



San Diego County Air Pollution Control District

DRAFT - MONITORING AND TECHNICAL SERVICES Annual Air Quality Monitoring Network Report

POSTED FOR PUBLIC VIEWING: May 29, 2026

SUBMITTED FOR EPA REVIEW: TBD

Table of Contents

1	INTRODUCTION – REPORT REQUIREMENTS.....	19
1.1	Federal Citation	19
1.2	Purpose, Scope, and Organization of Annual Network Report	20
1.3	Public Comments Information.....	20
1.3.1	District Contact Information.....	21
1.3.2	Additional Air Pollution Information	23
1.4	Description of Monitoring	24
1.4.1	Design Values.....	26
1.4.2	Network Design Theory	27
1.5	San Diego Air Basin Description	28
1.5.1	San Diego Topography.....	28
1.5.2	San Diego Climate.....	28
1.5.3	Population.....	29
2	OVERVIEW OF AIR MONITORING NETWORK.....	31
2.1	Overview of the Pollutant Monitoring Network	32
2.2	Summary of the Minimum Monitoring Requirements for the SDAB.....	36
2.3	Summary of Minimum Monitoring Requirements (Data)	39
2.3.1	Criteria Pollutants	39
2.3.2	Non-Criteria Pollutants & Others	40
2.4	Recent Planned and Unplanned Changes to the Network.....	40
2.4.1	Station Relocations and Upgrades	40
2.4.2	Station Additions	41
2.4.3	Sampler Shutdowns.....	41
2.4.4	Analyzer Addition: Continuous Formaldehyde – Operation Timeline June 2026.....	42
2.4.5	Sampler Addition: T-SASS (CARB) at Chula Vista Site.....	42
2.4.6	Waiver Letters	42

2.5	Submitted Questions During Question Period	42
3	OZONE (O ₃)	44
3.1	Introduction	44
3.2	Ozone Concentrations for San Diego	47
3.2.1	Concentrations for the Last 20 Years	47
3.2.2	Concentrations by Site for the Year	48
3.2.3	Concentrations by Site for Design Value	49
3.3	Ozone Minimum Monitoring Requirements	51
3.3.1	Minimum Requirements for the Design Value (DV) Criteria.....	51
3.3.2	Minimum Requirements for the Maximum Concentrations Site Design Value.....	52
3.3.3	Minimum Requirements for NCore & PAMS.....	52
3.3.4	Minimum Requirements of the Ozone Sampling Season	52
3.4	Ozone Suitability for Comparison to the NAAQS	53
4	NITROGEN DIOXIDE (NO ₂)	55
4.1	Introduction	55
4.2	NO ₂ Concentrations for San Diego	58
4.2.1	Concentrations for the Last 20 Years	58
4.2.2	Concentration by Site for the Year	59
4.2.3	Concentrations by Site for the Design Value.....	60
4.3	NO ₂ Minimum Monitoring Requirements.....	62
4.3.1	Minimum Requirements for Near Road Sites	62
4.3.2	Minimum Requirements Area Wide.....	64
4.3.3	Minimum Requirements of Regional Administrator	64
4.3.4	Minimum Requirements of PAMS True-NO ₂	65
4.3.5	Minimum Requirements for Reactive Oxides of Nitrogen within NCore & PAMS Programs.....	65
4.4	NO ₂ Suitability for Comparison to the NAAQS	66

5	CARBON MONOXIDE (CO)	68
5.1	Introduction	68
5.2	Carbon Monoxide Concentrations for San Diego for the Last 20 Years	70
5.3	Carbon Monoxide Concentrations for San Diego by Site for the Year	71
5.4	Carbon Monoxide Minimum Monitoring Requirements	72
5.4.1	Carbon Monoxide Monitoring Requirements – Near Road	72
5.4.2	Carbon Monoxide Minimum Monitoring Requirements – Regional Administrator	72
5.4.3	Carbon Monoxide Minimum Monitoring Requirements – NCore	73
5.4.4	Carbon Monoxide Minimum Monitoring Requirements – State (SIP)	73
5.5	Carbon Monoxide Suitability for Comparison to the NAAQS	74
6	SULFUR DIOXIDE (SO ₂)	76
6.1	Introduction	76
6.2	Sulfur Dioxide (SO ₂) Concentrations for San Diego	78
6.2.1	Concentrations for the Previous 20 Years	78
6.2.2	Concentrations by Site for the Design Value	79
6.3	Sulfur Dioxide (SO ₂) Minimum Monitoring Requirements	80
6.3.1	Minimum Requirements - NCore	80
6.3.2	Minimum Requirements – Ambient	81
6.4	Sulfur Dioxide (SO ₂) Suitability for Comparison to the NAAQS	82
7	LEAD (Pb)	84
7.1	Introduction	84
7.2	Lead Concentrations for San Diego	86
7.2.1	Concentrations for the Last 20 Years	86
7.2.2	Concentrations by Site and Year	87
7.3	Lead Minimum Monitoring Requirements	88
7.3.1	Minimum Requirements for non-Airport and Airport Sources	88
7.3.2	Minimum Requirements for Airport Special Study	89

7.3.3	Minimum Requirements for Regional Administrator.....	89
7.3.4	Minimum Requirements for QA Collocation & Filter Submittal to EPA.....	90
7.4	Lead Suitability for Comparison to the NAAQS	90
8	PARTICULATE MATTER 2.5 μm ($\text{PM}_{2.5}$)	93
8.1	Introduction	93
8.2	$\text{PM}_{2.5}$ Concentrations for San Diego for the Last 20 Years	97
8.2.1	Design Values for $\text{PM}_{2.5}$ Concentrations for San Diego By Site	99
8.3	$\text{PM}_{2.5}$ Minimum Monitoring Requirements.....	102
8.3.1	$\text{PM}_{2.5}$ Manual Minimum Monitoring Requirements – Design Criteria (24-Hr. and Annual Average)	102
8.3.2	$\text{PM}_{2.5}$ Manual Minimum Monitoring Requirements – State of California (SIP)	103
8.3.3	$\text{PM}_{2.5}$ Minimum Monitoring Requirements – Site of Expected Maximum Concentration (24-Hr and Annual Average).....	104
8.3.4	$\text{PM}_{2.5}$ Minimum Monitoring Requirements – Near Road.....	104
8.3.5	$\text{PM}_{2.5}$ Minimum Monitoring Requirements – Site of Poor Air Quality.....	105
8.3.6	$\text{PM}_{2.5}$ Minimum Monitoring Requirements - NCore	105
8.3.7	$\text{PM}_{2.5}$ Minimum Monitoring Requirements for Continuous Monitoring at NCore Sites	106
8.3.8	$\text{PM}_{2.5}$ Minimum Monitoring Requirements for Continuous Samplers.....	106
8.4	$\text{PM}_{2.5}$ Minimum Monitoring Requirements – QA Collocation of Samplers.....	107
8.4.1	$\text{PM}_{2.5}$ Minimum Monitoring Requirements for QA Collocation for Ambient	107
8.4.2	$\text{PM}_{2.5}$ Continuous Sampler Minimum Monitoring Requirements – Collocation.....	108
8.5	Operating Schedules for $\text{PM}_{2.5}$ Samplers	109
8.6	$\text{PM}_{2.5}$ Sampler Suitability for Comparison to the NAAQS.....	110
9	PARTICULATE MATTER 2.5 μm ($\text{PM}_{2.5}$ CHEMICAL SPECIATION).....	113
9.1	$\text{PM}_{2.5}$ Speciation Introduction	113
9.2	$\text{PM}_{2.5}$ Speciation Minimum Monitoring Requirements.....	115
9.3	Operating Schedules for $\text{PM}_{2.5}$ Speciation Samplers.....	115

9.4	PM _{2.5} Sampler Unsuitability for Comparison to the NAAQS	116
10	PARTICULATE MATTER 10 µm (PM ₁₀).....	118
10.1	Introduction	118
10.2	PM ₁₀ Concentrations for San Diego	121
10.2.1	Concentrations for the Last 20 Years	121
10.2.2	Concentrations by Site at Standard Conditions (STD) for the Year 2025.....	122
10.2.3	Concentrations by Site at Local Conditions (LC) for the Year 2025.....	124
10.3	PM ₁₀ Minimum Monitoring Requirements.....	125
10.3.1	Monitoring Requirements for Ambient Data	125
10.3.2	Monitoring Requirements for NCore	126
10.3.3	Monitoring Requirements for Collocation	127
10.4	PM ₁₀ Suitability Comparison to the NAAQS.....	127
10.4.1	Sampler Suitability Comparison	127
10.4.2	Sampler Frequency Comparison	128
11	NATIONAL CORE (NCore).....	130
11.1	Introduction	130
11.2	NCore Concentrations.....	131
11.3	NCore Suitability for Comparison to the NAAQS.....	132
12	PHOTOCHEMICAL ASSESSMENT MONITORING STATIONS (PAMS).....	135
12.1	Introduction	135
12.2	PAMS Minimum Monitoring Requirements – Sampling Season	137
12.3	PAMS Sampling Frequency and Equipment	137
	APPENDIX A: SITE DESCRIPTIONS	140
	APPENDIX B: SITE WAIVERS	224

List of Tables

Table 1-1: National Ambient Air Quality Standards (NAAQS) - CFR Part 50 NAAQS Table US EPA.....	25
Table 1-2: Monitoring Programs in the San Diego Regional Air Monitoring Network.....	26
Table 1-3: Site Information Included in the Annual Network Report.....	26
Table 2-1: List of Network Sites and Locations.....	33
Table 2-2: Air Monitoring Sites with Associated Monitors/Samplers & Sample Frequency.....	35
Table 2-3: Sampling Frequencies and Descriptions.....	36
Table 2-4: Summary of Minimum Monitoring Requirements.....	38
Table 3-1: Ozone State and Federal Standards for the Year.....	45
Table 3-2: Ozone Minimum Monitoring Requirements - Summary.....	46
Table 3-3: Ozone Monitoring Network.....	46
Table 3-4: Ozone Concentrations for San Diego (2005–2025).....	47
Table 3-5: Ozone Concentrations for San Diego by Site (2025).....	48
Table 3-6: Ozone Concentrations for San Diego by Site for Design Value 2023 to 2025.....	50
Table 3-7: Table D-2 of Appendix D to Part 58 – SLAMS Minimum O ₃ Monitoring Requirements.....	51
Table 3-8: Ozone Minimum Monitoring Requirements for the Design Value (DV) Criteria (8-Hr).....	51
Table 3-9: Ozone Minimum Monitoring Requirements - Maximum Concentration Site Design Value... ..	52
Table 3-10: Ozone Minimum Monitoring Requirements - NCore & PAMS.....	52
Table 3-11: Table D-3 to Appendix D of Part 58 - Ozone Monitoring Season by State.....	53
Table 3-12: Ozone Minimum Monitoring Requirements - Ozone Sampling Season.....	53
Table 3-13: Ozone Suitability for Comparison to the NAAQS - Sampling Equipment.....	53
Table 4-1: Nitrogen Dioxide State and National Standards for the Year*.....	56
Table 4-2: NO ₂ & NO _y Minimum Monitoring Requirements - Summary.....	57
Table 4-3: Nitrogen Dioxide & Reactive Oxides of Nitrogen Monitoring Network.....	57
Table 4-4: NO ₂ Concentrations for San Diego for the Last 20 Years 2005- 2025.....	58
Table 4-5: NO ₂ Concentrations for San Diego by Site for the Year 2025*.....	59
Table 4-6: NO ₂ Concentrations for San Diego by Site for the Design Value 2023 - 2025.....	61
Table 4-7: NO ₂ Minimum Monitoring Requirements (Populations) - Near-Road.....	63
Table 4-8: NO ₂ Minimum Monitoring Requirements (Traffic Counts) - Near-Road.....	63
Table 4-9: NO ₂ Minimum Monitoring Requirements - Area-Wide.....	64

Table 4-10: NO ₂ Minimum Monitoring Requirements - Regional Administrator.....	64
Table 4-11: Minimum Monitoring Requirements - True-NO ₂ PAMS.....	65
Table 4-12: Reactive Oxides of Nitrogen Minimum Monitoring Requirements - PAMS & NCore	65
Table 4-13: Nitrogen Dioxide & Reactive Oxides of Nitrogen Monitoring Equipment	66
Table 5-1: Carbon Monoxide State and National Standards for the Year	69
Table 5-2: Carbon Monoxide Minimum Monitoring Requirements - Summary	69
Table 5-3: Carbon Monoxide Monitoring Network	69
Table 5-4: Carbon Monoxide Concentrations for San Diego for the Last 20 Years 2005 - 2025.....	70
Table 5-5: Carbon Monoxide Concentration for San Diego by Site for the Year 2025*.....	71
Table 5-6: Carbon Monoxide Minimum Monitoring Requirements - Near Road.....	72
Table 5-7: Carbon Monoxide Minimum Monitoring Requirements - Regional Administrator	73
Table 5-8: Carbon Monoxide Minimum Monitoring Requirements - NCore	73
Table 5-9: Carbon Monoxide Minimum Monitoring Requirements - State (SIP).....	74
Table 5-10 Carbon Monoxide Suitability for Comparison to the NAAQS - Sampling Equipment	74
Table 6-1: Sulfur Dioxide State and National Standards for the Year	77
Table 6-2: Sulfur Dioxide (SO ₂) Minimum Monitoring Requirements - Summary	77
Table 6-3: Sulfur Dioxide (SO ₂) Monitoring Network	77
Table 6-4: Sulfur Dioxide (SO ₂) Concentrations for San Diego for the Previous 20 Years 2005 - 2025....	78
Table 6-5: Sulfur Dioxide (SO ₂) Concentrations for San Diego by Site for the Design Value 2023 - 2025	79
Table 6-6: Sulfur Dioxide (SO ₂) Minimum Monitoring Requirements - NCore.....	81
Table 6-7: Sulfur Dioxide (SO ₂) Minimum Monitoring Requirements - 2020 EPA NEI SO ₂	81
Table 6-8: Sulfur Dioxide (SO ₂) Minimum Monitoring Requirements - Ambient.....	81
Table 6-9: Sulfur Dioxide (SO ₂) Suitability for Comparison to the NAAQS - Sampling Equipment.....	82
Table 7-1: Lead State and National Standards for the Year	84
Table 7-2: Lead Monitoring Requirements - Summary	85
Table 7-3: Lead Sampling Network.....	85
Table 7-4: Lead Concentrations for San Diego for the Last 20 Years 2005 - 2025	86
Table 7-5: Lead Concentrations for San Diego by Site for the Year 2025	87
Table 7-6: Lead Minimum Monitoring Requirements - non-Airport Source Based on the 2020 NEI	88
Table 7-7: Lead Minimum Monitoring Requirements - Airport Source based on 2020 NEI	88

Table 7-8: Airports to be Monitored for Lead from 40 CFR Part 58 Appendix D Table D-3A.....	89
Table 7-9: Lead Minimum Monitoring Requirements - Regional Administrator.....	90
Table 7-10: Lead Minimum Requirements - QA Collocation and Filter Submittal to EPA.....	90
Table 7-11: Lead Suitability for Comparison to the NAAQS - Sampling Equipment.....	91
Table 8-1: PM _{2.5} State and National Standards for the Year	95
Table 8-2: PM _{2.5} Minimum Monitoring Requirements - Summary	95
Table 8-3: PM _{2.5} Sampling Network.....	96
Table 8-4: PM _{2.5} Concentrations (24-Hr Maximum) for San Diego for the Last 20 Years.....	97
Table 8-5: PM _{2.5} Concentrations (24-Hr and Annual Average) for San Diego by Site	98
Table 8-6: 24 Hour Design Value for PM _{2.5} Concentrations for San Diego by Site 2023 to 2025	100
Table 8-7: Annual Average Design Value for PM _{2.5} Concentrations for San Diego by Site 2023 to 2025	100
Table 8-8: Table D-5 of Appendix D Part 58 - PM _{2.5} Minimum Monitoring Requirements	102
Table 8-9: PM _{2.5} Minimum Monitoring Requirements – General Requirements.....	102
Table 8-10: PM _{2.5} Minimum Monitoring Requirements - Design Criteria (Annual Average)	103
Table 8-11: PM _{2.5} Minimum Monitoring Requirements – Design Criteria (24-Hr).....	103
Table 8-12: PM _{2.5} Minimum Monitoring Requirements – State (SIP)	104
Table 8-13: PM _{2.5} Minimum Monitoring Requirements-Site of Expected Maximum Concentration for Annual and 24-Hour Design Value.....	104
Table 8-14: Minimum Monitoring Requirements - Near Road.....	105
Table 8-15: PM _{2.5} Minimum Monitoring Requirements - Site of Poor Air Quality.....	105
Table 8-16: PM _{2.5} Minimum Monitoring Requirements - NCore.....	106
Table 8-17: PM _{2.5} Continuous Minimum Monitoring Requirements - Collocation	106
Table 8-18: PM _{2.5} Minimum Monitoring Requirement for Continuous Samplers - Ambient	107
Table 8-19: PM _{2.5} Minimum Monitoring Requirements - QA Collocation.....	107
Table 8-20: Table A-2 of Appendix A Part 58 Section 3.2.3.2(b)	108
Table 8-21: PM _{2.5} Minimum Monitoring Requirement for Collocation of Continuous (FEM) Samplers	108
Table 8-22: PM _{2.5} Minimum Monitoring Requirement for Collocation of Continuous (FEM) Samplers with Manual (FRM) Samplers	109
Table 8-23: PM _{2.5} Operating Schedule.....	109
Table 8-24: FRM PM _{2.5} Operating Schedule for NCore.....	110

Table 8-25: PM _{2.5} Operating Schedule for FRM Samplers Collocated with Continuous Samplers (24-Hr Design Value)	110
Table 8-26: PM _{2.5} Sampler Suitability for Comparison to the NAAQS	111
Table 9-1: PM _{2.5} Chemical Speciation Network Minimum Monitoring Requirements – Summary	114
Table 9-2: PM _{2.5} Chemical Speciation Sampling Network	114
Table 9-3: PM _{2.5} Speciation Minimum Monitoring Requirements	115
Table 9-4: PM _{2.5} Speciation Minimum Monitoring Requirements - NCore	115
Table 9-5: PM _{2.5} Speciation Operating Schedule Including NCore	116
Table 9-6: PM _{2.5} Speciation Sampler Unsuitability for Comparison to the NAAQS - Sampling Equipment	116
Table 10-1: PM ₁₀ State and National Standards for the Year	119
Table 10-2: PM ₁₀ Minimum Monitoring Requirements - Summary	120
Table 10-3: PM ₁₀ Sampling Network	120
Table 10-4: PM ₁₀ Concentrations for San Diego for the Last 20 Years 2005 - 2025	121
Table 10-5: PM ₁₀ Concentrations for San Diego by Site at Standard Conditions (STD) for the Year 2025	123
Table 10-6: PM ₁₀ Concentrations for San Diego by Site at Local Conditions (LC) for the Year 2025	124
Table 10-7: PM ₁₀ Minimum Monitoring Requirements from Table D-4 of Appendix D to Part 58 (Approximate number of stations per MSA)	126
Table 10-8: PM ₁₀ Minimum Monitoring Requirement - Design Criteria for the Year 2025	126
Table 10-9: PM ₁₀ Minimum Monitoring Requirements - Ambient	126
Table 10-10: PM ₁₀ Minimum Monitoring Requirements - NCore	127
Table 10-11: PM ₁₀ Continuous Minimum Monitoring Requirements - Collocation	127
Table 10-12: PM ₁₀ Sampler Suitability for Comparison to the NAAQS	128
Table 10-13: PM ₁₀ Suitability for Comparison to the NAAQS - Sampling Frequency 2025	128
Table 11-1: NCore Minimum Monitoring Requirements - Equipment & Summary	131
Table 11-2: NCore Concentrations for PM ₁₀ - PM _{2.5} (PMcoarse)	131
Table 11-3: NCore Concentrations for CO-TLE	131
Table 11-4: NCore Concentrations for SO ₂ -TLE	132
Table 11-5: NCore Concentrations for NO _y -NO	132
Table 11-6: NCore Concentrations for NO ₂	132

Table 11-7: NCore Suitability for Comparison to the NAAQS – Frequency & Equipment.....	133
Table 12-1: PAMS Minimum Monitoring Requirements - Equipment Summary.....	136
Table 12-2: PAMS Sampling Network.....	136
Table 12-3: Minimum Requirements - Sampling Season.....	137
Table 12-4: PAMS Sampling Equipment for VOCs and Carbonyls.....	137
Table 12-5: PAMS VOC Parameter Codes.....	138
Table 12-6: PAMS Carbonyls Parameter Codes.....	138

List of Figures

Figure 2-1: San Diego APCD Air Quality Monitoring Network.....	34
Figure 3-1: Ozone Network Map.....	44
Figure 3-2: Graph of Ozone Concentrations for San Diego (2005-2025).....	47
Figure 3-3: Graph of Ozone Concentrations for San Diego by Site* (2025).....	49
Figure 3-4: Graph of Ozone Concentrations for San Diego by Site for Design Value (2023-2025).....	50
Figure 4-1: Nitrogen Dioxide & NO _y Network Map.....	56
Figure 4-2: NO ₂ Concentrations for San Diego (2005 – 2025).....	58
Figure 4-3: Graph of NO ₂ Concentrations for San Diego by Site (2025)*.....	60
Figure 4-4: Graph of NO ₂ Concentrations for San Diego by Site for the Design Value* 2023 – 2025.....	62
Figure 5-1: Carbon Monoxide Network Map.....	68
Figure 5-2: Carbon Monoxide Concentrations for San Diego (2005-2025).....	70
Figure 5-3: Graph of Carbon Monoxide Concentrations for San Diego by Site (2025).....	71
Figure 6-1: Sulfur Dioxide Network Map.....	76
Figure 6-2: Graph of Sulfur Dioxide (SO ₂) Concentrations for San Diego (2005-2025).....	79
Figure 6-3: Graph of Sulfur Dioxide (SO ₂) Concentrations for San Diego by Site for the Design Value ...	80
Figure 7-1: Lead Network Map.....	84
Figure 7-2: Lead Concentrations for San Diego* (2005 – 2025).....	86
Figure 7-3: Graph of Lead Concentrations for San Diego by Site for the Year.....	87
Figure 8-1: PM _{2.5} Network Map.....	94
Figure 8-2: PM _{2.5} Concentrations (24-Hr Maximum) for San Diego* (2005-2025).....	97
Figure 8-3: PM _{2.5} Concentrations (24-Hr and Annual Average) for San Diego*† (2025).....	99

Figure 8-4: Graph of 24-Hr Design Value for PM _{2.5} Concentrations by Site (2023-2025).....	101
Figure 8-5: Graph of Annual Average Design Value for PM _{2.5} Concentrations by Site (2023-2025).....	101
Figure 9-1: PM _{2.5} Speciation Network Map	113
Figure 10-1: PM ₁₀ Network Map.....	119
Figure 10-2: PM ₁₀ 24-Hr Max Concentrations for San Diego (2005 –2025)	122
Figure 10-3: Graph of PM ₁₀ Concentrations for San Diego by Site at Standard Conditions (STD) (2025) (24-Hr & Annual Average).....	124
Figure 10-4: Graph of PM ₁₀ Concentrations for San Diego by Site at Local Conditions (LC) (2025) (24-Hr & Annual Average)	125
Figure 10-5 PM ₁₀ Sampling Frequency from Ratio of Concentration.....	128
Figure 11-1: NCore Network Map.....	130
Figure 12-1: PAMS Network Map	135

List of Appendix Tables

Appendix Table A-1.1: Relationships between Site Types and Scales and Representativeness	142
Appendix Table A-1.2: Summary of Probe Monitoring Paths.....	144
Appendix Table A-2.1: Alpine - General Site Information	146
Appendix Table A-2.2: Alpine – Gaseous Pollutants Monitor Designations + Other	148
Appendix Table A-2.3: Alpine - Particulate Pollutants Monitor Designations.....	149
Appendix Table A-2.4: Alpine - Meteorology Equipment Designations + Other	150
Appendix Table A-2.5: Alpine - Distance the Equipment are from Influences	151
Appendix Table A-3.1: Camp Pendleton - General Site Information.....	153
Appendix Table A-3.2: Camp Pendleton - Gaseous Pollutants Monitor Designations & Other	155
Appendix Table A-3.3: Camp Pendleton - Particulate Pollutants Monitor Designations	156
Appendix Table A-3.4: Camp Pendleton - Meteorological Equipment Designation & Other	157
Appendix Table A-3.5: Camp Pendleton - Distance the Equipment are from Influences	158
Appendix Table A-4.1: Chula Vista – General Site Information	160
Appendix Table A-4.2: Chula Vista - Gaseous Pollutants Monitor Designations & Other.....	162
Appendix Table A-4.3: Chula Vista - Particulate Pollutants Monitor Designations.....	163
Appendix Table A-4.4: Chula Vista - Other Pollutants Monitor Designations	164
Appendix Table A-4.5: Chula Vista - Meteorological Equipment Designations & Other.....	165

Appendix Table A-4.6: Chula Vista – Distance the Equipment are from Influences 166

Appendix Table A-5.1: Donovan - General Site Information 168

Appendix Table A-5.2: Donovan - Gaseous Pollutants Monitor Designations & Other 170

Appendix Table A-5.3: Donovan - Particulate Pollutants Monitor Designations 171

Appendix Table A-5.4 Donovan - Other Additional Pollutants Monitor Designations 172

Appendix Table A-5.5: Donovan - Meteorological Equipment Monitor Designations & Other 173

Appendix Table A-5.6: Donovan - Distance the Equipment are from Influences..... 174

Appendix Table A-6.1: Kearny Villa Road - General Site Information 176

Appendix Table A-6.2: Kearny Villa Road – Gaseous Pollutants Monitor Designations & Other..... 178

Appendix Table A-6.3: Kearny Villa Road - Particulate Pollutants Monitor Designations..... 179

Appendix Table A-6.4: Kearny Villa Road - Meteorological Equipment Designations & Other 180

Appendix Table A-6.5: Kearny Villa Road - Meteorological Equipment (Additional) Designations 181

Appendix Table A-6.6: Kearny Villa Road - Distance the Equipment are from Influences 182

Appendix Table A-7.1: Lexington Elementary School – General Site Information 184

Appendix Table A-7.2: Lexington Elementary School - Gaseous Pollutants Monitor Designations & Other 186

Appendix Table A-7.3: Lexington Elementary School - Particulate Pollutants Monitor Designations .. 187

Appendix Table A-7.4: Lexington Elementary School - Particulate Pollutants Monitor Designations (Cont.) 188

Appendix Table A-7.5: Lexington Elementary School - Other Pollutants Monitor Designations 189

Appendix Table A-7.6: Lexington Elementary School - Other Pollutants Monitor (Additional) Designations..... 190

Appendix Table A-7.7: Lexington Elementary School - Meteorological Equipment Monitor Designations & Other 191

Appendix Table A-7.8: Lexington Elementary School - Meteorological Equipment (Additional) Designations..... 192

Appendix Table A-7.9: Lexington Elementary School – Distance the Equipment are from Influences. 193

Appendix Table A-8.1: Rancho Carmel Drive - General Site Information..... 195

Appendix Table A-8.2: Rancho Carmel Drive - Gaseous Pollutants Monitor Designations & Other 197

Appendix Table A-8.3: Rancho Carmel Drive - Particulate Pollutants Monitor Designations 198

Appendix Table A-8.4: Rancho Carmel Drive - Meteorological Equipment Designations & Other..... 199

Appendix Table A-8.5: Rancho Carmel Drive - Distance the Equipment are from Influences 200

Appendix Table A-9.1: Palomar Airport: General Site Information	203
Appendix Table A-9.2: Palomar Airport - Particulate Pollutants Monitor Designations	205
Appendix Table A-9.3: Palomar Airport – Distance the Equipment are from Influences.....	206
Appendix Table A-10.1: Sherman Elementary School - General Site information	208
Appendix Table A-10.2: Sherman Elementary School - Gaseous Pollutants Monitor Designations & Other	210
Appendix Table A-10.3: Sherman Elementary School - Particulate Pollutants Monitor Designations .	211
Appendix Table A-10.4 Sherman Elementary School - Other Additional Pollutants Monitor Designations.....	212
Appendix Table A-10.5: Sherman Elementary School - Meteorological Equipment Designations & Other	213
Appendix Table A-10.5: Sherman Elementary School - Distance the Equipment are from Influences.	214
Appendix Table A-11.1: San Ysidro – General Site Information	216
Appendix Table A-11.2: San Ysidro - Gaseous Pollutants Monitor Designations & Other	218
Appendix Table A-11.3: San Ysidro - Particulate Pollutants Monitor Designations	219
Appendix Table A-11.4: San Ysidro - Meteorological Equipment Designations & Other	220
Appendix Table A-11.5: San Ysidro - Distance Equipment are from Influences	221

List of Appendix Figures

Appendix Figure A.1: Distance of PM Samplers to Nearest Traffic Lane.....	145
Appendix Figure A.2: Alpine - Over-Head View of Station Location.....	147
Appendix Figure A.3: Alpine - Pictures (Directional) from the Station's Deck Top	152
Appendix Figure A.4: Camp Pendleton - Over-Head View of Station Location	154
Appendix Figure A.5: Camp Pendleton - Pictures (Directional) from the Station's Deck Top.....	159
Appendix Figure A.6: Chula Vista – Over-Head View of Station Location	161
Appendix Figure A.7: Chula Vista - Pictures (Directional) from the Ground	167
Appendix Figure A.8: Donovan - Picture of the Location	169
Appendix Figure A.9: Donovan - Pictures (Directional) from the Station's Deck Top	175
Appendix Figure A.10: Kearny Villa Road - Over-Head View of Station Location.....	177
Appendix Figure A.11: Kearny Villa Road - Pictures (Directional) from the Station's Deck Top	183
Appendix Figure A.12: Lexington Elementary School - Over-Head View of the Station Location	185

Appendix Figure A.13: Lexington Elementary School – Pictures (Directional) from the Stations Deck Top	194
Appendix Figure A.14: Rancho Carmel Drive - Over-Head View of Station Location	196
Appendix Figure A.15: Rancho Carmel Drive - Pictures (Directional) from the Ground*	201
Appendix Figure A.16: Rancho Carmel Drive - Gas Inlet.....	202
Appendix Figure A.17: Palomar Airport - Over-Head View of Station Location	204
Appendix Figure A.18: Palomar Airport - Pictures (Directional) from the Ground*	207
Appendix Figure A.19: Sherman Elementary School – Over-Head View of the Station Location	209
Appendix Figure A.20: Sherman Elementary - Pictures (Directional) from the Station's Deck Top.....	215
Appendix Figure A.21: San Ysidro - Over-Head View of Station Location	217
Appendix Figure A.22: San Ysidro - Pictures (Directional) from the Station's Deck Top	222
Appendix Figure B.1: EPA Correspondence for Lead Discontinuation	227
Appendix Figure B.2: EPA Correspondence for Lead Discontinuation (cont.).....	228
Appendix Figure B.3: Distance of Inlets from Dripline of Nearby Trees at Rancho Carmel Drive Near-road Monitoring Site.....	230

GLOSSARY OF TERMS

Monitor Type

E	EPA
O	Other
SLAMS	State & Local Monitoring Stations
SPM	Special Purpose Monitor
CATAC	California Toxics Monitoring

Site Type

HC	Highest Concentration
PE	Population Exposure
SO	Source Oriented
UPBD	Upwind Background
G/B	General/Background
RT	Regional Transport
WRI	Welfare Related Impacts
QA	Quality Assurance
RA40	Regional Administrator – Vulnerable Populations

Method (Sampling/Analysis)

Auto	GCFID Continuous
CAPS	Cavity Attenuated Phase Shift
BS	Broadband Spectroscopy
CL	Chemiluminescence
CT	Low Volume, size selective inlet, continuous
FL	Fluorescence
HV	High Volume
IR	Nondispersive Infrared
SI	High Volume, Size Selective Inlet
SP	Low Volume, Size Selective Inlet, Speciated
SQ	Low Volume, Size Selective Inlet, Sequential
UV	Ultraviolet Absorption
Canister	Evacuated Stainless Steel Canisters
Cartridges	Di-nitrophenylhydrazine Cartridges
FSL	Fused Silica Lined
Filter	Quartz Filters

Monitor Designation

PRI	Primary
QAC	Collocated

Network Affiliation

BG	Border Grant
CSN STN	Trends Speciation
CSN SU	Supplemental Speciation
NATTS	National Air Toxics Trends Stations
NCORE	National Core Multi-pollutants
NR	Near-road
PAMS	Photochemical Assessment Monitor

Spatial Scale

MI	Micro
MS	Middle
NS	Neighborhood
US	Urban

Objective (Federal)

NAAQS	Suitable for NAAQS Comparison
Research	Research Support
PI	Public Information
N/A	Not Applicable
O	Other

(left intentionally blank)

1 INTRODUCTION – REPORT REQUIREMENTS

1.1 Federal Citation

In 2007, the U.S. Environmental Protection Agency (EPA) finalized amendments to the ambient air monitoring regulations. These amendments revised the following:

- Technical requirements for certain types of sites, programs, and analyzers.
- Added pollutants and programs.
- Specified sampling frequencies.

Monitoring agencies are required to submit annual monitoring network reports, conduct network assessments every five years, perform quality assurance activities, and, in certain instances, establish new monitoring programs. The regulations from Title 40, Part 58, Section 10(a) of the Code of Federal Regulations (40 CFR 58.10, (a)(1)) state that:

The State, or where applicable local, agency shall adopt and submit to the Regional Administrator an annual monitoring network plan which shall provide for the establishment and maintenance of an air quality surveillance system . . . The plan shall include a statement of purposes for each monitor and evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of this part, where applicable. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA.

This document is prepared and submitted as part of these requirements. It describes the network of ambient air quality monitors, samplers, and analyzers operated by San Diego County Air Pollution Control District (District) staff in fulfillment of EPA regulations governing network compliance that are updated every July 1. This Annual Network Report (ANR) serves to evaluate whether the current monitoring strategies meet the requirements of the District, to determine compliance with all current Federal, and State regulations as it pertains to the ambient Air Quality Network (AAQN). It also serves to identify and report needs for additions, relocations, or terminations of monitoring sites or instrumentation to continue to meet federal requirements.

The Ambient Air Quality Monitoring Network measures air pollutants on a regional level. The District also has a Community Air Protection Program (CAPP) that is devoted to the monitoring of toxic air contaminants at a microscale and localized level. The District has a separate network of air monitoring sites within communities to measure pollutants that are of interest to the community. Although the CAPP has a separate network of monitoring sites, there is some overlap with the Ambient Air Quality Monitoring Network. The District's Ambient Air Quality Monitoring Network

sites at Sherman Elementary School (SES) and at the Otay Mesa-Donovan State Prison (DVN) fall within the Portside Community and the International Border Community, respectively.

In addition, as part of the AB-423 legislation, the District approved a separate Comprehensive Monitoring Plan in the fall of 2022. In the Comprehensive Monitoring Plan, the District discusses the decision process and tools that are used when determining placement of a new monitoring location (regional or community-based) and the pollutants to measure at that location.

1.2 Purpose, Scope, and Organization of Annual Network Report

In San Diego County, there are several locations where the ambient air quality is routinely measured for air pollutants. These sites are operated by the District. The measured data provide the public with information on the status of the air quality and the progress being made to improve air quality. The data can be used by health researchers, business interests, environmental groups, and others.

This report describes the network of ambient air quality monitors within the San Diego Air Basin (SDAB) and meets the requirements for an Annual Network Report as listed in Title 40 of the Code of Federal Regulations (CFR), Part 58.10. The 40 CFR 58.10 require that the report be submitted to the EPA, including any public comments, by July 1, of each year.

As required by the CFR, this report includes equipment which have federal reference methods (FRM) or federal equivalent methods (FEM) designations. While the CFR also requires reporting of approved regional methods (ARM), no ARMs are in operation in San Diego County. Air monitoring samplers and analyzers are designated as FRM and FEM. Only air pollution concentrations measured by FRM and FEM monitors and samplers are compared against the National Ambient Air Quality Standards (NAAQS) for the criteria pollutants (listed in Section 1.4) set by the EPA so that EPA will determine the attainment status. There are no Special Purpose Monitors (SPM) currently in the Network. This report also includes information regarding non-regulatory and non-criteria pollutant monitoring.

1.3 Public Comments Information

Pursuant to Federal regulations, the draft report will be available for a minimum of 30 days for public inspection period. Notice of availability of the report was posted on the District's website (www.sdapcd.org). Comments regarding this report and the District response(s) before submittal to EPA will be listed in the Chapter 2 Overview of the Air Quality Monitoring Network (Section 2.5). Any comments regarding this report and answered by the District after submittal to the EPA, will be forwarded to EPA Region 9 headquarters.

Please submit any comments in writing using the following methods:

David Medina, Ph.D.
Senior Chemist, Ambient Air Quality Section
E-mail
David.medina@sdapcd.org
Mail
Dr. David Medina c/o San Diego County Air Pollution Control District,
10124 Old Grove Road, San Diego, CA, 92131

Note: The Ambient Air Quality Air Pollution Monitoring Network measures air pollutants on a regional level. The District also has a Community Air Protection Program (CAPP) and the monitoring of toxic air contaminants at a microscale and localized level.

1.3.1 District Contact Information

1.3.1.1 Monitoring Stations and Equipment

For information regarding:

- The contents of this report.
- Air monitoring stations.
- Field instruments.
- Procedures of the field instruments.
- General oversight of the air monitoring programs.

Please contact the following staff member:

Ambient Air Quality Contact:
David Medina, Ph.D.
Senior Chemist, Ambient Air Quality Section
David.medina@sdapcd.org
(858) 586-2780

1.3.1.2 Field Operations

For information regarding:

- Daily field operations regarding equipment at stations.

- Procedures of the station equipment.

Please contact the following staff member:

Electronic Technician Contact:
Victor Padilla
Supervisor of Technicians, Electronic
Technicians Section
Victor.padilla@sdapcd.org
(858) 586-2785

1.3.1.3 *Meteorological and Modeling Information*

For information regarding:

- Ambient air quality data.
- Meteorological data.
- Episode modeling.
- Air quality forecasting.
- Smoke and management plans

Please contact the following staff member:

Meteorology Contact:
Adam Canter
Senior Meteorologist
Adam.canter@sdapcd.org
(858) 586-2771

1.3.1.4 *Quality Assurance*

For information regarding:

- Data validation processes.
- Quality assurance procedures.

Please contact the following staff member:

Quality Assurance Contact:

Melin Lu

Senior Chemist, QA Section

Melin.lu@sdapcd.org

(858) 860-4071

1.3.2 *Additional Air Pollution Information*

Additional information regarding San Diego's ambient air quality monitoring network, including pollutant data summaries for the various monitors in the network, are available from a variety of sources. This section lists several additional sources for related information.

Similar information is available on the Environmental Protection Agency (EPA) and California Air Resources Board (CARB) websites, but the links to these locations change frequently. Key words to search at their website are: Ambient Air Quality Monitoring, National Ambient Air Quality Standards, Fine Particle (PM_{2.5}) Designations, The Plain English Guide to the Clean Air Act, About Air Toxics, Health and Ecological Effects, Air Trends, PAMS Information, Green House Gases, Stratospheric Ozone, as well as the names of the chapters of this document, etc.

CARB's Monitoring and Laboratory Division (MLD) maintains web pages with information about all the existing monitoring sites that routinely monitor and submit air quality data in California. These web pages also include detailed local maps showing the location of the sites. This information can be found at [Air Quality Monitoring | California Air Resources Board](#) and [Ambient Air Monitoring – Regulatory | California Air Resources Board](#).

CARB's annual network report contains listings of all the monitoring sites in the State, along with the years for which the data are available for each monitor/sampler in California. Summaries of the official air quality data from sites around the State can be found at: [iADAM Air Quality Data Statistics \(ca.gov\)](#) (<http://www.arb.ca.gov/adam/welcome.html>). Pollution data is available on the District's website (<http://www.sdapcd.org/>). Other helpful websites to visit are: <http://airnow.gov/>, and at: https://aqs.epa.gov/aqsweb/documents/data_mart_welcome.html.

1.4 Description of Monitoring

The EPA has set National Ambient Air Quality Standards (NAAQS) for six common air pollutants, which are called criteria pollutants. These pollutants are known to cause health effects and harm the environment. **Table 1-1** lists the pollutants and the National Ambient Air Quality Standards (NAAQS) for each of the six criteria pollutants ([NAAQS Table | US EPA](#)). It is the role of the San Diego County APCD to measure for these criteria pollutants. In addition, the EPA requires that the San Diego County APCD operates additional monitoring programs (see **Table 1-2**). This document details the current monitoring network in the SDAB for the criteria pollutants, monitoring programs, and site information (See **Table 1-3**) that the District must report. See tables below for additional information.

Table 1-1: National Ambient Air Quality Standards (NAAQS) - CFR Part 50 [NAAQS Table](#) | [US EPA](#)

Pollutant		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded
Nitrogen Dioxide (NO ₂)		primary	1 hour	100 ppb	98 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb	Annual Mean
Ozone (O ₃)		primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
Particulate Pollution (PM)	PM _{2.5}	primary	1 year	9.0 µg/m ³	Annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m ³	Annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m ³	98 th percentile, averaged over 3 years
	PM ₁₀	primary and secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO ₂)		primary	1 hour	75 ppb	99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	1 year	10 ppb	Annual mean averaged over 3 years

Table 1-2: Monitoring Programs in the San Diego Regional Air Monitoring Network

San Diego APCD Monitoring Programs
Criteria Pollutant Monitoring
National Core (NCore)
Near-road
Photochemical Assessment Monitoring Stations (PAMS)
Chemical Speciation Network (CSN)
Border 2025
Special Purpose Monitoring (SPM)

Table 1-3: Site Information Included in the Annual Network Report

Site Information
Site Location
Site Type
Site Objective
Spatial Scale
Sampling Schedule
Equipment
Sampling Method
Monitoring Objective

1.4.1 Design Values

The Design Value (DV) is a statistic that is used by the Environmental Protection Agency (EPA) to compare to the National Ambient Air Quality Standards (NAAQS) to help determine compliance. A Design Value is calculated using air monitoring data for each of the criteria pollutants at each monitoring location within the regional air monitoring network. The Design Values are updated and computed annually by the EPA when the District submits the annual air monitoring data into the EPA data portal called the Air Quality System (AQS) (EPA website: [Air Quality Design Values | US EPA](#)). A description of the Design Values can be found in the [Code of Federal Regulations, Title 40, Part 50](#).

1.4.2 Network Design Theory

Ambient air monitoring networks (Network) are designed to fulfill several criteria. A general summary of the criteria are found in the following sections.

1.4.2.1 Network Design Objectives

Network design objectives include the following:

1. Provide data to the public in a timely manner.
2. Support compliance with NAAQS and emissions strategy development.
3. Support air pollution research studies.

1.4.2.2 Logistics Objectives

Logistics objectives include the following:

1. Minimal interference and perturbation of wind flow by obstacles.
2. Proximity to headquarters.
3. Availability of electrical power and communications.
4. Cost of site lease, relocation, or new deployment, site improvements, e.g. fence, road, etc.
5. Safety, security, and accessibility.
6. Flat, level footprint for shelter, platforms, and concrete pad.
7. Gravel or paved road access.

1.4.2.3 Other Objectives

Other objectives that do not fit in the above sections include the following:

1. Funding.
2. Staffing.
3. Drive time from location to location (congestion patterns).
4. Longevity of the site location.
5. Development of the area surrounding the monitoring location.
6. Proximity to other monitors.
7. Homogeneity in space and with respect to speciation.
8. Devoid of source influences (point sources, mobile sources, etc.).

1.5 San Diego Air Basin Description

San Diego County lies in the southwest corner of California, has an area of 4,526 square miles, and encompasses the San Diego Air Basin (SDAB) and includes part of the Salton Sea Air Basin. Most of the County's population and pollutant emissions are concentrated in the western portion of the County in the SDAB, which extends to the mountains in the near east. The topography in the SDAB, along with local meteorology, influences the pollutants in the basin. San Diego County also shares an international border with Mexico. The neighboring city of Tijuana forms a binational airshed with San Diego. The Air Pollution Control District has air monitoring stations set-up throughout the SDAB to monitor for these pollutants.

1.5.1 *San Diego Topography*

The topography of San Diego County is highly diverse and comprises of coastal plains, lagoons, flatlands, mesas, broad valleys, canyons, foothills, mountains, and deserts. Generally, building structures are on the flatlands, mesas, and valleys, while the canyons and foothills tend to be sparsely developed. This segmentation is what has carved the region into a conglomeration of separate cities that led to low density housing and an automobile-centric environment.

To the west of San Diego are the beaches and the Pacific Ocean, to the south is Tijuana, Mexico and the Baja California Peninsula, to the near east are the mountains, to the far east is the desert (the Salton Sea Air Basin), and to the north is the South Coast Air Basin (the greater Los Angeles-Riverside-San Bernardino area/Air Basin).

1.5.2 *San Diego Climate*

The climate is classified as Mediterranean, but it is diverse because of the topography. The climate is dominated by the Pacific High-pressure system that results in mild, dry summers and mild, wet winters. San Diego experiences over 150 days above 70°F and 8 inches to 12 inches of rainfall annually (mostly, November – March). El Niño and La Niña patterns have large effects on the annual rainfall received in San Diego.

An El Niño is a warming of the surface waters of the eastern Pacific Ocean. It is a climate pattern that occurs across the tropical Pacific Ocean that is associated with drastic weather occurrences, including enhanced rainfall in Southern California. La Niña is a term for cooler than normal sea surface temperatures across the Eastern Pacific Ocean. San Diego receives less than normal rainfall during La Niña years.

The Pacific High-pressure system drives the prevailing winds in the SDAB. The winds tend to blow onshore in the daytime and offshore at night. In the summer, an inversion layer is created over the coastal areas and increases the O₃ levels. In the winter, San Diego often experiences a shallow inversion layer which tends to increase carbon monoxide and PM_{2.5} concentration levels due to the increased use of residential wood burning.

In the fall months, the SDAB is often impacted by Santa Ana winds. These winds are the result of a high-pressure system over the Nevada-Utah region that overcomes the westerly wind

pattern and forces hot, dry winds from the east to the Pacific Ocean. These winds are powerful and incessant. They blow the air basin's pollutants out to sea. However, a weak Santa Ana can transport air pollution from the South Coast Air Basin and greatly increase the San Diego ozone concentrations. A strong Santa Ana also primes the vegetation for firestorm conditions.

1.5.3 Population

According to the official 2020 U.S. census, the population for San Diego County is 3.3 million. The County population has been increasing by a growth rate of 0.46% annually.

(left intentionally blank)

2 OVERVIEW OF AIR MONITORING NETWORK

The District operated ten (10) monitoring sites in 2025 that collected criteria pollutant data (**Figure 2-1**). The District's monitoring network has been designed to provide criteria pollutant monitoring coverage to the majority of the inhabited regions of the County (**Table 2-1 & Table 2-2**).

Since the San Diego County Air Pollution Control District was established by the County Board of Supervisors in 1955, occasional air monitoring has been performed in remote portions of the County, including the mountain and desert areas. Historical measurements have shown relatively low levels of air pollution in these areas. Population and growth in these areas have remained low enough that routine air sampling has not been necessary. Measurements have shown that harmful air contaminants are found in areas where population is dense, traffic patterns are heavy, and industrial sources are concentrated. As pollutants are carried inland by prevailing winds, they are frequently trapped against the mountain slopes by a temperature inversion layer, generally occurring between 1500 and 2500 feet above sea level. Therefore, our air monitoring stations are found between the coast and the mountain foothills up to approximately 2000 feet. The monitoring network needs to be large enough to cover the diverse range of topography, meteorology, emissions, and air quality in San Diego, while adequately representing the large population centers. This monitoring network plays a critical role in assessing San Diego County's clean air progress and in determining pollutant exposures throughout the County.

Ambient concentration data are collected for a wide variety of pollutants in the SDAB. The main (criteria) pollutants are the following:

- Ozone (O₃)
- Fine particulate matter 2.5 micrometers and less in diameter (PM_{2.5})
- Particulate matter 10 micrometers and less in diameter (PM₁₀)
- Nitrogen dioxide (NO₂)
- Carbon monoxide (CO)
- Sulfur dioxide (SO₂)
- Lead (Pb)

The District also measures additional compounds, including reactive oxides of Nitrogen (NO_y), and PAMS parameters [carbonyls, and Volatile Organic Compounds (VOCs)]. Monitoring for meteorological parameters is also conducted at most monitoring locations. Data for all the pollutants are needed to better understand the nature of the ambient air quality in San Diego County, as well as to inform the public regarding the quality of the air they breathe. Not all pollutants are monitored at all sites, but most sites monitor for multiple pollutants. A particular site's location and monitoring purpose determine the actual pollutants measured at that site.

A fundamental purpose of air monitoring to distinguish between areas where pollutant levels exceed the ambient air quality standards and areas where those standards are not exceeded. Health-based ambient air quality standards are set at levels that preclude adverse impacts to human health (allowing for a margin of safety). The District develops strategies and regulations to achieve the emission

reductions necessary to meet all health-based standards. Data from the ambient monitoring network are then used to indicate the success of the regulations and control strategies in terms of the rate of progress towards attaining the standards or to demonstrate that standards have been attained and maintained. Thus, there is an established feedback loop between the emission reduction programs and the ambient monitoring programs. Over the years, Federal, State, and District regulatory/strategic measures have proven to be extremely successful at reducing levels of harmful air contaminants. Monitors once placed throughout the County to document the frequent and regular exceedance of ozone, nitrogen dioxide, carbon monoxide, and particulate matter standards now document the continued downward concentration trends of these pollutants.

This section will address comments from the public regarding inquiries to this report. Questions that are emailed to the District will be included below with a response. The Draft version of the 2025 Annual Network Report was posted on the District's website on May 29, 2026. It will be posted for 30 days to allow for public comment. The final version of the 2025 Annual Network Report will be submitted on June 30, 2026.

2.1 Overview of the Pollutant Monitoring Network

This section lists all the monitoring locations in the SDAB undertaken by the District for this report year. **Table 2-1** below is a list of the District's stations and their locations. **Figure 2-1** shows where these monitoring locations are on a map of the County.

Table 2-1: List of Network Sites and Locations

Station Name	Station Abbreviation	Address	Latitude/ Longitude	AQS ID
Alpine-Padre Dam	ALP	2300 W. Victoria Dr.	32.842312° -116.768277°	06-073-1006
Camp Pendleton	CMP	21441 W. B St.	33.217020° -117.396179°	06-073-1008
Chula Vista	CVA	84 E. J St.	32.631243° -117.059086°	06-073-0001
Otay Mesa – Donovan	DVN	480 Alta Rd.	32.578162° -116.921388°	06-073-1014
Escondido*	ESC	TBD	-----	06-073-1002
Kearny Villa Rd.	KVR	6125A Kearny Villa Rd.	32.845713° -117.123979°	06-073-1016
Lexington Elementary School	LES	533 S. First St.	32.789569° -116.944308°	06-073-1022
McClellan-Palomar Airport	CRQ	2192 Palomar Airport Rd.	33.130898° -117.272392°	06-073-1023
Rancho Carmel Dr. (1 st Near-road Site)	RCD	11403 Rancho Carmel Dr.	32.985428° -117.082213°	06-073-1017
San Ysidro (2 nd Near-road Site)	SAY	198 W. San Ysidro Blvd.	32.552809° -117.047328°	06-073-1025
Sherman Elementary School	SES	450B 24 th St.	32.710177° -117.142665°	06-073-1026

* Still in Development. District is seeking new monitoring site in Escondido.

