eTable 1. Pearson Correlation Coefficients[#] Between Air Toxics Measured at 4 Monitoring Stations in Los Angeles County, 1995-2006.

	Benzene	Perchloroethylene	1,3-Butadiene	Toluene	Ortho-Xylene	Meta/para-Xylene	Ethyl Benzene	Methylene Chloride	PAHs	Lead	Vanadium	Chromium	Manganese	Nickel	Selenium	Acetaldehyde	Formaldehyde	Ortho-dichlorobenzene	Para-dichlorobenzene	Chloroform	Tricloroethylene	Copper	Hexavalent Chromium	Molybdenum
Benzene	1.00																							
Perchloroethylene	0.94	1.00																						
1,3-Butadiene	0.97	0.93	1.00																					
Toluene	0.90	0.91	0.85	1.00																				
Ortho-Xylene	0.93	0.91	0.90	0.91	1.00																			
Meta/para-Xylene	0.84	0.84	0.82	0.88	0.94	1.00																		
Ethyl Benzene	0.90	0.88	0.88	0.84	0.94	0.83	1.00																	
Methylene Chloride	0.78	0.80	0.72	0.79	0.77	0.69	0.79	1.00																
PAHs	0.85	0.81	0.89	0.72	0.73	0.65	0.71	0.70	1.00															
Lead	0.69	0.76	0.67	0.76	0.73	0.57	0.70	0.65	0.40	1.00														
Vanadium	-0.49	-0.51	-0.50	-0.53	-0.48	-0.31	-0.50	-0.55	-0.44	-0.48	1.00													
Chromium	-0.03	0.02	-0.12	0.15	-0.00	-0.01	0.03	0.31	0.37	0.08	0.22	1.00												
Manganese	-0.11	-0.04	-0.21	0.10	-0.06	-0.03	-0.06	0.24	0.06	0.07	0.31	0.94	1.00											
Nickel	-0.27	-0.23	-0.34	-0.17	-0.29	-0.26	-0.26	-0.04	-0.07	-0.16	0.51	0.86	0.83	1.00										
Selenium	0.24	0.38	0.20	0.37	0.25	0.17	0.25	0.44	0.34	0.49	-0.08	0.66	0.61	0.58	1.00									
Acetaldehyde	0.19	0.31	0.23	0.26	0.27	0.25	0.19	0.15	0.27	0.32	-0.12	0.09	0.05	0.00	0.39	1.00								
Formaldehyde	0.22	0.28	0.25	0.24	0.31	0.30	0.26	0.15	0.26	0.43	-0.10	0.13	0.11	-0.00	0.41	0.63	1.00							
Ortho-dichlorobenzene	0.01	-0.05	-0.04	-0.01	0.13	0.07	0.09	0.06	0.00	0.29	-0.06	0.02	0.02	-0.19	-0.09	-0.03	0.18	1.00						
Para-dichlorobenzene	0.01	-0.04	-0.02	-0.01	0.11	0.18	0.10	-0.01	-0.06	0.04	-0.18	-0.19	-0.16	-0.24	-0.12	-0.32	-0.09	0.33	1.00					
Chloroform	0.39	0.44	0.33	0.43	0.51	0.52	0.45	0.37	0.40	0.24	-0.26	-0.03	-0.05	-0.23	0.05	0.33	0.36	0.29	0.20	1.00				
Tricloroethylene	0.34	0.32	0.38	0.43	0.37	0.43	0.38	0.32	0.23	0.38	-0.52	-0.15	-0.10	-0.39	0.03	-0.12	-0.13	-0.05	0.28	-0.06	1.00			
Copper	0.52	0.62	0.50	0.49	0.50	0.54	0.47	0.56	0.36	0.48	-0.28	-0.00	0.01	-0.13	0.27	-0.02	0.20	0.37	0.32	0.33	0.25	1.00		
Hexavalent Chromium	0.52	0.34	0.42	0.43	0.47	0.40	0.38	0.54	0.21	0.18	-0.22	0.15	0.00	-0.14	-0.03	-0.05	0.10	0.33	-0.09	0.26	-0.11	0.12	1.00	
Molybdenum	0.54	0.49	0.47	0.47	0.49	0.33	0.41	0.43	0.41	0.38	0.02	0.38	0.28	0.36	0.50	0.37	0.46	0.12	-0.25	0.19	-0.23	0.10	0.25	1.00

pregnancy averages based on non-cases.

eTable 2: Air Toxics Measures Entire Pregnancy Averages Among Non-cases 5 km Distance to Governmental Air Monitoring Stations, Los Angeles County.

Air Toxic	Factor load[#]	Mean (SD)	IQR
Factor 1			
Benzene (ppbV)	0.96	1.16 (0.58)	0.78
Perchloroethylene (ppbV)	0.96	0.23 (0.17)	0.24
1,3-Butadiene (ppbV)	0.95	0.31 (0.17)	0.28
Toluene (ppbV)	0.94	3.04 (1.33)	1.68
Ortho-Xylene (ppbV)	0.93	0.49 (0.22)	0.28
Meta/para-Xylene (ppbV)	0.86	1.41 (0.62)	0.88
Ethyl Benzene (ppbV)	0.91	0.38 (0.16)	0.19
Methylene Chloride (ppbV)	0.85	0.77 (0.40)	0.54
PAHs (ppbv)	0.81	1.14 (0.49)	0.79
Lead (ng/m3)	0.73	23.96 (11.54)	13.64
Vanadium (ng/m3)	-0.61	12.12 (5.19)	6.58
Factor 2			
Chromium (ng/m3)	0.97	7.09 (3.80)	1.74
Manganese (ng/m3)	0.94	26.99 (12.52)	5.62
Nickel (ng/m3)	0.91	6.39 (2.25)	1.82
Selenium (ng/m3)	0.73	1.60 (0.65)	0.59
Factor 3			
Acetaldehyde (ppbV)	0.78	1.39 (0.42)	0.50
Formaldehyde (ppbV)	0.76	4.00 (1.30)	1.93
Factor 4			
Ortho-Dichloro-benzene (ppbV)	0.86	0.14 (0.03)	0.02
Para-Dichloro-benzene (ppbV)	0.64	0.16 (0.03)	0.02
Not loading	-		
Chloroform (ppbV)	-	0.05 (0.01)	0.01
Tricloroethylene (ppbV)	-	0.11 (0.14)	0.14
Copper (ng/m3)	-	59.12 (51.69)	22.81
Hexavalent Chromium (ng/m3)	-	0.19 (0.16)	0.10
Molybdenum (ng/m3)	-	2.51 (0.53)	0.82

[#]Factor loadings for given factors absolute values: >0.60; Varimax Rotation Factor Pattern (SAS 9.3).

eTable 3. Trimester-Specific Means for Pregnancy Exposure to Air Toxics in 5 km Buffer Birth Years 1995-2006.

	Trimester 1			Trimester 2			Trimester 3		
Air Toxic	*N*	Mean	SD	*N*	Mean	SD	*N*	Mean	SD
Factor 1									
Benzene	128,221	1.27	0.78	128,221	1.17	0.75	127,731	1.06	0.65
Perchloroethylene	118,910	0.25	0.20	118,910	0.23	0.19	118,449	0.21	0.18
1,3-Butadiene	128,221	0.34	0.23	128,221	0.32	0.23	127,731	0.28	0.20
Toluene	122,584	3.26	1.85	122,584	3.04	1.79	122,102	2.85	1.67
Ortho-Xylene	121,744	0.54	0.32	121,744	0.49	0.30	121,265	0.44	0.26
Meta/para-Xylene	122,485	1.53	0.93	122,485	1.39	0.89	121,998	1.32	0.85
Ethyl Benzene	121,902	0.41	0.24	121,902	0.38	0.22	121,425	0.36	0.21
Methylene Chloride	123,704	0.82	0.49	123,704	0.77	0.47	123,218	0.74	0.46
PAHs	109,899	1.31	0.99	109,899	1.14	0.96	109,489	0.97	0.79
Lead	79,290	25.22	17.43	79,290	24.41	17.48	78,986	22.70	15.04
Vanadium	79,290	11.99	6.10	79,290	12.01	5.97	78,986	12.41	6.16
Factor 2									
Chromium	79,290	7.17	4.15	79,290	7.16	4.47	78,986	7.03	4.51
Manganese	79,290	27.24	13.49	79,290	27.14	14.84	78,986	26.82	14.87
Nickel	79,290	6.33	2.65	79,290	6.37	2.79	78,986	6.46	2.77
Selenium	79,290	1.63	0.85	79,290	1.58	0.79	78,986	1.57	0.84
Factor 3									
Acetaldehyde	123,429	1.41	0.59	123,429	1.38	0.57	122,959	1.39	0.60
Formaldehyde	123,429	3.94	1.57	123,429	3.97	1.65	122,959	4.08	1.75
Factor 4									
Ortho-dichlorobenz.	105,254	0.14	0.05	105,254	0.14	0.05	104,836	0.14	0.04
Para-dichlorobenzene	104,914	0.16	0.05	104,914	0.15	0.05	104,496	0.16	0.05
Not loading									
Chloroform	123,824	0.05	0.02	123,824	0.05	0.02	123,340	0.05	0.02
Trichloroethylene	120,431	0.13	0.19	120,431	0.11	0.16	119,962	0.10	0.14
Copper	79,290	59.13	74.33	79,290	58.25	70.51	78,986	61.20	82.51
Hexavalent-chromium	73,843	0.20	0.30	73,843	0.20	0.31	73,548	0.19	0.30
Molybdenum	79,290	2.58	0.80	79,290	2.53	0.79	78,986	2.43	0.69

eTable 4. Characteristics of the Population for the 10 Mile Cohort, Los Angeles County, Birth Years 1995-2006.

	Controls (N = 1,076,628) n (%)
Mother's race/ethnicity	
Non-Hispanic White	139,998 (13)
Hispanic White	731,269 (68)
African American/Black	89,219 (8)
Asian	109,379 (10)
Other/not specified	4,937 (0.5)
Missing	1,826 (0.2)
Mother's age	
≤ 18	78,741 (7)
19-25	369,838 (34)
26-30	289,303 (27)
31-35	219,978 (20)
> 35	118,768 (11)
Source of payment for prenatal care	
Public (Medi-Cal)	621,155 (58)
Private	420,664 (39)
Other	28,945 (3)
Missing	5,864 (0.5)
Parity	
Prima para	407,698 (38)
Second	333,571 (31)
Third	193,646 (18)
More	141,345 (13)
Missing	368 (0)
Maternal education	
Less than high school	447,912 (42)
High school	288,158 (27)
More than high school	329,354 (31)
Missing	11,204 (1)
US born	
Yes	415,418 (39)
No	659,548 (61)
Missing	1,662 (0.2)
Child sex	
Male	544,939 (51)
Female	531,687 (49)
Missing	2 (0)

Differences to 100% due to rounding.

eTable 5. Distribution of Cases and Non-cases by Air Toxics Monitor Los Angeles County, Birth Years 1995-2006.

	Cases N (%)	**Non-cases** N (%)
Long Beach	140 (18)	43,016 (29)
Azusa	57 (7)	10,566 (7)
Burbank	157 (20)	21,322 (14)
LA Downtown	414 (54)	73,040 (49)
Missing	-	10 (0)

Differences to 100% due to rounding.

eTable 6: Adjusted[#] Odds Ratios for Pregnancy Exposure to Air Toxics[1] in 5km Distance for Autistic Disorder in Two- and Three Pollutant Models, Birth Years 1995-2006, Los Angeles County.

Air Toxic 1	IQR	Air Toxic 2	IQR	Air Toxic 3	IQR	N (case/ total population)	Air toxic 1 OR (95% CI)	Air toxic 2 OR (95% CI)	Air toxic 3 OR (95% CI)
1,3-Butadiene	0.28	Formaldehyde	1.93			560/107,245	1.25 (0.88, 1.78)	1.32 (1.13, 1.54)	
Meta/para-Xylene	0.88	Formaldehyde	1.93			554/102,559	1.36 (1.09, 1.68)	1.27 (1.08, 1.48)	
1,3-Butadiene	0.28	Formaldehyde	1.93	Trichloroethylene	0.14	544/102,255	1.15 (0.79, 1.68)	1.39 (1.18, 1.62)	1.14 (1.01, 1.28)
Meta/para-Xylene	0.88	Formaldehyde	1.93	Trichloroethylene	0.14	538/97,577	1.24 (0.99, 1.56)	1.34 (1.14, 1.58)	1.12 (0.99, 1.27)
1,3-Butadiene	0.28	Meta/para-Xylene	0.88			641/120,714	0.60 (0.31, 1.15)	1.99 (1.34, 2.95)	
1,3-Butadiene	0.28	Meta/para-Xylene	0.88	Lead	13.64	262/61,498	0.67 (0.29, 1.55)	1.32 (0.77, 2.25)	1.43 (1.1, 1.88)

[#]Adjusted for: birth year, maternal race/ethnicity, maternal age and education, child sex, type of insurance, place of birth mother (US vs. non US), parity (prima para, 2, 3 or more births).

eTable 7. Pregnancy Exposure to Air Toxics[1] in 5km Distance Adjusted[#] Odds Ratios (per IQR increase) for Autistic Disorder by Sex, Birth Years 1995-2006, Los Angeles County.

