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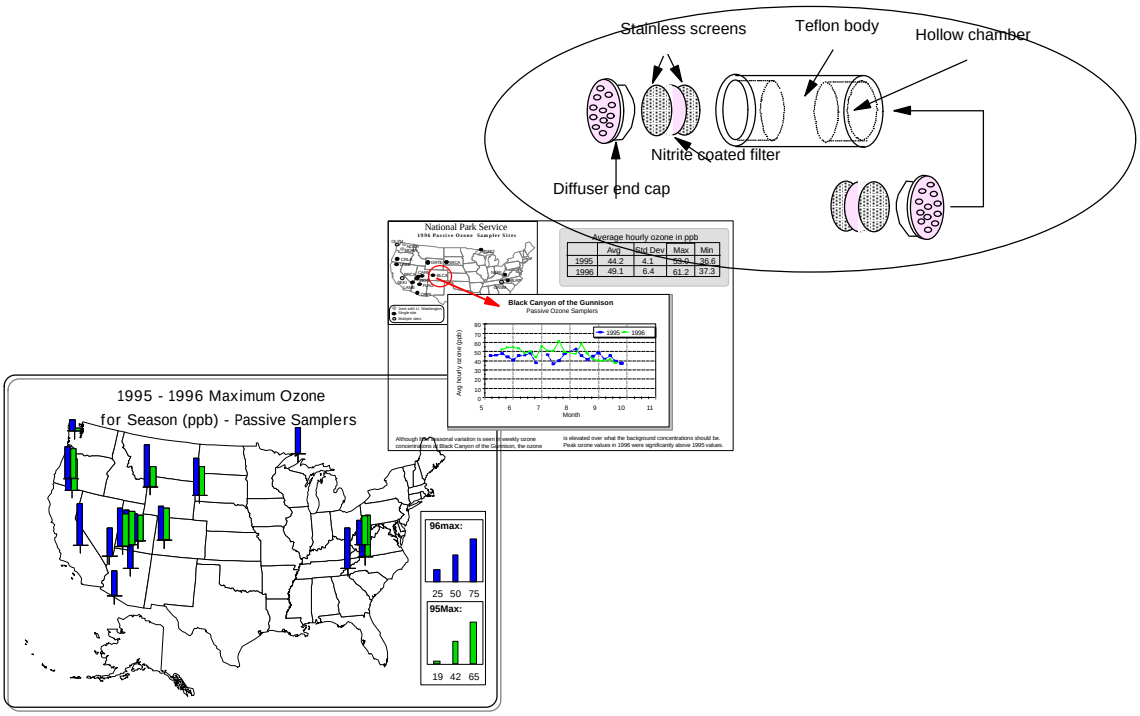
Ambient Ozone Measurements In the National Parks Using Passive Samplers

1995-1996

Data Appendix

AIRWEB ADDITION



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Appendix

This section contains the weekly ozone data for each sampling location and some summary tables that are useful for comparing parks within the group areas described in the main report.

Table A1 Site information for the ozone passive sampling program.

Table A2 List of closest ozone monitoring sites to parks in the study.

Table A3 Summary of 1995 weekly ozone data.

Table A4 Summary of 1996 weekly ozone data.

Table A5 Summary of passive ozone concentrations by month for 1995-1996.

A. Alaska parks
B. California parks
C. Colorado plateau parks
D. California-Oregon parks
E. Washington parks
F. Western parks in Wyoming and South Dakota
G. Isle Royale
H. Eastern parks

Table A1 **Site Information for the Ozone Passive Sampling Program**

Park Code	Park Unit / Site name	State	Elevation (feet)	Lat. (deg)	Long. (deg)
BLCA	Black Canyon of the Gunnison	Colorado	8200	38.5787	-107.699
BRCA	Bryce Canyon	Utah	8120	37.5751	-112.1925
CARE	Capital Reef	Utah		38.1155	-111.1591
CRLA	Crater Lake	Oregon	7000	42.9435	-122.1278
DENA	Denali	Alaska	2168	63.0539	-150.8548
GRTE	Grand Teton	Wyoming	6700	43.8462	-110.6749
ISRO	Isle Royale	Michigan		48.0586	-88.7255
LABE	Lava Beds	California	4760	71.7613	-121.5158
LAME	Lake Mead	Arizona		36.0007	-114.4855
1	Northshore	Arizona	1300		
2	Overton Arm	Arizona	2500		
3	Katherine Landing	Arizona	700		
NERI	New River Gorge	West Virginia	2400	37.8913	-81.0612
NOAT	Noatak	Alaska		68.1103	-160.0312
ORPI	Organ Pipe Cactus	Arizona		32.0345	-112.8892
WICA	Wind Cave	South Dakota		43.601	-103.4602
WRST	Wrangell-St. Elias	Alaska		61.3394	-142.5706
ZION	Zion	Utah		37.2511	-113.0119
SEKI	Sequoia-Kings Canyon	California	6200	36.4758	-118.4949
1	Crabtree	California	10700		
2	LeConte Canyon	California	8700		
3	Bear Paw Meadow	California	7800		
4	Mineral King	California	7500		
5	Cedar Grove	California	4700		
6	Lower Kaweah (co-locate)	California	6200	36.5672	-118.7781
GC	Grant Grove	California	6600	36.7397	-118.9611
LP	Lookout Point	California	4000		
AM	Ash Mountain	California	1710	36.4936	-118.8286
CHIS	Channel Islands	California			
1	E. Santa Cruz Island	California			
2	Santa Rosa Is., Stiff Leg	California			
3	San Miguel Is, O3 station	California			
4	Anacapa Island	California			
5	Santa Rosa Is, Black Mt	California			
6					