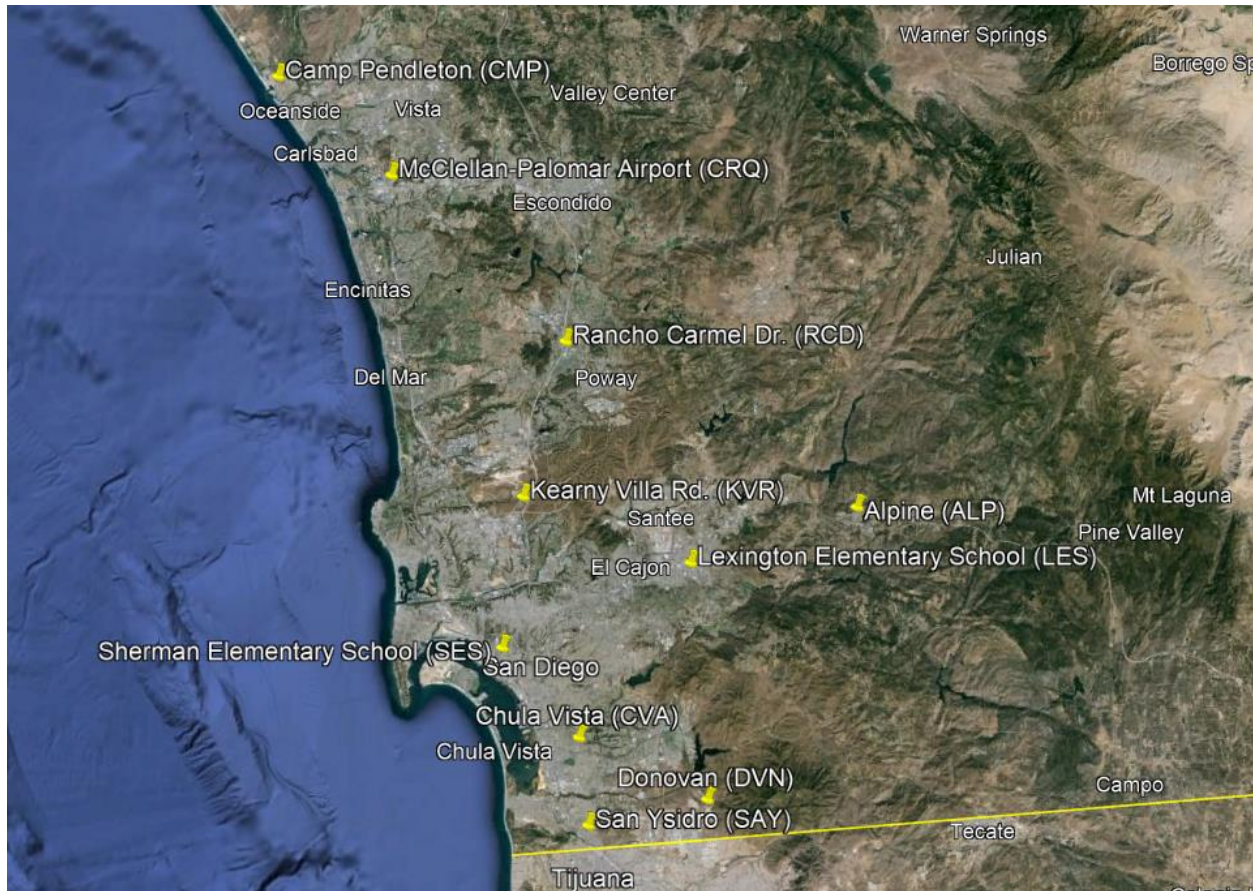


Figure 2-1: San Diego APCD Air Quality Monitoring Network

Table 2-2 lists all the samplers, analyzers, and other instrumentation at these monitoring sites. Collocation of samplers to satisfy Federal QA requirements for PM_{2.5} FRM monitors, PM₁₀, and TSP samplers (indicated by yellow highlights in **Table 2-2**). The District operates, calibrates and audits all instruments listed in **Table 2-2**, except for the CARB's Xontech 924's at the Chula Vista and El Cajon stations (operation only) and ATECs. Not all collected samples are analyzed by District personnel. Some samples are sent to the EPA or CARB laboratories for subsequent analysis. They are noted in **Table 2-2** as EPA or CARB.

The official PAMS season is from June to the end of August. VOCs are sampled and analyzed on the hourly basis (7/24). For PAMS Carbonyls there are three 8-hour samples collected every three days (1:3) with one collocated 8-hour sample collected every 6 days (1:6). Collocation samplers run with the sampling frequency of 1:6. Note that all sample times are set to Pacific Standard Time. For more information on the sampling frequencies described above and within **Table 2-2**, refer to **Table 2-3**.

Table 2-2: Air Monitoring Sites with Associated Monitors/Samplers & Sample Frequency

		ALP	CMP	CVA	DVN	LES	KVR	CRQ	RCD	SAY	SES
AMBIENT	O ₃	7/24	7/24	7/24	7/24	7/24	7/24				7/24
	NO ₂	7/24	7/24	7/24	7/24	7/24	7/24		7/24	7/24	7/24
	CO								7/24	7/24	
NCORE	NOy-TLE					7/24					
	CO-TLE					7/24					
	SO ₂ -TLE					7/24					
LEAD	(Airports) (Hi-Vol)							1:6			
PM ₁₀	(FEM Continuous)	7/24	7/24	7/24	7/24	7/24	7/24		7/24	7/24	7/24
PM _{10,2.5}	(FEM Continuous)					7/24					
PM _{2.5}	(FEM Continuous)	7/24	7/24	7/24	7/24	7/24	7/24		7/24	7/24	7/24
	(Manual)					1:3					
	(Speciation)					1:3					
	Channel 1 (Metals)					1:3					
	Channel 2 (Inorganic Ions)					1:3					
	Channel 3 (Wood Smoke)										
PAMS	(VOCs)					7/24					
	(Carbonyls)					1:3					
TOXICS	(VOCs)			1:6		1:6					
	(Total Metals & Cr ⁻⁶)			1:12		1:12					
	(Aldehydes/ Carbonyls)			1:6		1:6					
	(Aldehydes/ Carbonyls)				1:6	1:6					1:6
METEROLOGICAL PARAMETERS & Others	Wind Speed	7/24	7/24	7/24	7/24	7/24	7/24				7/24
	Wind Direction	7/24	7/24	7/24	7/24	7/24	7/24				7/24
	External Temperature	7/24	7/24	7/24	7/24	7/24	7/24		7/24	7/24	7/24
	% Relative Humidity	7/24				7/24	7/24				
	Internal Temperature	7/24	7/24	7/24	7/24	7/24	7/24		7/24	7/24	7/24
	Barometric Pressure					7/24	7/24				
	Solar Radiation					7/24	7/24				
	Ultraviolet Radiation					7/24					
	Precipitation					7/24					

Table 2-3: Sampling Frequencies and Descriptions

Sampling Frequency	Description
7/24	Sampler that operates continually with no media changes needed
1:3	Sampler that requires a sample deposition media (filter, DNPH cartridge, or Summa canister); it runs every three (3) days for a duration of 24 hours. The media are manually loaded, collected, and programmed in between sample days.
1:6	Sampler that requires a sample deposition media (filter, DNPH cartridge, or Summa canister); it runs every six (6) days for a duration of 24 hours. The media are manually loaded, collected, and programmed on a weekly basis.
1:12	Sampler that requires a sample deposition media (filter, DNPH cartridge, or Summa canister); it runs every twelve (12) days for a duration of 24 hours. The media are manually loaded, collected, and programmed on a biweekly basis.

2.2 Summary of the Minimum Monitoring Requirements for the SDAB

The EPA regulations specify the minimum number of sites at which State and Local air agencies must deploy monitors. The State and Local agencies generally find they need to deploy more monitors than are minimally required to fulfill State and Local purposes for monitoring. For example, often California air quality standards are more stringent than National standards, so many areas need more monitors than required by the EPA to show compliance with both State and National standards.

For pollutants monitoring, the minimum requirements for the number of monitors are in the 40 CFR 58, Appendix D “Network Design Criteria for Ambient Air Quality Monitoring”. Each pollutant or monitoring program has different requirements for determining the minimum number of monitors needed for a Metropolitan Statistical Area (MSA) and the requirements can change yearly. The County of San Diego encompasses the San Diego County air basin and part of the Salton Sea air basin, as outlined by the California Air Resources Board. Some pollutants have additional monitoring requirements associated with them, e.g. PM_{2.5} monitoring has requirements for continuous and sequential monitors. This section summarizes the minimum monitoring requirements from the criteria pollutant chapters in this report. For greater detail, refer to the specific pollutant’s chapter.

Note: When the number of monitors required is based on the MSA population, it is taken from the latest U.S. Census. In the non-Census years, the MSA population is extrapolated by the San Diego Association of Governments (SANDAG) and that number is used by the District.

The U.S. EPA regulations specify the minimum number of samplers and monitors (also referred to as analyzers) needed for ambient air monitoring, including those required for collocation. These numbers vary annually, by program, and by within each pollutant. **Table 2-4** summarizes these totals listed in the subsequent chapters. Much of this equipment overlaps and can serve multiple

functions and/or programs. For example, there are two different requirements for the NO_y analyzer: one for the PAMS program and one for the NCore program. These dual requirements allow for one NO_y analyzer to be used for both programs.

Table 2-4: Summary of Minimum Monitoring Requirements

Parameter	Requirements for Monitors/Samplers for CFR Programs	# of Equipment Required	# of Equipment Active	# of Equipment Needed
O ₃	CFR EPA Table D-2 only=	2	7	0
	Ncore & PAMS only=	1	1	0
NO ₂ , True- NO ₂ , NO _y	Near-road=	2	2	1
	Area-Wide=	1	1	0
	Regional Administrator=	1	1	0
	PAMS true-NO ₂ =	1	1	0
	Ncore & PAMS NO _y =	1	1	0
CO	Near-road=	1	2	0
	Regional Administrator=	0	0	0
	Ncore=	1	1	0
	SIP=	1	1	0
SO ₂	PWEI=	0	0	0
	Ncore=	1	1	0
Pb-TSP	Source (non-Airport)=	0	0	0
	Source (Airport)=	0	0	0
	Airport Study=	0	0	0
	Airport Study Exceedance=	1	1	0
	Regional Administrator=	0	0	0
	QA Collocation=	1	1	0
PM _{2.5} Samplers	General Requirements CFR EPA Table D-2 only=	3	9	0
	California Particulate Matter Network (non-microscale)=	5	7	0
	DV Maximum Concentration, 24-Hr =	1	1	0
	DV Maximum Concentration, Annual Average=	1	1	0
	Expected Maximum Concentration, 24-Hr =	1	1	0
	Expected Maximum Concentration, Annual Average=	1	1	0
	Near-road=	1	2	0
	Poor Air Quality=	1	1	0
	Ncore=	1	1	0
PM _{2.5} Continuous	QA Collocation=	1	2	0
	Minimum number required=	2	9	0
	Minimum number of PM _{2.5} continuous collocated with PM _{2.5} manual=	1	1	0
	Ncore=	1	1	0
PM _{2.5} Speciation	QA collocation of PM _{2.5} continuous=	0	1	0
	PM _{2.5} STN & CSN Speciation=	1	1	0
PM ₁₀ Samplers	Ncore=	1	1	0
	General Requirements CFR EPA Table D-2 only=	4-8	9	0
	QA collocation	0	1	0
Ncore	Ncore=	1	1	0
	PM _{2.5} -Continuous=	1	1	0
	PM _{2.5} -Manual (Integrated/filter-based)=	1	1	0
	PM _{2.5} -Speciated=	1	1	0
	PM _{10-2.5} =	1	1	0
	Ncore & PAMS O ₃ =	1	1	0
	SO ₂ -TLE=	1	1	0
	CO-TLE=	1	1	0
	Ncore & PAMS NO/NO ₂ =	1	1	0
	Wind speed/Wind direction=	1	1	0
% Relative Humidity=	1	1	0	
PAMS	Ambient temperature=	1	1	0
	Hourly averaged speciated volatile organic compounds (VOCs)=	1	1	0
	Three 8-hour averaged carbonyl samples per day on a 1 in 3 day schedule =	1	1	0
	Ncore & PAMS O ₃ =	1	1	0
	NO=	1	1	0
	True-NO ₂ =	1	1	0
	Ncore & PAMS NO _y =	1	1	0
	Ncore & PAMS Hourly averaged ambient temperature=	1	1	0
	Ncore & PAMS Hourly vector-averaged wind direction=	1	1	0
	Hourly average atmospheric pressure=	1	1	0
	Ncore & PAMS Hourly averaged relative humidity=	1	1	0
	Hourly precipitation=	1	1	0
	Hourly averaged mixing-height=	1	1	0
	Hourly averaged solar radiation=	1	1	0
Hourly averaged ultraviolet radiation	1	1	0	

2.3 Summary of Minimum Monitoring Requirements (Data)

The EPA regulations specify the following when applicable:

- The positioning of samplers, analyzers, and stations to collect data that can be compared to the National standards (NAAQS),
- The methodologies used to determine the samplers and analyzers are creating defensible data.
- The legal certification of data.

In the following sub-sections, a more in-depth exploration of data requirements.

2.3.1 *Criteria Pollutants*

2.3.1.1 *Data Suitability for Comparison to NAAQS*

The CFR requires that for O₃, NO₂, CO, SO₂, Pb-TSP, PM_{2.5}, PM₁₀ data to be used in regulatory determinations of compliance with the NAAQS, these instruments must be sited according to Federal Regulations (these requirements are listed in 1)a)i)(1)(a)(i) Appendix A) and the sampling frequency must be in accordance with Federal regulations (sampling frequencies for each pollutant are in their respective chapters). All the District's instruments meet or exceed all minimum monitoring requirements for siting and sampling frequencies, and the data from them can be compared to the NAAQS and the data can be certified.

2.3.1.2 *Data Quality Control/Quality Assurance*

All of the District's O₃, NO₂, CO, SO₂, Pb-TSP, PM_{2.5}, PM₁₀ samplers and analyzers were calibrated, flow checked, one-point checked, internally/District-audited, and externally-NPAP & NPEP audited according to EPA methodologies and the data can be certified.

2.3.1.3 *Data Reporting/Certifying*

All the ambient data from the O₃, NO₂, CO, SO₂, Pb-TSP, PM_{2.5}, PM₁₀ samplers and analyzers were reviewed for validity and the verified data were uploaded into EPA's AQS database quarterly.

All QA and QC reports regarding the O₃, NO₂, CO, SO₂, Pb-TSP, PM_{2.5}, PM₁₀ instruments were reviewed for validity and the verified data were uploaded into EPA's AQS database quarterly.

All reviewed and verified ambient data and all reviewed and verified QA/QC reports regarding the O₃, NO₂, CO, SO₂, Pb-TSP, PM_{2.5}, PM₁₀ instruments, were certified in a letter to the EPA Region 9 Authorities on May 1, 2025.

2.3.2 *Non-Criteria Pollutants & Others*

2.3.2.1 *Data Unsuitability for Comparison to the NAAQS*

The District analyzes for other pollutants: PAMS-VOCs, PAMS-Carbonyls, and Toxics-Carbonyls. These instruments have no NAAQS to compare. All these instruments meet or exceed all minimum monitoring requirements for siting and sampling frequencies.

2.3.2.2 *Data Quality Control/Quality Assurance*

All QA/QC functions on the District's PM_{2.5} (continuous) in non-FEM mode, PAMS-VOC, PAMS-Carbonyls, and Toxics-Carbonyls instruments met or exceeded EPA requirements.

2.3.2.3 *Data Reporting/Certifying*

All the data from the PAMS-VOC, PAMS-Carbonyls, and Toxics-Carbonyls instruments were reviewed for validity and the verified data were uploaded into EPA's AQS. The verified data were uploaded to the EPA's AQS database. This data is non-certifiable and is not included in the annual Data Certification Report.

2.4 **Recent Planned and Unplanned Changes to the Network**

The EPA Region 9 governing authority approves the District's distribution of monitors and the location of the collocated sites for compliance with Federal regulations. Any station or equipment changes will be undertaken in partnership and advisement with the EPA (and CARB, when applicable). Before any SLAMS monitor is decommissioned, the District will follow the procedures listed in 40 CFR Part 58.14, "System Modifications" and any proposed changes to the air monitoring network will be documented in the Annual Network Report. The District will provide a minimum 30-day period for public review, prior to any change, when possible. If a station or analyzer is to relocate, parallel sampling will be undertaken, when possible.

Changes to the monitoring network may occur outside the Annual Network Report approval and the planning process, due to unforeseen circumstances such as eviction, safety concerns, etc. Any changes due to circumstances beyond the District's control will be communicated in writing to the EPA Regional Authority and identified in the subsequent Annual Network Report.

Note: all listed timelines for construction activities are an estimate, as all construction activities require city permitting, construction work goes out to the competitive bid process, and these are handled by the County Department of General Services and the District has no control over these timelines.

2.4.1 *Station Relocations and Upgrades*

2.4.1.1 *Escondido – Operational Timeline: TBD*

In 2015, the District was evicted from the Escondido site. During the set-up of the new site, the County announced (in March 2022) the plan for a new high density, affordable housing project to be built on the County land adjacent to the monitoring station. The project

would impact the air monitoring at the site. The District is seeking an alternative location (TBD) in the Escondido area for the air monitoring station and meet the EPA siting requirements. Escondido is an important site for our regional Air Monitoring Network and provides valuable air pollution data for our inland North County. An estimated timeline for the new Escondido site is TBD.

2.4.1.2 Camp Pendleton – Operation Timeline: TBD

This station needs to be relocated (EPA R9 2017 TSA recommendation) elsewhere in the north coastal region. Data is often affected by emissions from the upwind motor pool. A weak node in the power grid, causes frequent power outages which have cascading ramifications: loss of data; equipment repairs; additional field QA/QC; etc. The District has significant site/base access complications. Once a new location is identified, the District will submit a 58.14 request to EPA to the EPA R9 Authorities for approval. All station relocations must be approved by EPA first. The District has no plans of relocating Camp Pendleton in calendar year 2023.

2.4.1.3 Chula Vista – Station Trailer and Deck Upgrade – October 2025

Monitoring at the Chula Vista (CVA) site was suspended in April 2025 to upgrade the station trailer and add a deck for samplers. Once the upgraded trailer and deck were installed, the District resumed monitoring in October 2025.

2.4.2 Station Additions

2.4.2.1 Otay Mesa Point of Entry (POE) – Operational Timeline: TBD

The EPA Border 2025 Authorities have requested that PM_{2.5}-continuous and Black Carbon-continuous analyzers be located near the Otay Mesa POE. The District has received landlord approval to deploy a sampling platform at the State of California Highway Patrol Truck Safety Inspection facility along east Via de la Amistad. As with the San Ysidro site, this location will serve multiple purposes:

- EPA Border 2025 program (PM_{2.5} continuous and Black Carbon continuous analyzers).
- Ambient pollutants (exact parameters unknown)
- Community Air Monitoring (State AB 617) program (exact parameters unknown)

2.4.3 Sampler Shutdowns

2.4.3.1 Pb-TSP at McClellan Palomar Airport (CRQ) – Shutdown Timeline January 2026

The District will discontinue lead monitoring at McClellan Palomar Airport (CRQ) in January, 2026. All the measured concentrations at the Palomar Airport location were well below 50% of the NAAQS. In 2025, the District petitioned the EPA to decommission lead sampling at

this airport and EPA approved the District's waiver request. The letter of approval from the EPA is attached to the end of this Annual Network Report.

2.4.4 Analyzer Addition: Continuous Formaldehyde – Operation Timeline June 2026

The District will add continuous formaldehyde analyzer at the PAMS site (expected timeline: June 2026). The continuous sampling will replace the current sampling utilizing cartridges. Continuous sampling will still cover all requirements put forth by the EPA PAMS program.

2.4.5 Sampler Addition: T-SASS (CARB) at Chula Vista Site

The California Air Resources Board (CARB) replaced the Xontech 924 with a Met One T-SASS to monitor toxic compounds (carbonyls, total metals, and hexavalent chromium). The sampler was deployed at the Chula Vista site in November 2025.

2.4.6 Waiver Letters

2.4.6.1 McClellan-Palomar Airport (CRQ)

The District submitted a formal request to the EPA in the 2024 Annual Network Report to discontinue lead monitoring at McClellan-Palomar Airport. The EPA approved the waiver to discontinue lead monitoring at the Airport. The formal request waiver submitted to EPA is in **Appendix B-1**. The approval letter from EPA is attached to **Appendix B-2**.

2.4.6.2 Rancho Carmel Drive (RCD) Near-road Site

The District has requested a waiver from the EPA to continue operating the Rancho Carmel Drive Near-road monitoring site under its current configuration. Several trees located near the sampling inlet place the site outside the EPA's siting requirement specified in 40 CFR Part 58, Appendix E,. The waiver request is under EPA review and has not approved the waiver request. The EPA has requested additional information from the District before a response to the request is issued. For detailed measurements, regulatory references and supporting rationale, refer to the full waiver in **Appendix B-3**.

2.5 Submitted Questions During Question Period

TBD

(left intentionally blank)

3 OZONE (O₃)

3.1 Introduction

The District operates ozone monitors at seven monitoring sites throughout the Regional Air Monitoring Network. The Ozone Network Map (**Figure 3-1**) shows the air monitoring sites with ozone monitors. The minimum requirements for the number of ozone monitors are stated in the Code of Federal Regulations (40 CFR, Part 58, Appendix D, Section 4.1(a)). This corresponds to two monitors (40 CFR, Part 58, Appendix D, Table D-2). In addition, the District is also required to operate an ozone monitor for the NCore & Photochemical Assessment Monitoring Stations (PAMS) program. Ambient level ozone was monitored on a continuous (7/24) basis.

The District is seeking an alternative location for the air monitoring site in Escondido. The District meets or exceeds all minimum requirements for ozone monitoring for all programs. Additional information on ozone monitoring is provided in this chapter.

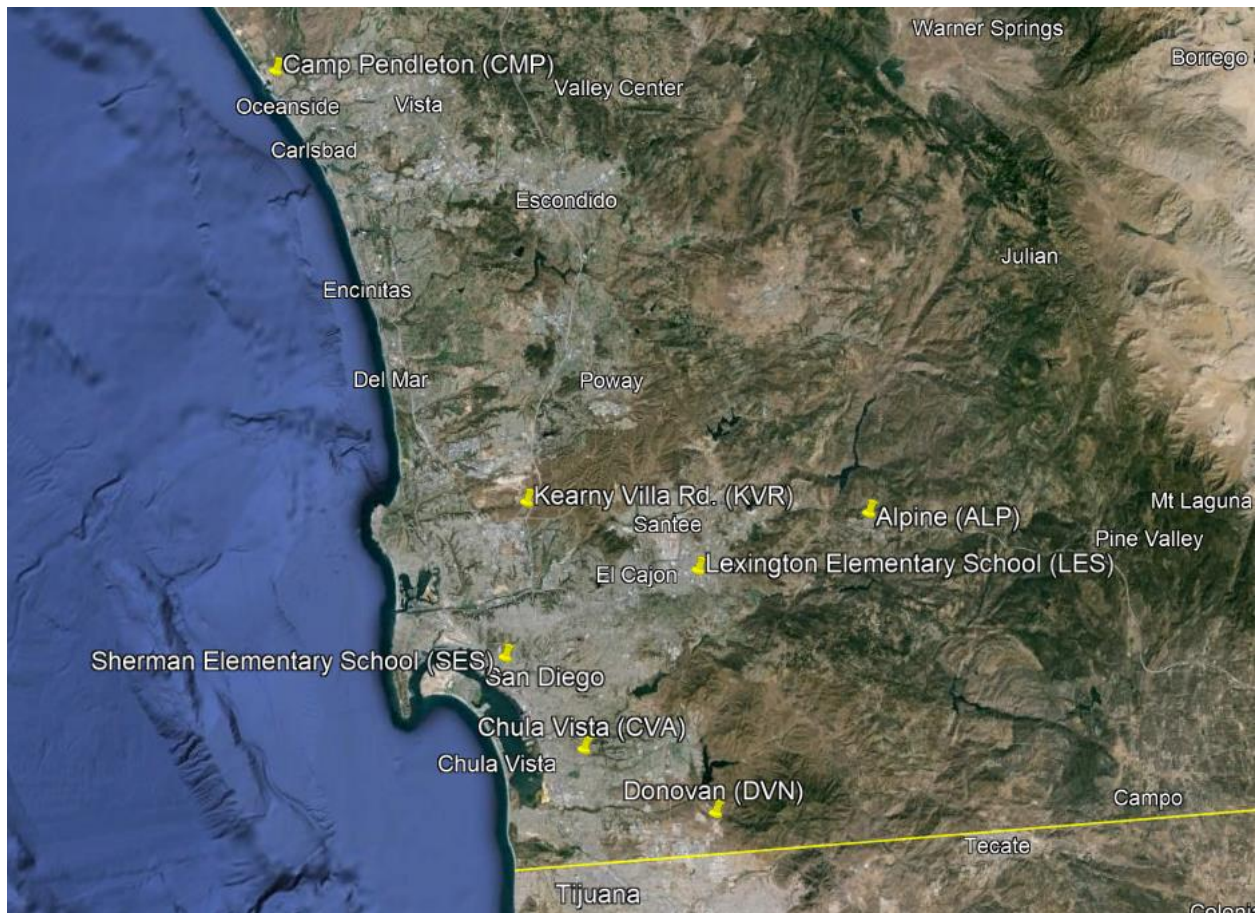


Figure 3-1: Ozone Network Map

Table 3-1: Ozone State and Federal Standards for the Year

Ambient Air Quality Standards				
Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone (O ₃)	1 hour	0.09 ppm (180 µg/m ³)	Not Applicable	Not Applicable
	8 hour	0.07 ppm (137 µg/m ³)	0.07 ppm (137 µg/m ³)	0.07 ppm (137 µg/m ³)

3.2 Ozone Concentrations for San Diego

3.2.1 Concentrations for the Last 20 Years

San Diego has had a decrease in the 3-yr average of the exceedance days for ozone as well as a decrease in its 8-hour Design Value (3-year average of the 4th highest 8-hour concentration) since the early 2000's (Table 3-4 and Figure 3-2).

Note: "Days Above the National 8-Hr Standard" in Table 3-4 reflect the ozone standard for that year.

Table 3-4: Ozone Concentrations for San Diego (2005–2025)

Design Value (ppm)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	0.086	0.088	0.089	0.092	0.089	0.088	0.082	0.081	0.080	0.079	0.079	0.081	0.084	0.084	0.082	0.079	0.078	0.079	0.079	0.079	0.081
Maximum 8-Hr Conc. (ppm)	0.089	0.100	0.092	0.109	0.097	0.088	0.093	0.083	0.083	0.081	0.084	0.091	0.095	0.082	0.084	0.102	0.080	0.088	0.085	0.090	0.086
Days above the National 8-Hr Standard	24	38	27	35	24	14	10	10	7	12	13	13	54	23	19	33	16	24	28	28	14

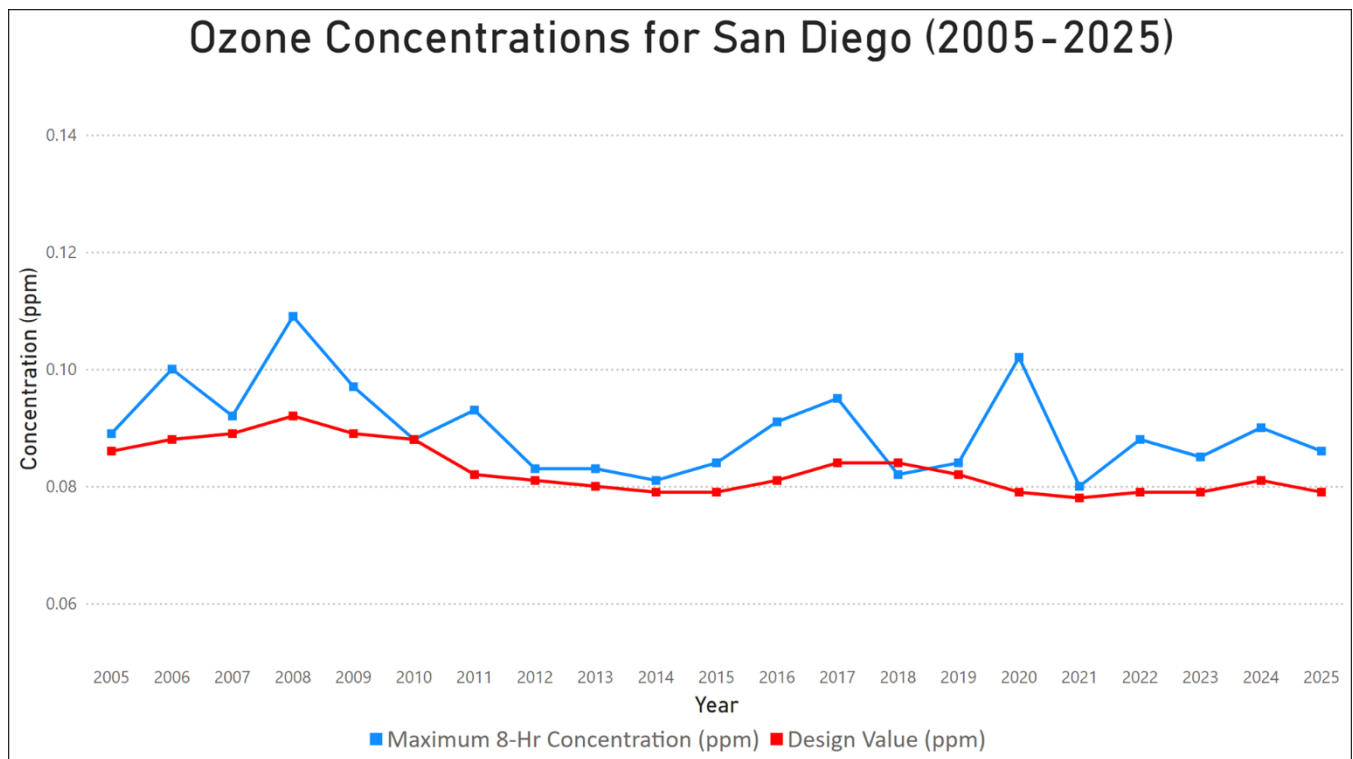


Figure 3-2: Graph of Ozone Concentrations for San Diego (2005-2025)

3.2.2 Concentrations by Site for the Year

Table 3-5 lists the maximum ozone measurements for every ozone monitoring location and **Figure 3-3** show the values graphically with respect to the National Standard for the year. These annual concentrations are only used for informational purposes. The NAAQS comparison requires the Design Value (DV) calculation.

Table 3-5: Ozone Concentrations for San Diego by Site (2025)

No. (#)	Site (name)	Site Abbreviation (name)	Maximum 8-Hr Concentration (ppm)	Number of Days Above the National Standard (#)	Annual Average (ppm)
1	Camp Pendleton	CMP	0.066	0	0.041
2	Kearny Villa Rd.	KVR	0.075	2	0.043
3	Alpine	ALP	0.078	13	0.050
4	Lexington Elementary School	LES	0.086	4	0.046
5	Sherman Elementary School	SES	0.058	0	0.038
6	Chula Vista	CVA	0.062	0	0.043
7	Donovan	DVN	0.074	1	0.045

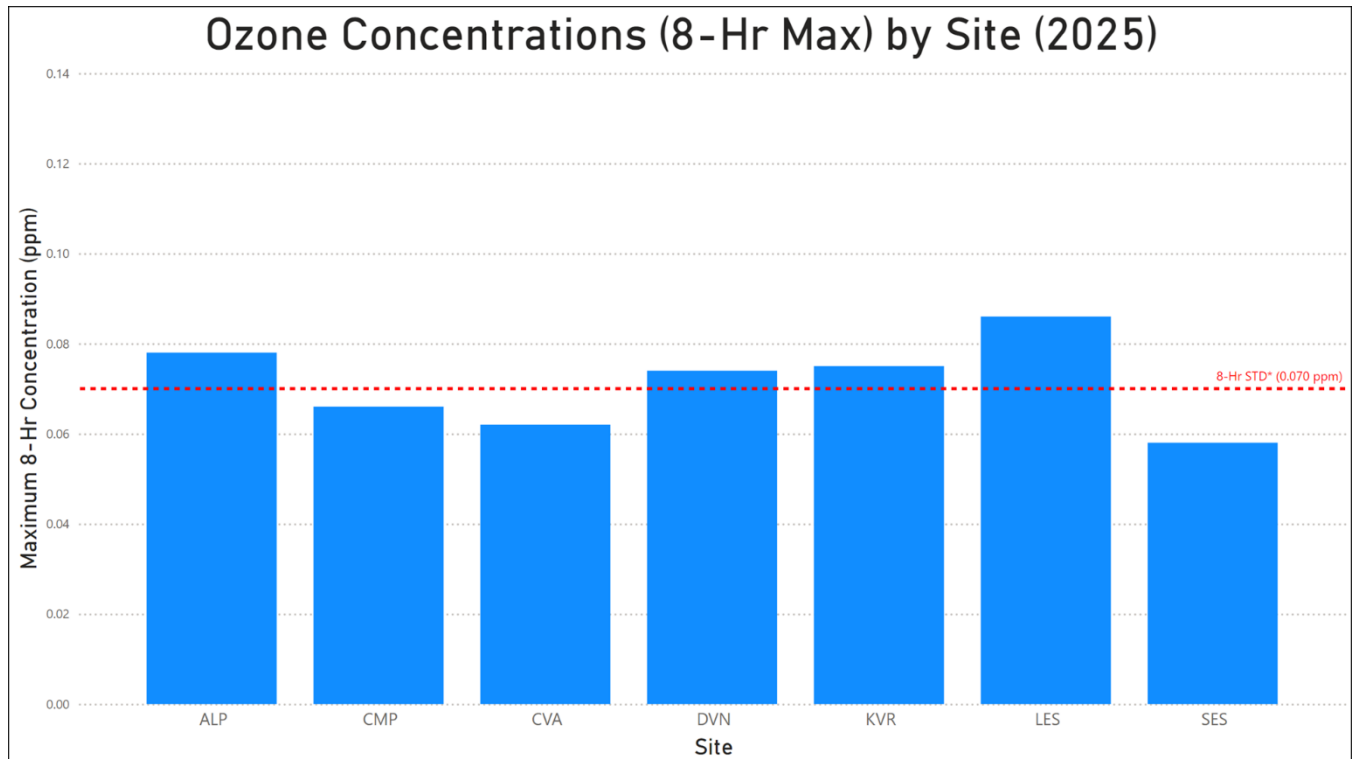


Figure 3-3: Graph of Ozone Concentrations for San Diego by Site* (2025)

* 8-Hr Std is 0.070 ppm. For informational purposes only. NAAQS comparisons requires Design Value (DV) calculations. Annual values are not comparable to the NAAQS.

3.2.3 Concentrations by Site for Design Value

Table 3-6 lists the maximum ozone measurements for every ozone monitoring location and **Figure 3-4** shows the values graphically for the Design Value.

Table 3-6: Ozone Concentrations for San Diego by Site for Design Value 2023 to 2025

No. (#)	Site (name)	Site Abbreviation (name)	Concentration of 8-Hr Design Value (ppm)	Is the 8-Hr Design Value ≥ 85% of the NAAQS? (yes/no)	Does the 8-Hr Design Value Meet the NAAQS? (yes/no)
1	Camp Pendleton	CMP	0.061	yes	yes
2	Kearny Villa Rd.	KVR	0.067	yes	yes
3	Alpine	ALP	0.079	yes	no
4	Lexington Elementary School	LES	0.073	yes	no
5	Sherman Elementary School	SES	0.055	no	yes
6	Chula Vista	CVA	0.059	no	yes
7	Donovan	DVN	0.065	yes	yes

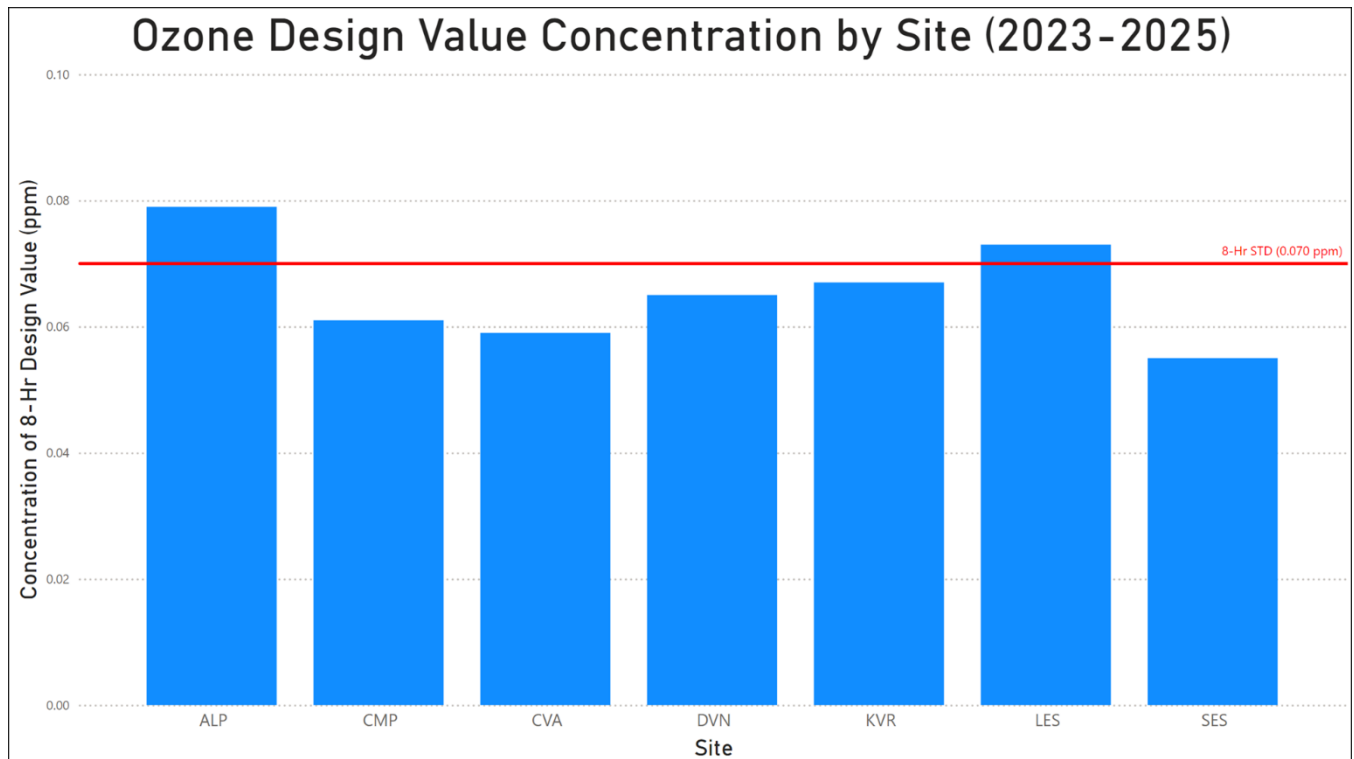


Figure 3-4: Graph of Ozone Concentrations for San Diego by Site for Design Value (2023-2025)

3.3 Ozone Minimum Monitoring Requirements

The District is federally mandated to monitor O₃ levels in accordance with the CFR. This section will state the different monitoring requirements for each program. These monitors can serve as fulfilling other O₃ network requirements (e.g. ambient O₃ monitor can fulfill a PAMS O₃ monitor requirement).

The District meets or exceeds all minimum requirements for O₃ monitoring for all programs.

3.3.1 Minimum Requirements for the Design Value (DV) Criteria

The District is required to operate a minimum number of O₃ monitors irrespective of O₃ network affiliations. To ascertain the minimum number of monitors required, the Design Value (DV) must be calculated and referenced to Table D-2 to Part 58 of the Code of Federal Regulations (CFR), Title 40 (**Table 3-7** within this document). The DV is derived by averaging the 4th highest for the last three years.

Table 3-7: Table D-2 of Appendix D to Part 58 – SLAMS Minimum O₃ Monitoring Requirements

MSA population	Most recent 3-year design value concentrations ≥85% of any O ₃ NAAQS	Most recent 3-year design value concentrations <85% of any O ₃ NAAQS
350,000 - < 4 million	2	1

Based on the recent census, San Diego has a population of 3.3 million people. This corresponds to two required ozone monitors to meet the requirements for ambient monitoring. The District operates seven throughout the network and is shown in **Table 3-8**.

Table 3-8: Ozone Minimum Monitoring Requirements for the Design Value (DV) Criteria (8-Hr)

What is the Maximum 8-Hr Design Value? 2023-2025 (ppm)	Is the Maximum 8-Hr Design Value ≥ 85% of the NAAQS? 2023-2025 (yes/no)	Is the Maximum 8-Hr Design Value < 85% of the NAAQS? 2023-2025 (yes/no)	Does the Maximum 8-Hr Design Value Meet the NAAQS? 2023-2025 (yes/no)	MSA & County (name)	Population Estimated from 2020 Census (#)	Number of Monitors Required (#)	Number of Monitors Active (#)	Number of Monitors Needed (#)
0.079	yes	no	no	San Diego	3.3 Million	2	7	0

3.3.2 *Minimum Requirements for the Maximum Concentrations Site Design Value*

All Districts are required to categorize at least one monitor/sampling site in the air basin as an area of maximum concentration. A concentration is calculated for this site. The DV is derived by averaging the 4th highest for the last three years. **Table 3-9** displays this maximum concentration site requirement.

Table 3-9: Ozone Minimum Monitoring Requirements - Maximum Concentration Site Design Value

Maximum 8-Hr Design Value Site 2023-2025 (name)	Maximum 8-Hr Design Value Concentration 2023-2025 (ppm)
Alpine (ALP) 06-073-1006	0.079

3.3.3 *Minimum Requirements for NCore & PAMS*

The District is required to operate NCore and Photochemical Assessment Monitoring Stations (PAMS) sites. There are several associated requirements to operate these sites. One of the overlapping requirements is to operate O₃ monitors. **Table 3-10** lists Ozone (O₃) Monitoring requirements.

Table 3-10: Ozone Minimum Monitoring Requirements - NCore & PAMS

Number of O ₃ Monitors Required at Ncore & PAMS Sites (#)	Number of O ₃ Monitors Active at Ncore & PAMS Sites (#)	Number of O ₃ Monitors Needed at PAMS & Ncore Sites (#)	Location of O ₃ Monitors at Ncore & PAMS Sites (name)
1	1	0	Lexington Elementary School (LES) 06-073-1022

3.3.4 *Minimum Requirements of the Ozone Sampling Season*

All Districts are required to sample for ozone during ozone season as defined by **Table 3-11** which refers to Table D-3 in Part 58 of the Code of Federal Regulations, Title 40. **Table 3-12** lists the ozone sampling season for the SDAB.

Table 3-11: Table D-3 to Appendix D of Part 58 - Ozone Monitoring Season by State

State	Begin Month	End Month
California	January	December

Table 3-12: Ozone Minimum Monitoring Requirements - Ozone Sampling Season

Required Ozone Sampling Season (range)	Active Ozone Sampling Season (range)	Does Active Ozone Sampling Season Meet Requirements? (yes/no)
January-December (annually)	January-December (annually)	yes

3.4 Ozone Suitability for Comparison to the NAAQS

The CFR requires that for ozone data to be used in regulatory determinations of compliance with the ozone NAAQS, the ozone monitors must be sited according to Federal Requirements and the sampling frequency must be in accordance with the federal regulations. All District ozone monitors meet or exceed all minimum monitoring requirements and sampling frequencies, as to be able to be compared to the NAAQS. **Table 3-13** summarizes these requirements.

Table 3-13: Ozone Suitability for Comparison to the NAAQS - Sampling Equipment

Parameter	Code	Unit	Code	Duration	Code	Equipment	Method	Code	Sampling Frequency	Method ID	
Ozone	O ₃	44201	ppm	007	1-Hr	1	Thermo 49 series	Ultraviolet absorption	047	7/24	EQOA-0880-047

(left intentionally blank)

4 NITROGEN DIOXIDE (NO₂)

4.1 Introduction

The District operates NO₂ monitors at nine monitoring sites throughout the Regional Air Monitoring Network. The NO₂ Network Map (**Figure 4-1**) shows the air monitoring sites with NO₂ monitors. The National Standards for NO₂ are listed in **Table 4-1**. The minimum requirements for the number of NO₂ monitors are stated in the Code of Federal Regulations (40 CFR, Part 58, Appendix D). The required NO₂ monitors that the District must operate are summarized in **Table 4-2** while **Table 4-3** provides additional information on all the District monitoring sites with NO₂ monitors. Ambient level NO₂ was monitored on a continuous (7/24) basis.

In addition, the District is also required to operate a monitor for Reactive Oxides of Nitrogen (NO_y) for NCore program and the Photochemical Assessment Monitoring Sites (PAMS) program. The Lexington Elementary School air monitoring site in El Cajon is the site for both the NCore and PAMS program. Additional information on the NCore and PAMS programs can be found in Chapter 11 and Chapter 12, respectively.

The District meets or exceeds all minimum requirements for NO₂ monitoring for all required programs. Additional information on NO₂ monitoring is provided in this chapter.

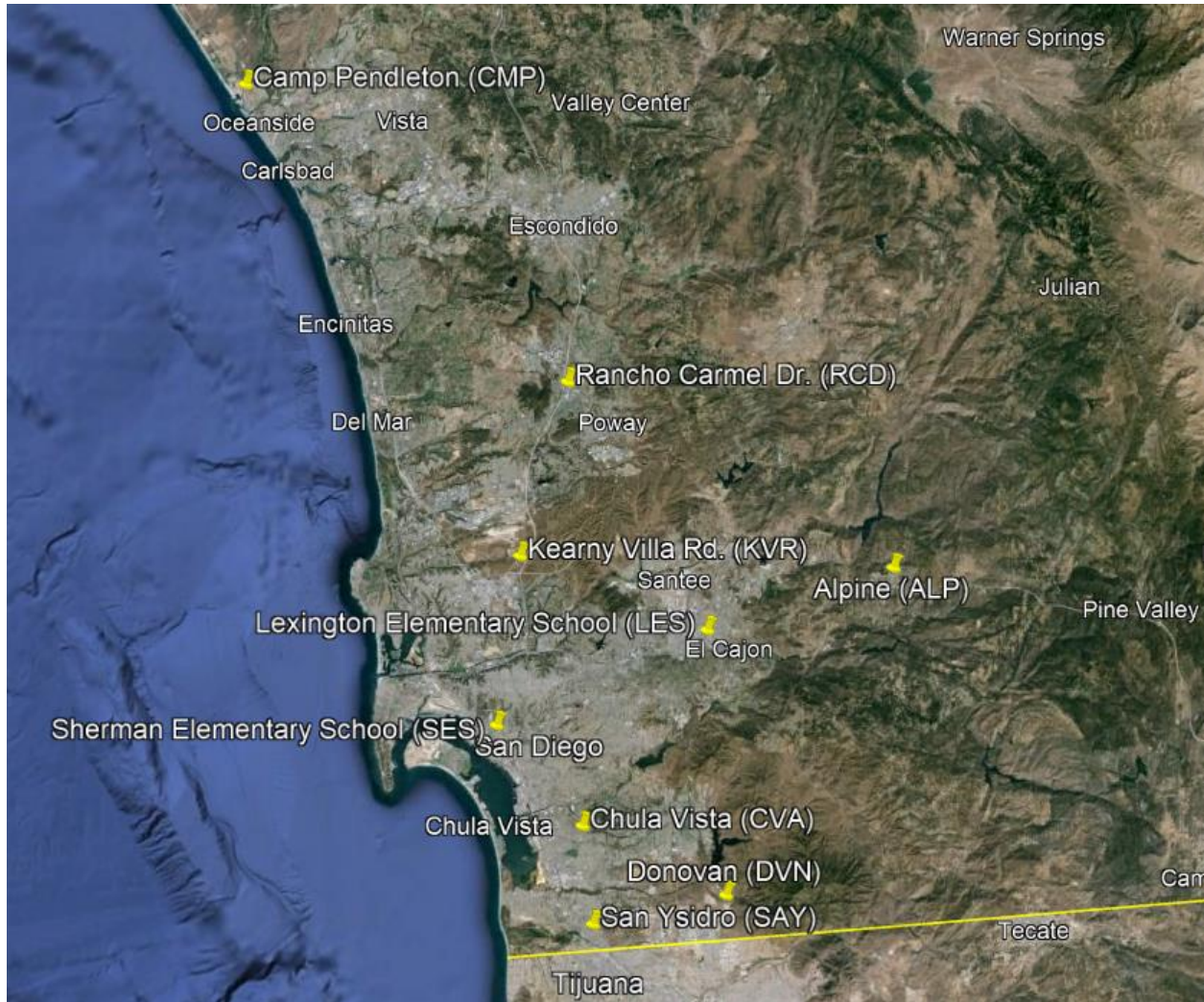


Figure 4-1: Nitrogen Dioxide & NO_y Network Map

Table 4-1: Nitrogen Dioxide State and National Standards for the Year*

Pollutant	Averaging Time	Ambient Air Quality Standards		
		California Standards	National Standards	
		Concentration	Primary	Secondary
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm (339 µg/m ³)	0.100 ppm (188 µg/m ³)	Not Applicable
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (137 µg/m ³)	0.053 ppm (137 µg/m ³)

*The NO_y analyzer is non-regulatory; therefore, there are no NAAQS to compare. The NO_x and NO_y measurements are comparable in the SDAB.

4.2 NO₂ Concentrations for San Diego

4.2.1 Concentrations for the Last 20 Years

San Diego has measured a decrease in maximum NO₂ concentrations (**Table 4-4**) over the last twenty years. Over the last 15 years, the maximum 1-hour NO₂ concentrations have been below 100 ppb (fluctuating between 55 and 86 ppb). Improved emission control technology on mobile sources and emissions should contribute to a decrease in NO₂ concentrations. The concentration of NO₂ over the last 20 years is shown in **Figure 4-2** below.

