APPENDIX C-5
SUMMARY OF NONRADIOLOGICAL MONITORING

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Nonradiological emissions and plant effluents are controlled and permitted under New York State and U.S. EPA regulations. Airborne emissions arise from seven sources, all of which are permitted by New York State Department of Environmental Conservation (NYSDEC). These release points include two natural gas-fired boilers, two nitric acid tank vents, an office paper waste incinerator, a glass-melter off-gas system and a cement storage silo vent. The melter off-gas system is currently being tested and operated under a permit to construct. These permits are identified and described in Table C-5.1. Although there are periodic New York State inspections of the air emission points, routine sampling and analysis of nonradiological emissions from these points are not required. Discharges from these points are well below the levels requiring monitoring under the state permit system.

Liquid discharges are regulated under the State Pollution Discharge Elimination System (SPDES). The outfalls and monitoring requirements for the permit are presented in Table C-5.2. The locations of the monitoring points are shown in Figure C-5.1.

The results of the SPDES nonradiological monitoring are presented in Figures C-5.2 through C-5.23. These data indicate Project effluents were generally within the permit limits during 1987. However, the WVDP reported a total of 19 noncompliance episodes. These noncompliances are summarized in Table C-5.3 and are described in the following paragraphs.

The majority of noncompliance episodes are for pH and solids at outfall 007, the mixing basin for sanitary and utility room wastewaters. Of the 11 excursions reported at this outfall, eight were for pH and three were for solids (one suspended solids and two settleable solids). The pH excursions are attributed to the influence of basic (i.e., high pH) boiler blowdown wastewaters and, on several occasions, to photosynthetically mediated carbon dioxide assimilation by the flourishing algae population in the wastewater mixing basin. The solids excursions arise from resuspension of settled materials during aeration of the mixing basin for pH control. The solids excursions during September 1987 also contributed to the two high BOD concentrations measured and averaged for outfalls 001, 007 and 008.

Outfall 001, the batch discharge from the low-level waste treatment facility, experienced or contributed to six other permit excursions. Three of these excursions were for pH, which slightly exceeded the upper limit of 9.0 in the "heel" of the lagoon. Two other excursions were data reporting errors; values for arsenic were reported as "less than" values when the value reported was actually higher than the permit limits.

The remaining two excursions are related in that the solids excursion for the July 1987 discharge, caused by rain induced flushing of the loose sediment from the lagoon near the end of a discharge episode, also caused a high BOD value for that discharge.

These noncompliance episodes are summarized in Table C5-3. The environmental impacts associated with these noncompliance episodes are negligible because of their generally small magnitude and short duration, the innocuous nature of the noncomplying parameters, and natural dilution by a factor of approximately 1000 between the point where Erdman Brook leaves the controlled area of the site (formerly outfall 006) and Cattaraugus Creek (the nearest point of public access).

TABLE C-5.1
WEST VALLEY DEMONSTRATION PROJECT ENVIRONMENTAL PERMITS

Permit #	Issued by	Expiration Date	Type of Permit
042200-0114-00002 WC	NYSDEC	6/89	Certificate to operate air contamination source - boiler
042200-0114-00003 WC	NYSDEC	6/89	Certificate to operate air contamination source - boiler
042200-0114-0004 WR	NYSDEC	6/89	Certificate to operate air contamination source - incinerator**
042200-0114-00010 WM	NYSDEC	6/89	Certificate to operate air contamination source - Low Level Waste Treatment Facility Nitric Acid Storage Tank
042200-0114-014D1 WI	NYSDEC	6/89	Certificate to operate air contamination source - Nitric Acid Bulk Storage Tank
042200-0114-CSS01	NYSDEC	6/89	Certificate to Operate Cement Storage Silo Ventilation System
042200-0114-015F-1	NYSDEC	6/86*	Permit to Construct Vitrification Off-Gas System
NY-0000973	NYSDEC	9/90	State Pollution Discharge Elimination System (SPDES permit)
WVDP-187-01	EPA		Certificate to Operate Radioactive Air Source - Building 01-14 Ventilation System***
WVDP-287-01	EPA		Certificate to Operate Radioactive Air Source - Contact Size Reduction & Decontamination Facility***
WVDP-387-01	EPA		Certificate to Operate Radioactive Air Source - Supernatant Treatment Ventilation System***
WVDP-487-01	EPA		Certificate to Operate Radioactive Air Source - Low Level Waste Supercompactor Ventilation System***
WVDP-587-01	EPA		Certificate to Operate Radioactive Air Source - Outdoor Ventilation Exhaust***
WVDP-687-01	EPA		Certificate to Operate Radioactive Air Source - Liquid Waste Treatment System (modification of Process Building Ventilation System)***

* Permit to construct is extended annually with submittal of status report.
** Currently nonradioactive waste is removed to a commercial landfill and not incinerated.
*** National Emission Standard for Hazardous Air Pollutants (NESHAP) tempory permits are valid until the final permits are issued.

TABLE C-5.2
WEST VALLEY DEMONSTRATION PROJECT
SPDES SAMPLING PROGRAM
Effective September 1, 1985

Outfall	Parameter	Limit	Sample Frequency
001 (Process and Storm waste waters)	Flow		2 per discharge event
	Aluminum	14.0 mg/L	2 per discharge event
	Ammonia	*	2 per discharge event
	Arsenic	0.01 mg/L	2 per discharge event
	BOD-5	**	2 per discharge event
	Iron	**	2 per discharge event
	Zinc	0.31 mg/L	2 per discharge event
	Suspended Solids	45.0 mg/L	2 per discharge event
	Cyanide	0.1 mg/L	2 per discharge event
	Settleable Solids	0.30 mL/L	2 per discharge event
	pH	6.0 - 9.0	2 per discharge event
	Oil and Grease	15.0 mg/L	2 per discharge event
	Cadmium	0.013 mg/L	annual
	Chromium	0.050 mg/L	annual
	Copper	0.050 mg/L	annual
	Lead	0.080 mg/L	annual
	Nickel	0.080 mg/L	annual
	Selenium	0.040 mg/L	annual
007 (Sanitary and Utility waste water)	Flow		3 per month
	Ammonia	*	3 per month
	BOD-5	**	3 per month
	Iron	**	3 per month
	Suspended Solids	45.0 mg/L	2 per month
	Settleable Solids	0.3 mL/L	Weekly
	pH	6.0 - 9.0	Weekly
	Chloroform	0.020 mg/L	annual
008 (French Drain waste water)	Flow		3 per month
	BOD-5	**	3 per month
	Iron	**	3 per month
	pH	6.0 - 9.0	3 per month
	Silver	0.008 mg/L	annual
	Zinc	0.100 mg/L	annual

* Reported as flow weighted average of Outfalls 001 and 007.

** Reported as flow weighted average of Outfalls 001, 007 and 008. Iron data are net limits reported after background concentrations are subtracted.

