

Air Monitoring Network Plan 2014



NCUAQMD
2300 Myrtle Ave
Eureka, CA 95501

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Definition of Terms

AAC: Atmospheric Analysis and Consulting
AQS: Air Quality System
BAAQMD: Bay Area Air Quality Management District
CARB: California Air Resources Board
E-BAM: Emergency Beta-Attenuation Monitor
FEM: Federal Equivalency Method
FRM: Federal Reference Method
MSA: Micropolitan Statistical Area
NAAQS: National Ambient Air Quality Standards
NOAA: National Oceanographic and Atmospheric Administration
NCUAQMD: North Coast Unified Air Quality Management District
POC: Parameter Occurrence Code
PQAO: Primary Quality Assurance Organization
SIP: State Implementation Plan
SLAMS: State and Local Air Monitoring Station
SPM: Special Purpose Monitor

Executive Summary

The North Coast Unified Air Quality Management District (NCUAQMD) maintains a network of air pollution monitoring equipment. This network has developed slowly, beginning in 1986 with a solitary PM₁₀ monitoring station. Currently there are four stations in operation.

The NCUAQMD is located in the far northwestern portion of California. It is comprised of three counties: Del Norte, Humboldt, and Trinity, which together cover 7,753 square miles. It is bordered on the west by the Pacific Ocean and extends from the Oregon Border south approximately 140 miles to the Mendocino County line. Eureka, the county seat of Humboldt County, is 284 miles north of San Francisco, 466 miles south of Portland, Oregon and on the coast of the Pacific Ocean. The area is made up of varied terrain, from coastal wetlands to rugged mountains. Inversions and diurnal offshore wind patterns are common.

Major sources located in the Humboldt Bay region (Eureka, Arcata) include the Fairhaven Power Plant, and PG&E's Humboldt Bay Power Plant. The first source is located on the Samoa Peninsula just east of Eureka. The PG&E plant is located just south of Eureka.

In addition to these Title V sources, the NCUAQMD is impacted by mobile and large industrial sources. The District is also impacted by wood smoke in the winter and agricultural crop residue burning and wildfires in the summer.

Overview of Network Operation

Network Design.

The North Coast Unified Air Quality Management District operated five monitoring sites in 2013. The following maps show the locations of the monitoring sites. Tables 1 and 2 list the pollutants measured at each site.

Table 1. List of Special Purpose Monitoring Sites

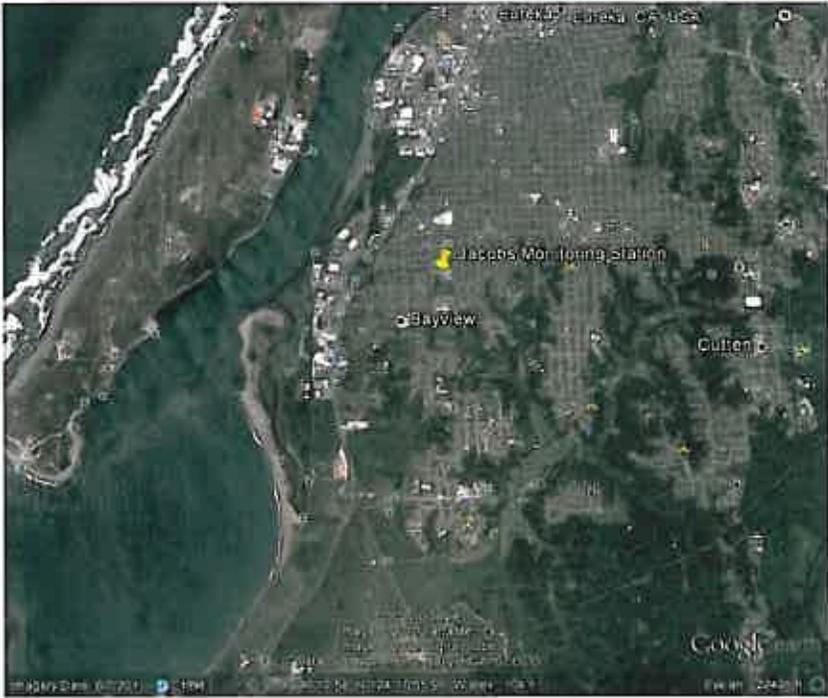
Site Name	AQS Site #	Pollutant Monitored
Jacobs	060231004	PM ₁₀ , PM _{2.5} , O ₃ , NO ₂ , CO, SO ₂
Humboldt Hill	060231005	PM ₁₀ , PM _{2.5} , O ₃ , NO ₂ , CO, SO ₂ , NH ₃
Weaverville	061050002	PM _{2.5}