	Boys			Girls		
Air Toxic	**case/ total population n**	Odds Ratio	95% CI	**case/ total population n**	Odds Ratio	95% CI
Factor 1						
Benzene	523/64,628	1.41	1.06, 1.89	128/61,774	1.62	0.90, 2.89
Perchloroethylene	497/59,978	1.43	1.08, 1.90	122/57,312	1.29	0.73, 2.29
1,3-Butadiene	523/64,628	1.54	1.11, 2.15	128/61,774	1.79	0.89, 3.58
Toluene	507/61,808	1.39	1.12, 1.74	124/59,062	1.26	0.80, 1.99
Ortho-Xylene	494/61,415	1.44	1.18, 1.77	125/58,644	1.35	0.91, 2.00
Meta/para-Xylene	513/61,711	1.53	1.24, 1.88	128/59,003	1.45	0.96, 2.19
Ethyl Benzene	491/61,524	1.50	1.23, 1.81	124/58,630	1.43	0.99, 2.05
Methylene Chloride~	514/62,335	1.10	0.93, 1.31	127/59,637	1.01	0.71, 1.42
PAHs	453/55,324	0.94	0.75, 1.17	104/53,181	1.62	0.97, 2.68
Lead	291/39,943	1.63	1.31, 2.01	57/38,430	0.98	0.60, 1.61
Vanadium	291/39,943	0.61	0.47, 0.78	57/38,430	1.04	0.64, 1.68
Factor 2						
Chromium	291/39,943	1.01	0.97, 1.06	57/38,430	1.01	0.90, 1.12
Manganese	291/39,943	1.02	0.98, 1.07	57/38,430	1.03	0.93, 1.14
Nickel	291/39,943	0.95	0.87, 1.05	57/38,430	1.05	0.87, 1.27
Selenium	291/39,943	1.04	0.93, 1.16	57/38,430	1.11	0.88, 1.39
Factor 3						
Acetaldehyde	516/62,277	1.22	1.08, 1.38	125/59,516	1.11	0.86, 1.43
Formaldehyde	516/62,277	1.38	1.19, 1.60	125/59,516	1.17	0.87, 1.56
Factor 4						
Ortho-dichlorobenzene	448/53,105	1.07	0.97, 1.18	110/50,764	0.95	0.78, 1.15
Para-dichlorobenzene	444/52,936	0.97	0.91, 1.03	108/50,597	0.92	0.81, 1.05
Not loading						
Chloroform	510/62,456	1.05	0.93, 1.18	126/59,665	1.10	0.87, 1.39
Trichloroethylene	501/60,701	1.16	1.03, 1.31	123/58,080	1.07	0.84, 1.36
Copper	291/39,943	1.07	1.00, 1.16	57/38,430	1.14	0.99, 1.31
Hexavalent Chromium	232/37,173	0.99	0.88, 1.11	50/35,789	0.70	0.33, 1.49
Molybdenum[#]	291/39,943	0.88	0.65, 1.18	57/38,430	1.10	0.55, 2.17

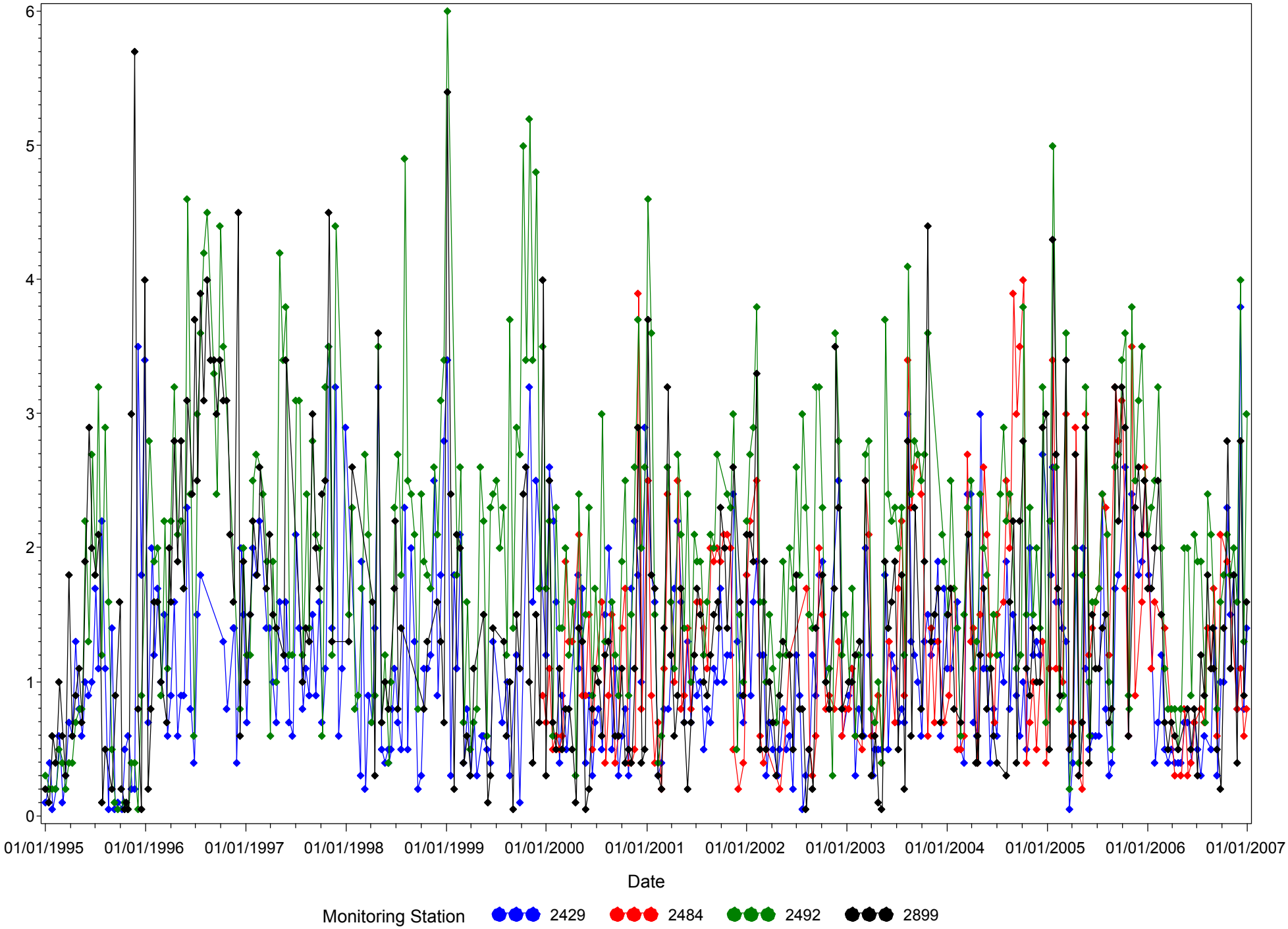
[#]Adjusted for: birth year, maternal race/ethnicity, maternal age and education, type of insurance, place of birth mother (US vs. non US), parity (prima para, 2, 3 or more births).

eFigure 1. Map of the Los Angeles Basin with California Air Toxics Monitoring Stations (Long Beach, Azusa, Burbank, Los Angeles Downtown) indicated.

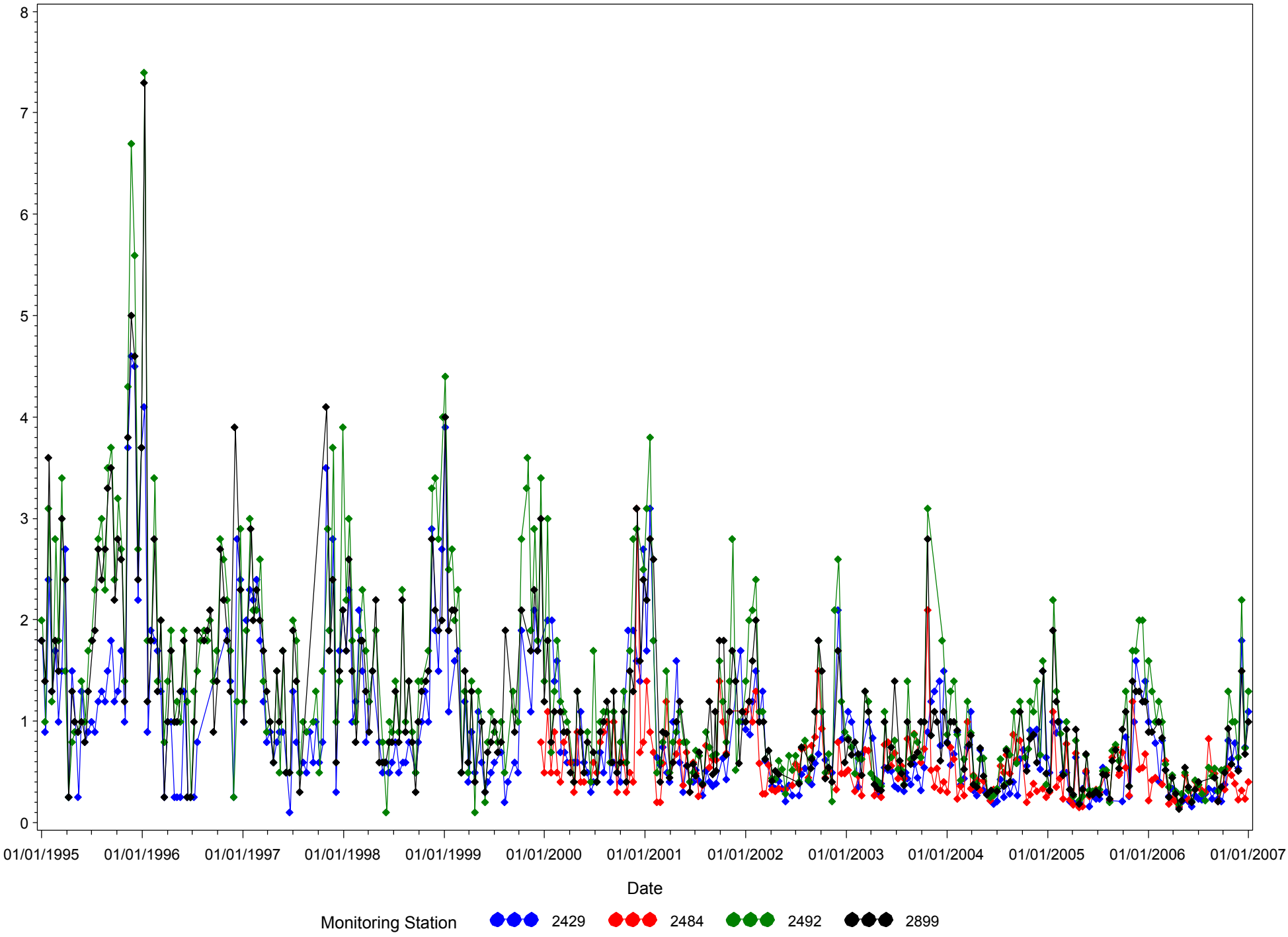

Burbank
Azusa
Los Angeles
North Long Beach
Legend
CARB stations
Highways
0 5 10 20 Kilometers
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

eFigure 2. Plots of 12-day measurement 24 hours averages 1995 – 2006 by monitoring site and air toxic. Legend for monitoring stations: 2429= Long Beach; 2484= Azusa; 2492= Burbank; 2899= Los Angeles downtown.

