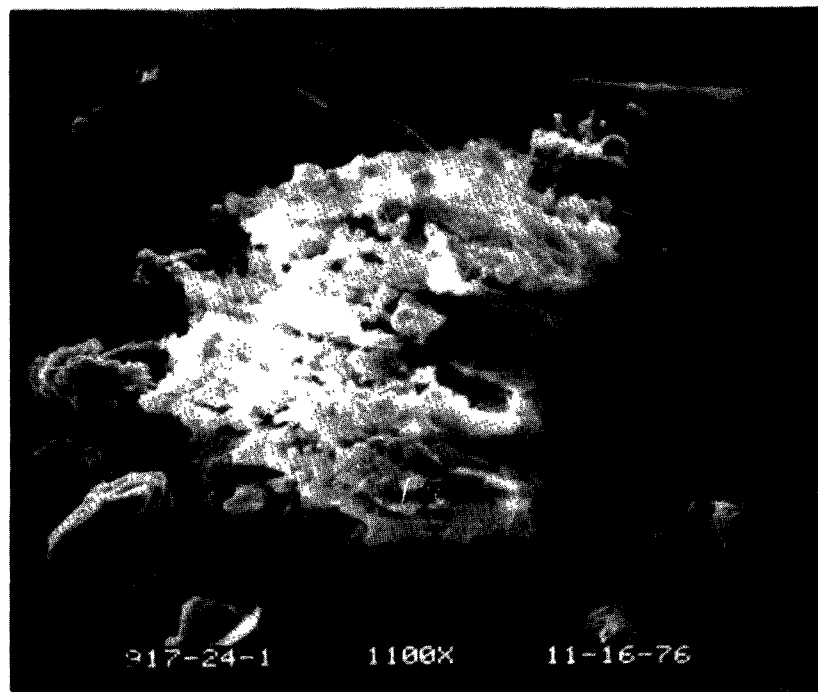


FIGURE D-39: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

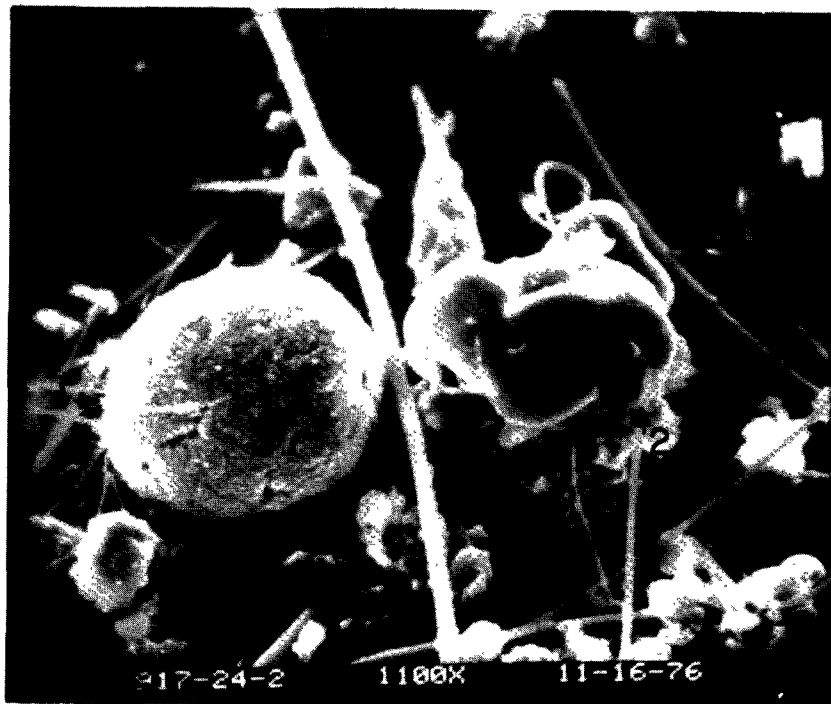


FIGURE D-40: Selected large particle taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

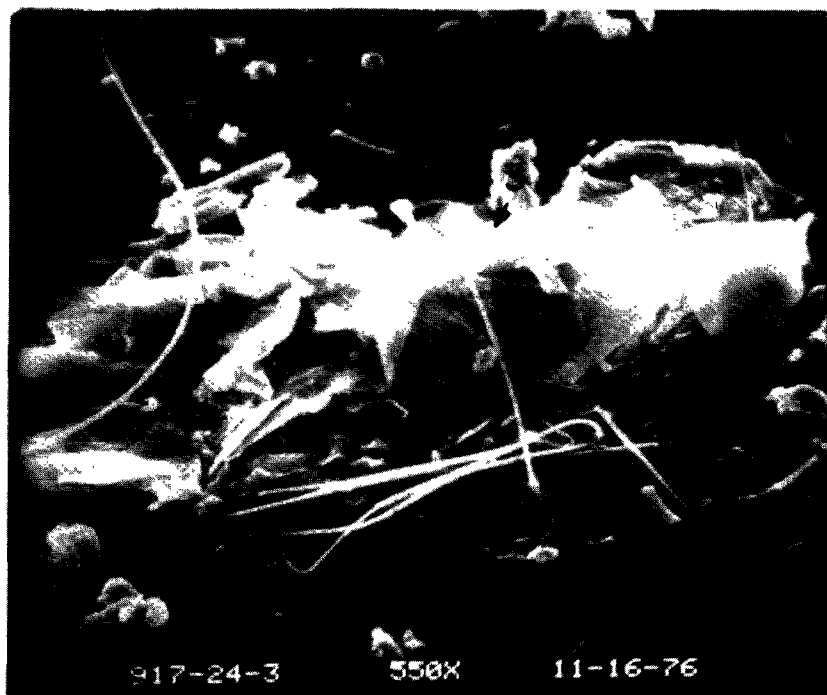


FIGURE D-41: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

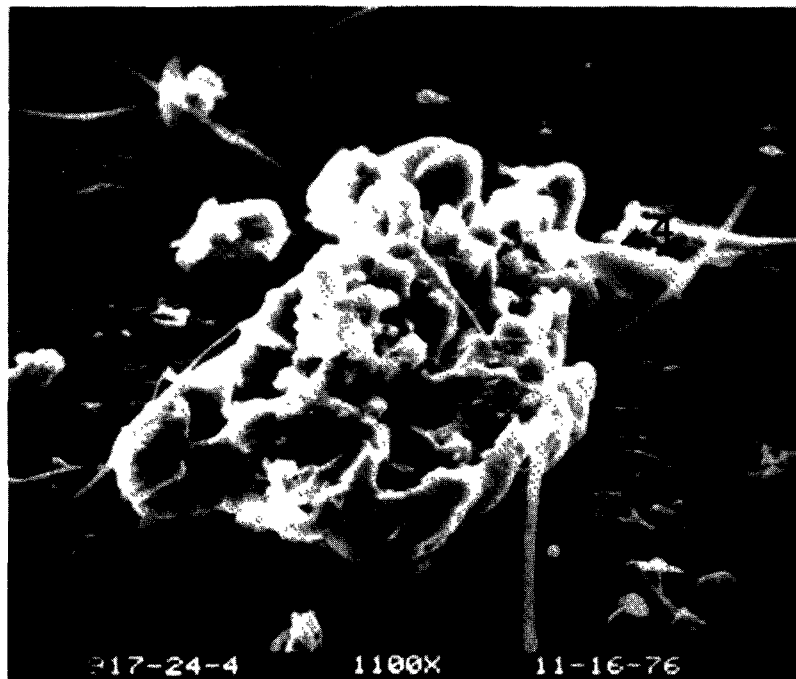


FIGURE D-42: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

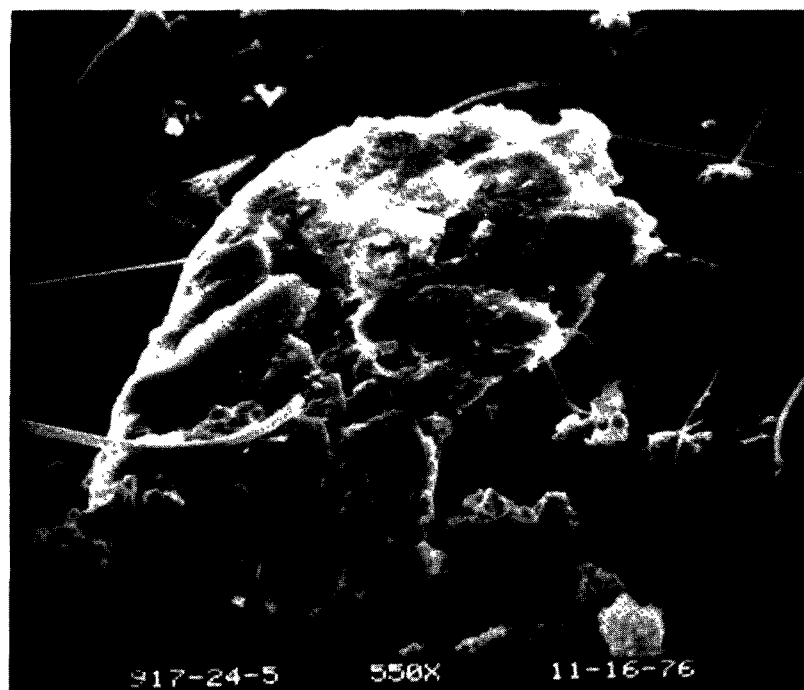


FIGURE D-43: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

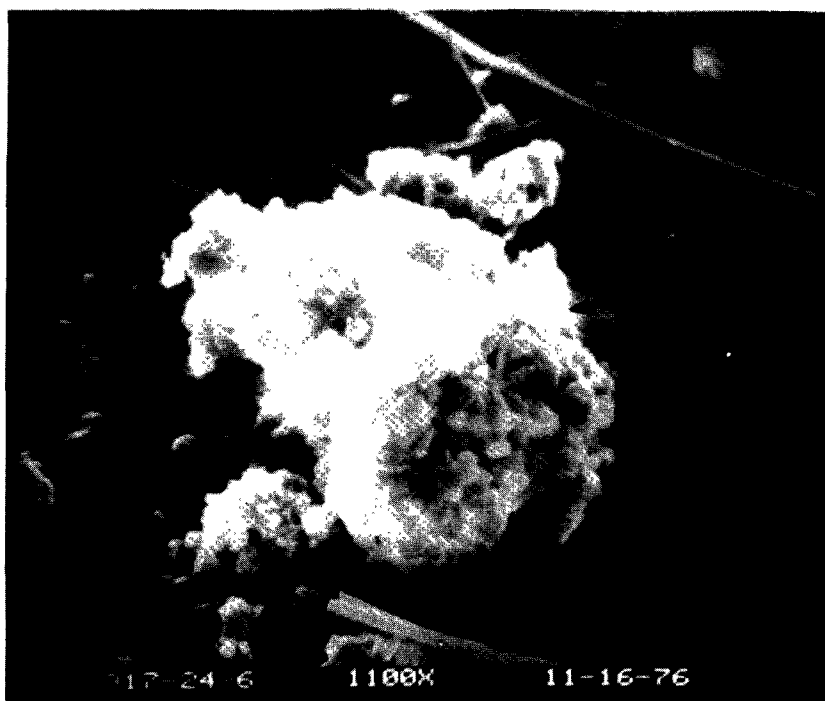


FIGURE D-44: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

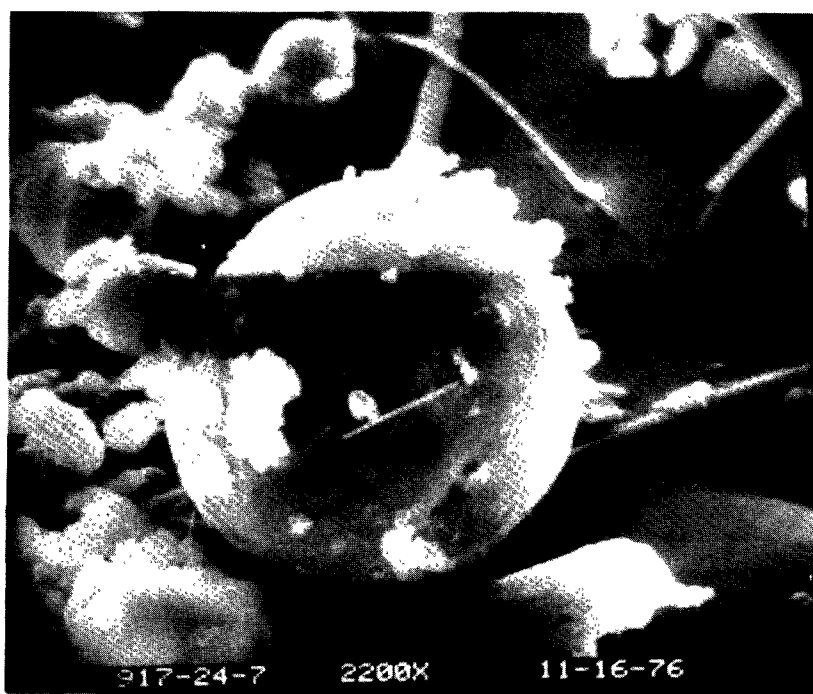


FIGURE D-45: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

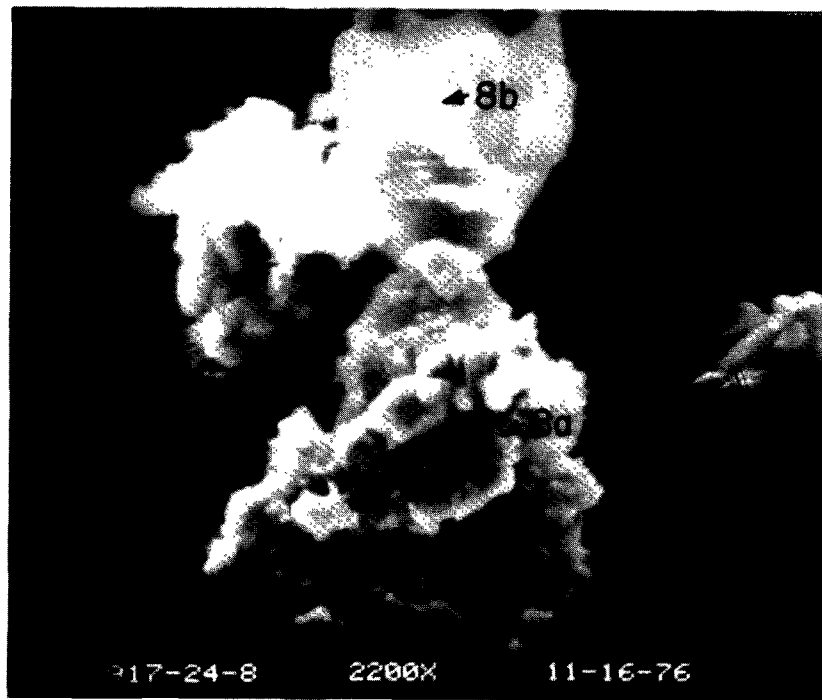


FIGURE D-46: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

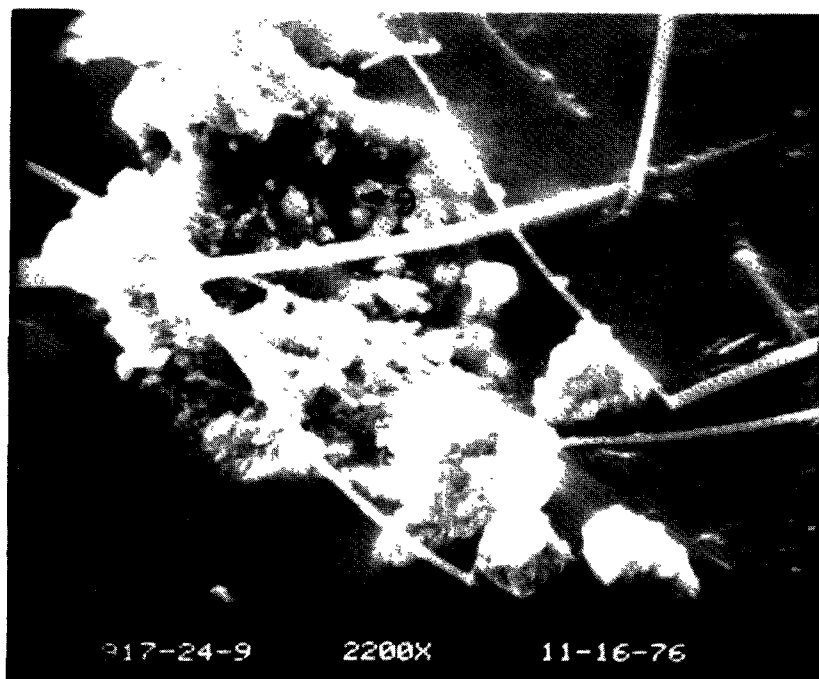


FIGURE D-47: Selected large particles taken from the Brighton Twp cover filter which was exposed on 8/10/76. (Refer to Table D-218)