Table 2. List of State and Local Air Monitoring Sites

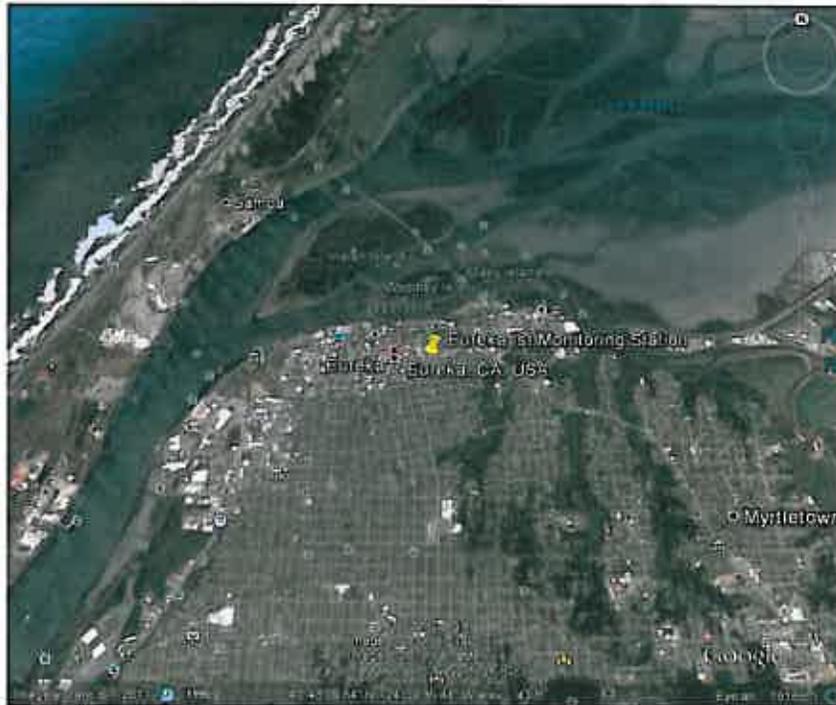
Site Name	AQS Site #	Pollutants Monitored
Eureka Ist	060231002	PM ₁₀ , PM _{2.5}
Weaverville	061050002	PM ₁₀
Crescent City	060150006	PM ₁₀

Monitoring Station Locations

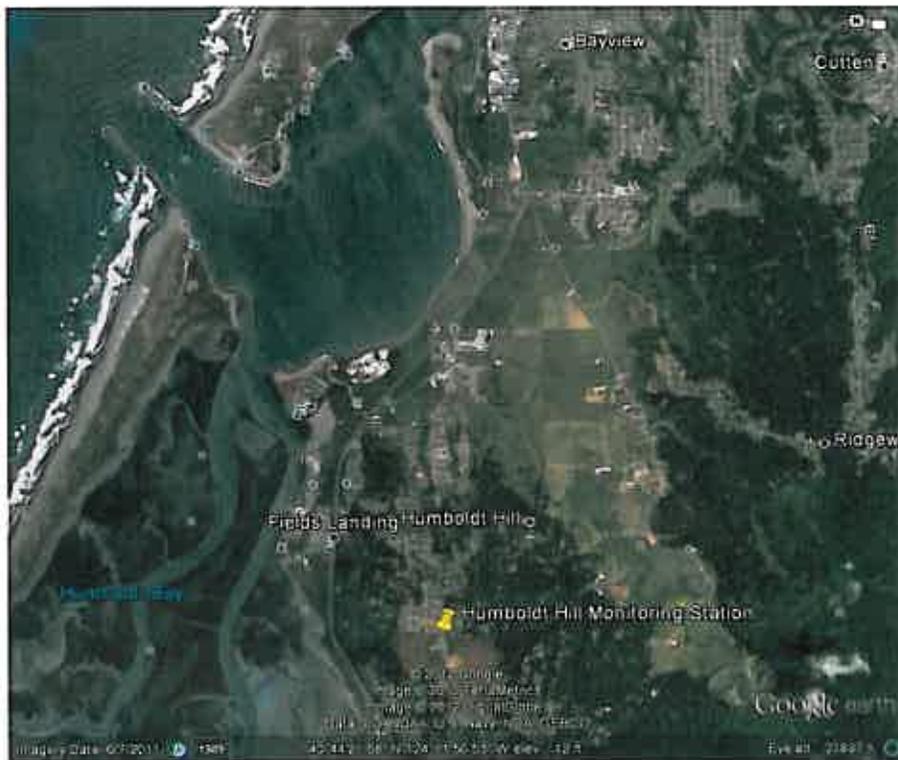
Jacobs Monitoring Station (717 South Ave, Eureka, Humboldt County)