Park Code	Park Unit / Site name	State	Elevation (feet)	Lat. (deg)	Long. (deg)
OLYM	Olympic	Washington	410	47.8504	-123.5737
1	Continuous monitoring site	Washington	410	48.0975	-123.4256
2	Weather Station Pt	Washington	3080		
3	Hurricane Ridge	Washington	5040		
4	Deer Park	Washington	5985		
5	Staircase	Washington	800		
6	Dosewallips	Washington	1400		
GRSM	Great Smoky Mountains	Tennessee	4077	35.6327	-83.3978
1L	milkweed site 1, lower	Tennessee			
1U	milkweed site 1, upper	Tennessee			
2L	milkweed site 2, lower	Tennessee			
2U	milkweed site 2, upper	Tennessee			
3L	milkweed site 3, lower	Tennessee			
3U	milkweed site 3, upper	Tennessee			
Co	Cove Mountain -co-located	Tennessee	4077	35.6967	-83.6097
FLAG	Flagstaff cluster	Arizona		35.1643	-111.5034
1	Walnut Canyon	Arizona	6700		
2	Sunset Crater Volcano	Arizona	7000		
3	Wupatki	Arizona	4800		
LAME	Lake Mead	Arizona		36.0007	-114.4855
1	Northshore	Arizona	1300		
2	Overton Arm	Arizona	2500		
3	Katherine Landing	Arizona	700		
BLRI	Blue Ridge Parkway	North Carolina	4000	36.5475	-80.906
1		North Carolina			
2		North Carolina			
3		North Carolina			

Table A2 **List of closest ozone monitoring stations sites to parks in study.**

		1st alternate		2nd alternate		3rd alternate	
Park	**Area**	**AIRS code**	**Location**	**AIRS code**	**Location**	**AIRS code**	**Location**
BLCA	COPlat						
BRCA	COPlat	40052003	Grand Canyon NP				
CARE	COPlat	490370101	Canyonlands NP	490490002	West Provo, urban		
ZION	COPlat	40052003	Grand Canyon NP				
GRTE	West	560391010	Yellowstone NP				
WICA	West	560391010	Yellowstone NP	460711001			
BLRI	East	540390004	WV	540250001	WV	211270003	KT
BLRI3	East						
NERI	East						
LABE	CA_OR	60932001	Yreka, CA, suburban	410290201	Talent, OR, rural	60890004	Redding, suburban
CRLA	CA_OR	410290201	Talent, OR, rural	410391007	Saginaw, rural	60932001	Yreka, CA, suburban
DENA	AK		None		None		None
NOAT	AK		None		None		None
WRST	AK		None		None		None
OLYM	Wash	530730005	WA	530330010	WA	530531001	WA

Table A3 Summary of 1995 ozone data.

1995 Ozone Concentrations (Passive Sampler Method)

	May				June					July					Aug				Sept					Oct			Std		
	1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	Avg	Dev	Max	Min
BLCA	45.7	46.0	47.9	44.4	41.0	45.5	46.3	48.5	37.8		47.1	36.6	40.3	47.7	53.0	45.5	41.7	45.0	48.7	42.0	45.5	40.0	37.3			**44.2**	4.1	53.0	36.6
BLRI			57.3	41.6		42.1	46.3	45.8	38.1	41.1	58.1	59.7	42.1	38.5	30.4	58.5	50.2	44.4		65.1	31.4	31.0	34.3	33.8		**44.5**	10.3	65.1	30.4
BLRI3															41.9	45.3	35.8						21.8	32.7		**35.5**	8.2	45.3	21.8
BRCA	39.8	42.4	46.3	36.5	37.1	48.2	49.9	49.9	43.9		49.9	43.4	49.3	50.6	55.2	47.8	45.4	44.1	49.6	44.0	49.5	45.0	40.2			**45.8**	4.6	55.2	36.5
CARE	42.3	41.7	46.1	42.3		41.3	46.2	39.7		43.9	43.5	37.5	41.3	46.1	43.4	38.7	30.6	35.2		40.0	37.8	36.5	30.0			**40.2**	4.5	46.2	30.0
CRLA		45.1	45.0	50.2	44.6	39.0	32.1	34.2	48.5		30.2	38.3	41.8	37.1	31.0	39.1	33.6	44.0	44.2	37.3	48.0	37.2	30.2			**39.6**	6.1	50.2	30.2
DENA											18.4	17.3	14.7	16.6	18.7	14.3	14.9		16.1	21.5						**16.9**	2.2	21.5	14.3
GRTE	37.9	36.3	38.7	36.6	28.3	32.0	39.8	33.8	37.5		37.0	35.4	31.9	38.6		36.9	40.0	29.5	40.0	31.8	31.4	31.0	36.4			**35.3**	3.5	40.0	28.3
LABE	37.7	41.1	45.3	47.7	44.0	41.4	31.0	32.3	20.5		37.2	40.9	42.9	48.0	42.5	40.5	39.5	52.9	51.3	40.1	49.8	42.0	34.9			**41.1**	7.1	52.9	20.5
NERI	41.1	37.4	40.4	37.9	30.4	27.3	40.2	27.3	32.8		37.5	45.5	38.2	34.2	25.0	37.2	44.4	37.9	42.8	49.3	25.6	16.4	30.9			**35.4**	7.7	49.3	16.4
NOAT													18.4	29.5	10.4	15.2	16.7									**18.1**	6.3	29.5	10.4
OLYM1											18.7	14.2	13.6		11.5	12.7	12.2	15.0	16.7	11.8						**14.0**	2.3	18.7	11.5
OLYM2											30.4	15.7	22.3		21.3	19.2	23.1	23.9	31.4	31.9						**24.4**	5.4	31.9	15.7
OLYM3											29.8	16.9	22.1		23.7	23.3	24.0	23.6	32.8	29.5						**25.1**	4.6	32.8	16.9
OLYM4											34.5	24.4	28.6		33.1	31.3	31.3	29.8	41.4	36.5						**32.3**	4.6	41.4	24.4
OLYM5											12.6	9.9	12.2		11.8	8.2	8.7	9.4	8.9	5.4						**9.7**	2.2	12.6	5.4
OLYM6											12.9	10.5	12.4		10.1	8.2	8.7	9.7	9.9	8.4						**10.1**	1.5	12.9	8.2
WICA	34.8	39.9	34.2	38.3	38.2	36.1	35.0	36.8	36.7		47.0	42.7	37.3	46.2	48.5	49.8	49.3		49.5	18.7	24.9	39.6	35.5			**39.0**	7.7	49.8	18.7
WRST											9.9				8.8	6.9	22.4		12.4	9.1						**11.6**	5.1	22.4	6.9
ZION	42.5	44.8	54.6	35.3		44.9	46.0	43.4	48.5	41.3	45.5	44.0	51.6	52.4	46.8	39.5	46.0		44.0		42.1	44.8	44.4		40.0	**44.9**	4.3	54.6	35.3

