APPENDIX

Annual Arithmetic Means and Observational Data

AQS Parameter Description	Year	Arithmetic Mean (ppbc)	Number of Carbons	Arithmetic Mean (ppbv)	Observation Count	Half-MDL Subcount
Volatile Organic Compounds						
Carbon disulfide	2013	0.23033	1	0.23033	61	0
Propylene	2013	1.04661	3	0.34887	61	0
Acetylene	2013	1.18531	2	0.592655	61	0
Freon 114	2013	0.0349	2	0.01745	61	1
1,3-Butadiene	2013	0.11885	4	0.0297125	61	0
n-Octane	2013	0.25246	8	0.0315575	61	1
Methyl tert-butyl ether	2013	0.0118	5	0.00236	61	0
Tert-amyl methyl ether	2013	0.039	6	0.0065	61	61
tert-Butyl ethyl ether	2013	0.07062	6	0.01177	61	52
Ethyl acrylate	2013	0.00115	5	0.00023	61	0
Methyl methacrylate	2013	0.01049	5	0.002098	61	0
Formaldehyde	2013	2.63607	1	2.63607	61	0
Acetaldehyde	2013	2.19344	2	1.09672	61	0
Propionaldehyde	2013	0.46885	3	0.156283333	61	0
Acrolein - Unverified	2013	1.24196	3	0.413986667	56	0
Butyraldehyde	2013	0.41495	4	0.1037375	61	0
Isovaleraldehyde	2013	0.005	5	0.001	61	61
Hexanaldehyde	2013	0.22023	6	0.036705	61	0
Valeraldehyde	2013	0.16742	5	0.033484	59	1
Crotonaldehyde	2013	0.99	4	0.2475	61	0
Acetone	2013	3.0691	3	1.023033333	61	0
Methyl ethyl ketone	2013	0.60479	4	0.1511975	61	0
Methyl isobutyl ketone	2013	0.30557	6	0.050928333	61	0
Acetonitrile	2013	0.52869	2	0.264345	61	0
Acrylonitrile	2013	0.18066	3	0.06022	61	0
Chloromethane	2013	0.54475	1	0.54475	61	0
Dichloromethane	2013	0.48183	1	0.48183	60	0
Chloroform	2013	0.04656	1	0.04656	61	0
Carbon tetrachloride	2013	0.1018	1	0.1018	61	0
Bromoform	2013	0.00148	1	0.00148	61	0
Trichlorofluoromethane	2013	0.28631	1	0.28631	61	0
Chloroethane	2013	0.00475	2	0.002375	61	0
1,1-Dichloroethane	2013	0	2	0	61	0
Methyl chloroform	2013	0.01508	2	0.00754	61	0
Ethylene dichloride	2013	0.04328	2	0.02164	61	0
Tetrachloroethylene	2013	0.03967	2	0.019835	61	0
1,1,2,2-Tetrachloroethane	2013	0.00344	2	0.00172	61	0
Bromomethane	2013	0.01115	1	0.01115	61	0
1,1,2-Trichloroethane	2013	0	2	0	61	0
1,1,2-Trichloro-1,2,2-trifluoroethane	2013	0.16164	2	0.08082	61	1
Dichlorodifluoromethane	2013	0.51574	1	0.51574	61	0
Trichloroethylene	2013	0.01803	2	0.009015	61	0
1,1-Dichloroethylene	2013	0	2	0	61	0
Bromodichloromethane	2013	0.0095	1	0.0095	61	61
1,2-Dichloropropane	2013	0	3	0	61	0
trans-1,3-Dichloropropene	2013	0	3	0	61	0
cis-1,3-Dichloropropene	2013	0	3	0	61	0