TABLE C-5.3
WEST VALLEY DEMONSTRATION PROJECT
1987 SPDES NONCOMPLIANCE EPISODES

Date	Outfall	Parameter	Limit	Value	Comments
Feb. 87	007	pH	6.0 - 9.0	9.1	
Apr. 87	001	pH	6.0 - 9.0	9.06	
May 87	007	pH	6.0 - 9-0	9.21	
June 87	007	pH	6.0 - 9.0	9.16	
July 87	001	Arsenic	0.01 Daily Max.	0.2	reporting error 2 occasions reported
July 87	001	Total Suspended Solids	30.0 Avg. 45.0 Max.	31.4	
July 87	007	pH	6.0 - 9.0	9.89	4 occasions reported
July 87	Sum 001, 007 & 008	BOD-5	5.0 Daily Avg.	5.64	
Aug. 87	007	pH	6.0 - 9.0	9.40	
Sep. 87	001	Total Suspended Solids	30.0 Avg. 45.0 Max.	46.0	
Sep. 87	007	Total Suspended Solids	30.0 Avg. 45.0 Max.	54.0	
Sep. 87	007	Settleable Solids	0.3 mL/L	4.0 2.3	2 occasions reported
Sep. 87	Sum 001, 007 & 008	BOD-5	5.0 Daily Avg.	9.04	2 occasions reported

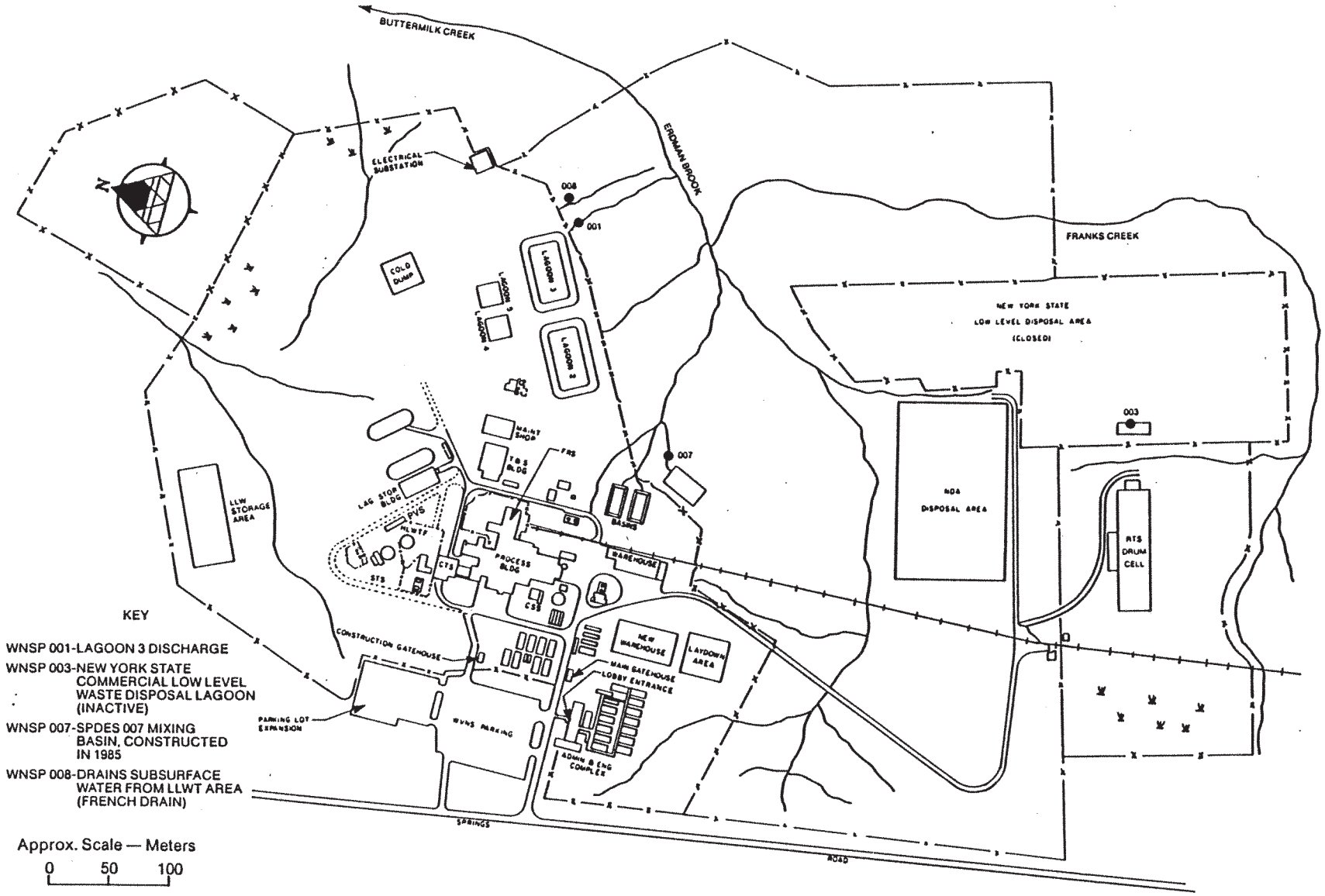

Figure C-5.1. Locations of SPDES Monitoring Points On-site.

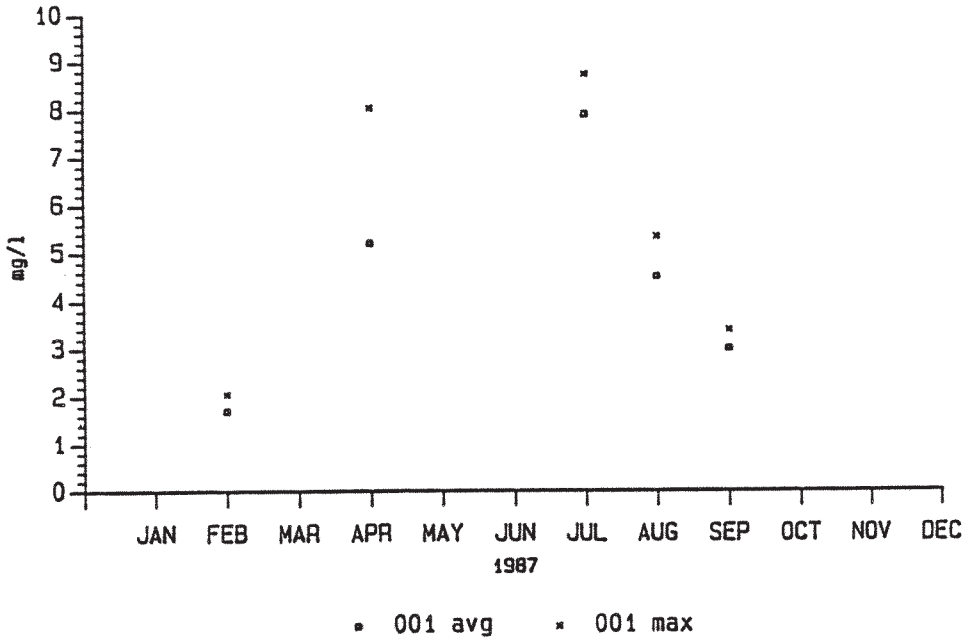

Figure C-5.2 BOD-5 Outfall 001.