ppb units, expressed as average hourly ozone

Table A4 Summary of 1996 ozone data.

1996 Ozone Concentrations (Passive Sampler method)

Month:		May			June				July					August				Sept.				Summary			
	Site	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	Avg	STD	Max	Min
BLCA	1	52.5	54.6	54.5	53.6	48.1	50.3	43.7	55.8	51.3	51.1	61.2	49.4	47.7	58.7	47.7	42.1	40.2	40.4	41.4	37.3	49.1	6.4	61.2	37.3
BLRI	1					44.0	46.2	55.7	44.2	33.7	33.8	27.3	38.2	36.4	43.5	36.8	40.1	33.7	37.6	43.0	29.5	39.0	6.8	55.7	27.3
BLRI	2	49.0	49.3	45.6	47.1	48.1	49.2	56.5	43.2	42.9	35.1	40.9	36.1	44.8	43.4	47.8	45.8	33.8	38.7	42.7	24.1	43.2	6.9	56.5	24.1
BLRI	3		40.7	42.9	43.6	49.0	48.7	46.6	45.2	41.3	40.6	39.4	32.2	41.5	48.4	33.8	47.6		15.6			41.1	8.1	49.0	15.6
BRCA	1		57.5	62.6	48.8	52.5	57.9	43.7	52.2	53.8	51.2	56.2	57.0	56.1	51.0	45.2	43.7	45.2	41.3	43.2	41.0	50.5	6.3	62.6	41.0
CARE	1	51.4		47.1	46.4	41.7	42.8		49.3	46.0	51.0			51.3	46.6	50.4	37.9	37.0	35.0	36.0		44.7	5.7	51.4	35.0
CRLA	1		49.5	47.5	52.8	45.0	37.3		40.4	41.4	37.4	44.5	38.6	58.1	53.7	55.5	47.3	42.6	31.4	39.7	32.8	44.2	7.5	58.1	31.4
FLAG	1								45.4	41.0	44.2	47.0	47.1	45.4	56.2	37.3	41.1					44.9	5.0	56.2	37.3
FLAG	2								40.6	37.7	38.9	50.5	43.0	45.1	54.2	35.7	50.9					44.1	6.2	54.2	35.7
FLAG	3								52.4	50.1	47.3	59.5	52.1	52.5	53.7	45.8	43.6					50.8	4.5	59.5	43.6
GRSM	1L	39.9	34.8	33.5	36.0	38.3	40.8	39.2	28.2	25.0	27.8	19.5	25.8	32.3	38.1	35.5						33.0	6.2	40.8	19.5
GRSM	1U	49.6	42.6	41.6	46.1	47.8	48.1	45.9	36.8	31.6	35.1	29.6	32.9	41.8	43.2	49.5						41.5	6.5	49.6	29.6
GRSM	2L	39.3	33.4	32.6	28.3	28.8	31.6	29.8	23.3	19.0		19.1	23.7		40.1	29.4						29.1	6.4	40.1	19.0
GRSM	2U	44.6	38.9	38.5	37.7	32.9	35.0	37.9	32.5			27.8	31.6	35.7	18.3							34.3	6.3	44.6	18.3
GRSM	3L	40.3	36.7	37.6	36.9	38.2	42.5	37.7	29.7	24.0	27.6	22.2	26.8	34.8		29.6						33.2	6.2	42.5	22.2
GRSM	3U	49.8	48.1	46.3	51.3	48.5	49.1	49.7	41.2		35.4	35.0	40.8	45.3		42.4						44.8	5.2	51.3	35.0
GRSM	Co	65.4	70.9	65.7	67.4	62.7	63.0		73.2	59.6	51.8	51.4	56.1	58.3	58.5	68.4	67.7					62.7	6.4	73.2	51.4
GRTE	1	49.1	36.5	46.0	39.9	38.1	43.4	35.2	41.4		38.6	36.6	41.1	37.6		59.8	74.8	38.3	36.7	35.7	31.7	42.3	10.0	74.8	31.7
ISRO	1	48.1		50.1	42.6	37.7	36.9		32.6	38.4	36.8	23.2	35.8	34.6	40.7	37.6	49.4	38.2	23.8	34.1	31.1	37.3	7.2	50.1	23.2
LABE	1	39.0	48.8	52.2	44.4	47.6	38.5	32.3	29.3	48.6	34.5	49.8	44.8					40.4	44.4	34.1	36.7	41.6	6.8	52.2	29.3
LAME	1								53.5	42.9	44.0			39.6		34.8	34.4					41.5	6.5	53.5	34.4
LAME	2								54.9	51.0	41.8	44.8		42.5		43.2	43.1					45.9	4.7	54.9	41.8
LAME	3								63.2	54.6	53.8	53.0		53.5		53.9	50.9					54.7	3.6	63.2	50.9
NERI	1	43.8	34.1	43.8	36.0	40.0	36.2	46.8	38.0	33.8	28.9	34.3	26.9	29.4	28.3	43.7	25.1	23.4	23.3	26.5	19.2	33.1	7.8	46.8	19.2
OLYM	1				23.6	25.5	18.7	21.2	17.2	21.0	10.4	19.5	16.4	22.6	23.4	23.1	17.8					20.0	3.8	25.5	10.4
OLYM	2				29.4	28.8	23.6	21.9	21.6	32.7	23.6	35.0	23.3	38.7	25.2	37.2	29.1					28.5	5.7	38.7	21.6
OLYM	3				35.3	29.8	25.2	23.7	26.7	34.2	23.0	41.1	25.5	37.4	27.0	45.4	28.0					30.9	6.8	45.4	23.0
OLYM	4				41.4	33.6	28.1	25.9	32.9	40.3	30.6	45.9	30.6	40.7	38.9	50.4	37.0					36.6	6.9	50.4	25.9
OLYM	5				16.4	15.0	12.1			16.5	5.3	16.0	10.3	18.0	11.9	22.5	10.4					14.0	4.4	22.5	5.3
OLYM	6				18.8	11.2		10.6	12.2	-0.9	7.4	21.4	-3.5	22.4	18.4	22.8	12.5					12.8	8.3	22.8	-3.5
ORPI	1				45.7	39.3	25.5	46.7	43.8	34.5	34.7	49.2	36.0	40.2	43.7	40.9		27.1	37.0	27.4	34.8	37.1	6.4	49.2	25.5
SEKI	1								51.5	48.8	49.4	52.8	57.5	45.7	51.4	44.8		43.7	46.6	40.2		48.4	4.6	57.5	40.2
SEKI	2								50.1	54.0	49.6	53.7	56.6	52.5	51.8	46.4	49.7	40.4	42.7	40.1		49.0	5.2	56.6	40.1
SEKI	3								68.6	69.5	62.5	66.3	70.8	63.8	71.1	62.6	57.7	55.4	44.1	61.3		62.8	7.4	71.1	44.1
SEKI	4								56.7	29.7	53.6	68.8	46.8	63.4	7.8	56.3	51.0	49.1	37.7			47.4	16.3	68.8	7.8
SEKI	5								46.6	27.4	44.8	37.3	37.7	44.9	41.1	36.9	44.3	33.5	38.9			39.4	5.5	46.6	27.4
SEKI	6								71.1	66.2	64.4	72.2	71.4	66.7	74.4	63.9	66.2	55.6	45.7	57.7		64.6	7.8	74.4	45.7
SEKI	GC				67.3	66.6	50.1	47.2	67.5	66.5	69.5	65.2		63.8	64.6	61.9	55.3	50.1	44.6	48.4	55.6	59.0	8.3	69.5	44.6
WICA	1	49.2	39.3	49.8	48.4	49.5	47.4	43.5	42.8	46.3	43.0	41.0		67.0	48.6	45.3	44.3	47.4	40.9	36.8	37.4	45.7	6.4	67.0	36.8
ZION	1	50.1	52.9	69.4	51.9	56.0	51.6	55.4	48.8	45.9	44.9	46.6	49.1	51.1	49.1	48.6	47.8	42.4	40.0	43.9	36.3	49.1	6.7	69.4	36.3