Note: the “Days Above the National 1-Hr Standard.” Row reflect the NO₂ standard for that year

Table 4-4: NO₂ Concentrations for San Diego for the Last 20 Years 2005- 2025

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Maximum 1-Hr Conc. (ppm)	0.109	0.097	0.101	0.091	0.078	0.081	0.067	0.065	0.081	0.075	0.062	0.073	0.074	0.055	0.086	0.058	0.061	0.064	0.063	0.086	0.071
Maximum Annual Average (ppm)	0.024	0.024	0.022	0.019	0.017	0.015	0.014	0.013	0.014	0.013	0.016	0.017	0.016	0.014	0.014	0.013	0.013	0.015	0.020	0.013	0.012
Days above the National 1-Hr Standard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

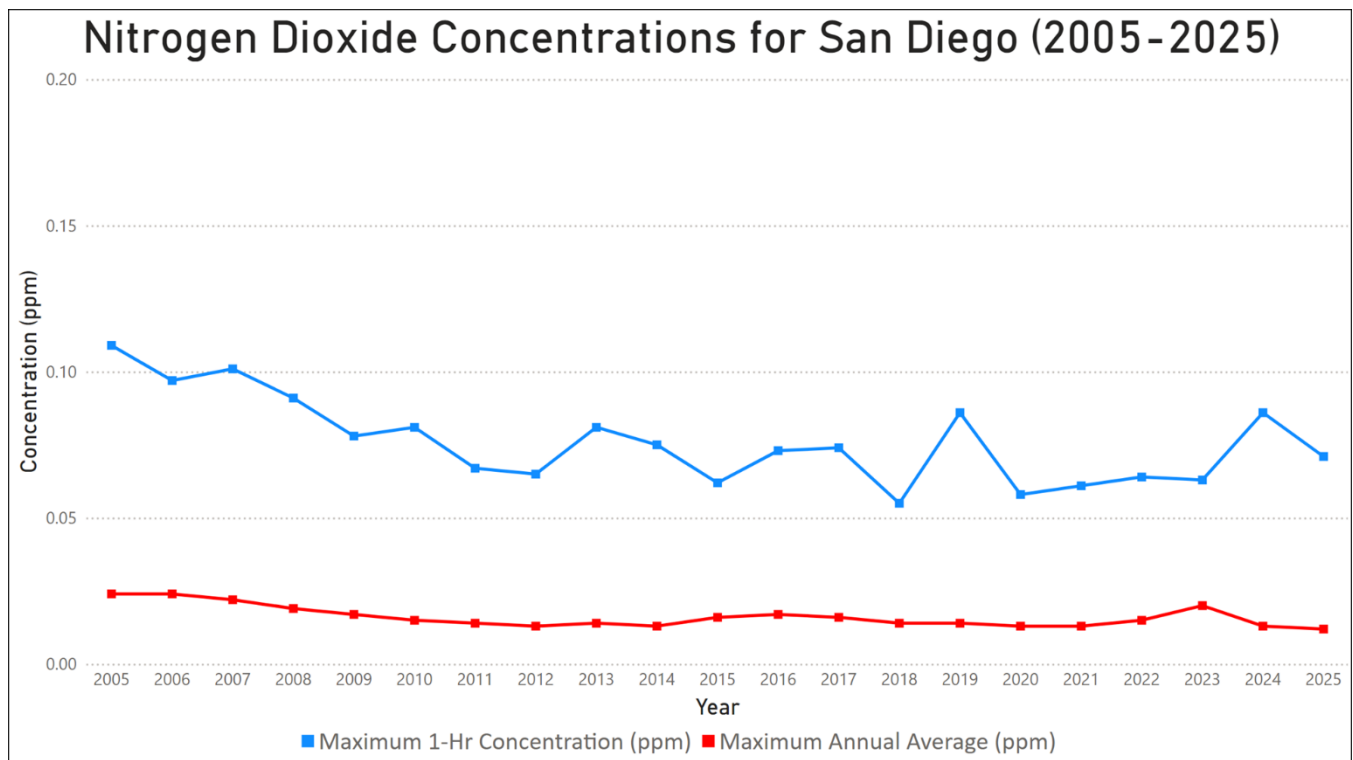


Figure 4-2: NO₂ Concentrations for San Diego (2005 – 2025)

4.2.2 Concentration by Site for the Year

Table 4-5 lists the maximum nitrogen dioxide measurements for each nitrogen dioxide monitoring location; **Figure 4-3** shows the values graphically with respect to the National Standard for the year.

Note: This is for informational purposes only since the NAAQS comparison requires a Design Value (DV) calculation. Annual Values are not comparable to the NAAQS.

Table 4-5: NO₂ Concentrations for San Diego by Site for the Year 2025*

No. (#)	Site (name)	Site Abbreviation	Maximum 1-Hr Concentration (ppm)	Number of Days Above the National Standard (#)	Annual Average (ppm)
1	Camp Pendleton	CMP	0.048	0	0.004
2	Rancho Carmel Dr.	RCD	0.055	0	0.012
3	Kearny Villa Rd.	KVR	0.041	0	0.005
4	Alpine	ALP	0.037	0	0.004
5	Lexington Elementary School	LES	0.036	0	0.007
6	Sherman Elementary School	SES	0.056	0	0.010
7	Chula Vista	CVA	0.048	0	0.010
8	Donovan	DVN	0.059	0	0.007
9	San Ysidro	SAY	0.071	0	0.011

* For informational purposes only. NAAQS comparison requires Design Value (DV) calculations. Annual Values are not comparable to NAAQS.

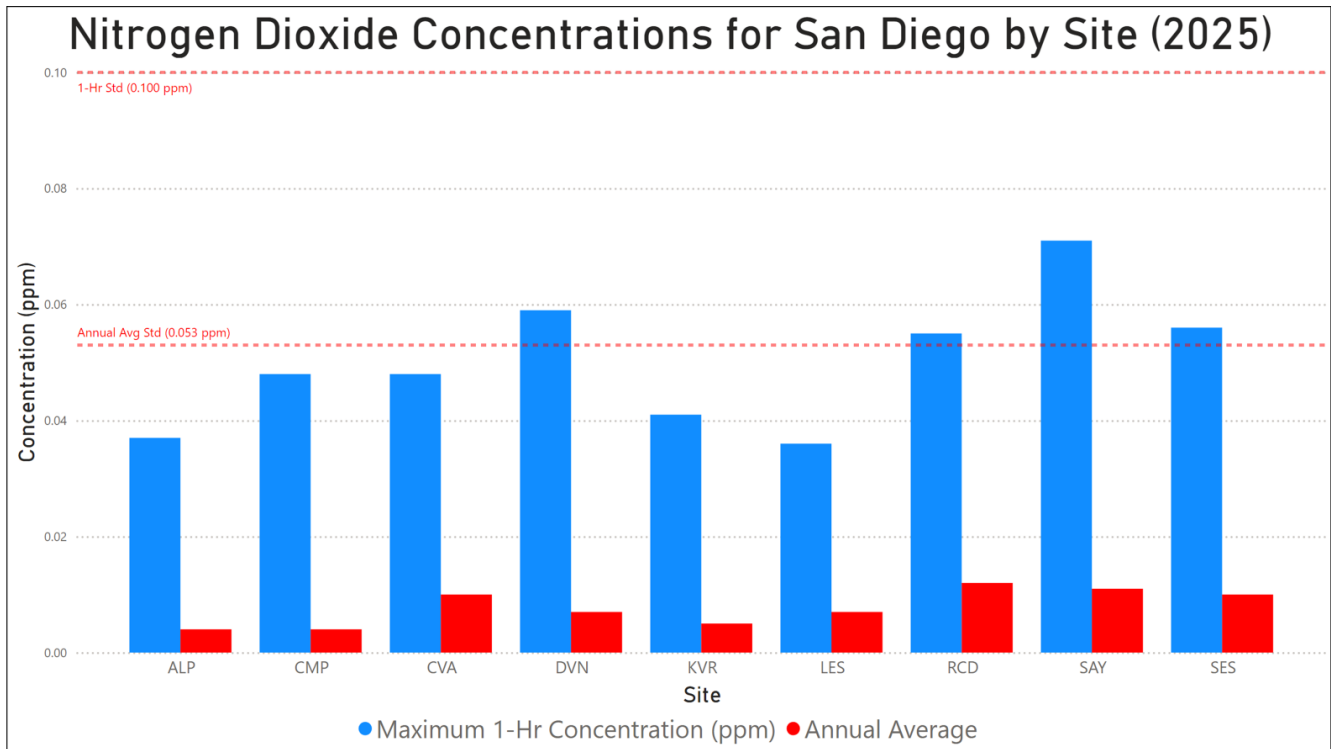


Figure 4-3: Graph of NO₂ Concentrations for San Diego by Site (2025)*

* Annual Avg Std (0.053 ppm) and 1-Hr Std (0.100 ppm) for informational purposes only. NAAQS comparison requires Design Value (DV) calculations. Annual Values are not comparable to NAAQS.

4.2.3 Concentrations by Site for the Design Value

Table 4-6 lists the maximum nitrogen dioxide measurements each nitrogen dioxide monitoring location; **Figure 4-4** shows the values graphically with respect to the National Standard for the year.

Table 4-6: NO₂ Concentrations for San Diego by Site for the Design Value 2023 - 2025

No. (#)	Site (name)	Site Abbreviation	Maximum Concentration 1-Hr DV (ppm)	Number of Days Above the National Standard (#)
1	Camp Pendleton	CMP	0.036	0
2	Rancho Carmel Dr.	RCD	0.044	0
3	Kearny Villa Rd.	KVR	0.033	0
4	Alpine	ALP	0.018	0
5	Lexington Elementary School	LES	0.031	0
6	Sherman Elementary School	SES	0.045	0
7	Chula Vista	CVA	0.040	0
8	Donovan	DVN	0.054	0
9	San Ysidro	SAY	*	0

* Not enough data to calculate a design value

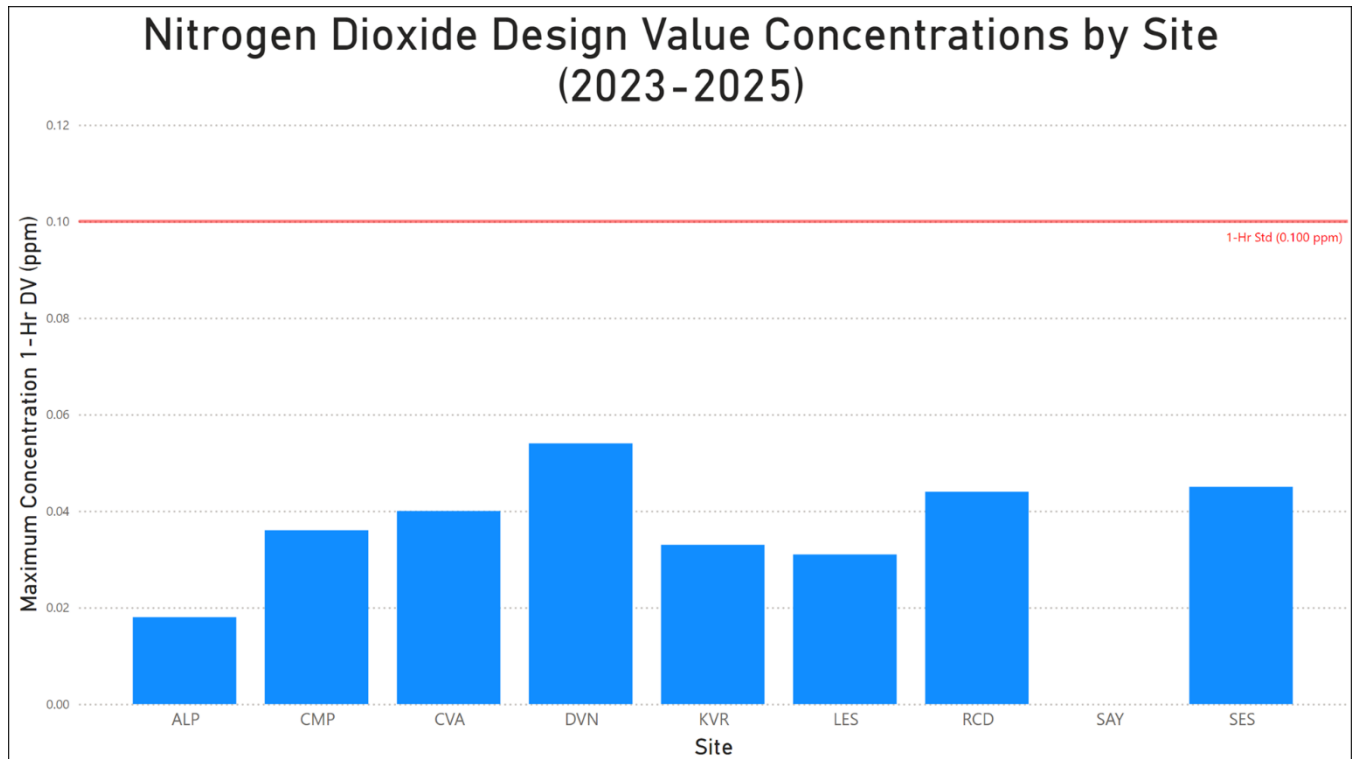


Figure 4-4: Graph of NO₂ Concentrations for San Diego by Site for the Design Value* 2023 – 2025

*SAY did not have a year of data to calculate the Design Value

4.3 NO₂ Minimum Monitoring Requirements

The District is federally mandated to monitor NO₂ levels in accordance with the CFR. This section will state the different minimum monitoring requirements for each program, e.g. ambient, Near-road, PAMS, etc., that the District operates. These monitors can serve to fulfill other NO₂ network requirements, e.g. ambient NO₂ monitor can fulfill a PAMS NO₂ monitor requirement.

The District meets or exceeds all minimum requirements for NO₂ monitoring for all programs.

4.3.1 Minimum Requirements for Near Road Sites

To measure concentrations for some pollutants in communities located by roadways, the EPA instituted the Near-road monitoring program. The requirement is stated in the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 4.3.2(a)). The requirement for the District is two NO₂ Near-road monitors, which is determined based on population and traffic counts (AADT).

The first Near-road monitoring site must be sited in proximity to the highest traffic count, adjusted for High Density (FE=Fleet Equivalency) vehicles. The first Near-road site is on Rancho Carmel Drive (RCD)

The criteria for the second Near-road location are more flexible than the criteria for the first site. The second site is not necessarily the next location according to FE ranking. The EPA prescribes that the second site be selected so that it is differentiated from the first by one or more factors affecting traffic emissions and/or pollution transport (e.g. fleet mix, terrain, geographic area, different roadway, public health, etc). The District began sampling at the second Near-road site in October 2023. The San Ysidro station is located near the Point-of-Entry (POE) at Fire Station #29 (at Interstate-5 and Cottonwood Road). This site has been:

- Endorsed by EPA-National Authorities.
- Verbally approved by EPA-National Authorities.
- Visited and verbally approved by EPA-Region 9 Authorities during the 2017 and 2023 TSA.

Table 4-7 and **Table 4-8** provide a summary for the Near-road NO₂ monitoring requirements.

Table 4-7: NO₂ Minimum Monitoring Requirements (Populations) - Near-Road

MSA & County (name)	Population Estimated from 2020 Census (#)	Number of NO ₂ Near-road Monitors Required (#)	Site Abbreviation	Are Additional NO ₂ Near-road Monitors Required? (yes/no)	Number of Additional NO ₂ Near-road Monitors Required (#)	Number of NO ₂ Near-road Monitors Active (#)	Number of NO ₂ Near-road Monitors Needed (#)
San Diego	3.3 Million	2	RCD	NO	0	2	0
			SAY				

Table 4-8: NO₂ Minimum Monitoring Requirements (Traffic Counts) - Near-Road

MSA (name)	County (name)	Population Estimated from 2020 Census (#)	MAX AADT (#)	Location of Near-road Sites (#)	Is Near-road Site Active? (yes/no)	Number of Near-road Site(s) Needed (#)
San Diego	San Diego	3.3 Million	247,500 (2023)	Rancho Carmel Dr. (RCD) 06-073-1017	yes	0
			69,000 (2023)	San Ysidro Blvd. (SAY) 06-073-1025	yes	0

4.3.2 Minimum Requirements Area Wide

The District is required to designate a monitor that routinely measures high concentrations of nitrogen dioxide. This monitor cannot be used for Regional Administrator needs. The requirement is stated in the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 4.3.3(a)). This monitor is required at a location of expected highest NO₂ concentrations. The site of the Area-wide monitor is located at Donovan (DVN). **Table 4-9** lists the Area-wide NO₂ monitoring requirement for the SDAB.

Table 4-9: NO₂ Minimum Monitoring Requirements - Area-Wide

MSA & County (name)	Population Estimated from 2020 Census (#)	Number of Area-wide NO ₂ Monitors Required (#)	Number of Area-wide NO ₂ Monitors Active (#)	Number of Area-wide NO ₂ Monitors Needed (#)	Location of Area-wide Site (name)	Does Area-wide Site Meet NAAQS? (yes/no)
San Diego	3.3 Million	1	1	0	Donovan (DVN) 06-073-1014	yes

4.3.3 Minimum Requirements of Regional Administrator

To obtain a pollutant profile in certain areas, the monitoring of NO₂ may be required by the EPA Regional Administrator. The requirement for the Regional Administrator site is in the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 4.3.4(a)). The purpose of this requirement is to add monitors for NO₂ to protect susceptible and vulnerable populations throughout the nation. The Sherman station in Sherman Heights satisfies this requirement. **Table 4-10** provides additional information for this requirement.

Table 4-10: NO₂ Minimum Monitoring Requirements - Regional Administrator

Number of Regional Administrator NO ₂ Monitors Required (#)	Number of Regional Administrator NO ₂ Monitors Active (#)	Number of Regional Administrator NO ₂ Monitors Needed (#)	Location of Regional Administrator Site (name)	Does Regional Administrator Site Meet NAAQS? (yes/no)
1	1	0	Sherman Elementary School (SES) 06-073-1026	Yes

4.3.4 Minimum Requirements of PAMS True-NO₂

The District is required to operate a single PAMS site. There are several associated requirements to operate a PAMS site according to the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 5(b)(4)). Additional details on the PAMS program is located in **Chapter 12**. One of the requirements is to operate a True-NO₂ monitor. **Table 4-11** lists the PAMS true-NO₂ Monitoring requirements for the SDAB.

Table 4-11: Minimum Monitoring Requirements - True-NO₂ PAMS

PAMS Sites/Locations (name)	Number of true-NO ₂ Monitors Required at PAMS Sites (#)	Number of true-NO ₂ Monitors Active at PAMS Sites (#)	Number of true-NO ₂ Monitors Needed at PAMS Sites (#)
Lexington Elementary School (LES) 06-073-1022	1	1	0

4.3.5 Minimum Requirements for Reactive Oxides of Nitrogen within NCore & PAMS Programs

The District is federally mandated to monitor NO_y levels in accordance with the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 3(b) and Section 5(b)(4)). This section will state the different minimum monitoring requirements for each program, e.g. NCore, PAMS, etc. that the District operates and the references therein. **Table 4-12** summarizes these requirements.

Table 4-12: Reactive Oxides of Nitrogen Minimum Monitoring Requirements - PAMS & NCore

Number of NO _y Monitors Required at Ncore & PAMS Sites (#)	Number of NO _y Monitors Active at Ncore & PAMS Sites (#)	Number of NO _y Monitors Needed at PAMS & Ncore Sites (#)	Ncore & PAMS Sites (name)
1	1	0	Lexington Elementary School (LES) 06-073-1022

4.4 NO₂ Suitability for Comparison to the NAAQS

The CFR requires that for NO₂ data to be used in regulatory determinations of compliance with the NO₂ NAAQS, the NO₂ monitors must be sited according to Federal Regulations and the sampling frequency must be in accordance with Federal regulations. All District NO₂ monitors meet or exceed all minimum monitoring requirements and sampling frequencies, as to be able to be compared to the NAAQS. **Table 4-13** summarizes these requirements. Note that there is no NAAQS for NO_y.

Table 4-13: Nitrogen Dioxide & Reactive Oxides of Nitrogen Monitoring Equipment

	Parameter		Code	Unit	Code	Duration	Code	Equipment	Method	Code	Frequenc y	Method ID
Amb	Nitrogen dioxide	NO ₂	42602	ppb	008	1-Hr	1	Teledyne T500U	Cavity Attenuated Phase Shift (CAPS)	212	7/24	EQNA-0514-212
Ncore	Reactive Oxides of Nitrogen Not Applicable Nitric oxide	NO _y NO _y -NO NO	42600 42612 42601	ppb	008	1-Hr	1	Thermo 42i-y	Chemiluminescence	574	7/24	Not Applicable

(left Intentionally blank)

5 CARBON MONOXIDE (CO)

5.1 Introduction

Carbon monoxide (CO) was sampled on a continuous basis at three (3) locations in the SDAB. (Figure 5-1). The measurements from these monitors are referenced to the carbon monoxide standards of the year (Table 5-1). The details of each monitoring site with a carbon monoxide analyzer are listed in Table 5-2.

A trace level carbon monoxide monitor sampled at the Lexington Elementary School Site at El Cajon, as part of the NCore program. Additional NCore program details and requirements are available in Chapter 10: National Core (NCore).

Two carbon monoxide monitors sampled at the Rancho Carmel Drive and San Ysidro as part of the Near-road program. The carbon monoxide monitor at the San Ysidro site is an extra monitor.

The District exceeds the number of required carbon monoxide monitors.

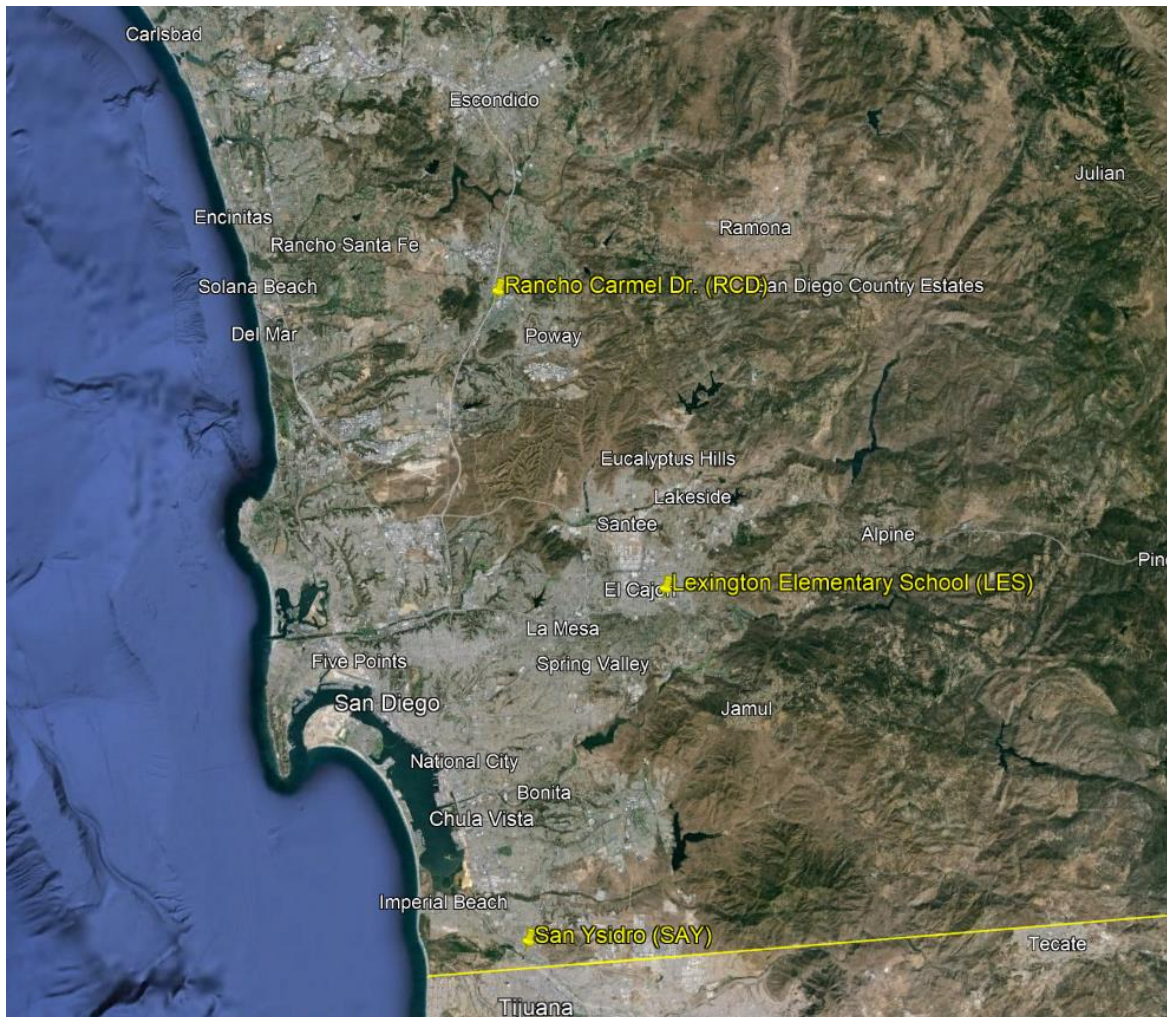


Figure 5-1: Carbon Monoxide Network Map

Table 5-1: Carbon Monoxide State and National Standards for the Year

Ambient Air Quality Standards				
Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Carbon Monoxide (CO)	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	Not Applicable
	8 hour	9 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	Not Applicable

Table 5-2: Carbon Monoxide Minimum Monitoring Requirements - Summary

Requirements for CO Monitors for CFR Programs (name)	Site Abbreviation	Number of CO Monitors Required (#)	Number of CO Monitors Active (#)	Number of CO Monitors Needed (#)	Reference (40 CFR, Part 58, Appendix D)
Near-road	RCD, SAY	1	2	0	4.2.1
Regional Administrator	--	0	0	0	4.2.2(a)
NCore	LES	1	1	0	3(b)
SIP	--	1	1	0	CARB*

*http://www.arb.ca.gov/planning/sip/co/final_2004_co_plan_update.pdf

Table 5-3: Carbon Monoxide Monitoring Network

Abbreviation	LES	RCD	SAY
Name	Lexington Elementary School	Rancho Carmel Dr.	San Ysidro
AQS ID	06-073-1022	06-073-1017	06-073-1025
CO	Monitor Type	SLAMS	SLAMS
	Method	IR	IR
	Affiliation	NCORE, PAMS	NR
	Spatial Scale	NS	MS
	Site Type	PE	SO
	Objective (Federal)	PI, NAAQS	PI, NAAQS
	Equipment	Thermo 48i-TLE	Thermo 48i-TLE

5.2 Carbon Monoxide Concentrations for San Diego for the Last 20 Years

In San Diego, carbon monoxide concentrations have decreased over the years (Table 5-4) and is shown graphically in Figure 5-2. Note: the “Days Above the National Standard” row in Table 5-4 reflect the carbon monoxide standards for that year.

Table 5-4: Carbon Monoxide Concentrations for San Diego for the Last 20 Years 2005 - 2025

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Maximum 1-Hr Concentration (ppm)	7.9	10.8	8.7	5.6	4.6	3.9	3.5	4.4	3.2	3.8	3.1	2.2	2.0	1.9	4.1	3.3	3.0	2.2	2.7	3.3	3.7
Maximum 8-Hr Concentration (ppm)	4.7	3.6	5.2	3.5	3.4	2.5	2.4	3.8	2.6	3.0	2.0	1.7	1.5	1.4	2.5	1.7	1.8	1.2	2.1	2.8	2.8
Days above the National Standard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

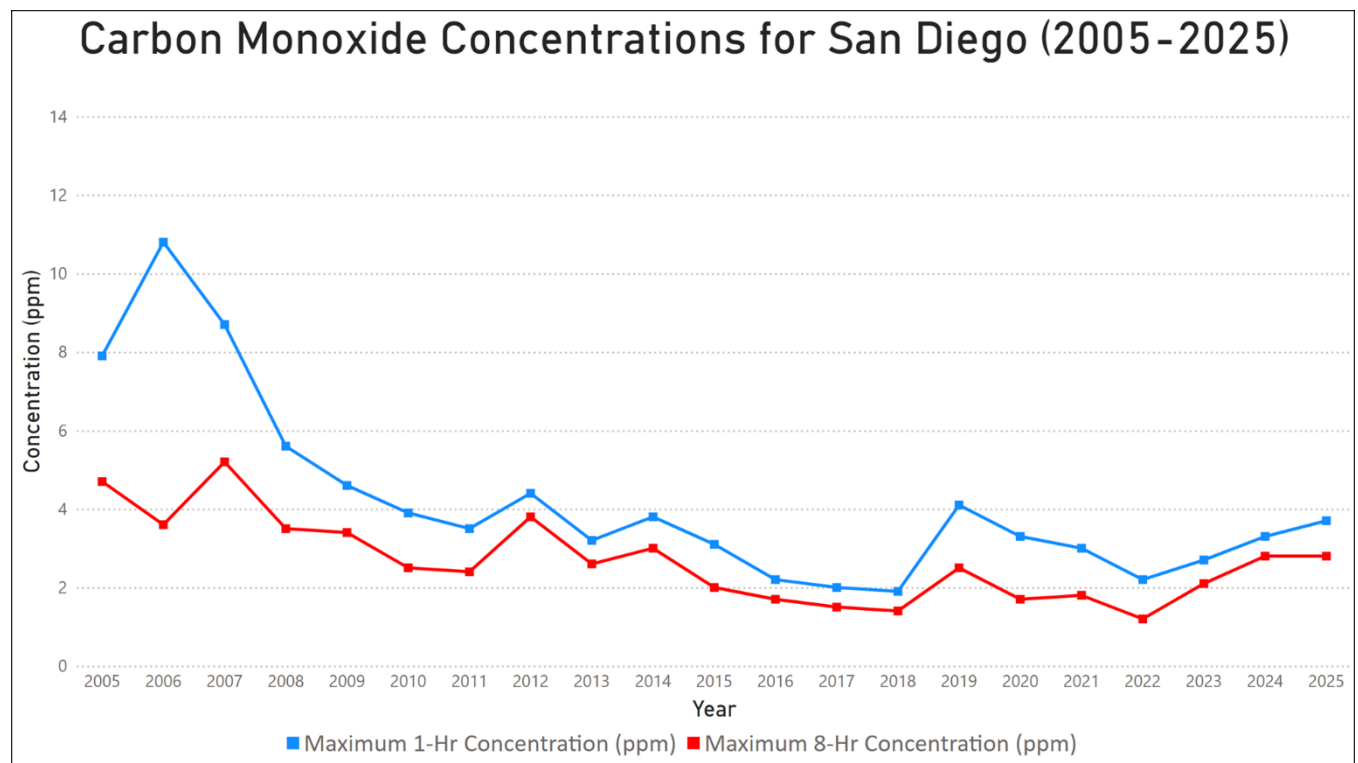


Figure 5-2: Carbon Monoxide Concentrations for San Diego (2005-2025)

5.3 Carbon Monoxide Concentrations for San Diego by Site for the Year

Table 5-5 lists the maximum carbon monoxide measurements for each carbon monoxide monitoring location and NCore; **Figure 5-3** shows the values graphically with respect to the National Standard. The annual values comparison to the National Standard is for informational purposes only.

Table 5-5: Carbon Monoxide Concentration for San Diego by Site for the Year 2025*

No. (#)	Site (name)	Site Abbreviation	Maximum 8-Hr Concentration (ppm)	Maximum 1-Hr Concentration (ppm)	Number of Days Above the National Standard (#)	Annual Average (ppm)
1	Lexington Elementary School	LES	0.9	1.2	0	0.28
2	Rancho Carmel Dr.	RCD	1.4	3.0	0	0.46
3	San Ysidro	SAY	2.8	3.7	0	0.40

* Note: For informational purposes only. The annual values are not comparable to the NAAQS

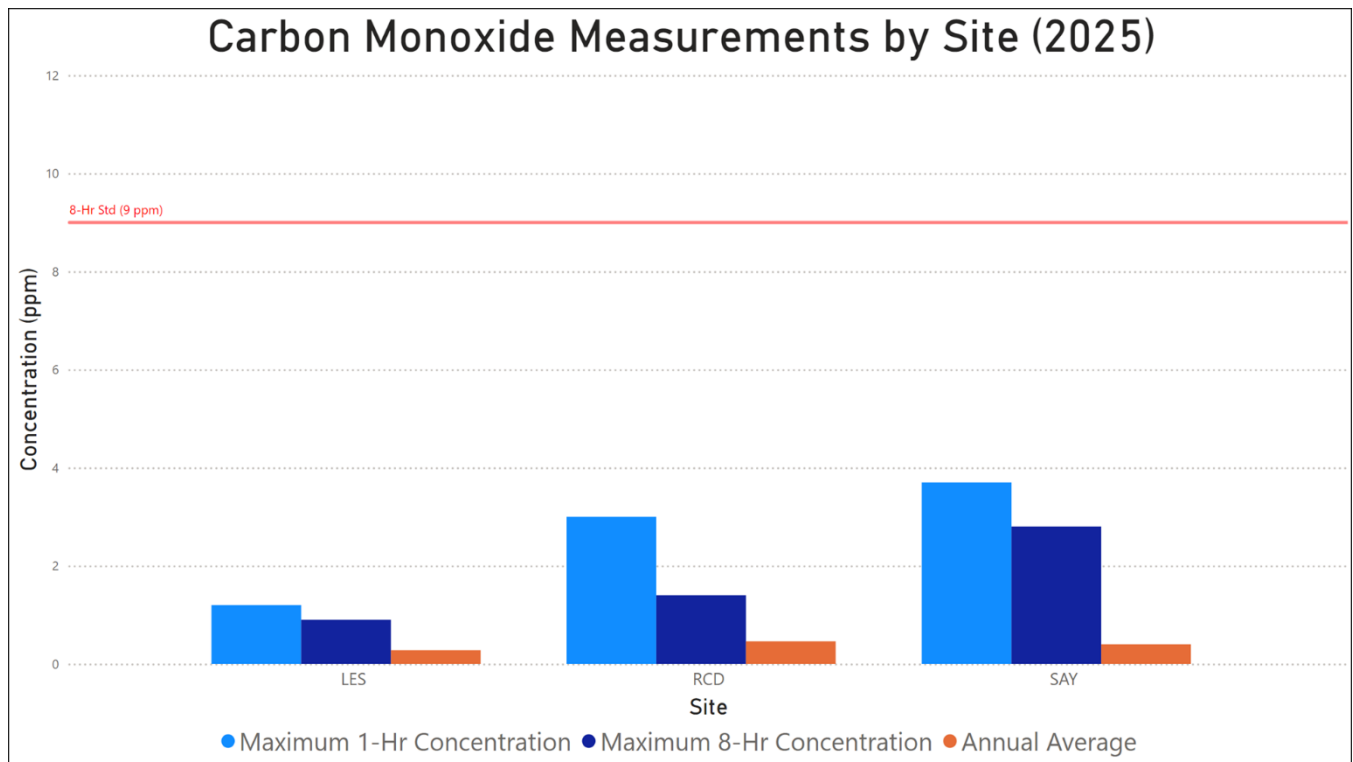


Figure 5-3: Graph of Carbon Monoxide Concentrations for San Diego by Site (2025)

5.4 Carbon Monoxide Minimum Monitoring Requirements

The District is federally mandated to monitor carbon monoxide levels in accordance with the CFR. This section will state the different minimum monitoring requirements for each program, e.g. ambient, Near-road, NCore, etc., that the District operates.

The District meets or exceeds all minimum requirements for NO₂ monitoring for all programs.

5.4.1 Carbon Monoxide Monitoring Requirements – Near Road

In an effort to measure concentrations for some pollutants in communities located by highly trafficked roadways, the EPA instituted the Near-road monitoring program. **Table 5-6** lists the Near-road requirements. The requirement for the Near-road carbon monoxide monitoring is stated in the Code of Federal Regulations (CFR) Title 40, Part 58, Appendix D, Section 4.2.1. Although the requirement is for one carbon monoxide monitor to be deployed at a Near-road site, the District operates two. One is located at the Rancho Carmel Drive site and the second is located at the 2nd Near-road site in San Ysidro.

Table 5-6: Carbon Monoxide Minimum Monitoring Requirements - Near Road

MSA & County (name)	Population from 2020 Census (#)	Are Near-road NO ₂ Monitors Required (yes/no)	Are Collocated CO Monitors Required (yes/no)	Number of Collocated CO Monitors Required (#)	Number of Collocated CO Monitors Active (#)	Number of Collocated CO Monitors Needed (#)
San Diego	3.3 Million	Yes	Yes	1	2	0

5.4.2 Carbon Monoxide Minimum Monitoring Requirements – Regional Administrator

Table 5-7 lists the Regional Administrator Designated Carbon Monoxide Monitoring requirements for the SDAB. The requirement for the Regional Administrator Monitoring for carbon monoxide is stated in the Code of Federal Regulations (CFR), Title 40, Part 58, Appendix D, Section 4.2.2(a).

Table 5-7: Carbon Monoxide Minimum Monitoring Requirements - Regional Administrator

Number of Regional Administrator sites Required* (#)	Number of Regional Administrator sites Active (#)	Number of Regional Administrator sites Needed (#)
0	0	0

* CO emissions in Barrio Logan were so far below the NAAQS that EPA approved the decommissioning of CO monitoring there.

5.4.3 Carbon Monoxide Minimum Monitoring Requirements – NCore

The District is required to operate a CO monitor as part of the NCore multipollutant monitoring program. This program was designed to measure pollutants at lower levels, low ppb-ppt range. **Table 5-8** lists the NCore CO requirements. The requirement for the NCore monitoring for carbon monoxide is stated in the Code of Federal Regulations (CFR), Title 40, Part 58, Appendix D, Section 3(b).

Table 5-8: Carbon Monoxide Minimum Monitoring Requirements - NCore

Number of CO Monitors Required at Ncore Sites (#)	Number of CO Monitors Active at Ncore Sites (#)	Number of CO Monitors Needed at Ncore Sites (#)	Ncore Sites/Location (name)
1	1	0	Lexington Elementary School (LES) 06-073-1022

5.4.4 Carbon Monoxide Minimum Monitoring Requirements – State (SIP)

The District must operate one non-source monitor as part of the 2004 Revision to the California State Implementation Plan (SIP) for Carbon Monoxide (http://www.arb.ca.gov/planning/sip/co/final_2004_co_plan_update.pdf). **Table 5-9** summarizes these requirements.

Table 5-9: Carbon Monoxide Minimum Monitoring Requirements - State (SIP)

Number of CO Monitors Required for the SIP (#)	Number of CO Monitors Active for the SIP (#)	Number of CO Monitors Needed for the SIP (#)	SIP Sites/Locations (name)
1	1	0	Lexington Elementary School (LES) 06-073-1022

5.5 Carbon Monoxide Suitability for Comparison to the NAAQS

The CFR requires that for CO data to be used in regulatory determinations of compliance with the CO NAAQS, the CO monitors must be sited according to Federal Regulations and the sampling frequency must be in accordance with Federal regulations. District CO monitors meet or exceed all minimum monitoring requirements and sampling frequencies, as to be able to be compared to the NAAQS. **Table 5-10** summarizes these requirements.

Table 5-10 Carbon Monoxide Suitability for Comparison to the NAAQS - Sampling Equipment

	Parameter		Code	Unit	Code	Duration	Code	Equipment	Method	Code	Frequency	Method ID
Amb	Carbon monoxide*	CO	42101	ppm	007	1-Hr	1	Thermo 48i-TLE	Nondispersive infrared	554	7/24	RFC A-0981-554
Ncore	Carbon monoxide Trace Level	CO	42101	ppb	008	1-Hr	1	Thermo 48i-TLE	Nondispersive infrared	554	7/24	RFC A-0981-554

*Carbon monoxide analyzer operated in 20 ppm range.

(left intentionally blank)

6 SULFUR DIOXIDE (SO₂)

6.1 Introduction

The District operates one SO₂ monitor within the Regional Air Monitoring Network. This SO₂ monitor is located at the Lexington Elementary School site in El Cajon as part of the NCore Program. This monitor is a trace level analyzer. The map of the SO₂ monitoring network is shown in **Figure 6-1**. SO₂ was monitored on a continuous (7/24) basis. The sulfur dioxide standards of the year are listed in **Table 6-1**. The minimum requirements for the number of SO₂ monitors are stated in the Code of Federal Regulations (40 CFR, Part 58, Appendix D). For additional information on the District's NCore program, refer to **Chapter 10: National Core (NCore)**.

The District meets or exceeds the requirements for SO₂ monitoring

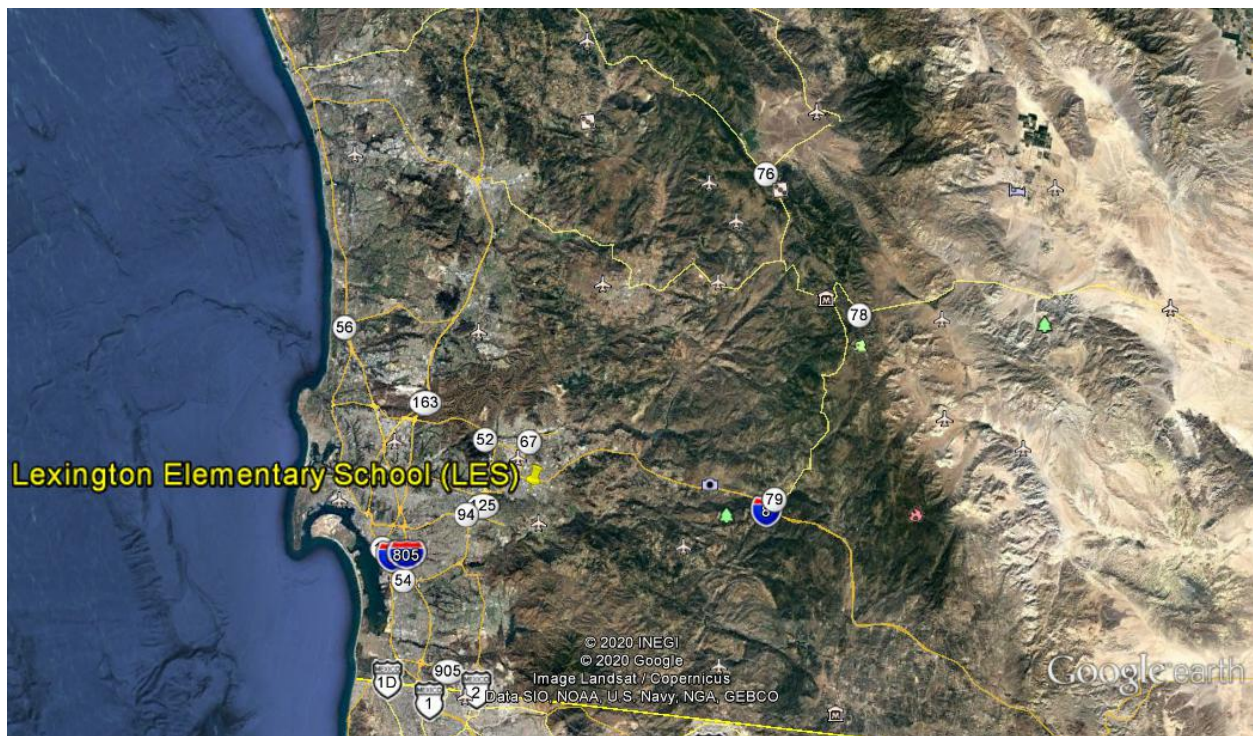


Figure 6-1: Sulfur Dioxide Network Map

Table 6-1: Sulfur Dioxide State and National Standards for the Year

Ambient Air Quality Standards				
Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm (665 µg/m ³)	75 ppb (196 µg/m ³)	Not Applicable
	3 hour	Not Applicable	Not Applicable	0.5 ppm (1300 µg/m ³)
	24 hour	0.04 ppm (105 µg/m ³)	Not Applicable in San Diego	Not Applicable
	Annual Arithmetic Mean	Not Applicable	Not Applicable in San Diego	Not Applicable

Table 6-2: Sulfur Dioxide (SO₂) Minimum Monitoring Requirements - Summary

CFR Programs Requirements for SO ₂ Monitors (name)	Site Abbreviation	Number of SO ₂ Monitors Required (#)	Number of Active SO ₂ Monitors (#)	Number of Needed SO ₂ Monitors (#)	Reference (40 CFR, Part 58, Appendix D)
PWEI	LES	0	0	0*	4.4.2(a), 4.4.2(1)
NCore		1	1	0	3(b)

* For the SDAB, the Population Weighted Emissions Index (PWEI) is less than 5,000. A PWEI between 5,000 and 100,000 requires a minimum of one SO₂ monitor.

Table 6-3: Sulfur Dioxide (SO₂) Monitoring Network

Abbreviation	LES
Name	Lexington Elementary School
AQS ID	06-073-1022
Monitor Type	SLAMS
Method	FL
Affiliation	NCore
Spatial Scale	NS
Site Type	PE
Objective (Federal)	PI, NAAQS
Equipment	Thermo 43i-TLE

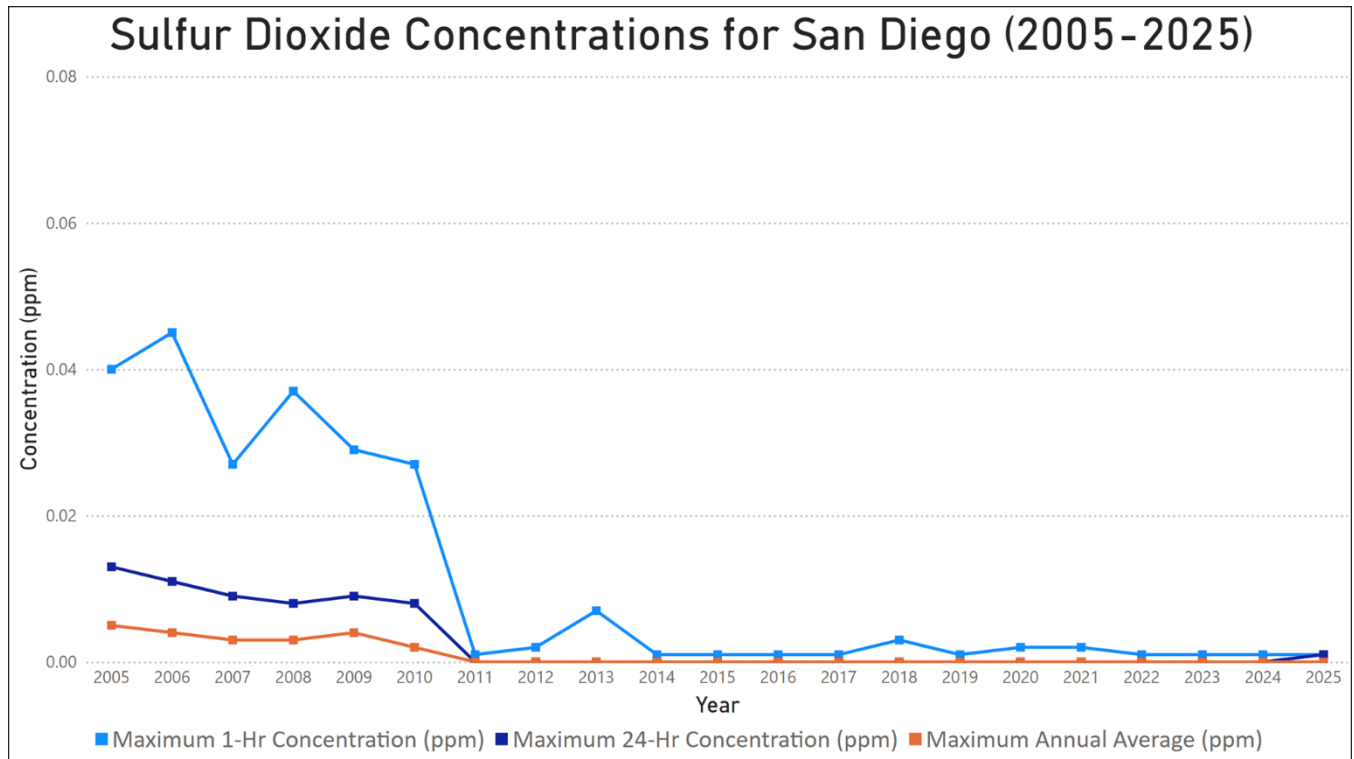


Figure 6-2: Graph of Sulfur Dioxide (SO₂) Concentrations for San Diego (2005-2025)

6.2.2 Concentrations by Site for the Design Value

Table 6-5 lists the maximum sulfur dioxide measurements for the NCore monitoring location and Figure 6-3 shows the values graphically with respect to the National Standard.

Table 6-5: Sulfur Dioxide (SO₂) Concentrations for San Diego by Site for the Design Value 2023 - 2025

Site	Site Abbreviation	Design Value Maximum Concentration 1-Hr (ppm)	Number of Days Above National Standard (#)
Lexington Elementary School	LES	0.001	0

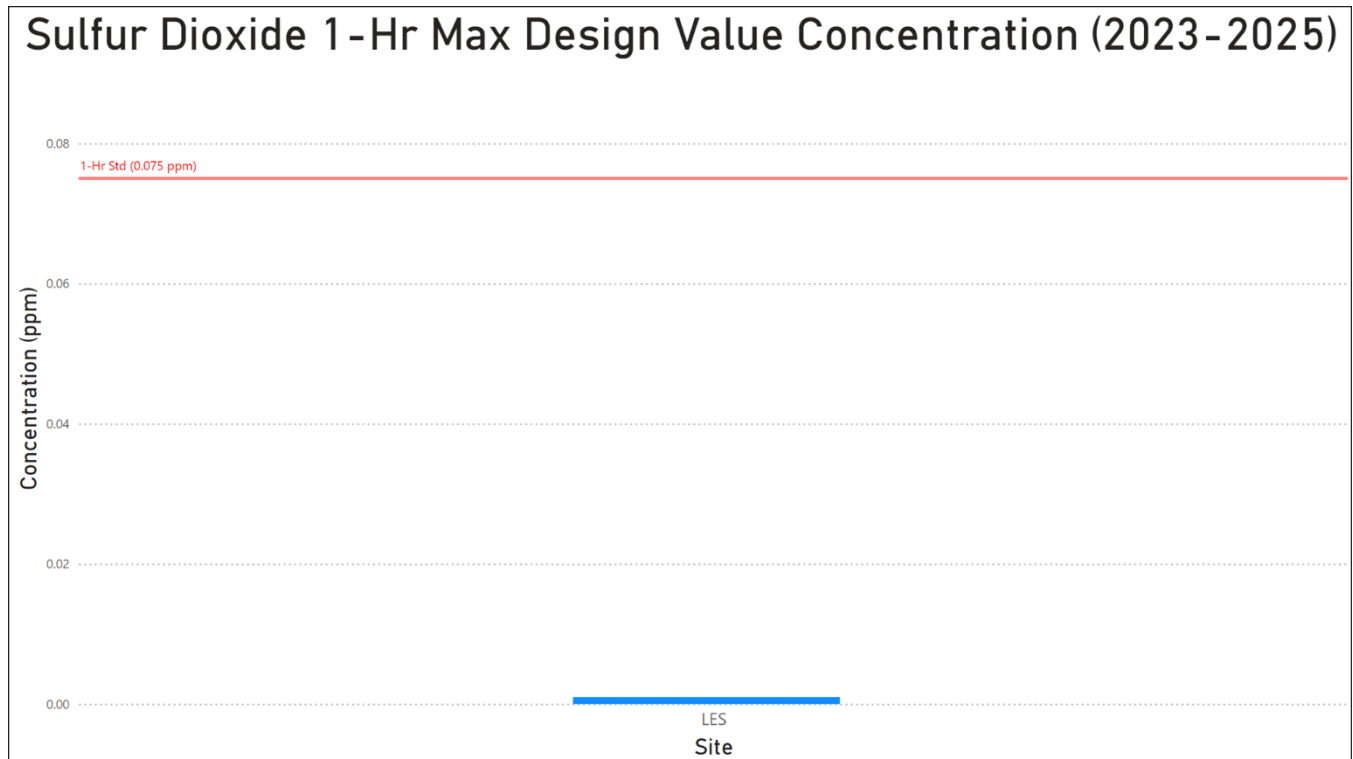


Figure 6-3: Graph of Sulfur Dioxide (SO₂) Concentrations for San Diego by Site for the Design Value

6.3 Sulfur Dioxide (SO₂) Minimum Monitoring Requirements

The District is federally mandated to monitor SO₂ levels in accordance with the CFR. This section will state the different monitoring requirements for each program, ambient, NCore, etc. that the District operates and the references therein (Note: only the passages applicable/informative to the District are referenced). These monitors can serve as fulfilling other SO₂ network requirements, e.g. ambient SO₂ monitor can fulfill a PAMS SO₂ monitor requirement.