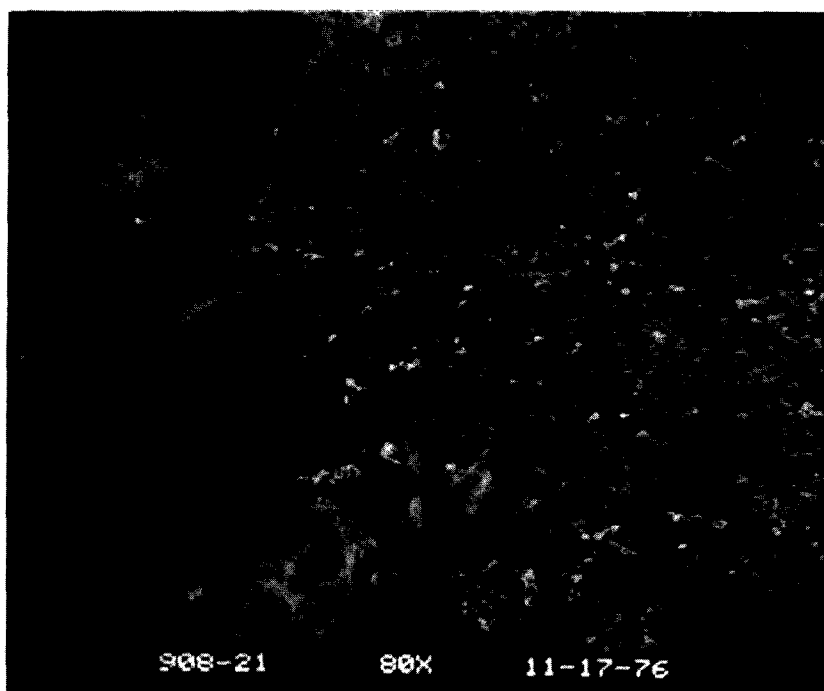


FIGURE D-48: Selected large particles taken from the Central Lab filter which was exposed on 8/10/76. (Refer to Table D-219)

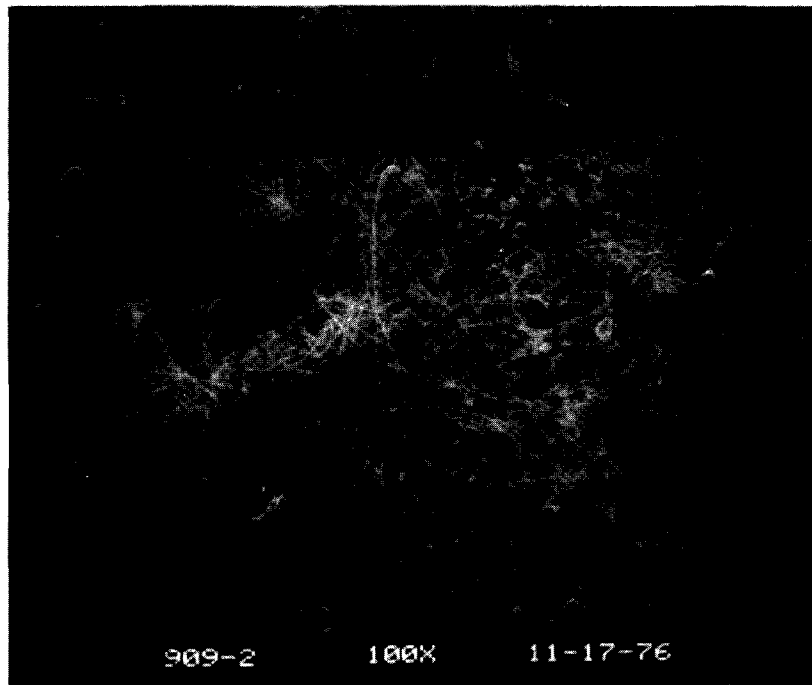


FIGURE D-49: Selected large particles taken from the Central Lab cover filter which was exposed on 8/10/76. (Refer to Table D-220)

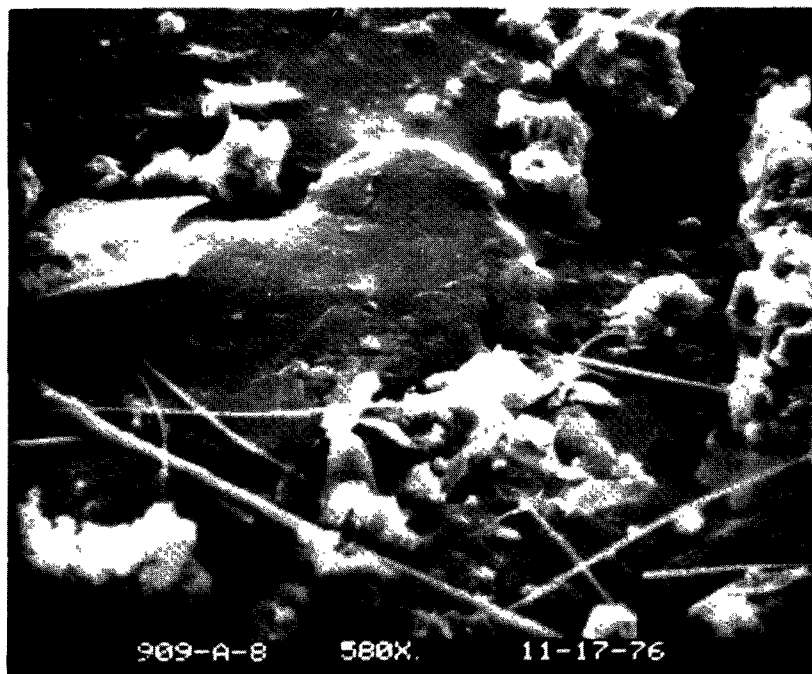


FIGURE D-50: Selected large particles taken from the Central Lab cover filter which was exposed on 8/10/76. (Refer to Table D-220)

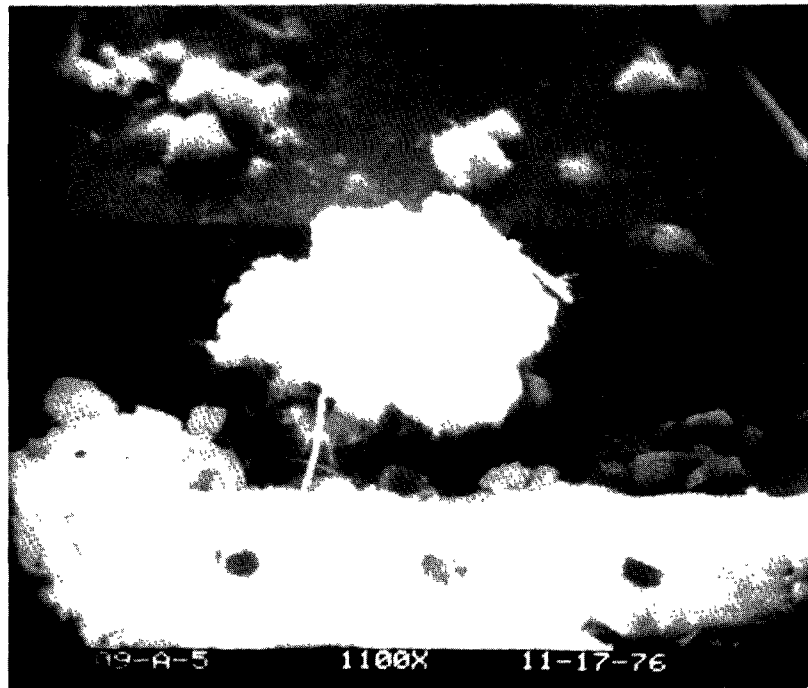


FIGURE D-51: Selected large particles taken from the Central Lab cover filter which was exposed on 8/10/76. (Refer to Table D-220)

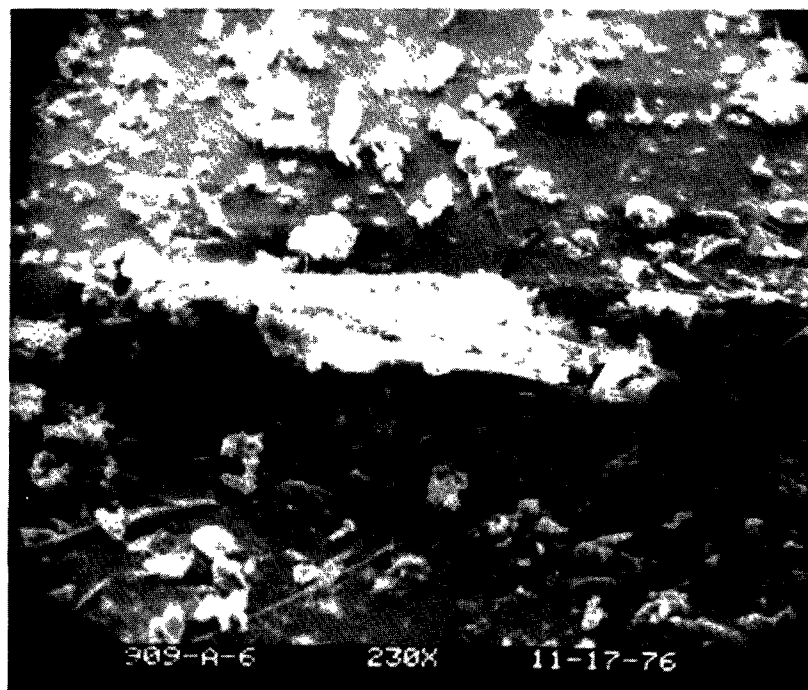


FIGURE D-52: Selected large particles taken from the Central Lab cover filter which was exposed on 8/10/76. (Refer to Table D-220)

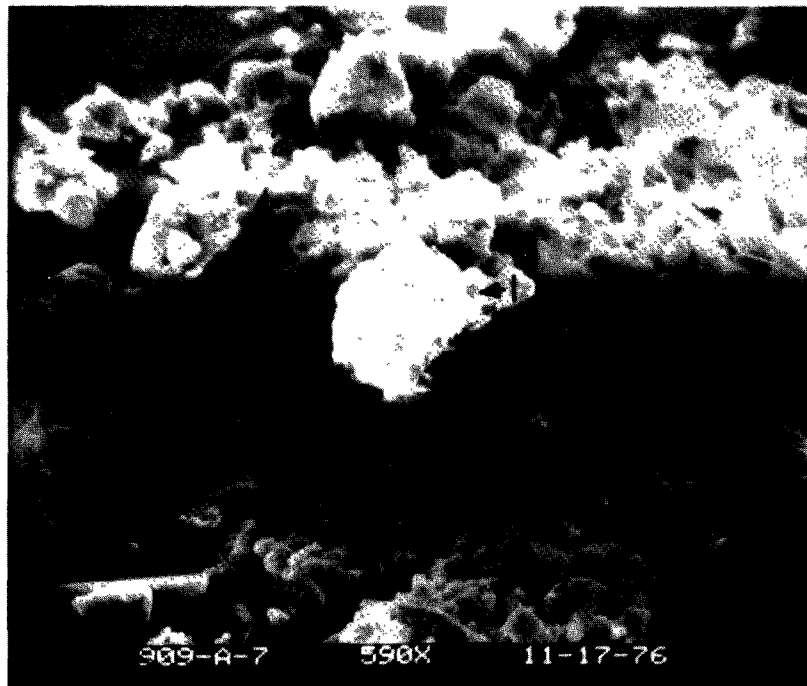


FIGURE D-53: Selected large particles taken from the Central Lab cover filter which was exposed on 8/10/76. (Refer to Table D-220)



FIGURE D-54: Selected large particles taken from the Central Lab cover filter which was exposed on 8/10/76. (Refer to Table D-220)



FIGURE D-55: Selected large particles taken from the Central Lab cover filter which was exposed on 8/10/76. (Refer to Table D-220)

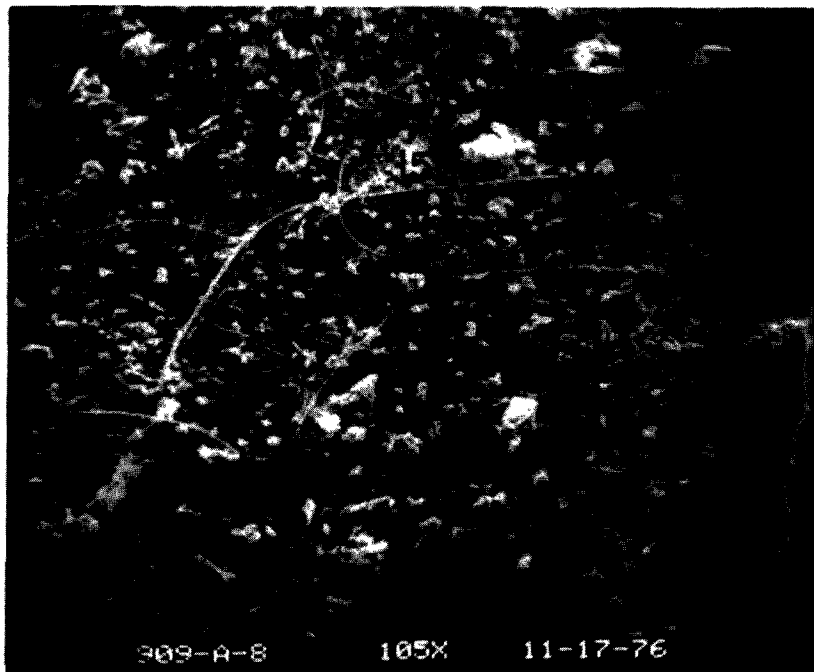


FIGURE D-56: Selected large particles taken from the Central Lab cover filter which was exposed on 8/10/76. (Refer to Table D-220)