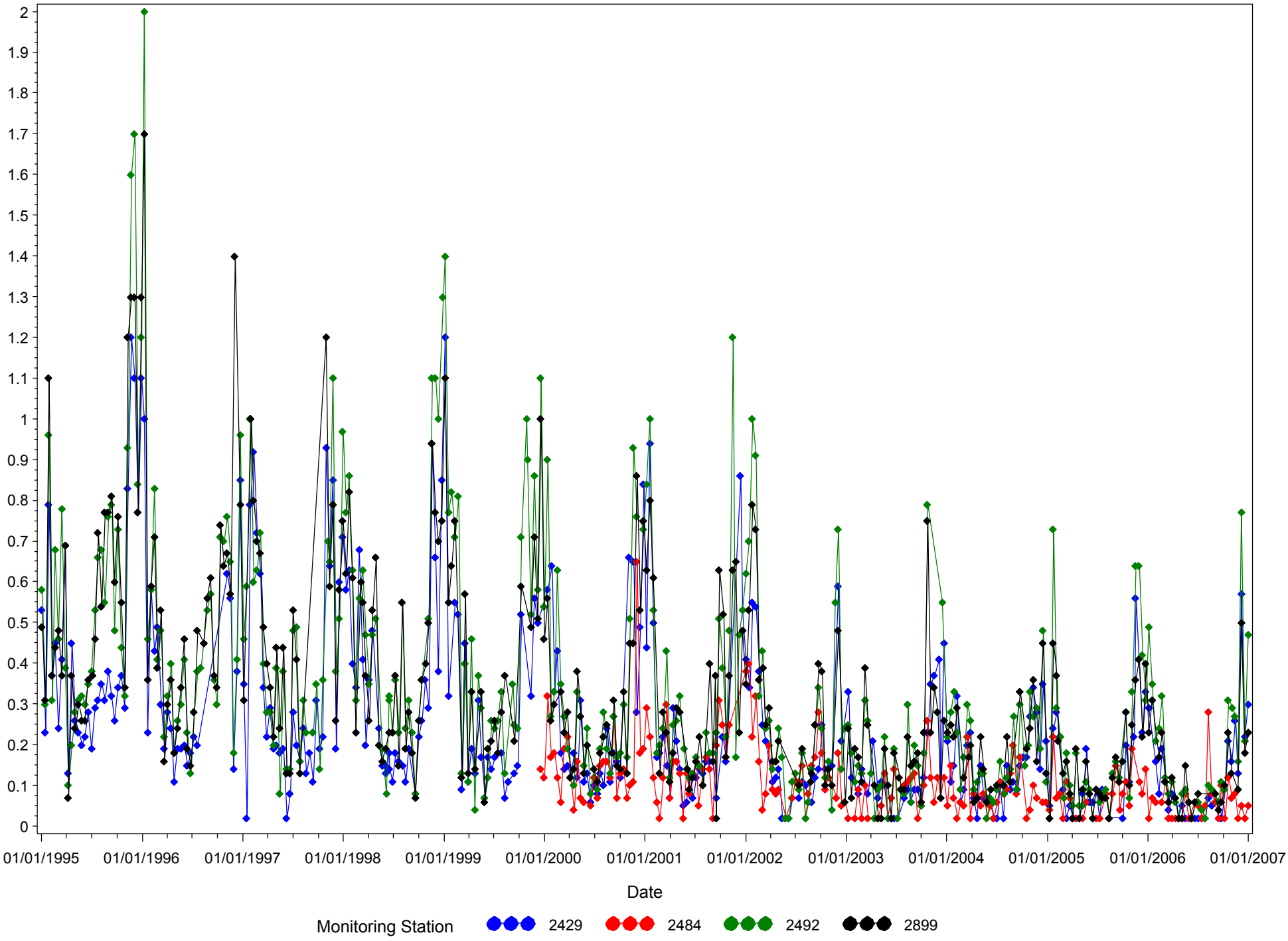
Average ACCHO Exposure by Monitoring Station



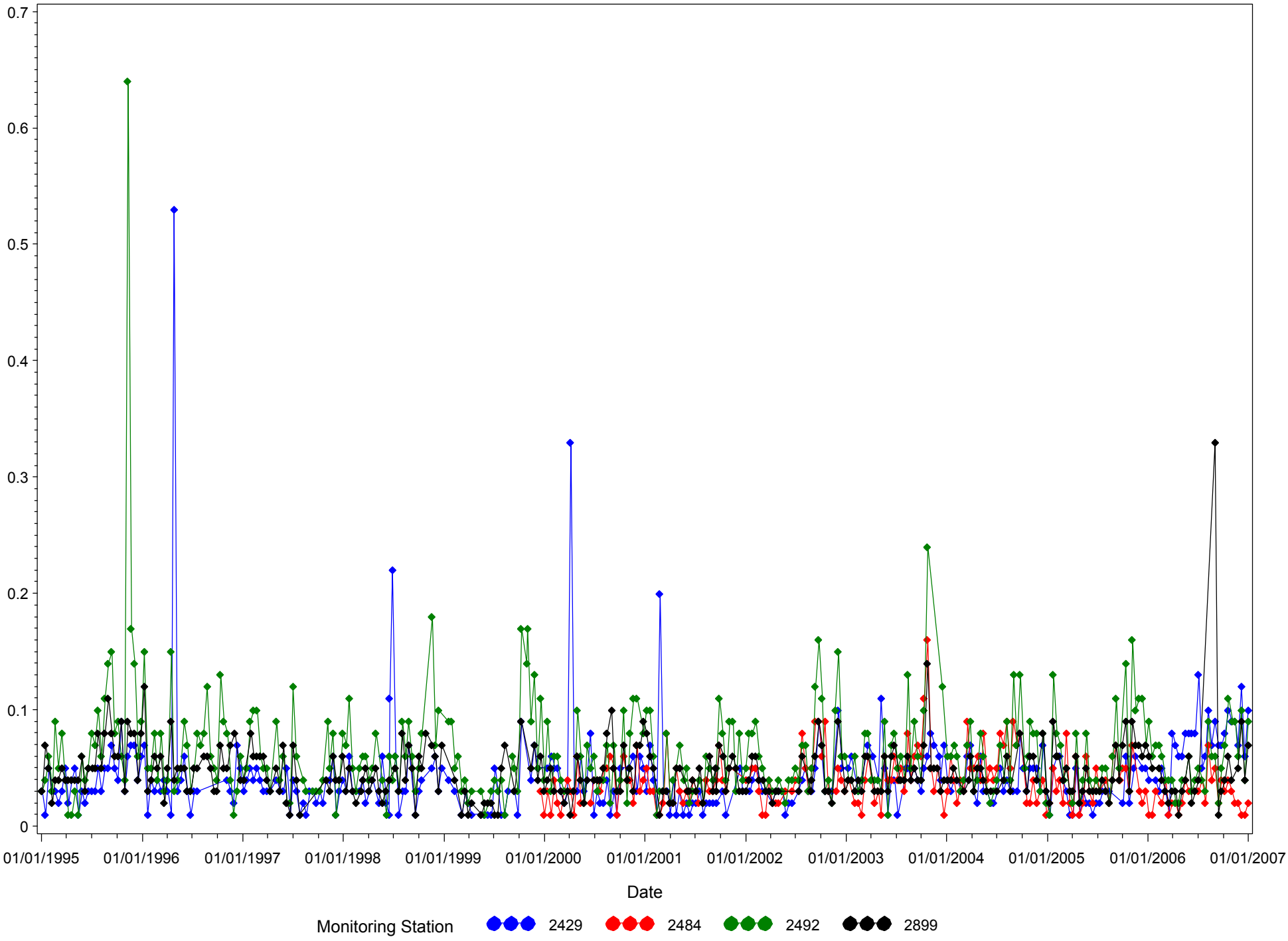
Average BENZ Exposure by Monitoring Station



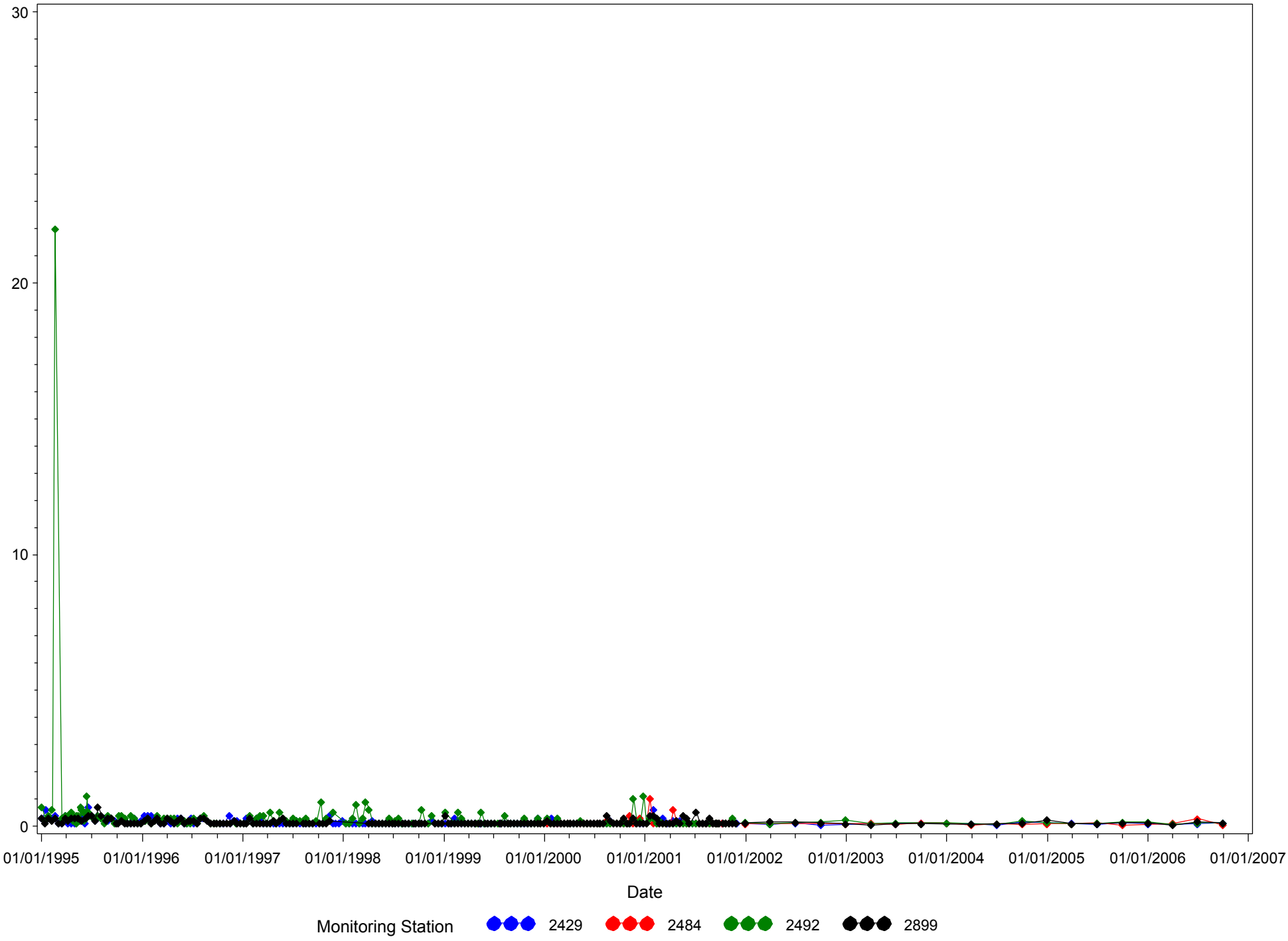
Average BUTA Exposure by Monitoring Station



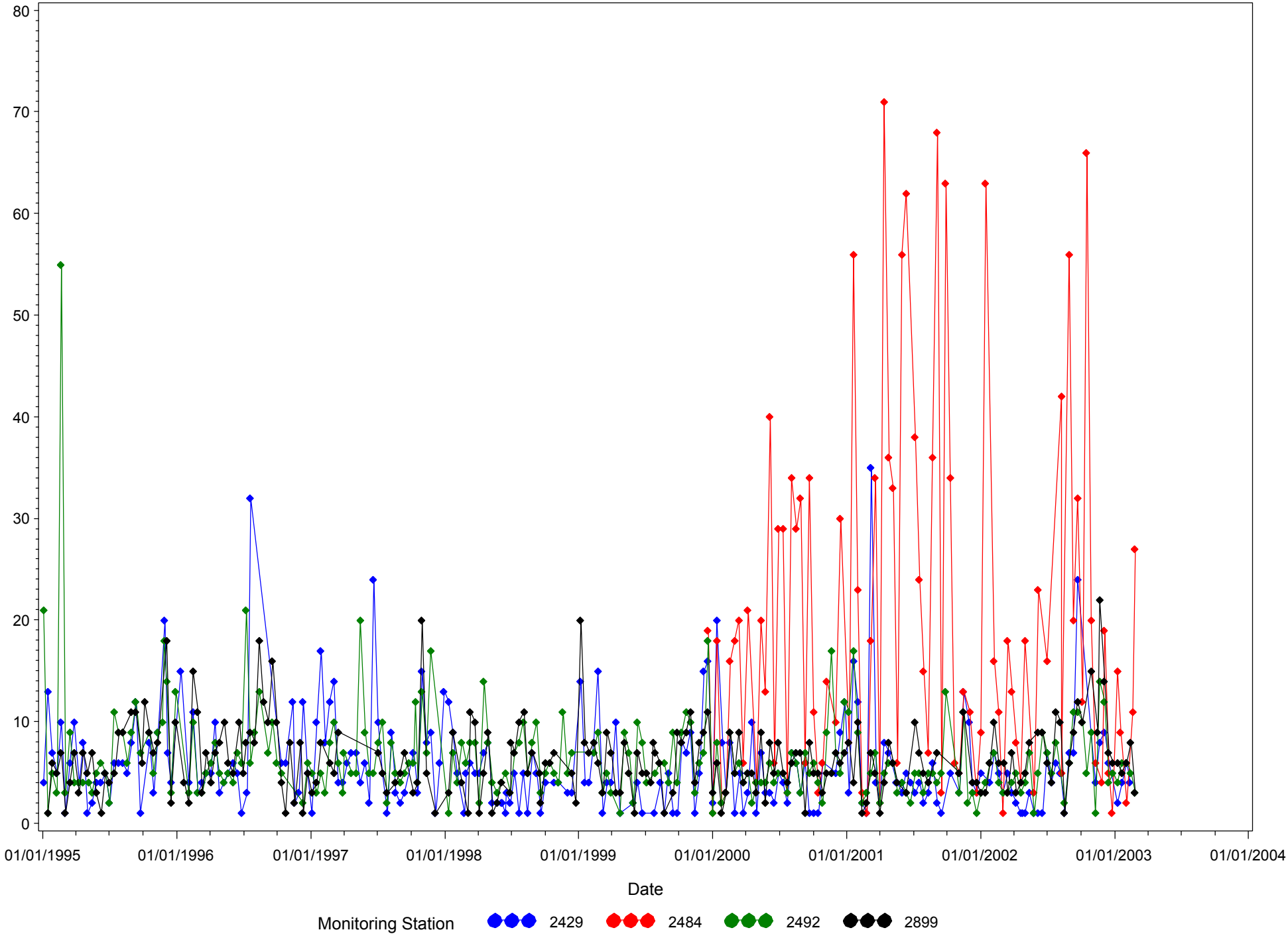
Average CHCL3 Exposure by Monitoring Station