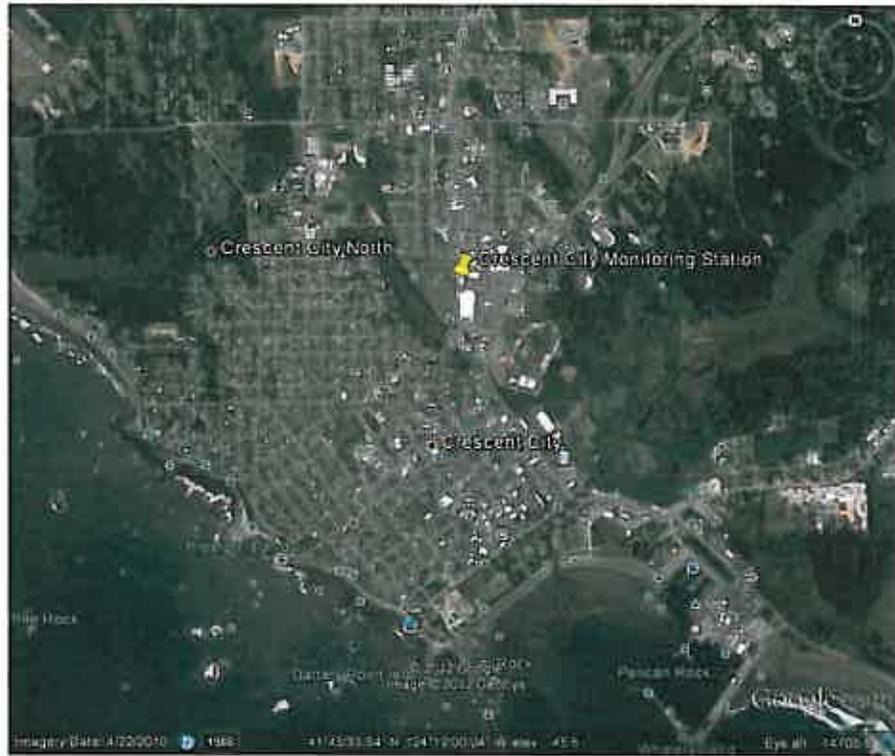
Eureka I Street Monitoring Station (529 I Street, Eureka, Humboldt County)



Humboldt Hill Monitoring Station (7333 Humboldt Hill Rd., Eureka, Humboldt County)



Crescent City Monitoring Station, (880 Northcrest Dr., Crescent City, Del Norte County)



Minimum Monitoring Requirements

This network meets the minimum monitoring requirements for all criteria pollutants (Tables 3-11).

Ozone

Table 3. Minimum Monitoring Requirements for Ozone.

Micropolitan Statistical Area	County	Pop. In Year 2010	4th highest 8-hour max. (ppm) (2011-2013)	3 year design value	SLAMS Monitors Required	Active SLAMS Monitors	Active SPM Monitors	Monitors Needed
Eureka-Arcata-Fortuna	Humboldt	134,623	Jacobs 0.045	Jacobs 0.045	0	0	2	0
			Humboldt Hill 0.046	Humboldt Hill 0.044				
Crescent City	Del Norte	28,610	-	-	0	0	0	0
none	Trinity	13,786	-	-	0	0	0	0

No monitors are required for either a SIP or Maintenance Plan. The NCUAQMD monitors Ozone as an examination of population exposure levels.

PM 2.5

Table 4. Minimum Monitoring Requirements for FRM PM_{2.5}.

Micropolitan Statistical Area	County	Pop. In Year 2010	Annual Design Value (ug/m ³) (2011-2013)	Daily Design Value (ug/m ³) (2011-2013)	FRM Monitors Required	SLAMS Monitors Active	SPM Monitors Active	Monitors Needed
Eureka, Arcata, Fortuna	Humboldt	134,623	I street 6.2	I street 19	0	1	1	0
			Jacobs 7.7	Jacobs 23*				
			Humboldt Hill 7.4	Humboldt Hill 18*				
Crescent City	Del Norte	28,610	-	-	0	0	0	0
none	Trinity	13,786	-	-	0	0	0	0

*Incomplete data.

Table 5. Minimum Monitoring Requirements for Continuous PM_{2.5} monitors.

Micropolitan Statistical Area	County	Pop. In Year 2010	SLAMS FEM monitors required	SLAMS Monitors Active	SPM Monitors Active
Eureka, Arcata, Fortuna	Humboldt	134,623	0	0	1*
Crescent City	Del Norte	28,610	0	0	0
none	Trinity	13,786	0	0	1*

* Instruments currently being accessed for non-regulatory designations

Table 6. Collocation of continuous PM_{2.5} monitors

Method Code	# Primary Monitors	Required Collocated monitors	Active Collocated FRM monitors	Active Collocated FEM Monitors
195	0	0	0	0

No PM_{2.5} monitors are required for either a SIP or Maintenance Plan.

In 2013, the NCUAQMD participated in the Federal Fine Particulates monitoring program by operating instruments at the Eureka Ist, Jacobs, Humboldt Hill and Weaverville stations. PM_{2.5} was monitored with FRM instruments at the Jacobs, Humboldt Hill and I street sites. All of these FRM instruments are suitable for national comparison. Only one FRM SPM was operated at any given time.