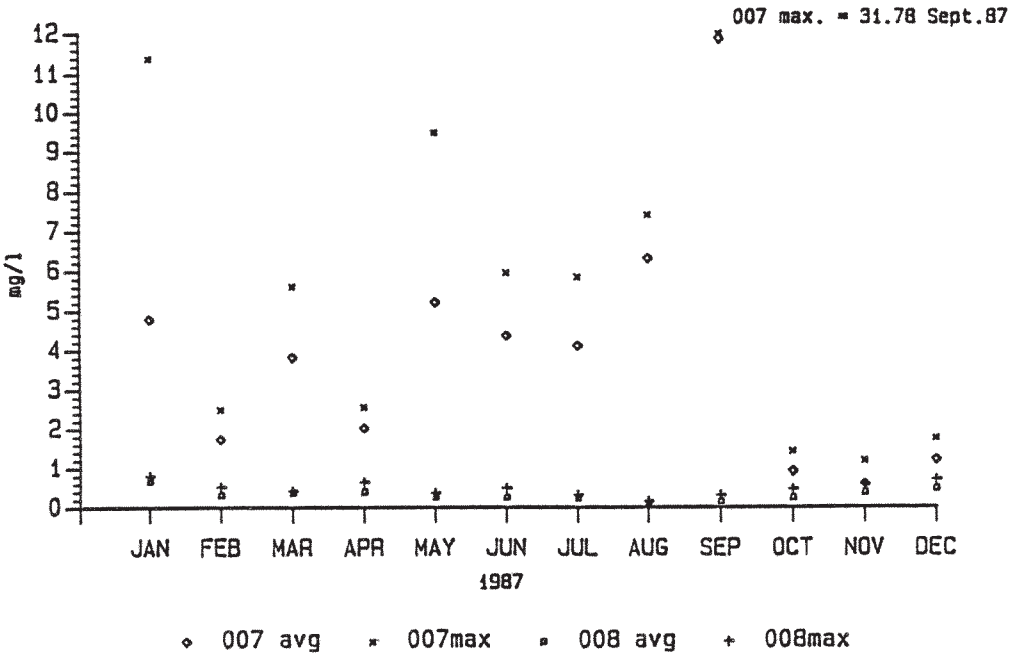

Figure C-5.3 BOD-5 Outfall 007, 008.