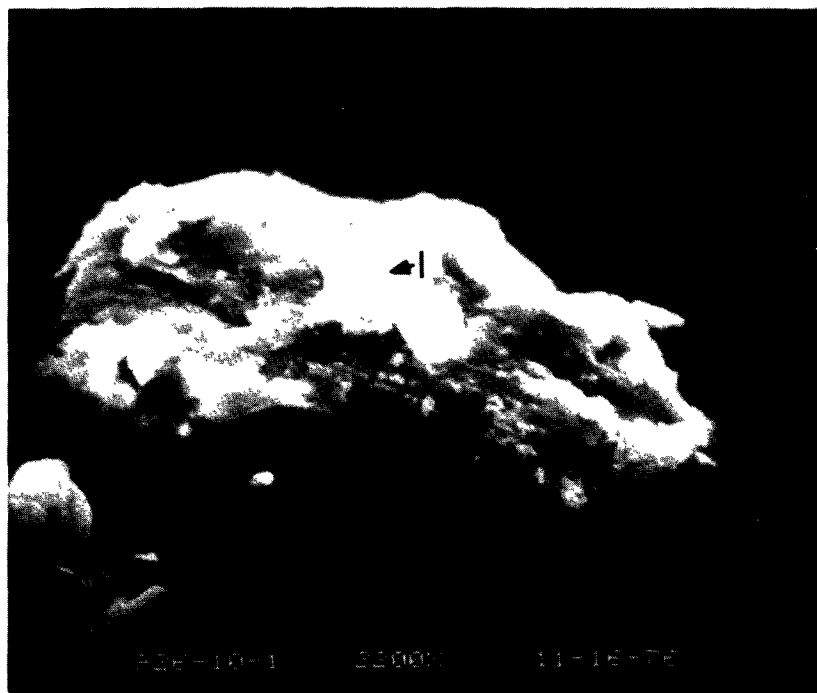


FIGURE D-57: Selected large particles taken from the Duquesne II filter which was exposed on 8/10/76. (Refer to Table D-221)



FIGURE D-58: Selected large particles taken from the Duquesne II filter which was exposed on 8/10/76. (Refer to Table D-221)



FIGURE D-59: Selected large particles taken from the Duquesne II filter which was exposed on 8/10/76. (Refer to Table D-221)



FIGURE D-60: Selected large particles taken from the Duquesne II filter which was exposed on 8/10/76. (Refer to Table D-221)

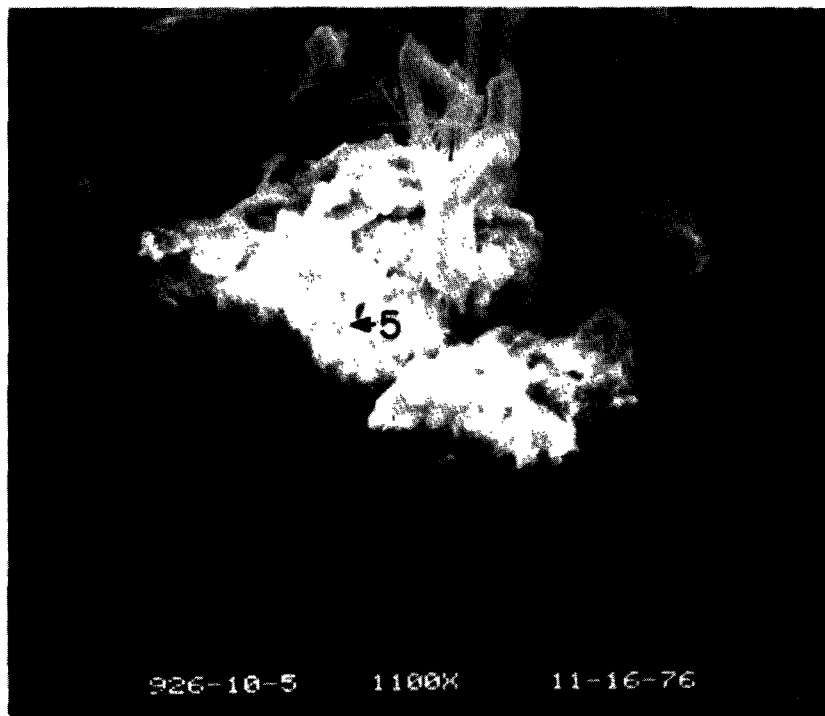


FIGURE D-61: Selected large particles taken from the Duquesne II filter which was exposed on 8/10/76. (Refer to Table D-221)

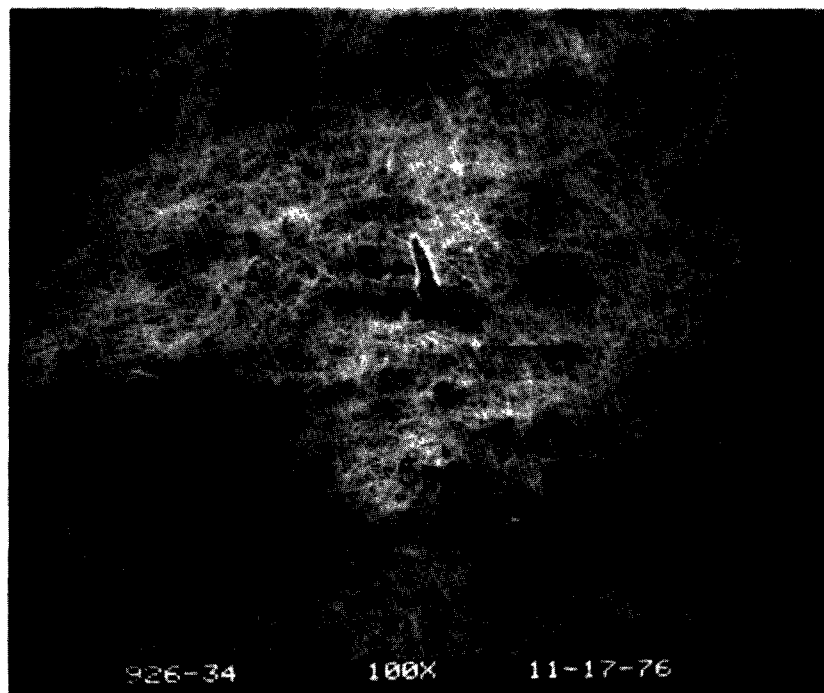


FIGURE D-62: Selected large particles taken from the Duquesne II filter which was exposed on 8/10/76. (Refer to Table D-221)



FIGURE D-63: Selected large particles taken from the Duquesne II filter which was exposed on 8/10/76. (Refer to Table D-221)

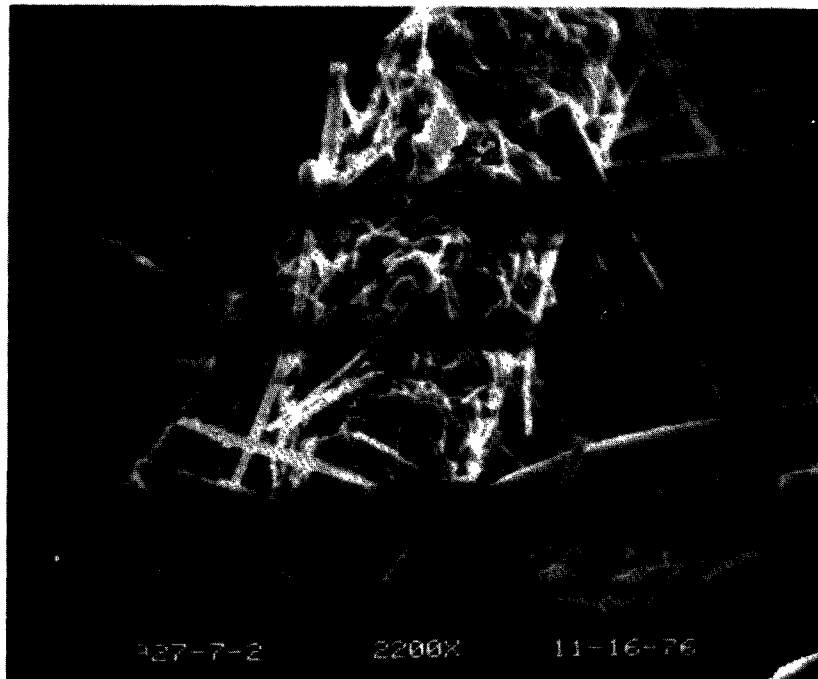


FIGURE D-64: Selected large particles taken from the Duquesne II cover filter which was exposed on 8/10/76. (Refer to Table D-222)

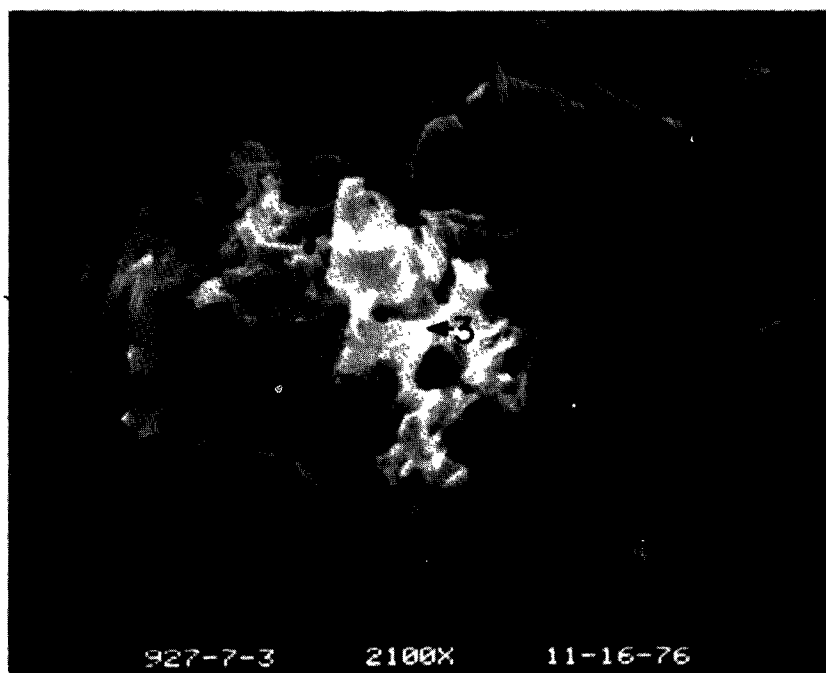


FIGURE D-65: Selected large particles taken from the Duquesne II cover filter which was exposed on 8/10/76. (Refer to Table D-222)



FIGURE D-66: Selected large particles taken from the Duquesne II cover filter which was exposed on 8/10/76. (Refer to Table D-222)

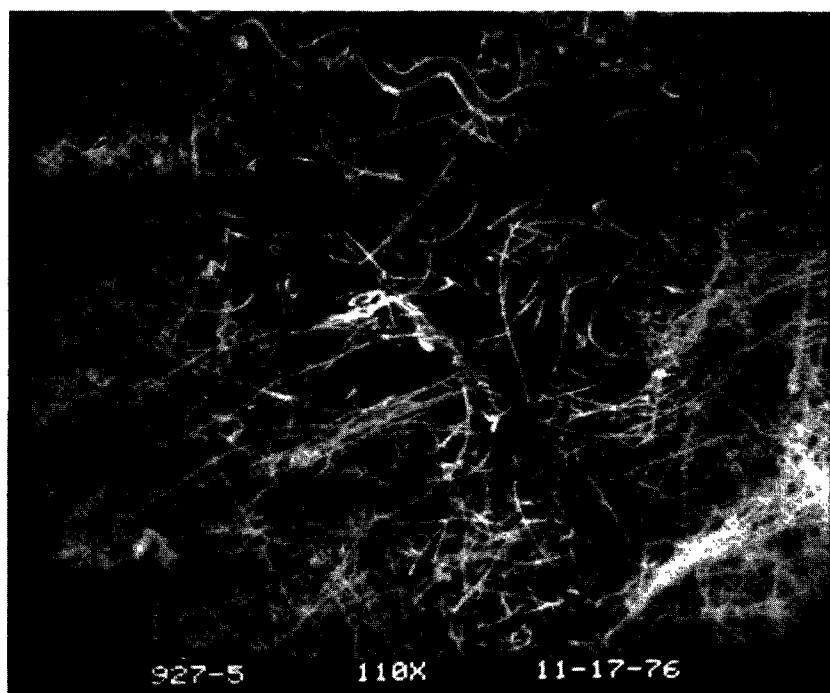


FIGURE D-67: Selected large particles taken from the Duquesne II cover filter which was exposed on 8/10/76. (Refer to Table D-222)

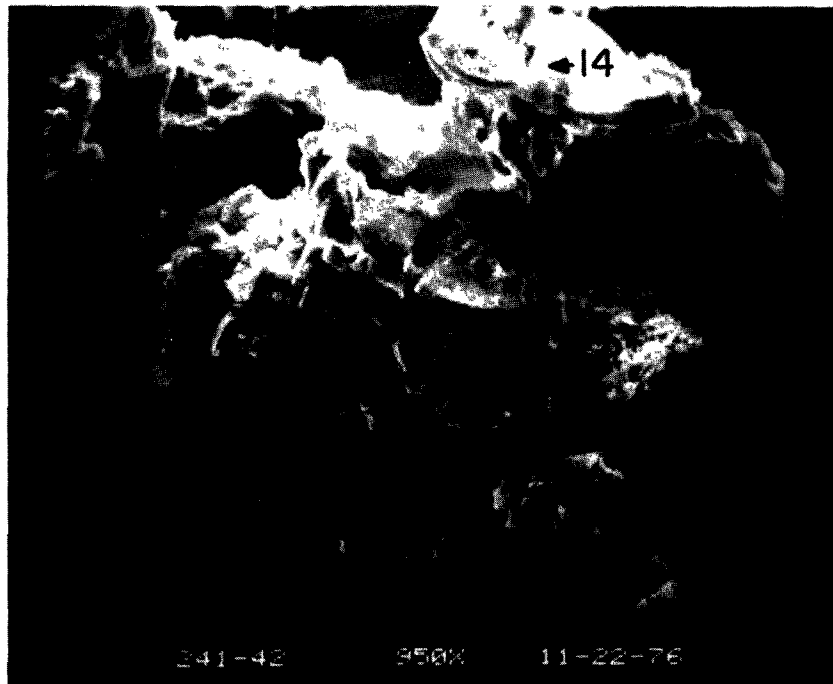


FIGURE D-68: Selected large particles taken from the Central Lab filter which was exposed on 8/16/76. (Refer to Table D-223)



FIGURE D-69: Selected large particles taken from the Central Lab filter which was exposed on 8/16/76. (Refer to Table D-223)