The District meets or exceeds all minimum requirements for SO₂ monitoring for all programs.

6.3.1 Minimum Requirements - NCore

The District is required to operate an NCore site. There are several associated requirements to operate this NCore site. The requirement for SO₂ at NCore is stated in the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 3(b)). **Table 6-6** lists NCore Sulfur Dioxide (SO₂) monitoring requirements.

Table 6-6: Sulfur Dioxide (SO₂) Minimum Monitoring Requirements - NCore

MSA & County	Number of NCore SO ₂ Monitors Required (#)	Number of NCore SO ₂ Monitors Active (#)	Number of NCore SO ₂ Monitors Needed (#)	Met NAAQS? (yes/no)
San Diego	1	1	0	yes

6.3.2 Minimum Requirements – Ambient

The procedure to determine the minimum number of ambient level monitors required is different than the other gaseous criteria pollutants. The number of monitors is based on the population weighted emissions index (PWEI) for the area (San Diego County). It is based on the total SO₂ emissions in the air basin with respect to the population of the air basin. The total SO₂ emissions for San Diego County are obtained from the EPA National Emissions Inventory (NEI) [2020 NEI Data Retrieval Tool](#). The population is from the most recent census. **Table 6-7** lists the data used to calculate the PWEI for San Diego County. If the PWEI is below 5,000 MP-TPY, the District is not required to deploy an SO₂ monitor. **Table 6-8** lists this requirement. The requirement for determining the number of ambient SO₂ monitors based on the PWEI is stated in the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 4.4.2(a) and Section 4.4.2(1)).

Table 6-7: Sulfur Dioxide (SO₂) Minimum Monitoring Requirements - 2020 EPA NEI SO₂

MSA & County (name)	Population from 2020 Census. (yes/no)	Total SO ₂ Emissions from NEI (tons/yr)	Total SO ₂ Emissions ÷ 1,000,000 (TPY-1M)	Calculated PWEI= Total SO ₂ Emissions x Population (Mpeople-TPY)
San Diego	3.3 Million	671	0.000671	2,214

Table 6-8: Sulfur Dioxide (SO₂) Minimum Monitoring Requirements - Ambient

Calculated PWEI (MP-TPY)	Are the Emissions <5,000 MP-TPY? (yes/no)	Number of Required SO ₂ Monitors (#)	Number of Active SO ₂ Monitors (#)	Number of Ambient SO ₂ Monitors Needed (#)
2,214	Yes	0	0	0

6.4 Sulfur Dioxide (SO₂) Suitability for Comparison to the NAAQS

The CFR requires that for SO₂ data to be used in regulatory determinations of compliance with the SO₂ NAAQS, the SO₂ monitors must be sited according to Federal Regulations and the sampling frequency must be in accordance with Federal regulations. All District SO₂ monitors meet or exceed all minimum monitoring requirements and sampling frequencies, as to be able to be compared to the NAAQS. **Table 6-9** summarizes these requirements.

Table 6-9: Sulfur Dioxide (SO₂) Suitability for Comparison to the NAAQS - Sampling Equipment

	Parameter		Code	Unit	Code	Duration	Code	Equipment	Method	Code	Frequency	Method ID
Ncore	Sulfur dioxide Trace Level	SO ₂	42101	ppb	008	1-Hr 5-min	1 H	Thermo 43i-TLE	Fluorescence	560	7/24	EQSA-0486-060

(left intentionally blank)

7 LEAD (Pb)

7.1 Introduction

Regulatory Lead (Pb) was sampled for at one location in the SDAB (**Figure 7-1** and **Table 7-2**) and referenced to the lead standards of the year (**Table 7-1**). Source level lead was sampled at McClellan-Palomar airport. In the 2024 Annual Network Report, the District requested a waiver to discontinue lead monitoring at this site. The U.S. EPA approved the waiver, and monitoring at McClellan-Palomar Airport will cease beginning January 2026. For additional details, refer to the EPA approval letter included at the end of this report.

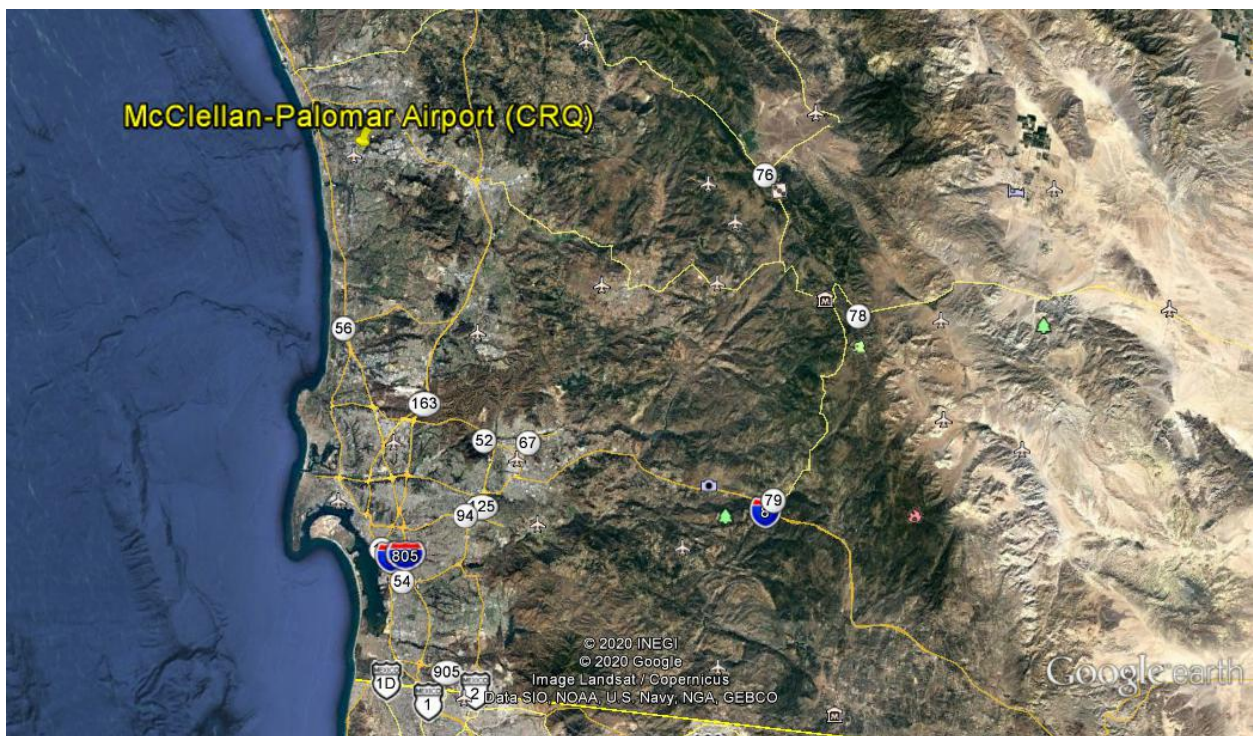


Figure 7-1: Lead Network Map

Table 7-1: Lead State and National Standards for the Year

Pollutant	Averaging Time	Ambient Air Quality Standards		
		California Standards	National Standards	
		Concentration	Primary	Secondary
Lead (Pb)	30 Day Average	1.5 µg/m ³	Not Applicable	Not Applicable
	Calendar Quarter	Not Applicable	1.5 µg/m ³ (for certain areas)	1.5 µg/m ³ (for certain areas)
	Rolling 3-Month Average	Not Applicable	0.15 µg/m ³	0.15 µg/m ³

Table 7-2: Lead Monitoring Requirements - Summary

Pb-TSP Samplers Requirements for Pb-TSP Samplers for CFR Programs (name)	Site Abbreviation	Number of Pb-TSP Samplers Required (#)	Number of Pb-TSP Samplers Active (#)	Number of Pb-TSP Samplers Needed (#)	Reference (40 CFR, Part 58,)
Source (non-Airport)	--	0	0	0	Appendix D, 4.5(a)
Source (Airport)	--	0	0	0	Appendix D, 4.5(a)
Airport Study	CRQ	0	0	0	Appendix D, 4.5(iii)
Airport Study Exceedance	CRQ	1*	1	0	--
Regional Administrator	--	0	0	0	Appendix D, 4.5
QA Collocation	CRQ	1	1	0	Appendix A, 3.4.4.1
QAC filters sent to EPA for analysis	CRQ	4	4	0	Appendix A, 3.4.7

* The District is seeking EPA approval to discontinue regulatory lead sampling at Palomar Airport.

Table 7-3: Lead Sampling Network

Abbreviation	CRQ	
Name	Palomar Airport	
AQS ID	06-073-1023	
Lead	Monitor Type	SLAMS
	Monitor Designation	PRI
	Method	HV
	Affiliation	Not Applicable
	Spatial Scale	MI
	Site Type	SO
	Objective (Federal)	NAAQS
	Analysis	APCD
	Frequency	1:6
	Equipment	Tisch TE-5170BLVFC+

7.2 Lead Concentrations for San Diego

7.2.1 Concentrations for the Last 20 Years

The rapid decrease in lead emissions since the 1980s can be attributed primarily to phasing out the lead in gasoline in the 1970s by EPA and CARB. Note: the “Days Above National Standard” row in **Table 7-4** and **Figure 7-2** reflect the lead standard for that year. No Testing (NT) was done in the SDAB from 1997 until 2012. The measured concentration for 2012 is from the NCore location, which is categorized as neighborhood scale and representative concentrations. The airport sampler is categorized as source impact and microscale and is not considered representative concentrations.

Table 7-4: Lead Concentrations for San Diego for the Last 20 Years 2005 - 2025

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Maximum Calendar Quarter (µg/m ³)	NT	NT	NT	NT	NT	NT	NT	0.006	0.007	0.010	0.015	0.010	0.020	0.020	0.020	0.020	0.020	0.010	0.020	0.020	0.020
Maximum Rolling 3-Month Average (µg/m ³)	NT	NT	NT	NT	NT	NT	NT	0.006	0.007	0.011	0.015	0.010	0.020	0.020	0.020	0.020	0.020	0.010	0.020	0.020	0.020
Days above the National Standard	NT	NT	NT	NT	NT	NT	NT	0	0	0	0	0	0	0	0	0	0	0	0	0	0

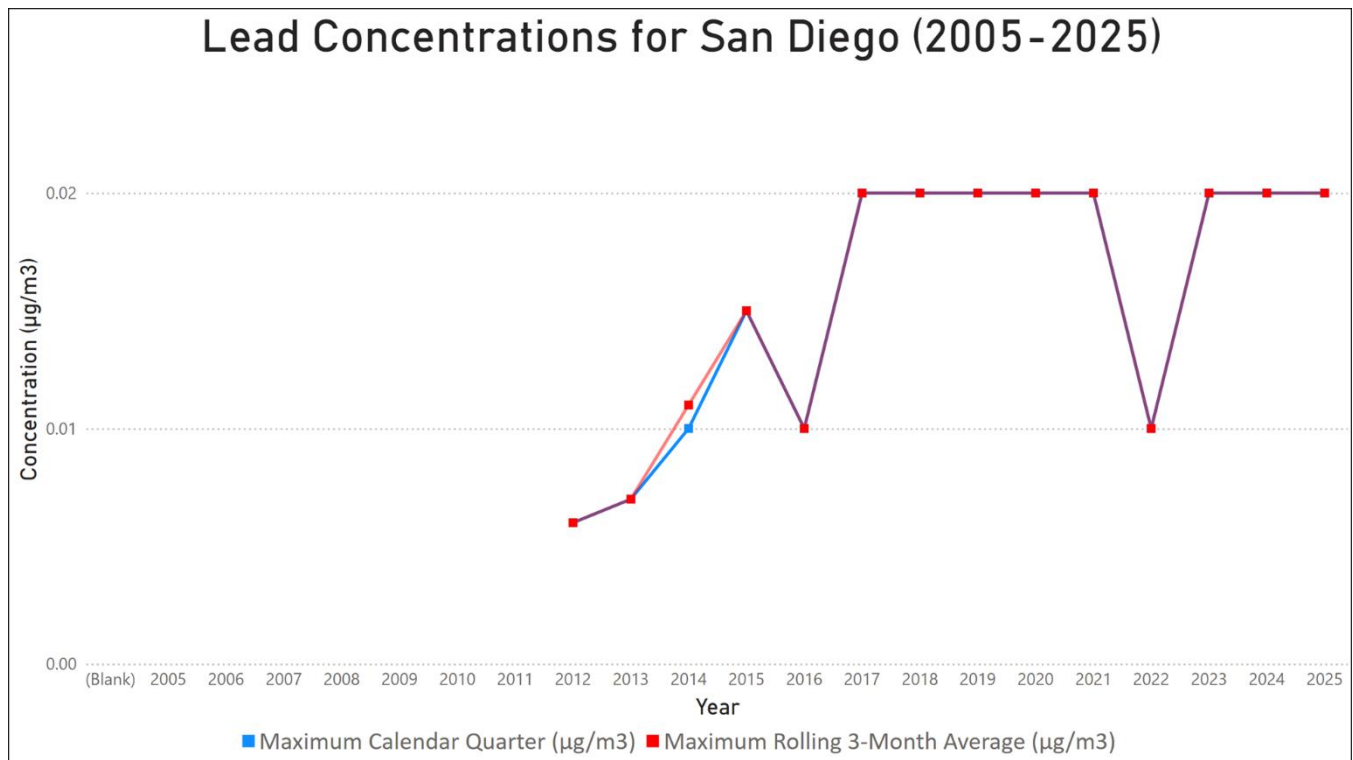


Figure 7-2: Lead Concentrations for San Diego* (2005 – 2025)

*Sampling began in the year 2012

7.2.2 Concentrations by Site and Year

Table 7-5 lists the maximum lead measurements for each lead monitoring location; Figure 7-3 shows the values graphically with respect to the National Standard.

Table 7-5: Lead Concentrations for San Diego by Site for the Year 2025

Site (name)	Site Abbreviation	Maximum Rolling 3-Month Average 2025 ($\mu\text{g}/\text{m}^3$)	Design Value 2025 ($\mu\text{g}/\text{m}^3$)	Number of Days Above the NAAQS 2025 (#)
Palomar Airport*	CRQ	0.020	0.020	0

*Source impact and microscale monitors

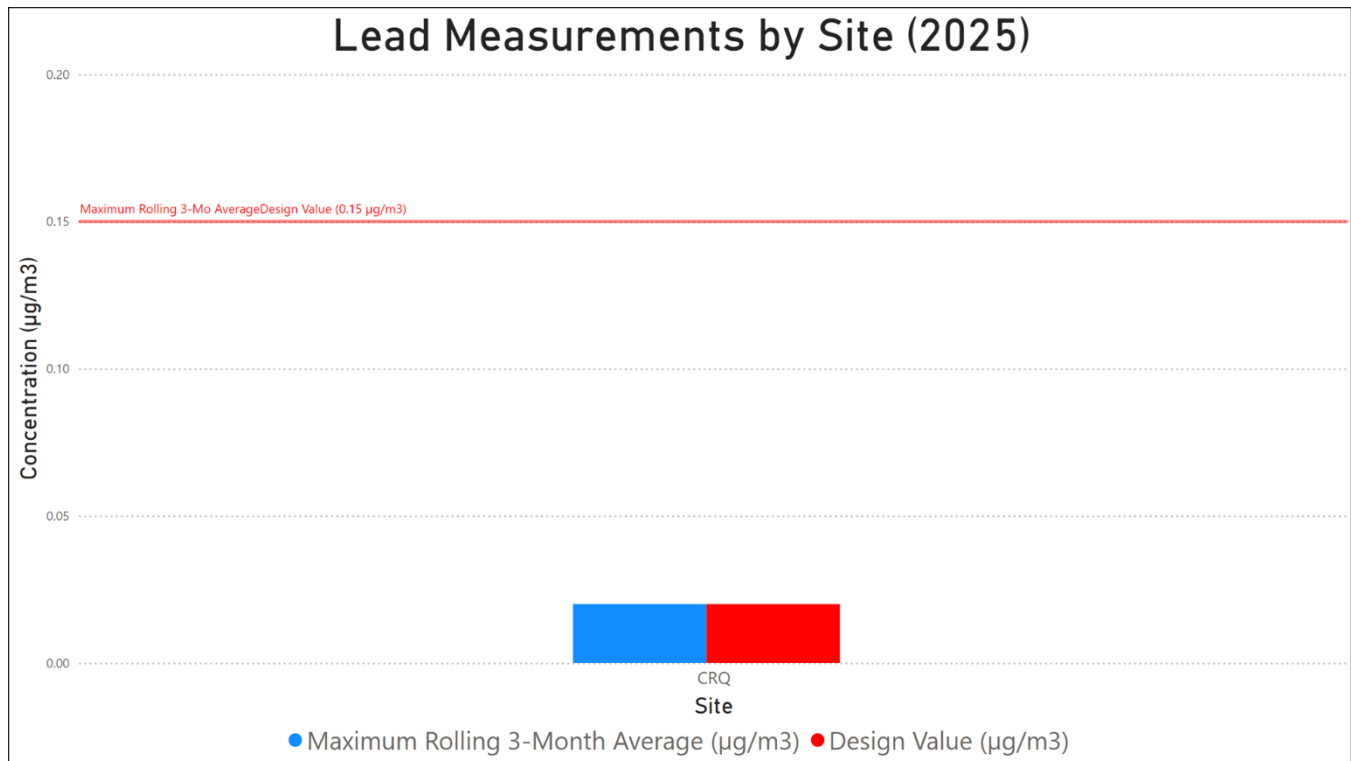


Figure 7-3: Graph of Lead Concentrations for San Diego by Site for the Year

7.3 Lead Minimum Monitoring Requirements

The District is federally mandated to monitor Pb levels in accordance with the CFR. This section will state the different minimum monitoring requirements for each program, e.g. ambient, NCore, Airports, etc. that the District operates and the references therein (Note: only the passages applicable/informative to the District are referenced).

The District meets or exceeds all minimum requirements for lead monitoring for all programs.

7.3.1 Minimum Requirements for non-Airport and Airport Sources

The procedure to determine the minimum number of non-Airport source level monitors required is based on any non-Airport source emitting more than 0.5 tons/year of Pb emissions (40 CFR, Part 58, Appendix D, Section 4.5(a)). **Table 7-6** lists these requirements for non-Airport sources. The procedure to determine the minimum number of Airport source level monitors is the same, except that the threshold is 1.0 tons/year. **Table 7-7** lists these requirements for Airport source level sampling. The sources and their Pb emissions are from the latest published EPA NEI database ([2020 NEI Data Retrieval Tool](#)).

Table 7-6: Lead Minimum Monitoring Requirements - non-Airport Source Based on the 2020 NEI

MSA & County (name)	From NEI Any Non-Airport Pb Sources >0.5 TPY? (yes/no)	From NEI What is the Largest Non-Airport Pb Source?	From NEI What is the Largest Non-Airport Pb Emissions Rate? (TPY)	Number of Non-Airport Sources Pb Monitors Required (#)	Number of Non-Airport Sources Pb Monitors Active (#)	Number of Non-Airport Sources Pb Monitors Needed (#)
San Diego	No	Camp Pendleton	0.23	0	0	0

Table 7-7: Lead Minimum Monitoring Requirements - Airport Source based on 2020 NEI

MSA & County (name)	From NEI Any Airport Pb Sources >=1.0 TPY? (yes/no)	From NEI What is the Largest Airport Pb Source (TPY)	From NEI What is the Largest Airport Pb Emissions Rate? (TPY)	Number of Airport Sources Pb Monitors Required (#)	Number of Airport Sources Pb Monitors Active (#)	Number of Airport Sources Pb Monitors Needed (#)
San Diego	No	Montgomery Field	0.62	0	0	0

7.3.2 *Minimum Requirements for Airport Special Study*

One EPA regulation states that if an airport emits less than 1.0 TPY of Pb emissions, no source sampling is required. The EPA added a regulation that listed several airports to undergo temporary Pb sampling, regardless if the NEI listed Pb emissions were less than 1.0 TPY (40 CFR, Part 58, Appendix D, Section 4.5(iii)). Table D-3A from the 40 CFR Part 58, Appendix D, Section 4.5(iii) (**Table 7-8** within this document) lists the Airports selected for monitoring lead. If emissions exceeded the NAAQS by 50%, the sampler was to become permanent, or until the emissions were proven to be less than 50% of the NAAQS (over a minimum 3-yr period). **Table 7-8** lists these requirements.

Table 7-8: Airports to be Monitored for Lead from 40 CFR Part 58 Appendix D Table D-3A

<i>Airport</i>	<i>County</i>	<i>State</i>
McClellan-Palomar	San Diego	CA
Gillespie Field	San Diego	CA

7.3.2.1 *McClellan – Palomar Airport*

The Airport study at McClellan-Palomar Airport officially concluded and the airport did not pass the minimum tolerances. Consequently, permanent sampling was established. The concentrations for lead have met the waiver criteria (three continuous years of sampling at this location and less than 50% of the NAAQS) and the District is requesting the cessation of regulatory lead sampling (please see waiver attached at the end of this report). EPA has not approved the District's request for discontinuation of Pb monitoring at Palomar Airport, and EPA Region 9 will continue to work with EPA Headquarters to determine discontinuation eligibility.

7.3.2.2 *Gillespie Field Airport*

The Airport study at Gillespie Field officially concluded and it was determined by EPA to discontinue all lead sampling at this airport.

7.3.3 *Minimum Requirements for Regional Administrator*

The EPA Regional Administrator may require additional lead sampling beyond what is required in section 4.5 particularly near industrial sources of lead. No industrial sources of lead have required additional monitoring as directed by the EPA Regional Administrator (Title 40 CFR, Part 58, Appendix D, Section 4.5). **Table 7-9** lists these requirements.

Table 7-9: Lead Minimum Monitoring Requirements - Regional Administrator

MSA & County (name)	Number of Regional Administrator Pb Monitors Required (#)	Number of Regional Administrator Pb Monitors Active (#)	Number of Regional Administrator Pb Monitors Needed (#)
San Diego	0	0	0

7.3.4 Minimum Requirements for QA Collocation & Filter Submittal to EPA

Table 7-10 summarizes the collocation requirements for quality assurance purposes listed in the CFR Title 40, Part 58, Appendix A, Section 3.4.4.1 and Section 3.4.7. The minimum monitoring requirements for QA collocation corresponds to one collocated sampler. This collocated sampler is located at Palomar Airport (CRQ). As part of the requirement, the District sends four quality control filters to the EPA for analysis

Table 7-10: Lead Minimum Requirements - QA Collocation and Filter Submittal to EPA

Number of Pb-TSP Samplers Required (#)	Number of Pb-TSP Samplers Active (#)	Number of Pb-TSP Samplers Calculated for Collocation (#)	Number of Pb-TSP Samplers Active for Collocation (#)	Number of Pb-TSP Samplers Needed for Collocation (#)	Location of Collocated Site (name)	Are four collocated samples sent to PEP laboratory for analysis? (yes/no)
1	1	1 x (15%) = 1	1	0	Palomar (CRQ) 06-073-1023	Yes

7.4 Lead Suitability for Comparison to the NAAQS

The Code of Federal Regulations (Title 40, Part 58.12) requires that for Pb-TSP data to be used in regulatory determinations of compliance with the Pb NAAQS, the Pb-TSP samplers' sampling frequency must be in accordance with Federal regulations. All District Pb-TSP samplers meet or exceed all minimum monitoring requirements for the sampling frequency and can be compared to the NAAQS. **Table 7-11** summarizes these requirements.

Table 7-11: Lead Suitability for Comparison to the NAAQS - Sampling Equipment

What is the Minimum EPA Permitted Sampling Frequency? (#)	What is the Actual Sampling Frequency? (#)	Does the Actual Sampling Frequency Meet EPA Specifications? (yes/no)
1:6	1:6	yes

(left intentionally blank)

8 PARTICULATE MATTER 2.5 μm (PM_{2.5})

8.1 Introduction

The District operates PM_{2.5} monitors at nine monitoring sites throughout the Regional Air Monitoring Network. The PM_{2.5} Network Map (**Figure 8-1**) shows all the air monitoring sites with PM_{2.5} monitors. The annual standards for PM_{2.5} are listed in **Table 8-1**. In 2024, the annual standard for PM_{2.5} was lowered from 12 $\mu\text{g}/\text{m}^3$ to 9 $\mu\text{g}/\text{m}^3$. The minimum requirements for the number of PM_{2.5} monitors are stated in the Code of Federal Regulations (40 CFR, Part 58, Appendix D). There are several requirements that must be fulfilled for PM_{2.5} monitors. To fulfill the requirements, the District operates samplers that are designated as a Federal Equivalence method (FEM) and samplers that are designated as a Federal Reference Method (FRM) throughout the Regional Air Monitoring Network. The FEM sampler is a continuous sampler and reports data hourly. The FRM sampler is a sequential filter-based sampler and samples every three days. The minimum requirements are summarized in **Table 8-2** below. A more detailed explanation of each PM_{2.5} sampler requirement is discussed in this chapter.

The District operates a network of continuous particulate matter analyzers, with one exception. The District still operates one required sequential PM_{2.5} sampler that is designated as a Federal Reference Method (FRM) at Lexington Elementary School in El Cajon as part of the NCore program requirements. The FEM continuous PM_{2.5} samplers fulfill the general sampler requirements for PM_{2.5} in the Regional Air Monitoring Network as well as the requirements for continuous analyzers. A PM_{2.5} sampler deployed at one monitoring site can fulfill several of the requirements listed in the CFR.

The District is seeking an alternative location for the air monitoring site in Escondido. The District meets or exceeds all minimum requirements for PM_{2.5} manual monitoring for all programs with the exception of the number of PM_{2.5} FRM SIP samplers due to site relocations.

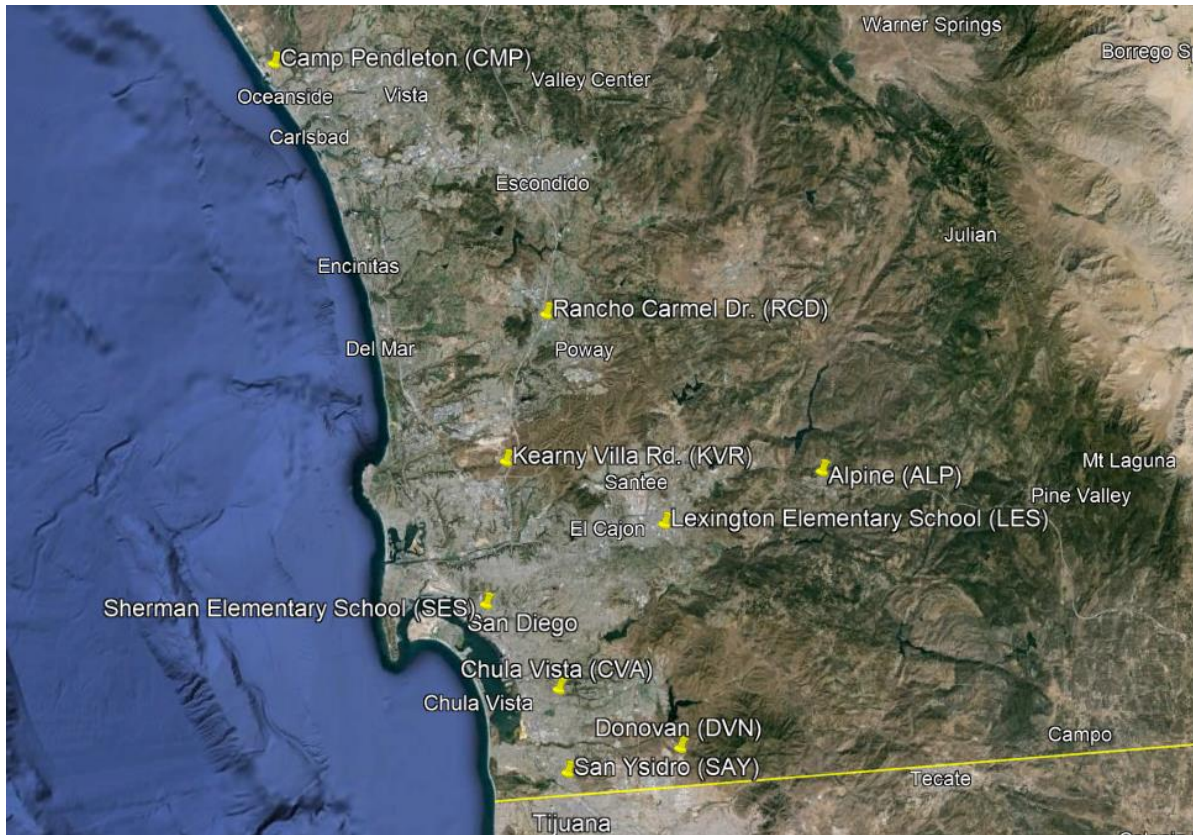


Figure 8-1: PM_{2.5} Network Map

Table 8-1: PM_{2.5} State and National Standards for the Year

Ambient Air Quality Standards				
Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Fine Particulate Matter (PM _{2.5})	24 hour	Not Applicable	35 µg/m ³	35 µg/m ³
	Annual Arithmetic Mean	12 µg/m ³	9 µg/m ³	15 µg/m ³

Table 8-2: PM_{2.5} Minimum Monitoring Requirements - Summary

CFR Programs PM _{2.5} Samplers Requirements (name)	Site Abbreviation	Number of PM _{2.5} Samplers Required (#)	Number of PM _{2.5} Samplers Active (#)	Number of PM _{2.5} Samplers Needed (#)	Reference Section (40 CFR, Part 58)
General Requirements	See Table 8-3	3	9	0	App. D, 4.7.1(a) Table D-5
California Particulate Matter Network (non-microscale)	See Table 8-3	5	7	0	
Design Value Maximum Concentration, 24-Hr	DVN	1	1	0	App. D, 4.7.1 (a)
Design Value Maximum Concentration, Annual Average	DVN	1	1	0	App. D, 4.7.1 (a)
Expected Maximum Concentration, 24-Hr	DVN	1	1	0	App. D, 4.7.1(b)(1)
Expected Maximum Concentration, Annual Average	DVN	1	1	0	App. D, 4.7.1(b)(1)
Near-road	RCD, SAY	1	2	0	App. D, 4.7.1(b)(2)
Poor Air Quality	SES	1	1	0	App. D, 4.7.1(b)(3)
NCore Filter-based (Sequential) Sampler	LES	1	1	0	App. D, 3(b)
NCore Coarse Particulate Matter (PM _{10-2.5}) Criteria	LES	1	1	0	App. D, 4.8.1(a)
QA Collocation	LES, KVR	1	2	0	App. A 3.2.3.1 & 3.2.3.2(b), Table A-2
Continuous Monitor at NCore Site	LES	1	1	0	App D, 3(b)
Continuous PM _{2.5} Sampler	See Table 8-3	2	9	0	App. D, 4.7.2
Continuous PM _{2.5} FEM Sampler Collocation	LES, KVR	0	2	0	App. D, 4.7.2

8.2 PM_{2.5} Concentrations for San Diego for the Last 20 Years

Annual average PM_{2.5} concentrations in the County are reported in the table below, see **Table 8-4**. The 98th percentile of 24-Hr PM_{2.5} concentrations showed variability within this period, a reflection of changes in meteorology and the influence of the 2007 wildfires. Furthermore, the standard was lowered in 2007, which corresponded to increased incidents of “Days above the Standard”. Note: the “Days Above the Standard” row in **Table 8-4** reflects the PM_{2.5} standard for that year. In 2024, the annual standard for PM_{2.5} was lowered from 12 µg/m³ to 9 µg/m³. **Figure 8-2** graphs the San Diego Air Basin (SDAB) PM_{2.5} concentrations over the last twenty years.

Table 8-4: PM_{2.5} Concentrations (24-Hr Maximum) for San Diego for the Last 20 Years

Maximum 24-Hr Concentration (µg/m ³)	2005	2006	2007*	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Concentration (µg/m ³)	44.1	63.3	126.2	42.0	65.0	33.3	34.7	70.7	56.3	36.7	33.5	34.4	42.7	41.9	23.8	51.9	30.2	26.4	40.7	45.4	59.2
Days above the National Std	0	1	17	3	3	0	0	2	2	1	0	0	1	1	0	3	0	0	1	6	8

*Wildfires in San Diego County

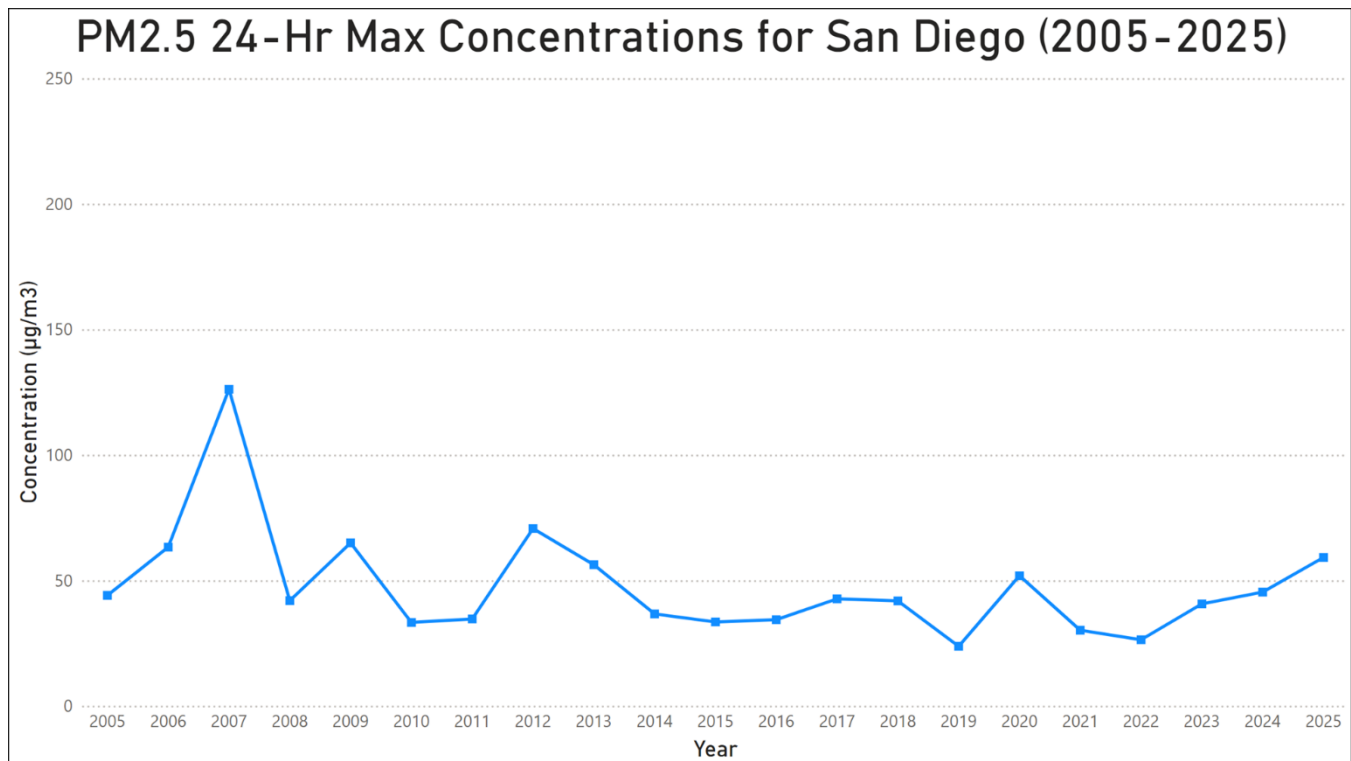


Figure 8-2: PM_{2.5} Concentrations (24-Hr Maximum) for San Diego* (2005-2025)

*Wildfires occurred in 2007

Table 8-5 below lists the maximum PM_{2.5} concentrations for 24-Hrs and the Annual average for each site with a PM_{2.5} sampler. This is for informational purposes only. The NAAQS is determined using the Design Value (DV) statistical calculation and not solely a single year's Maximum 24-Hr or Annual Average concentration, which is reported in the table below. **Figure 8-3** plots the PM_{2.5} Concentrations (24-Hr and Annual Average) for San Diego by Site for the Year.

Table 8-5: PM_{2.5} Concentrations (24-Hr and Annual Average) for San Diego by Site

Site (Name)	Site Abbrev	Maximum 24-Hr Concentration* ($\mu\text{g}/\text{m}^3$)	Annual Average* ($\mu\text{g}/\text{m}^3$)	Number of Days Above the National Standard
Alpine	ALP	30.1	6.2	0
Camp Pendleton	CMP	29.4	8.3	0
Chula Vista	CVA	48.7	9.8	2
Lexington Elementary School	LES	36.4**	9.2	0
Kearny Villa Road	KVR	25.0	8.5	0
Donovan	DVN	49.5	14.3	3
Sherman Elementary School	SES	34.3	10.6	0
Rancho Carmel Drive	RCD	20.7	8.2	0
San Ysidro	SAY	59.2	13.9	7

*For informational purposes only. NAAQS is determined using the Design Value (DV) calculation.

**Maximum value at Lexington Elementary School was measured on collocated MetOne E-SEQ-FRM instrument

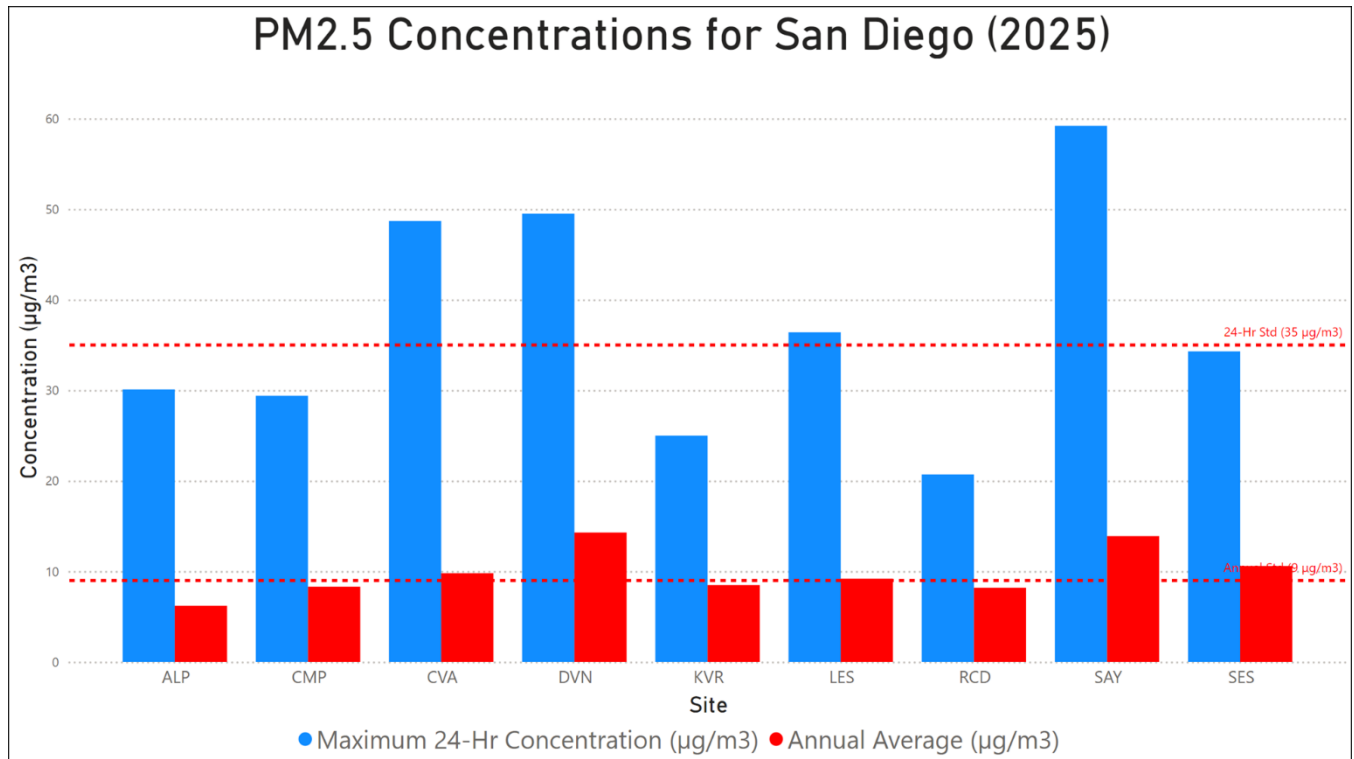


Figure 8-3: PM_{2.5} Concentrations (24-Hr and Annual Average) for San Diego*† (2025)

*24-Hr Std ($35 \mu\text{g}/\text{m}^3$) and Annual Std ($12 \mu\text{g}/\text{m}^3$) are for informational purposes only. NAAQS is determined using the Design Value (DV) calculation.

8.2.1 Design Values for PM_{2.5} Concentrations for San Diego By Site

For PM_{2.5}, a Design Value is calculated for both the 24-Hr and Annual Average. **Table 8-6** lists the 24-Hr PM_{2.5} Design Values calculated for each site. **Table 8-7** lists the Annual Average PM_{2.5} Design Values calculated for each site. **Figures 8-4** and **Figure 8-5** show the plots of the Design Values for each site and are compared to the National Standards for the 24-Hr and Annual Average, respectively. The District transitioned from the sequential sampling method to a continuous method starting in 2022.

Table 8-6: 24 Hour Design Value for PM_{2.5} Concentrations for San Diego by Site 2023 to 2025

Site (Name)	Site Abbrev	24-Hr Design Value (DV) ($\mu\text{g}/\text{m}^3$)	Number of Days Above the 24-Hr NAAQS	Is the 24-Hr DV \geq 85% of the NAAQS (yes/no)	Is the 24-Hr DV < 85% of the NAAQS (yes/no)	Does the 24-Hr DV Meet the NAAQS? (yes/no)
Alpine	ALP	15	0	No	yes	yes
Camp Pendleton	CMP	18	0	No	yes	yes
Chula Vista	CVA	22	2	No	yes	yes
Lexington Elementary School	LES	18	1*	No	yes	yes
Kearny Villa Road	KVR	18	0	No	yes	yes
Donovan	DVN	30	3	yes	no	yes
Sherman Elementary School	SES	23	0	No	yes	yes
Rancho Carmel Drive	RCD	16	0	No	yes	yes
San Ysidro	SAY	34	7	yes	no	yes

*Maximum value at Lexington Elementary School was measured on collocated MetOne E-SEQ-FRM instrument

Table 8-7: Annual Average Design Value for PM_{2.5} Concentrations for San Diego by Site 2023 to 2025

Site (Name)	Site Abbrev	Annual Average Design Value (DV) ($\mu\text{g}/\text{m}^3$)	Is the Annual Average DV \geq 85% of the NAAQS (yes/no)	Is the Annual Average DV < 85% of the NAAQS (yes/no)	Does the Annual Average DV Meet the NAAQS? (yes/no)
Alpine	ALP	6.3	No	Yes	Yes
Camp Pendleton	CMP	8.0	Yes	No	Yes
Chula Vista	CVA	9.5	Yes	No	No
Lexington Elementary School	LES	9.0	Yes	No	Yes
Kearny Villa Road	KVR	7.9	Yes	No	Yes
Donovan	DVN	13.6	Yes	No	No
Sherman Elementary School	SES	9.7	Yes	No	No
Rancho Carmel Drive	RCD	7.6	No	Yes	Yes
San Ysidro	SAY	14.1	Yes	No	No

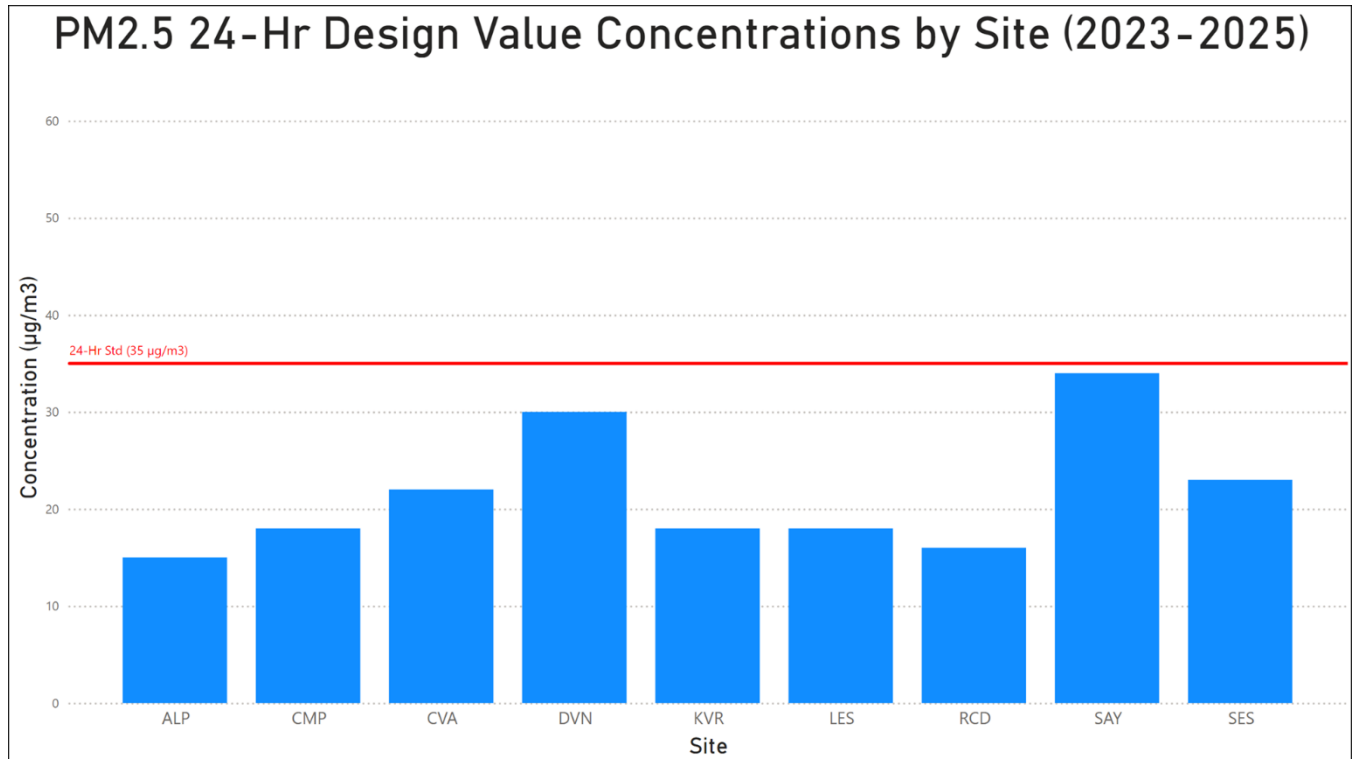


Figure 8-4: Graph of 24-Hr Design Value for PM_{2.5} Concentrations by Site (2023-2025)

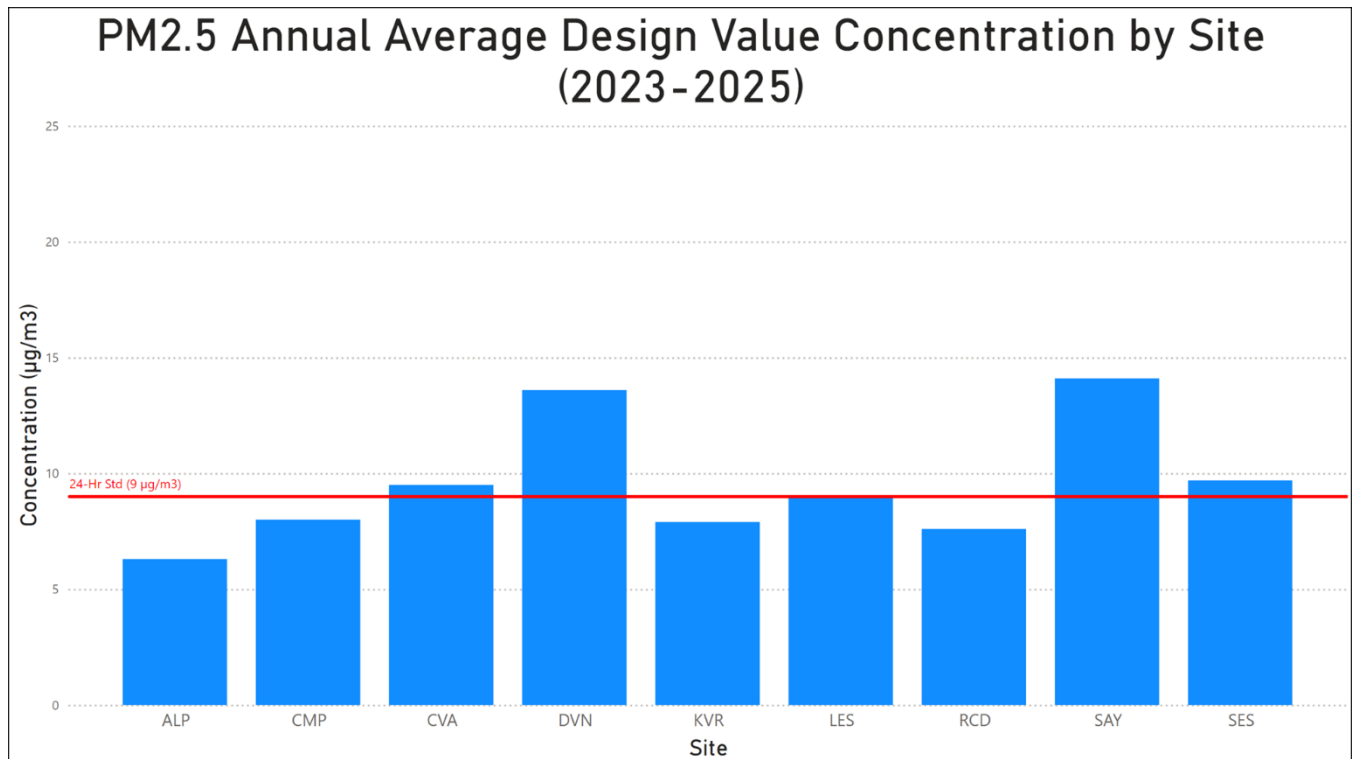


Figure 8-5: Graph of Annual Average Design Value for PM_{2.5} Concentrations by Site (2023-2025)

8.3 PM_{2.5} Minimum Monitoring Requirements

8.3.1 PM_{2.5} Manual Minimum Monitoring Requirements – Design Criteria (24-Hr. and Annual Average)

The District is required to operate a minimum number of PM_{2.5} samplers irrespective of the PM_{2.5} network affiliation. To ascertain the minimum number of samplers required for ambient air sampling, the Highest Concentration value must be calculated. For a MSA population of greater than 1,000,000, the number of required monitors is based on Table D-5 of Appendix D to Part 58 (**Table 8-8**) of the Code of Federal Regulations, Title 40.