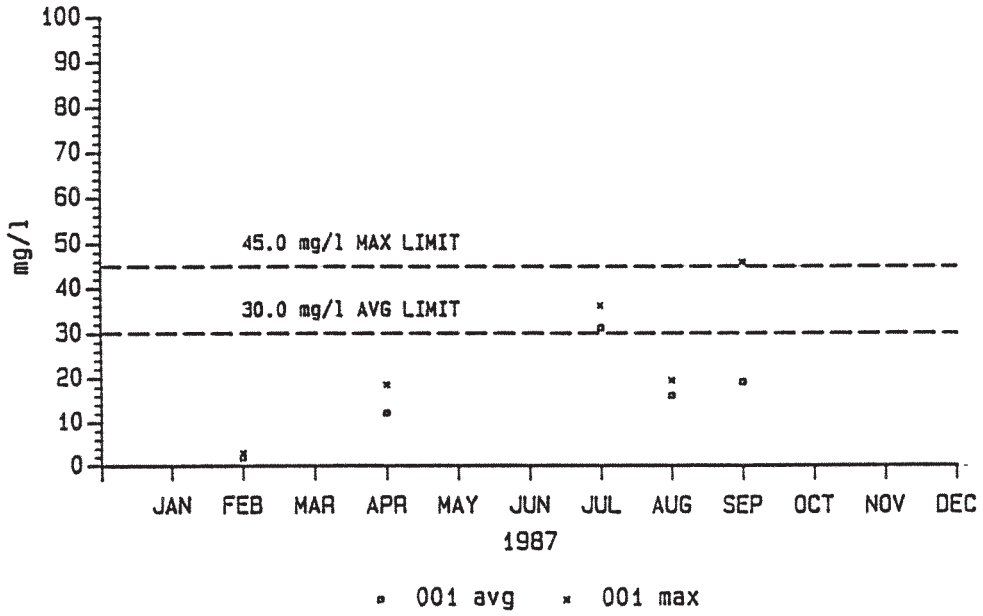

Figure C-5.4 Suspended Solids, Outfall 001

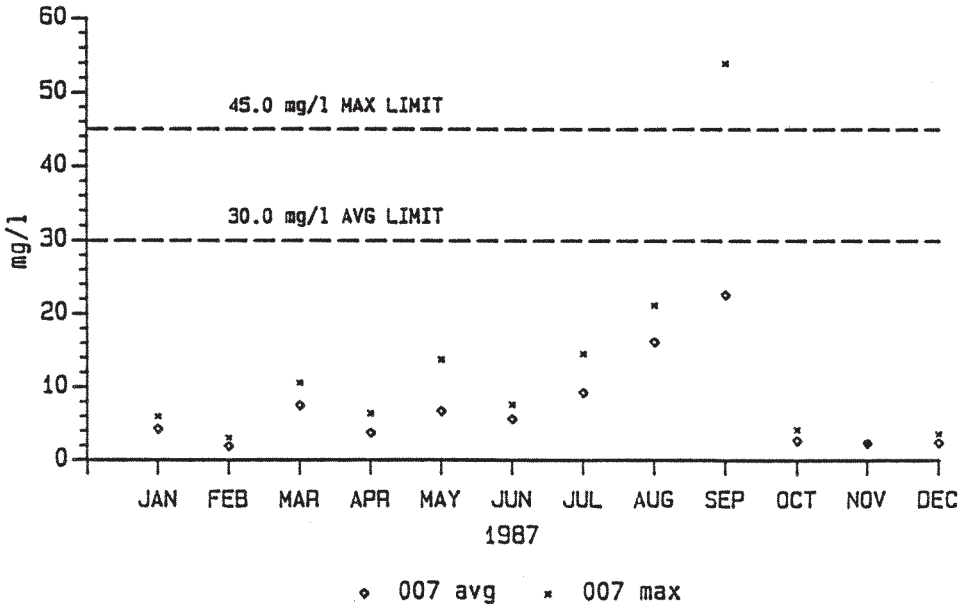

Figure C-5.5 Suspended Solids, Outfall 007

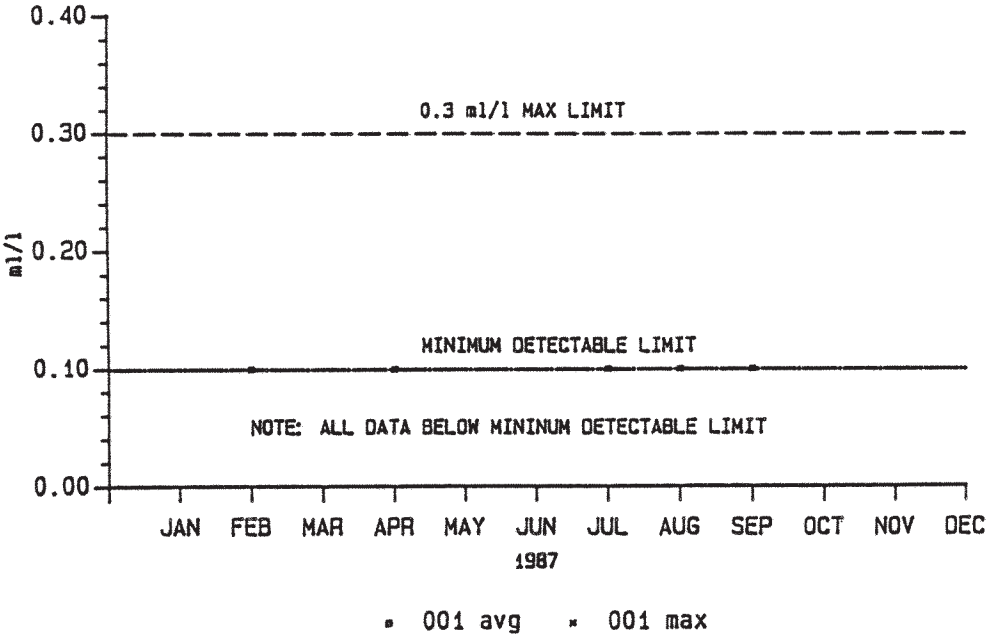

Figure C-5.6 Settleable Solids, Outfall 001

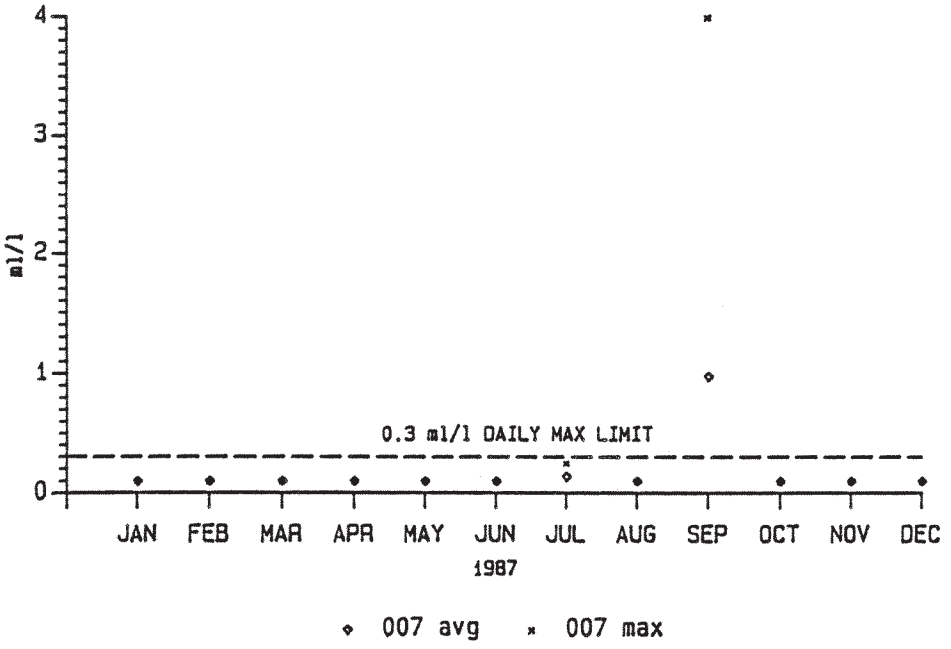

Figure C-5-7 Settleable Solids, Outfall 007