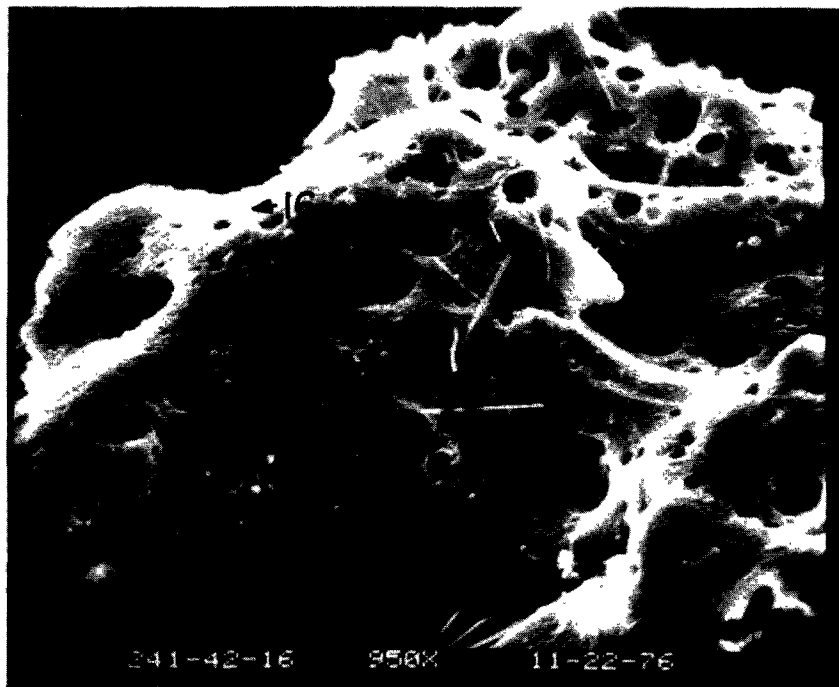


FIGURE D-70: Selected large particles taken from the Central Lab filter which was exposed on 8/16/76. (Refer to Table D-223)

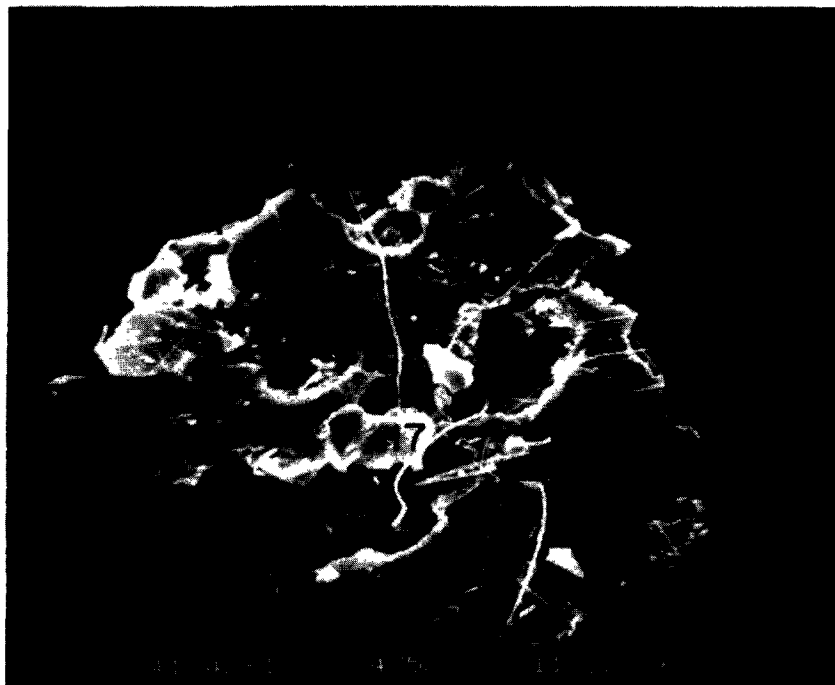


FIGURE D-71: Selected large particles taken from the Central Lab filter which was exposed on 8/16/76. (Refer to Table D-223)

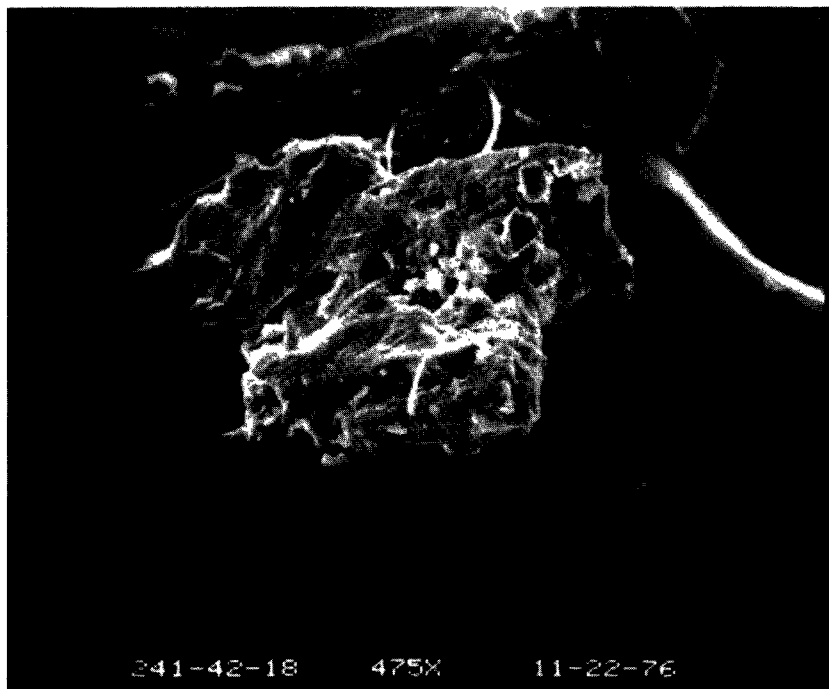


FIGURE D-72: Selected large particles taken from the Central Lab filter which was exposed on 8/16/76. (Refer to Table D-223)

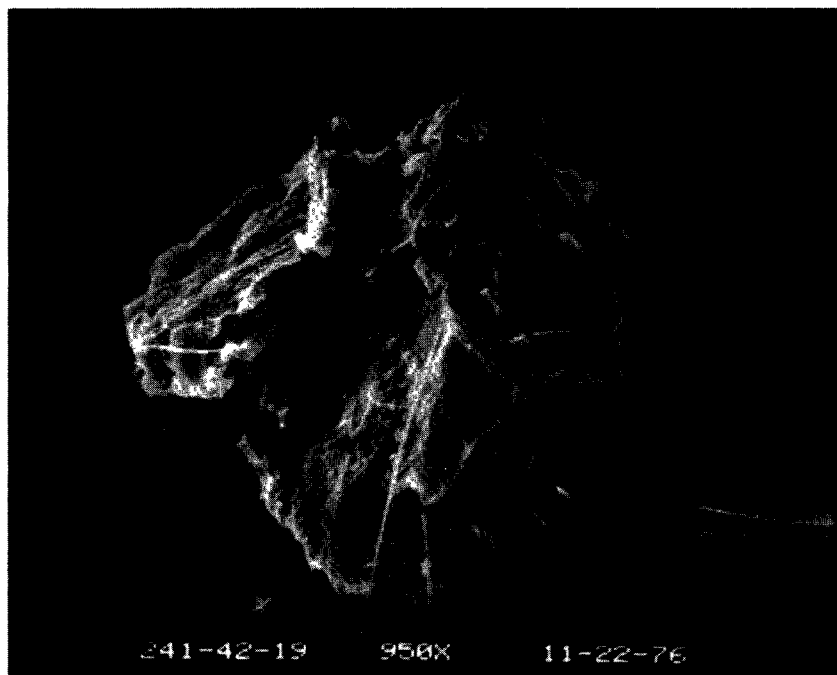


FIGURE D-73: Selected large particles taken from the Central Lab filter which was exposed on 8/16/76. (Refer to Table D-223)

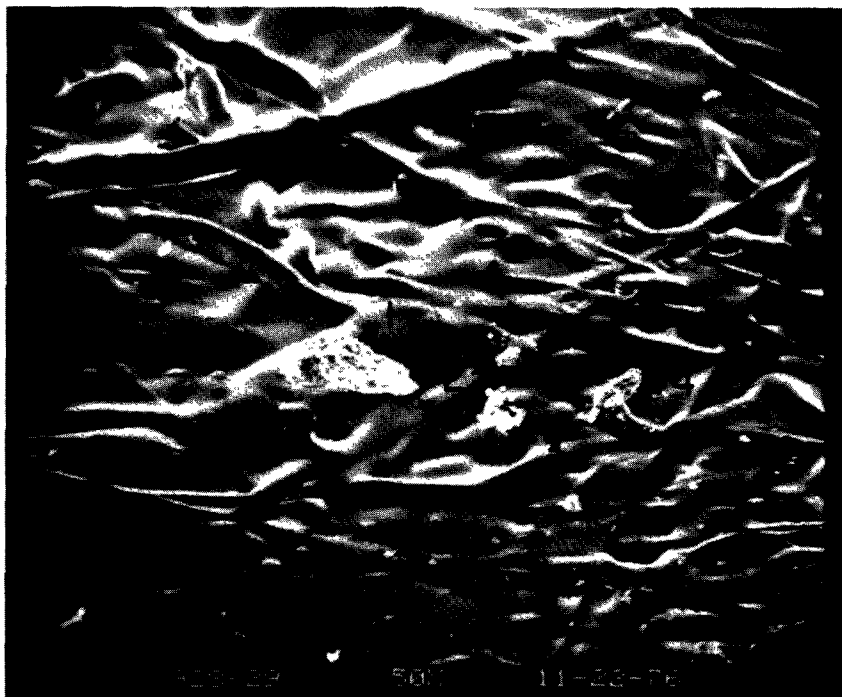


FIGURE D-74a: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)



FIGURE D-74b: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

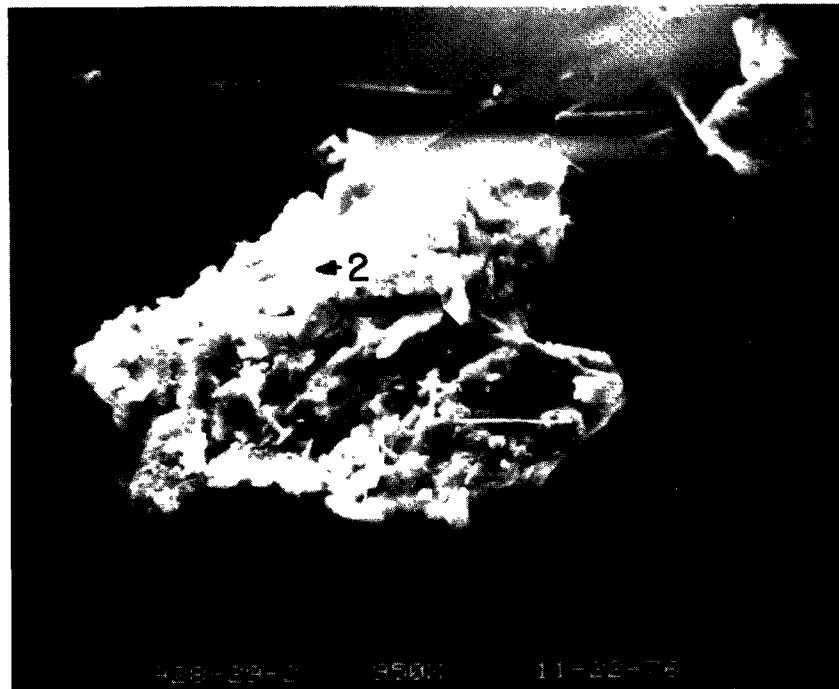


FIGURE D-75: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

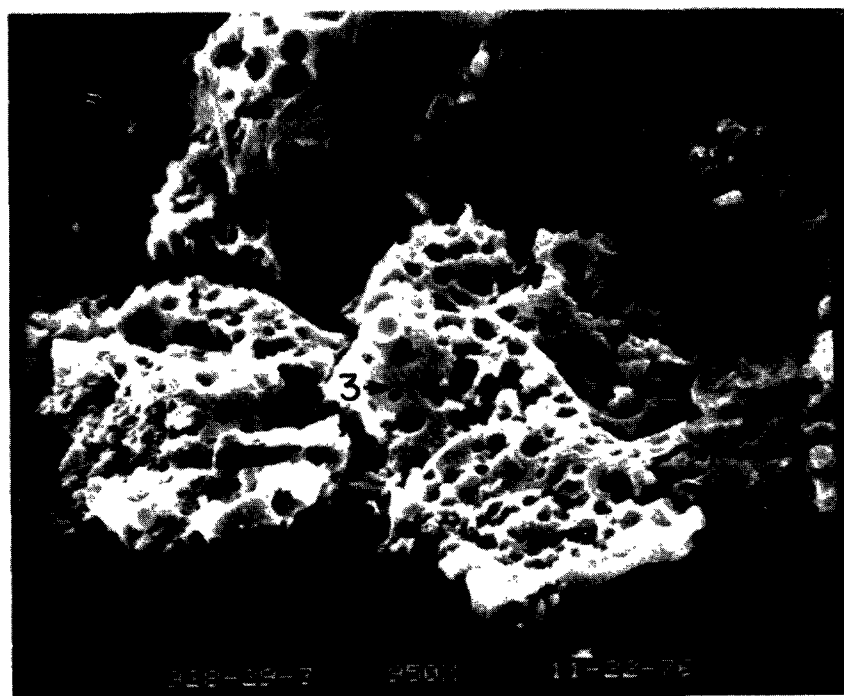


FIGURE D-76: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)