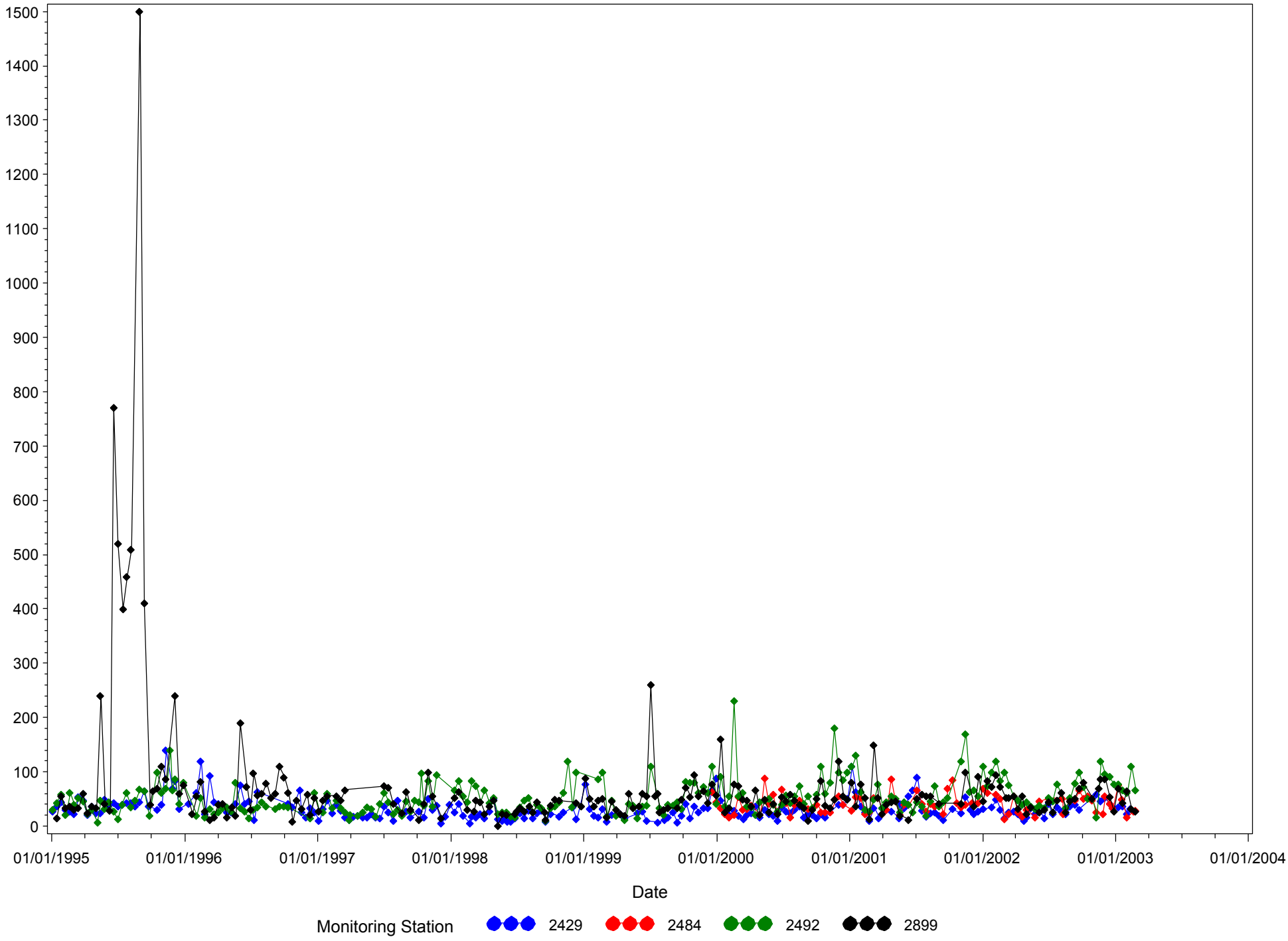
Average CR6 Exposure by Monitoring Station



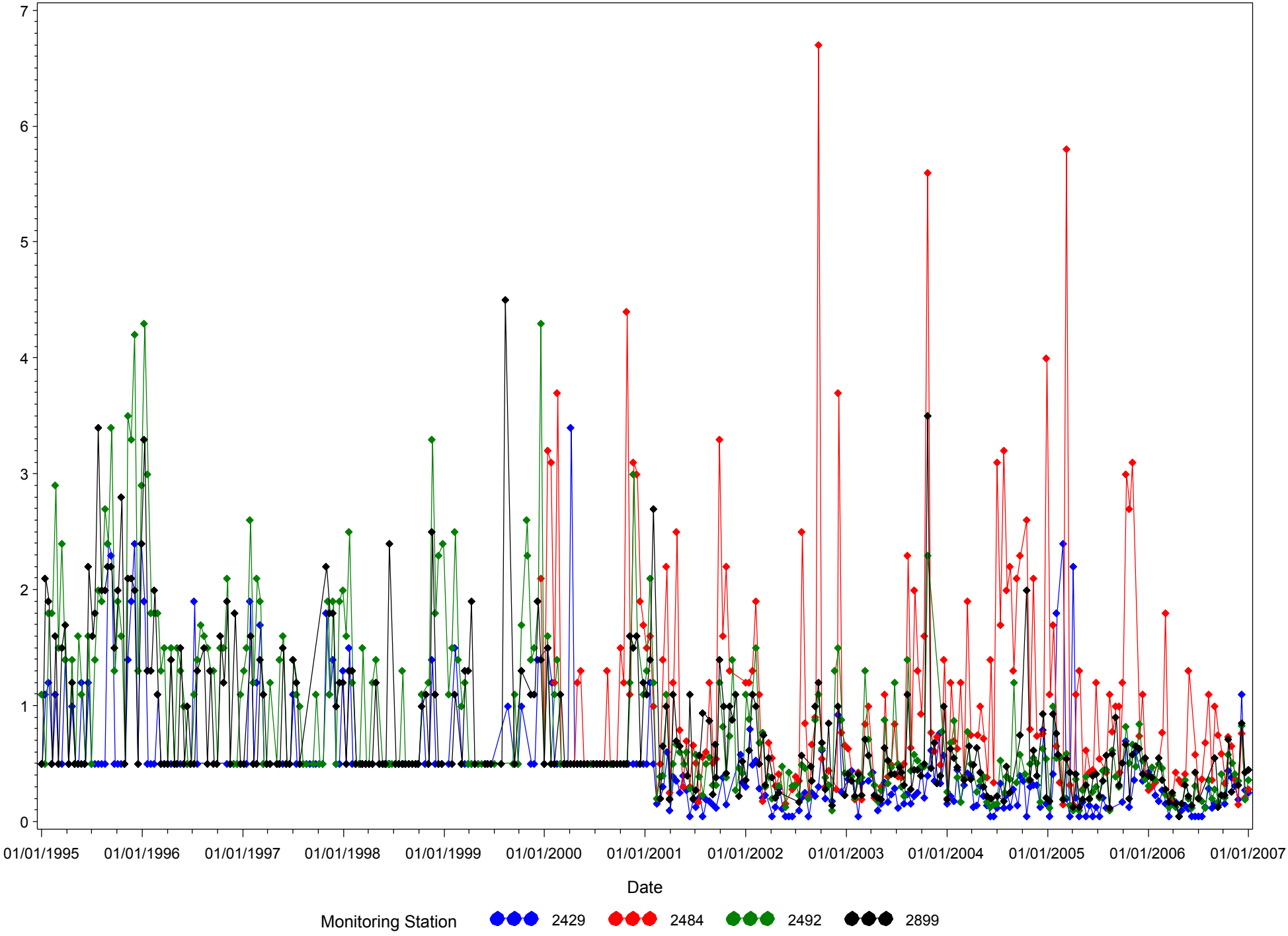
Average CR Exposure by Monitoring Station



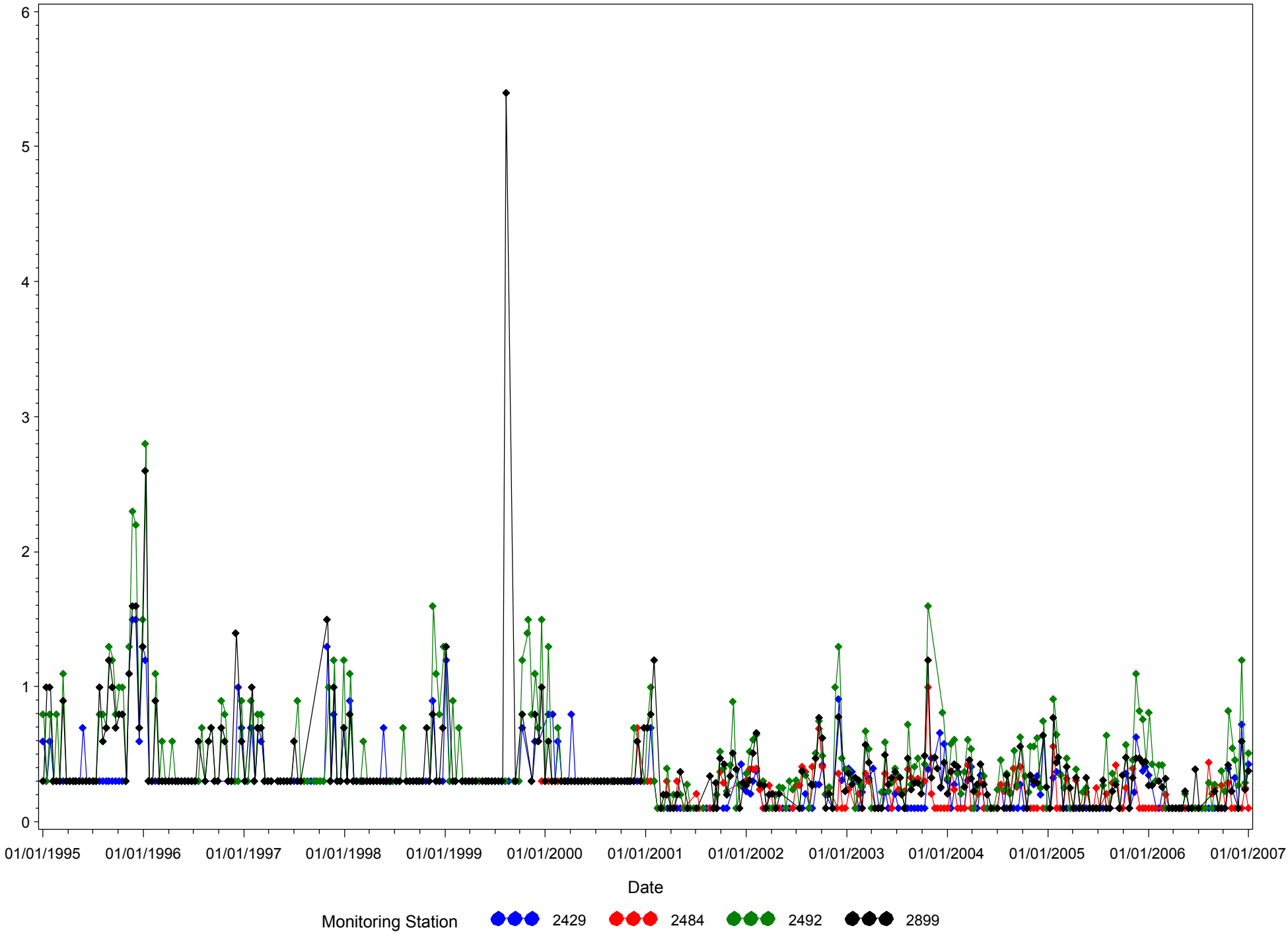
Average CU Exposure by Monitoring Station