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Dibromochloromethane	2013	0.009	1	0.009	61	61
Chloroprene	2013	0	4	0	61	0
Bromochloromethane	2013	0.008	1	0.008	61	61
trans-1,2-Dichloroethylene	2013	0.012	2	0.006	61	61
cis-1,2-Dichloroethene	2013	0.016	2	0.008	61	61
Ethylene dibromide	2013	0.00033	2	0.000165	61	0
Hexachlorobutadiene	2013	0.00836	4	0.00209	61	0
Vinyl chloride	2013	0.0041	2	0.00205	61	0
m/p Xylene	2013	1.07852	8	0.134815	61	0
Benzene	2013	1.14	6	0.19	61	0
Toluene	2013	2.47049	7	0.352927143	61	0
Ethylbenzene	2013	0.43623	8	0.05452875	61	0
o-Xylene	2013	0.44672	8	0.05584	61	0
1,3,5-Trimethylbenzene	2013	0.17402	9	0.019335556	61	27
1,2,4-Trimethylbenzene	2013	0.43554	9	0.048393333	61	2
Styrene	2013	0.20082	8	0.0251025	61	0
Benzaldehyde	2013	0.2497	7	0.035671429	61	0
2,5-Dimethylbenzaldehyde	2013	0.009	9	0.001	61	61
Tolualdehydes	2013	0.1865	8	0.0233125	52	2
Chlorobenzene	2013	0.01246	6	0.002076667	61	0
1,2-Dichlorobenzene	2013	0.069	6	0.0115	61	61
1,3-Dichlorobenzene	2013	0.078	6	0.013	61	61
1,4-Dichlorobenzene	2013	0.09246	6	0.01541	61	0
1,2,4-Trichlorobenzene	2013	0.00197	6	0.000328333	61	0
AQS Parameter Description	**Year**			**Arithmetic Mean (ng/m3)**	**Observation Count**	**Half-MDL Subcount**
PM10 Metals						
Antimony PM10 LC	2013			1.47148	61	0
Arsenic PM10 LC	2013			0.71852	61	0
Beryllium PM10 LC	2013			0.00869	61	0
Cadmium PM10 LC	2013			0.56852	61	0
Chromium PM10 LC	2013			2.97311	61	0
Cobalt PM10 LC	2013			0.13	61	0
Lead PM10 LC FRM/FEM	2013			9.44	61	0
Manganese PM10 LC	2013			13.35475	61	0
Nickel PM10 LC	2013			1.10295	61	0
Mercury PM10 LC	2013			0.02344	61	0
Selenium PM10 LC	2013			0.7782	61	0
AQS Parameter Description	**Year**			**Arithmetic Mean (ug/m3)**	**Observation Count**	**Half-MDL Subcount**
PM2.5 Metals						
Antimony PM2.5 LC	2013			0.01985	119	116
Arsenic PM2.5 LC	2013			0.00063	119	0
Aluminum PM2.5 LC	2013			0.02983	119	68
Barium PM2.5 LC	2013			0.00657	119	116
Bromine PM2.5 LC	2013			0.00469	119	15
Cadmium PM2.5 LC	2013			0.00134	119	0
Calcium PM2.5 LC	2013			0.06193	119	5
Chromium PM2.5 LC	2013			0.00731	119	0
Cobalt PM2.5 LC	2013			0.00084	119	106
Copper PM2.5 LC	2013			0.00298	119	49