FIGURE D-77: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

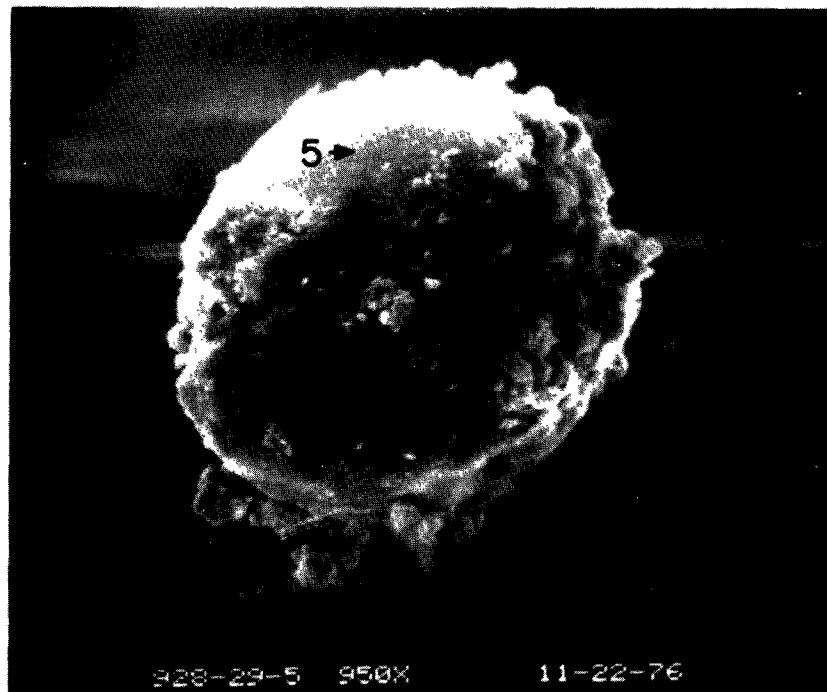


FIGURE D-78: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

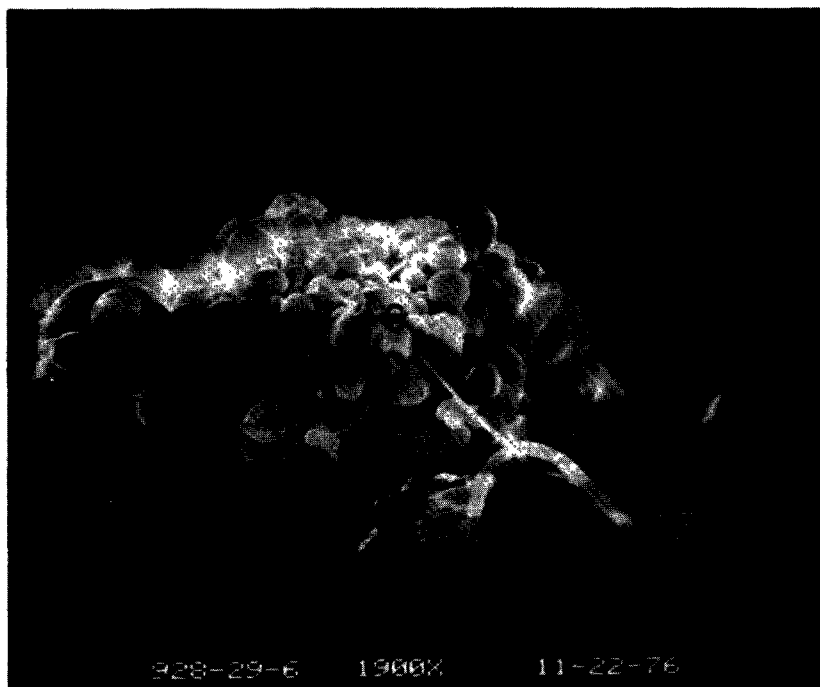


FIGURE D-79: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

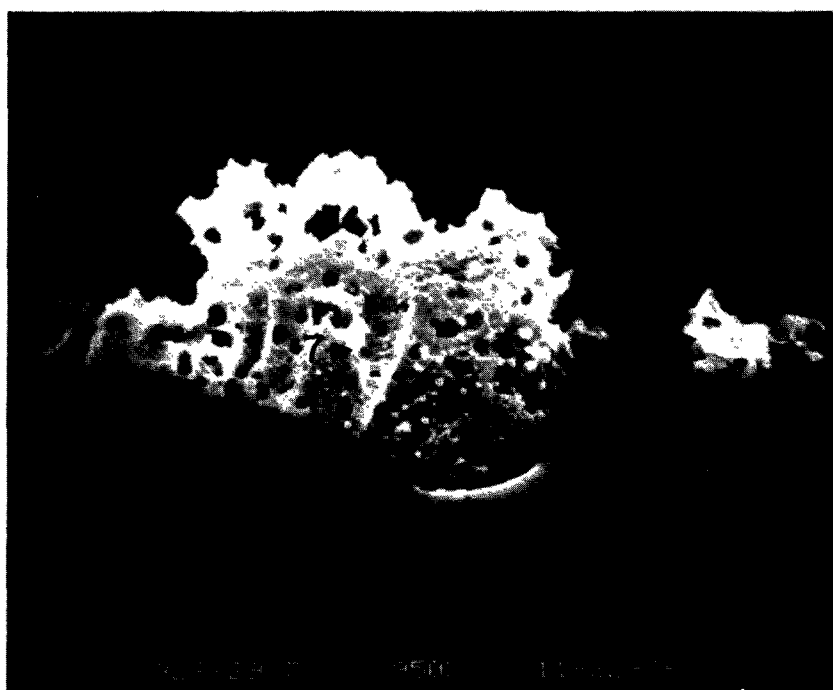


FIGURE D-80: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)



FIGURE D-81: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

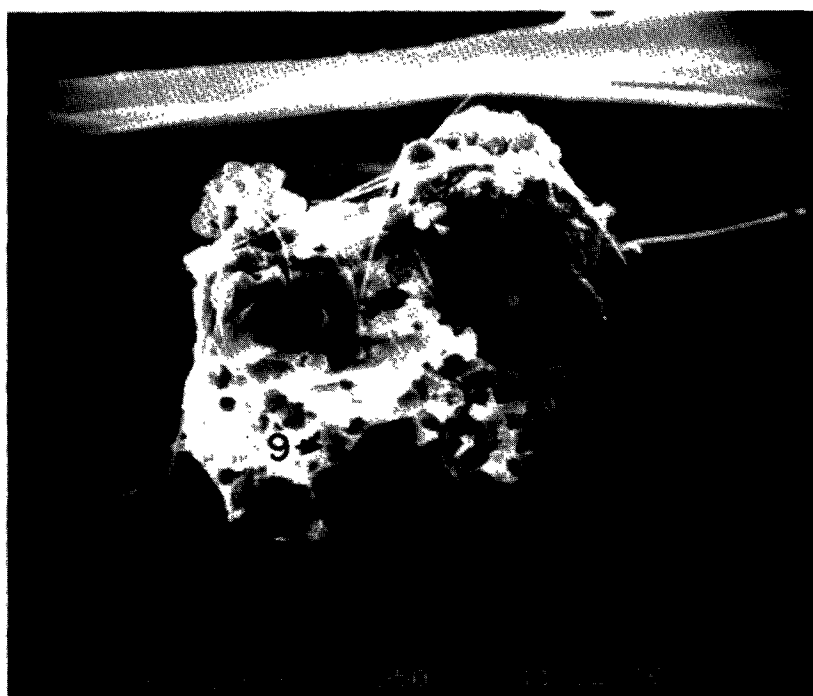


FIGURE D-82: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

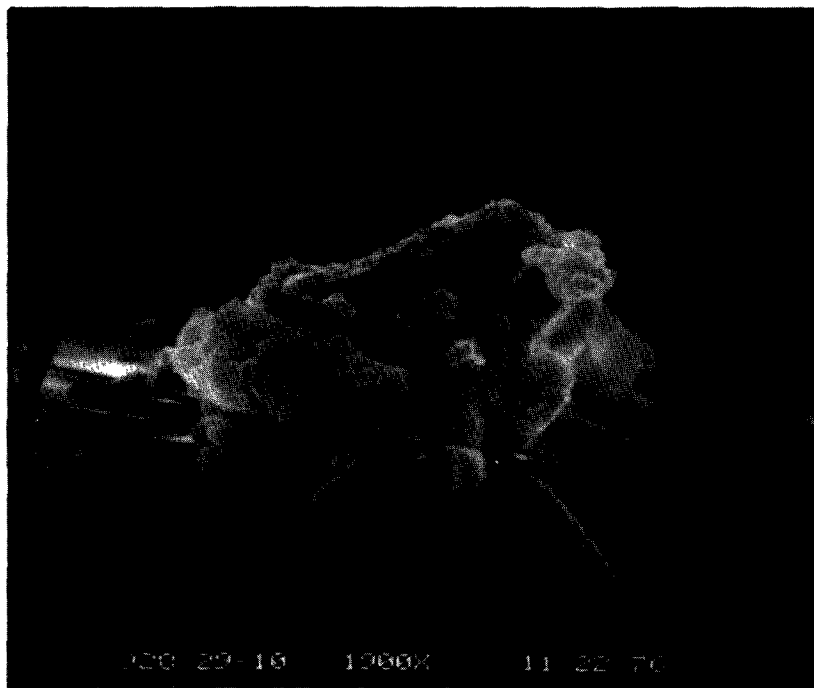


FIGURE D-83: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

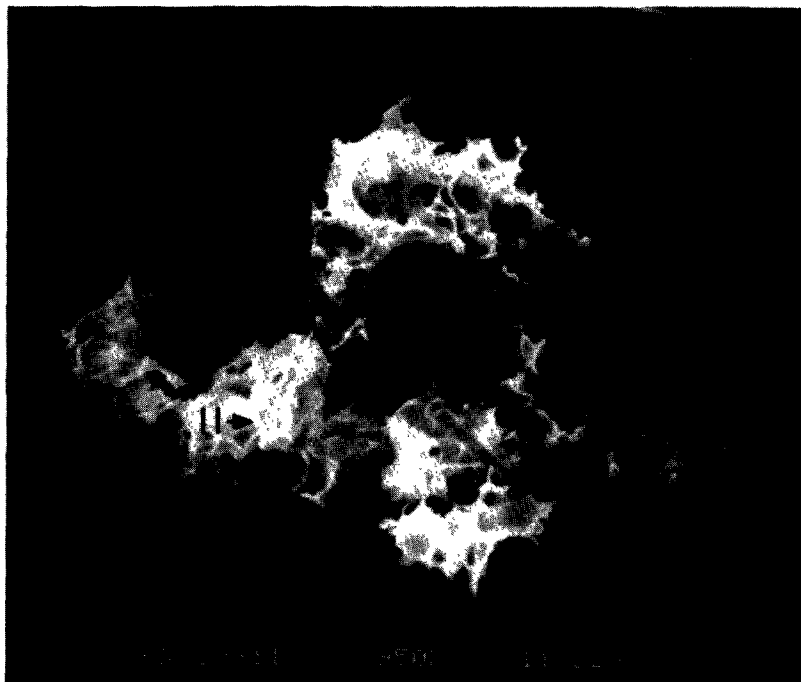


FIGURE D-84: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)



FIGURE D-85: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

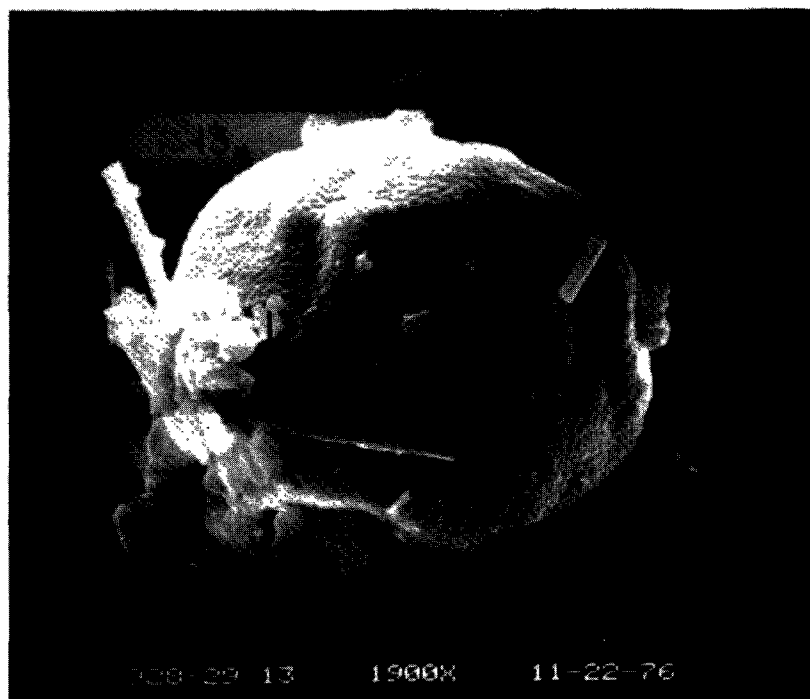


FIGURE D-86: Selected large particles taken from the Brighton Twp filter which was exposed on 9/9/76. (Refer to Table D-224)

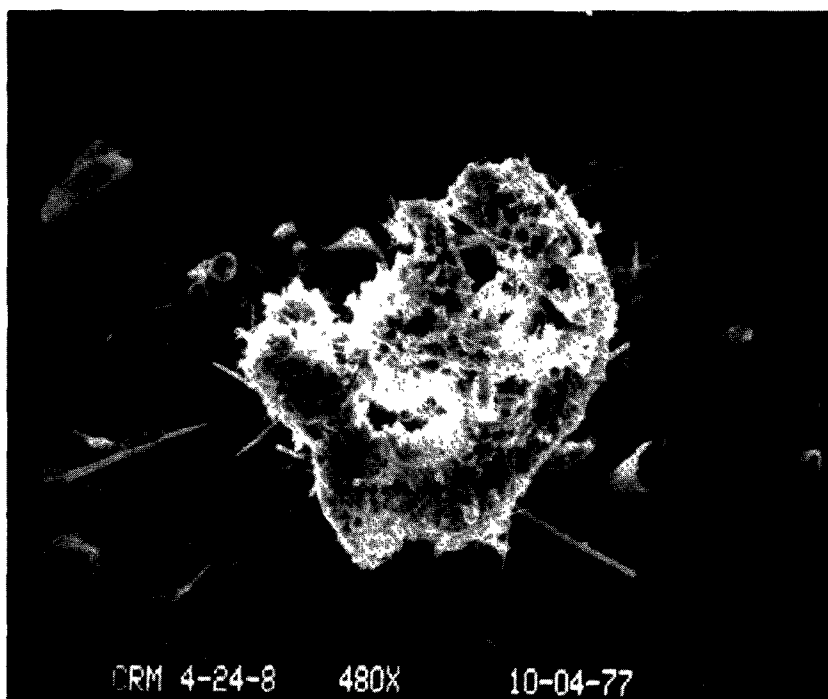


FIGURE D-87: Selected large particle Number 1.
(Refer to Table D-226)

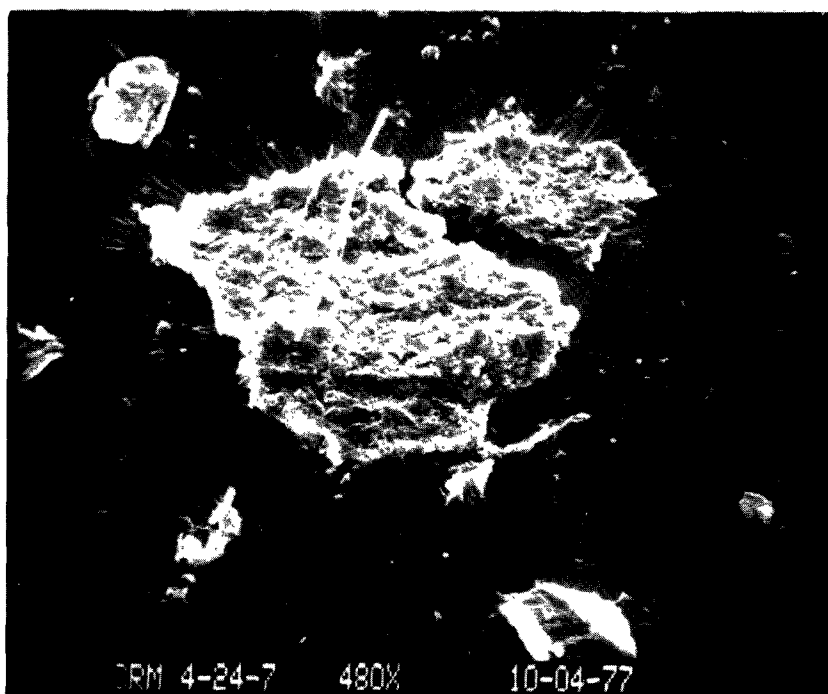


FIGURE D-88: Selected large particle Number 2.
(Refer to Table D-226)