Table 8-8: Table D-5 of Appendix D Part 58 - PM_{2.5} Minimum Monitoring Requirements

<i>MSA population</i>	<i>Most recent 3-year design value ≥85% of any PM_{2.5} NAAQS</i>	<i>Most recent 3-year design value <85% of any PM_{2.5} NAAQS</i>
(#)	(#)	(#)
>1,000,000	3	2

Based on the recent census, San Diego has a population of 3.3 million people. This corresponds to three required PM_{2.5} samplers to meet the requirements for ambient monitoring. The District operates nine throughout the network and is shown in **Table 8-9**.

Table 8-9: PM_{2.5} Minimum Monitoring Requirements – General Requirements

MSA & County (name)	Population Estimated from 2020 Census (#)	Number of Required PM _{2.5} Samplers (#)	Number of Active PM _{2.5} Samplers (#)	Number of Needed PM _{2.5} Samplers (#)
San Diego	3.3 Million	3	9	0

There is a federal annual standard and a federal 24-hour standard for PM_{2.5}. The site locations for the Annual Design Value and the 24-Hr Design Value are reported in **Table 8-10** and **Table 8-11**, respectively.

Table 8-10: PM_{2.5} Minimum Monitoring Requirements - Design Criteria (Annual Average)

Annual Design Value 2023-2025 (µg/m ³)	Annual Design Value Location (name)	Is the Annual Design Value ≥ 85% of the NAAQS? (yes/no)	Is the Annual Design Value < 85% of the NAAQS? (yes/no)	Does the Annual Design Value Meet the NAAQS? (yes/no)
14.1	San Ysidro (SAY) 06-073-1025	yes	no	no

Table 8-11: PM_{2.5} Minimum Monitoring Requirements – Design Criteria (24-Hr)

24-hr Design Value 2023-2025 (µg/m ³)	24-hr Design Value Location (name)	Is the 24-hr Design Value ≥ 85% of the NAAQS? (yes/no)	Is the 24-hr Design Value < 85% of the NAAQS? (yes/no)	Does the 24-hr Design Value Meet the NAAQS? (yes/no)
34	San Ysidro (SAY) 06-073-1025	yes	no	yes

8.3.2 *PM_{2.5} Manual Minimum Monitoring Requirements – State of California (SIP)*

In 1998, the San Diego Air Pollution Control District, in partnership with the California Air Resources Board (ARB), developed a PM-fine monitoring network to implement the new PM_{2.5} NAAQS and is outlined in the “California Particulate Matter Monitoring Network Description”. **Table 8-12** summarizes these requirements.

The EPA Region 9 governing authority approved the ARB’s statewide distribution plan for the placement of the PM_{2.5} monitors within each district and the location of the collocated monitors for each district to satisfy the sampling and quality assurance requirements of 40 CFR Part 58. Any changes to the PM_{2.5} network in the SDAB will be undertaken in partnership and with advisement of ARB. If a PM_{2.5} monitor is violating the NAAQS and the District is forced to relocate the station or the sampler, the District will provide a minimum 30-day period for public review, prior to the relocation of the monitor or the station.

Table 8-12: PM_{2.5} Minimum Monitoring Requirements – State (SIP)

MSA & County (name)	Population Estimated from 2020 Census (#)	Number of PM _{2.5} Samplers Required (non- microscale) (#)	Number of PM _{2.5} Samplers Active (#)	Number of PM _{2.5} Samplers Needed (#)
San Diego	3.3 Million	5	7*	0

*Near-road is microscale and cannot be used in this total.

8.3.3 *PM_{2.5} Minimum Monitoring Requirements – Site of Expected Maximum Concentration (24-Hr and Annual Average)*

The District is required to designate PM_{2.5} sampling at the site of expected maximum concentrations with respect to the 24-Hr and annual average NAAQS. For the District these locations can change yearly. Most recently, the District’s Donovan site has had expected maximum concentrations for the Annual Average and the San Ysidro site has the expected maximum concentrations for the 24-Hr Design Values. **Table 8-13** lists the site of the expected maximum concentration (24-Hr and annual).

Table 8-13: PM_{2.5} Minimum Monitoring Requirements-Site of Expected Maximum Concentration for Annual and 24-Hour Design Value

Expected Maximum Concentration Annual Design Value for NAAQS (site)	Expected Maximum Concentration 24-Hr Design Value for NAAQS (site)
Donovan (DVN) 06-073-1014	San Ysidro (SAY) 06-073-1025

8.3.4 *PM_{2.5} Minimum Monitoring Requirements – Near Road*

The District is required to designate two sites as part of the Near-road program. The District has a Near-road monitoring site at Rancho Carmel Drive and at San Ysidro. As a part of this program, the District must sample for PM_{2.5} at one Near-road site, but currently operates two samplers. A PM_{2.5} Near-road sampler is operating at the Rancho Carmel Drive Side and an additional second sampler is operating at the San Ysidro site. **Table 8-14** lists the requirement.

Table 8-14: Minimum Monitoring Requirements - Near Road

MSA & County (name)	Population Estimated from 2020 Census (#)	Are PM _{2.5} Near-road Samplers Required? (yes/no)	Number of PM _{2.5} Near-road Samplers Required? (#)	Number of PM _{2.5} Near-road Samplers Active (#)	Number of PM _{2.5} Near-road Samplers Needed (#)	Near-road Site Location Name (name)
San Diego	3.3 million	Yes	1	2	0	Rancho Carmel Dr. (RCD) 06-073-1017
						San Ysidro (SAY) 06-73-1025

8.3.5 PM_{2.5} Minimum Monitoring Requirements – Site of Poor Air Quality

The District is required to designate PM_{2.5} sampling locations for specific purposes or needs. One of these designations is called the site of Poor Air Quality with respect to the 24-Hr and annual average NAAQS (Note: the site that serves as fulfilling the requirement for the location of maximum concentration cannot also be the site of poor air quality). **Table 8-15** summarizes these requirements.

Table 8-15: PM_{2.5} Minimum Monitoring Requirements - Site of Poor Air Quality

Site of Poor Air Quality (name)
Sherman Elementary School (SES) 06-073-1026

8.3.6 PM_{2.5} Minimum Monitoring Requirements - NCore

The District is required to operate a PM_{2.5} sampler as part of the NCore multipollutant monitoring program. This program was designed to measure pollutants at lower levels, as well as other pollutants. For the NCore program, the District is required to collect PM_{2.5} and PM_{coarse} (PM_{10-2.5}) data. PM_{coarse} data is obtained by operating a continuous PM sampler (Teledyne T640x) that measures both the PM_{2.5} and PM₁₀ simultaneously. The PM_{2.5} concentrations are then subtracted from the PM₁₀ concentrations to get the PM_{coarse} fraction. **Table 8-16** lists the NCore PM_{2.5} requirements.

Table 8-16: PM_{2.5} Minimum Monitoring Requirements - NCore

Number of PM _{2.5} Samplers Required at NCore Sites (#)	Number of PM _{2.5} Samplers Active at NCore Sites (#)	Number of PM _{2.5} Samplers Needed at NCore Sites (#)	Can this PM _{2.5} Sampler be used for PMcoarse? (yes/no)	Number of PM _{2.5} Samplers Needed for PMcoarse? (#)	NCore Site Location Name (name)
1	1	0	yes	0	Lexington Elementary School (LES) 06-073-1022

8.3.7 PM_{2.5} Minimum Monitoring Requirements for Continuous Monitoring at NCore Sites

The District is required to operate a PM_{2.5} continuous sampler as part of the NCore multipollutant monitoring program. Since the District operates an all continuous network of PM_{2.5} samplers, this requirement is fulfilled with the sampler which is listed **Table 8-12** below (which is the same as the requirement for the Minimum Monitoring Requirements at NCore in **Table 8-17**).

Table 8-17: PM_{2.5} Continuous Minimum Monitoring Requirements - Collocation

Number of PM _{2.5} Continuous Analyzers Required at NCore Sites (#)	Number of PM _{2.5} Continuous Analyzers Active at NCore Sites (#)	Number of PM _{2.5} Continuous Analyzers Needed at NCore Sites (#)	NCore Location (name)
1	1	0	Lexington Elementary School (LES) 06-073-1022

8.3.8 PM_{2.5} Minimum Monitoring Requirements for Continuous Samplers

In addition to the basic requirements for PM_{2.5} sampler QA collocation, there is also a requirement for the number of PM_{2.5} continuous samplers to be deployed in the monitoring network. However, the District has switched to continuous samplers throughout the regional air monitoring network as the primary air monitoring method for PM_{2.5} sampling. **Table 8-18** summarizes this requirement. The District meets or exceeds this requirement.

Table 8-18: PM_{2.5} Minimum Monitoring Requirement for Continuous Samplers - Ambient

Minimum Number of PM _{2.5} Samplers Required from Table D-5 (#)	Minimum Number of PM _{2.5} Continuous Analyzers Required= ½ Minimum Number of Required PM _{2.5} Manual Samplers Round Up (#)	Number of PM _{2.5} Continuous Analyzers Active (#)	Number of PM _{2.5} Continuous Analyzers Needed (#)
3	3 x (½) = 2	9	0

8.4 PM_{2.5} Minimum Monitoring Requirements – QA Collocation of Samplers

The District is required to operate collocated samplers for the various programs mandated by the CFR. The details are discussed in the sections below. This includes a collocation for the samplers in the air monitoring network including any continuous samplers deployed. It should be noted that the District transitioned to continuous samplers throughout the air monitoring network. The requirement for the collocation of continuous samplers is fulfilled with the general QA collocation requirement for ambient samplers.

8.4.1 PM_{2.5} Minimum Monitoring Requirements for QA Collocation for Ambient

For quality assurance purposes, there are requirements for analyzers or samplers of the same make and model to be collocated. In 1998, the District and the ARB gave criteria for choosing a site for collocation. Collocation guidance is from the CFR. **Table 8-19** summarizes these requirements. The District meets or exceeds all minimum requirements for PM_{2.5} collocation.

Table 8-19: PM_{2.5} Minimum Monitoring Requirements - QA Collocation

Number of PM _{2.5} Samplers Required from Table D-5 (#)	Number of PM _{2.5} Samplers Active (#)	Number of PM _{2.5} Samplers Needed for Collocation (#)	Number of PM _{2.5} Samplers Active for Collocation (#)	Number of PM _{2.5} Samplers Needed for Collocation (#)	Collocation Site Name (name)
3	9	9 x (15%) = 1	2	0	Lexington Elementary School (LES) 06-073-1022
					Kearny Villa Road (KVR) 06-073-1016

8.4.2 *PM_{2.5} Continuous Sampler Minimum Monitoring Requirements – Collocation*

In addition, monitors selected for collocation must meet the requirements listed in the CFR, Title 40, Part 58, Appendix A, Section 3.2.3.2(b), Table A-2. For the District’s primary monitor designated as a Federal Equivalence Method (FEM) sampler, the District must collocate with one Federal Reference Method (FRM) sampler. There is no requirement to collocate with a Federal Equivalence Method (FEM) sampler [also referred to as a continuous sampler]. **Table 8-20** shows the minimum monitoring requirement for the collocation of continuous (FEM) samplers. **Table 8-21** and **Table 8-22** list the collocated sites for the FEM and FRM samplers, respectively.

Table 8-20: Table A-2 of Appendix A Part 58 Section 3.2.3.2(b)

Primary FEMS of a unique method designation	Collocated	Collocated with an FRM	Collocated with same method designation
1-9	1	1	0
10-16	2	1	1

Table 8-21: PM_{2.5} Minimum Monitoring Requirement for Collocation of Continuous (FEM) Samplers

Number of PM _{2.5} Continuous Samplers Designated as FEM (#)	Minimum Number of PM _{2.5} Continuous Analyzers Required to be Collocated with FEM sampler (Table A-2) (#)	Minimum Number of PM _{2.5} Continuous FEM Samplers Actively Collocated with FEM Sampler (#)	Minimum Number of PM _{2.5} Continuous (FEM) Samplers Needed to be Collocated (#)	Collocation Locations (name)
9	0	1	0	Kearny Villa Road (KVR) 06-073-1016

Table 8-22: PM_{2.5} Minimum Monitoring Requirement for Collocation of Continuous (FEM) Samplers with Manual (FRM) Samplers

Minimum Number of PM _{2.5} Continuous Analyzers Required to be Collocated with PM _{2.5} Manual Samplers (#)	Minimum Number of PM _{2.5} Continuous Analyzers Actively Collocated with PM _{2.5} Manual Samplers (Table A-2) (#)	Minimum Number of PM _{2.5} Continuous Analyzers Needed to be Collocated with PM _{2.5} Manual Samplers (#)	Collocation Locations (name)
0	1	0	Lexington Elementary School (LES) 06-073-1022

8.5 Operating Schedules for PM_{2.5} Samplers

PM_{2.5} samplers must operate on a specified frequency based upon several factors according to the CFR (e.g. maximum concentration, percentage to the NAAQS, etc.). The District operates FEM continuous hourly samplers at all sites, which helps meet the CFR requirement. The tables below provide additional information regarding the sampling frequency of the PM_{2.5} samplers in the Regional Monitoring Network. **Table 8-23** highlights whether a sampler reports FEM continuous hourly data (7/24) or if it is a FRM sequential sampler, which samples once every three days (1:3) using the filter-based sampling method. Lexington Elementary School is the only site that has a sequential sampler. The District adheres to the sample days specified in the EPA Annual Monitoring Calendar.

Table 8-23: PM_{2.5} Operating Schedule

	Camp Pendleton	Rancho Carmel Dr.	Alpine	Lexington Elementary School (NCore, PAMS, DV 24-hr)	Kearny Villa Rd.	Donovan	Chula Vista	Sherman Elementary School	San Ysidro
PM _{2.5} -manual FRM	-	-	-	1:3	-	-	-	-	-
PM _{2.5} -continuous FEM	7/24	7/24	7/24	7/24	7/24	7/24	7/24	7/24	7/24

Lexington Elementary School also serves as the NCore site, which has the requirement of having a FRM sequential sampler collocated with a FEM continuous sampler. **Table 8-24** reports the sampling frequency for the FRM sampler at Lexington Elementary School. **Table 8-25** provides additional information for the Design Value (DV) calculated at this collocated (continuous vs. sequential) site.

Table 8-24: FRM PM_{2.5} Operating Schedule for NCore

Is there a NCore PM _{2.5} FRM Sampler? (yes)	Location of NCore PM _{2.5} FRM Sampler (name)	What is the Minimum EPA Sampling Frequency? (#)	What is the Actual Sampling Frequency? (#)	Does the Actual Sampling Frequency Meet EPA Specifications? (yes/no)
yes	Lexington Elementary School (LES) 06-073-1022	1:3	1:1	yes

Table 8-25: PM_{2.5} Operating Schedule for FRM Samplers Collocated with Continuous Samplers (24-Hr Design Value)

Is the 24-hr DV PM _{2.5} FRM sampler Collocated with PM _{2.5} Continuous FEM Sampler? (yes/no)	Location of 24-hr DV PM _{2.5} Manual sampler Collocated with PM _{2.5} Continuous FEM Samplers (name)	Calculations 24-hr DV		Any 24-Hr DV NAAQS Exceedances over the Last 3-years (yes/no)	What is the Required Sampling Frequency? (#)	What is the Actual Sampling Frequency? (#)	Does the Actual Sampling Frequency Meet EPA Specifications (yes/no)
		(years)	(µg/m ³)				
yes	Lexington Elementary School (LES) 06-073-1022	2023-2025	18	NO	1:1	1:1	yes
		2022-2024	19	NO			
		2021-2023	19	NO			
		2020-2022	23	NO			
		2019-2021	23	NO			
		2018-2020	22	NO			
		2017-2019	19	NO			
		2016-2018	19	NO			
2015-2017	18	NO					

8.6 PM_{2.5} Sampler Suitability for Comparison to the NAAQS

The CFR requires that certain operating and siting parameters be met for an instrument to be suitable to be compared to the NAAQS. All District PM_{2.5} samplers meet or exceed all the minimum monitoring requirements and sampling frequencies, to be compared to the NAAQS. **Table 8-24** lists the information for the FEM continuous samplers and the FRM sequential sampler used in the District. Note: The District operates additional PM samplers that are used for PM_{2.5} speciation and are addressed in another Chapter.

Table 8-26: PM_{2.5} Sampler Suitability for Comparison to the NAAQS

Parameter		Code	Unit	Code	Duration	Code	Equipment	Method	Code	Frequency	Method ID
Particulate Matter \leq 2.5 μm (FEM continuous)	PM _{2.5}	88101	$\mu\text{g}/\text{m}^3$ LC	105	1-Hr	1	Teledyne T640x	Broad- band Spec.	638	7/24	EQPM-0516- 238
Particulate Matter \leq 2.5 μm (FRM sequential)	PM _{2.5}	88101	$\mu\text{g}/\text{m}^3$ LC	105	24-Hr	7	Met One E-SEQ- FRM PM _{2.5} Air Sampler w/VSCC	Gravi- metric	545	1:3	RFPS-0717- 245

(left intentionally blank)

9 PARTICULATE MATTER 2.5 μm (PM_{2.5} CHEMICAL SPECIATION)

9.1 PM_{2.5} Speciation Introduction

The State is federally mandated to monitor PM_{2.5} speciation in accordance with the Code of Federal Regulations (CFR). This chapter will discuss the needs to meet these requirements. The District is required to designate two sites for PM_{2.5} speciation sampling in the Regional Air Monitoring Network. Currently, the District samples for the Chemical Speciation program at the Lexington Elementary School Site in El Cajon (Shown in **Figure 9-1**).

The EPA [Chemical Speciation Network](#) (CSN) is an extension of the PM_{2.5} Monitoring Network. However, the data are not used to determine attainment status for the National Ambient Air Quality Standards (NAAQS). The EPA uses this program to fulfill several objectives, including trends, characterization, emission control strategies, health studies, etc. More information can be found on the EPA Chemical Speciation site.

The District uses two types of samplers for the Chemical Speciation program. One sampler is the Met One SuperSASS, which collects samples on Teflon and nylon filters. The other sampler is a URG300N sampler and samples on a quartz filter. Parameters analyzed include ions and carbon. The EPA provides a complete list of all the parameters that are measured from each sampler ([CSN Parameters](#)). Samples are shipped and analyzed using the EPA national contract and data are available through the EPA ([EPA CSN Data](#)). This chapter will provide additional information on the District's CSN program, including sites, operating schedule, and sampling equipment.

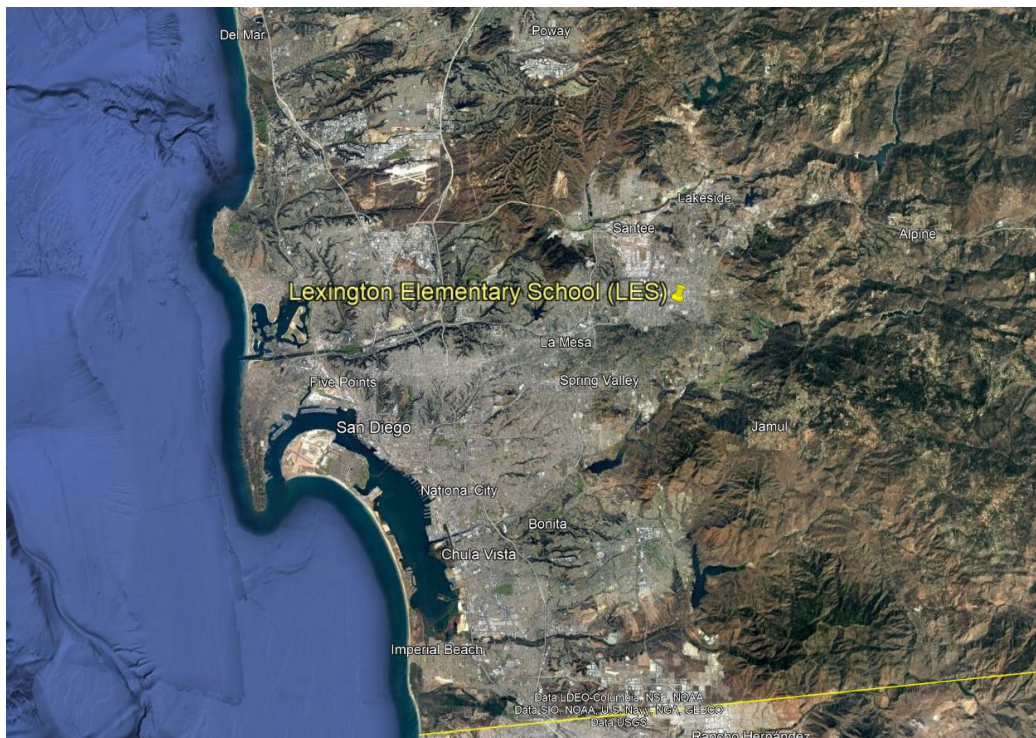


Figure 9-1: PM_{2.5} Speciation Network Map

Table 9-1: PM_{2.5} Chemical Speciation Network Minimum Monitoring Requirements – Summary

CFR Programs PM _{2.5} Other Requirements Chemical Speciation Network (name)	Site Abbreviation	Number of PM _{2.5} Speciation Required (#)	Number of PM _{2.5} Speciation Active (#)	Number of PM _{2.5} Speciaton Needed (#)	Reference Section (40 CFR, Part 58, Appendix D)
PM _{2.5} , STN and CSN Speciation	LES	1	1	0	4.7.4
NCore	LES	1	1	0	3.(b)

Table 9-2: PM_{2.5} Chemical Speciation Sampling Network

Site Abbreviation	LES		
Site Name	Lexington Elementary School		
AQS ID	06-073-1022		
PM _{2.5} (speciated)	Monitor Type	SLAMS	SLAMS
	Method	SP & SQ	SP & SQ
	Affiliation	NCORE, CSN, STN	NCORE, CSN, STN
	Spatial Scale	NS	NS
	Site Type	PE	PE
	Objective (Federal)	Research	Research
	Analysis	EPA	EPA
	Frequency	1:3	1:3
	Equipment	URG-3000N	Met One SuperSASS

9.2 PM_{2.5} Speciation Minimum Monitoring Requirements

The District is required to designate a speciation network according to the CFR and as designed by the governing authorities. **Table 9-3** lists these requirements. In addition, the District is required to operate PM_{2.5} samplers as part of the NCore multipollutant monitoring program. **Table 9-4** lists these requirements.

Table 9-3: PM_{2.5} Speciation Minimum Monitoring Requirements

Established PM _{2.5} CSN Samplers (Sites) (#)	Established PM _{2.5} STN Samplers (Sites) (#)	Are the PM _{2.5} CSN & STN Monitor (Sites) Active? (yes/no)	Number of PM _{2.5} CSN & STN Monitor (Sites) Needed? (#)
Lexington Elementary School (LES) 06-073-1022	Lexington Elementary School (LES) 06-073-1022	Yes	0

*Escondido site has not yet been established.

Table 9-4: PM_{2.5} Speciation Minimum Monitoring Requirements - NCore

Number of NCore Site(s) (#)	Location of NCore Site(s) (name)	Are the Monitors (Sites) Active (yes/no)	Number of Monitors (Sites) Needed (#)
1	Lexington Elementary School (LES) 06-073-1022	Yes	0

9.3 Operating Schedules for PM_{2.5} Speciation Samplers

Table 9-5 shows the sampling frequency requirement for the PM_{2.5} Speciation as well as the sampling frequency implemented for the District. The District’s speciation sampling at Lexington Elementary school also satisfies the requirement for speciation sampling for the NCore program.

Table 9-5: PM_{2.5} Speciation Operating Schedule Including NCore

	Site	Does this meet the NCore PM _{2.5} Speciation Requirement	What is the Minimum EPA Sampling Frequency?	What is the Actual Sampling Frequency?	Does the Actual Sampling Frequency Meet EPA Specifications?
PM _{2.5} -speciation	Lexington Elementary School (LES) 06-073-1022	yes	1:3	1:3	yes

9.4 PM_{2.5} Sampler Unsuitability for Comparison to the NAAQS

There are no NAAQS for the PM_{2.5} Speciation program **Table 9-6** summarizes the equipment requirements.

Table 9-6: PM_{2.5} Speciation Sampler Unsuitability for Comparison to the NAAQS - Sampling Equipment

Parameter	Code	Unit	Code	Duration	Code	Equipment	Method	Code	Frequency	Method ID
Particulate Matter ≤ 2.5 µm (speciated)	PM _{2.5} CSN	See ARB or EPA	See EPA	24-Hr	7	URG-3000N	See EPA	See EPA	1:3 or 1:6	Not Applicable
Particulate Matter ≤ 2.5 µm (speciated)	PM _{2.5} STN	See ARB or EPA	See EPA	24-Hr	7	Met One SuperSASS	See EPA	See EPA	1:3 or 1:6	Not Applicable

(left intentionally blank)

10 PARTICULATE MATTER 10 μm (PM₁₀)

10.1 Introduction

The District operates PM₁₀ monitors at nine monitoring sites throughout the Regional Air Monitoring Network. The PM₁₀ Network Map (**Figure 10-1**) shows all the air monitoring sites with PM₁₀ monitors. The annual standards for PM₁₀ are listed in **Table 10-1**. The minimum requirements for the number of PM_{2.5} monitors are stated in the Code of Federal Regulations (40 CFR, Part 58, Appendix D). There are several requirements that must be fulfilled for PM₁₀ monitors. To fulfill the requirements, the District operates samplers that are designated as a Federal Equivalence method (FEM) throughout the Regional Air Monitoring Network.

In 2019, the District recorded a maximum PM₁₀ concentration of 199 $\mu\text{g}/\text{m}^3$. This initiated a requirement for 6 to 10 monitors. Based on the recent data, the PM₁₀ monitoring requirement is 4 to 8 monitors. The District deployed continuous particulate matter (PM_{2.5} & PM₁₀) analyzers (T640x) at Lexington Elementary School, Donovan, Camp Pendleton, Sherman Elementary School, and Alpine in late 2022. The District then deployed additional particulate matter (PM_{2.5} & PM₁₀) analyzers throughout the monitoring network in 2023. The District will continue to operate PM₁₀ sampling at nine sites.

The minimum requirements are summarized in **Table 10-2** below. A more detailed explanation of each PM₁₀ sampler requirement is discussed in this chapter. The District meets the requirement for PM₁₀ analyzers in the Regional Monitoring Network. The District is also in the process of finding an alternative location for the air monitoring site in Escondido.

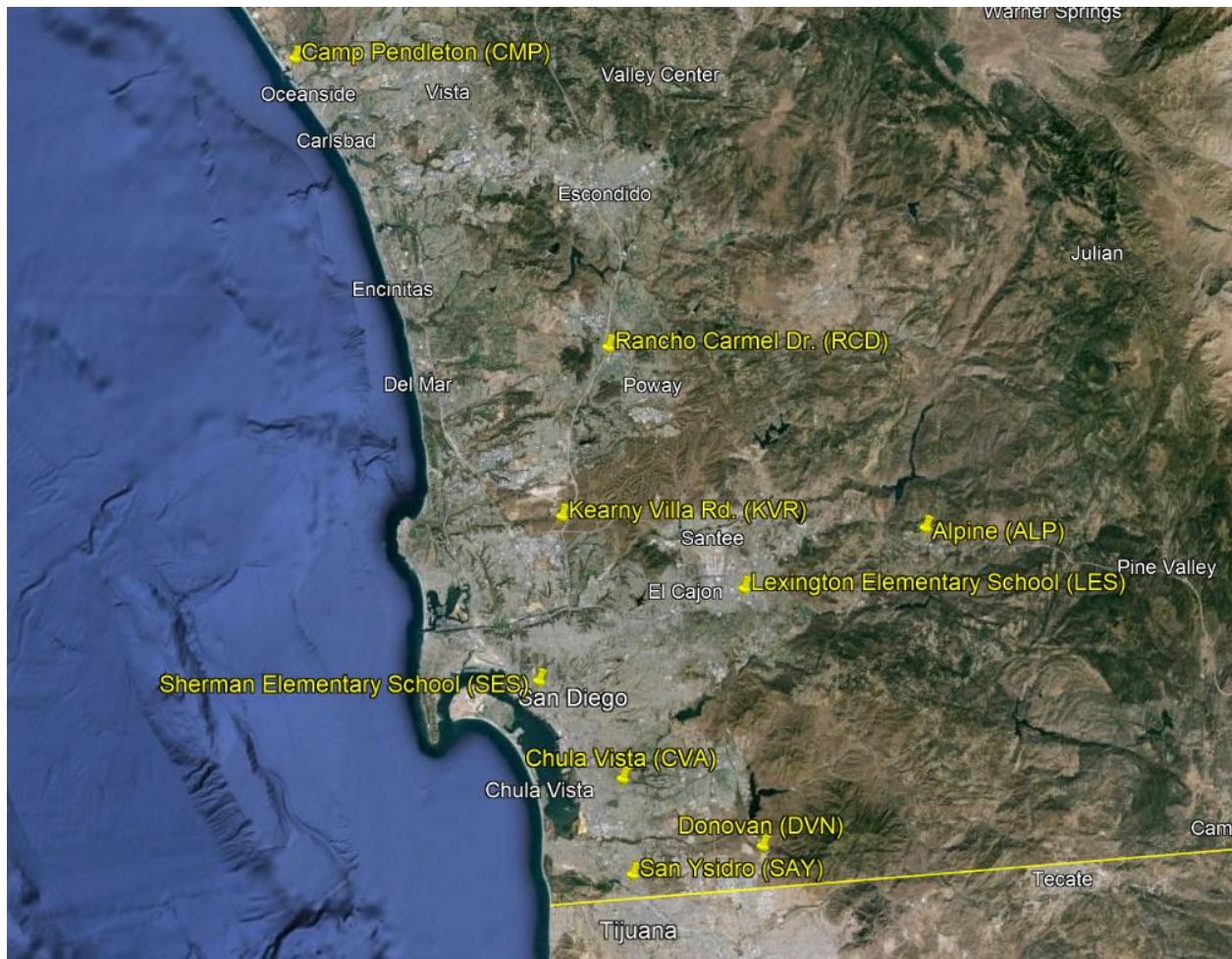


Figure 10-1: PM₁₀ Network Map

Table 10-1: PM₁₀ State and National Standards for the Year

Ambient Air Quality Standards				
Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Fine Particulate Matter (PM ₁₀)	24 hour	50 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$
	Annual Arithmetic Mean	20 $\mu\text{g}/\text{m}^3$	Not Applicable	Not Applicable

10.2 PM₁₀ Concentrations for San Diego

10.2.1 Concentrations for the Last 20 Years

PM₁₀ concentrations do not correlate well to growth in population or vehicle usage, and high PM₁₀ concentrations do not always occur in high population areas. Emissions from stationary sources and motor vehicles form secondary particles that contribute to PM₁₀ in many areas. This section will illustrate the different metrics for comparison.

The three-year average of the annual average shows a large decrease; however, there is a great deal of variability from year-to-year. Much of this variability is due to meteorological conditions rather than changes in emissions. Note: the “Days Above the National 24-Hr Standard” row in **Table 10-4** and **Figure 10-2** reflect the PM₁₀ standard for that year.

Table 10-4: PM₁₀ Concentrations for San Diego for the Last 20 Years 2005 - 2025

	2005	2006	* 2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Maximum 24-Hr Concentration (µg/m ³)	155	133	394	158	126	108	125	126	90	29	136	79	66	53	199	174	122	243	175	152	130
Days above the National Standard	2	0	2	1	0	0	0	0	0	0	0	0	0	0	1	2	0	3	1	0	0

*Due to the firestorms of 2007, the 24-hr value exceeded the National standard for those years. The firestorms are considered as exceptional events, and they do not have a lasting impact in the SDAB. Even with the last two firestorms, the County still qualifies for attainment status.

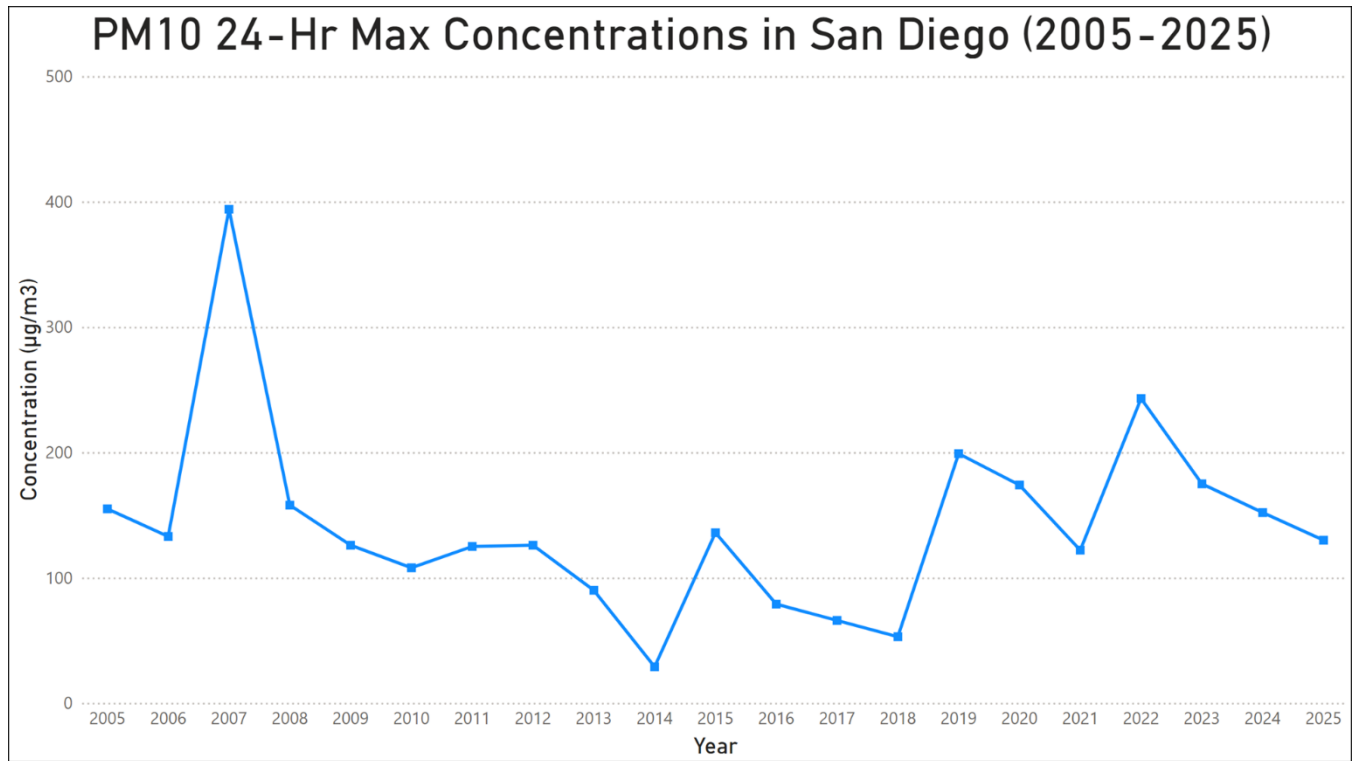


Figure 10-2: PM₁₀ 24-Hr Max Concentrations for San Diego (2005 –2025)

10.2.2 Concentrations by Site at Standard Conditions (STD) for the Year 2025

PM₁₀ data is reported in Standard Conditions at all sites. Lexington Elementary School (LES) also reports PM₁₀ data in Local Conditions (LC). In 2022, The District began replacing filter based sequential samplers with continuous samplers (T640x) that measure PM_{2.5} and PM₁₀ simultaneously. **Table 10-5** shows the PM₁₀ Standard concentrations for the year. **Figure 10-3** shows the graph of the PM₁₀ concentrations by site for the Standard concentrations for the year.

Table 10-5: PM₁₀ Concentrations for San Diego by Site at Standard Conditions (STD) for the Year 2025

Site	Site Abbreviation	Maximum Concentration for 24-hrs ($\mu\text{g}/\text{m}^3$)	Annual Average ($\mu\text{g}/\text{m}^3$)	Number of Days Above the National Standard (#)
Alpine	ALP	58	16.0	0
Camp Pendleton	CMP	92	20.3	0
Chula Vista	CVA	74	24.1	0
Donovan	DVN	130	41.2	0
Kearny Villa Road	KVR	50	20.8	0
Lexington Elementary School	LES	49	21.4	0
Rancho Carmel Drive	RCD	39	19.4	0
San Ysidro	SAY	121	33.7	0
Sherman Elementary School	SES	57	23.9	0

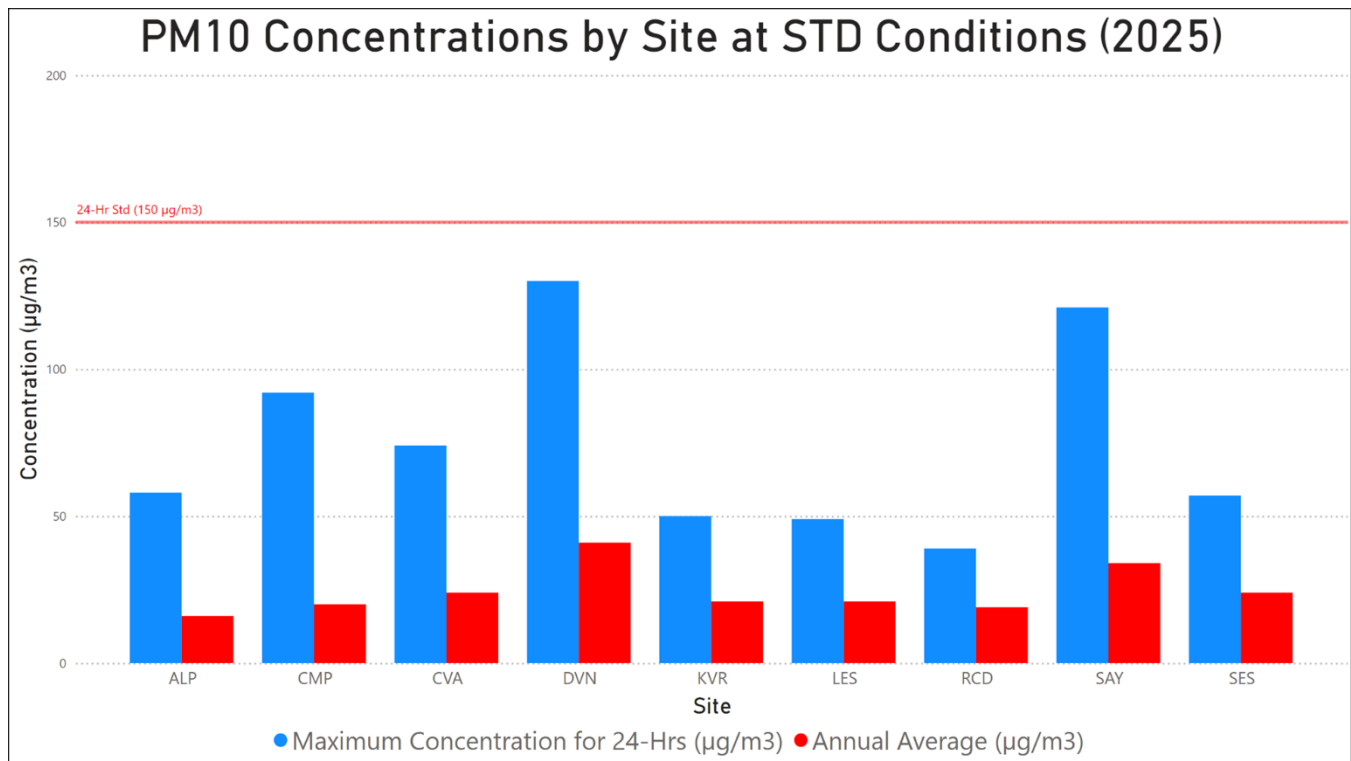


Figure 10-3: Graph of PM₁₀ Concentrations for San Diego by Site at Standard Conditions (STD) (2025) (24-Hr & Annual Average)

***SAY Annual Average is not available since sampling occurred for less than a year.**

10.2.3 Concentrations by Site at Local Conditions (LC) for the Year 2025

PM₁₀ concentrations are reported in Local Conditions (LC) at Lexington Elementary School (LES). **Table 10-6** and **Figure 10-4** show the data in Local Conditions (LC). Note: The data are for informational purposes only. The NAAQS is used for Design Value (DV) calculations. These annual values are not comparable to the NAAQS.

Table 10-6: PM₁₀ Concentrations for San Diego by Site at Local Conditions (LC) for the Year 2025

Site	Site Abbreviation	Maximum Concentration for 24-hrs (µg/m ³)	Annual Average (µg/m ³)
Lexington Elementary School*	LES	51	22.0

*The District only submits PM₁₀ data in local conditions for LES as part of PMcoarse data. No PM₁₀ data reported in local conditions (LC) at the other sites with PM₁₀ samplers.

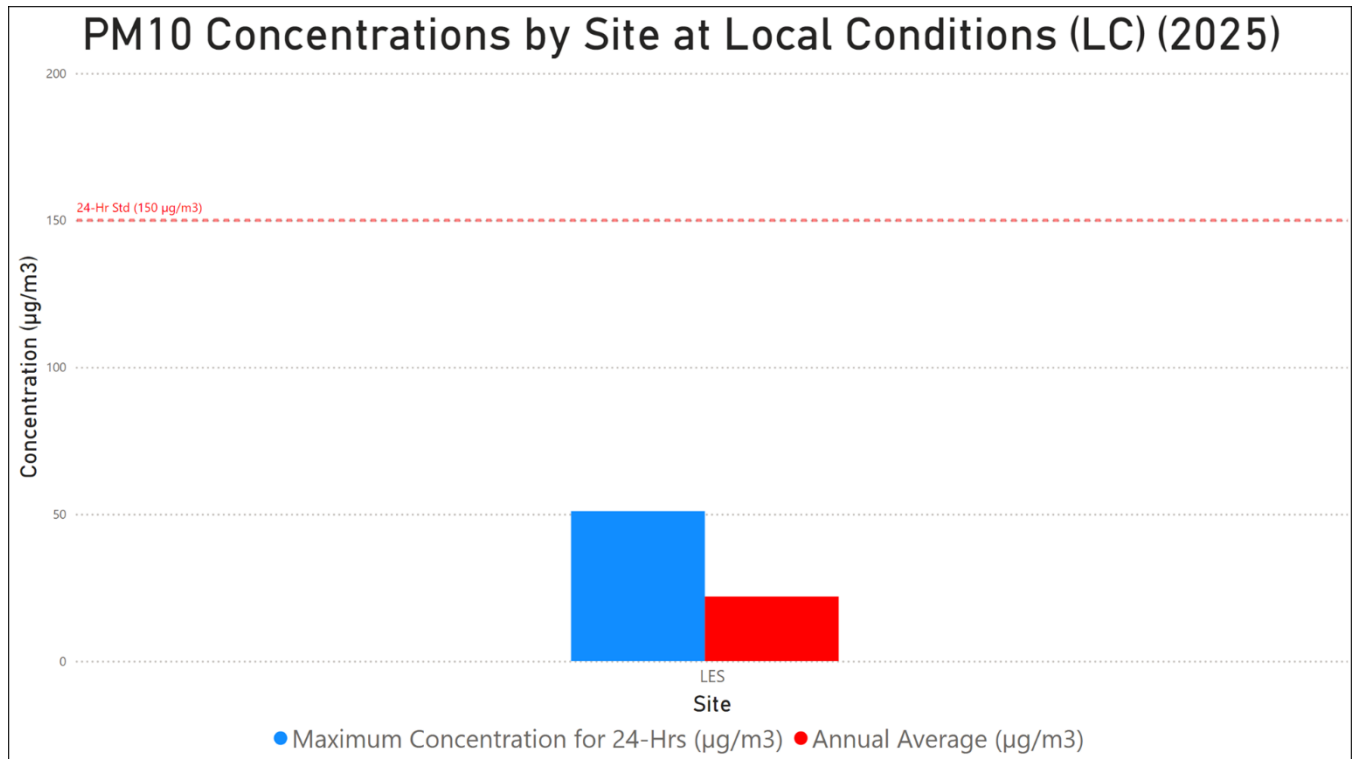


Figure 10-4: Graph of PM_{10} Concentrations for San Diego by Site at Local Conditions (LC) (2025) (24-Hr & Annual Average)

10.3 PM_{10} Minimum Monitoring Requirements

The District is federally mandated to monitor PM_{10} levels in accordance with the CFR. This section will state the different monitoring requirements for each program, e.g. ambient, NCore, etc. that the District operates and references therein (Note: only the passages applicable/informative to the District are referenced). These monitors can serve as fulfilling other PM_{10} network requirements, e.g. ambient PM_{10} sampler can fulfill an NCore PM_{10} sampler requirement.

The District meets or exceeds all minimum requirements for PM_{10} monitoring for all programs.

10.3.1 *Monitoring Requirements for Ambient Data*

All Districts are required to operate a minimum number of PM_{10} samplers irrespective of the PM_{10} network affiliation. These monitors can serve as fulfilling other PM_{10} network requirements. To ascertain the minimum number of samplers required, the Maximum Concentration value must be calculated. According to the Code of Federal Regulations Title 40, Part 58, Appendix D, Table D-4 (**Table 10-7**), the District is required to have 6 to 10 PM_{10} samplers. This is summarized in **Table 10-8** to **Table 10-9**.

Table 10-7: PM₁₀ Minimum Monitoring Requirements from Table D-4 of Appendix D to Part 58 (Approximate number of stations per MSA)

Population Category	High Concentration (120% of NAAQS ²)	Medium Concentration (>80% of NAAQS)	Low Concentration (<80% of NAAQS)
>1,000,000	6-10	4-8	2-4

Table 10-8: PM₁₀ Minimum Monitoring Requirement - Design Criteria for the Year 2025

24-hr Maximum Concentration 2025 (µg/m ³)	24-hr Maximum Concentration Location (name)	High Concentration Is the 24-hr Maximum Concentration ≥ 120% of the NAAQS? (yes/no)	Medium Concentration Is the 24-hr Maximum Concentration > 80% of the NAAQS? (yes/no)	Low Concentration Is the 24-hr Maximum Concentration < 80% of the NAAQS? (yes/no)	Does the 24-hr Maximum Concentration Meet the NAAQS? (yes/no)
152	DVN	no	yes	no	yes

Table 10-9: PM₁₀ Minimum Monitoring Requirements - Ambient

MSA & County (name)	Population Estimated from 2020 Census (#)	Number of PM ₁₀ Samplers Required (#)	Number of PM ₁₀ Continuous Samplers Deployed (#)	Number of PM ₁₀ Samplers Needed (#)
San Diego	3.3 million	4 - 8	9	0

10.3.2 Monitoring Requirements for NCore

The District is required to operate a PM₁₀ sampler as part of the NCore multipollutant monitoring program for the calculation of PM_{10-2.5} data. This NCore requirement is found in the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 3(b)). **Table 10-9** lists the NCore PM₁₀ requirements.

Table 10-10: PM₁₀ Minimum Monitoring Requirements - NCore

Number of PM ₁₀ Samplers Required for NCore Sites* (#)	Number of PM ₁₀ Samplers Active at NCore Sites (#)	Number of PM ₁₀ Samplers Needed at NCore Sites (#)	Name of NCore Site (name)
1	1	0	Lexington Elementary School (LES) 06-073-1022

* While the PM₁₀ sampler is not specifically needed to fulfill NCore requirement, it is needed for PM_{10-2.5} (PMcoarse) measurements.

10.3.3 Monitoring Requirements for Collocation

There is no requirement for the collocation of continuous PM₁₀ samplers in the Code of Federal Regulations. Only manual PM₁₀ samplers are required to have collocation. However, the District deploys one collocated sampler. The collocated PM₁₀ sampler is located at the Kearny Villa Road (KVR) site.

Table 10-11: PM₁₀ Continuous Minimum Monitoring Requirements - Collocation

Number of PM ₁₀ Samplers Required (#)	Number of PM ₁₀ Samplers Active (#)	Number of PM ₁₀ Samplers Required for Collocation (#)	Number of PM ₁₀ Samplers Active for Collocation (#)	Number of PM ₁₀ Samplers Needed for Collocation (#)	Location of Collocated Site(s) (name)
4 - 8	9	0	1	0	Kearny Villa Rd (KVR) 06-073-1016

10.4 PM₁₀ Suitability Comparison to the NAAQS

Many different criteria are required for PM₁₀ data to be considered suitable for comparison to the NAAQS, e.g. siting, sampling frequency, etc. This section will state those criteria.

10.4.1 Sampler Suitability Comparison

The CFR requires that certain operating and siting parameters be met for an instrument to be suitable to be compared to the NAAQS. All District PM₁₀ samplers meet or exceed all the minimum monitoring requirements and sampling frequencies, to be compared to the NAAQS.

Table 10-12 summarizes the suitability for comparison to the NAAQS.

Table 10-12: PM₁₀ Sampler Suitability for Comparison to the NAAQS

	Parameter	Code	Unit	Code	Duration	Code	Equipment	Method	Code	Frequency	Method ID
Amb	Particulate Matter ≤ 10 µm	PM ₁₀	µg/m ³ STD	001	1-Hr	1	Teledyne T640x	Broadband Spec.	639	7/24	EQPM-0516-239
NCore	Particulate Matter ≤ 10 µm	PM ₁₀	µg/m ³ LC STD	105 001	1-Hr	1	Teledyne T640x	Broadband Spec	639	7/24	EQPM-0516-239

10.4.2 Sampler Frequency Comparison

The CFR requires that for PM₁₀ data to be used in regulatory determinations of compliance with the PM₁₀ NAAQS, the PM₁₀ monitors’ sampling frequency must be in accordance with the Code of Federal Regulations (Title 40, Part 58, Subpart B, Section 58.12(e)). All District PM₁₀ samplers meet or exceed all minimum monitoring requirements for the sampling frequency and can be compared to the NAAQS. The sampling frequency is determined from the ratio of concentration of the site of maximum concentration to the 24-hour standard (**Figure 10-5**). The minimum sampling schedule is once every six days. The District operates continuous samplers (7/24) and therefore meets the sampling requirement. **Table 10-13** summarizes these requirements.