ppb units, expressed as average hourly ozone

1997 Passive Ozone Summary

		May			June				July					August 1997				Sept				Summary			
	Site	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	Avg	Std	Max	Min
BADL	1															35.1	44.7	33.6	38.2	26.6	28.8	30.4	11.3	44.7	10.6
BLCA	1	47.3	42.5	39.4	48.0	39.6	48.5	49.0	51.1	44.7	44.7	33.9	42.9	31.9		36.3	39.7	35.6	34.7	34.6	33.3	38.6	10.6	51.1	9.4
BLRI	1	51.0	32.9	43.8	33.0	43.1	40.0	40.9	46.2	46.8	43.2	44.8	49.8	37.4		43.2	39.9	43.9	42.0	37.0	31.8	39.1	10.4	51.0	9.3
	2		41.1		36.2	47.3	52.2	49.1	54.7	43.9	47.0			49.4	41.8	38.4	47.4	35.1	50.8	43.1	35.4	41.6	11.7	54.7	10.4
BRCA	1	50.2	47.5	50.0	48.5	50.6	55.7	56.1	52.5	46.7	45.9	36.9	40.4	39.6	42.5	39.6	42.5	40.5	38.2	23.3	36.2	41.8	11.8	56.1	11.2
CARE	1		34.8	44.3					41.3	34.7	32.9	28.8	33.3	30.4	26.7	25.9		26.0	30.5			30.2	9.7	44.3	8.8
CHIS	1													42.9		31.6	42.0		45.0	47.8		35.3	13.0	47.8	12.6
	2													35.5	38.6	35.2			31.8	46.2	52.2	35.3	13.2	52.2	12.3
	3													38.5	33.1	26.5		33.8	32.2	37.0	49.6	32.3	11.9	49.6	11.2
	4													35.0	25.8	32.4	29.8	32.2	34.7	43.5	33.8	30.0	10.2	43.5	9.6
	5													38.9	38.9	37.1			43.0	44.1	45.7	35.3	12.1	45.7	11.9
	6													36.4	37.5	26.6	26.1	33.8	39.8	41.6	53.5	33.9	12.7	53.5	11.9
CRLA	1			33.7	40.2	32.2	33.2	28.0	31.4	31.1	39.3	39.3	38.5	41.0	40.2	28.4	34.0	37.0	28.7	35.8	40.7	32.9	8.8	41.0	7.8
FLAG	1	60.2			48.9	44.2	51.5	46.5	48.3	46.8	38.3	30.3	31.0	34.1	37.8	29.2	29.6	32.2	31.8	31.0	25.5	37.2	12.5	60.2	11.9
	2	50.2			47.6	45.4	46.6	47.7	52.7	47.5	37.4	28.9	33.2	33.7	34.6	29.5	30.1	36.3	28.9	35.4	28.1	36.6	11.4	52.7	10.5
	3	56.6			52.5	54.6	52.1	50.2	54.1	49.9	44.3	36.5	37.7	41.8	42.5	40.4	37.9	44.1	33.8	39.8	35.7	42.1	12.0	56.6	10.7
GRTE	1	45.8	31.6	28.0	31.3	31.4	43.6	34.1	33.1	30.5	30.8			27.4	31.2	31.8	31.3	27.3	31.8	21.3	31.3	30.3	8.9	45.8	8.2
ISRO	1	58.7	61.8		46.2	44.1	49.0	25.4	45.8	35.0	37.0	34.9		38.4	13.2		26.5	21.7	27.5	33.4	33.2	36.1	14.3	61.8	13.2
JOTR	1				73.1	70.6	85.2	66.9	79.0	65.1	59.0	52.7	49.4	57.4	50.4	52.7	47.5	48.1	40.9	47.6	45.6	54.3	16.7	85.2	15.5
	2				62.5	65.8	80.4	81.0	83.6	72.1	59.9	63.8	61.9	67.1	55.4	52.1	57.6	59.9	47.0	41.1	23.8	57.1	17.6	83.6	17.5
	3				63.6	60.7	71.0	65.9	73.0	67.7	58.3	56.6	54.3	59.6	46.4	45.2	51.3	52.4	45.9	39.0	45.7	52.5	14.5	73.0	13.2