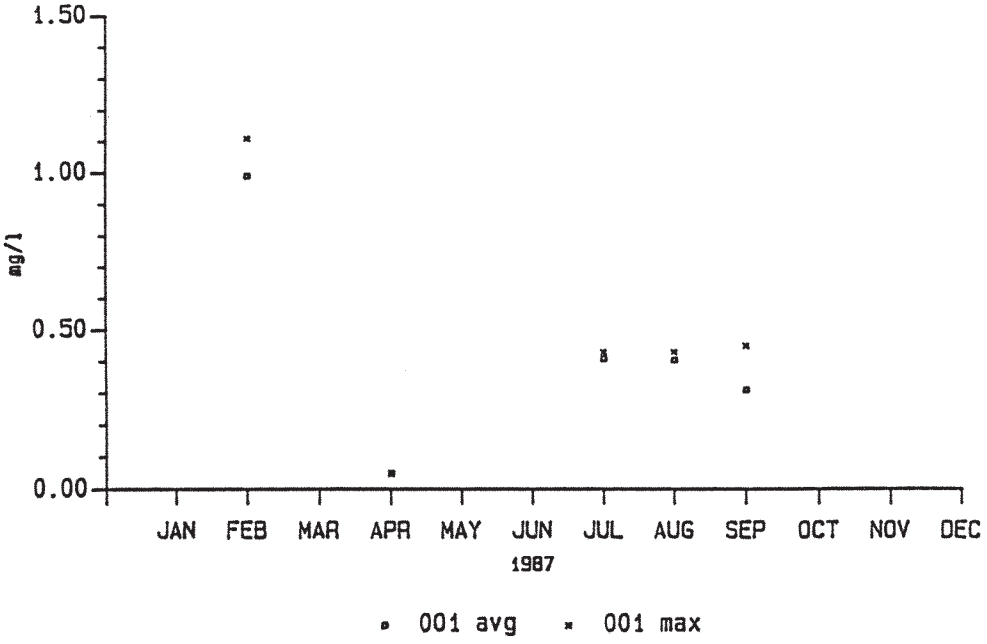

Figure C-5.8 Ammonia, Outfall 001

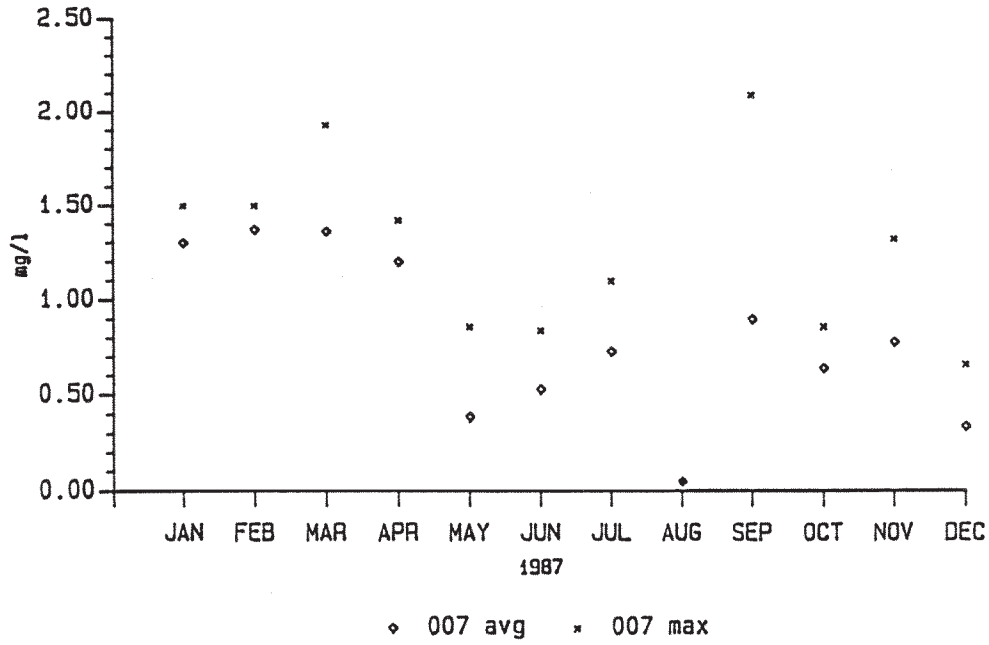

Figure C-5.9 Ammonia, Outfall 007

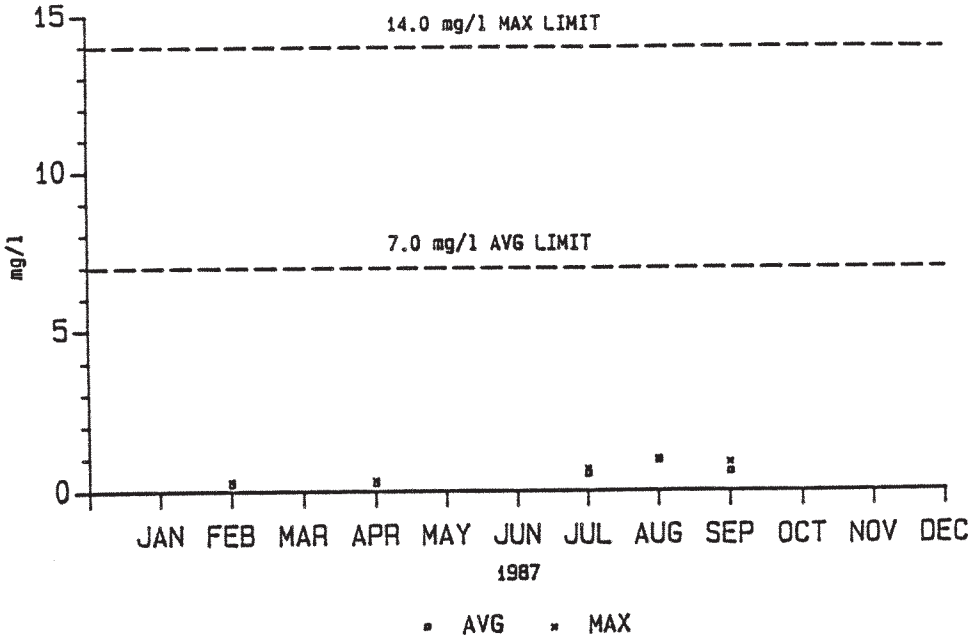

Figure C-5.10 Metals (Al), Outfall 001

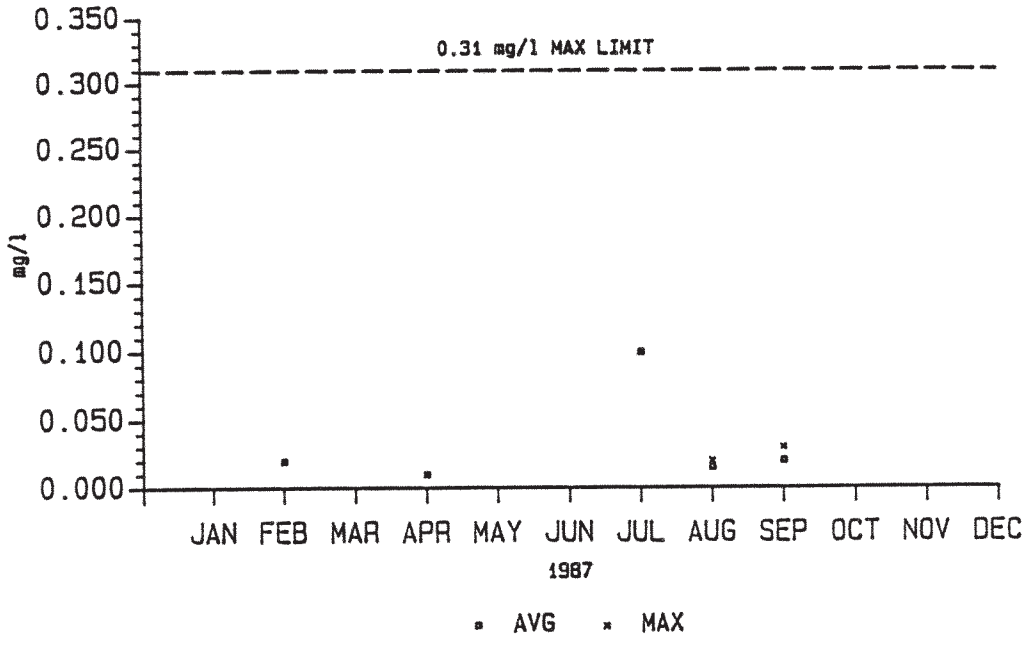

Figure C-5.11 Metals (Zn), Outfall 001

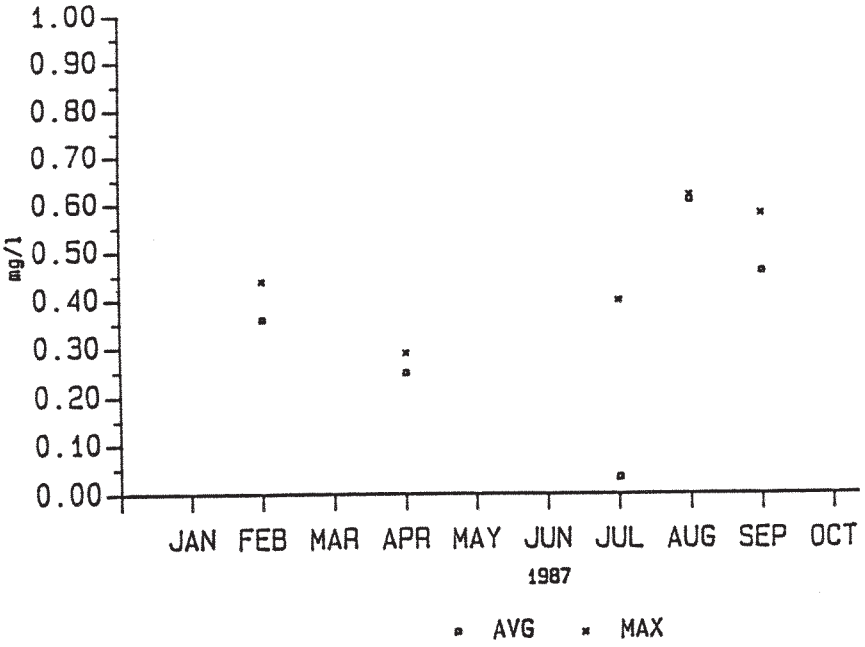