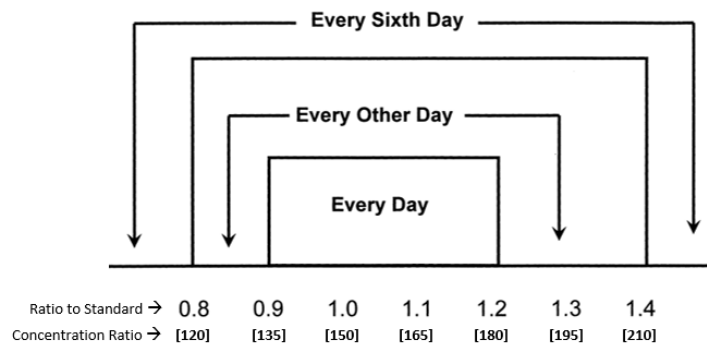


Figure 10-5 PM₁₀ Sampling Frequency from Ratio of Concentration

Table 10-13: PM₁₀ Suitability for Comparison to the NAAQS - Sampling Frequency 2025

Site of Expected Maximum Concentration for 24-Hr (name)	Maximum Concentration for 24-Hr (µg/m ³)	Is Site of Expected Maximum Concentration for 24-Hr < 80% to the NAAQS (yes/no)	What is the Minimum EPA Permitted Sampling Frequency? (#)	What is the Actual Sampling Frequency? (#)	Does the Actual Sampling Frequency Meet EPA Specifications? (yes/no)
Donovan (DVN) 06-073-1014	130	no	1:6	7/24	yes

(left intentionally blank)

11 NATIONAL CORE (NCore)

11.1 Introduction

National Core (NCore) is a multi-pollutant network that integrates several advanced measurement systems for particles, as well as pollutant gases with the existing equipment for a Photochemical Assessment Monitoring Station (PAMS). The EPA designated the El Cajon-Lexington Elementary School (**Figure 11-1**) as the NCore site for the SDAB, so there is additional instrumentation, including PM_{coarse} (values calculated from paired Low-Volume particulate samplers, by subtracting the measured concentrations from a $PM_{2.5}$ Low Volume sampler from the measured concentrations from a PM_{10} Low Volume sampler). The requirements for the NCore program are listed in the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 3) and discussed in this chapter. PM_{coarse} data is calculated from PM data collected from the T640x analyzer that has been deployed at the designated NCore site at El Cajon – Lexington Elementary School), CO (trace level), SO_2 (trace level), and NO_y (Reactive Nitrogen Oxides).

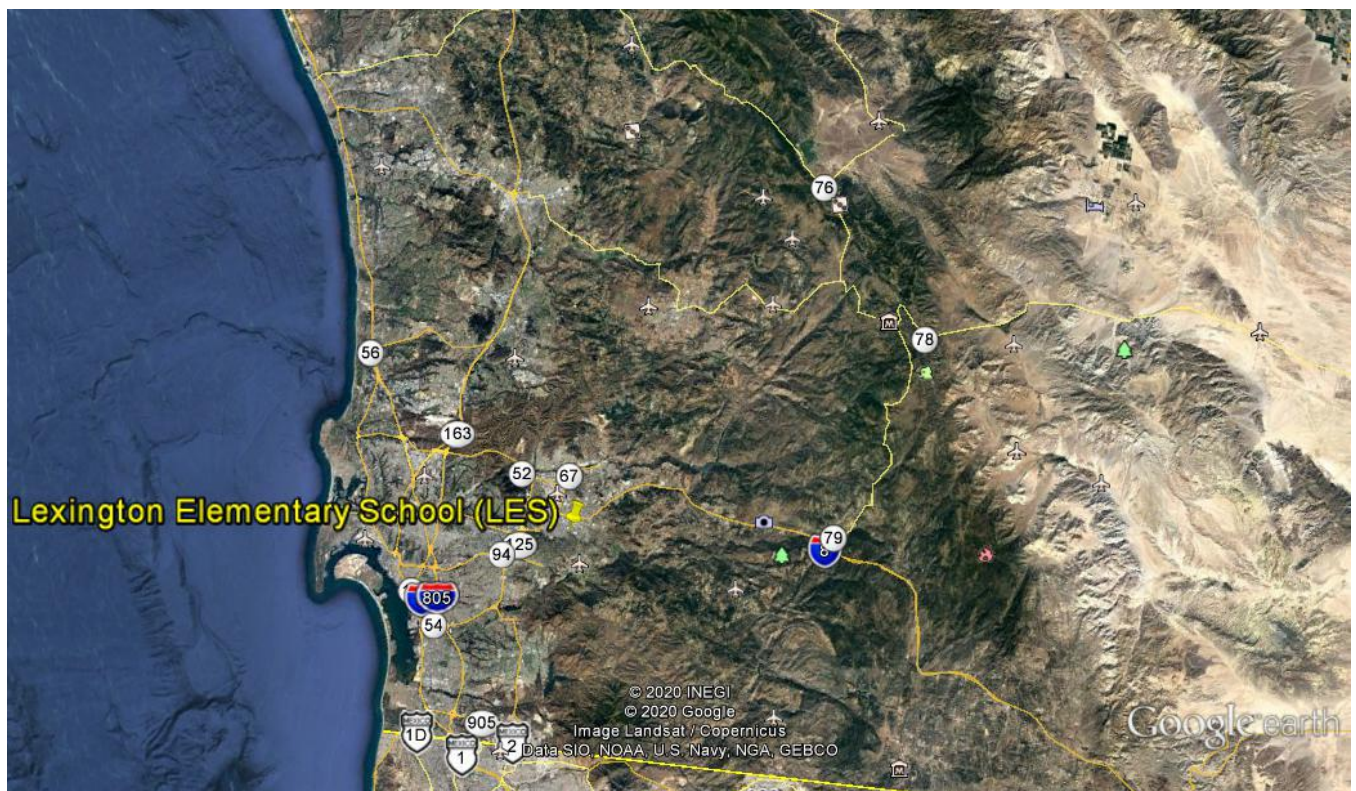


Figure 11-1: NCore Network Map

Table 11-1: NCore Minimum Monitoring Requirements - Equipment & Summary

Required Parameters (40 CFR, Part 58, Appendix D, Section 3)	Number of Monitors Required (#)	Number of Monitors Active (#)	Number of Monitors Needed (#)
PM _{2.5} -Continuous	1	1	0
PM _{2.5} -Sequential (filter-based)	1	1	0
PM _{2.5} -Speciated	1	1	0
PM _{10-2.5} (PMcoarse)*	1	1	0
NCore & PAMS O ₃	1	1	0
SO ₂ -TLE	1	1	0
CO-TLE	1	1	0
NCore & PAMS NO/NO _y	1	1	0
NCore & PAMS Wind speed/Wind direction	1	1	0
NCore & PAMS % Relative Humidity	1	1	0
NCore & PAMS Ambient temperature	1	1	0

*In order obtain PM_{10-2.5} concentrations, The District operates a continuous T640x sampler that collects PM_{2.5} and Pm₁₀ simultaneously. The difference between the two serves as the PM_{10-2.5} concentrations.

11.2 NCore Concentrations

The instrumentation needed for NCore designation are: PMcoarse (calculated values from paired PM₁₀ & PM_{2.5} Low Volume samplers); CO (trace level); SO₂ (trace level); NO_y (total reactive Nitrogen Oxides). **Table 11-2** to **Table 11-6** list the data.

Table 11-2: NCore Concentrations for PM₁₀ - PM_{2.5} (PMcoarse)

PMcoarse (µg/m ³)*	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Max. 24-Hr. Concentration	29.6	30.0	26.2	27.1	30.4	24.4	25.3	20.5	37.1	32.9
98th Percentile of 24-Hr Concentration	26.3	25.1	22.3	23.7	22.6	20.4	21.6	20.5	26.5	24.1
Average of the Quarterly Means	14.0	13.3	13.4	10.8	13.3	12.8	12.7	12.0	12.7	12.6

*Note: PMcoarse (PMc) does not have FRM or FEM designation and cannot be compared to any NAAQS. FSD and ECA were combined.

Table 11-3: NCore Concentrations for CO-TLE

CARBON MONOXIDE (ppm)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Maximum 1-Hr. Concentration	1.7	1.5	1.5	1.3	1.6	1.2	1.5	1.1	1.2	1.2
Maximum 8-Hr. Concentration	1.3	1.4	1.1	1.0	1.4	1.1	1.1	0.9	1.0	0.9

Table 11-4: NCore Concentrations for SO₂-TLE

SULFUR DIOXIDE (ppm)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Maximum 1-Hr SO ₂	0.001	0.001	0.003	0.001	0.002	0.002	0.001	0.001	0.001	0.001
Maximum 24-Hr SO ₂	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001
Annual Average SO ₂	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 11-5: NCore Concentrations for NO_y-NO

NO_y –NO (ppm)**	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Maximum 1-Hr. Concentration	**	**	0.049	0.041	0.043	0.040	0.037	0.040	0.040	0.038
Annual Average	**	**	0.009	0.009	0.008	0.008	0.008	0.008	0.008	0.008

*The NO_y sampler was not operational at the temporary NCore site at Floyd Smith Drive.

Table 11-6: NCore Concentrations for NO₂

NO₂ (ppm)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Maximum 1-Hr. Concentration	0.057	0.044	0.045	0.086	0.044	0.038	0.036	0.039	0.036	0.036
Annual Average	0.009	0.010	0.007	0.014	0.008	0.006	0.008	0.007	0.007	0.007

11.3 NCore Suitability for Comparison to the NAAQS

The requirements for the sampling frequency of monitors for NCore pollutants are located in the Code of Federal Regulations (Title 40, Part 58-B, Section 58.12) and are shown in **Table 11-7** below.

Table 11-7: NCore Suitability for Comparison to the NAAQS – Frequency & Equipment

Parameter		Code	Unit	Code	Duration	Code	Equipment	Method	Code	Sampling Frequency	Method ID
Ozone	O ₃	44201	ppm	007	1-Hr	1	Thermo 49 series	Ultraviolet absorption	047	7/24	EQQA-0880-047
Carbon monoxide Trace Level	CO	42101	ppb	008	1-Hr	1	Thermo 48i-TLE	Nondispersive infrared	554	7/24	RFCA-0981-054
Sulfur dioxide Trace Level	SO ₂	42401	ppb	008	1-Hr 5-min	1 H	Thermo 43i-TLE	Fluorescence	560	7/24	EQSA-0486-060
Nitrogen Dioxide	NO ₂	42602	ppb	008	1-Hr	1	Teledyne T500U	Cavity Attenuated Phase Shift (CAPS)	212	7/24	EQNA-0514-212
Particulate Matter ≤ 2.5 µm (continuous)	PM _{2.5}	88101	µg/m ³ LC	105	1-Hr	1	Teledyne T640x	Broadband Spectroscopy	638	7/24	EQPM-0516-238
Particulate Matter ≤ 10 µm (continuous)	PM ₁₀	85101 LC 81102-STD	µg/m ³ LC STD	105 001	1-Hr	1	Teledyne T640x	Broadband Spectroscopy	639	7/24	EQPM-0516-239
Particulate Matter ≤ 2.5 µm (speciated)	PM _{2.5} CSN	See EPA	See EPA	See EPA	24-Hr	7	URG-3000N	See EPA	See EPA	1:3	Not Applicable
Particulate Matter ≤ 2.5 µm (speciated)	PM _{2.5} STN	See EPA	See EPA	See EPA	24-Hr	7	Met One SuperSASS	See EPA	See EPA	1:3	Not Applicable
Particulate Matter ≤ 2.5 µm (manual)	PM _{2.5}	88101	µg/m ³ LC	105	24-Hr	7	Met One E-SEQ-FRM Sampler w/VSCC	Gravimetric	545	1:3	RFPS-0717-245

(left intentionally blank)

12 PHOTOCHEMICAL ASSESSMENT MONITORING STATIONS (PAMS)

12.1 Introduction

The purpose of the Photochemical Assessment Monitoring Stations (PAMS) program is to help understand, predict, and control ozone concentrations. Ozone is not emitted directly; it is created by the interactions of several different pollutants/emissions, e.g. oxides of nitrogen (NO_x), and volatile organic compounds (VOC), some carbonyls, etc. This enhanced monitoring network to track these different emissions has several different monitoring requirements (e.g. laboratory needs, meteorological needs, etc.) that the District operates and references therein (Note: only the passages applicable/informative to the District are referenced). The site designated as the PAMS monitoring site is the Lexington Elementary School (LES) in El Cajon (**Figure 12-1**). This section will state these requirements for the PAMS program. **Table 12-1** lists the PAMS monitoring requirements. **Table 12-2** lists the PAMS sampling network site at LES. Some of these monitors or samplers required for the PAMS program can also serve as fulfilling other network requirements (e.g. ambient O₃ monitor can fulfill a PAMS O₃ monitoring requirement). Currently, there are no NAAQS standards to compare the data. The PAMS requirements are found in the Code of Federal Regulations (Title 40, Part 58, Appendix D, Section 5). The District meets or exceeds all minimum requirements for PAMS monitoring.

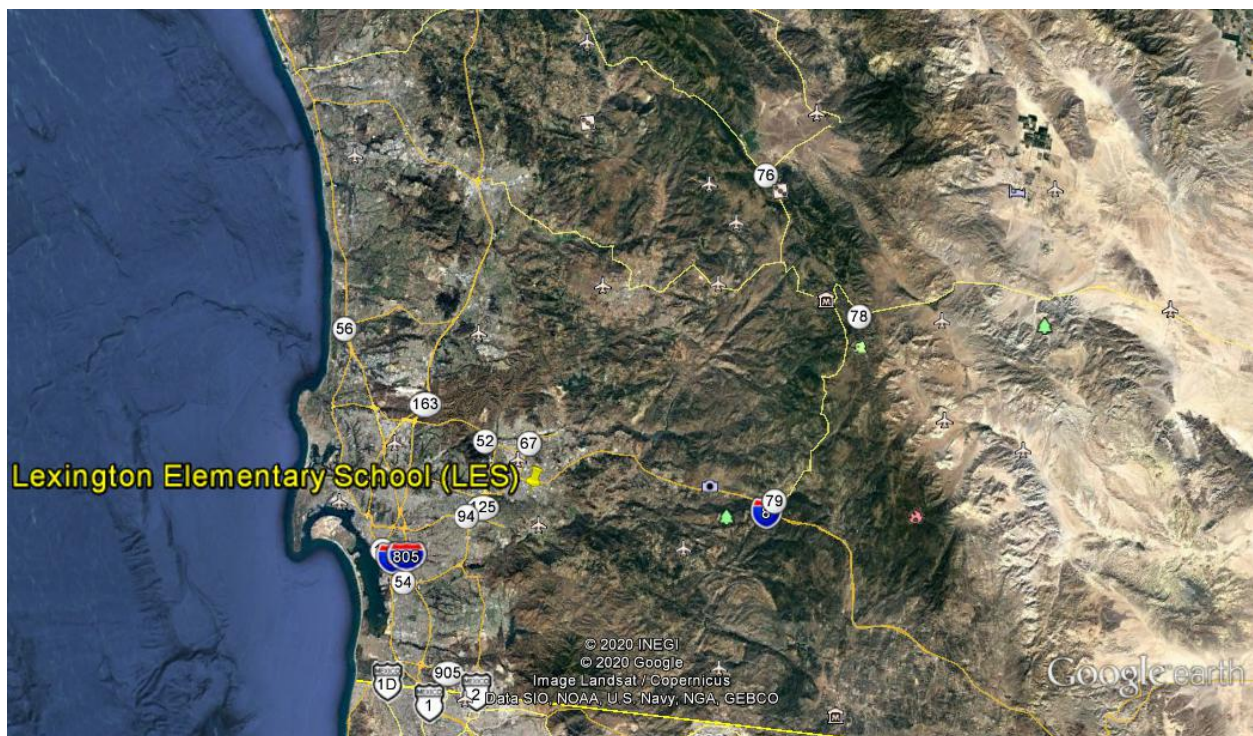


Figure 12-1: PAMS Network Map

Table 12-1: PAMS Minimum Monitoring Requirements - Equipment Summary

PAMS Required Parameters (40 CFR, Part 58, Appendix D, Section 5)	Equipment Required	Equipment On-hand	Equipment Active	Equipment Needed
Hourly averaged speciated volatile organic compounds (VOCs)	1	1	1	0
Three 8-hour averaged carbonyl samples per day on a 1:3	1	1	1	0
NCORE & PAMS O ₃	1	1	1	0
NO	1	1	1	0
True-NO ₂	1	1	1	0
NCORE & PAMS NO _y	1	1	1	0
NCORE & PAMS Hourly averaged ambient temperature	1	1	1	0
NCORE & PAMS Hourly vector-averaged wind direction	1	1	1	0
Hourly average atmospheric pressure	1	1	1	0
NCORE & PAMS Hourly averaged relative humidity	1	1	1	0
Hourly precipitation	1	1	1	0
Hourly averaged mixing-height	1	1	1	0
Hourly averaged solar radiation	1	1	1	0
Hourly averaged ultraviolet radiation	1	1	1	0

Table 12-2: PAMS Sampling Network

Abbreviation	LES			
Name	Lexington Elementary School			
AQS ID	06-073-1022			
PAMS	Monitor Type	SLAMS	SLAMS	SLAMS
	Method	Auto	Cartridges	Cartridges
	Affiliation	PAMS	PAMS	PAMS
	Spatial Scale	NS	NS	NS
	Site Type	PE	PE	PE
	Objective (Federal)	Research	Research	Research
	Analysis By	APCD	APCD	APCD
	Frequency	24/7	1:3	1:6
	Equipment	GCFID	Atec 8000	Atec 8000

12.2 PAMS Minimum Monitoring Requirements – Sampling Season

The District is required to operate PAMS parameters for a minimum sampling period. This requirement is found in the Code of Federal Regulations (CFR Title 40, Part 58, Appendix D, Section 5) and listed in **Table 12-3**

Table 12-3: Minimum Requirements - Sampling Season

Minimum PAMS Monitoring Period (months)	Actual PAMS Monitoring Period (months)	Is the PAMS Monitoring Period Active? (yes/no)
June-August	June-August	Yes

12.3 PAMS Sampling Frequency and Equipment

The PAMS season is from June to August. PAMS parameters include Volatile Organic Compounds (VOCs) and carbonyls. The VOCs are sampled and measured by gas chromatography (auto-GC) that operates on an hourly basis (24-hour sampling/daily) during the PAMS season. During the non-PAMS season, the auto-GC will not be operational. Carbonyls are sampled in cartridges collected using an ATEC sampler. PAMS carbonyl samplers will collect three samples that each have an 8-hour sampling duration. The 8-hour samples are collected on a set time schedule, as follows:

1. 0400 – 1200 (4:00 AM – 12:00 PM)
2. 1200 – 2000 (12:00 PM - 8:00 PM)
3. 2000 – 0400 (8:00 PM – 4:00 AM)

Table 12-4 lists the equipment used for sampling VOCs and carbonyls. **Table 12-5** lists the VOCs sampled by the auto-GC. **Table 12-6** lists the carbonyls sampled using the ATEC sampler. Cartridges sampling for carbonyls are analyzed by the EPA National Contract laboratory.

Table 12-4: PAMS Sampling Equipment for VOCs and Carbonyls

Pollutant	Abbreviation	Samplers	Collection Method	Collection Frequency	Analytical Method	Parameter Code	Method Code
Volatile Organic Compounds	VOCs	n/a	Auto GC	24/7	GC-FID	Table 10.15	n/a
Carbonyl Compounds	n/a	Atec 8000	DNPH cartridges	1:3	HPLC	Table 10.16	202

Table 12-5: PAMS VOC Parameter Codes

Compound	Parameter	Compound	Parameter
Ethylene	43203	2.2.4-Trimethylpentane	43250
Acetylene	43206	n-Heptane	43232
Ethane	43202	Methylcyclohexane	43261
Propylene	43205	2.3.4-Trimethylpentane	43252
Propane	43204	Toluene	45202
Isobutane	43214	2-Methylheptane	43960
1-Butene	43280	3-Methylheptane	43253
n-Butane	43212	n-Octane	43233
trans-2-Butene	43216	Ethylbenzene	45203
cis-2-Butene	43217	m-Xylene	45205
Isopentane	43221	p-Xylene	45206
1-Pentene	43224	Styrene	45220
n-Pentane	43220	o-Xylene	45204
Isoprene	43243	n-Nonane	43235
Trans-2-pentene	43226	Isopropylbenzene	45210
cis-2-Pentene	43227	α-Pinene	43256
2.2-Dimethylbutane	43244	n-Propylbenzene	45209
Cyclopentane	43242	m-Ethyltoluene	45212
2.3-Dimethylbutane	43284	p-Ethyltoluene	45213
2-Methylpentane	43285	1.3.5-Trimethylbenzene	45207
3-Methylpentane	43230	o-Ethyltoluene	45211
1-Hexene	43245	β-Pinene	43257
n-Hexane	43231	1.2.4-Trimethylbenzene	45208
Methylcyclopentane	43262	n-Decane	43238
2.4-Dimethylpentane	43247	1.2.3-Trimethylbenzene	45225
Benzene	45201	m-Diethylbenzene	45218
cyclohexane	43248	p-Diethylbenzene	45219
2-Methylhexane	43263	Undecane	43954
2.3-Dimethylpentane	43291	Total PAMS	43000
3-Methylhexane	43249	Total NMOC	43102

Table 12-6: PAMS Carbonyls Parameter Codes

Compound	Parameter
Formaldehyde	43502
Acetaldehyde	43503
Acetone	43551

(left intentionally blank)

Appendix A: Site Descriptions

A-1 Introduction

The appendices list the stations that comprise the San Diego Air Pollution Control District's ambient air quality network (Network) along with specific information required by the EPA for each monitor. This specific information is cross-referenced against the requirements for siting.

Federal requirements for the monitoring objectives and spatial scales, **Table A-1.1**, are in the CFR annual update on July 1 of every year, 40 CFR Part 58, Subpart G-Federal Monitoring, Appendix D, "Network Design Criteria for Ambient Air Quality Monitoring". **Table A-1.1** summarizes these requirements.

Appendix Table A-1.1: Relationships between Site Types and Scales and Representativeness

Site Type	Definition	Appropriate Siting Scales	Permissible Scales & Definitions
Highest concentration	Site located to determine the highest concentrations expected to occur in the area covered by the network	Micro, Middle, Neighborhood, Urban	Micro (0 – 100 meters), Middle (100 – 500 meters) Neighborhood (500 meters – 4 kilometers) Urban (4 – 50 kilometers)
Maximum ozone concentrations	Occurring downwind from the area of maximum precursor emissions.	Micro, Middle, Neighborhood, Urban	Micro (0 – 100 meters), Middle (100 – 500 meters) Neighborhood (500 meters – 4 kilometers) Urban (4 – 50 kilometers)
Maximum precursor impact	Are typically placed near the downwind boundary of the central business district (CBD) or primary area of precursor emissions mix	Micro, Middle, Neighborhood, Urban	Micro (0 – 100 meters), Middle (100 – 500 meters) Neighborhood (500 meters – 4 kilometers) Urban (4 – 50 kilometers)
Population Exposure	Sites located to determine typical concentrations in areas of high population density	Neighborhood, Urban	Neighborhood (500 meters – 4 kilometers) Urban (4 – 50 kilometers)
Source Oriented	Site located to determine the impact of significant sources or source categories on air quality	Micro, Middle, Neighborhood	Micro (0 – 100 meters), Middle (100 – 500 meters) Neighborhood (500 meters – 4 kilometers)
General/Background	Sites located to determine general background concentration levels	Urban, Regional	Urban (4 – 50 kilometers) Regional (50 – 1,000 kilometers)
Regional transport	Sites located to determine the extent of regional pollutant transport among populated areas and in support of secondary standards.	Urban, Regional	Urban (4 – 50 kilometers) Regional (50 – 1,000 kilometers)
Welfare-related impacts	Sites located to measure air pollution impacts on visibility, vegetation damage, or other welfare based impacts	Urban, Regional	Urban (4 – 50 kilometers) Regional (50 – 1,000 kilometers)
Upwind Background	Sites located to measure overwhelming incoming transport of ozone. Situated in the predominant upwind direction from the maximum precursor emissions location	Neighborhood Urban Regional	Neighborhood (500 meters – 4 kilometers) Urban (4 – 50 kilometers) Regional (50 – 1,000 kilometers)
Quality Assurance	Site located for quality assurance requirements	Micro, Middle, Neighborhood, Urban	Micro (0 – 100 meters), Middle (100 – 500 meters) Neighborhood (500 meters – 4 kilometers) Urban (4 – 50 kilometers)

Federal requirements for correctly siting the inlet sample probe(s) are in the 40 CFR Part 58, Subpart G-Federal Monitoring, Appendix E, “Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring”.

This specific information is presented in a site description template required by the EPA in all network plans. The pollutant monitors must be assigned a specific scale, type, monitoring objective, and designation. These parameters have specific guidelines that must be followed in order for the data collected from the monitors to be considered valid. Additionally, each monitor must meet certain physical parameters, e.g., distance from each other, distance from the road, distance from obstructions, etc. **Table A-1.2** Summary of Probe Monitoring Paths summarizes these requirements. **Figure A-1.1** illustrates the distances PM samplers must be from the nearest traffic lane.

Modifications to the Site Template and General Information

The EPA supplies monitoring organizations with a site description template to use for the input of site information in the Annual Network Report. The District has modified the site description template into two tables. The section of the EPA template that lists the distance from obstructions, collocated monitors, etc., has been moved into a separate table with a more detailed accounting of the requirements provided in **Table A-1.2**.

The traffic count is referenced to the closest cross street listed in the current Traffic Count database maintained by the San Diego Association of Governments (SANDAG). At some station locations, the closest cross street with an Annual Average Daily Traffic (AADT) count may be several hundred meters away. The vehicle count is estimated visually (this is stated, when applicable) and the traffic count for the closest major thoroughfare is also reported for comparison purposes. Traffic count data from SANDAG is done in 5-year allotments. All Traffic counts used for this report is from the latest SANDAG report.

Appendix Table A-1.2: Summary of Probe Monitoring Paths

Pollutant (name)	Scale <maximum monitoring path length> (name)	Height from the ground to the probe, inlet or 80% of monitoring path ¹ (meters)	Horizontal and vertical distance from supporting structures ² to probe, inlet, or 90% of monitoring path ¹ (meters)	Distance from trees to probe, inlet, or 90% of the monitoring path ¹ (meters)	Average daily traffic count (#)	Distance from roadways to probe, inlet, or monitoring path ^{1,10} (meters)		
SO ₂ ^{3,4,5,6}	Middle	Min= 2, Max= 15	> 1	> 10	For all scales Not Applicable	For all scales Not Applicable		
	Neighborhood	Min= 2, Max= 15	> 1	> 10				
	Urban	Min= 2, Max= 15	> 1	> 10				
	Regional	Min= 2, Max= 15	> 1	> 10				
CO ^{4,5,7}	Micro	Min= 3.5, Max= 15	> 1	> 10	For micro scale Not Applicable	For micro scale Min= 2, Max= 10		
	Middle Neighborhood	Min= 2, Max= 15 Min= 2, Max= 15	> 1 > 1	> 10 > 10	For all other scales	For all other scales		
					≤ 10,000	10		
					15,000	25		
					20,000	45		
					30,000	80		
					40,000	115		
50,000	135							
≥ 60,000	150							
O ₃ ^{3,4,5}	Middle	Min= 2, Max= 15	> 1	> 10	For all scales ≥ 10,000	For all scales 10		
	Neighborhood	Min= 2, Max= 15	> 1	> 10				
	Urban	Min= 2, Max= 15	> 1	> 10				
	Regional	Min= 2, Max= 15	> 1	> 10				
NO _y & NO ₂ ^{3,4,5}	Micro	Min= 2, Max= 7	> 1	> 10	For all scales ≥ 10,000	For all scales 10		
	Middle	Min= 2, Max= 15	> 1	> 10				
	Neighborhood	Min= 2, Max= 15	> 1	> 10				
	Urban,	Min= 2, Max= 15	> 1	> 10				
	Regional	Min= 2, Max= 15	> 1	> 10				
PAMS ^{3,4,5}	Neighborhood Urban	Min= 2, Max= 15 Min= 2, Max= 15	> 1 > 1	> 10 > 10	For all scales > 10,000	For all scales 10		
							15,000	20
							20,000	30
							40,000	50
							70,000	100
≥ 110,000	250							
Pb ^{3,4,5,6,8} PM ^{3,4,5,6,8,9}	Micro	Min= 2, Max= 7	> 2	> 10		Min= 5, Max= 15 (street canyon) Min= 2, Max= 10 (street)		
	Neighborhood Urban	Min= 2, Max= 15 Min= 2, Max= 15	> 2 > 2	> 10 > 10		See Figure A-1.1 (below)		

¹Monitoring path for open path analyzers is applicable only to middle or neighborhood scale CO monitoring, middle, neighborhood, urban, and regional scale Now monitoring, and all applicable scales for monitoring SO₂, O₃ and O₃ precursors.

²When probe is located on a rooftop, this separation distance is in reference to walls, parapets, or penthouses located on roof.

³Should be > 20 meters from the dripline of tree(s) and must be 10 meters from the dripline when the tree(s) act as an obstruction

⁴Distance from sampler, probe, or 90% of monitoring path to obstacle, such as a building, must be at least twice the height the obstacle protrudes above the sampler, probe, or monitoring path. Sites not meeting this criterion may be classified as middle scale.

⁵Must have unrestricted airflow 270 degrees around the probe or sampler; 180 degrees if the probe is on the side of a building or a wall.

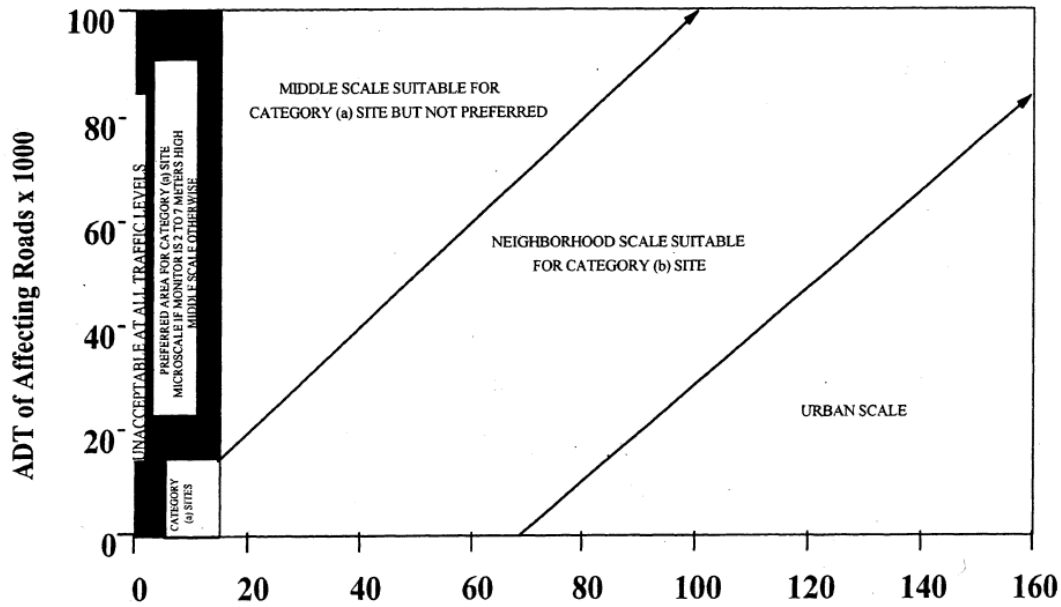
⁶The sampler, probe, or monitoring path should be away from minor source, such as furnace or incineration flues. The separation distance is dependent on the height of the minor source's emission point, the type of waste burned, and the quality of the fuel (sulfur, ash, or lead content). This criterion is designed to avoid undue influences from minor sources.

⁷For microscale CO monitoring sites, the probe must be > 10 meters from a street intersection and preferably at a midblock location

⁸ Collocated monitors must be within 4 meters of each other and at least 2 meters apart for flow rates > 200 liters/min or at least 1 meter apart for samplers having flow rates < 200 liters/min

⁹ For particulate sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement.

¹⁰ Measured from the edge of the nearest lane to the sampler or inlet.



Appendix Figure A.1: Distance of PM Samplers to Nearest Traffic Lane

A-2 Alpine Station Description

Appendix Table A-2.1: Alpine - General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	Alpine
Year Established:	1/1/1972
Site Address:	2300 W. Victoria Dr.
Site Name Abbreviation:	ALP
AQS Number:	06-073-1006
Latitude:	32.842312°
Longitude:	-116.768277°
Elevation above Sea Level:	627 m
General Location:	Trailer adjacent to Padre Reservoir
Ground Cover:	Asphalt
Distance to Road:	17 m west= W. Victoria Drive
Traffic Count (AADT):	2024 AADT: 1,000 to 4,999 range (SANDAG) 2022 AADT: 5,000 to 9,999 range (SANDAG) 2016 AADT: 3,300 (SANDAG) Traffic count taken from nearby Alpine Blvd, which is the closest cross street with traffic count (south/slightly upwind 760 m). W. Victoria Dr. AADT is estimated to be 500.
Site Description:	Due to its geographical location, each year the Alpine station records the highest ozone levels within the air basin. All particulate equipment is on the rooftop of the station.
Monitoring Objectives:	The Alpine location is used to assess downwind transport of fine particulates (PM _{2.5}). NO ₂ data continues to provide information on trends and are an indication of the relative effectiveness of NO _x regulatory and control measures. The Alpine site also provides information used in making burn/no-burn decisions.
Planned Changes:	<i>none</i>



Appendix Figure A.2: Alpine - Over-Head View of Station Location

Appendix Table A-2.2: Alpine – Gaseous Pollutants Monitor Designations + Other

Pollutant	O ₃	NO ₂	Other Zero Air	Other Calibrator
POC	1	2	N/A	N/A
Monitor designation	Primary	Primary	N/A	N/A
Parameter code	44201	42602	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, NAAQS	N/A	N/A
Site type	Highest Concentration	Population Exposure	N/A	N/A
Monitor type	SLAMS	SLAMS	N/A	N/A
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Thermo 49i	Teledyne-API T500U	Teledyne-API 701H	Teledyne-API T700U
Method code	047	212	N/A	N/A
FRM/FEM/ARM/Other	FEM	FEM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Urban Scale	Urban Scale	N/A	N/A
Monitoring start date	01/01/1979	12/17/2021	04/29/2015	04/29/2015
Current sampling frequency	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	N/A	N/A
Sampling season	Year-round	Year-round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Lo-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
12/2Probe material for reactive gases	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	4.83	5.27	N/A	N/A
Any changes within the next 18 months?	No	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	1:1	N/A
Annual Performance Evaluation date	10/09/2025	12/03/2025	09/18/2025	N/A
NPAP date	*	*	N/A	N/A

*Not performed this year.

Appendix Table A-2.3: Alpine - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Continuous (FEM)	PM ₁₀ Continuous (FEM)
POC	3	3
Monitor designation	Primary	Primary
Parameter code	88101 (LC)	81102 (STP)
Basic monitoring objective	NAAQS	NAAQS
Site type	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639
FRM/FEM/ARM/Other	FEM	FEM
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Urban Scale	Urban Scale
Monitoring start date	09/08/2022	09/08/2022
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None
Any PM Hi-Vol sampler w/in 2m	None	None
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	No	No
Suitable for comparison to the NAAQS?	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly
Semi-Annual flow rate audits dates	10/09/2025	10/09/2025
Additional QA flow rate check dates*	01/16/2025, 07/29/2025	01/16/2025, 07/29/2025
PEP date	03/12/2025	**

*Additional QA checks are not official audits

**Not Performed This Year

Appendix Table A-2.4: Alpine - Meteorology Equipment Designations + Other

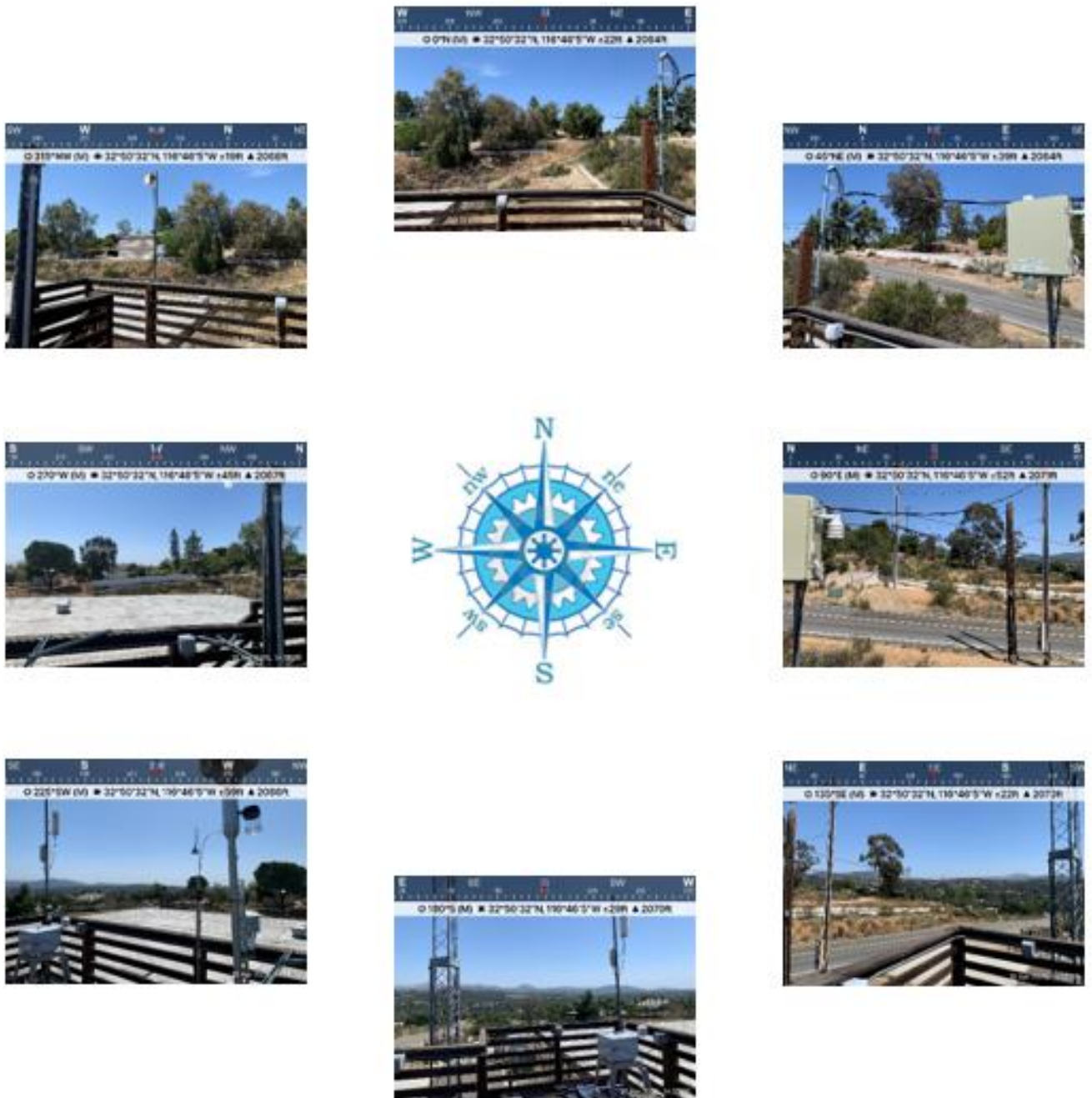
Pollutant	Other Internal Temp	Meteorological Wind Speed	Meteorological Wind Direction	Meteorological External Temp	Meteorological Rel. Humidity
POC	1	2	2	1	1
Monitor designation	N/A	N/A	N/A	N/A	N/A
Parameter code	62107	61101, 61103	61104	62101	62201
Basic monitoring objective	N/A	N/A	N/A	N/A	N/A
Site type	N/A	N/A	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Qualimetrics 4480	RM Young 81000	RM Young 81000	RM Young 41382VF	RM Young 41382VF
Method code	012	066	066	040	012
FRM/FEM/ARM/Other	Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD	APCD
Spatial scale	Urban	Urban	Urban	Urban	Urban
Monitoring start date	04/2015	01/16/2024	01/16/2024	04/2015	01/01/1972
Current sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous
Sampling season	Year-round	Year-round	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	No	Yes	Yes	No	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A	N/A
Frequency of QC check (one-point)	Monthly	Semi-Annually	Semi-Annually	Monthly	Monthly
Annual Performance Evaluation date	09/18/2025	09/18/2025	09/18/2025	09/18/2025	09/18/2025
NPAP date	N/A	N/A	N/A	N/A	N/A

Appendix Table A-2.5: Alpine - Distance the Equipment are from Influences

(meters)	Gas Inlet	NOy Inlet	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI (16.7 lpm)	PM ₁₀ , QAC (16.7 lpm)	BC 1060	PM _{2.5} FRM, PRI (16.7 lpm)	PM _{2.5} FRM, QAC (16.7 lpm)	PM _{2.5} FEM (T640x) (16.7 lpm)	PM _{2.5} STN (6.7 lpm)	PM _{2.5} CSN (22.0 lpm)	† PAMS-VOC* (50 ccpm)	† PAMS-VOC, QAC (50 ccpm)	† PAMS-Carbonyls (1.5 lpm)	† Toxics-VOC (50 ccpm)	† Toxics-VOC, QAC (50 ccpm)	Toxics-Metals (12 lpm)	Meteorology
Gas Inlet	n/a						4.0			1.0									6.2
NOy Inlet																			
Pb-TSP, PRI																			
Pb-TSP, QAC																			
PM ₁₀ , PRI																			
PM ₁₀ , QAC																			
BC 1060	4.0						n/a			3.0									4.7
PM _{2.5} FRM, PRI																			
PM _{2.5} FRM, QAC																			
PM _{2.5} FEM (T640x)	1.0						3.0			n/a									5.2
PM _{2.5} STN																			
PM _{2.5} CSN																			
†PAMS-VOC																			
†PAMS-VOC QAC																			
†PAMS-Carbonyls																			
†Toxics-VOC																			
†Toxics-VOC, QAC																			
Toxics-Metals																			
Meteorology	6.2						4.7			5.2									n/a
<i>height from ground</i>	6.5						5.8			4.5									9.9
<i>distance: from the road</i>	17.0						16.0			16.0									14.4
<i>from the supporting structure (wood deck)</i>	2.0						1.3			2.2									5.5
<i>from obstructions on roof</i>	N						N			N									N
<i>from obstructions not on roof</i>	N						N			N									N
<i>from the closest tree</i>	37.0						40.0			38.0									38.0
<i>from furnace/flue</i>	N						N			N									N
<i>unrestricted air flow (degrees)</i>	360						360			360									360

n/a= Not Applicable; N= None;

†On the side of the station/trailer; *Currently no canister sampling for PAMS. PAMS re-engineered program at Lexington Elementary School.



Appendix Figure A.3: Alpine - Pictures (Directional) from the Station's Deck Top

A-3 Camp Pendleton Station Description

Appendix Table A-3.1: Camp Pendleton - General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	Camp Pendleton
Year Established:	4/1997
Site Address:	21441 West B St.
Site Name Abbreviation:	CMP
AQS Number:	06-073-1008
Latitude:	33.217063 ^o
Longitude:	-117.396169 ^o
Elevation above Sea Level:	16 m
General Location:	Trailer in the W corner of the parking lot across the Corporal Training facility and above the Del Mar beach on Camp Pendleton.
Ground Cover:	Asphalt
Distance to Road:	41 m west= B St.
Traffic Count (AADT):	B St. estimated AADT= 500 (No traffic count is available for the base) 2023 AADT: 175,000 (Caltrans). Closest traffic count is Interstate 5 (east/downwind 440 m).
Site Description:	This station is a trailer located within the Marine Corps Camp Pendleton Base and sits atop a bluff overlooking the Pacific Ocean. In 1997, it replaced the Oceanside station about 7.6 km south east (east of I-5) of the CMP location. Due to its geographical location, this station records over-water transport from the South Coast Air Basin. Diesel truck motor pool 61 m west of the stations and at the base of the bluffs.
Monitoring Objectives:	This site functions as a transport site due to its geographical location. It is used to provide information on trends for the pollutants, including Ozone, NO _x , and PM _{2.5} .
Planned Changes:	<i>Not within the next 18-mon, but due to structures and heavy machinery (motor pool) encroaching on the station, as well as frequent power outages, this station will need to be relocated at some point. Once a suitable replacement location has been secured, the District will work with EPA to formalize the relocation process.</i>



Appendix Figure A.4: Camp Pendleton - Over-Head View of Station Location

Appendix Table A-3.2: Camp Pendleton - Gaseous Pollutants Monitor Designations & Other

Pollutant	O ₃	NO ₂	Other Zero Air	Other Calibrator
POC	1	2	N/A	N/A
Monitor designation	Primary	Primary	N/A	N/A
Parameter code	44201	42602	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, NAAQS	N/A	N/A
Site type	Population Exposure	Population Exposure	N/A	N/A
Monitor type	SLAMS	SLAMS	N/A	N/A
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Thermo 49i	Teledyne API T500U	Teledyne-API 701H	Teledyne-API T700U
Method code	047	212	N/A	N/A
FRM/FEM/ARM/Other	FEM	FEM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Not Applicable	Not Applicable
Monitoring start date	1997	12/16/2021	04/29/2015	04/29/2015
Current sampling frequency	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	N/A	N/A
Sampling season	Year round	Year round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	3.77	4.26	N/A	N/A
Any changes within the next 18 months?	No	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	1:1	N/A
Annual Performance Evaluation date	02/20/2025	02/13/2025	06/25/2025	N/A
NPAP date	*	*	N/A	N/A

*Not performed this year

Appendix Table A-3.3: Camp Pendleton - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Continuous (FEM)	PM ₁₀ Continuous (FEM)
POC	3	3
Monitor designation	Primary	Primary
Parameter code	88101 (LC)	81102(STP)
Basic monitoring objective	NAAQS	NAAQS
Site type	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639
FRM/FEM/ARM/Other	FEM	FEM
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Urban Scale	Urban Scale
Monitoring start date	08/30/2022	08/30/2022
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None
Any PM Hi-Vol sampler w/in 2m	None	None
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	No	No
Suitable for comparison to the NAAQS?	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly
Semi-Annual flow rate audits dates	02/20/2025	02/20/2025
Additional QA flow rate check dates*	05/22/2025, 11/24/2025	05/22/2025, 11/24/2025
PEP date	05/29/2025	**

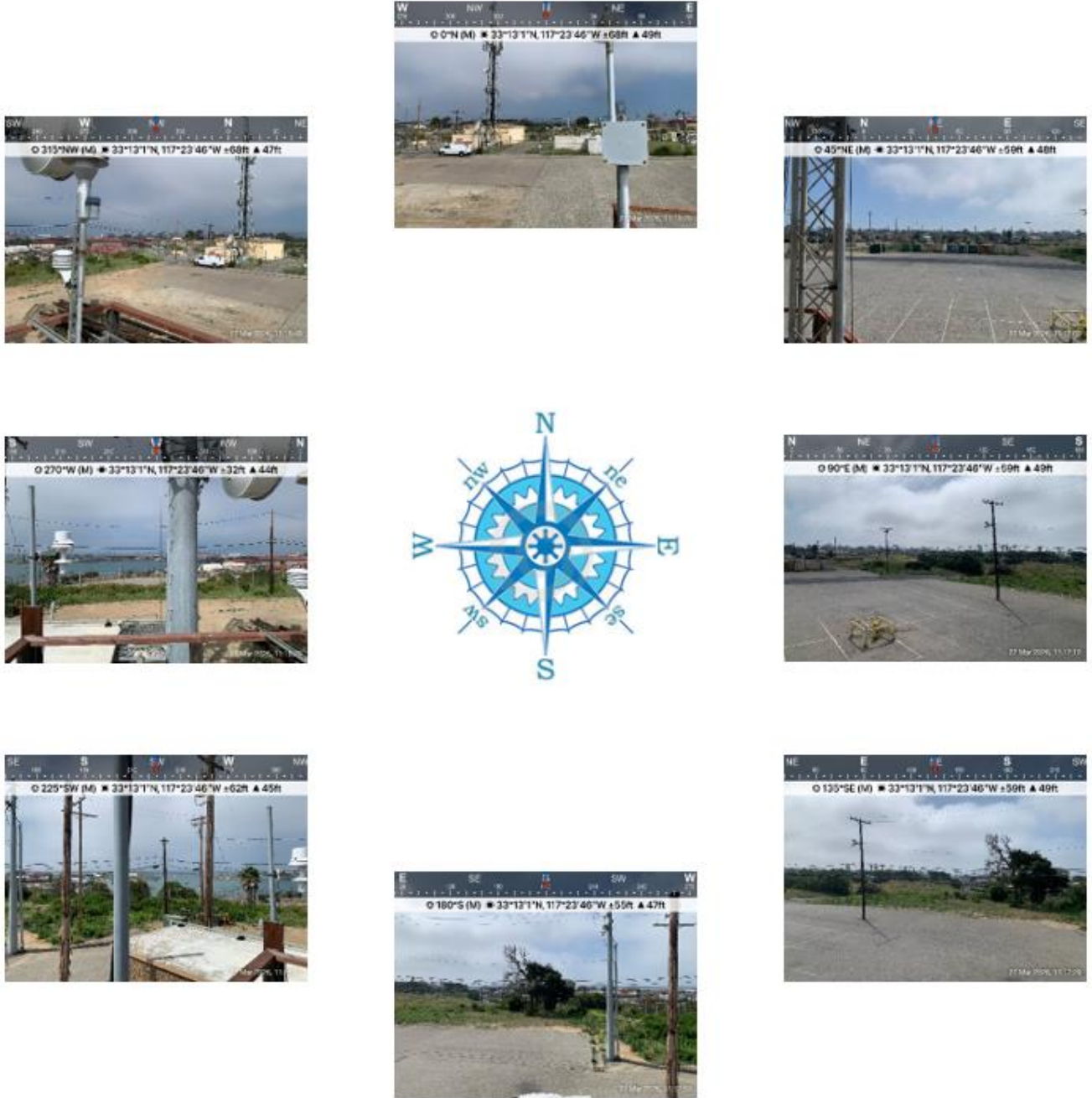
*Additional QA checks are not official audits

**Not performed this year

Appendix Table A-3.4: Camp Pendleton - Meteorological Equipment Designation & Other

Pollutant	Other Internal Temp	Meteorological Wind Speed	Meteorological Wind Direction	Meteorological External Temp
POC	1	2	2	1
Monitor designation	N/A	N/A	N/A	N/A
Parameter code	62107	61101	61104	62101
Basic monitoring objective	N/A	N/A	N/A	N/A
Site type	N/A	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Qualimetrics 4480	RM Young 81000	RM Young 81000	Qualimetrics 4480
Method code	012	066	066	040
FRM/FEM/ARM/Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Monitoring start date	1997	02/22/2024	02/22/2024	1997
Current sampling frequency	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous
Sampling season	Year-round	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	No	No	No	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A
Frequency of QC check (one-point)	Monthly	Semi-Annually	Semi-Annually	Monthly
Annual Performance Evaluation date	06/25/2025	*	*	06/25/2025
NPAP date	N/A	N/A	N/A	N/A

*Annual evaluation not performed due to safety concern.