LABE	1	42.8	36.9	30.9	34.6	33.8	34.5	32.8	42.4	31.9	42.7	45.8		45.7	47.1	36.9	39.7	42.0	31.4	52.9	42.0	37.3	10.5	52.9	9.4
LAME	1				52.6	50.1	63.3	57.9	53.4		55.0		43.8	51.7	44.8	48.4	45.1	64.9				48.2	14.6	64.9	13.1
	2				51.8	49.0	55.4	48.9	43.1		43.0	28.6	32.5	42.1	37.1	37.5	37.7	47.3				39.6	12.4	55.4	11.5
	3				49.2	43.6	57.6	56.8	48.8		43.4	34.4	45.6	49.7	39.1	43.5	41.7	50.7				42.9	12.8	57.6	11.6
NERI	1	40.4	34.4	26.1	31.8	32.1	33.1	33.5	35.8	38.3	44.5	32.0	32.7	39.4	22.8	23.1	29.7	33.2	25.1	25.1	26.7	30.5	8.9	44.5	8.1

1997 Passive Ozone Summary

		May			June				July					August 1997				Sept				Summary			
	Site	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	Avg	Std	Max	Min
OLYM	1	22.8	19.4	10.9	19.9	16.1	16.2	12.5	16.1	11.2	14.3	14.8	13.8	15.5	14.5	8.3	10.6	15.8	9.7	15.7	13.6	14.1	4.6	22.8	4.4
	2	37.2	24.9	26.7	26.0	21.6	21.4	20.2	21.0	13.6	24.8	22.6	24.3	29.3	29.5	23.6	21.1	28.5	25.9	31.3	36.0	24.4	7.5	37.2	7.2
	3	42.5	25.6	33.9	30.3	22.8	24.0	21.5	26.0	14.5	28.0	21.8	23.0	27.8	29.7	28.8	23.3	30.0	30.1	34.7	36.8	26.7	8.4	42.5	8.1
	4				34.7	32.7	29.0	28.9		25.8	28.6	25.1	34.3	36.8	33.5	34.2	31.9			42.0		29.8	9.0	42.0	8.2
	5		6.9	7.1	10.1	8.4	8.4	8.5	5.9	6.0	11.0	11.7	12.3	13.5	8.4	5.4	4.6		7.7	2.6	5.2	7.8	3.2	13.5	2.6
	6		9.1	6.1	12.0	11.5	9.2	7.9	7.5	7.7	10.3	12.9	13.6	17.0	11.6	7.3	4.6	7.8	7.8	4.7	5.1	9.0	3.7	17.0	3.7
	7								7.5	5.5	15.6	2.6	9.5	19.4	5.5	4.7	3.9	6.3	8.1	5.0	7.2	8.0	5.1	19.4	2.6
	8								7.9	5.3	8.1		7.9	10.3		6.3	5.3	8.3			7.0	6.8	2.4	10.3	2.3
ORPI	1		38.7	47.6	48.1	41.0	41.8	47.5	44.2	39.8	35.3	33.1	49.8		30.4	37.3	39.8	46.2	36.4	33.0	35.4	37.9	10.4	49.8	9.3
SEKI	1								70.2	66.3	55.9	56.3	63.7	64.6	64.9	56.7	48.8	54.0	44.9	42.8		52.7	16.2	70.2	14.7
	2								63.3	63.1	53.6	55.3	58.6	64.4	54.8	54.3	48.0	52.4	43.1	44.6	41.1	49.3	14.7	64.4	13.2
WICA	1	43.0	38.8	37.2	46.9		40.9	46.1	37.3	45.4	46.8	45.4	40.5	30.2	32.2	42.3	43.8	38.4	41.6	25.8	36.2	37.5	10.1	46.9	9.2
YOSE	1													53.7	48.5	39.5	40.9	38.6	40.1	42.1	36.1	38.0	12.8	53.7	11.8
	2													46.5	41.7	33.2	36.2	33.0	31.9	32.3	28.3	31.9	11.0	46.5	10.2
ZION	1	45.2	44.5	58.8	41.2	46.7	56.4	45.2	54.3	47.4	45.3	32.2	39.1	39.7	39.9	39.5	49.1	31.4	34.1	31.8	31.8	40.7	11.9	58.8	10.9