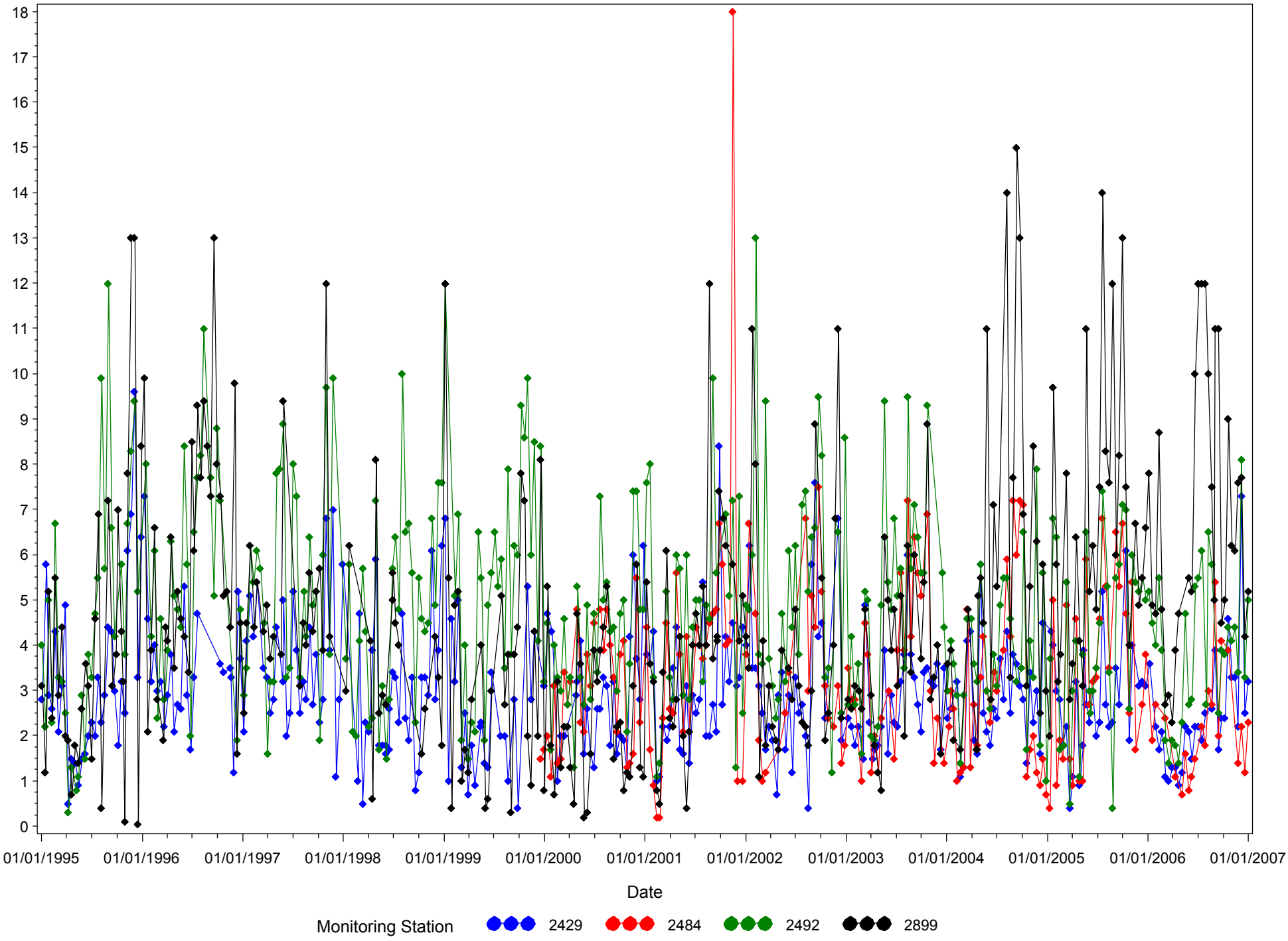
Average DCM Exposure by Monitoring Station



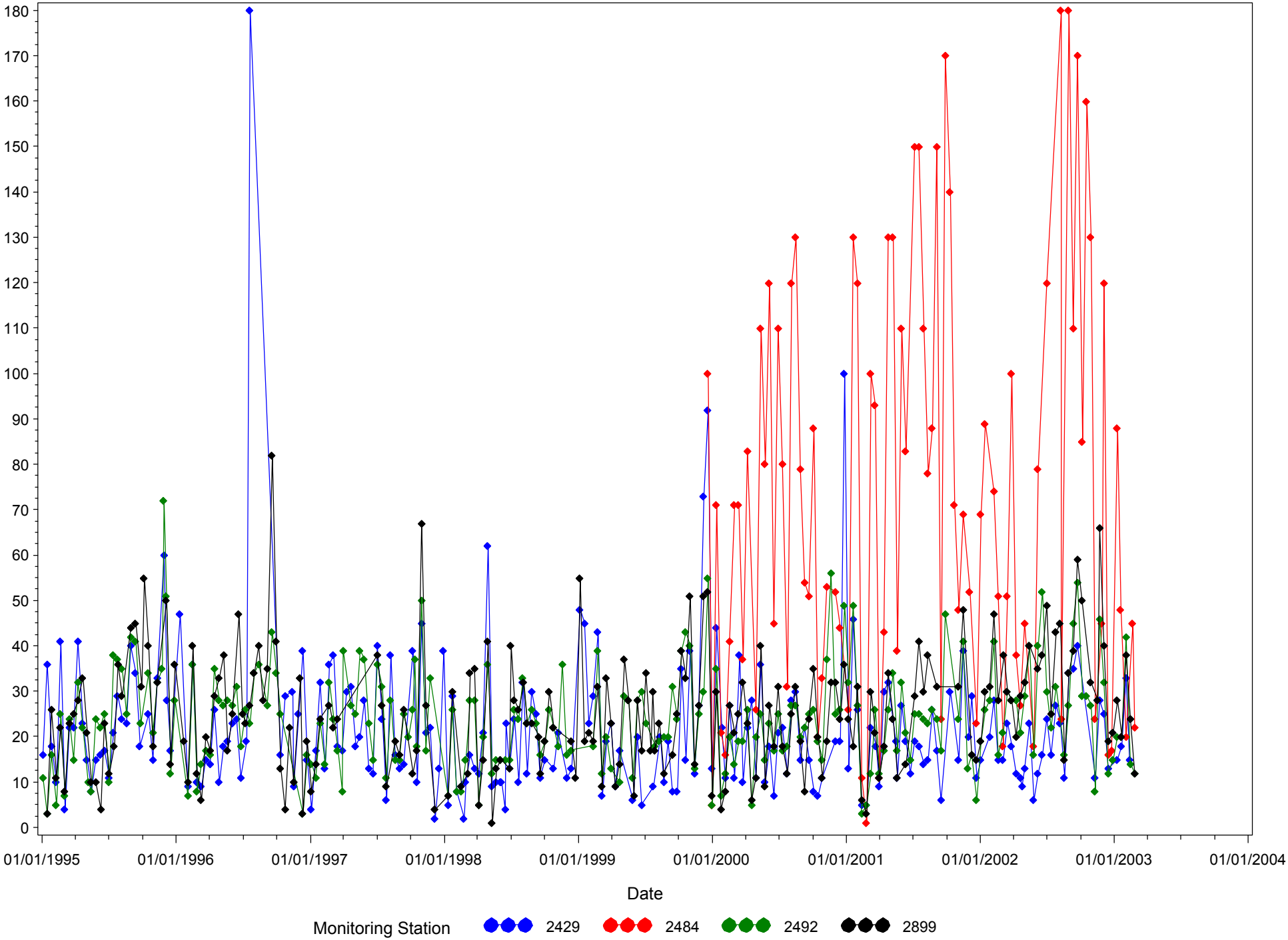
Average EBZ Exposure by Monitoring Station



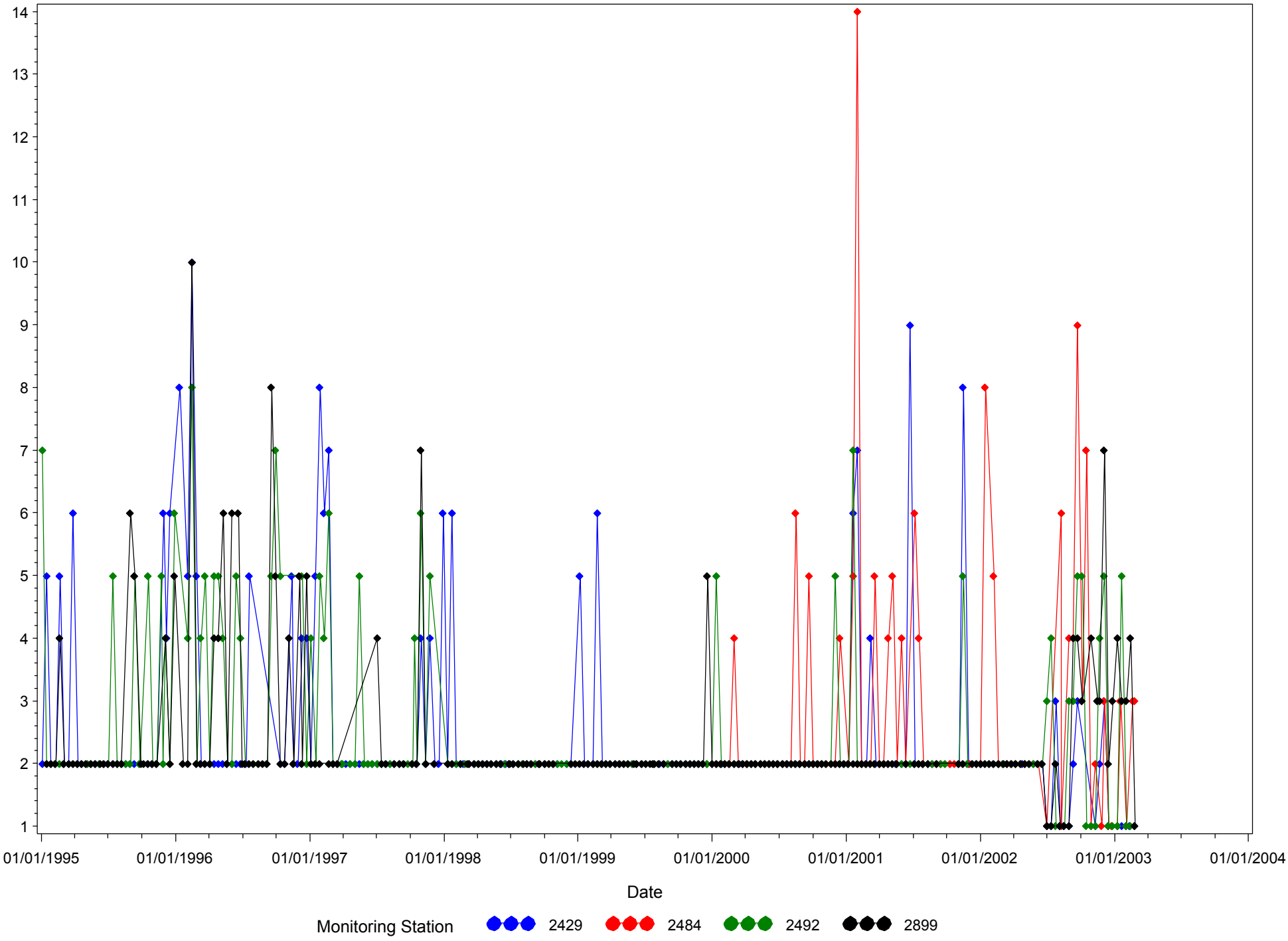
Average HCHO Exposure by Monitoring Station



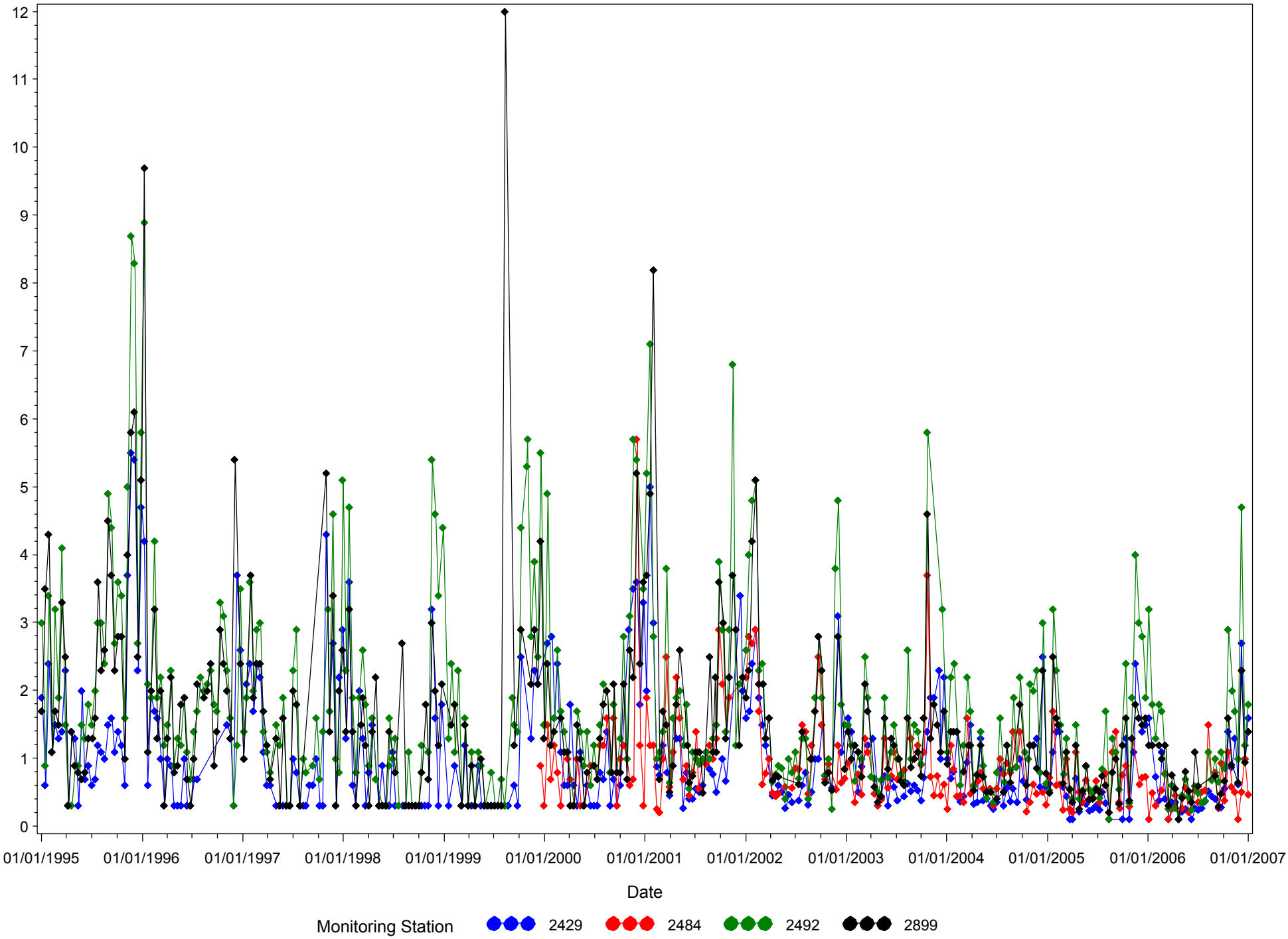
Average MN Exposure by Monitoring Station