An FEM PM_{2.5} monitor is currently located Humboldt Hill Station. This instrument is being accessed for consideration of being designated as non-regulatory. The 2015 Annual Network Plan will contain this evaluation.

In 2013, an FEM instrument was located in Weaverville. This instrument has been removed. A non-regulatory BAM1020 was deployed at that location in February 2014.

PM10

Table 7. Minimum Monitoring Requirements for PM₁₀.

Metropolitan Statistical Area	County	Population in Year 2010	Max Concentration (2011-2013) (ug/m ³)	SLAMS Monitors Required	SLAMS Monitors Active	SPM Monitors Active	Monitors Needed
Eureka, Arcata, Fortuna	Humboldt	134,623	I street 64	0	1	2	0
			Jacobs 64				
			Humboldt Hill* 44				
Crescent City	Del Norte	28,610	61	0	1	0	0
none	Trinity	13,786	52	0	1	0	0

* Humboldt Hill data calculated using only 2012 and 2013 data

NCUAQMD was non-attainment for the State PM₁₀ standard in all three counties in 2013. Beginning July 1, 2014, Del Norte and Trinity Counties will be redesignated as attainment.

NO₂

Table 8. Minimum Monitoring Requirements for NO₂.

Micropolitan Statistical Area	County	Pop. in Year 2010	Annual Design Value (ppb) (2011-2013)	SLAMS Monitors Required	Active SLAMS Monitors	Active SPM Monitors	Monitors Needed
Eureka-Arcata, Fortuna	Humboldt	134,623	Jacobs 3.1	0	0	2	0
			Humboldt Hill 0.82				
Crescent City	Del Norte	28,610	-	0	0	0	0
none	Trinity	13,786	-	0	0	0	0

No monitors are required for SIP or Maintenance Plans. NCUAQMD monitors NO₂ in Humboldt County to examine population exposure. Based on population, no near-road NO₂ monitors are required within the NCUAQMD boundaries.

SO₂

Table 9. Minimum Monitoring Requirements for SO₂.

Micro-politian Statistical Area	County	Pop. in Year 2010	Annual Design Value (ppb) (2011-2013)	Max 24 hour (ppb) (2011-20013)	Max 1 hour (ppb) (2010-2013)	SLAMS Monitors Required	Active SLAMS Monitors	Active SPM Monitors	Monitors Needed
Eureka-Arcata, Fortuna	Humboldt	134,623	Jacobs 0.26	Jacobs 0.9	Jacobs 1.5	0	0	2	0
			Humboldt Hill 0	Humboldt Hill 0.8	Humboldt Hill 1.1				
Crescent City	Del Norte	28,610	-	-	-	0	0	0	0
none	Trinity	13,786	-	-	-	0	0	0	0

No monitors are required for SIP or Maintenance Plans. The NCUAQMD is not required to monitor SO₂. NCUAQMD monitors SO₂ in Humboldt County to examine population exposure.

CO

Table 10. Minimum Monitoring Requirements for CO.

Micro-politian Statistical Area	County	Pop. in Year 2010	8-hour Design Value (ppm) (2011-2013)	1 hour Design Value (2011-2013)	SLAMS Monitors Required	Col-located Monitors Required	Active SLAMS Monitors	Active SPM Monitors	Monitors Needed
Eureka-Arcata-Fortuna	Humboldt	134,623	Jacobs 1.1	Jacobs 1.4	0	0	0	2	0
			Humboldt Hill 0.7	Humboldt Hill 0.8					
Crescent City	Del Norte	28,610	-	-	0	0	0	0	0
none	Trinity	13,786	-	-	0	0	0	0	0

No monitors are required for SIP or Maintenance Plans. The NCUAQMD is not required to monitor CO. NCUAQMD monitors CO in Humboldt County to examine population exposure.

Pb

Table 11. Minimum Monitoring Requirements for Pb.

MSA	County	Pop. In Year 2010	Annual Design Value	Monitors Required	Active Monitors	Monitors Needed
Eureka, Arcata, Fortuna	Humboldt	134,623	-	0	0	0
Crescent City	Del Norte	28,610	-	0	0	0
none	Trinity	13,786	-	0	0	0

No monitors are required for SIP or Maintenance Plans. The NCUAQMD is not required to monitor Pb and does not do so.

Quality Control

All NCUAQMD ambient air monitoring meets stringent ARB Quality Control and Quality Assurance requirements. ARB audit records and site information for NCUAQMD can be found on the ARB website at <http://www.arb.ca.gov/aagm/qmosqual/qmosqual.htm>, or obtained by contacting NCUAQMD at (707) 443-3093.

Collocation

The NCUAQMD is a member of the ARB PQAO and relies on the ARB PQAO network to satisfy collocation requirements. It is ARB's responsibility to show that this requirement is met.