Appendix Figure A.5: Camp Pendleton - Pictures (Directional) from the Station's Deck Top

A-4 Chula Vista Station Description

Appendix Table A-4.1: Chula Vista – General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	Chula Vista
Year Established:	01/20/1972
Site Address:	84 East J St.
Site Name Abbreviation:	CVA
AQS Number:	06-073-0001
Latitude:	32.631175 ^o
Longitude:	-117.059115 ^o
Elevation above Sea Level:	55 m
General Location:	Trailer in the W corner of the Chula Vista Elementary School District offices parking lot
Ground Cover:	Asphalt
Distance to Road:	51 m northwest= E. J St.; 301 m south-southeast Hilltop Dr.
Traffic Count (AADT):	2024 AADT Range: 5,000 to 9,999 (SANDAG). Hilltop Dr. at E. J St.
Site Description:	This station is a trailer located on the western corner of the Chula Vista Elementary School District Administration property, immediately south of Chula Vista Fire Station No. 2.
Monitoring Objectives:	Helps track trends for an area that has a high rate of asthma.
Planned Changes:	<i>This station and work area will be demolished and reconfigured, respectively (date TBD). During this phase, there will be no sampling (EPA approved).</i>



Appendix Figure A.6: Chula Vista – Over-Head View of Station Location

Appendix Table A-4.2: Chula Vista - Gaseous Pollutants Monitor Designations & Other

Pollutant	O ₃	NO ₂	Other Zero Air	Other Calibrator
POC	1	2	N/A	N/A
Monitor designation	Primary	Primary	N/A	N/A
Parameter code	44201	42602	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, NAAQS	N/A	N/A
Site type	Population Exposure	Population Exposure	N/A	N/A
Monitor type	SLAMS	SLAMS	N/A	N/A
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Thermo 49i	Teledyne-API T500U	Teledyne-API 701H	Teledyne-API T700U
Method code	047	212	N/A	N/A
FRM/FEM/ARM/Other	FEM	FEM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	N/A	N/A
Monitoring start date	1972	12/20/2021	2015	2015
Current sampling frequency	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	N/A	N/A
Sampling season	Year-round	Year-round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	4.13	4.63	N/A	N/A
Any changes within the next 18 months?	Yes	Yes	Yes	Yes
Suitable for comparison to the NAAQS?	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	1:1	N/A
Annual Performance Evaluation date	03/18/2025	03/18/2025	12/17/2025	N/A
NPAP date	*	*	N/A	N/A

*Not performed this year

Appendix Table A-4.3: Chula Vista - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Continuous (FEM)	PM ₁₀ Continuous (FEM)
POC	3	3
Monitor designation	Primary	Primary
Parameter code	88101 (LC)	81102(STP)
Basic monitoring objective	NAAQS	NAAQS
Site type	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639
FRM/FEM/ARM/Other	FEM	FEM
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	06/30/2023	06/30/2023
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None
Any PM Hi-Vol sampler w/in 2m	None	None
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	Yes	Yes
Suitable for comparison to the NAAQS?	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly
Semi-Annual flow rate audits dates	12/17/2025	12/17/2025
Additional QA flow rate check dates*	02/09/2025, 04/17/2025, 11/25/2025	02/09/2025, 04/17/2025, 11/25/2025
PEP date	2/26/2025	**

*Additional QA checks are not official audits.

** Not performed this year

Appendix Table A-4.4: Chula Vista - Other Pollutants Monitor Designations

Pollutant	Toxics-VOC	Toxics-Metals	Toxics-Cr(VI)	Toxics-Aldehyde
POC	See ARB	See ARB	See ARB	See ARB
Monitor designation	N/A	N/A	N/A	N/A
Parameter code	See ARB	See ARB	See ARB	See ARB
Basic monitoring objective	Research	Research	Research	Research
Site type	Population Exposure	Population Exposure	Population Exposure	Population Exposure
Monitor type	CA Toxics	CA Toxics	CA Toxics	CA Toxics
Network affiliation	CA Toxics	CA Toxics	CA Toxics	CA Toxics
Instrument manufacturer & model	Xontech 910	Xontech 924*	Xontech 924*	Xontech 924*
Method code	See ARB	See ARB	See ARB	See ARB
FRM/FEM/ARM/Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	ARB	ARB	ARB	ARB
Reporting agency	ARB	ARB	ARB	ARB
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	1988	1988	1988	1988
Current sampling frequency	1:12	1:12	1:12	1:12
Required sampling frequency	1:6	1:6	1:6	1:6
Sampling season	Year-round	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	Yes	Yes	Yes	Yes
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A
Frequency of flow rate verification	N/A	N/A	N/A	N/A
Annual Performance Evaluation date	N/A	N/A	N/A	N/A
NPAP date	N/A	N/A	N/A	N/A

*CARB installed a T-SASS to replace the Xontech 924 at CVA site on 11/21/2026. A method code to be added to AQS.

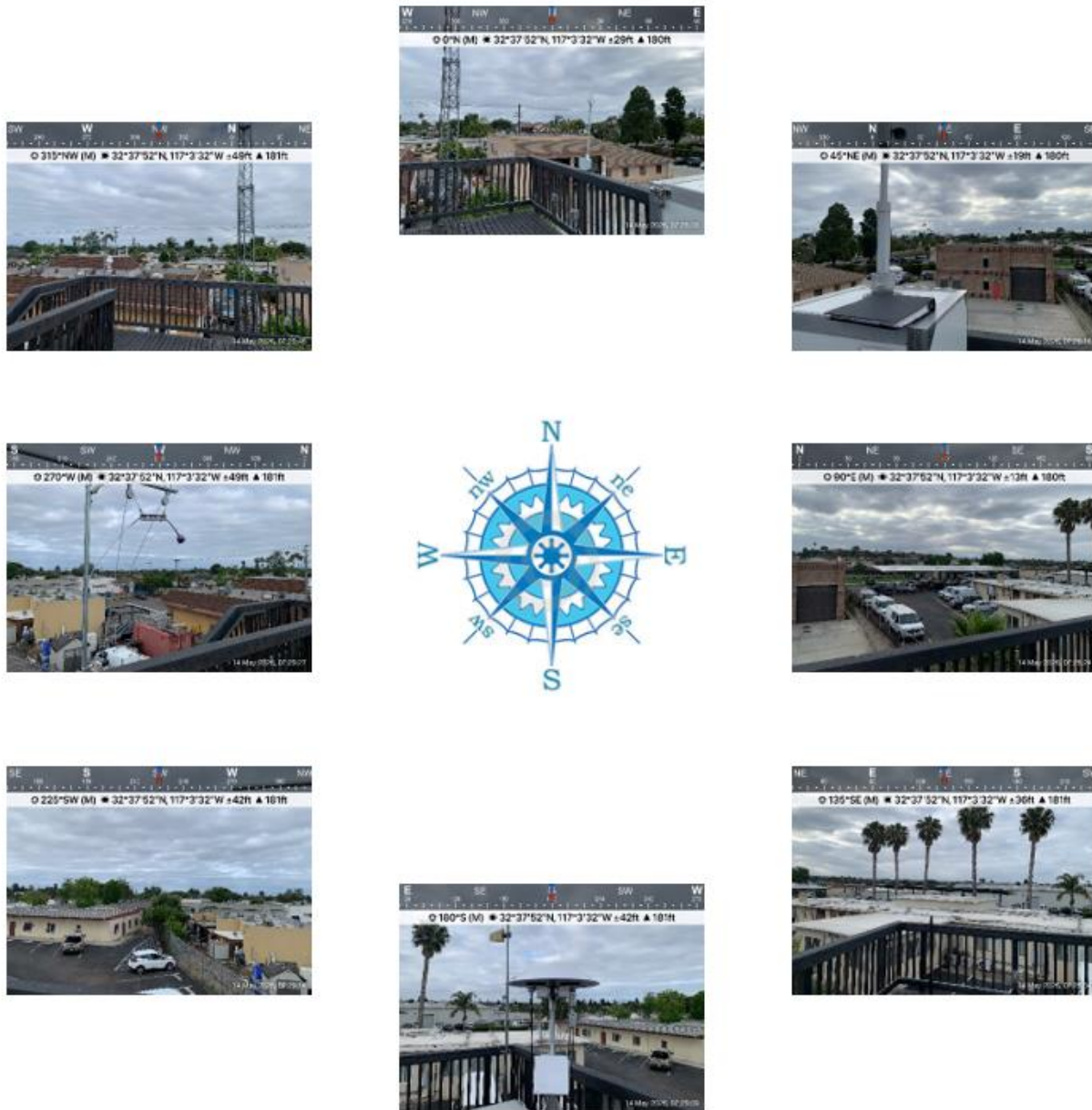
Appendix Table A-4.5: Chula Vista - Meteorological Equipment Designations & Other

Pollutant	Other Internal Temp	Meteorological Wind Speed	Meteorological Wind Direction	Meteorological External Temp
POC	1	2	2	1
Monitor designation	N/A	N/A	N/A	N/A
Parameter code	62107	61101, 61103	61104	62101
Basic monitoring objective	N/A	N/A	N/A	N/A
Site type	N/A	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Qualimetrics 4480	RM Young 81000	RM Young 81000	RM Young 41382VF
Method code	012	066	066	040
FRM/FEM/ARM/Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Monitoring start date	1972	2/26/2024	2/26/2024	02/01/1998
Current sampling frequency	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous
Sampling season	Year-round	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	Yes	Yes	Yes	Yes
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A
Frequency of QC check (one-point)	Monthly	Semi-Annually	Semi-Annually	Monthly
Annual Performance Evaluation date	12/17/2025	12/17/2025	12/17/2025	12/17/2025
NPAP date	N/A	N/A	N/A	N/A

Appendix Table A-4.6: Chula Vista – Distance the Equipment are from Influences

(meters)	Gas Inlet	NOy Inlet	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI, (16.7 lpm)	PM ₁₀ , QAC (16.7 lpm)	BC 1060	PM _{2.5} FRM, PRI (16.7 lpm)	PM _{2.5} FRM, QAC (16.7 lpm)	PM _{2.5} PM ₁₀ , FEM T640x (16.7 lpm)	PM _{2.5} STN (6.7 lpm)	PM _{2.5} CSN (22.0 lpm)	† PAMS-VOC (50 ccpm)	† PAMS-VOC, QAC (50 ccpm)	† PAMS-Carbonyls (1.5 lpm)	Toxics-VOC (50 ccpm)	Toxics-VOC, QAC (50 ccpm)	Toxics Metals T-SASS (1-14 lpm)	Meteorology
Gas Inlet	n/a									2.4						4.4		6.0	4.4
NOy Inlet																			
Pb-TSP, PRI																			
Pb-TSP, QAC																			
PM ₁₀ , PRI																			
PM ₁₀ , QAC																			
BC 1060																			
PM _{2.5} FRM, PRI																			
PM _{2.5} FRM, QAC																			
PM _{2.5} PM ₁₀ FEM	2.4															3.2		3.7	5.1
PM _{2.5} STN																			
PM _{2.5} CSN																			
†PAMS-VOC																			
†PAMS-VOC, QAC																			
†PAMS-Carbonyls																			
Toxics-VOC	4.4									3.2								3.1	5.3
Toxics-VOC, QAC																			
Toxics Metals (T-SASS)	6.0									3.7						3.1			7.7
Meteorology	4.4									5.1						5.3		7.7	
<i>height from ground</i>	6.7									7.2						6.6		6.5	9.7
<i>distance: from the road</i>	54									54						54		54	54
<i>from the supporting structure</i>	2.1									2.5						2.0		1.9	5.1
<i>from obstructions on roof</i>	N									N						N		N	N
<i>from obstructions not on roof</i>	N									N						N		N	N
<i>from the closest tree</i>	34									34						34		34	34
<i>from furnace/flue</i>	N									N						N		N	N
<i>unrestricted air flow (degrees)</i>	360									360						360		360	360

n/a= Not Applicable; N= None; †On the side of the station/trailer



Appendix Figure A.7: Chula Vista - Pictures (Directional) from the Ground

A-5 Donovan Station Description

Appendix Table A-5.1: Donovan - General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	Donovan
Year Established:	1/2005 PM ₁₀ sampler original site date; Relocated 800 m east on 7/2014
Site Address:	Donovan State Prison Rd. (200 m west of Alta Rd.)
Site Name Abbreviation:	DVN
AQS Number:	06-073-1014
Latitude:	32.578267 ^o
Longitude:	-116.921359 ^o
Elevation above Sea Level:	185 m
General Location:	200 m east of Alta Rd on the Donovan Prison Rd.
Ground Cover:	Asphalt
Distance to Road:	26 m north= Donovan Prison Rd.
Traffic Count (AADT):	Estimated AADT: 300 (no traffic count available) Station is 200 meters west of Alta Rd. Closest street with traffic count, Otay Mesa and Alta Rd (southwest/downwind 2,100 m). 2024 AADT Range: 5,000 to 9,999 (SANDAG). 2022 AADT Range: 1,000 to 4,999 (SANDAG).
Site Description:	This site is situated at the entrance to the Richard J. Donovan Correctional Facility.
Monitoring Objectives:	This site is primarily used to measure neighborhood scale concentrations in the southeast county. This site is also near the District's International Border Community.
Planned Changes:	None



Appendix Figure A.8: Donovan - Picture of the Location

Appendix Table A-5.2: Donovan - Gaseous Pollutants Monitor Designations & Other

Pollutant	O ₃	NO ₂	Other Zero Air	Other Calibrator
POC	1	2	N/A	N/A
Monitor designation	Primary	Primary	N/A	N/A
Parameter code	44201	42602	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, NAAQS	N/A	N/A
Site type	Population Exposure	Highest Concentration	N/A	N/A
Monitor type	SLAMS	SLAMS	N/A	N/A
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Thermo 49i	Teledyne-API T500U	Teledyne-API 701H	Teledyne-API T700U
Method code	047	212	N/A	N/A
FRM/FEM/ARM/Other	FEM	FEM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	N/A	N/A
Monitoring start date	09/01/2014	12/27/2021	07/2014	2015
Current sampling frequency	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	N/A	N/A
Sampling season	Year-round	Year-round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	3.60	4.07	N/A	N/A
Any changes within the next 18 months?	No	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	1:1	N/A
Annual Performance Evaluation date	02/11/2025	02/11/2025	07/03/2025	N/A
NPAP date	*	*	N/A	N/A

*Not performed this year

Appendix Table A-5.3: Donovan - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Continuous (FEM)	PM ₁₀ Continuous (FEM)
POC	3	3
Monitor designation	Primary	Primary
Parameter code	88101 (LC)	81102 (STP)
Basic monitoring objective	NAAQS	NAAQS
Site type	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639
FRM/FEM/ARM/Other	FEM	FEM
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	08/02/2022	08/02/2022
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None
Any PM Hi-Vol sampler w/in 2m	None	None
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	No	No
Suitable for comparison to the NAAQS?	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly
Semi-Annual flow rate audits dates	07/03/2025	07/03/2025
Additional QA flow rate check dates*	04/24/2025, 10/31/2025	04/24/2025, 10/31/2025
PEP date	03/05/2025	**

*Additional QA checks are not official audits.

** Not performed this year

Appendix Table A-5.4 Donovan - Other Additional Pollutants Monitor Designations

Pollutant	TOXICS-Carbonyls	TOXICS-Carbonyls
POC	1	2
Monitor designation	Primary	Collocated
Basic monitoring objective	Research	Research
Site type	Population Exposure	Population Exposure
Monitor type	Other (SDAPCD Network)	Other (SDAPCD Network)
Network affiliation	N/A	N/A
Instrument manufacturer & model	Atec 8000	Atec 8000
Method code	202	202
FRM/FEM/ARM/Other	Other	Other
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Middle	Middle
Monitoring start date	2017	2017
Current sampling frequency	1:6	1:12
Required sampling frequency	1:6	1:12
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	No	No
Suitable for comparison to the NAAQS?	N/A	N/A
Frequency of flow rate verification	N/A	N/A
Semi-Annual flow rate audits dates	N/A	N/A
Additional QA flow rate check dates	N/A	N/A
Annual Performance Evaluation date	N/A	N/A
NPAP date	N/A	N/A

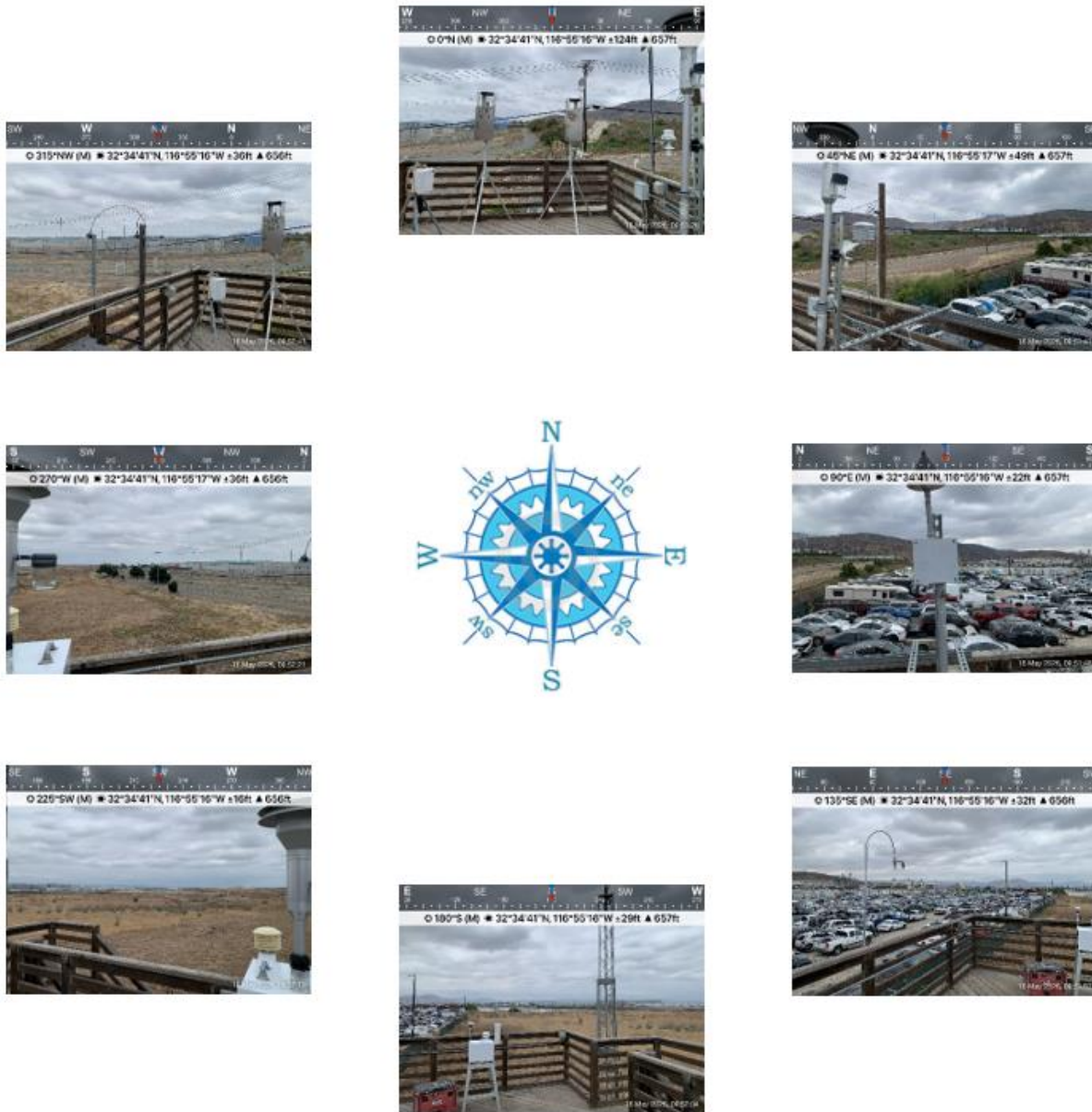
Appendix Table A-5.5: Donovan - Meteorological Equipment Monitor Designations & Other

Pollutant	Other Internal Temp	Meteorological Wind Speed	Meteorological Wind Direction	Meteorological External Temp
POC	1	2	2	1
Monitor designation	N/A	N/A	N/A	N/A
Parameter code	62107	61101, 61103	61104	62101
Basic monitoring objective	N/A	N/A	N/A	N/A
Site type	N/A	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Qualimetrics 4480	Qualimetrics 2030	Qualimetrics 2020	RM Young 41382VF
Method code	012	066	066	040
FRM/FEM/ARM/Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	09/01/2014	01/19/2024	01/19/2024	09/01/2014
Current sampling frequency	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous
Sampling season	Year-round	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	No	Yes	Yes	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A
Frequency of QC check (one-point)	Monthly	Semi-Annually	Semi-Annually	Monthly
Annual Performance Evaluation date	04/29/2025	07/24/2025	07/24/2025	04/29/2025
NPAP date	N/A	N/A	N/A	N/A

Appendix Table A-5.6: Donovan - Distance the Equipment are from Influences

(meters)	Gas Inlet	Q-ACSM (CARB)	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI (16.7 lpm)	PM ₁₀ , QAC (16.7 lpm)	BC 1060*	PM _{2.5} FRM, PRI (16.7 lpm)	E-Seq TSP Metals (16.7 lpm)	PM _{2.5} , PM ₁₀ FEM T640x (16.7 lpm)	SuperSASS (OCEC)*	PM _{2.5} CSN (22.0 lpm)	† PAMS-VOC (50 ccpm)	† Toxics-Carbonyls, PRI (1.5 lpm)	† Toxics-Carbonyls, QAC, (1.5 lpm)	Toxics-VOC (50 ccpm)	Toxics-VOC, QAC (50 ccpm)	Toxics-Metals (12 lpm)	Meteorology
Gas Inlet	n/a	2.5					4.5		2.3	1.4				4.6	4.1				4.6
Q-ACSM (CARB)	2.5						2.6		3.7	4.0				6.9	6.2				6.2
Pb-TSP, PRI																			
Pb-TSP, QAC																			
PM ₁₀ , PRI																			
PM ₁₀ , QAC																			
*BC 1060	4.5	2.6							4.2	5.8				7.8	6.9				5.3
PM _{2.5} FRM, PRI																			
E-Seq TSP Metals	2.3	3.7					4.2			2.3				3.3	2.5				5.5
PM _{2.5} FEM	1.4	4.0					5.8		2.3					3.4	3.1				7.2
SuperSASS (OC/EC)																			
PM _{2.5} CSN																			
†PAMS-VOC																			
†Toxics-Carbonyls	4.6	6.9					7.8		3.3	3.4					0.8				7.1
†Tox-Carbonyl,QAC	4.1	6.2					6.9		2.5	3.1				0.8					7.5
Toxics-VOC																			
Toxics-VOC, QAC																			
Toxics-Metals																			
Meteorology	4.6	6.2					5.3		5.5	7.2				8.1	7.5				
<i>height from ground</i>	6.4	6.1					5.6		6.2	6.5				5.9	5.9				10.1
<i>distance: from the road</i>	30	30					34		30	29				27	27				35
<i>from the supporting structure (wood deck)</i>	2.1	1.9					1.3		1.9	2.2				N	N				5.8
<i>from obstructions on roof</i>	N	N					N		N	N				N	N				N
<i>from obstructions not on roof</i>	N	N					N		N	N				N	N				N
<i>from the closest tree</i>	N	N					N		N	N				N	N				N
<i>from furnace/flue</i>	N	N					N		N	N				N	N				N
<i>unrestricted air flow (degrees)</i>	360	360					360		360	360				360	360				360

n/a= Not Applicable; N= None; †On the side of the station/trailer *BC1060 & SuperSASS = District's Community Air Protection Program



Appendix Figure A.9: Donovan - Pictures (Directional) from the Station's Deck Top

A-6 Kearny Villa Road Station Description

Appendix Table A-6.1: Kearny Villa Road - General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	Kearny Villa Rd.
Year Established:	11/5/2010
Site Address:	6125A Kearny Villa Rd.
Site Name Abbreviation:	KVR
AQS Number:	06-073-1016
Latitude:	32.845722 ^o
Longitude:	-117.123983 ^o
Elevation above Sea Level:	132 m
General Location:	Trailer in the SW corner of Camp Elliot (adjacent to Marine Corps Air Station Miramar).
Ground Cover:	Asphalt & Packed dirt
Distance to Road:	180 m west= Kearny Villa Rd. 542 m southwest= Ruffin Rd.
Traffic Count (AADT):	2024 AADT Range: 5,000 to 9,999 (SANDAG) along nearby Ruffin Rd. 2022 AADT Range: 5,000 to 9,999 (SANDAG) along Kearny Villa Rd
Site Description:	When this location housed only a wind profiler, it was originally called Miramar (MMR). In 2010, when the District relocated the Overland station (KMA) alongside the wind profiler for the PAMS program, it was formally re-designated as KVR. The profiler is decommissioned; the station is located on the southeast section of Marine Corps Air Station Miramar (MCAS) called Camp Elliot.
Monitoring Objectives:	It provides representative data for a large area and is quality assurance location for the PM _{2.5} Manual program.
Planned Changes:	<i>none</i>



Appendix Figure A.10: Kearny Villa Road - Over-Head View of Station Location

Appendix Table A-6.2: Kearny Villa Road – Gaseous Pollutants Monitor Designations & Other

Pollutant	O ₃	NO ₂	Other Zero Air	Other Calibrator
POC	1	2	N/A	N/A
Monitor designation	Primary	Primary	N/A	N/A
Parameter code	44201	42602	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, NAAQS	N/A	N/A
Site type	Population Exposure	Population Exposure	N/A	N/A
Monitor type	SLAMS	SLAMS	N/A	N/A
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Thermo 49i	Teledyne-API T500U	Teledyne-API 701H	Teledyne-API T700U
Method code	047	212	N/A	N/A
FRM/FEM/ARM/Other	FEM	FEM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	N/A	N/A
Monitoring start date	01/01/2010	12/21/2021	11/2010	2015
Current sampling frequency	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	N/A	N/A
Sampling season	Year-round	Year-round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	5.57	3.50	N/A	N/A
Any changes within the next 18 months?	No	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	1:1	N/A
Annual Performance Evaluation date	01/16/2025	01/16/2025	01/27/2025, 09/25/2025	N/A
NPAP date	*	*	N/A	N/A

*Not performed this year

Appendix Table A-6.3: Kearny Villa Road - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Continuous, PRI (FEM)	PM ₁₀ Continuous, PRI (FEM)	PM _{2.5} Continuous, CO (FEM)	PM ₁₀ Continuous, CO (FEM)
POC	3	3	4	4
Monitor designation	Primary	Primary	Collocated	Collocated
Parameter code	88101 (LC)	81102 (STP)	88101 (LC)	81102 (STP)
Basic monitoring objective	NAAQS	NAAQS	QAC	QAC
Site type	Population Exposure	Population Exposure	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639	638	639
FRM/FEM/ARM/Other	FEM	FEM	FEM	FEM
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	06/30/2023	06/30/2023	06/30/2023	06/30/2023
Current sampling frequency	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous
Sampling season	Year-round	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None	None	None
Any PM Hi-Vol sampler w/in 2m	None	None	None	None
Probe material for reactive gases	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	No	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly	Monthly	Monthly
Semi-Annual flow rate audits dates	01/16/2025, 02/25/2025	01/16/2025, 02/25/2025	01/16/2025, 02/25/2025	01/16/2025, 02/25/2025
Additional QA flow rate check dates*	01/24/2025, 02/14/2025, 04/15/2025, 10/16/2025	01/24/2025, 02/14/2025, 04/15/2025, 10/16/2025	01/24/2025, 02/14/2025, 04/15/2025, 10/16/2025	01/24/2025, 02/14/2025, 04/15/2025, 10/16/2025
PEP date	5/29/2025	**	5/29/2025	**

*Additional QA checks are not official audits.

**Not performed

Appendix Table A-6.4: Kearny Villa Road - Meteorological Equipment Designations & Other

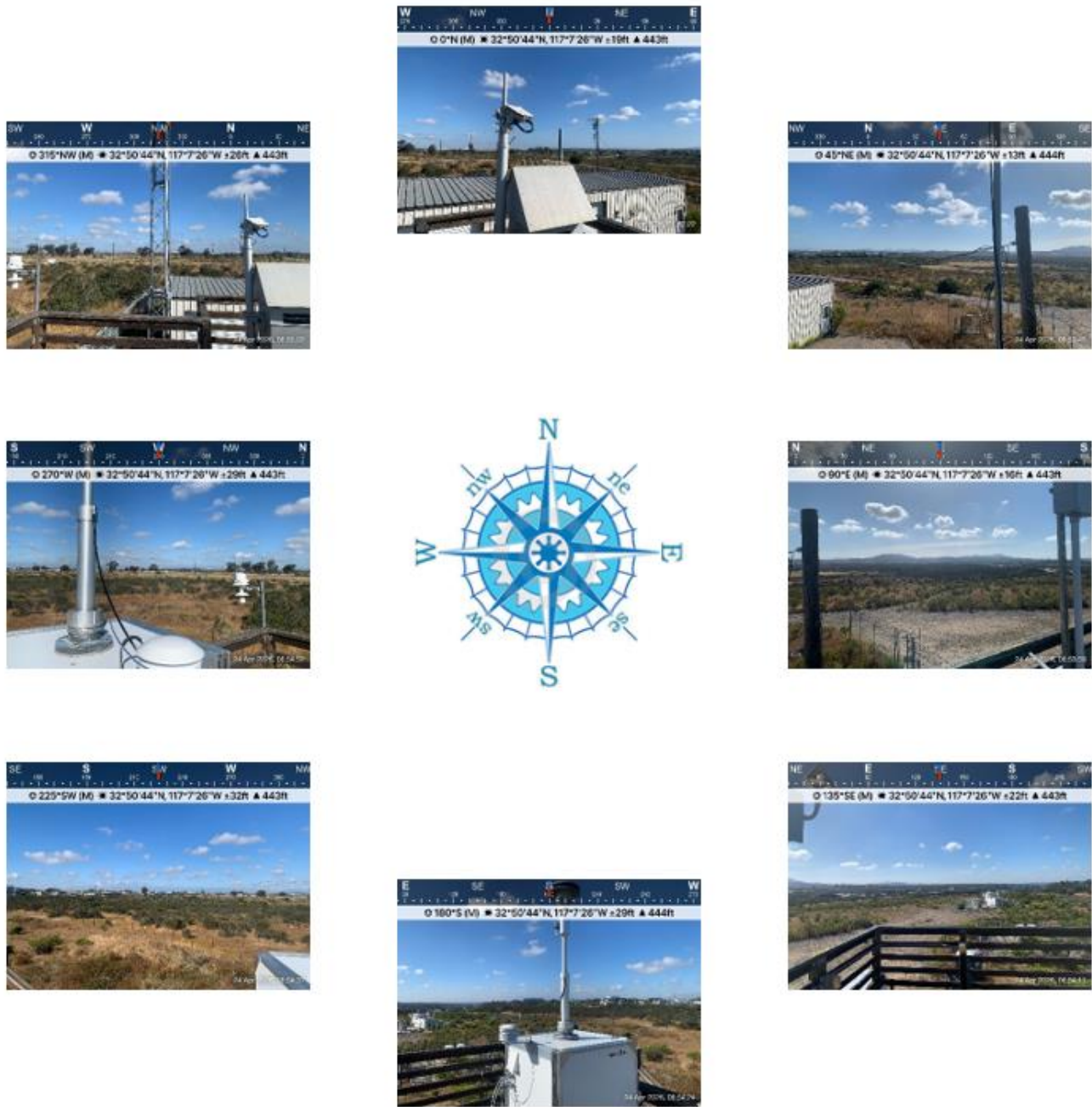
Pollutant	Other Internal Temp	Meteorological Wind Speed	Meteorological Wind Direction	Meteorological External Temp	Meteorological Rel. Humidity
POC	1	2	2	1	1
Monitor designation	N/A	N/A	N/A	N/A	N/A
Parameter code	62107	61101, 61103	61104	62101	62201
Basic monitoring objective	N/A	N/A	N/A	N/A	N/A
Site type	N/A	N/A	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Qualimetrics 4480	RM Young 81000	RM Young 81000	RM Young 41382VF	RM Young 41382VF
Method code	012	066	066	040	012
FRM/FEM/ARM/Other	Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	11/5/2010	12/22/2023	12/22/2023	11/5/2010	11/5/2010
Current sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous
Sampling season	Year round	Year round	Year round	Year round	Year round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	No	No	No	No	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A	N/A
Frequency of QC check (one-point)	Monthly	Semi-Annually	Semi-Annually	Monthly	Monthly
Annual Performance Evaluation date	09/25/2025	09/25/2025	09/25/2025	09/25/2025	09/25/2025
NPAP date	N/A	N/A	N/A	N/A	N/A

Appendix Table A-6.5: Kearny Villa Road - Meteorological Equipment (Additional) Designations

Pollutant	Barometric Pressure	Solar Radiation
POC	1	1
Monitor designation	N/A	N/A
Parameter code	64101	63301
Basic monitoring objective	N/A	N/A
Site type	N/A	N/A
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Met One 092	Eppley 8-48
Method code	014	011
FRM/FEM/ARM/Other	Other	Other
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	11/5/2010	11/5/2010
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	No	Yes
Suitable for comparison to the NAAQS?	N/A	N/A
Frequency of QC check (one-point)	Monthly	Monthly
Annual Performance Evaluation date	09/25/2025	09/25/2025
NPAP date	N/A	N/A

Appendix Table A-6.6: Kearny Villa Road - Distance the Equipment are from Influences

(meters)	Gas Inlet	NOy Inlet	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI (16.7 lpm)	PM ₁₀ , QAC (16.7 lpm)	BC 1060	PM _{2.5} , PM ₁₀ FEM PRI T640x (16.7 lpm)	PM _{2.5} , PM ₁₀ FEM QAC T640x (16.7 lpm)	PM _{2.5} non-FEM (16.7 lpm)	PM _{2.5} STN (6.7 lpm)	PM _{2.5} CSN (22.0 lpm)	† PAMS-VOC (50 ccpm)	† PAMS-VOC, QAC (50 ccpm)	† PAMS-Carbonyls (1.5 lpm)	Toxics-VOC (50 ccpm)	Toxics-VOC, QAC (50 ccpm)	RADNET	Meteorology
Gas Inlet	n/a							3.0	2.1									4.5	6.2
NOy Inlet																			
Pb-TSP, PRI																			
Pb-TSP, QAC																			
PM ₁₀ , PRI																			
PM ₁₀ , QAC																			
BC 1060																			
PM _{2.5} , PM ₁₀ FEM PRI	2.8							n/a	2.0									3.1	6.0
PM _{2.5} , PM ₁₀ FEM QAC	2.1							2.0	n/a									5.1	6.8
PM _{2.5} non-FEM																			
PM _{2.5} STN																			
PM _{2.5} CSN																			
†PAMS-VOC																			
†PAMS-VOC, QAC																			
†PAMS-Carbonyls																			
Toxics-VOC																			
Toxics-VOC, QAC																			
RADNET	4.5							3.1	5.1										4.7
Meteorology	6.2							6.0	6.8									4.7	n/a
<i>height from ground</i>	6.3							6.6	6.6									6.4	11.1
<i>distance: from the road</i>	140							140	140									140	140
<i>from the supporting structure (wood deck)</i>	2.3							2.5	2.5									2.4	7.0
<i>from obstructions on roof</i>	N							N	N									N	N
<i>from obstructions not on roof</i>	N							N	N									N	N
<i>from the closest tree</i>	N							N	N									N	N
<i>from furnace/flue</i>	N							N	N									N	N
<i>unrestricted air flow (degrees)</i>	360							360	360									360	360



Appendix Figure A.11: Kearny Villa Road - Pictures (Directional) from the Station's Deck Top

A-7 Lexington Elementary School Station Description

Appendix Table A-7.1: Lexington Elementary School – General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	El Cajon – Lexington Elementary School
Year Established:	6/2016
Site Address:	533 B. First St.
Site Name Abbreviation:	LES
AQS Number:	06-073-1022
Latitude:	32.789562°
Longitude:	-116.944318°
Elevation above Sea Level:	143 m
General Location:	Trailer on the Lexington Elementary School property off First & Redwood St.
Ground Cover:	Cement pad
Distance to Road:	26.5 m west= First St.
Traffic Count (AADT):	AADT Estimate: 5,000 2024 AADT Range: 5,000 to 9,999 (SANDAG). AADT from nearby E. Washington Ave. 2022 AADT Range: 10,000 to 19,000 (SANDAG). AADT from nearby E. Washington Ave. (Washington and E. First St. approx. 450 meters south of site).
Site Description:	This station is a trailer off the parking lot for Lexington Elementary School. This area is primarily residences.
Monitoring Objectives:	The El Cajon site represents a major population center located in an inland valley, downwind of the heavily populated coastal zone. It is impacted from the transportation corridor of Interstate 8 and its major arteries. It is classified as a PAMS and NCore site
Planned Changes:	<i>Site of equipment for PAMS re-engineering. Not within 18-mon, but there is no room for expansion, the District will research the viability of reclassifying the Escondido site as NCore. Once this is proven and the Escondido site is operational, the District will work with EPA to formalize the relocation process.</i>



Appendix Figure A.12: Lexington Elementary School - Over-Head View of the Station Location

Appendix Table A-7.2: Lexington Elementary School - Gaseous Pollutants Monitor Designations & Other

Pollutant	O ₃	CO-TLE	SO ₂ -TLE	NO _y -TLE	NO ₂	Other Zero Air	Other Calibrator
POC	1	1	1	1	2	N/A	N/A
Monitor designation	Primary	Primary	Primary	Other	Primary	N/A	N/A
Parameter code	44201	42101	42401	42612 (NO _y -NO ₂)	42602	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, NAAQS	Public Information, NAAQS	Public Information, Research	Public Information, Research	N/A	N/A
Site type	Population Exposure	Population Exposure	Population Exposure	Population Exposure	Population Exposure	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS	N/A	N/A
Network affiliation	PAMS, NCore	PAMS, NCore	NCore	PAMS, NCore	PAMS, NCore	N/A	N/A
Instrument manufacturer & model	Thermo 49i	Thermo 48i-TLE	Thermo 43i-TLE	Thermo 42i-y	Teledyne T500U	Teledyne-API 701H	Teledyne-API T700u
Method code	047	554	560	574	212	N/A	N/A
FRM/FEM/ARM/Other	FEM	FRM	FEM	Other	FEM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	N/A	N/A
Monitoring start date	07/21/2016	07/29/2016	07/26/2016	2/08/2018	09/29/2020	07/2016	07/2016
Current sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous	N/A	N/A
Sampling season	Year-round	Year-round	Year-round	Year-round	Year-round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Probe material for reactive gases	Borosilicate glass	Borosilicate glass	Borosilicate glass	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	2.89	6.50	5.17	8.04	5.05	N/A	N/A
Any changes within the next 18 months?	No	No	No	No	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	Yes	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	1:1	1:1	1:1	N/A	N/A
Annual Performance Evaluation date	03/11/2025	05/20/2025, 11/13/2025	05/29/2025, 11/13/2025	05/06/2025, 11/19/2025	03/11/2025	10/08/2025	N/A
NPAP date	*	*	*	*	*	N/A	N/A

*Not performed this year.

Appendix Table A-7.3: Lexington Elementary School - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Sequential (FRM)	PM _{2.5} STN	PM _{2.5} CSN
POC	1	1	1
Monitor designation	Collocated	Other	Other
Parameter code	88101 (LC)	See RTI	See RTI
Basic monitoring objective	NAAQS	Research	Research
Site type	Highest Concentration	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS	SLAMS
Network affiliation	NCore	NCore, CSN STN	NCore, CSN STN
Instrument manufacturer & model	Met One E-SEQ-FRM	Met One Super SASS	URG-3000N
Method code	545	See RTI	See RTI
FRM/FEM/ARM/Other	FRM	Other	Other
Collecting agency	APCD	APCD	APCD
Analytical laboratory	APCD	EPA	EPA
Reporting agency	APCD	EPA	EPA
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	06/01/2016	6/2016	6/2016
Current sampling frequency	1:3	1:3	1:3
Required sampling frequency	1:1	1:6	1:6
Sampling Season	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None	None
Any PM Hi-Vol sampler w/in 2m	None	None	None
Probe material for reactive gases	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A
Any changes within the next 18 months?	No	No	No
Suitable for comparison to the NAAQS?	Yes	No	No
Frequency of flow rate verification	Monthly	Monthly	Monthly
Semi-Annual flow rate audits dates	05/06/2025	05/06/2025	05/06/2025
Additional QA flow rate check dates*	02/20/2025, 08/13/2025	02/25/2025, 08/13/2025	02/25/2025, 09/02/2025
PEP date	**	N/A	N/A

*Additional QA checks are not official audits.

**Not performed this year

Appendix Table A-7.4: Lexington Elementary School - Particulate Pollutants Monitor Designations (Cont.)

Pollutant	PM _{2.5} Continuous (FEM)	PM ₁₀ Continuous (FEM)	PM _{coarse} (FEM Continuous)
POC	3	3	3
Monitor designation	Primary	Primary	Primary
Parameter code	88101 (LC)	81102 (STP) 85101 (LC)	86101 (LC)
Basic monitoring objective	NAAQS	NAAQS	Research
Site type	Population Exposure	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	NCore
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639	640
FRM/FEM/ARM/Other	FEM	FEM	Other
Collecting agency	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	08/11/2022	08/11/2022	08/11/2022
Current sampling frequency	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous
Sampling Season	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None	None
Any PM Hi-Vol sampler w/in 2m	None	None	None
Probe material for reactive gases	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A
Any changes within the next 18 months?	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	No
Frequency of flow rate verification	Monthly	Monthly	Monthly
Semi-Annual flow rate audits dates	05/01/2025	05/01/2025	05/01/2025
Additional QA flow rate check dates*	02/20/2025, 08/19/2025	02/20/2025, 08/19/2025	02/20/2025, 08/19/2025
PEP date	3/12/2025	**	N/A

*Additional QA checks are not official audits

**Not performed this year

Appendix Table A-7.5: Lexington Elementary School - Other Pollutants Monitor Designations

Pollutant	PAMS-VOC*	PAMS-Carbonyls	PAMS-Carbonyls
POC	TBD	6 for 3-8hr samples	7 for 1-8hr sample
Monitor designation	Other	Primary	Collocated
Parameter code	See PAMS Table 10.15	See PAMS Table 10.16	See PAMS Table 10.16
Basic monitoring objective	Research	Research	Research
Site type	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS
Network affiliation	PAMS	PAMS	PAMS
Instrument manufacturer & model	Agilent / Markes	Atec 8000	Atec 8000
Method code	228	202	202
FRM/FEM/ARM/Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	6/2021*	6/2021*	6/2021*
Current sampling frequency	continuous	1:3	1:6
Required sampling frequency	continuous	1:3	1:6
Sampling season	June-August	June-August	June-August
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A
Any changes within the next 18 months?	No	No	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A
Frequency of flow rate verification	N/A	N/A	N/A
Annual Performance Evaluation date	N/A	N/A	N/A
NPAP date	N/A	N/A	N/A

Appendix Table A-7.6: Lexington Elementary School - Other Pollutants Monitor (Additional) Designations

Pollutant	Toxics-Metals	Toxics-Carbonyls	Toxics-Carbonyls
POC	1	3	4
Monitor designation	Not Applicable	Primary	Collocated
Basic monitoring objective	Research	Research	Research
Site type	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	N/A
Instrument manufacturer & model	Xonteck 924	Atec 8000	Atec 8000
Method code	305	202	202
FRM/FEM/ARM/Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	7/18/2017	2017	2017
Current sampling frequency	1:6	1:6	1:12
Required sampling frequency	1:6	1:6	1:12
Sampling season	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A
Any changes within the next 18 months?	No	No	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A
Frequency of flow rate verification	N/A	N/A	N/A
Annual Performance Evaluation date	N/A	N/A	N/A
NPAP date	N/A	N/A	N/A

Appendix Table A-7.7: Lexington Elementary School - Meteorological Equipment Monitor Designations & Other

Pollutant	Other Internal Temp	Meteorological Wind Speed	Meteorological Wind Direction	Meteorological External Temp	Meteorological Rel. Humidity
POC	1	2	2	1	1
Monitor designation	N/A	N/A	N/A	N/A	N/A
Parameter code	62107	61101, 61103	61104	62101	62201
Basic monitoring objective	N/A	N/A	N/A	N/A	N/A
Site type	N/A	N/A	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	PAMS, NCore	PAMS, NCore	PAMS, NCore	PAMS, NCore	PAMS, NCore
Instrument manufacturer & model	Qualimetrics 4480	RM Young 81000	RM Young 81000	RM Young 41382VF	RM Young 41382VF
Method code	012	066	066	040	012
FRM/FEM/ARM/Other	Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	06/22/2016	02/22/2024	02/22/2024	06/22/2016	06/22/2016
Current sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous
Sampling season	Year-round	Year-round	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	No	Yes	Yes	No	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A	N/A
Frequency of QC check (one-point)	Monthly	Semi-Annually	Semi-Annually	Monthly	Monthly
Annual Performance Evaluation date	10/08/2025	10/08/2025, 11/13/2025	10/08/2025, 11/13/2025	10/08/2025, 11/19/2025	10/08/2025, 11/19/2025
NPAP date	N/A	N/A	N/A	N/A	N/A

Appendix Table A-7.8: Lexington Elementary School - Meteorological Equipment (Additional) Designations

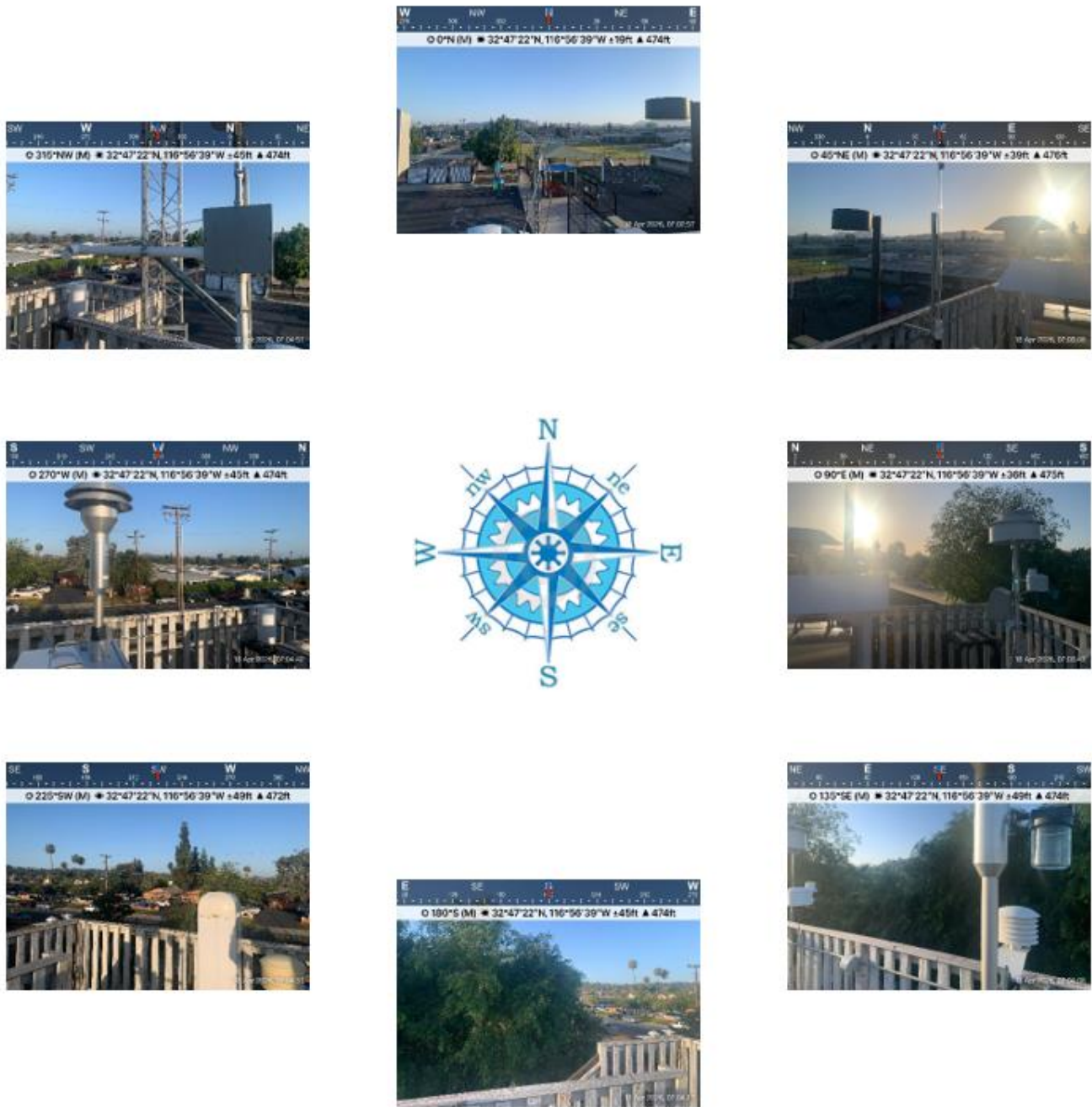
Pollutant	Meteorological Barometric Press.	Solar Radiation	Ultraviolet Radiation	Rainfall	Ceilometer
POC	1	1	1	1	1
Monitor designation	N/A	N/A	N/A	N/A	N/A
Parameter code	64101	63301	63302	65102	61301
Basic monitoring objective	N/A	N/A	N/A	N/A	N/A
Site type	N/A	N/A	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	PAMS, NCore	PAMS, NCore	PAMS, NCore	PAMS, NCore	PAMS, NCore
Instrument manufacturer & model	Met One 092	Eppley SPP	Kipp & Zonen SUV5	Met One 370D (8" Rain Gauge)	Vaisala CL-51
Method code	014	011	011	015	128
FRM/FEM/ARM/Other	Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	03/10/2017	04/09/2019	01/09/2020	10/17/2019	08/26/2021
Current sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous	Continuous
Sampling season	Year-round	Year-round	Year-round	Year-round	Year Round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	No	Yes	No	No	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A	N/A
Frequency of QC check (one-point)	Monthly	Monthly	N/A	N/A	N/A
Annual Performance Evaluation date	10/08/2025	10/08/2025	*	*	N/A
NPAP date	N/A	N/A	N/A	N/A	N/A

* Not performed this year

Appendix Table A-7.9: Lexington Elementary School – Distance the Equipment are from Influences

(meters)	Gas Inlet	NOy Inlet	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI (16.7 lpm)	PM ₁₀ , QAC (16.7 lpm)	BC 1060	PM _{2.5} FRM, (16.7 lpm)	PM _{2.5} FRM, QAC (16.7 lpm)	PM _{2.5} FEM T640x (16.7 lpm)	PM _{2.5} STN (6.7 lpm)	PM _{2.5} CSN (22.0 lpm)	*PAMS-VOC-Auto GC	† PAMS-Carbonyls (Atec 8000)	† PAMS-Carbonyls (Atec 8000) -QAC	Toxics-VOC (50 ccpm)	Toxics-VOC, QAC (50 ccpm)	Toxics-Metals (12 lpm)	Meteorology
Gas Inlet	n/a	3.8						1.1		2.1	3.4	2.0	2.2	1.4	1.6	1.1		3.2	5.5
NOy Inlet	3.8	n/a						4.4		5.5	6.3	5.4	4.6	4.5	4.8	4.5		6.2	1.9
Pb-TSP, PRI																			
Pb-TSP, QAC																			
PM ₁₀ , PRI																			
PM ₁₀ , QAC																			
BC 1060																			
PM _{2.5} FRM	1.1	4.4						n/a		1.6	3.3	2.4	2.8	3.0	2.8	2.3		3.9	6.1
PM _{2.5} FRM, QAC																			
PM _{2.5} FEM	2.1	5.5						1.6		n/a	1.5	1.1	2.1	2.6	2.9	2.8		2.7	7.4
PM _{2.5} STN	3.4	6.3						3.4		1.6	n/a	1.5	2.2	3.9	3.4	3.6		1.8	7.7
PM _{2.5} CSN	2.0	5.4						2.4		1.1	1.5	n/a	1.0	2.6	2.0	2.2		1.6	7.3
*PAMS-VOC	2.1	4.6						2.8		2.1	2.2	1.0	n/a	2.1	1.4	2.0		1.5	6.3
†PAMS-Carbonyls	1.4	4.5						3.0		2.6	3.9	2.6	2.1	n/a	0.8	0.4		3.3	6.1
†PAMS-Carbonyls-co	1.6	4.8						2.8		2.9	3.4	2.0	1.4	0.8	n/a	0.8		2.5	6.4
Toxics-VOC	1.1	4.5						2.3		2.8	3.6	2.2	2.0	0.4	0.8	n/a		4.5	6.0
Toxics-VOC, QAC																			
Toxics-Metals	3.2	6.2						3.9		2.7	1.8	1.6	1.5	3.3	2.5	4.5		n/a	7.5
Meteorology	5.5	1.9						6.1		7.4	7.7	7.3	6.3	6.1	6.4	6.0		7.5	n/a
<i>height from ground</i>	6.5	8.9						6.3		6.4	6.3	6.5	6.8	5.8	5.9	5.8		6.4	11.6
<i>distance: from the road</i>	23.0	22.7						21.8		24.0	24.7	24.5	24.8	23.0	23.8	22.9		24.7	23.4
<i>from the supporting structure (wood deck)</i>	2.1	4.5						1.9		2.0	1.9	2.1	2.3	N	N	N		2.0	7.2
<i>from obstructions on roof</i>	N	N						N		N	N	N	N	N	N	N		N	N
<i>from obstructions not on roof</i>	N	N						N		N	N	N	N	N	N	N		N	N
<i>from the closest tree</i>	6.3	8.6						5.5		5.1	4.5	7.3	7.2	8.2	8.1	7.9		7.6	10.4
<i>unrestricted air flow (degrees)</i>	360	360						360		360	360	360	360	360	360	360		360	360

n/a= Not Applicable; N= None; †On the side of the station/trailer. *This is the manifold inlet for the PAMS Auto-GC. (No PAMS canister sampling).