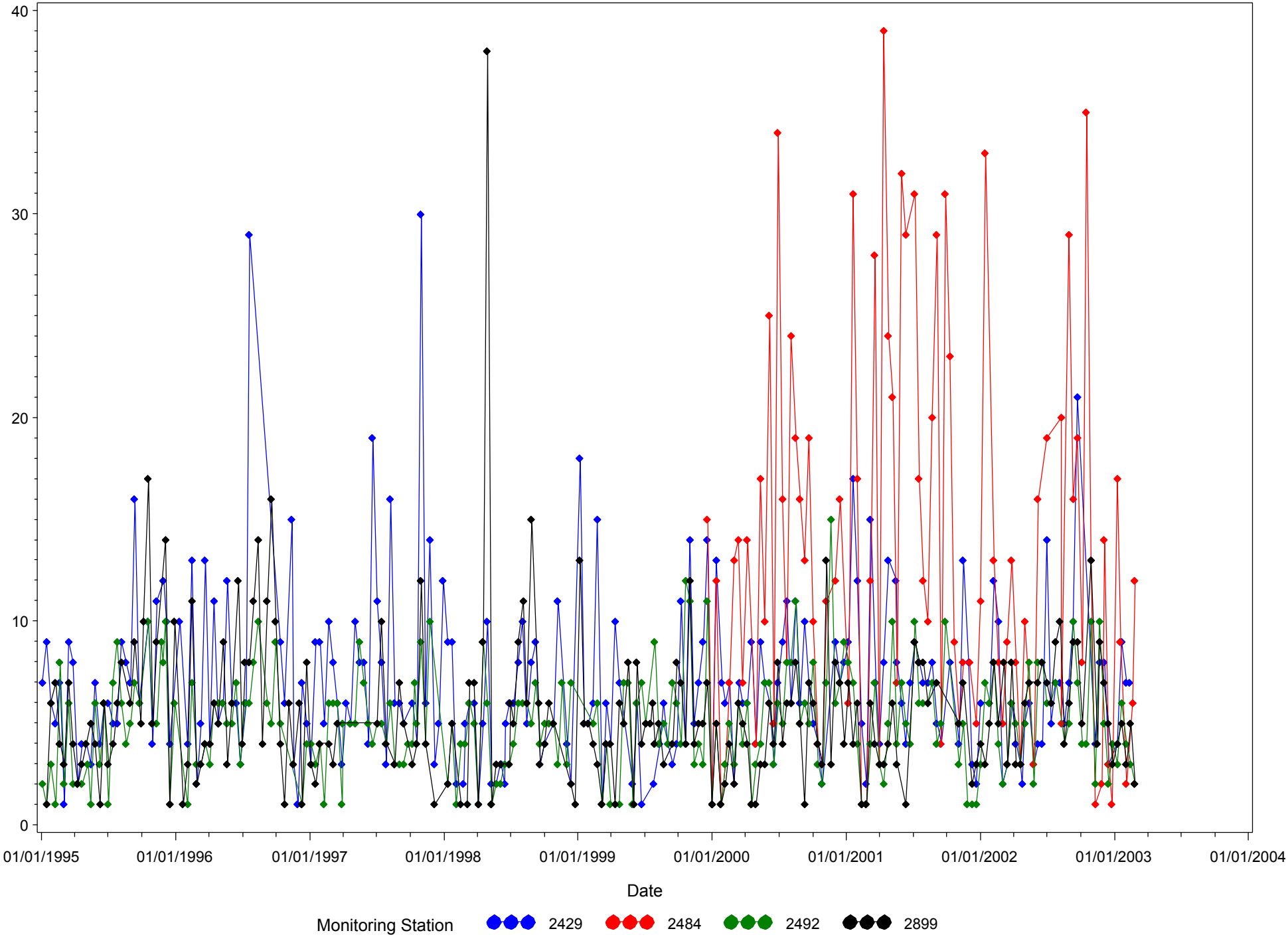
Average MO Exposure by Monitoring Station



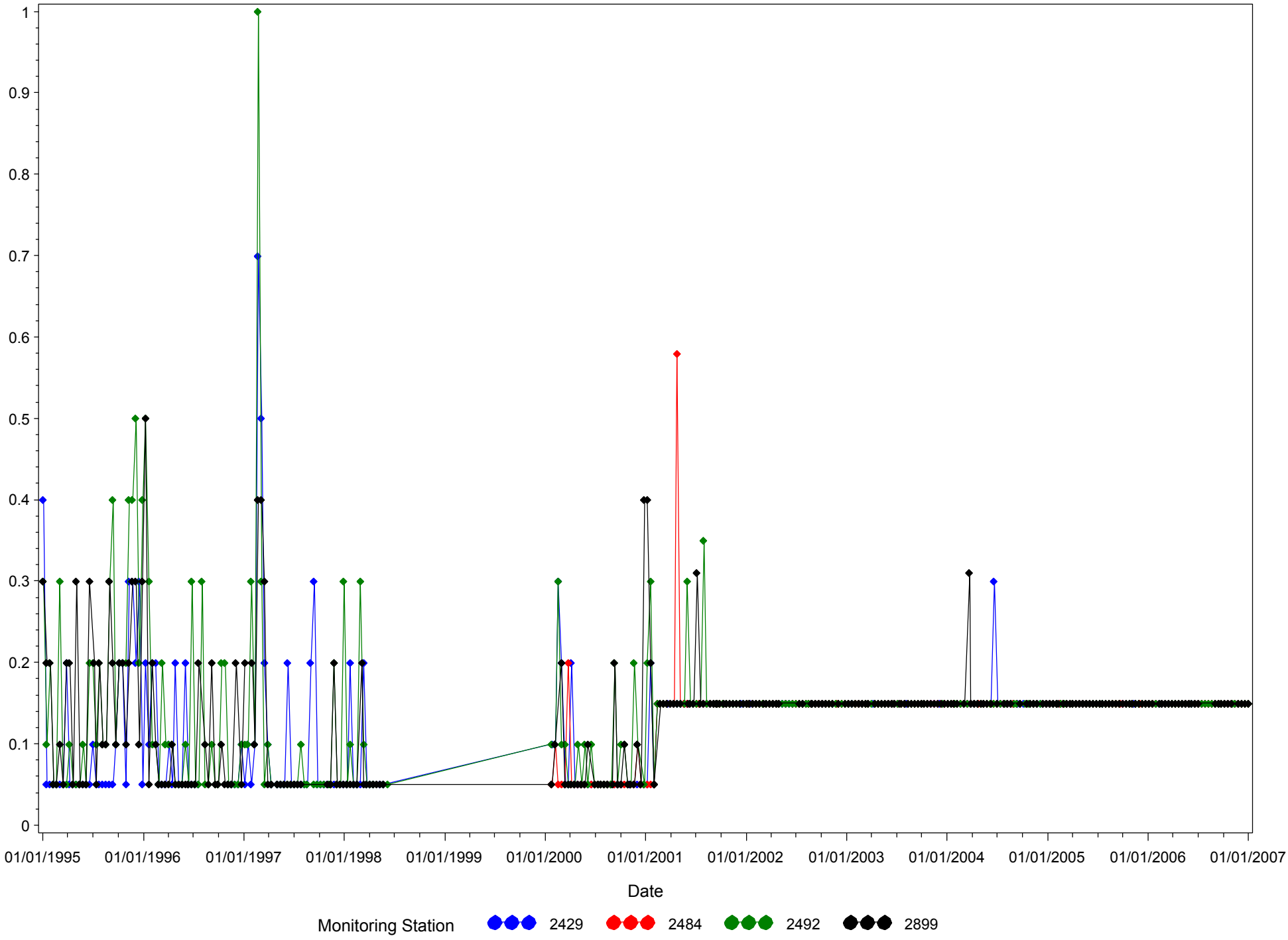
Average MPXYL Exposure by Monitoring Station



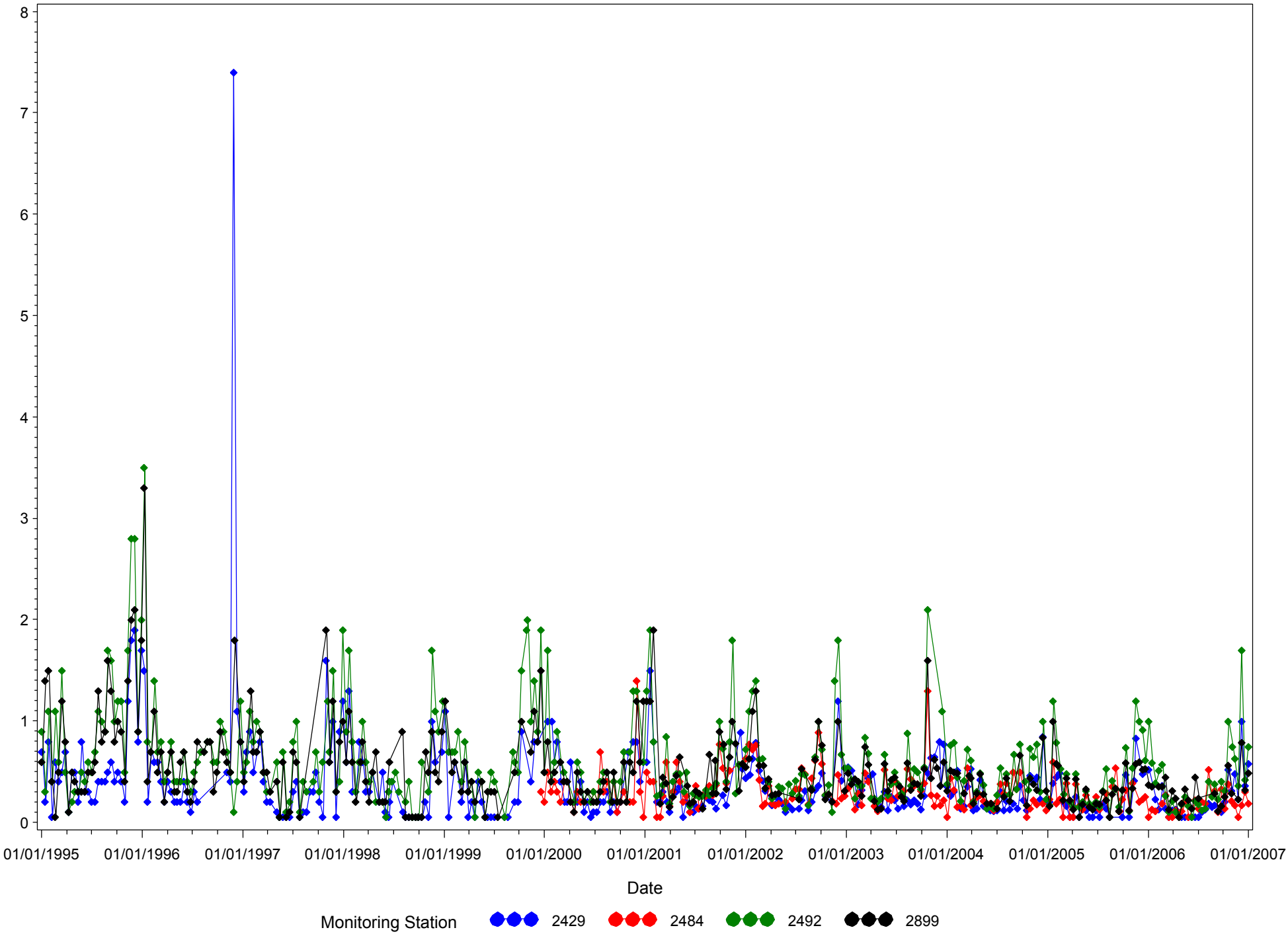
Average NI Exposure by Monitoring Station