NCUAQMD does not currently have any collocated manual PM₁₀ samplers. NCUAQMD shut down the manual PM₁₀ sampling program on Dec 31, 2013.

NCUAQMD does not currently have any permanently collocated PM_{2.5} samplers. The FEM Grimm 180 has been collocated with an FRM PM_{2.5} at Humboldt Hill since March of 2013 for the purpose of comparing the FEM data to an FRM instrument. Preliminary results show the Grimm instrument to be unsuitable for comparison to the NAAQS. If that proves true, the Grimm 180s in the NCUAQMD network will not require collocation, as they will not be regulatory. The results of this study will be included in the 2015 Annual Network Plan.

Recent or Proposed Modifications to Network

Effective July 1, 2014, Trinity and Del Norte Counties were designated as Attainment for PM₁₀. In anticipation of this fact, and necessitated by the closure of the NCUAQMD PM₁₀ weight lab, the filter based PM₁₀ program at NCUAQMD was discontinued as of December 31, 2013. PM₁₀ will continue being monitored in Humboldt County at the Jacobs and Humboldt Hill stations, using real-time methods. Starting in January 2014, Jacobs station includes an FEM PM₁₀ BAM1020. Humboldt Hill station continues to include a non-regulatory PM₁₀ Grimm 180.

The District discontinued the Eureka I street monitoring station on December 31, 2013. EPA approval was given on Dec 11th, 2013, the approval letter is attached. Eureka I Street station included both FRM PM₁₀ and FRM PM_{2.5}. The FRM PM_{2.5} instrument was moved to the Jacobs station, and began collecting data on January 1, 2014. This is a SPM, and does not require EPA approval to begin operation.

The Crescent City FRM PM₁₀ instrument was shut down on Dec 31, 2013. An EPA approval letter for this closure is attached.

The Weaverville FRM PM₁₀ was shut down on Dec 31, 2013. The request letter sent to EPA for this closure is attached.

PM₁₀ redesignation has allowed the District to monitor PM_{2.5} in the recently redesignated counties. Crescent City began monitoring 2.5 with an FEM GRIMM 180 instrument in February 2014. The Grimm 180 monitor is located a short distance from the original Crescent City monitoring location. This is a SPM monitor, and as such does not require EPA approval to begin operation. Weaverville began monitoring with a non-regulatory PM_{2.5} BAM1020 in March 2014. This is located at the same station as the discontinued FRM PM₁₀. This is also a SPM monitor, as thus does not require EPA approval to begin operation.

An FEM PM_{2.5} instrument is planned to be placed in Trinity County at a location distant from the current station to more fully understand the PM levels throughout Trinity County. There is no firm date for this deployment, as funding has not been secured.

In March 2013, the Humboldt Hill Station began hosting a Thermo FRM PM_{2.5} instrument. This instrument was located at Humboldt Hill to allow data comparison between it and the FEM PM_{2.5} Grimm 180. This is a SPM and thus does not require EPA approval to begin operation.

Review of Changes to PM_{2.5} Monitoring Network

The NCUAQMD has not changed the location of any violating PM_{2.5} monitor. Any changes to the NCUAQMD's PM_{2.5} network are reviewed by EPA Region Nine. NCUAQMD has never removed a PM_{2.5} monitor, and has added three monitors since the inception of its 2.5 monitoring program. If a violating PM_{2.5} monitor ever needed to be moved, we would use the annual network plan inspection/comment process to provide for the review of this change.

In March of 2013 the District moved the Special Purpose FRM PM_{2.5} sampler located at Jacobs station to Humboldt Hill Station. This allows for ongoing comparison to the FEM Grimm 180 operating there. Results of this comparison will be included in next year's Annual Network Plan. In January of 2014, an R&P FRM 2000 was reinstalled at the Jacobs station.

The District discontinued the Eureka I street PM_{2.5} monitor. The EPA approval letter for this is attached, as well as the request letters to EPA for this closure.

PM₁₀ Redesignation has allowed the District to monitor PM_{2.5} in the recently redesignated counties. Crescent City began monitoring 2.5 with an FEM GRIMM 180 instrument in February 2014. This is located a short distance from the original Crescent City monitoring location. This is a SPM monitor, and as such does not require EPA approval to begin operation.

Weaverville began monitoring with a non-regulatory PM_{2.5} BAM1020 in March 2014. This is located at the same station as the discontinued FRM PM₁₀. This is also a SPM monitor, as thus does not require EPA approval to begin operation.

An FEM PM_{2.5} instrument is planned to be placed in Trinity County at a location distant from the current station to more fully understand the PM levels throughout Trinity County. There is no firm date for this deployment, as funding has not been secured.

NCUAQMD owns auditing equipment for the Grimm 180, and conducts audits according to Grimm specifications. ARB does not own audit equipment for the Grimm 180, and is thus unable to conduct the audits required for certification. There is no firm date for the

commencement of ARB audits, as funding for the needed equipment has not been secured by either agency.