Figure C-5.12 Metals (Fe), Outfall 001

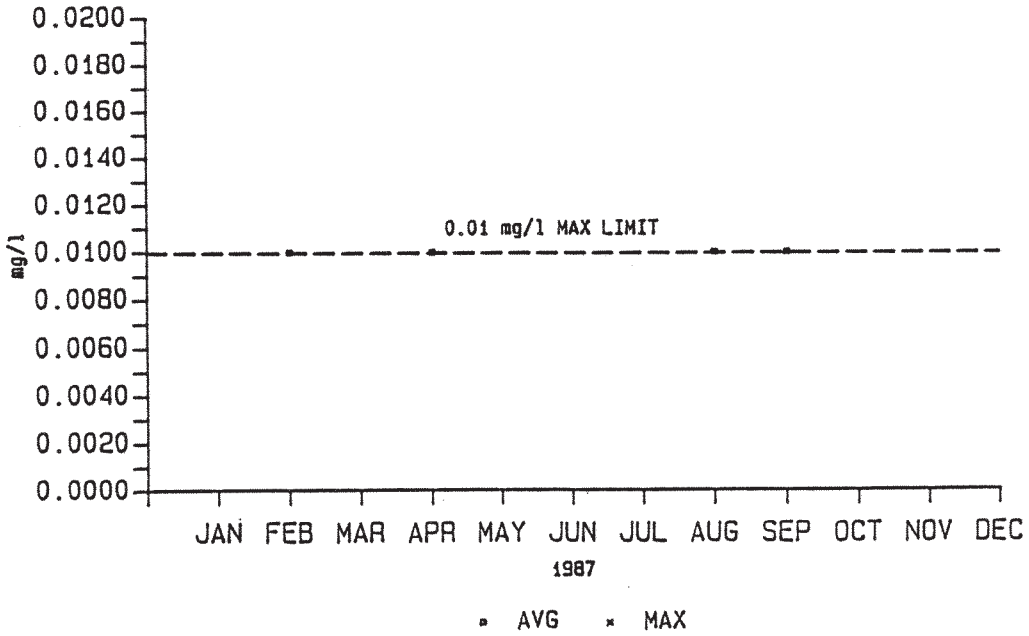

Figure C-5.13 Metals (As), Outfall 001

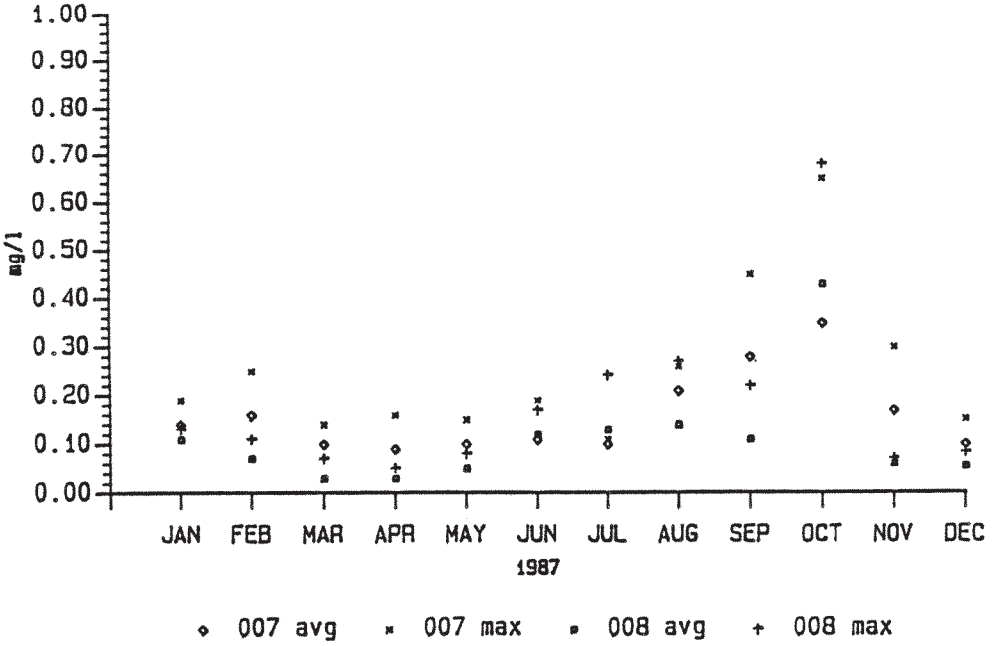

Figure C-5.14 Metals (Fe), Outfalls 007, 008

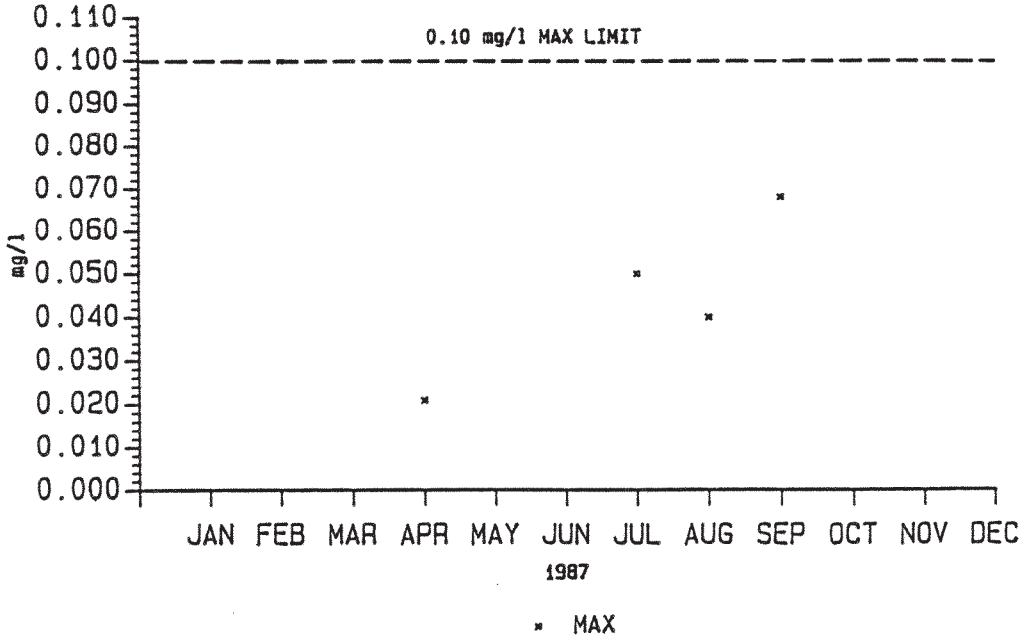

Figure C-5.15 Cyanide, Outfall 001

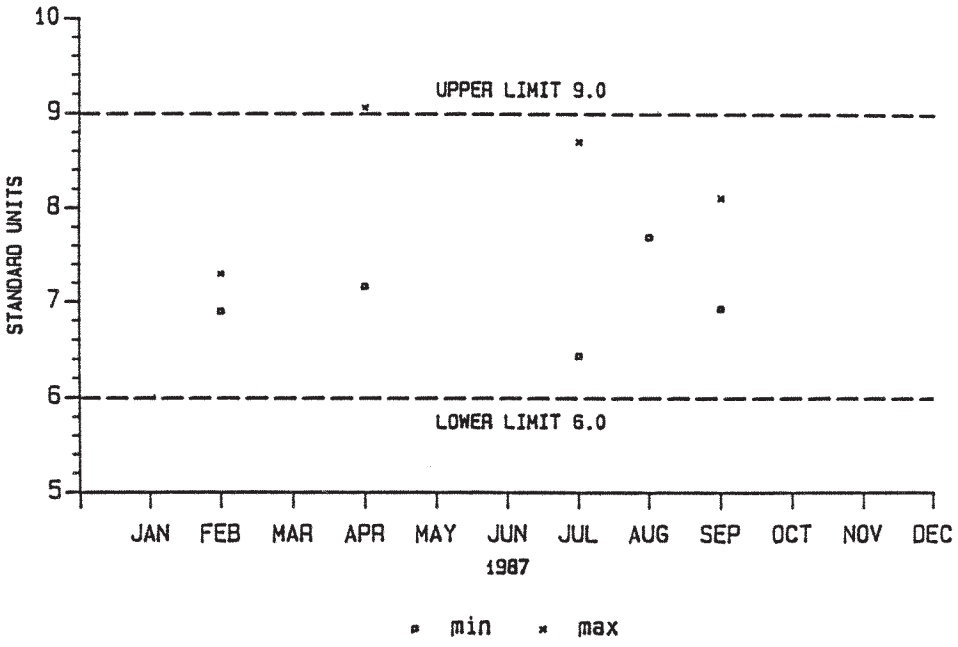