Appendix Figure A.13: Lexington Elementary School – Pictures (Directional) from the Stations Deck Top

A-8 Rancho Carmel Drive Station Description

Appendix Table A-8.1: Rancho Carmel Drive - General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	Rancho Carmel Drive
Year Established:	3/26/2015
Site Address:	11403 Rancho Carmel Drive
Site Name Abbreviation:	RCD
AQS Number:	06-073-1017
Latitude:	32.985442°
Longitude:	-117.082180°
Elevation above Sea Level:	218 m
General Location:	On City of San Diego Pump Station grounds
Ground Cover:	Packed Dirt
Distance to Road:	33 meters to I-15 North; 24 meters to Rancho Carmel Drive
Traffic Count (AADT):	2024 AADT: 5,000 to 9,999 (SANDAG) along nearby Carmel Mountain Rd. 2023 AADT for I-15: 247,500 (Caltrans)
Site Description:	Is on the hill overlooking I-15. The probe is horizontal.
Monitoring Objectives:	This is the 1 st near-road site. It measures NO ₂ , CO, and PM _{2.5} contributions from I-15
Planned Changes:	none



Appendix Figure A.14: Rancho Carmel Drive - Over-Head View of Station Location

Appendix Table A-8.2: Rancho Carmel Drive - Gaseous Pollutants Monitor Designations & Other

Pollutant	NO ₂	CO	Other Zero Air	Other Calibrator
POC	2	1	N/A	N/A
Monitor designation	Primary	Primary	N/A	N/A
Parameter code	42602 (NO ₂)	42101	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, NAAQS	N/A	N/A
Site type	Source Oriented	Source Oriented	N/A	N/A
Monitor type	SLAMS	SLAMS	N/A	N/A
Network affiliation	Near-road	Near-road	N/A	N/A
Instrument manufacturer & model	Teledyne-API T500U	Thermo 48i-TLE *	Teledyne-API 701H	Teledyne-API T700U
Method code	212	554	N/A	N/A
FRM/FEM/ARM/Other	FEM	FRM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Micro Scale	Micro Scale	N/A	N/A
Monitoring start date	12/08/2021	04/24/2015	3/2015	3/2015
Current sampling frequency	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	N/A	N/A
Sampling season	Year-round	Year-round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	4.56	6.02	N/A	N/A
Any changes within the next 18 months?	Yes	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	N/A	N/A
Annual Performance Evaluation date	04/24/2025	04/24/2025	04/30/2025	N/A
NPAP Date	**	**	N/A	N/A

* Instrument operated at ambient level range of 20 ppm

**Not performed this year

Appendix Table A-8.3: Rancho Carmel Drive - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Continuous (FEM)	PM ₁₀ Continuous (FEM)
POC	3	3
Monitor designation	Primary	Primary
Parameter code	88101 (LC)	81102(STP)
Basic monitoring objective	NAAQS	NAAQS
Site type	Source Oriented	Source Oriented
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639
FRM/FEM/ARM/Other	FEM	FEM
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Micro Scale	Micro Scale
Monitoring start date	06/30/2023	06/30/2023
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling Season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None
Any PM Hi-Vol sampler w/in 2m	None	None
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	N/A	N/A
Suitable for comparison to the NAAQS?	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly
Semi-Annual flow rate audits dates	04/22/2025, 10/16/2025	04/22/2025, 10/16/2025
Additional QA flow rate check dates*	01/28/2025, 02/11/2025, 07/29/2025	01/28/2025, 02/11/2025, 07/29/2025
PEP date	6/1/2025	**

*Additional QA checks are not official audits.

**Not performed this year.

Appendix Table A-8.4: Rancho Carmel Drive - Meteorological Equipment Designations & Other

Pollutant	Other Internal Temp	Meteorological External Temp
POC	1	1
Monitor designation	N/A	N/A
Parameter code	62107	62101
Basic monitoring objective	N/A	N/A
Site type	N/A	N/A
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Qualimetrics 4480	RM Young 41382VF
Method code	012	040
FRM/FEM/ARM/Other	Other	Other
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Micro-scale	Micro-scale
Monitoring start date	03/26/2015	03/26/2015
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	No	No
Suitable for comparison to the NAAQS?	N/A	N/A
Frequency of QC check (one-point)	Monthly	Monthly
Annual Performance Evaluation date	04/24/2025	04/24/2025
NPAP date	N/A	N/A

Appendix Table A-8.5: Rancho Carmel Drive - Distance the Equipment are from Influences

(meters)	Gas Inlet	NOy Inlet	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI (16 lpm)	PM ₁₀ , QAC (16 lpm)	BC-1060	PM _{2.5} PM ₁₀ FEM, PRI T640x (16.7 lpm)***	PM _{2.5} PM ₁₀ FEM QAC T640x (16.7 lpm)	PM _{2.5} non-FEM (16.7 lpm)	PM _{2.5} STN (6.7 lpm)	PM _{2.5} CSN (22.0 lpm)	† PAMS-VOC (50 ccpm)	† PAMS-VOC, QAC (50 ccpm)	† PAMS-Carbonyls (1.5 lpm)	† Toxics-VOC (50 ccpm)	† Toxics-VOC, QAC (50 ccpm)	Toxics-Metals (12 lpm)	Meteorology
Gas Inlet	n/a							5.1											
NOy Inlet																			
Pb-TSP, PRI																			
Pb-TSP, QAC																			
PM ₁₀ , PRI																			
PM ₁₀ , QAC																			
BC 1060																			
PM _{2.5} PM ₁₀ FEM, PRI	5.1																		
PM _{2.5} PM ₁₀ FEM, QAC																			
PM _{2.5} non-FEM																			
PM _{2.5} STN																			
PM _{2.5} CSN																			
†PAMS-VOC																			
†PAMS-VOC, QAC																			
†PAMS-Carbonyls																			
†Toxics-VOC																			
†Toxics-VOC, QAC																			
Toxics-Metals																			
Meteorology																			
<i>height from ground</i>	2.3							2.5											
<i>distance from the road</i>	35							20											
<i>from the supporting structure(wall)</i>	**1.3							N											
<i>from obstructions on roof (deck)**</i>	N							N											
<i>from obstructions not on roof</i>	N							N											
<i>from the closest tree</i>	8.2U 5.3 D							3.6											
<i>from furnace/flue</i>	N							N											
<i>unrestricted air flow (degrees)</i>	270							270											

n/a= Not Applicable; N= None; †On the side of the station/trailer U= upwind; D=downwind

** It is a horizontal probe placed in the direction of the prevailing wind flow. It goes directly from the analyzer inside the station and out the side of the building with a ledge-like support under the glass.

*** PM_{2.5} sampler is at street level and on no supporting structure.



Appendix Figure A.15: Rancho Carmel Drive - Pictures (Directional) from the Ground*

*There is no deck from which to take pictures. The probe is horizontal from the side of station on an incline, so all pictures are taken from behind the stations (about 5 meters behind the probe for safety reasons).

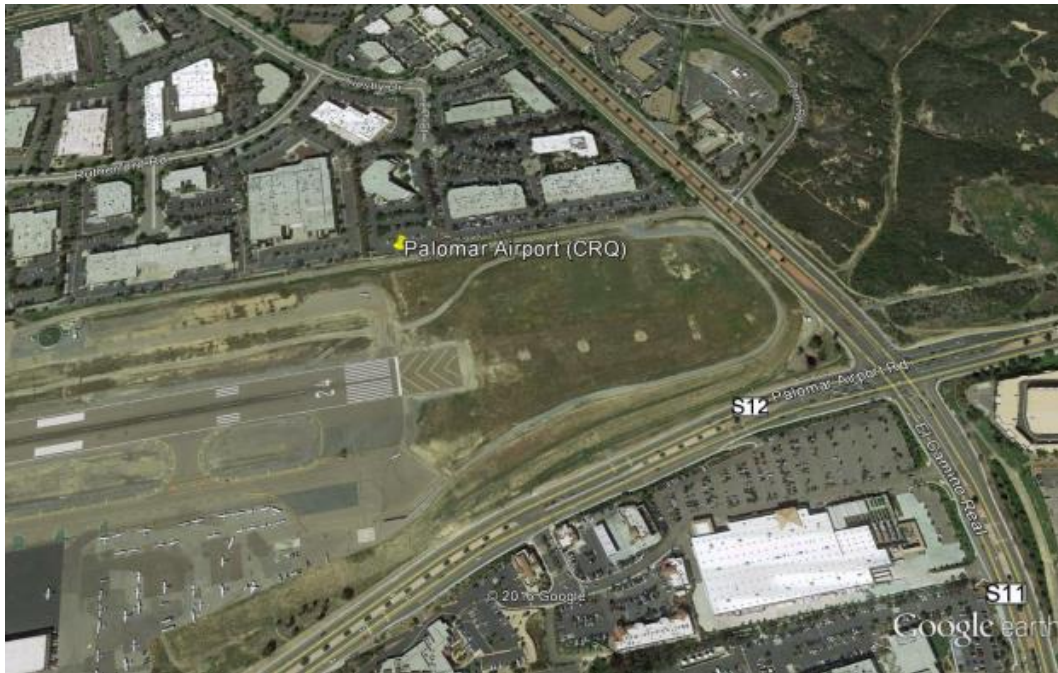


Appendix Figure A.16: Rancho Carmel Drive - Gas Inlet

A-9 McClellan – Palomar Airport Station Description

Appendix Table A-9.1: Palomar Airport: General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	McClellan-Palomar (Palomar)
Year Established:	3/10/2012 at old location; 11/1/2014 at current location
Site Address:	2192 Palomar Airport Rd.
Site Name Abbreviation:	CRQ
AQS Number:	06-073-1023
Latitude:	33.130822 ^o
Longitude:	-117.272686 ^o
Elevation above Sea Level:	92 m
General Location:	Adjacent to the business park (immediately north of the paved access road)
Ground Cover:	Paved
Distance to Road:	380 m east= El Camino Real
Traffic Count (AADT):	2024 AADT: 10,000 to 19,000 (SANDAG). El Camino Real at Palomar Airport Rd.
Site Description:	Adjacent to business park. In 2014, the samplers were moved from the blast shield area to the current location. There is an auxiliary Airport only access road about 3 meters from the samplers with an AADT= 8; because of this low traffic count, the El Camino Real Drive AADT was used. Additionally, the measurements from the road used El Camino Real Drive.
Monitoring Objectives:	To quantify airborne lead particulates from the combustion of aviation gasoline.
Planned Changes:	<i>In 2017, site was being petitioned by the District to the EPA for decommissioning.</i>



Appendix Figure A.17: Palomar Airport - Over-Head View of Station Location

Appendix Table A-9.2: Palomar Airport - Particulate Pollutants Monitor Designations

Pollutant	Pb-TSP Hi-Vol (primary)	Pb-TSP Hi-Vol (collocated)
POC	1	2
Monitor designation	Primary	Collocated
Parameter code	14129	14129
Basic monitoring objective	NAAQS	NAAQS
Site type	Source Oriented	Source Oriented
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Tisch TE-5170BLVFC+	Tisch TE-5170BLVFC+
Method code	192	192
FRM/FEM/ARM/Other	FRM	FRM
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Micro Scale	Micro Scale
Monitoring start date	3/10/2012 (old site) 11/1/2014 (current site)	3/10/2012 (old site) 11/1/2014 (current site)
Current sampling frequency	1:6	1:12
Required sampling frequency	1:6	1:12
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	Yes	Yes
Suitable for comparison to the NAAQS?	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly
Semi-Annual flow rate audits dates	03/27/2025, 09/11/2025	03/27/2025, 09/11/2025
Additional QA flow rate check dates*	06/26/2025, 10/17/2025, 10/22/2025, 12/30/2025	06/26/2025, 10/17/2025, 10/22/2025, 12/30/2025
PEP date	5/31/2025	5/31/2025

* Additional QA checks are not official audits

Appendix Table A-9.3: Palomar Airport – Distance the Equipment are from Influences

(meters)	Gas Inlet	NOy Inlet	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI (16 lpm)	PM ₁₀ , QAC (16 lpm)	BC 1060	PM _{2.5} PM ₁₀ FEM, PRI T640x (16.7 lpm)	PM _{2.5} PM ₁₀ FEM, QAC T640x (16.7 lpm)	PM _{2.5} non-FEM (16.7 lpm)	PM _{2.5} STN (6.7 lpm)	PM _{2.5} CSN (22.0 lpm)	† PAMS-VOC (50 ccppm)	† PAMS-VOC, QAC (50 ccppm)	† PAMS-Carbonyls (1.5 lpm)	† Toxics-VOC (50 ccppm)	† Toxics-VOC QAC (50 ccppm)	Toxics-Metals (12 lpm)	Meteorology
Gas Inlet																			
NOy Inlet																			
Pb-TSP, PRI			n/a	2.9															
Pb-TSP, QAC			2.9	n/a															
PM ₁₀ , PRI																			
PM ₁₀ , QAC																			
BC 1060																			
PM _{2.5} FEM, PRI																			
PM _{2.5} , FEM, QAC																			
PM _{2.5} non-FEM																			
PM _{2.5} STN																			
PM _{2.5} CSN																			
†PAMS-VOC																			
†PAMS-VOC QAC																			
†PAMS-Carbonyls																			
†Toxics-VOC																			
†Toxics-VOC, QAC																			
Toxics-Metals																			
Meteorology																			
<i>height from ground</i>			2.0	2.0															
<i>distance: from the road</i>			313	316															
<i>from the supporting structure</i>			N	N															
<i>from obstructions on roof</i>			N	N															
<i>from obstructions not on roof</i>			N	N															
<i>from the closest tree</i>			28.8	28.8															
<i>from furnace/flue</i>			N	N															
<i>unrestricted air flow (degrees)</i>			360	360															

n/a= Not Applicable; N= None; †On the side of the station/trailer



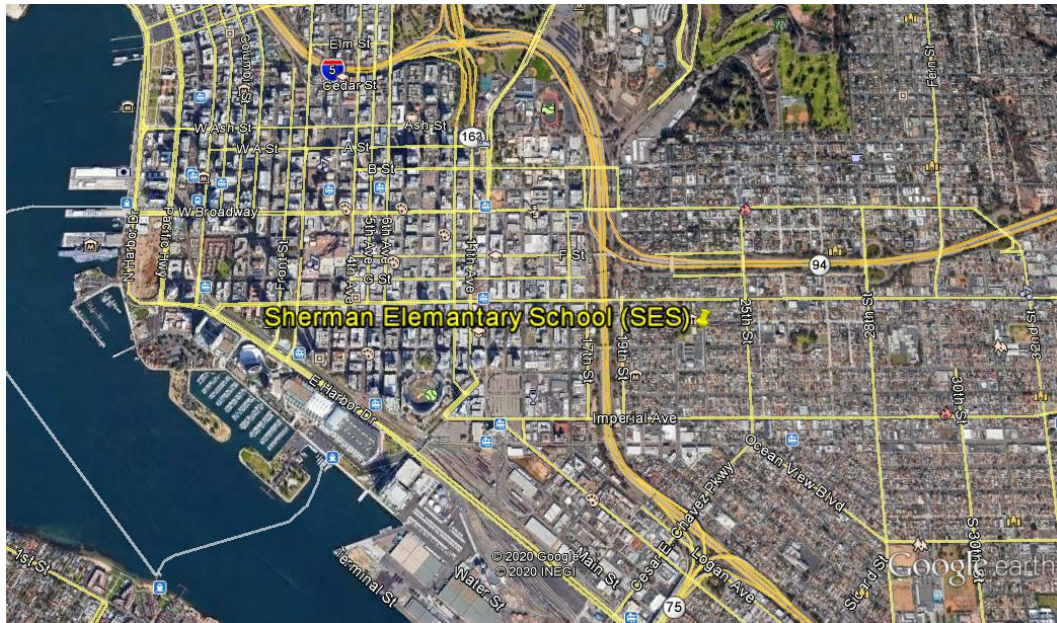
Appendix Figure A.18: Palomar Airport - Pictures (Directional) from the Ground*

*The sampler is situated at ground level

A-10 Sherman Elementary School Station Description

Appendix Table A-10.1: Sherman Elementary School - General Site information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	Sherman Elementary School
Year Established:	2019
Site Address:	450 24 th St.
Site Name Abbreviation:	SES
AQS Number:	06-073-1026
Latitude:	32.710177 ^o
Longitude:	-117.142665 ^o
Elevation above Sea Level:	35 m
General Location:	At the junction of SR 94 and I-5 and downwind of Downtown San Diego and the Bay
Ground Cover:	Paved
Distance to Road:	14 m east= 24 th Street; 281 m NE= Market St & 25 St
Traffic Count (AADT):	2024 AADT: 10,000 to 19,000 (SANDAG). Market St. 2022 AADT: 5,000 to 9,999 (SANDAG). Market St. & 25 th St.
Site Description:	This site is downwind of the San Diego Bay industrial zone, and captures emissions from Interstates 5, 805, 15 and SR 94, downtown San Diego, Lindbergh Field, North Island Naval Air Station, marine terminals, NASSCO shipyards, Continental Maritime shipyard, Southwest Marine, and train yards.
Monitoring Objectives:	Forecasting of PM _{2.5} levels for several monitoring sites (from Chula Vista to Kearny Mesa) is partially based upon the values collected at this site. This location is useful for capturing high NO ₂ concentrations, and assessing ozone transport from the south (Baja, Mexico).
Planned Changes:	<i>None</i>



Appendix Figure A.19: Sherman Elementary School – Over-Head View of the Station Location

Appendix Table A-10.2: Sherman Elementary School - Gaseous Pollutants Monitor Designations & Other

Pollutant	O ₃	NO ₂	Other Zero Air	Other Calibrator
POC	1	2	N/A	N/A
Monitor designation	Primary	Primary	N/A	N/A
Parameter code	44201	42602	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, Research	N/A	N/A
Site type	Population Exposure	RA40 Vulnerable	N/A	N/A
Monitor type	SLAMS	SLAMS	N/A	N/A
Network affiliation	N/A	Area-wide	N/A	N/A
Instrument manufacturer & model	Thermo 49i	Teledyne-API T500U	Teledyne-API 701H	Teledyne-API T700U
Method code	047	212	N/A	N/A
FRM/FEM/ARM/Other	FEM	FEM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	N/A	N/A
Monitoring start date	07/16/2019	06/30/2021	08/2019	08/2019
Current sampling frequency	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	N/A	N/A
Sampling season	Year-round	Year-round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	7.04	4.97	N/A	N/A
Any changes within the next 18 months?	No	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	N/A	N/A
Annual Performance Evaluation date	06/04/2025	06/04/2025	08/16/2025	N/A
NPAP date	*	*	N/A	N/A

*Not Performed this year

Appendix Table A-10.3: Sherman Elementary School - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Continuous (FEM)	PM ₁₀ Continuous (FEM)
POC	3	3
Monitor designation	Primary	Primary
Parameter code	88101 (LC)	81102 (STP)
Basic monitoring objective	NAAQS	NAAQS
Site type	Population Exposure	Population Exposure
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639
FRM/FEM/ARM/Other	FEM	FEM
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	5/16/2022	5/16/2022
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None
Any PM Hi-Vol sampler w/in 2m	None	None
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	No	No
Suitable for comparison to the NAAQS?	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly
Semi-Annual flow rate audits dates	06/04/2025, 11/20/2025, 12/10/2025	06/04/2025, 11/20/2025, 12/10/2025
Additional QA flow rate check dates*	03/19/2025, 09/23/2025	03/19/2025, 09/23/2025
PEP date	2/26/2025	**

*Additional QA checks are not official audits

**Not performed this year

Appendix Table A-10.4 Sherman Elementary School - Other Additional Pollutants Monitor Designations

Pollutant	TOXICS-Carbonyls
POC	3
Monitor designation	Primary
Basic monitoring objective	Research
Site type	Population Exposure
Monitor type	Other (SDAPCD Network)
Network affiliation	N/A
Instrument manufacturer & model	Atec 8000
Method code	202
FRM/FEM/ARM/Other	Other
Collecting agency	APCD
Analytical laboratory	APCD
Reporting agency	APCD
Spatial scale	Middle
Monitoring start date	2017
Current sampling frequency	1:6
Required sampling frequency	1:6
Sampling season	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A
Any PM Hi-Vol sampler w/in 2m	N/A
Probe material for reactive gases	N/A
Residence time for reactive gases	N/A
Any changes within the next 18 months?	No
Suitable for comparison to the NAAQS?	N/A
Frequency of flow rate verification	N/A
Semi-Annual flow rate audits dates	N/A
Additional QA flow rate check dates	N/A
Annual Performance Evaluation date	N/A
NPAP date	N/A

Appendix Table A-10.5: Sherman Elementary School - Meteorological Equipment Designations & Other

Pollutant	Other Internal Temp	Meteorological Wind Speed	Meteorological Wind Direction	Meteorological External Temp
POC	1	2	2	1
Monitor designation	N/A	N/A	N/A	N/A
Parameter code	62107	61101, 61103	61104	62101
Basic monitoring objective	N/A	N/A	N/A	N/A
Site type	N/A	N/A	N/A	N/A
Monitor type	SLAMS	SLAMS	SLAMS	SLAMS
Network affiliation	N/A	N/A	N/A	N/A
Instrument manufacturer & model	Qualimetrics 4480	RM Young 81000	RM Young 81000	RM Young 41382VF
Method code	012	066	066	040
FRM/FEM/ARM/Other	Other	Other	Other	Other
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale	Neighborhood Scale
Monitoring start date	07/16/2019	10/25/2023	10/25/2023	07/26/2019
Current sampling frequency	Continuous	Continuous	Continuous	Continuous
Required sampling frequency	Continuous	Continuous	Continuous	Continuous
Sampling season	Year-round	Year-round	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	N/A	N/A	N/A	N/A
Residence time for reactive gases	N/A	N/A	N/A	N/A
Any changes within the next 18 months?	No	No	No	No
Suitable for comparison to the NAAQS?	N/A	N/A	N/A	N/A
Frequency of QC check (one-point)	Monthly	Semi-Annually	Semi-Annually	Monthly
Annual Performance Evaluation date	07/17/2025	08/14/2025	08/14/2025	07/17/2025
NPAP date	N/A	N/A	N/A	N/A

Appendix Table A-10.6: Sherman Elementary School - Distance the Equipment are from Influences

(meters)	Gas Inlet	NOy Inlet	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI, (16.7 lpm)	PM ₁₀ , QAC (16.7 lpm)	BC 1060	E-Seq TSP Metals (16.7 lpm)	EBAM (UCSD)	PM _{2.5} PM ₁₀ FEM, PRI T640x (16.7 lpm)	PM _{2.5} STN (6.7 lpm)	PM _{2.5} CSN (22.0 lpm)	†PAMS-VOC (50 ccppm)	†PAMS-VOC, QAC (50 ccppm)	†PAMS-Carbonyls (1.5 lpm)	Toxics-VOC (50 ccppm)	Toxics-Carbonyls (50 ccppm)	Toxics-Carbonyls (co) (50ccppm)	Meteorology		
Gas Inlet	n/a							3.5	3.6	1.2								2.7	2.9	4.7	
NOy Inlet																					
Pb-TSP, PRI																					
Pb-TSP, QAC																					
PM ₁₀ , PRI, Hi-Vol																					
PM ₁₀ , QAC, Hi-Vol																					
BC 1060																					
E-Seq TSP Metals	3.5							n/a	5.1	2.2								3.2	2.2	6.8	
EBAM (UCSD)	3.6							5.2	n/a	3.4								6.0	5.8	5.8	
PM _{2.5} PM ₁₀ FEM T640x	1.2							2.1	3.4	n/a								2.6	2.4	5.0	
PM _{2.5} STN																					
PM _{2.5} CSN																					
†PAMS-VOC																					
†PAMS-VOC, QAC																					
†PAMS-Carbonyls																					
Toxics-VOC																					
Toxics-Carbonyls	2.7							3.2	6.0	2.6									1.1	5.4	
Toxics-Carbonyls (co)	2.9							2.2	5.8	2.4									1.1	6.4	
Meteorology	4.7							6.8	5.8	5.0									6.2	n/a	
<i>height from ground</i>	5.9							5.9	5.9	6.0									5.5	5.7	10.2
<i>distance: from the road</i>	14.5							15.8	16.7	14.7									16.7	16.7	15.7
<i>from the supporting structure (wood deck)</i>	1.9							1.9	1.9	2.0									3.4	1.7	6.2
<i>from obstructions on roof</i>	N							N	N	N									N	N	N
<i>from obstructions not on roof</i>	N							N	N	N									N	N	N
<i>from the closest tree</i>	14.5							17.2	14.2	15.7									14.4	14.4	13.3
<i>from furnace/flue</i>	N							N	N	N									N	N	N
<i>unrestricted air flow (degrees)</i>	360							360	360	360									360	360	360

n/a= Not Applicable; N= None; †On the side of the station/trailer



Appendix Figure A.20: Sherman Elementary - Pictures (Directional) from the Station's Deck Top

A-11 San Ysidro Station Description

Appendix Table A-11.1: San Ysidro – General Site Information

County:	San Diego
Representative Area:	San Diego MSA
Site Name:	San Ysidro
Year Established:	10/1/2023
Site Address:	198 W. San Ysidro Blvd.
Site Name Abbreviation:	SAY
AQS Number:	06-073-1025
Latitude:	32.552809
Longitude:	-117.047328
Elevation above Sea Level:	18 meters
General Location:	Fire Station #29 in San Ysidro near Interstate highway
Ground Cover:	Packed Dirt
Distance to Road:	30 meters
Traffic Count (AADT):	2024 AADT: 5,000 to 9,999 (SANDAG) for San Ysidro Blvd. 2023 AADT: 69,000 (Caltrans) for I-15/805 junction.
Site Description:	As the 2 nd Near-road site, the purpose is to measure NO ₂ , CO, and PM _{2.5} from the nearby freeway (I-5). Located at the southernmost point of the air basin and has a mix of cars compared to trucks with much longer idle times. Near the San Ysidro Port of Entry (POE).
Monitoring Objectives:	This is the 2 nd Near-road site. It measures NO ₂ , CO, and PM _{2.5} contributions from near freeway.
Planned Changes:	<i>none</i>



Appendix Figure A.21: San Ysidro - Over-Head View of Station Location

Appendix Table A-11.2: San Ysidro - Gaseous Pollutants Monitor Designations & Other

Pollutant	NO ₂	CO	Other Zero Air	Other Calibrator
POC	2	1	N/A	N/A
Monitor designation	Primary	Primary	N/A	N/A
Parameter code	42602	42101	N/A	N/A
Basic monitoring objective	Public Information, NAAQS	Public Information, NAAQS	N/A	N/A
Site type	Source Oriented	Source Oriented	N/A	N/A
Monitor type	SLAMS	SLAMS	N/A	N/A
Network affiliation	Near-road	Near-road	N/A	N/A
Instrument manufacturer & model	Teledyne-API T500U	Thermo 48i-TLE *	Teledyne-API 701H	Teledyne-API T700U
Method code	212	554	N/A	N/A
FRM/FEM/ARM/Other	FEM	FRM	N/A	N/A
Collecting agency	APCD	APCD	APCD	APCD
Analytical laboratory	APCD	APCD	APCD	APCD
Reporting agency	APCD	APCD	APCD	APCD
Spatial scale	Micro Scale	Micro Scale	N/A	N/A
Monitoring start date	10/18/2023	11/02/2023	N/A	N/A
Current sampling frequency	Continuous	Continuous	N/A	N/A
Required sampling frequency	Continuous	Continuous	N/A	N/A
Sampling season	Year-round	Year-round	N/A	N/A
Any PM Lo-Vol sampler w/in 1m	N/A	N/A	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A	N/A	N/A
Probe material for reactive gases	Borosilicate glass	Borosilicate glass	N/A	N/A
Residence time for reactive gases	5.97	6.14	N/A	N/A
Any changes within the next 18 months?	Yes	No	No	No
Suitable for comparison to the NAAQS?	Yes	Yes	N/A	N/A
Frequency of QC check (one-point)	1:1	1:1	N/A	N/A
Annual Performance Evaluation date	12/04/2025	12/04/2025	04/22/2025	N/A
NPAP Date	**	05/28/2025	N/A	N/A

* Instrument operated at ambient level range of 20 ppm

**Not performed this year

Appendix Table A-11.3: San Ysidro - Particulate Pollutants Monitor Designations

Pollutant	PM _{2.5} Continuous (FEM)	PM ₁₀ Continuous (FEM)
POC	3	3
Monitor designation	Primary	Primary
Parameter code	88101 (LC)	81102(STP)
Basic monitoring objective	NAAQS	NAAQS
Site type	Source-Oriented	Source-Oriented
Monitor type	SLAMS	SLAMS
Network affiliation	Near-Road	Near-Road
Instrument manufacturer & model	Teledyne-API T640x	Teledyne-API T640x
Method code	638	639
FRM/FEM/ARM/Other	FEM	FEM
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Micro Scale	Micro Scale
Monitoring start date	09/27/2023	09/27/2023
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	None	None
Any PM Hi-Vol sampler w/in 2m	None	None
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	N/A	N/A
Suitable for comparison to the NAAQS?	Yes	Yes
Frequency of flow rate verification	Monthly	Monthly
Semi-Annual flow rate audits dates	04/22/2025, 10/16/2025	04/22/2025, 10/16/2025
Additional QA flow rate check dates*	01/22/2025, 07/22/2025	01/22/2025, 07/22/2025
PEP date	03/05/2025	03/05/2025

*Additional QA checks are not official audits

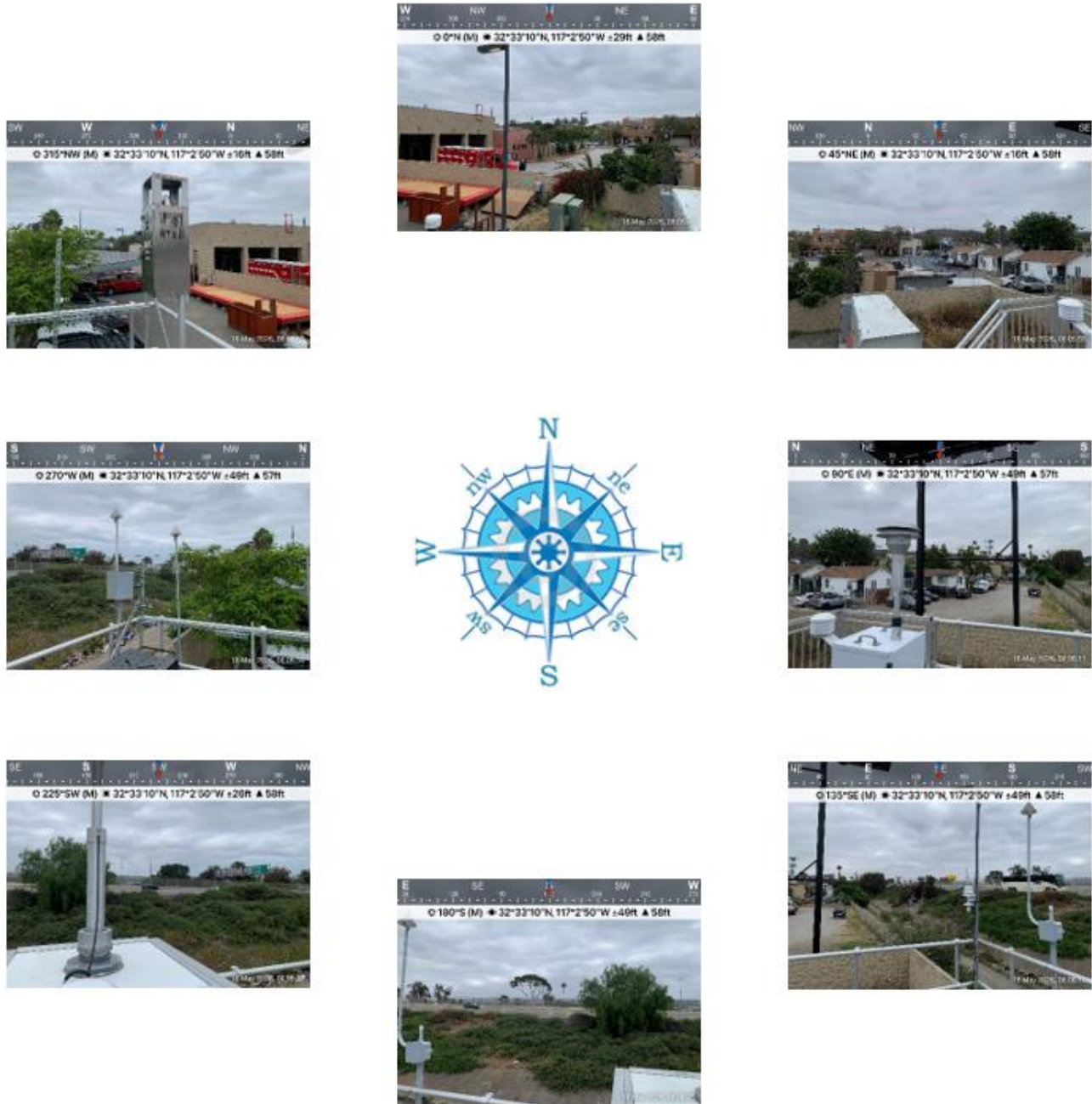
**Not performed this year

Appendix Table A-11.4: San Ysidro - Meteorological Equipment Designations & Other

Pollutant	Other Internal Temp	Meteorological External Temp
POC	1	1
Monitor designation	N/A	N/A
Parameter code	62107	62101
Basic monitoring objective	N/A	N/A
Site type	N/A	N/A
Monitor type	SLAMS	SLAMS
Network affiliation	N/A	N/A
Instrument manufacturer & model	Qualimetrics 4480	RM Young 41382VF
Method code	012	040
FRM/FEM/ARM/Other	Other	Other
Collecting agency	APCD	APCD
Analytical laboratory	APCD	APCD
Reporting agency	APCD	APCD
Spatial scale	Micro-scale	Micro-scale
Monitoring start date	09/28/2023	09/28/2023
Current sampling frequency	Continuous	Continuous
Required sampling frequency	Continuous	Continuous
Sampling season	Year-round	Year-round
Any PM Lo-Vol sampler w/in 1m	N/A	N/A
Any PM Hi-Vol sampler w/in 2m	N/A	N/A
Probe material for reactive gases	N/A	N/A
Residence time for reactive gases	N/A	N/A
Any changes within the next 18 months?	No	No
Suitable for comparison to the NAAQS?	N/A	N/A
Frequency of QC check (one-point)	Monthly	Monthly
Annual Performance Evaluation date	04/22/2025	04/22/2025
NPAP date	N/A	N/A

Appendix Table A-11.5: San Ysidro - Distance Equipment are from Influences

(meters)	Gas Inlet	H2S Inlet	Pb-TSP, PRI (44.5 cfm)	Pb-TSP, QAC (44.5 cfm)	PM ₁₀ , PRI (16 lpm)	PM ₁₀ , QAC (16 lpm)	BC-1060	PM _{2.5} PM ₁₀ FEM, PRI T640x(16.7 lpm)	PM _{2.5} FEM, QAC (16.7 lpm)	PM _{2.5} non-FEM (16.7 lpm)	PM _{2.5} Super SASS (6.7 lpm)	E-Sequential (TSP) (16.67 lpm)	† PAMS-VOC (50 ccpm)	† PAMS-VOC, QAC (50 ccpm)	† PAMS-Carbonyls (1.5 lpm)	† Toxics-VOC (50 ccpm)	† Toxics-VOC, QAC (50 ccpm)	Toxics-Metals (12 lpm)	Meteorology
Gas Inlet	n/a	5.3					4.6	2.6				2.5							
H2S Inlet	5.3						3.4	3.0				4.8							
Pb-TSP, PRI																			
Pb-TSP, QAC																			
PM ₁₀ , PRI																			
PM ₁₀ , QAC																			
BC 1060	4.6	3.4						2.6				2.4							
PM _{2.5} PM ₁₀ FEM, PRI	2.6	3.0					2.6					2.4							
PM _{2.5} PM ₁₀ FEM, QAC																			
PM _{2.5} non-FEM																			
PM _{2.5} Super SASS																			
E-SEQ TSP	2.5	4.8					2.4	2.4											
†PAMS-VOC																			
†PAMS-VOC, QAC																			
†PAMS-Carbonyls																			
†Toxics-VOC																			
†Toxics-VOC, QAC																			
Toxics-Metals																			
Meteorology																			
<i>height from deck</i>	2.6	2.2					1.3	2.5				1.9							
<i>height from ground</i>	5.6	5.2					4.3	5.5				4.9							
<i>distance: from the road</i>	31	31					31	31				31							
<i>from the supporting structure(wall)</i>	N	N					N	N				N							
<i>from obstructions on roof (deck)</i>	N	N					N	N				N							
<i>from obstructions not on roof</i>	N	N					N	N				N							
<i>from the closest tree</i>	N	N					N	N				N							
<i>from furnace/flue</i>	N	N					N	N				N							
<i>unrestricted air flow (degrees)</i>	360	360					360	360				360							



Appendix Figure A.22: San Ysidro - Pictures (Directional) from the Station's Deck Top

(left intentionally blank)

Appendix B: Site Waivers

B-1 McClellan-Palomar Airport (CRQ)

B-1.1 Lead Discontinuation Request

San Diego County APCD Formal Request for Waiver to Decommission Lead (Pb) Sampling at McClellan-Palomar Airport (CRQ)

Date: 5/29/2025

To: U.S. Environmental Protection Agency – Region 9

From: Paula Forbis, Air Pollution Control Officer

Agency: San Diego Air Pollution Control District

Subject: Request for Decommissioning of Lead Monitoring at Palomar Airport per Title 40, Part 58, Subpart B, Section 58.14 c(1) and with Title 40, Part 58, Appendix D, Section 4.5(a)(ii) and (iii)

Request:

The San Diego County Air Pollution Control District (SDAPCD) is formally petitioning EPA to waive the site requirement for lead (Pb) monitoring at the McClellan-Palomar Airport (CRQ) site (AQS 06-073-1023) and discontinuation of lead sampling via total suspended particulate (TSP) at this monitoring site. This request is made in accordance with Title 40, Part 58, Subpart B, Section 58.14 c(1) and with Title 40, Part 58, Appendix D, Section 4.5(a)(ii) and (iii) of the Code of Federal Regulations, which provides criteria for discontinuing source-oriented lead monitoring based on monitored concentrations and emission inventory trends.

Reason:

San Diego County has been and is currently in attainment with the lead (Pb) National Ambient Air Quality Standard (NAAQS) set at 0.15 µg Pb/ m³ as a rolling 3-month average and lead (Pb) monitoring is not required for an attainment or maintenance plan.

The measured concentrations of lead (Pb) at the McClellan-Palomar Airport monitoring location have remained consistently well below the NAAQS. The design value, calculated as the maximum rolling 3-month lead average over a 3-year period, for this site has remained consistently at 0.02 µg Pb/ m³ since sampling began on November 1, 2014 through end of 2024 at AQS site 06-073-1023. This represents only 13% of the NAAQS.

	2015 – 2017	2016 – 2018	2017 – 2019	2018 – 2020	2019 – 2021	2020 – 2022	2021 - 2023	2022 - 2024
Design Value (µg/m ³)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

In accordance with 40 CFR Part 58, Appendix D to Part 58, Section 4.5(a)(ii) and (iii), SDAPCD has continuously been monitoring for lead at this location since November 2014 and has never measured values exceeding 50 percent of the NAAQS set at 0.15 µg Pb/ m³ as a rolling 3-month

average. Given the information above, and the additional information below, there is a zero percent probability that McClellan-Palomar lead design value in the next three years will exceed 80% of the NAAQS (80% NAAQS = 0.12 $\mu\text{g Pb}/\text{m}^3$).

Additional Information:

While shorter time averages (i.e. monthly averages or individual samples) cannot be compared to the NAAQS for attainment determination, those comparisons can be useful to evaluate worst case scenarios. The highest single month average over the 10+ years of sampling was 0.027 $\mu\text{g Pb}/\text{m}^3$, which, if it was the design value, would only be 18% of the NAAQS at 0.15 $\mu\text{g Pb}/\text{m}^3$. Furthermore, the highest individual sample over the 10+ years of sampling was 0.061 $\mu\text{g Pb}/\text{m}^3$, which, if it was a design value, would only be 41% of the NAAQS at 0.15 $\mu\text{g Pb}/\text{m}^3$.

At no time during the last 10 years of sampling has the lead concentration been above 50% of the NAAQS (0.15 $\mu\text{g Pb}/\text{m}^3$).

	2014 ^a	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Max Single Month Avg	0.008	0.019	0.012	0.020	0.023	0.019	0.027	0.025	0.016	0.020	0.019
Max Individ. Sample	0.021	0.032	0.025	0.035	0.043	0.040	0.054	0.040	0.045	0.061	0.042

^a Sampled only in November and December

In 2011, McClellan-Palomar Airport was selected for lead monitoring due to its 2008 EPA National Emission inventory value of 0.595 tons/ year. Since that time, the lead emissions at McClellan-Airport have dropped by nearly 50%.

2008: 0.595 tons/year

2011: 0.386 tons/year

2014: 0.360 tons/year

2017: 0.360 tons/year

2020: 0.316 tons/year

These data reinforce the conclusion that source emissions are continuing to decline, reducing the necessity for continued lead monitoring at this location.

Given these findings and the guidance provided under Title 40, Part 58, Subpart B, Section 58.14 c(1) and with Title 40, Part 58, Appendix D, Section 4.5(a)(ii) and (iii) of the Code of Federal Regulations, SDAPCD respectfully requests EPA approval to waive the siting requirements and allow decommissioning of the lead (Pb) TSP sampling at the McClellan-Palomar monitoring site.

B-1.2 Lead Discontinuation Approval

B. Approval of Pb Monitoring Waiver and Discontinuation of McClellan-Palomar Airport Pb Monitor

This enclosure provides the U.S. Environmental Protection Agency's (EPA) review and approval for the San Diego County Air Pollution Control District (SDAPCD) request to waive the site requirement for lead (Pb) monitoring, and the discontinuation of the Pb State/Local Air Monitoring Station (SLAMS) monitor at the McClellan-Palomar Airport site (Air Quality System (AQS) Site ID: 06-073-1023). On July 1, 2025, SDAPCD sent EPA its Annual Network Plan (ANP) which included a request for EPA approval of this network change. In this ANP, SDAPCD explained the request to discontinue the McClellan-Palomar Airport site due to continual declining source emissions, and lack of necessity for continued Pb monitoring at this location. Per 40 CFR 58.14, monitoring agencies are required to obtain EPA approval for the discontinuation of SLAMS monitors.

SDAPCD was required to conduct ambient air Pb monitoring at the McClellan-Palomar Airport site because it exceeded 50 percent of the 2008 rolling 3-month average Pb National Ambient Air Quality Standards (NAAQS) during a 12-month study mandated in 2011 for airports listed in 40 CFR part 58, Appendix D, §4.5 (a)(iii), Table D-3A. Thus, it became "a required monitor under paragraph 4.5(c) of this Appendix [App. D], and shall continue to monitor for Pb unless a waiver is granted allowing it to stop operating as allowed by the provisions in paragraph 4.5(a)(ii) of this Appendix." Additionally, discontinuation of this Pb SLAMS monitoring site was specifically reviewed by EPA against criteria contained in 40 CFR 58.14(c)(1). EPA has reviewed SDAPCD's request and data associated with this monitor and concludes that the criteria contained in 40 CFR part 58, Appendix D, §4.5 and 40 CFR 58.14(c)(1) are met as described below; EPA therefore approves a waiver for the ambient air Pb monitoring near this source which would have otherwise been required, and the discontinuation of the Pb SLAMS monitor at the McClellan-Palomar Airport site.

According to certified data submitted to EPA's AQS, the McClellan-Palomar Airport Pb SLAMS monitor was in attainment of the 2008 rolling 3-month average Pb NAAQS based on the five most recent design values (design values 2020-2024, encompassing data years 2018-2024). The EPA has determined that, based on design values from 2020-2024, there is a less than 10 percent probability of exceeding 80 percent of the NAAQS during the next three years at this site. Preliminary 2025 data are consistent with the historical trend and continue to show low concentrations. This monitor is not specifically required by an attainment or maintenance plan and is not located in a nonattainment or maintenance area. Therefore, the closure of this site does not compromise data collection needed for implementation of the Pb NAAQS.

This site was needed to fulfill 40 CFR part 58, Appendix D 4.5 requirements for source-oriented monitoring at airport sources listed in Table D-3A after exceeding 50 percent of the 2008 rolling 3-month Pb NAAQS in 2011, and thus, was indefinitely required by the EPA Regional Administrator unless otherwise waived. Since then, the 2008, 2011, 2014, 2017, and 2020

National Emissions Inventory (NEI) has reported 0.595, 0.386, 0.360, 0.360, and 0.316 tons/year, respectively, at the McClellan- Palomar Airport (NEI Emissions Inventory ID: 10011011). Thus, the most recent data from the NEI (2008, 2011, 2014, 2017, 2020) indicates that the McClellan-Palomar Airport does not exceed the 1.0 tons/year threshold that would necessitate a monitoring plan. Furthermore, at no time during the last 10 years of sampling (2014-2024) has the Pb concentration been above 50 percent of the 2008 rolling 3-month average Pb NAAQS. Based on the provided information, the EPA has determined that the request demonstrates the McClellan-Palomar Airport will not contribute to a maximum Pb concentration in ambient air in excess of 50 percent of the NAAQS. Therefore, in accordance with the provisions in 40 CFR part 58, Appendix D, §4.5(a)(ii), EPA approves a waiver for the ambient air Pb monitoring near this source which would have otherwise been required by 40 CFR part 58, Appendix D, §4.5.

Based on these analyses, EPA approves SDAPCD's discontinuation of the McClellan-Palomar Airport Pb SLAMS site. Please include this enclosure and the relevant monitor and site closure information in next year's SDAPCD's annual monitoring network plan and per 40 CFR 58.10(b)(10), in all future annual network plans, include the date the waiver was approved. Please note that per 40 CFR part 58, Appendix D, §4.5(a)(ii) this waiver needs to be renewed every 5 years as part of the network assessment.

B-2 Rancho Carmel Drive (RCD) Near-road Site

San Diego County APCD Formal Request for Waiver for Nearby Trees at Rancho Carmel Drive Near-road Site

Date: 5/7/2024

To: U.S. Environmental Protection Agency – Region 9

From: David Sodeman, Chief of Monitoring and Technical Services

Agency: San Diego County Air Pollution Control District

Subject: Waiver Request per 40 CFR Part 58, Appendix D, Section 2.3(b) – Tree Proximity at Rancho Carmel Drive Near-road Monitoring Site

Request

This letter serves as a formal request for a waiver from the EPA's siting criteria outlined in Title 40, Part 58, Appendix E, which requires that the inlet probe for the gas analyzers and the inlet for the PM analyzer be great than 10 meters from the dripline of a tree. The District is seeking this waiver for the Rancho Carmel Drive Near-road monitoring site [AQS ID: 06-073-1017] due to the presence of nearby trees and not meeting the EPA's minimum distance criteria.

Reason

Although the current site does not fully meet the distance requirement due to the presence of trees in the surrounding area, the site was originally approved by the EPA based on its optimal positioning for capturing emissions from the adjacent highway. The inlet is oriented toward the predominant wind direction to ensure representative data collection of mobile source pollutants as per Near-road monitoring objectives. Additional guidance in the Code of Federal Regulations regarding spacing from obstructions for the Near-road monitoring stations is located in Title 40, Part 58, Appendix E, Section 2.3 "Spacing From Obstructions", part d:

"For near-road monitoring stations, the monitor probe shall have an unobstructed air flow, where no obstacles exist at or above the height of the monitor probe, between the monitor probe and the outside nearest edge of the traffic lanes of the target road segment".

The distances from the probe inlet to the tree driplines are as follows:

Tree 1: 8.78 meters

Tree 2: 8.35 meters

Tree 3: 5.76 meters

Tree 4: 12.15 meters

These trees, while within 20 meters, are not dense enough to obstruct the primary flow path from the roadway to the inlet. Figure 1 shows an aerial view of the Rancho Carmel Drive site with the

measurements of each tree to the inlet. Their positioning does not significantly affect the representative air quality measurements required under 40 CFR Part 58. We believe the data integrity remains high and consistent with monitoring goals.

Therefore, we respectfully request that EPA grant a waiver acknowledging the presence of these trees and approving the continued use of this site under its current configuration.



Appendix Figure B.3: Distance of Inlets from Dripline of Nearby Trees at Rancho Carmel Drive Near-road Monitoring Site