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Chlorine PM2.5 LC	2013			0.01237	119	59
Cerium PM2.5 LC	2013			0.00608	119	119
Cesium PM2.5 LC	2013			0.01007	119	118
Iron PM2.5 LC	2013			0.11927	119	0
Lead PM2.5 LC	2013			0.00417	119	0
Indium PM2.5 LC	2013			0.01018	119	118
Manganese PM2.5 LC	2013			0.00497	119	0
Nickel PM2.5 LC	2013			0.00098	119	0
Magnesium PM2.5 LC	2013			0.00892	119	106
Phosphorus PM2.5 LC	2013			0.00545	119	118
Selenium PM2.5 LC	2013			0.00117	119	110
Tin PM2.5 LC	2013			0.01354	119	117
Titanium PM2.5 LC	2013			0.0029	119	107
Vanadium PM2.5 LC	2013			0.00195	119	109
Silicon PM2.5 LC	2013			0.0707	119	5
Silver PM2.5 LC	2013			0.00834	119	118
Zinc PM2.5 LC	2013			0.01611	119	10
Strontium PM2.5 LC	2013			0.00136	119	112
Sulfur PM2.5 LC	2013			0.78092	119	0
Rubidium PM2.5 LC	2013			0.00099	119	116
Potassium PM2.5 LC	2013			0.05635	119	0
Sodium PM2.5 LC	2013			0.03819	119	83
Zirconium PM2.5 LC	2013			0.0038	119	114
Ammonium Ion PM2.5 LC	2013			0.8812	119	0
Sodium Ion Pm2.5 LC	2013			0.08763	119	7
Potassium Ion PM2.5 LC	2013			0.04762	119	24
Total Nitrate PM2.5 LC	2013			1.52727	119	0
Sulfate PM2.5 LC	2013			2.11216	119	0
AQS Parameter Description	**Year**			**Arithmetic Mean (ug/m3)**	**Observation Count**	**Half-MDL Subcount**
Total Suspended Particulate Metals						
Chromium VI (TSP) STP	2013			0.00002	59	0
Lead (TSP) LC	2013			0.01568	60	0
AQS Parameter Description	**Year**			**Arithmetic Mean (ng/m3, 25 °C)**	**Observation Count**	**Half- MDL Subcount**
Polycyclic Aromatic Hydrocarbons						
Naphthalene (TSP) STP	2013			72.07	60	0
Acenaphthene (TSP) STP	2013			5.02223	60	0
Acenaphthylene (TSP) STP	2013			0.70005	60	0
Fluorene (TSP) STP	2013			5.78838	60	0
Phenanthrene (TSP) STP	2013			12.10883	60	0
Anthracene (TSP) STP	2013			0.41707	60	0
Retene (TSP) STP	2013			0.14513	60	0
9-fluorenone (TSP) STP	2013			1.90453	60	0
Cyclopenta[cd]pyrene (TSP) STP	2013			0.04177	60	0
Fluoranthene (TSP) STP	2013			3.34025	60	0
Pyrene (TSP) STP	2013			1.71073	60	0
Chrysene (TSP) STP	2013			0.34184	60	0
Coronene (TSP) STP	2013			0.06118	60	0
Perylene (TSP) STP	2013			0.02246	60	0
Benzo[a]anthracene (TSP) STP	2013			0.15823	60	0

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Benzo[b]fluoranthene (TSP) STP	2013			0.3471	60	0
Benzo[k]fluoranthene (TSP) STP	2013			0.099	60	0
Benzo[e]pyrene (TSP) STP	2013			0.17325	60	0
Dibenzo[a,h]anthracene (TSP) STP	2013			0.01782	60	0
Benzo[g,h,i]perylene (TSP) STP	2013			0.17188	60	0
Benzo[a]pyrene (TSP) STP	2013			0.14413	60	0
Indeno[1,2,3-cd]pyrene (TSP) STP	2013			0.17001	60	0

ppbc = parts per billion carbon
ppbv = parts per billion by volume
MDL = Minimum Detection Level
ng/m3 = nanograms per cubic meter
PM10 = particulate matter having an aerodynamic diameter smaller than 10 micrometers
LC = local conditions
ug/m3 = micrograms per cubic meter
PM2.5 = particulate matter having an aerodynamic diameter smaller than 2.5 micrometers
TSP = total suspended particulates
STP = standard temperature and pressure

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Cancer and Non-cancer Benchmarks