Data Submission Requirements

Data and Precision/Accuracy reports are submitted to the California Air Resources Board (ARB) no later than 60 days after the quarter of record. The ARB uploads NCUAQMD data to the National Air Quality System (AQS) no later than 90 days after the quarter of record. The ARB submits the annual data certification no later than May of each year.

Data Availability

NCUAQMD air quality data is available on the AQS database. It can also be obtained directly from NCUAQMD, in the form of monthly reports. Please contact NCUAQMD at 707-443-3093 to request copies of these reports.

Detailed Site Information

Site Name: Jacobs

The Jacobs site was established in December of 2006 it is located on the south side of Eureka and is expected to represent neighborhood scale air quality.

Site Name	Jacobs					
AQS ID	060231004					
GIS coordinates	103.91015E 4514.83731N WGS84					
Location	Alice Birney Elementary School					
Address	717 South Ave, Eureka					
County	Humboldt					
Dist. to road (meters)	50					
Traffic count (AADT)	3100 (2007)					
Representative statistical area name	Eureka, Arcata, Fortuna					
Groundcover	grass					
PEP audit?	Information maintained by EPA					
NPAP audit?	Information maintained by EPA					
PM ₁₀ Flow audits	Performed every 3 months by NCUAQMD, Performed biannually by ARB					
PM _{2.5} Flow audits	Performed monthly by NCUAQMD, Performed biannually by ARB					
Gaseous audits	Performed annually by ARB					
Date of most recent ARB audit	March 18, 2014					
Dates of two most recent semi-annual PM ₁₀ flow audits	March 18, 2014 December 10, 2013					
Dates of two most recent semi-annual PM _{2.5} flow audits	March 18, 2014 December 10, 2013					
Gaseous One-point control checks	Performed a minimum of once every two weeks					
Representative Area	Humboldt County Micropolitan Statistical Area, Eureka-Arcata-Fortuna, suburban					
Pollutant	O ₃	NO ₂	CO	SO ₂	PM _{2.5}	PM ₁₀
Parameter Code	44201	42602	42101	42401	88101	85101 & 81102
POC	1	1	1	1	1	1
Basic Monitoring Objective	NAAQS comparison	NAAQS comparison	NAAQS comparison	NAAQS comparison	NAAQS comparison	NAAQS comparison
Site Type	Population exposure	Population exposure	Population exposure	Population exposure	Population exposure	Population exposure

Site Name	Jacobs					
Pollutant	O ₃	NO ₂	CO	SO ₂	PM _{2.5}	PM ₁₀
Monitor Type	Special purpose	Special purpose	Special purpose	Special purpose	Special purpose	Special purpose
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Sampling method	Photometric EQOA-0880-047	Chemiluminescence RFNA-1289-074	Gas Filter correlation RFCA-0981-054	Pulsed Florescence EQSA-0486-060	Low Volume RFPS-0498-117	High Volume RFPS-1287-063
Instrument manufacturer and model	Thermo 49i	Thermo 42i	Thermo 48i	Thermo 43i	R&P 2000	Thermo HVol
FRM/FEM/ARM	FEM	FRM	FRM	FEM	FRM	FRM
Collecting Agency	NCUAQMD	NCUAQMD	NCUAQMD	NCUAQMD	NCUAQMD	NCUAQMD
Analytical Lab	N/A	N/A	N/A	N/A	BAAQMD	NCUAQMD
Reporting Agency	ARB	ARB	ARB	ARB	BAAQMD	ARB
Start date	Dec 15, 2006	Dec 15, 2006	Dec 15, 2006	Dec 15, 2006	Dec 25, 2006	Dec 15, 2006
Current Sampling Frequency	continuous	continuous	continuous	continuous	1:3	1:6 Note:sampling discontinued Dec 31, 2013
Sampling season	Year round	Year round	Year round	Year round	Year round	Year round
Probe height (meters)	4.5	4.5	4.5	4.5	N/A	N/A
Distance from supporting structure (meters)	1.9	1.9	1.9	1.9	N/A	N/A
Distance from obstructions on roof	N/A	N/A	N/A	N/A	N/A	N/A
Distance from obstructions not on roof (meters)	19	19	19	19	19	19
Distance from trees (meters)	15	15	15	15	15	17
Distance to furnace or incinerator flue	N/A	N/A	N/A	N/A	N/A	N/A
Distance between collocated monitors	N/A	N/A	N/A	N/A	N/A	N/A
Unrestricted airflow (degrees)	360	360	360	360	360	360
Probe material	Teflon	Teflon	Teflon	Teflon	N/A	N/A
Residence time (seconds)	6	8	5	7	N/A	N/A
Will there be changes within the next 18 months?	No	No	No	No	No	Yes
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	N/A	N/A	Yes	N/A

Site Name: Eureka I Street

The I street site was established in 1986. It is located in downtown Eureka near HWY 101 and is expected to represent middle scale air quality. It was shut down on January 1, 2014.