Figure C-5.16 pH, Outfall 001

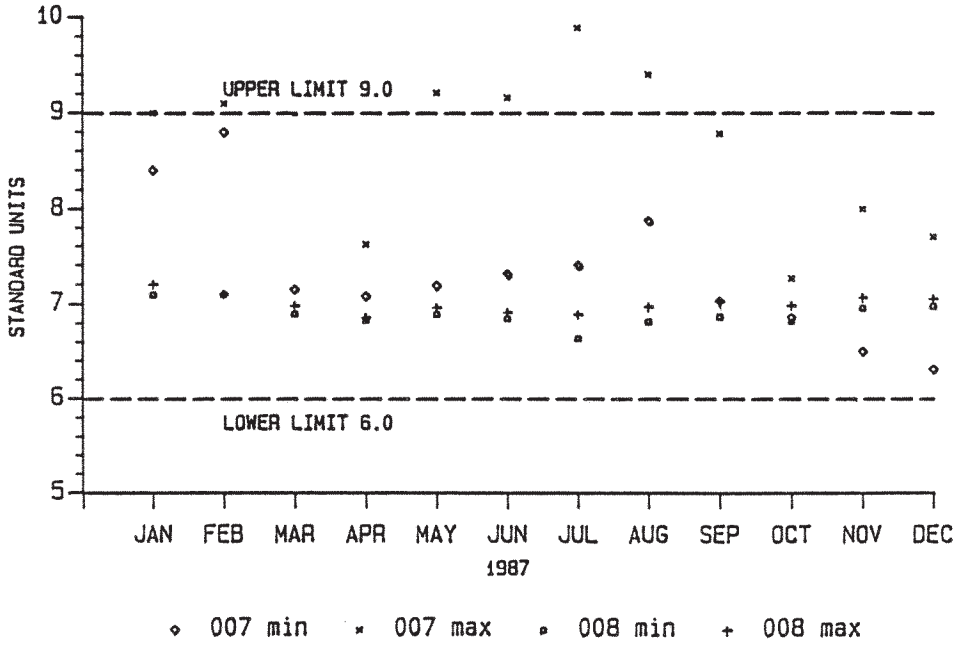

Figure C-5.17 pH, Outfalls 007, 008

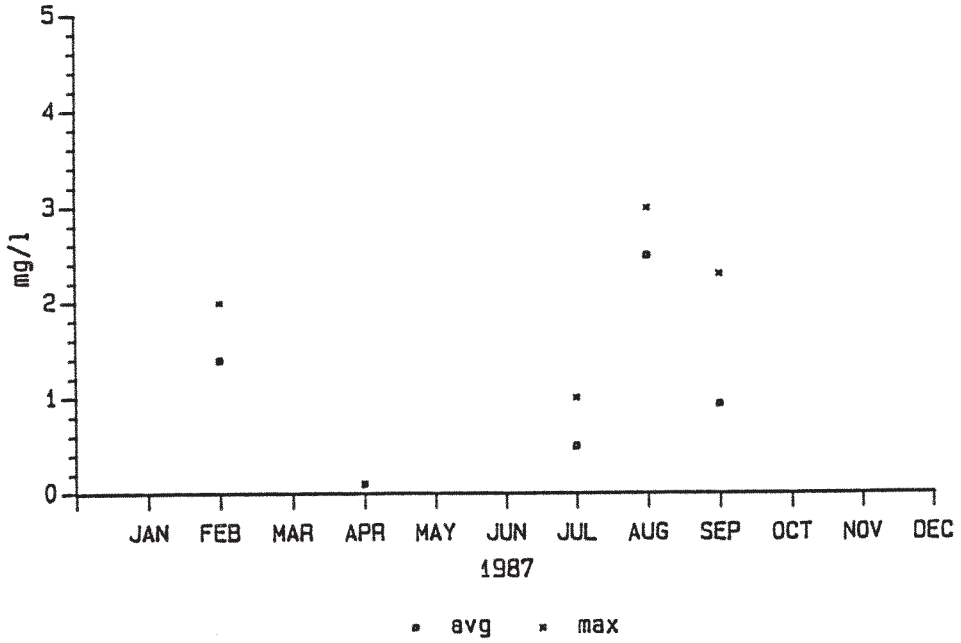

Figure C-5.18 Oil and Grease, Outfall 001

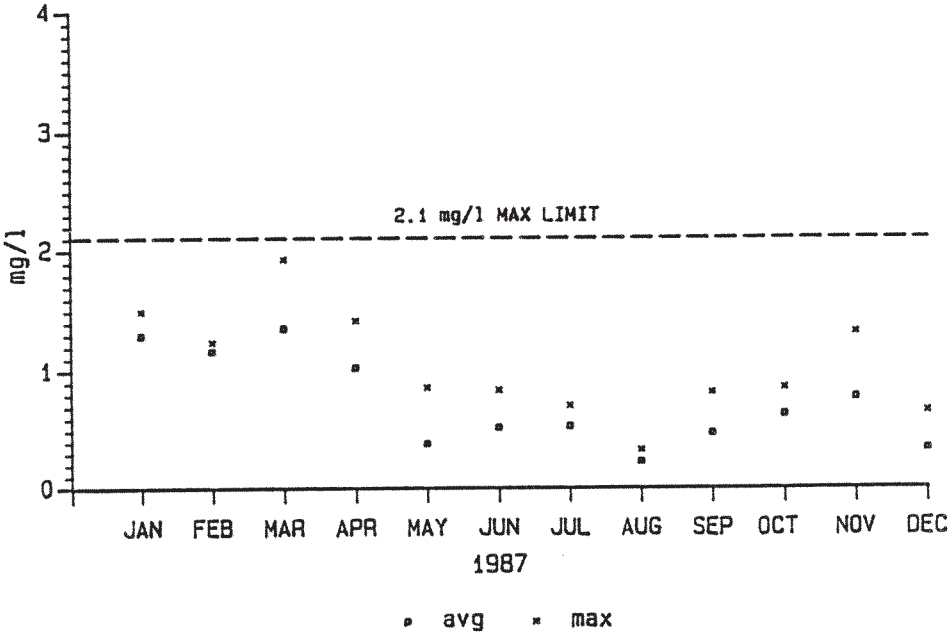

Figure C-5.19 Discharge Rate, Outfall 001

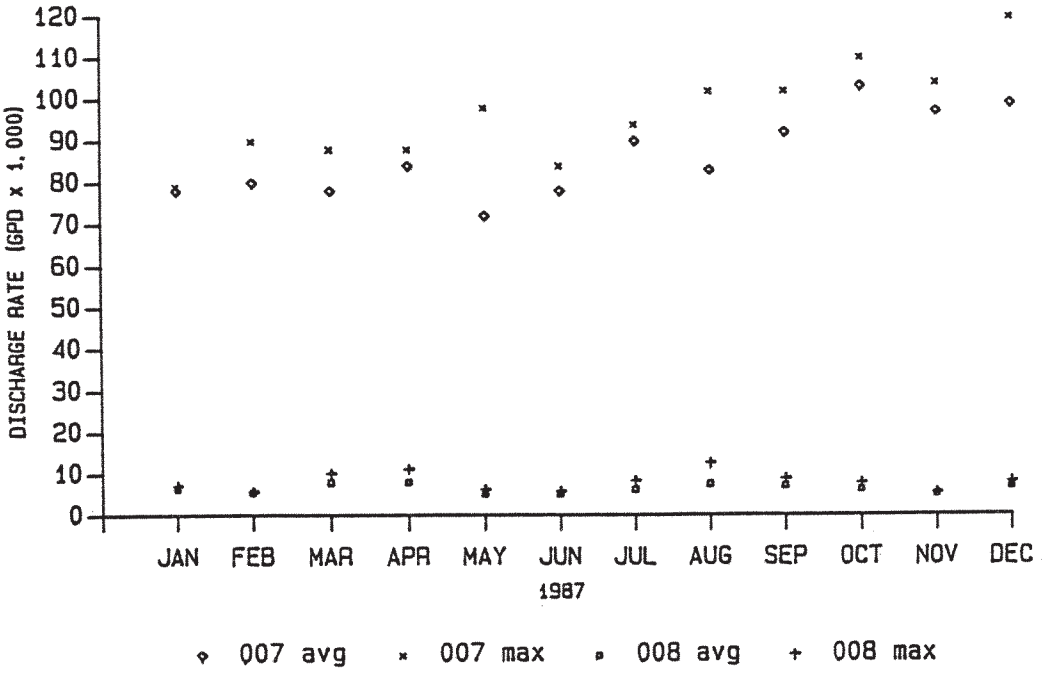

Figure C-5.20 Discharge Rate, Outfalls 007, 008