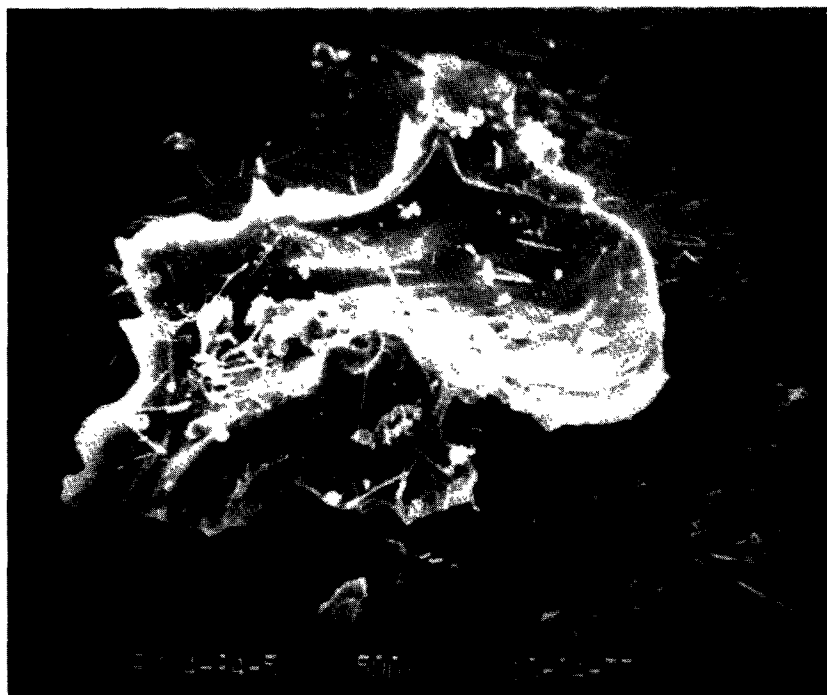


FIGURE D-89: Selected large particle Number 3.
(Refer to Table D-226)

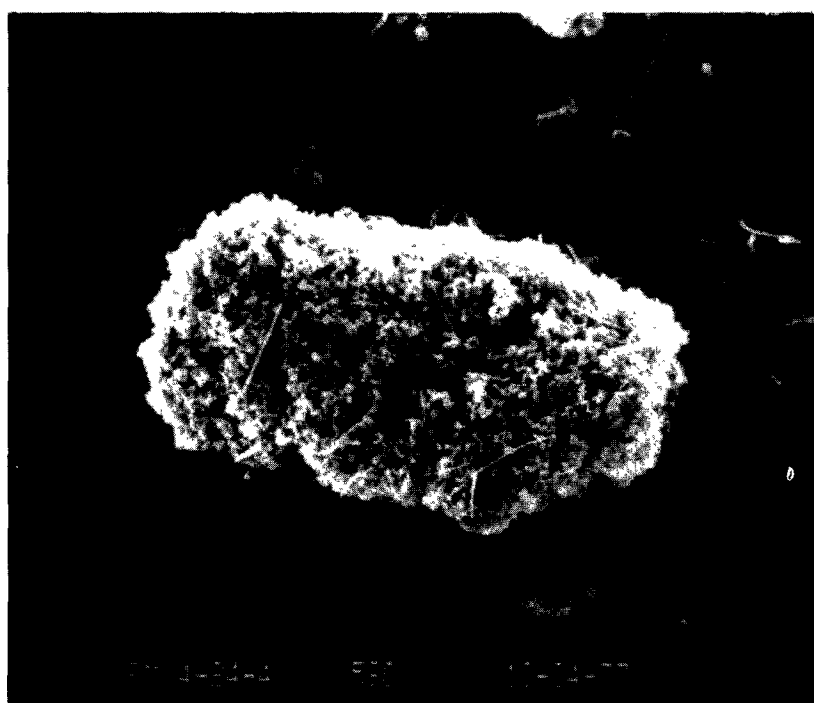


FIGURE D-90: Selected large particle Number 4.
(Refer to Table D-226)

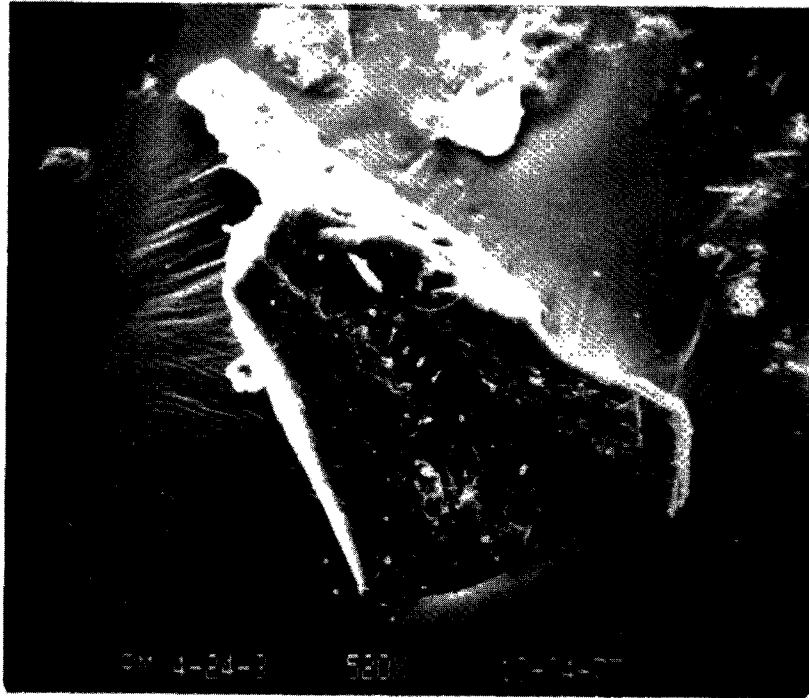


FIGURE D-91: Selected large particle Number 5.
(Refer to Table D-226)

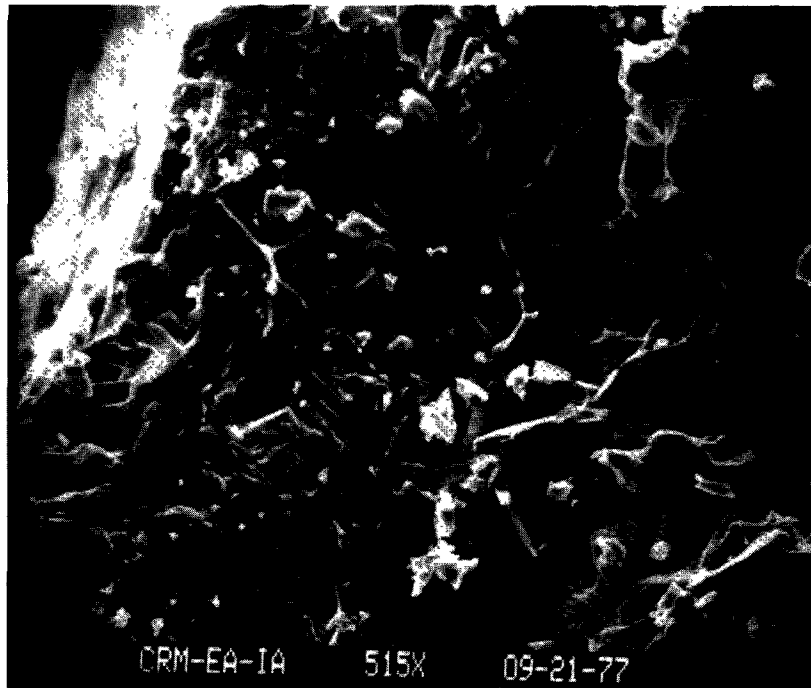


FIGURE D-92: Large particle A from an electric arc furnace slag sample. (Refer to Table D-227A)

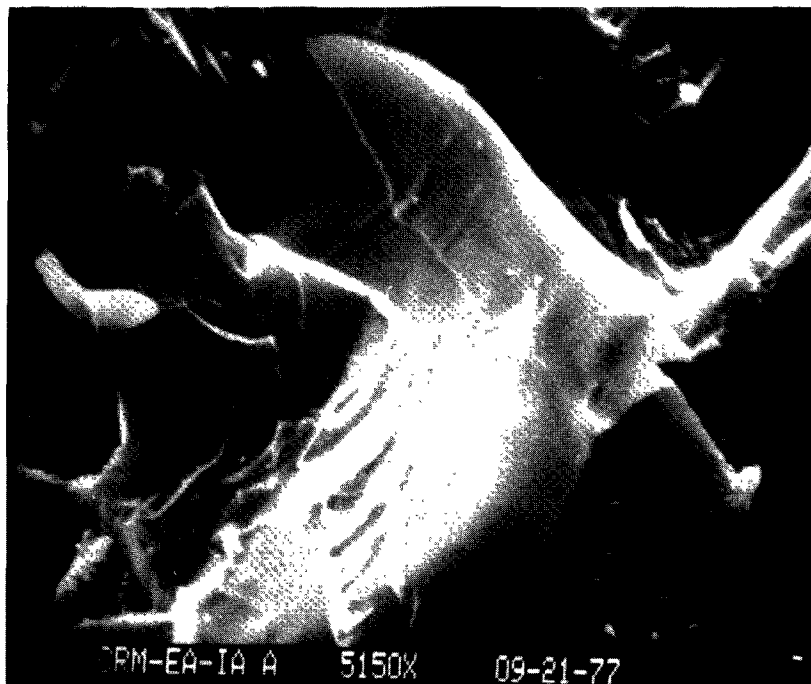


FIGURE D-93: Closeup of large particle A from an electric arc furnace slag sample. (Refer to Table D-227A)

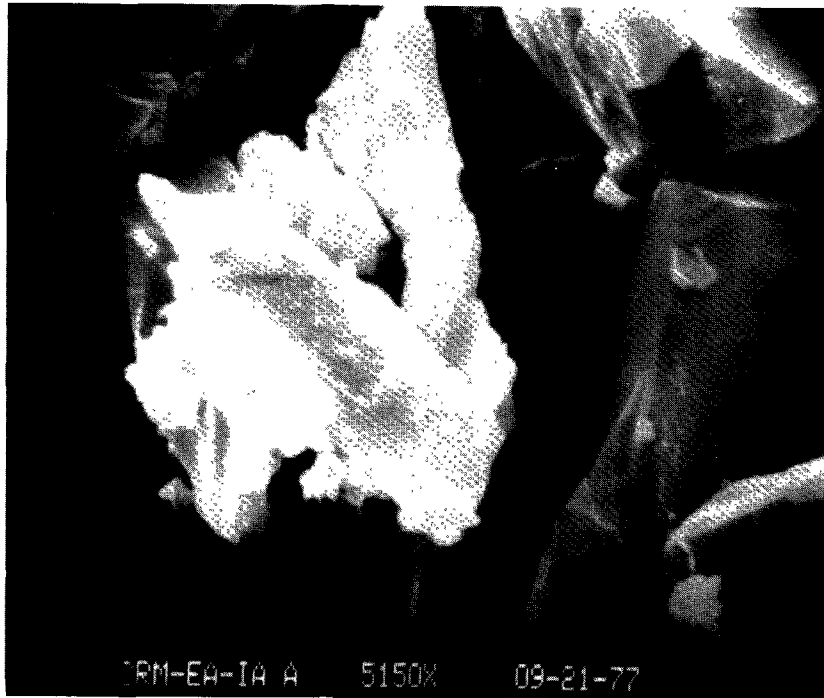


FIGURE D-94: Surface particle A-1 which had adhered to large particle A from an electric arc furnace slag sample. (Refer to Figure D-92 and Table D-227B)



FIGURE D-95: Surface particle A-2 which had adhered to large particle A from an electric arc furnace slag sample. (Refer to Figure D-92 and Table D-227B)

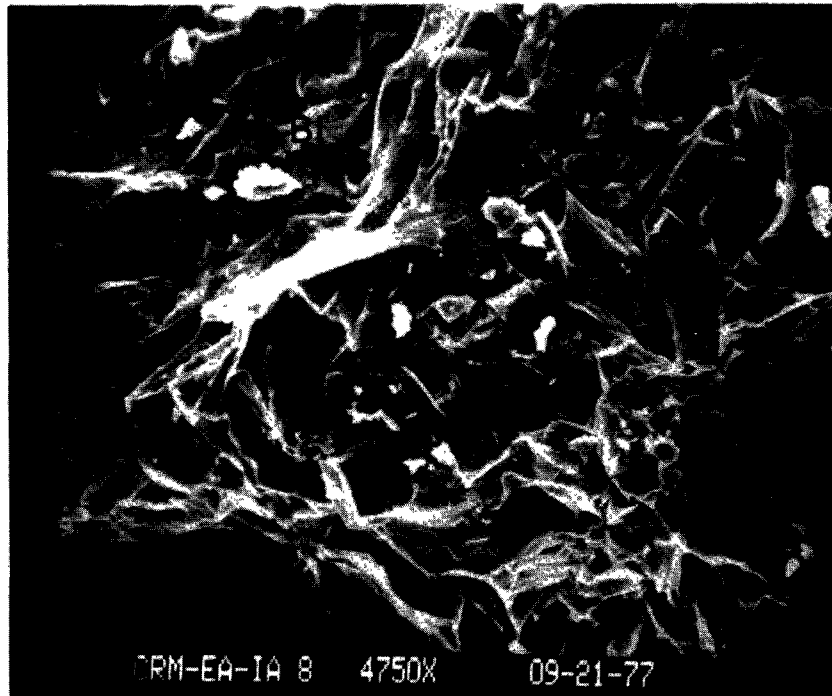


FIGURE D-96: Large particle B from an electric arc furnace slag sample. (Refer to Table D-227A)

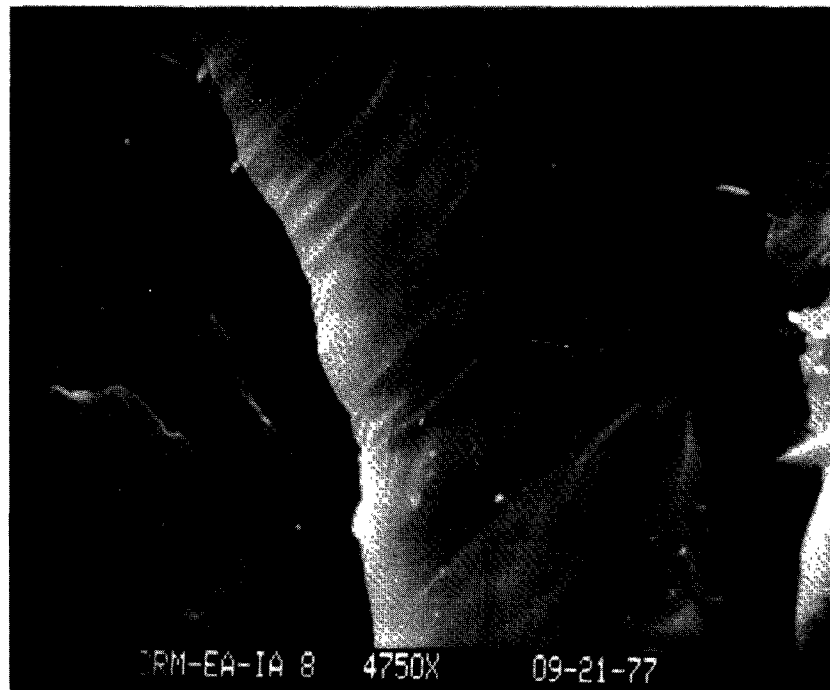


FIGURE D-97: Closeup of large particle B from an electric arc furnace slag sample. (Refer to Table D-227A)