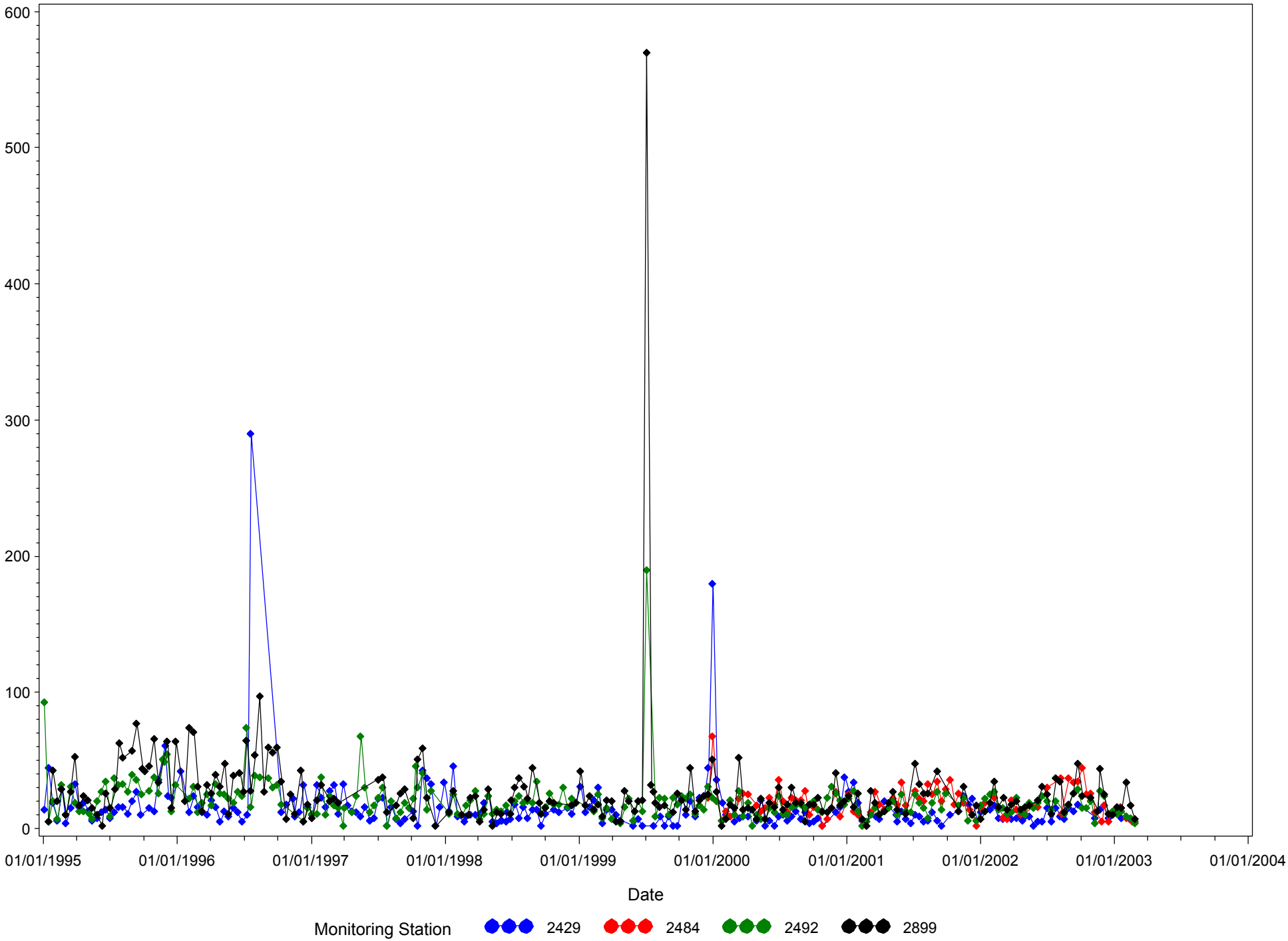
Average ODCB Exposure by Monitoring Station



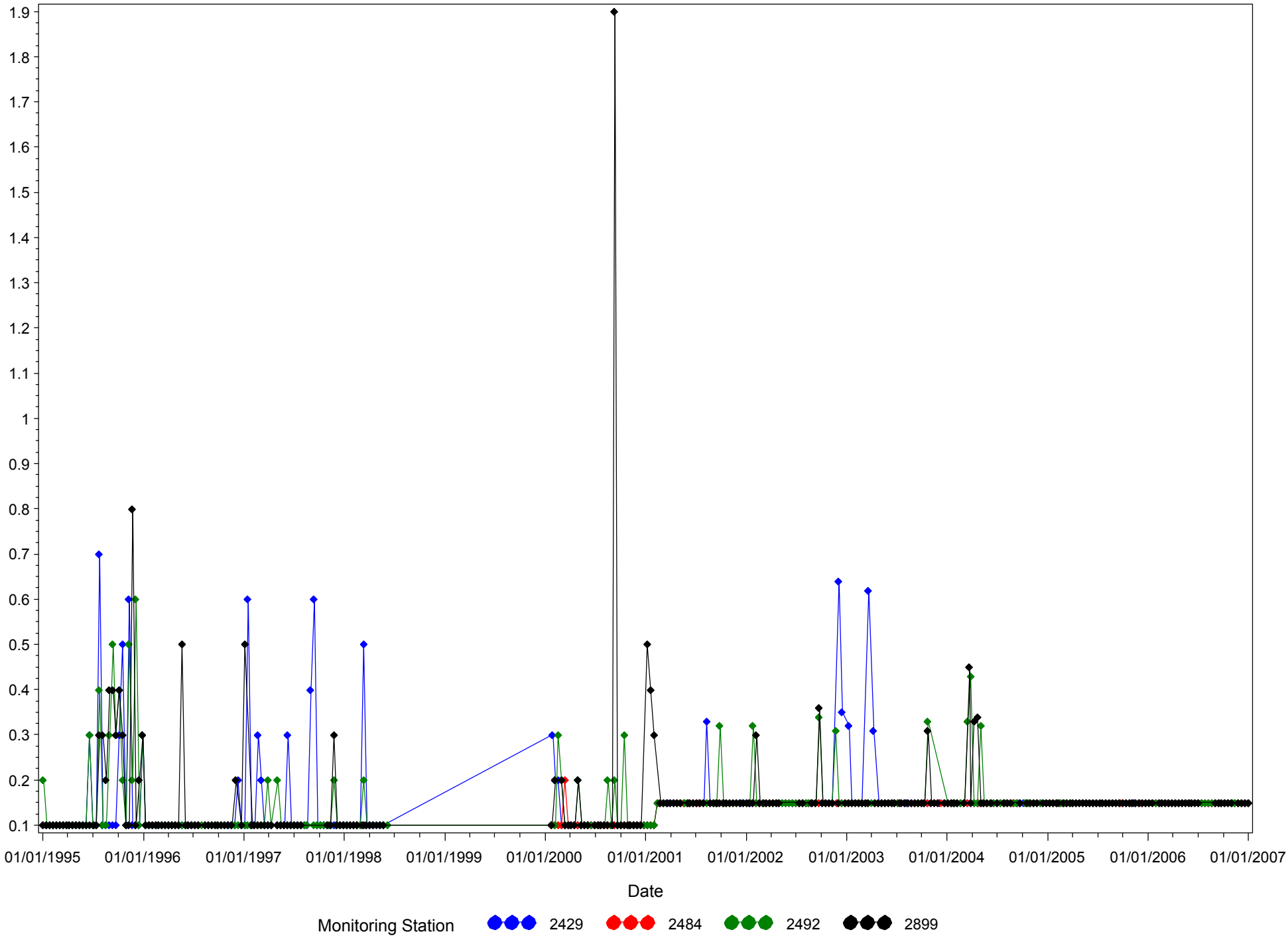
Average OXYL Exposure by Monitoring Station



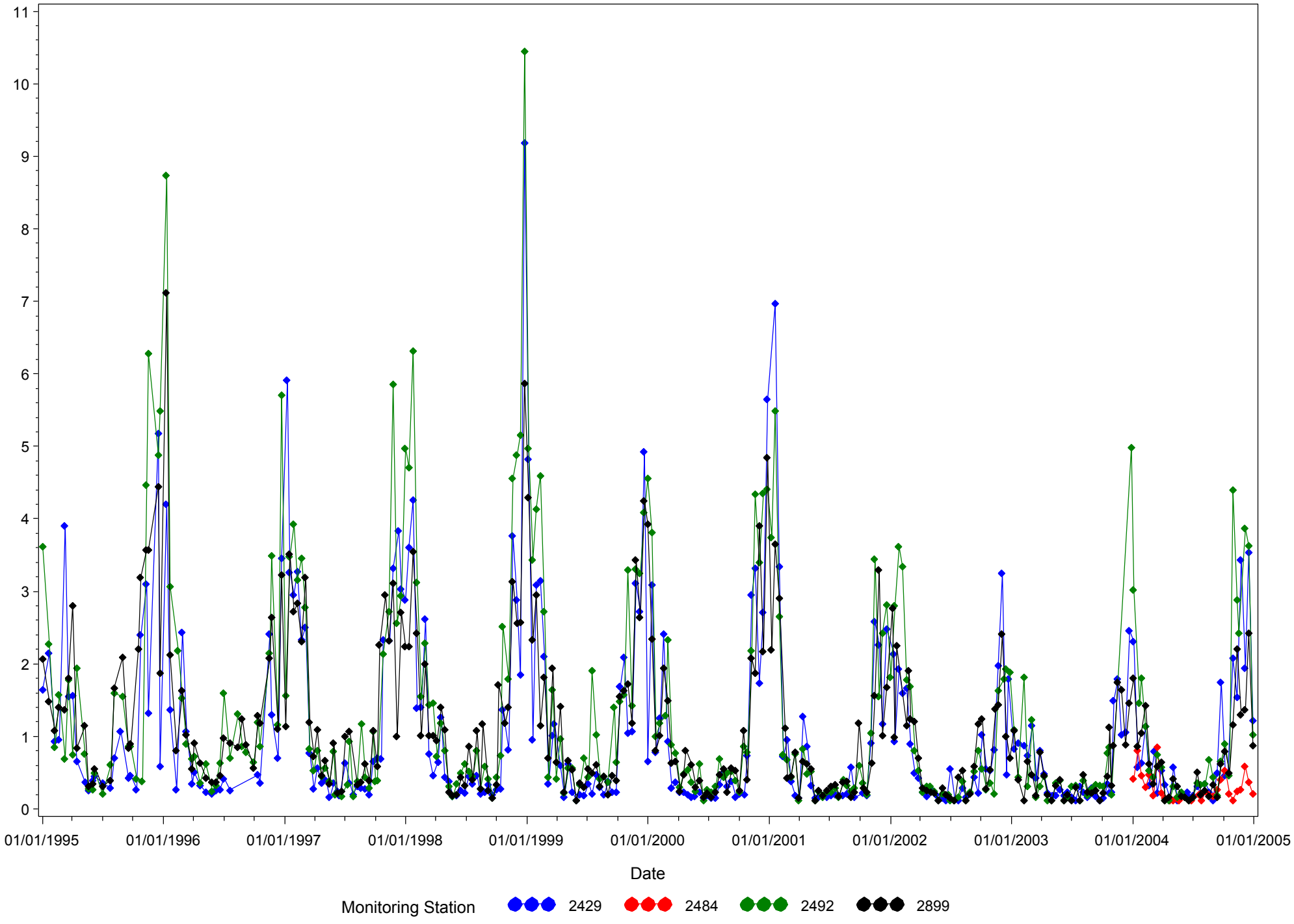
Average PB Exposure by Monitoring Station



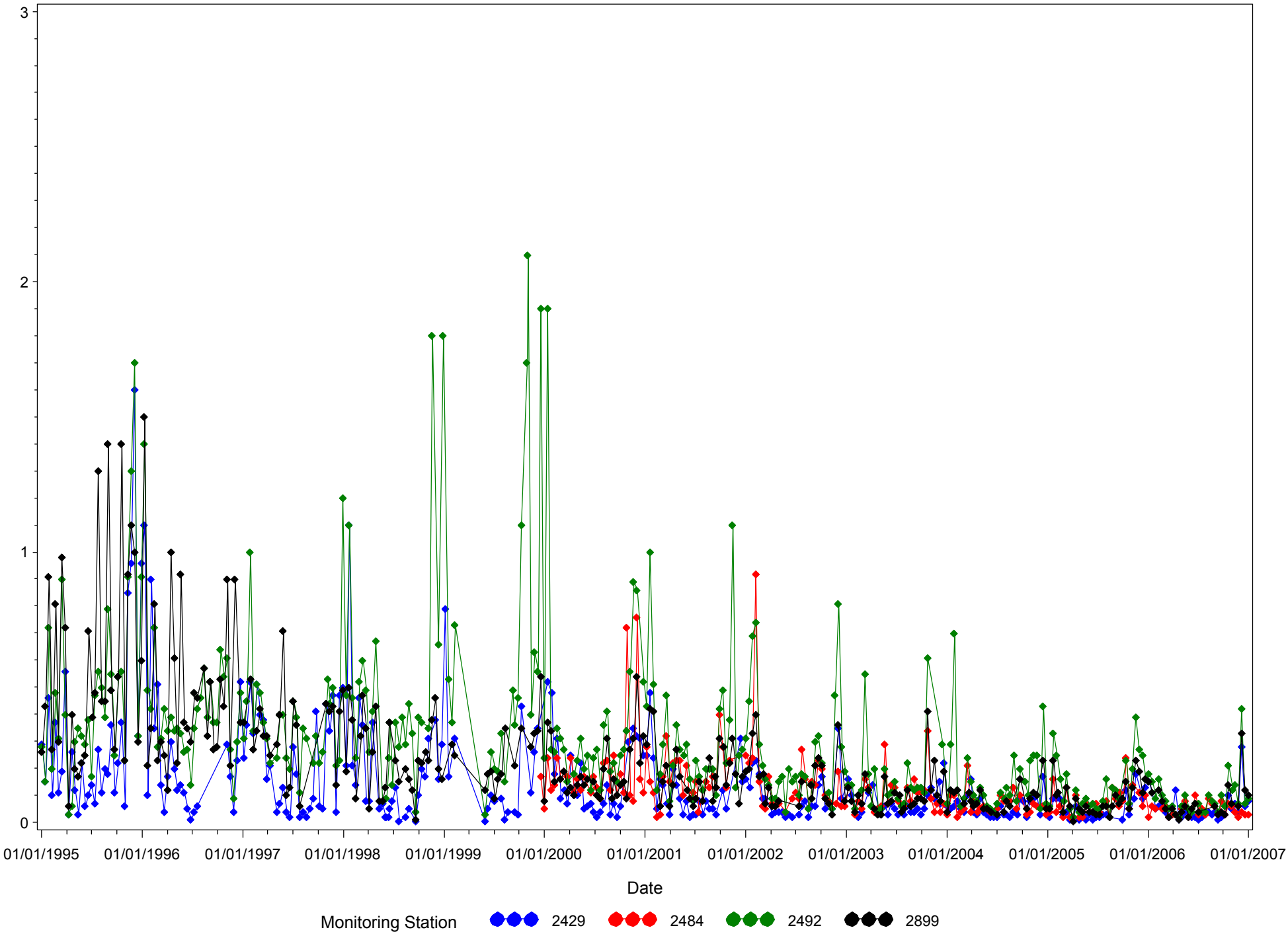
Average PDCB Exposure by Monitoring Station