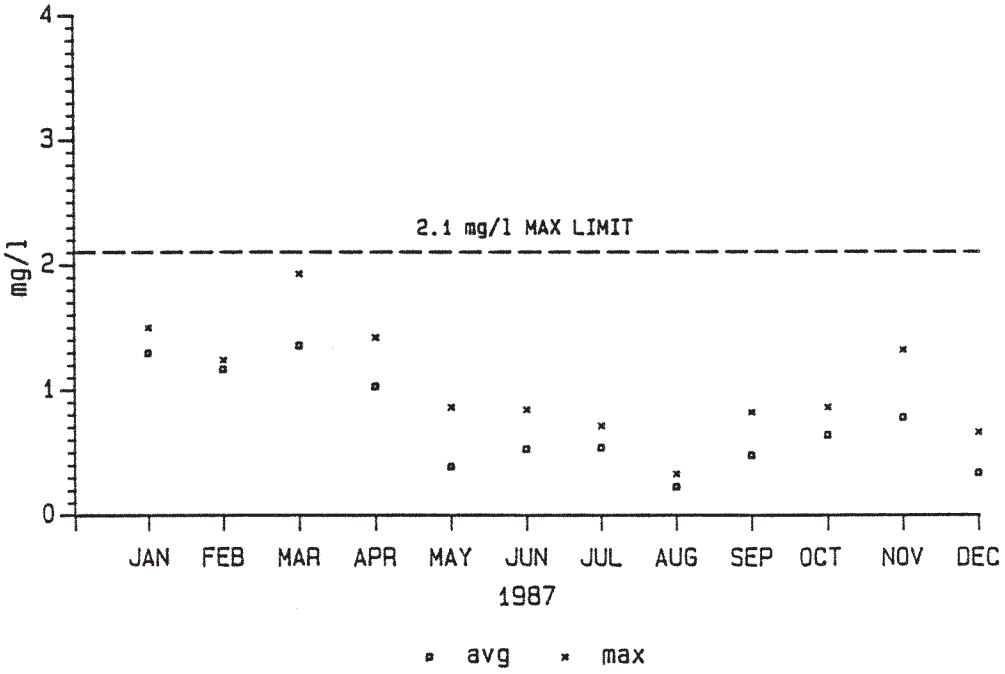

Figure C-5. 21 Flow Weighted Averages - Ammonia, Outfalls 001, 007

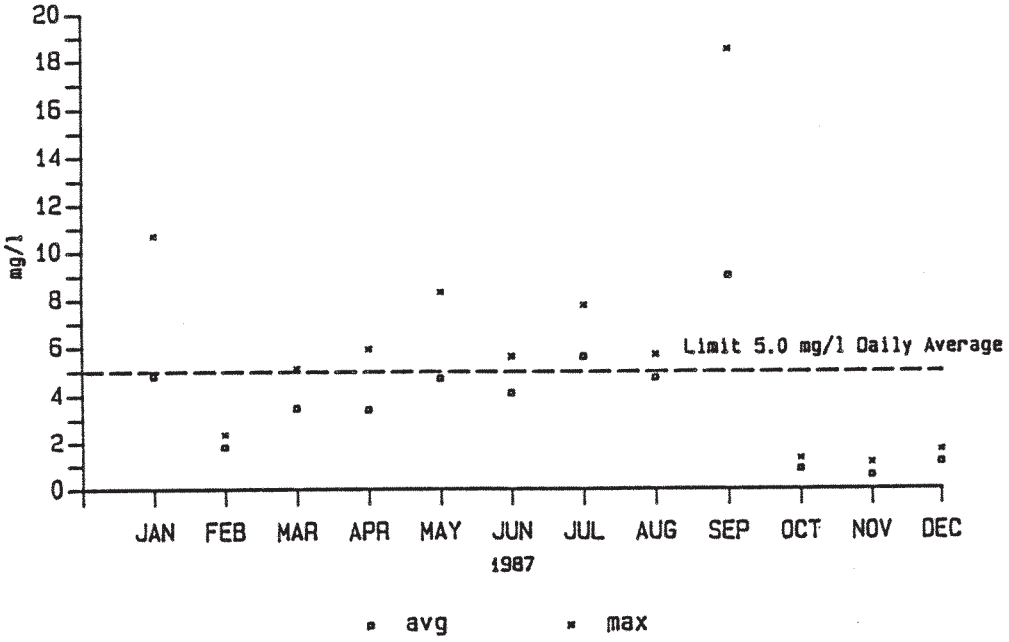

Figure C-5.22 Flow Weighted Averages - BOD-5, Outfalls 001, 007, 008

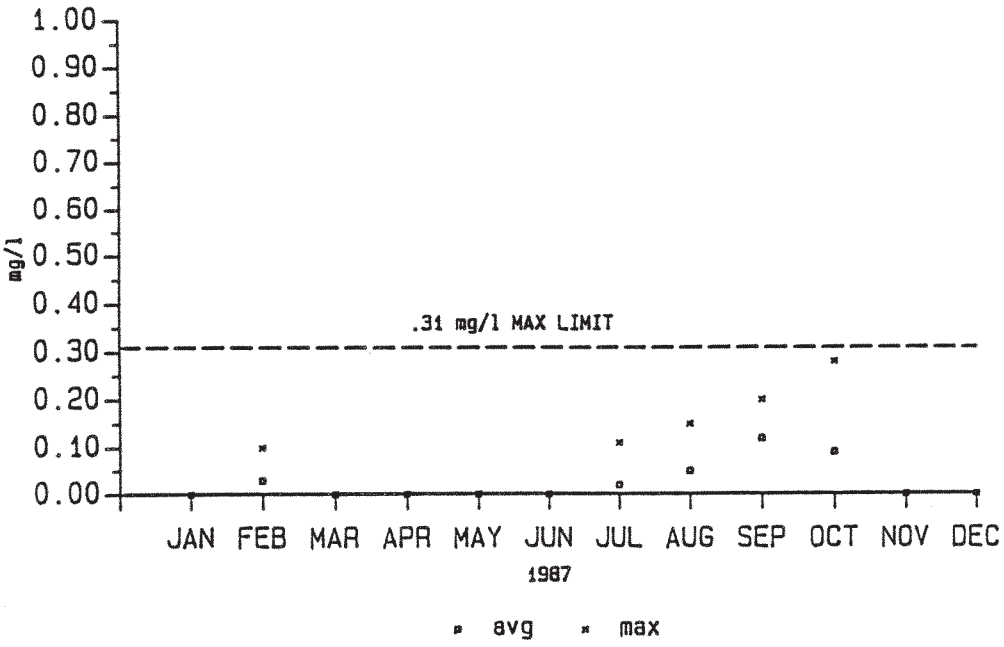

Figure C-5.23 Flow Weighted Averages - Metals (Fe) Outfalls 001, 007, 008