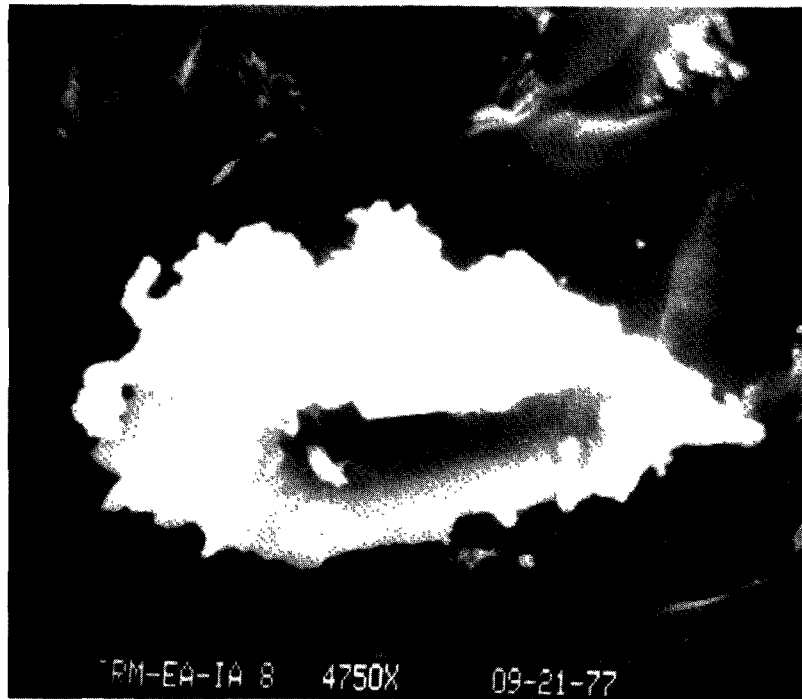


FIGURE D-98: Surface particle B-1 which had adhered to large particle B from an electric arc furnace slag sample. (Refer to Figure D-96 and Table D-227B)



FIGURE D-99: Surface particle B-2 which had adhered to large particle B from an electric arc furnace slag sample. (Refer to Figure D-96 and Table D-227B)

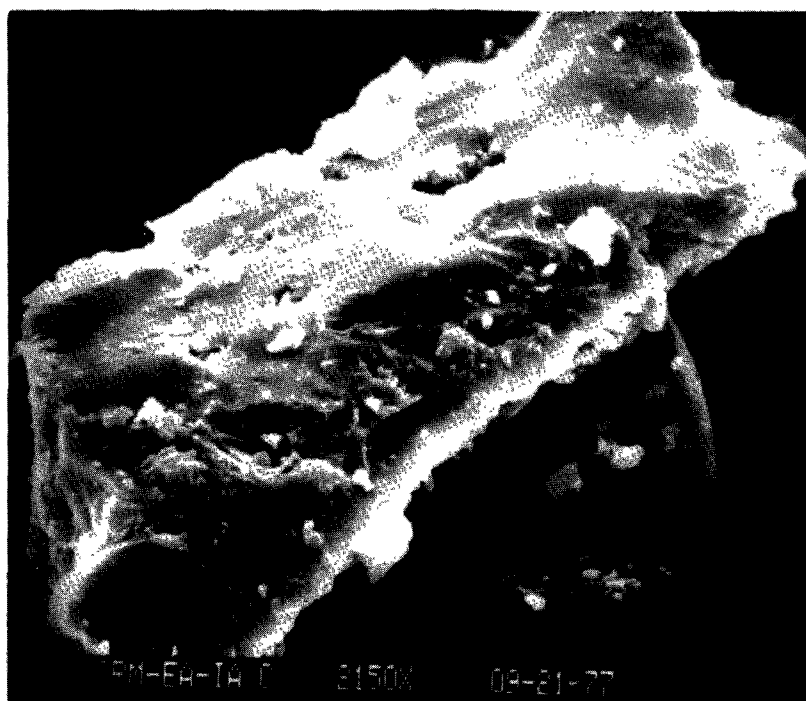


FIGURE D-100: Large particle C from an electric arc furnace slag sample. (Refer to Table D-227A)

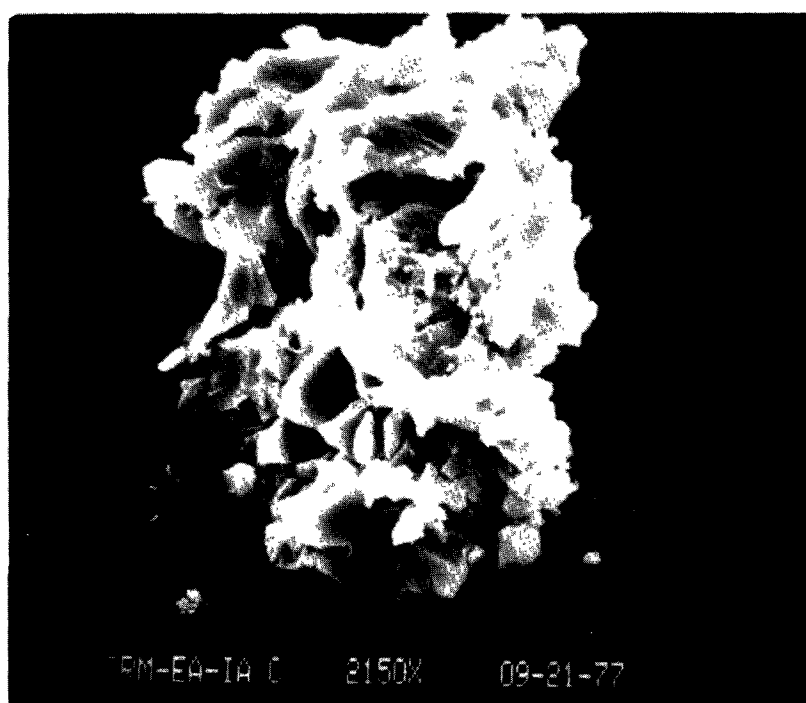


FIGURE D-101: Large particle D from an electric arc furnace slag sample. (Refer to Table D-227A)

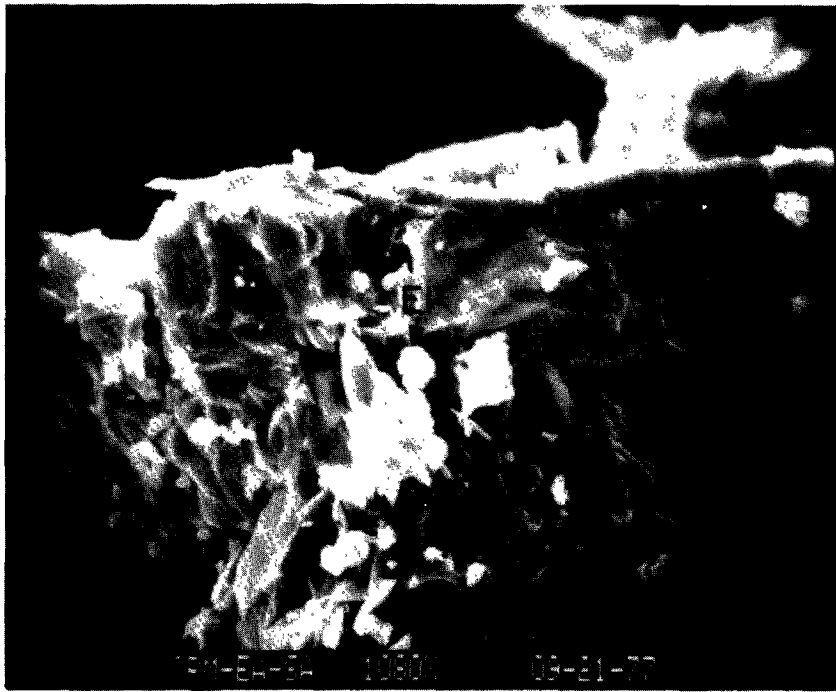


FIGURE D-102: Small particle E from an electric arc furnace slag sample (Refer to Table D-227C)

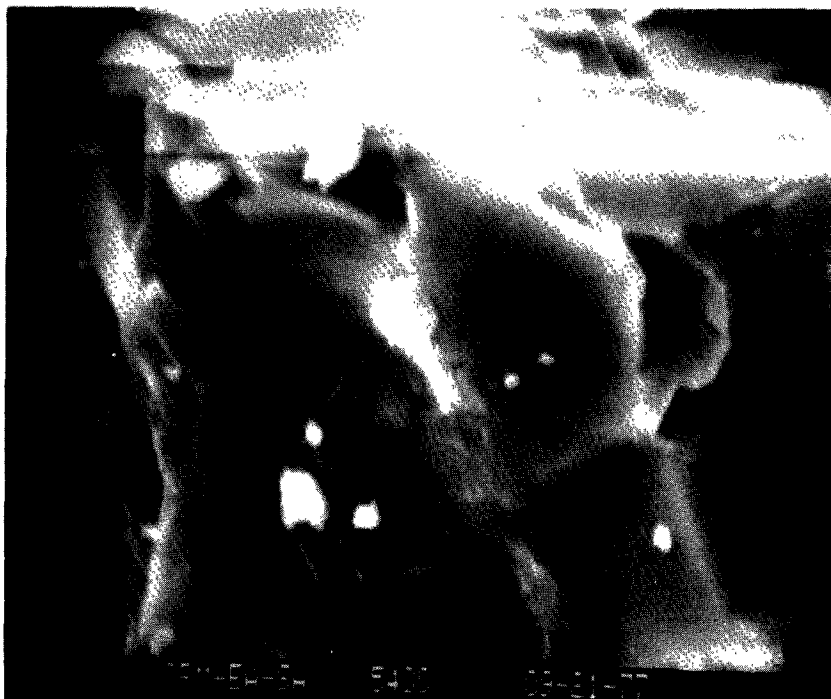


FIGURE D-103: Closeup of small particle E from an electric arc furnace slag sample. (Refer to Table D-227C)

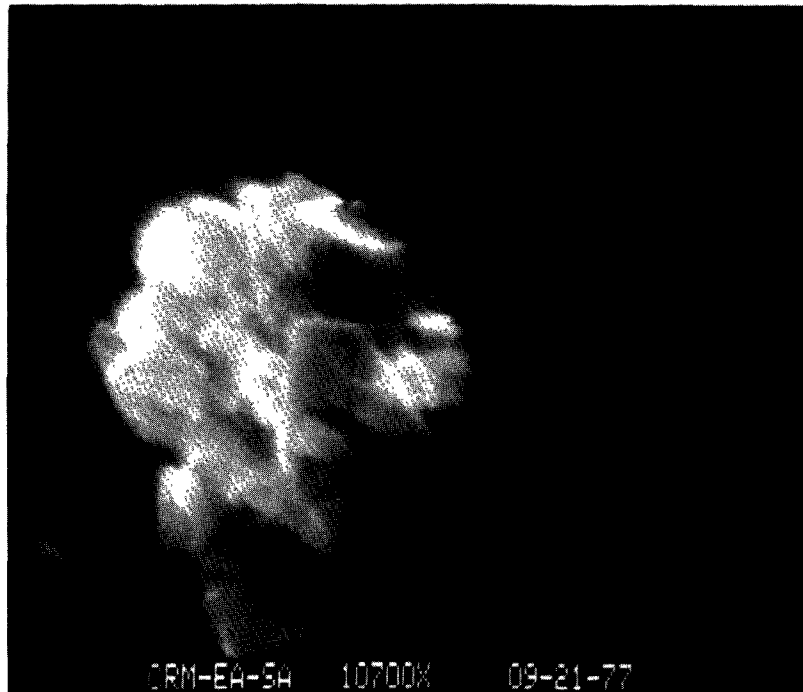


FIGURE D-104: Surface particle E-1 which had adhered to large particle E from an electric arc furnace slag sample. (Refer to Figure D-102 and Table D-227D)

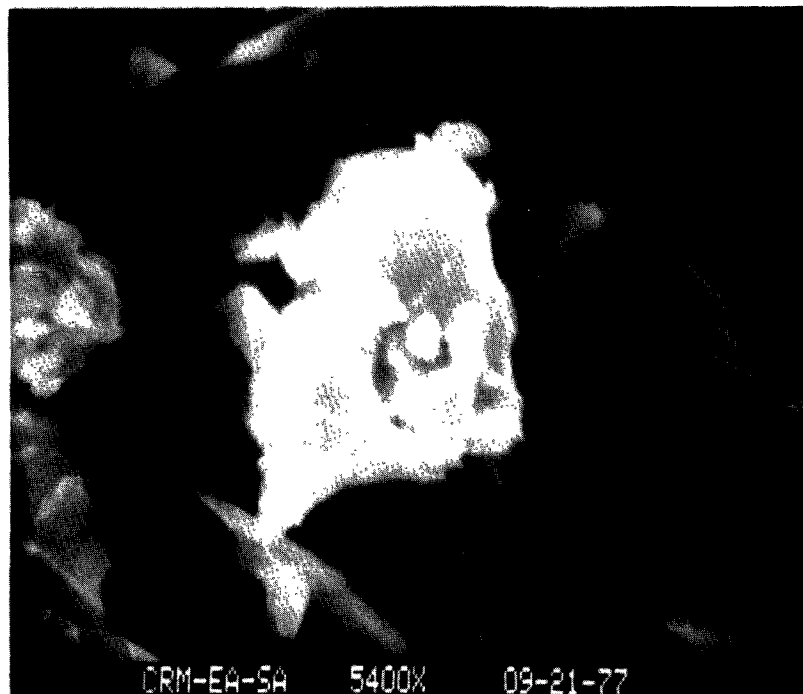


FIGURE D-105: Surface particle E-2 which had adhered to large particle E from an electric arc furnace slag sample. (Refer to Figure D-102 and Table D-227D)

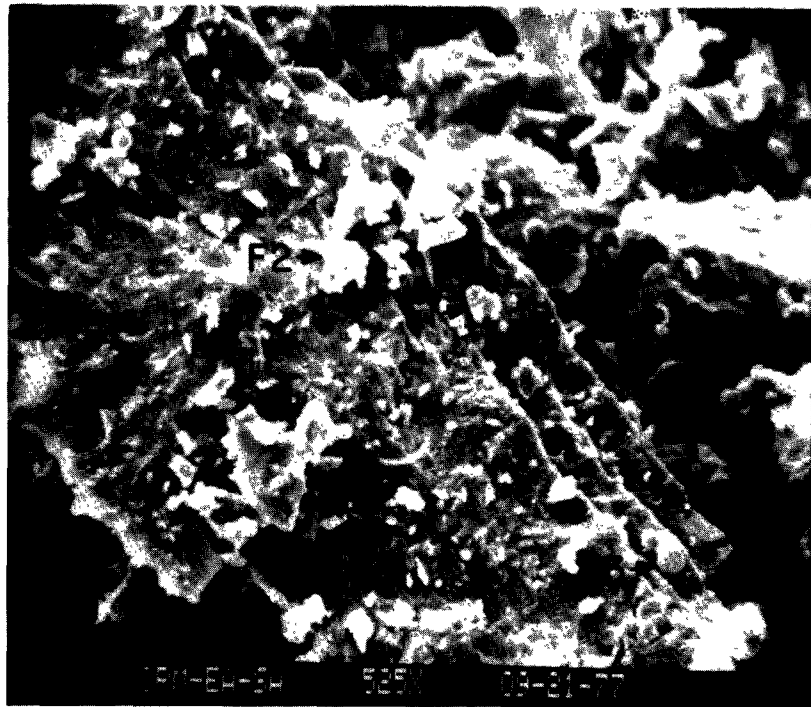


FIGURE D-106: Small particle F from an electric arc furnace slag sample. (Refer to Table D-227C)