Site Name	Eureka I Street	
AQS ID	060231002	
GIS coordinates	103.92619E 4517.39332N WGS84	
Location	Humboldt County Health Department	
Address	529 I St, Eureka	
County	Humboldt	
Dist. to road	9 meters to 6 th St, 30 meters to 5 th St.	
Traffic count	6 th St has ADT of 9,000 , 5 th St has ADT of 25,500	
Groundcover	Paved	
PEP audit?	Information maintained by EPA	
NPAP audit?	Information maintained by EPA	
PM10 Flow audit	Performed every 3 months by NCUAQMD, Performed bi-annually by ARB	
PM2.5 Flow Audit	Performed monthly by NCUAQMD, Performed bi-annually by ARB	
Date of most recent ARB audit	December 10, 2013	
Dates of two most recent semi-annual PM ₁₀ flow audits	December 10, 2013 June 10, 2013	
Dates of two most recent semi-annual PM _{2.5} flow audits	December 10, 2013 June 10, 2013	
Representative Area	Humboldt County Micropolitan Statistical Area, Eureka-Arcata-Fortuna, Urban	
Pollutant	PM_{2.5}	PM₁₀
Parameter code	88101	85101 & 81102
POC	1	1
Basic Monitoring Objective	NAAQS comparison	NAAQS comparison
Site Type	Highest Concentration	Highest Concentration
Monitor Type	SLAMS	SLAMS
Spatial scale	Middle Scale	Middle Scale
Sampling method	Low Volume RFPS-0498-117	High Volume RFPS-1287-063
Instrument manufacturer and model	R & P 2000	Thermo HVol
FRM/FEM/ARM	FRM	FRM
Collecting Agency	NCUAQMD	NCUAQMD
Analytical Lab	BAAQMD	NCUAQMD
Reporting Agency	BAAQMD	ARB
Start date	Jan 1999	Nov 1986
Current Sampling Frequency	1:3 /1:6 seasonal Note: Sampling was discontinued Dec 31, 2013 because of an inability to meet the 1:3 sampling frequency requirement	1:6 Note: sampling was discontinued Dec 31, 2013
Sampling season	Year round	Year round
Probe height (meters)	6	6

Site Name	Eureka I Street	
Pollutant	PM _{2.5}	PM ₁₀
Distance from supporting structure (meters)	2	2
Distance from obstructions on roof (meters)	5	5.5
Distance from obstructions not on roof (meters)	25	25
Distance from trees below probe height (meters)	6.5	4.6
Distance to furnace or incinerator flue (meters)	5	5
Distance between collocated monitors	N/A	N/A
Unrestricted airflow	270 degrees	270 degrees
Probe material	N/A	N/A
Residence time	N/A	N/A
Will there be changes within the next 18 months?	Yes	Yes
Is it suitable for comparison against the annual PM _{2.5} ?	Yes	N/A

Site Name: Humboldt Hill

The Humboldt Hill site was established in June 2011. It is located on Humboldt Hill on the south side of Eureka and is expected to represent neighborhood scale air quality.

Site Name	Humboldt Hill						
AQS ID	060231005						
GIS coordinates	40.71528 (N) -124.20139 (W)						
Location	Humboldt Hill Summit						
Address	7333 Humboldt Hill Road, Eureka						
County	Humboldt						
Dist. to road	25						
Traffic count	Unknown, less than 50						
Groundcover	grass						
PEP audit?	Information maintained by EPA						
NPAP audit?	Information maintained by EPA						
PM ₁₀ Flow audits	Performed every 3 months by NCUAQMD, Performed bi-annually by ARB						
Gaseous audits	Performed annually by ARB						
Dates of two most recent semi-annual PM ₁₀ flow audits	March 19, 2014						
Dates of two most recent semi-annual PM _{2.5} flow audits	March 19, 2014 December 10, 2013						
Date of most recent ARB audit	March 19, 2014 December 10, 2013						
Gaseous One-point control checks	Performed a minimum of once per two weeks						
Representative Area	Humboldt County Micropolitan Statistical Area, Eureka-Arcata-Fortuna, suburban						
Pollutant	O₃	NO₂	CO	SO₂	NH₃	PM_{2.5}	PM₁₀
Parameter code	44201	42602	42101	42401	42604	88101	85101 & 81102
POC	1	1	1	1	1	1	1
Basic Monitoring Objective	NAAQS comparison	NAAQS comparison	NAAQS comparison	NAAQS comparison	Air pollution data	Air pollution Data	NAAQS comparison
Site Type	Population exposure	Population exposure	Population exposure	Population exposure	Population exposure	Population exposure	Population exposure
Monitor Type	Special purpose	Special purpose	Special purpose	Special purpose	Special purpose	Special purpose	Special purpose