AQS Parameter Description	CAS Number	CANCER EFFECTS			NON-CANCER EFFECTS	
		U.S. EPA Weight-of-Evidence Classifications	Risk Level (ppbv)	Data Source	Risk Level (ppbv)	Data Source
Volatile Organic Compounds						
1,1,2,2-Tetrachloroethane	79-34-5	Likely Carcinogenic To Humans	2.5E-03	Cal/EPA		
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1					
1,1,2-Trichloroethane	79-00-5	C	1.1E-02	U.S. EPA		
1,1-Dichloroethane	75-34-3	C	1.5E-01	Cal/EPA		
1,1-Dichloroethylene	75-35-4	Suggestive Evidence			50	U.S. EPA
1,2,4-Trichlorobenzene	120-82-1	D			27	HEAST
1,2,4-Trimethylbenzene	95-63-6					
1,2-Dichlorobenzene	95-50-1	D				
1,2-Dichloropropane	78-87-5		2.2E-02	Cal/EPA	0.87	U.S. EPA
1,3,5-Trimethylbenzene	108-67-8					
1,3-Butadiene	106-99-0	Carcinogenic To Humans	1.4E-02	U.S EPA	0.9	U.S EPA
1,3-Dichlorobenzene	541-73-1	D				
1,4-Dichlorobenzene	106-46-7		1.5E-02	Cal/EPA	130	U.S EPA
2,5-Dimethylbenzaldehyde	5779-94-2					
Acetaldehyde	75-07-0	B2	2.8E-01	U.S. EPA	5.0	U.S. EPA
Acetone	67-64-1	Inadequate Data			13,000	U.S. ATSDR
Acetonitrile	75-05-8	D			36	U.S. EPA
Acetylene	74-86-2					
Acrolein	107-02-8	Inadequate Data			0.0087	U.S. EPA
Acrylonitrile	107-13-1	B1	4.6E-03	U.S. EPA	0.92	U.S. EPA
Benzaldehyde	100-52-7					
Benzene	71-43-2	Known Human Carcinogen	4.1E-02	U.S. EPA	9.4	U.S. EPA
Benzyl chloride	100-44-7	B2	3.9E-03	Cal/EPA		
Bromochloromethane	74-97-5	D				
Bromodichloromethane	75-27-4	B2	4.0E-03	Cal/EPA		
Bromoform	75-25-2	B2	8.7E-02	U.S. EPA		
Bromomethane	74-83-9	D			1.3	U.S. EPA
Butyraldehyde	123-72-8					
Carbon disulfide	75-15-0				220	U.S. EPA
Carbon tetrachloride	56-23-5	Likely Carcinogenic To Humans	2.7E-02	U.S. EPA	16	U.S. EPA
Chlorobenzene	108-90-7	D			220	Cal/EPA
Chloroethane	75-00-3				3,800	U.S. EPA
Chloroform	67-66-3	Likely/Not Likely Carcinogenic	8.2E-03	U.S. EPA	20	U.S. ATSDR
Chloromethane	74-87-3	Can't Be Determined	2.7E-01	HEAST	44	U.S. EPA
Chloroprene	126-99-8	Likely Carcinogenic To Humans	5.5E-04	U.S. EPA	6	U.S. EPA
cis-1,2-Dichloroethene	156-59-2	Inadequate Data				
cis-1,3-Dichloropropylene	542-75-6	Likely Carcinogenic To Humans	4.4E-02	U.S. EPA	4.4	U.S. EPA
Crotonaldehyde	123-73-9	C				
Dibromochloromethane	124-48-1	C	4.3E-03	Cal/EPA		
Dichlorodifluoromethane	75-71-8					
Dichloromethane	75-09-2	Likely Carcinogenic To Humans	1.7E+01	U.S. EPA	170	U.S. EPA
Ethyl acrylate	140-88-5					
Ethylbenzene	100-41-4	D	9.2E-02	Cal/EPA	230	U.S. EPA
Ethylene dibromide	106-93-4	Likely Carcinogenic To Humans	2.6E-04	U.S. EPA	1.2	U.S. EPA
Ethylene dichloride	107-06-2	B2	9.9E-03	U.S. EPA	600	U.S. ATSDR
Formaldehyde	50-00-0	B1	6.5E-02	U.S. EPA	8	U.S. ATSDR
Freon 114	76-14-2					
Hexachlorobutadiene	87-68-3	C	4.7E-03	U.S. EPA		
Hexanaldehyde	66-25-1					
Isovaleraldehyde	590-86-3					
m-Xylene	108-38-3	Inadequate Data			23	U.S. EPA
Methyl chloroform	71-55-6	Inadequate Data			920	U.S. EPA
Methyl ethyl ketone	78-93-3	Inadequate Data			1,700	U.S. EPA
Methyl isobutyl ketone	108-10-1	Inadequate Data			730	U.S. EPA
Methyl methacrylate	80-62-6	Not Likely Carcinogenic To Humans			170	U.S. EPA
Methyl tert-butyl ether	1634-04-4		1.1E+00	Cal/EPA	830	U.S. EPA
n-Octane	111-65-9					