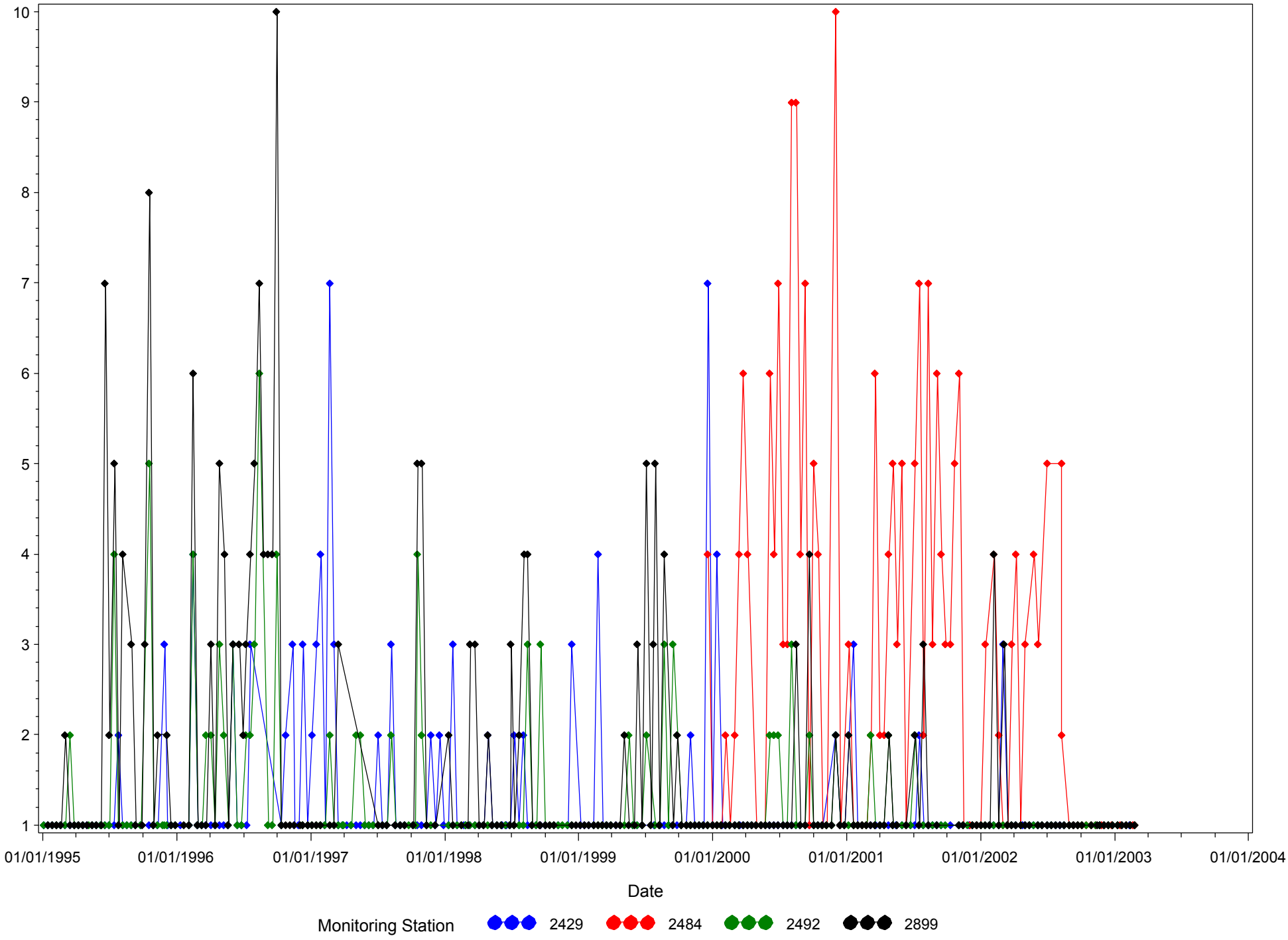
Average PAH Exposure by Monitoring Station



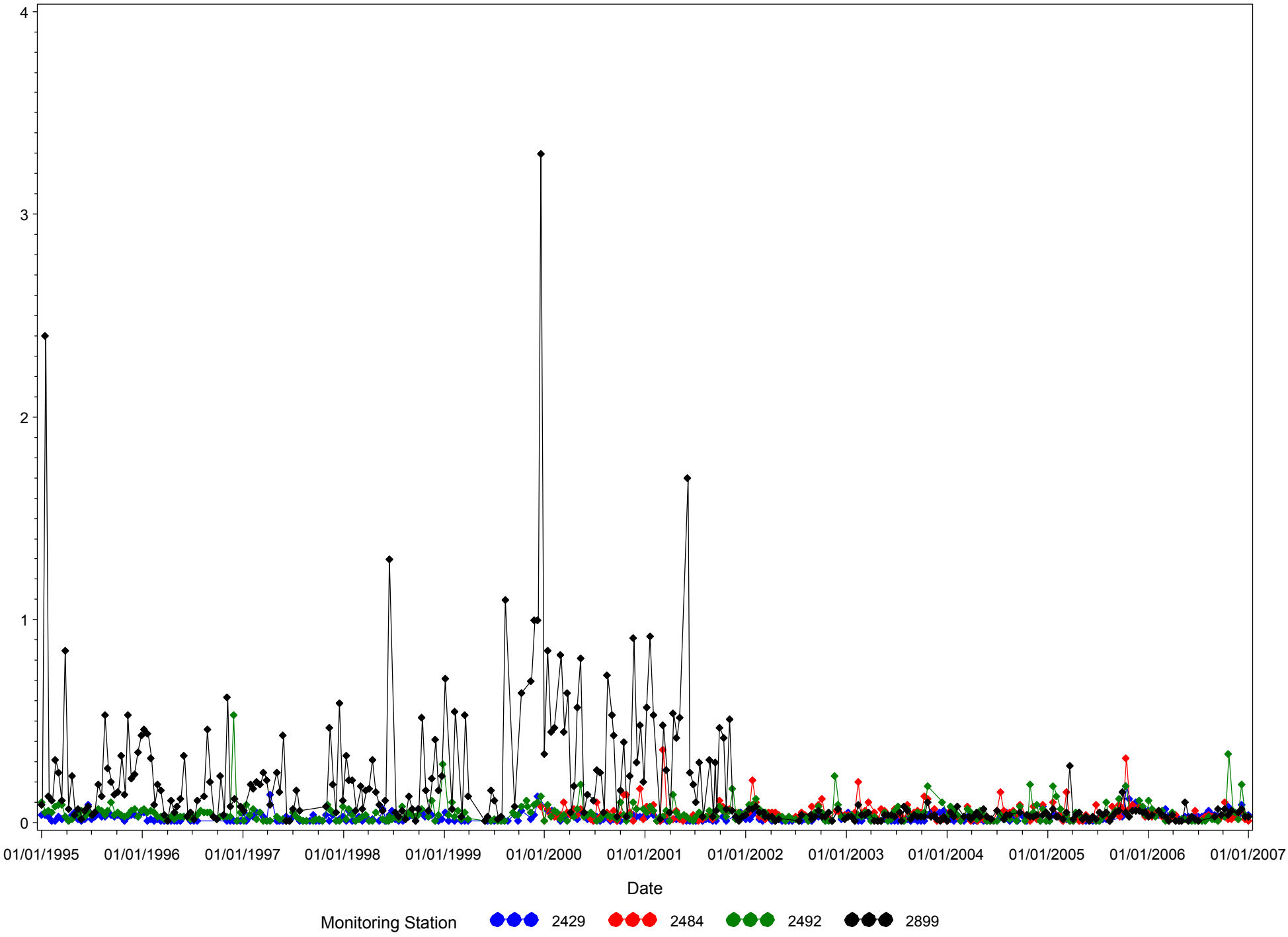
Average PERC Exposure by Monitoring Station



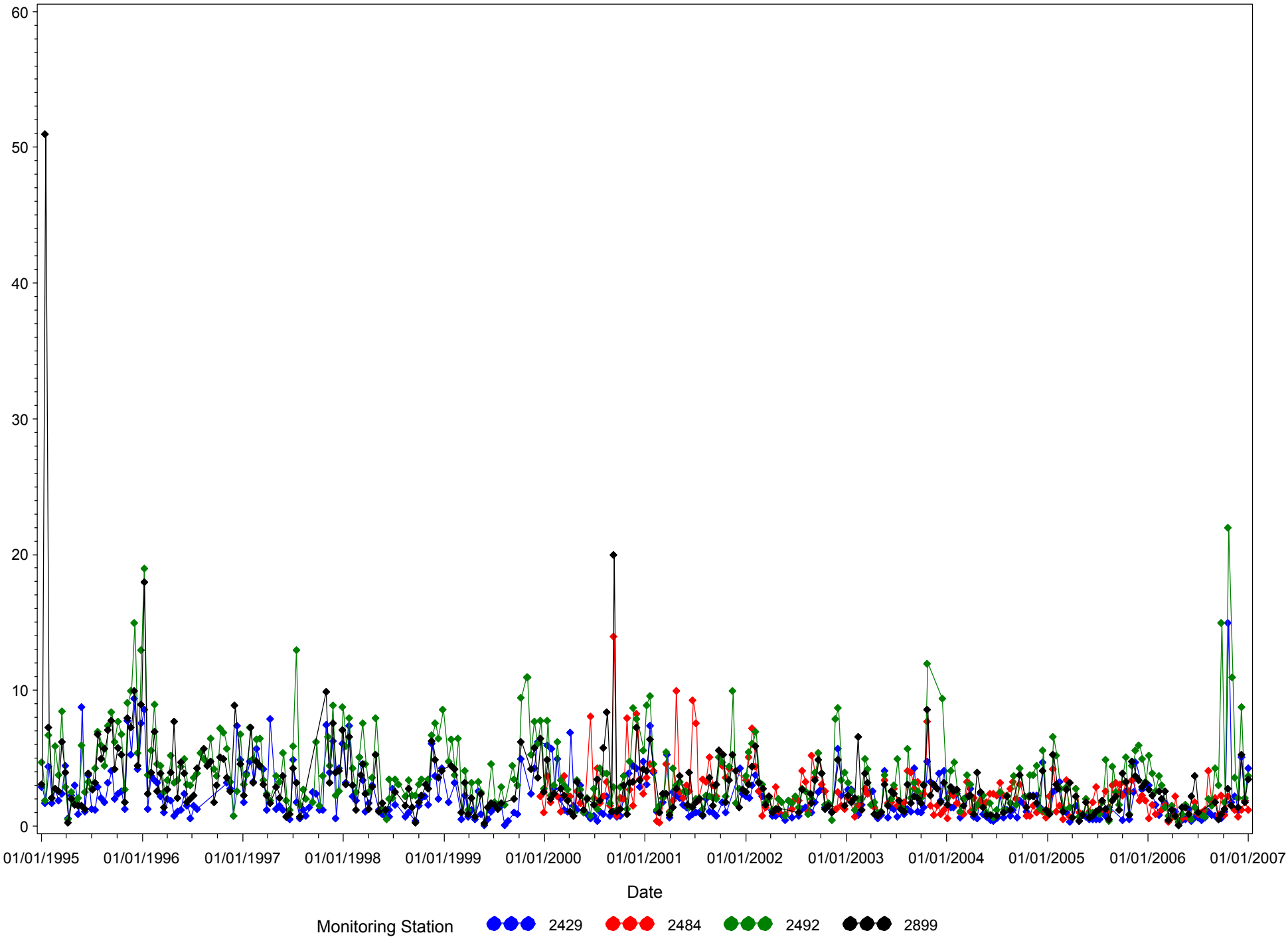
Average SE Exposure by Monitoring Station



Average TCE Exposure by Monitoring Station



Average TOLU Exposure by Monitoring Station



Average V Exposure by Monitoring Station