The ash residue resulting from the combustion of coal is primarily derived from the inorganic matter in the coal. The chemical composition of dry bottom ash and fly ash are quite similar. The major constituents present in coal ash are silica, alumina, ferric oxide, calcium oxide, magnesium oxide, and minor amounts of sodium and potassium oxides. Other parameters which may be present include sulfur trioxide, carbon, boron, phosphorus, uranium, and thorium. The concentration differences can vary considerably from one site to another.⁹³

When conducting their data analysis for their 1980 Development Document, the U.S. Environmental Protection Agency (EPA) found that there was no correlation between arsenic, nickel, zinc, copper, and selenium and total suspended solids, whenever their value was 30 mg/L or less.⁹⁴

The quality of storm water runoff from coal handling areas is dependent on pH, as pH influences the release of toxic and heavy metals. Suspended solids levels result when storm water suspends coal particulates. Most of the total dissolved solids concentrations are a consequence of enhanced pyritic oxidation.

Storm water runoff from exposed sources of coal tends to be of an acid nature, primarily as a result of the oxidation of iron sulfide in the presence of oxygen and water.⁹⁵ The presence of certain acidophilic, chemoautotrophic bacteria, and a pH of 2.0 to 4.5 generally indicates storm water runoff high in iron, manganese, and total dissolved solids. $^{\rm 96}$

Based on the similarities of the facilities included in this sector in terms of industrial activities and significant materials, EPA believes it is appropriate to discuss the potential pollutants at steam electric power generating facilities as a whole and not subdivide this sector. Therefore, Table O-2 lists data for selected parameters from facilities in the steam electric power generating sector. These data include the eight pollutants that all facilities were required to monitor for under Form 2F, as well as the pollutants that EPA has determined may merit further monitoring.

TABLE O–2.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY STEAM ELECTRIC GENERATING FACILITIES SUBMITTING PART II SAMPLING DATAⁱ (mg/L)

Pollutant, Sample type	# of Facilities		# of Samples		Mean		Minimum		Maximum		Median		95th Percentile		99th Percentile	
	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD ₅	29	33	78	80	5.8	5.7	0.0	0.0	45.0	37.0	4.3	4.0	20.3	16.8	38.4	29.5
COD	30	33	78	79	102.5	68.7	0.0	0.0	1410.0	540.0	32.5	39.0	332.8	188.3	739.8	333.6
Nitrate + Nitrite Nitrogen	30	33	78	79	5.47	0.73	0.00	0.00	350.00	3.90	0.36	0.41	4.34	2.41	11.17	4.66
Total Kjeldahl Nitrogen	30	33	78	80	2.36	1.90	0.00	0.00	22.30	19.1	1.20	0.99	7.35	5.37	14.95	10.26
Oil & Grease	34	N/A	90	N/A	1.4	N/A	0.0	N/A	20.0	N/A	0.0	N/A	7.3	N/A	19.5	N/A
рН	30	N/A	72	N/A	N/A	N/A	3.8	N/A	9.0	N/A	7.4	N/A	8.9	N/A	9.7	N/A
Total Phosphorus	30	33	77	80	0.81	0.65	0.00	0.00	6.00	7.20	0.30	0.28	3.56	2.62	9.27	6.45
Total Suspended Solids	30	33	78	79	504	208	0	0	22790	5554	44	40	1561	967	6077	3292
Iron, Total	29	32	67	73	7.0	6.3	0.0	0.0	67.0	191.0	1.8	1.4	34.7	19.9	117.0	58.1
Zinc, Total	14	17	33	38	0.300	0.250	0.000	0.000	5.500	4.200	0.07	0.08	1.164	0.725	3.389	1.607

ⁱ Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0. "Composite samples.

3. Pollutant Control Measures Required Under Other EPA Programs.

The Agency recognizes that other EPA programs address pollution prevention at steam electric power generating facilities. The Oil Pollution Prevention Program (40 CFR Part 112) has established procedures to prevent the discharge of oil from nontransportation related onshore and offshore facilities. This program requires owners or operators of onshore and offshore facilities to prepare a Spill Prevention Control and Countermeasure Plan (SPCC Plan) for their facility if they could reasonably be expected to discharge oil, into or upon the navigable waters of the United States or adjoining shorelines, in quantities that violate applicable water quality standards, or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines. Guidelines for the preparation and implementation of a Spill Prevention Control and Countermeasure Plan can be found at 40 CFR 112.7.

Under the Resource Conservation and Recovery Act (RCRA) specific requirements have been established which address generators of hazardous wastes. Regulations have been developed which address the accumulation of hazardous waste onsite prior to transport to a hazardous waste disposal facility. These regulations address proper storage of hazardous wastes, emergency planning, and training personnel in proper handling procedures for hazardous wastes.

4. Storm Water Pollution Prevention Plan Requirements

The conditions that apply to steam electric power generating facilities are based on the requirements set forth in the common permit conditions for storm water discharges from industrial activities discussed in today's fact sheet. The discussion that follows only addresses conditions that differ from those common conditions. There are no additional pollution prevention requirements beyond the common conditions for nuclear powered steam electric generating facilities.

a. Description of Pollutant Sources. Under the description of pollutant sources in the storm water pollution prevention plan requirements, permittees are required to include a site map of the facility. The areas required to be identified on the site map now also include the following: landfills,

⁹³ EPA. Effluent Guidelines Division. "Development Document for Effluent Limitations Guidelines and Standards for the Steam Electric Point Source Category." September 1980. (EPA 440/ 1–80/029–b). Page 131.

⁹⁴ EPA. Effluent Guidelines Division. "Development Document for Effluent Limitations

Guidelines and Standards for the Steam Electric Point Source Category." September 1980. (EPA 440/ 1–80/029–b). Page 138.

 ⁹⁵ EPA. Effluent Guidelines Division.
"Development Document for Effluent Limitations Guidelines and Standards for the Steam Electric

Point Source Category.'' September 1980. (EPA 440/ 1–80/029–b). Page 138.

⁹⁶ EPA. Effluent Guidelines Division. "Development Document for Effluent Limitations Guidelines and Standards for the Steam Electric Point Source Category." September 1980. (EPA 440/ 1–80/029–b). Page 138.