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o-Xylene	95-47-6	Inadequate Data			23	U.S. EPA
p-Xylene	106-42-3	Inadequate Data			23	U.S. EPA
Propionaldehyde	123-38-6	Inadequate Data			3.4	U.S. EPA
Propylene	115-07-1				1,700	Cal/EPA
Styrene	100-42-5				230	U.S. EPA
Tert-amyl methyl ether	994-05-8					
tert-Butyl ethyl ether	637-92-3					
Tetrachloroethylene	127-18-4	Likely Carcinogenic To Humans	5.9E-01	U.S. EPA	5.90	U.S. EPA
Tolualdehydes	1334-78-7					
Toluene	108-88-3	Inadequate Data			1,300	U.S. EPA
trans-1,2-Dichloroethylene	156-60-5	Inadequate Data				
trans-1,3-Dichloropropylene	10061-02-6					
Trichloroethylene	79-01-6	Carcinogenic To Humans	3.7E-02	U.S. EPA	0.37	U.S. EPA
Trichlorofluoromethane	75-69-4					
Valeraldehyde	110-62-3					
Vinyl chloride	75-01-4	Known Human Carcinogen	9.0E-02	U.S. EPA	39	U.S. EPA
AQS Parameter Description	**CAS Number**	**U.S. EPA Weight-of-Evidence Classifications**	**Risk Level (ug/m3)**	**Data Source**	**Risk Level (mg/m3)**	**Data Source**
PM10 Metals						
Cobalt	7440-48-4				1.0E-04	U.S. ATSDR
Lead	7439-92-1	B2	8.3E-02	Cal/EPA	1.5E-04	NAAQS
Chromium	7440-47-3					
Manganese	7439-96-5	D			5.0E-05	U.S. EPA
Mercury	7439-97-6	D			3.0E-04	U.S. EPA
Nickel	7440-02-0	A	3.8E-03	Cal/EPA	9.0E-05	U.S. ATSDR
Arsenic	7440-38-2	A	2.0E-04	U.S. EPA	1.5E-05	Cal/EPA
Antimony	7440-36-0					
Beryllium	7440-41-7	B1	4.0E-04	U.S. EPA	2.0E-05	U.S. EPA
Cadmium	7440-43-9	B1	6.0E-04	U.S. EPA	1.0E-05	U.S. ATSDR
Selenium	7782-49-2	D			2.0E-02	Cal/EPA
Chromium VI	18540-29-9	Known Human Carcinogen	8.0E-05	U.S. EPA	1.0E-04	U.S. EPA
AQS Parameter Description	**CAS Number**	**U.S. EPA Weight-of-Evidence Classifications**	**Risk Level (ug/m3)**	**Data Source**	**Risk Level (mg/m3)**	**Data Source**
PM2.5 Metals						
Aluminum PM2.5 LC	7429-90-5					
Ammonium Ion PM2.5 LC	14798-03-9					
Antimony PM2.5 LC	7440-36-0					
Arsenic PM2.5 LC	7440-38-2	A	2.0E-04	U.S. EPA	1.5E-05	Cal/EPA
Barium PM2.5 LC	7440-39-3	Can't Be Determined				
Bromine PM2.5 LC	7726-95-6					
Cadmium PM2.5 LC	7440-43-9	B1	6.0E-04	U.S. EPA	1.0E-05	U.S. ATSDR
Calcium PM2.5 LC	7440-70-2					
Cerium PM2.5 LC	7440-45-1					
Cesium PM2.5 LC	7440-46-2					
Chlorine PM2.5 LC	7782-50-5				1.4E-04	U.S. ATSDR
Chromium PM2.5 LC	7440-47-3					
Cobalt PM2.5 LC	7440-48-4				1.0E-04	U.S. ATSDR
Copper PM2.5 LC	7440-50-8	D				
Indium PM2.5 LC	7440-74-6					
Iron PM2.5 LC	7439-89-6					
Lead PM2.5 LC	7439-92-1	B2	8.3E-02	Cal/EPA	1.5E-04	NAAQS
Magnesium PM2.5 LC	7439-95-4					
Manganese PM2.5 LC	7439-96-5	D			5.0E-05	U.S. EPA
Nickel PM2.5 LC	7440-02-0	A	3.8E-03	Cal/EPA	9.0E-05	U.S. ATSDR
Phosphorus PM2.5 LC	7723-14-0	D				
Potassium Ion PM2.5 LC	7740 09 7					
Potassium PM2.5 LC	7740 09 7					
Rubidium PM2.5 LC	7440-17-7					
Selenium PM2.5 LC	7782-49-2	D			2.0E-02	Cal/EPA
Silicon PM2.5 LC	7440-21-3					
Silver PM2.5 LC	7440-22-4	D				
Sodium Ion Pm2.5 LC	7440-23-5					