Table A5. Summary of Passive Ozone Concentrations by Month, 1995-1996

A. Alaska

Park	Site	Group	Mo	N	1995 Mean	1996 Mean	1995 Std Dev	1996 Std Dev	1995 Max	1996 Max	1995 Dose	1996 Dose
DENA	1	AK	7	4	16.8		1.6		18.5		2778	
DENA	1	AK	8	4	16.0		1.9		18.7		2693	
DENA	1	AK	9	1	21.5				21.5		3614	
NOAT	1	AK	7	2	24.0		7.8		29.6		4936	
NOAT	1	AK	8	3	14.1		3.3		16.7		2437	
WRST	1	AK	7	1	10.0				10.0		1780	
WRST	1	AK	8	4	12.6		6.9		22.5		2328	
WRST	1	AK	9	1	9.2				9.2		1540	

B. California

Park	Site	Group	Mo	N	1995 Mean	1996 Mean	1995 Std Dev	1996 Std Dev	1995 Max	1996 Max	1995 Dose	1996 Dose
SEKI	1	CA	6	2		50.2		1.9		51.5		4589
SEKI	1	CA	7	3		53.2		4.1		57.5		8716
SEKI	1	CA	8	5		46.7		5.6		52.7		7574
SEKI	1	CA	9	3		43.5		3.2		46.6		7357
SEKI	2	CA	7	5		52.8		2.9		56.6		8567
SEKI	2	CA	8	4		50.1		2.7		52.5		8171
SEKI	2	CA	9	3		41.1		1.4		42.7		7296
SEKI	3	CA	7	5		67.5		3.3		70.8		10564
SEKI	3	CA	8	4		63.8		5.5		71.1		9452
SEKI	3	CA	9	3		53.6		8.7		61.3		9093
SEKI	4	CA	7	5		51.1		14.4		68.8		7784
SEKI	4	CA	8	4		44.6		25.1		63.4		7444
SEKI	4	CA	9	2		43.4		8.1		49.1		6052
SEKI	5	CA	7	5		38.8		7.6		46.6		7506
SEKI	5	CA	8	4		41.8		3.7		44.9		6833
SEKI	5	CA	9	2		36.2		3.8		38.9		5419
SEKI	6	CA	7	5		69.1		3.5		72.2		11585
SEKI	6	CA	8	4		67.8		4.6		74.4		11325
SEKI	6	CA	9	3		53.0		6.4		57.7		8879
SEKI	GC	CA	6	4		57.8		10.6		67.3		9730
SEKI	GC	CA	7	4		67.2		1.8		69.5		13903
SEKI	GC	CA	8	4		61.4		4.2		64.6		10845
SEKI	GC	CA	9	4		49.7		4.6		55.6		8390

C. Colorado Plateau

Park	Site	Group	Mo	N	1995 Mean	1996 Mean	1995 Std Dev	1996 Std Dev	1995 Max	1996 Max	1995 Dose	1996 Dose
BLCA	1	COPlat	5	8	45.0	53.9	2.6	1.2	47.9	54.6	7634	9124
BLCA	1	COPlat	6	8	44.5	48.9	4.7	4.2	48.6	53.6	7440	8148
BLCA	1	COPlat	7	9	42.9	53.8	5.4	4.8	47.7	61.2	7199	8971
BLCA	1	COPlat	8	9	46.8	49.1	4.3	7.0	53.0	58.7	7952	8086
BLCA	1	COPlat	9	8	41.2	39.8	3.5	1.8	45.6	41.4	6931	6892
BRCA	1	COPlat	5	7	40.4	60.1	4.0	3.6	46.3	62.6	6651	9991
BRCA	1	COPlat	6	8	48.0	50.7	2.9	6.0	50.0	57.9	8029	8460
BRCA	1	COPlat	7	9	48.3	54.1	3.3	2.5	50.6	57.0	8093	9184
BRCA	1	COPlat	8	9	48.4	49.0	4.3	5.7	55.2	56.1	7356	8069
BRCA	1	COPlat	9	8	44.7	42.7	3.8	1.9	49.5	45.2	8198	7181
CARE	1	COPlat	5	6	43.1	49.3	2.0	3.0	46.2	51.4	7200	8599
CARE	1	COPlat	6	7	42.8	43.6	2.9	2.5	46.2	46.4	9115	11472
CARE	1	COPlat	7	7	42.1	48.8	3.7	2.5	46.1	51.0	6882	9214
CARE	1	COPlat	8	8	37.0	46.6	5.4	6.1	43.4	51.3	6271	9154
CARE	1	COPlat	9	7	36.1	36.0	4.3	1.0	40.0	37.0	6182	7102
FLAG	1	COPlat	7	5		44.9		2.5		47.1		7510
FLAG	1	COPlat	8	4		45.0		8.2		56.2		7303
FLAG	2	COPlat	7	5		42.1		5.1		50.5		7095
FLAG	2	COPlat	8	4		46.5		8.1		54.2		7467
FLAG	3	COPlat	7	5		52.3		4.5		59.5		8765
FLAG	3	COPlat	8	4		48.9		5.0		53.7		8103
LAME	1	COPlat	7	3		46.8		5.8		53.5		7961
LAME	1	COPlat	8	3		36.3		2.9		39.6		11042
LAME	2	COPlat	7	4		48.1		5.9		54.9		7989
LAME	2	COPlat	8	3		42.9		0.4		43.2		7085
LAME	3	COPlat	7	4		56.2		4.7		63.2		9412
LAME	3	COPlat	8	3		52.8		1.6		53.9		8890
ORPI	1	COPlat	6	4		39.3		9.8		46.7		6771
ORPI	1	COPlat	7	5		39.6		6.6		49.2		6622
ORPI	1	COPlat	8	3		41.6		1.9		43.7		6986
ORPI	1	COPlat	9	4		31.6		5.1		37.0		5300
ORPI	1	COPlat	10	4		33.9		1.7		36.2		5673
ZION	1	COPlat	5	7	44.3	57.5	8.0	10.4	54.6	69.4	7459	9652
ZION	1	COPlat	6	9	44.9	53.7	2.7	2.3	48.6	56.0	7574	9130
ZION	1	COPlat	7	9	48.4	47.1	4.2	1.8	52.4	49.1	9523	7924
ZION	1	COPlat	8	8	44.1	49.2	3.2	1.4	46.8	51.1	8003	8277
ZION	1	COPlat	9	7	43.8	40.7	1.4	3.3	44.9	43.9	12382	6834
ZION	1	COPlat	10	1	40.0				40.0		13437	

