

4.5.2 SDS Water Quality

As required by its current NPDES Permit, the Port has monitored the stormwater quality from its SDS outfalls since 1995. Overall, the data show that the concentrations of various constituents in STIA stormwater are generally less than those in runoff from other residential, urban, and industrial areas in the region (Table 4-8). For example, the median concentrations for STIA constituents (column 3) are lower than those in urban stormwater (columns 5 and 6), with the exception of total recoverable copper. These data provide evidence for the efficacy of BMPs that have been implemented by the Port over a number of years. The following sections provide a brief description for each constituent category.

Table 4-8. Seattle-Tacoma International Airport runoff quality (1994-2000) compared to regional and national urban stormwater quality studies^a (from Port of Seattle 2000b).

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constituent	Units	STIA: RW/TW ^b (median)	STIA: All Data (median)	Belleuve: Sturtevant Creek ^c (log-normal median)	Belleuve: BURP ^e (mean, median)	King County: (Metro 1982) (mean)	NURP ^h : (EPA 1983) (median)	Portland NPDES ⁱ (median)	Freeway Runoff (mean)
FOG	mg/L	0.5	1.0	3.7	2.5	7.8	-	-	30 ^f
TPH	mg/L	0.08	0.3 ^j	3.7	-	-	-	6.5	-
Fecal coliforms	mpn/ 100 ml	14	42	201	980	-	1000 to 21000	-	-
BOD	mg/L	5.0	6.0	-	6.6	-	9	20	-
TSS	mg/L	9	17	82.3	50	-	100	119	106 ^g
Turbidity	mg/L	7	13	29.4	19	-	-	-	-
NH3 ^d	mg/L	0.03	0.1	0.58	0.17	-	-	-	-
Cu (TR)	µg/L	26	25	10.4	-	20	34	40	43 ^g
Pb (TR)	µg/L	1	4	26.3	170	210	144	25	466 ^g
Zn (TR)	µg/L	34	69	161.4	120	110	160	376	638 ^g

^a "-" indicates no data available, reported, or applicable.

^b RW/TW = runways/taxiways, represented by SDS3, SDS4, SDN3, and SDN4 subbasin data.

^c From Bellevue (1996), Sturtevant Creek, downstream site.

^d Ammonia values are expressed as total ammonia, not as ammonia-nitrogen. Data from 1998 Annual Report (Port of Seattle 1998b), the last year in which NH3 was reported.

^e Bellevue Urban Runoff Program. From Pitt and Bissonnette (1984). For turbidity, Cu, Pb, and Zn, data reported as mean of grab samples; therefore, Bellevue (1996) data are better comparators because they represent median.

^f Highway runoff in England (Booth and Homer 1995).

^g Highway runoff from Interstate 5 freeway in Seattle with 57,000 automobiles per day, 43 to 54 storm samples in 1980-81 (Chui, et al. 1982).

^h National Urban Runoff Program.

ⁱ City of Portland (1993).

^j Results from NWTPH-Dx analyses since March 1998. NWTPH-Dx method replaced TPH (IR).

FOG = Fats, oil, grease

TPH = Total petroleum hydrocarbons

BOD = Biochemical oxygen demand

TSS = Total suspended solids