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Sodium PM2.5 LC	7440-23-5					
Strontium PM2.5 LC	7440-24-6					
Sulfate PM2.5 LC	14808-79-8					
Sulfur PM2.5 LC	7704-34-9					
Tin PM2.5 LC	7440-31-5					
Titanium PM2.5 LC	7440-32-6					
Total Nitrate PM2.5 LC	14797-55-8				1.3E-01	NAAQS
Vanadium PM2.5 LC	7440-62-2				1.0E-04	U.S. ATSDR
Zinc PM2.5 LC	7440-66-6	Inadequate Data				
Zirconium PM2.5 LC	7440-67-7					
AQS Parameter Description	**CAS Number**	**U.S. EPA Weight-of-Evidence Classifications**	**Risk Level (ug/m3)**	**Data Source**	**Risk Level (mg/m3)**	**Data Source**
Total Suspended Particulate Metals						
Chromium VI	18540-29-9	Known Human Carcinogen	8.0E-05	U.S. EPA	1.0E-04	U.S. EPA
Lead	7439-92-1	B2	8.3E-02	Cal/EPA	1.5E-04	NAAQS
AQS Parameter Description	**CAS Number**	**U.S. EPA Weight-of-Evidence Classifications**	**Risk Level (ug/m3)**	**Data Source**	**Risk Level (mg/m3)**	**Data Source**
Polycyclic Aromatic Hydrocarbons						
Naphthalene	91-20-3	Can't Be Determined	0.029	Cal/EPA	3.0E-03	U.S. EPA
Acenaphthene	83-32-9					
Acenaphthylene	208-96-8	D				
Fluorene	86-73-7	D				
Phenanthrene	85-01-8	D				
Anthracene	120-12-7	D				
Retene	483-65-8					
9-fluorenone	486-25-9					
Cyclopenta[cd]pyrene	27208-37-3					
Fluoranthene	206-44-0	D				
Pyrene (TSP)	129-00-0	D				
Chrysene (TSP)	218-01-9	B2	0.09	Cal/EPA		
Coronene (TSP)	191-07-1					
Perylene (TSP)	198-55-0					
Benzo[a]anthracene (TSP)	56-55-3	B2	0.009	Cal/EPA		
Benzo[b]fluoranthene (TSP)	205-99-2	B2	0.009	Cal/EPA		
Benzo[k]fluoranthene (TSP)	207-08-9	B2	0.009	Cal/EPA		
Benzo[e]pyrene (TSP)	192-97-2					
Dibenzo[a,h]anthracene (TSP)	53-70-3	B2	0.0008	Cal/EPA		
Benzo[g,h,i]perylene (TSP)	191-24-2	D				
Benzo[a]pyrene (TSP)	50-32-8	B2	0.0009	Cal/EPA		
Indeno[1,2,3-cd]pyrene (TSP)	193-39-5	B2	0.009	Cal/EPA		

CAS = Chemical Abstracts Service
Cancer risk represents a 70-year exposure at a risk level of one-in-one million.
U.S. EPA Weight-of-Evidence Classifications: A = carcinogenic to humans; B = likely to be carcinogenic to humans;
C = suggestive evidence of carcinogenic potential; D = inadequate information to assess carcinogenic potential.
Data sources: U.S. EPA = U.S. Environmental Protection Agency; Cal/EPA = California Environmental Protection Agency;
HEAST = U.S. EPA's Health Effects Summary Tables; U.S. ATSDR = U.S. Agency for Toxic Substances and Disease Registry
ppbv = parts per billion by volume
ug/m3 = micrograms per cubic meter
mg/m3 = milligrams per cubic meter
PM10 = particulate matter having an aerodynamic diameter smaller than 10 micrometers
PM2.5 = particulate matter having an aerodynamic diameter smaller than 2.5 micrometers
LC = local conditions
TSP = total suspended particulates

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