D. California-Oregon

Park	Site	Group	Mo	N	1995 Mean	1996 Mean	1995 Std Dev	1996 Std Dev	1995 Max	1996 Max	1995 Dose	1996 Dose
CRLA	1	CA_OR	5	6	46.2	48.5	2.7	1.4	50.2	49.5	7841	8301
CRLA	1	CA_OR	6	7	38.5	45.0	7.3	7.8	48.5	52.8	6520	8928
CRLA	1	CA_OR	7	9	36.9	40.5	4.8	2.7	41.8	44.5	6390	6996
CRLA	1	CA_OR	8	9	38.4	53.7	6.0	4.6	44.2	58.1	6167	9079
CRLA	1	CA_OR	9	8	38.2	36.6	7.4	5.4	48.0	42.6	6642	6225
LABE	1	CA_OR	5	8	43.2	46.7	3.9	6.9	47.7	52.2	7201	7834
LABE	1	CA_OR	6	8	36.4	40.7	5.5	6.8	41.4	47.6	6099	6706
LABE	1	CA_OR	7	9	42.2	41.4	4.5	9.1	48.0	49.8	7073	7596
LABE	1	CA_OR	8	5	45.3		6.3		52.9		7593	
LABE	1	CA_OR	9	8	41.7	38.9	6.2	4.5	49.8	44.4	6994	6464

E. Washington

Park	Site	Group	Mo	N	1995 Mean	1996 Mean	1995 Std Dev	1996 Std Dev	1995 Max	1996 Max	1995 Dose	1996 Dose
OLYM	1	Wash	6	4		22.3		2.9		25.5		3428
OLYM	1	Wash	7	8	15.5	16.9	2.8	4.1	18.7	21.0	2585	2903
OLYM	1	Wash	8	9	13.6	21.7	2.2	2.6	16.7	23.4	2265	3702
OLYM	1	Wash	9	1	11.8				11.8		2049	
OLYM	2	Wash	6	4		25.9		3.7		29.4		4110
OLYM	2	Wash	7	8	22.8	27.2	7.4	6.1	30.4	35.0	3848	4618
OLYM	2	Wash	8	9	23.8	32.6	4.6	6.5	31.4	38.7	4013	5486
OLYM	2	Wash	9	1	31.9				31.9		5375	
OLYM	3	Wash	6	4		28.5		5.2		35.3		4489
OLYM	3	Wash	7	8	22.9	30.1	6.5	7.4	29.8	41.1	3807	5011
OLYM	3	Wash	8	9	25.5	34.5	4.1	8.7	32.8	45.4	4226	5806
OLYM	3	Wash	9	1	29.5				29.5		5002	
OLYM	4	Wash	6	4		32.3		6.9		41.4		5126
OLYM	4	Wash	7	8	29.2	36.1	5.1	6.8	34.5	45.9	4929	6119
OLYM	4	Wash	8	9	33.4	41.8	4.6	6.0	41.4	50.4	5575	6916
OLYM	4	Wash	9	1	36.5				36.5		6090	
OLYM	5	Wash	6	3		14.5		2.2		16.4		3282
OLYM	5	Wash	7	7	11.6	12.0	1.5	5.3	12.6	16.5	1966	2030
OLYM	5	Wash	8	9	9.4	15.7	1.4	5.6	11.9	22.5	1515	2677
OLYM	5	Wash	9	1	5.4				5.4		883	
OLYM	6	Wash	6	3		13.5		4.6		18.8		2791
OLYM	6	Wash	7	6	11.9	13.7	1.3	7.1	12.9	21.4	1987	1988
OLYM	6	Wash	8	9	9.3	19.0	0.8	4.8	10.2	22.8	1575	3189
OLYM	6	Wash	9	1	8.4				8.4		1348	