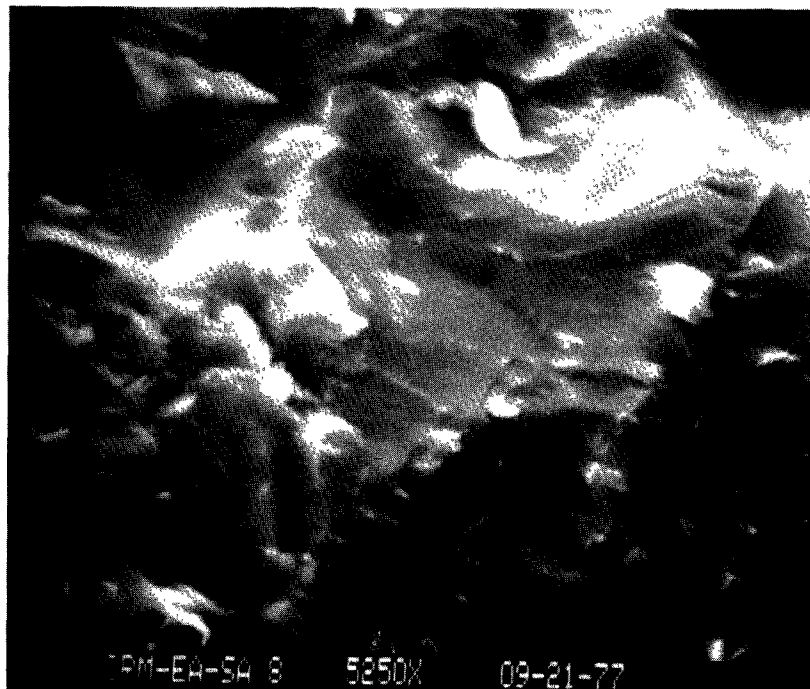


FIGURE D-107: Closeup of small particle F from an electric arc furnace slag sample. (Refer to Table D-227C)



FIGURE D-108: Surface particle F-1 which had adhered to large particle F from an electric arc furnace slag sample. (Refer to Figure D-106 and Table D-227D)

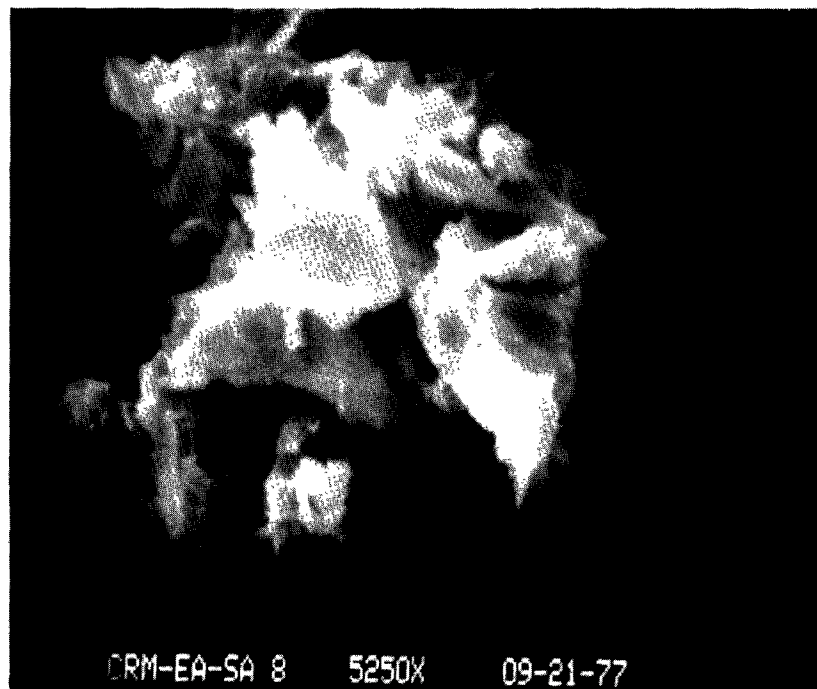


FIGURE D-109: Surface particle F-2 which had adhered to large particle F from an electric arc furnace slag sample. (Refer to Figure D-106 and Table D-227D)



FIGURE D-110: Surface particle F-3 which had adhered to large particle F from an electric arc furnace slag sample. (Refer to Figure D-106 and Table D-227D)

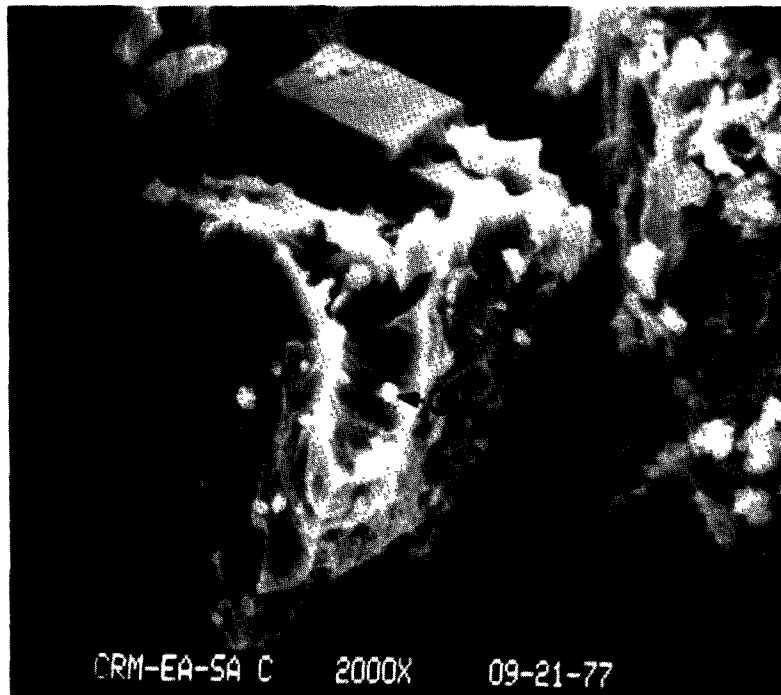


FIGURE D-111: Small particles G and H from an electric arc furnace slag sample. (Refer to Table D-227C)

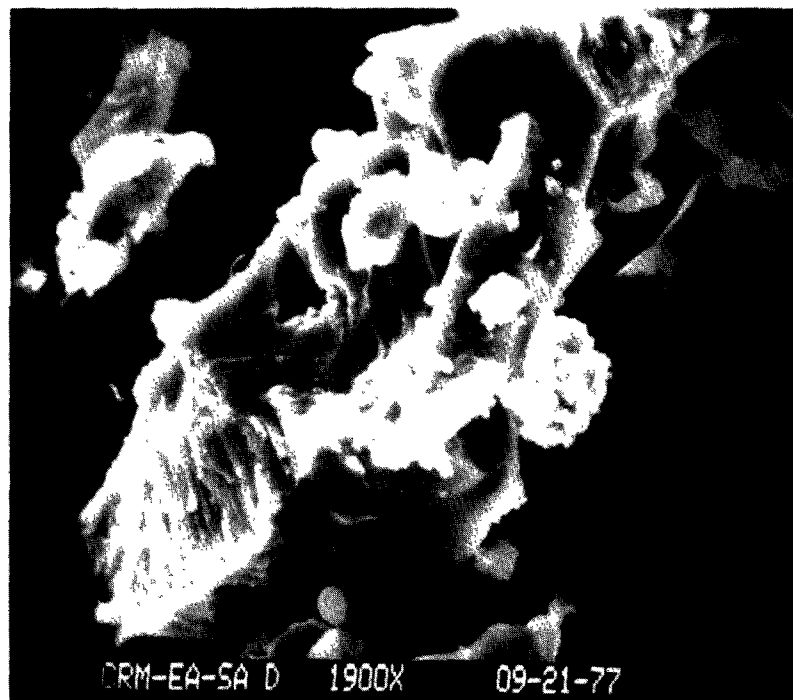


FIGURE D-112: Small particle I from an electric arc furnace slag sample. (Refer to Table D-227C)

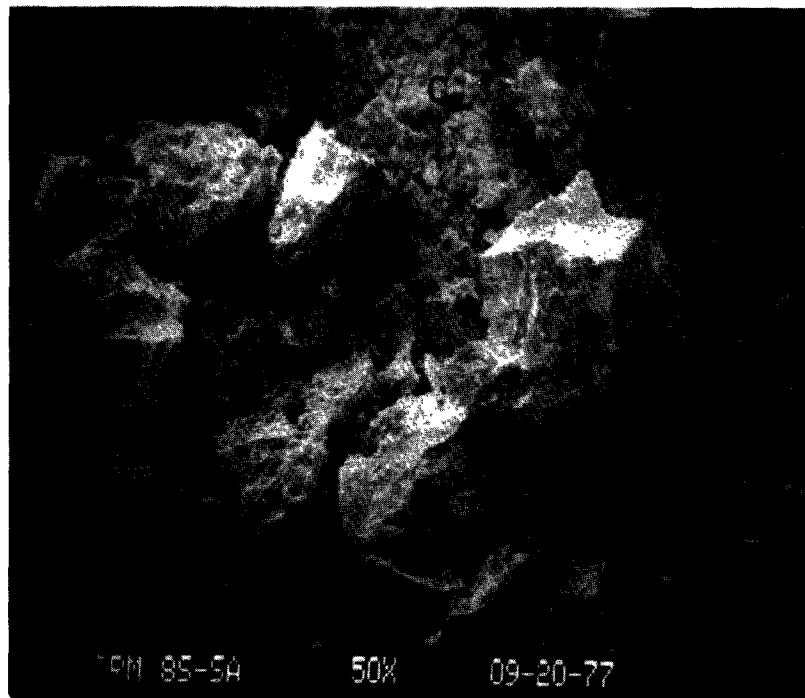


FIGURE D-113: Large particles A, B and C from a blast furnace slag sample. (Refer to Table D-228A)

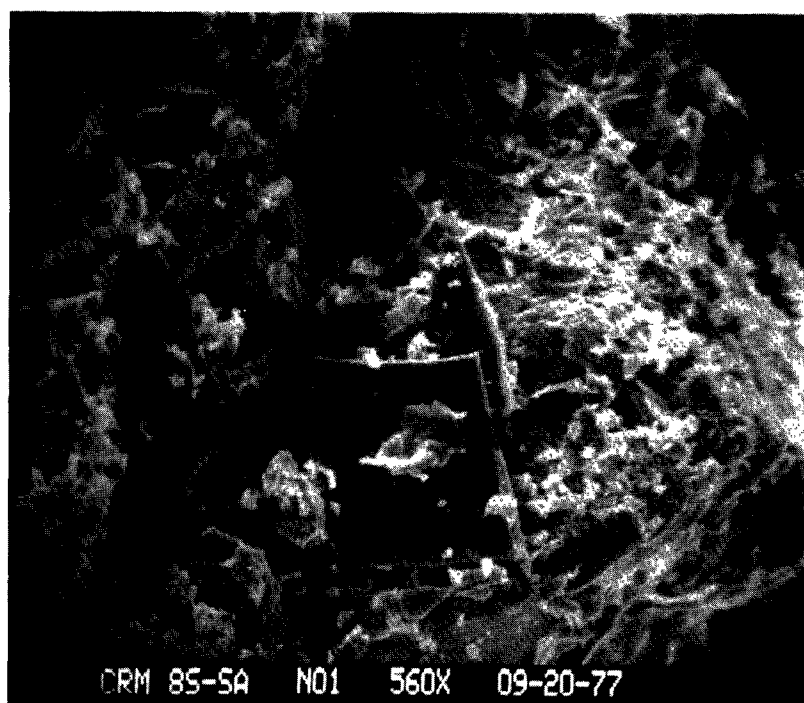


FIGURE D-114: Surface particles A-1, A-2, A-3, A-4 and A-5 which had adhered to large particle A from a blast furnace slag sample. (Refer to Table D-228B)

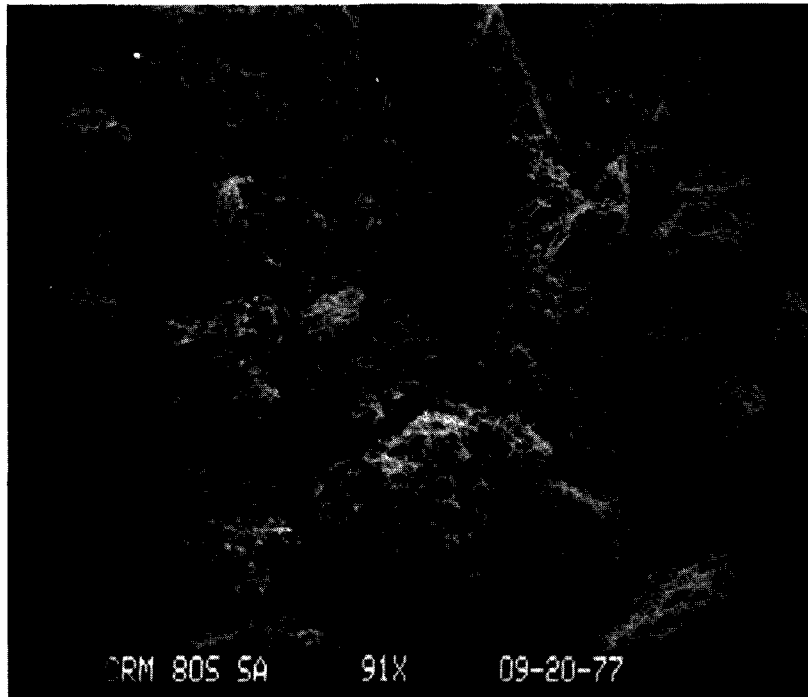


FIGURE D-115: Large particles A and B from a basic oxygen furnace slag sample. (Refer to Table D-229A)

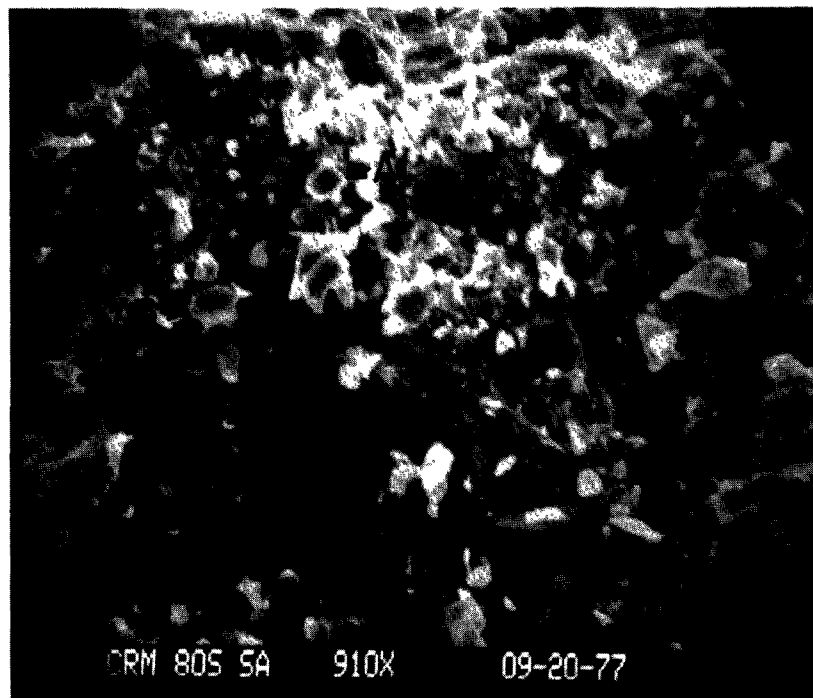


FIGURE D-116: Surface particles A-1, A-2, A-3, A-4, A-5 and A-6 which had adhered to large particle A from a basic oxygen furnace slag sample. (Refer to Table D-229B)