F. Western

Park	Site	Group	Mo	N	1995 Mean	1996 Mean	1995 Std Dev	1996 Std Dev	1995 Max	1996 Max	1995 Dose	1996 Dose
GRTE	1	West	5	8	35.6	43.9	4.2	6.6	38.7	49.1	5682	6153
GRTE	1	West	6	8	35.8	39.2	3.6	3.4	39.8	43.4	5957	6825
GRTE	1	West	7	9	36.0	39.4	3.4	2.3	40.3	41.4	6092	6954
GRTE	1	West	8	7	36.6	57.4	4.9	18.7	40.1	74.8	6252	9578
GRTE	1	West	9	8	32.6	35.6	2.5	2.8	36.4	38.3	5178	5933
WICA	1	West	5	8	37.1	46.1	2.4	5.9	39.9	49.8	6260	7700
WICA	1	West	6	8	36.2	47.2	0.8	2.6	36.8	49.5	6400	7869
WICA	1	West	7	8	43.3	43.3	4.4	2.2	47.0	46.3	7224	7291
WICA	1	West	8	8	49.3	51.3	0.6	10.6	49.9	67.0	10040	8309
WICA	1	West	9	8	40.6	40.6	6.4	4.9	49.9	47.4	5338	6819

G. Isle Royale

Park	Site	Group	Mo	N	1995 Mean	1996 Mean	1995 Std Dev	1996 Std Dev	1995 Max	1996 Max	1995 Dose	1996 Dose
ISRO	1	MI	5	2		49.1		1.4		50.1		8271
ISRO	1	MI	6	3		39.1		3.1		42.6		6423
ISRO	1	MI	7	5		33.4		6.1		38.4		5767
ISRO	1	MI	8	4		40.6		6.4		49.4		6846
ISRO	1	MI	9	4		31.8		6.1		38.2		5559

H. Eastern

Park	Site	Group	Mo	N	1995 Mean	1996 Mean	1995 Std Dev	1996 Std Dev	1995 Max	1996 Max	1995 Dose	1996 Dose
BLRI	1	East	5	2	49.5		11.1		57.4		8173	
BLRI	1	East	6	8	42.7	48.6	3.5	6.2	46.3	55.7	7166	8131
BLRI	1	East	7	9	49.6	35.4	10.9	6.3	59.8	44.2	8378	5912
BLRI	1	East	8	8	45.9	39.2	11.8	3.3	58.5	43.5	7742	6655
BLRI	1	East	9	9	39.1	36.0	14.6	5.7	65.1	43.0	6740	5968
BLRI	2	East	5	3		48.0		2.1		49.3		8376
BLRI	2	East	6	4		50.2		4.3		56.5		8625
BLRI	2	East	7	5		39.6		3.8		43.2		6801
BLRI	2	East	8	4		45.5		1.9		47.8		7979
BLRI	2	East	9	4		34.8		8.0		42.7		5989
BLRI	3	East	5	2		41.8		1.6		42.9		7039
BLRI	3	East	6	4		47.0		2.5		49.0		7274
BLRI	3	East	7	5		39.7		4.7		45.2		6938
BLRI	3	East	8	7	41.0	42.8	4.8	6.8	45.3	48.4	6936	7226
BLRI	3	East	9	3	27.2	15.6	7.7		32.7	15.6	4291	10841
GRSM	1L	East	5	3		36.1		3.4		39.9		7176
GRSM	1L	East	6	4		38.6		2.0		40.8		6484
GRSM	1L	East	7	5		25.3		3.5		28.2		4277
GRSM	1L	East	8	3		35.3		2.9		38.1		4722
GRSM	1U	East	5	4		44.1		3.7		49.6		9213
GRSM	1U	East	6	4		47.0		1.1		48.1		7931
GRSM	1U	East	7	5		33.2		2.8		36.8		5643
GRSM	1U	East	8	3		44.8		4.1		49.5		5807
GRSM	2L	East	5	3		35.1		3.7		39.3		7005
GRSM	2L	East	6	4		29.6		1.5		31.6		4978
GRSM	2L	East	7	4		21.3		2.6		23.7		3611
GRSM	2L	East	8	2		34.8		7.6		40.1		4447
GRSM	2U	East	5	3		40.7		3.4		44.6		8091
GRSM	2U	East	6	4		35.9		2.4		37.9		6166
GRSM	2U	East	7	3		30.6		2.5		32.5		5209
GRSM	2U	East	8	2		27.0		12.3		35.7		4577
GRSM	3L	East	5	3		38.2		1.9		40.3		7596
GRSM	3L	East	6	4		38.8		2.5		42.5		6523
GRSM	3L	East	7	5		26.1		3.0		29.7		4418
GRSM	3L	East	8	2		32.2		3.7		34.8		3818
GRSM	3U	East	5	3		48.1		1.8		49.8		9711
GRSM	3U	East	6	4		49.7		1.2		51.3		8327
GRSM	3U	East	7	4		38.1		3.4		41.2		6474
GRSM	3U	East	8	2		43.9		2.1		45.3		5039
GRSM	Co	East	5	3		67.3		3.1		70.9		13882
GRSM	Co	East	6	3		64.4		2.6		67.4		10474
GRSM	Co	East	7	5		58.4		8.9		73.2		10019
GRSM	Co	East	8	4		63.2		5.6		68.4		9101
NERI	1	East	5	8	37.4	40.6	4.3	5.6	41.2	43.8	6321	6655
NERI	1	East	6	8	31.9	39.8	6.1	5.0	40.2	46.8	5419	6444
NERI	1	East	7	9	38.9	32.4	4.7	4.5	45.5	38.0	6586	5707
NERI	1	East	8	9	37.5	31.6	7.6	8.3	44.4	43.7	6295	5382
NERI	1	East	9	8	30.5	23.1	13.9	3.0	49.3	26.5	5094	4060