Site Name	Humboldt Hill						
Pollutant	O ₃	NO ₂	CO	SO ₂	NH ₃	PM _{2.5}	PM ₁₀
Spatial scale	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood	Neighborhood
Sampling method	Photometric EQOA-0880-047	Chemiluminescence RFNA-1289-074	Gas Filter correlation RFCA-0981-054	Pulsed Fluorescence EQSA-0486-060	Chemiluminescence	Light scatter EQPM-0311-195	High Volume RFPS-1287-063
Instrument manufacturer and model	Thermo 49i	Thermo 42i	Thermo 48i	Thermo 43i	Thermo 17i	Grimm 180	Thermo HVol
FRM/FEM/ARM	FEM	FRM	FRM	FEM	N/A	FEM	FRM
Collecting Agency	NCUAQMD	NCUAQMD	NCUAQMD	NCUAQMD	NCUAQMD	NCUAQMD	NCUAQMD
Analytical Lab	N/A	N/A	N/A	N/A	N/A	N/A	NCUAQMD
Reporting Agency	ARB	ARB	ARB	ARB	N/A	ARB	ARB
Start date	June 20, 2011	June 20, 2011	June 20, 2011	June 20, 2011	Dec 13, 2012	June 20, 2011	Dec 15, 2011
Current Sampling Frequency	continuous	continuous	continuous	continuous	continuous	continuous	1:6 Note:sampling discontinued Dec 31, 2013
Sampling season	Year round	Year round	Year round	Year round	Year round	Year round	Year round
Probe height (meters)	4.5	4.5	4.5	4.5	4.5	5.3	N/A
Distance from supporting structure (meters)	1.9	1.9	1.9	1.9	1.9	1.2	N/A
Distance from obstructions on roof	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Distance from obstructions not on roof (meters)	15	15	15	15	15	15	15
Distance from trees (meters)	93	93	93	93	93	93	93
Distance to furnace or incinerator flue	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Distance between collocated monitors	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Unrestricted airflow (degrees)	360	360	360	360	360	360	360

Site Name	Humboldt Hill						
Pollutant	O ₃	NO ₂	CO	SO ₂	NH ₃	PM _{2.5}	PM ₁₀
Probe material	Teflon	Teflon	Teflon	Teflon	Teflon	Stainless steel	N/A
Residence time (seconds)	6	6	5	8	7	N/A	N/A
Will there be changes within the next 18 months?	No	No	No	No	No	No	Yes
Is it suitable for comparison against the annual PM _{2.5} ?	N/A	N/A	N/A	N/A	N/A	No. 40 CFR 58.11 (e) assessment in progress. Data will be included in 2015 ANP.	N/A

Site Name: Weaverville

The Weaverville site was established in 1995. It is located downtown Weaverville near HWY 299 and is expected to represent middle scale air quality.

Site Name	Weaverville	
AQS ID	061050002	
GIS coordinates	104.95617E 4509.31330N WGS84	
Location	Trinity County Courthouse	
Address	11 Court Street, Weaverville	
County	Trinity	
Dist. to road	7 meters to side road, 21 meters to highway 299	
Traffic count	1408 AADT for Garden Gulch; 5,100 AADT for HWY 299	
Groundcover	Paved	
PEP audit	Information maintained by EPA	
NPAP audit	Information maintained by EPA	
PM10 Flow audit	Performed every 15 sampling runs by NCUAQMD Performed biannually by ARB	
Date of most recent ARB audit	February 13, 2014	
Dates of two most recent semi-annual PM ₁₀ flow audits	February 13, 2014 October 2, 2013	
Dates of two most recent PM _{2.5} flow audits	April 9, 2014 March 7, 2014	
Representative Area	Rural, no MSA in Trinity County	
Pollutant	PM _{2.5}	PM ₁₀
Parameter Code	88101	85101 & 81102
POC	1	1
Basic monitor objective	Air Pollution Data	NAAQS comparison
Site Type	Population exposure	Population exposure
Monitor Type	SPM	SLAMS
Spatial scale	Middle Scale	Middle Scale
Sampling method	GRIMM 180 FEM	High Volume RFPS-1287-063
Instrument manufacturer and model	Grimm 180	Thermo HVol
FRM/FEM/ARM	FEM	FRM
Collecting Agency	NCUAQMD	NCUAQMD
Analytical Lab	N/A	NCUAQMD
Reporting Agency	ARB	ARB
Start date	Aug 2011	Jan 1995
Current Sampling Frequency	Continuous	1:6 Note:sampling discontinued Dec 31, 2013
Sampling season	Year round	Year round
Probe height (meters)	9.4	7
Distance from supporting structure (meters)	3	1.5
Distance from obstructions on roof (meters)	10	7

Site Name	Weaverville	
Pollutant	PM _{2.5}	PM ₁₀
Distance from obstructions not on roof (meters)	20	20
Distance from trees (meters)	15	15
Distance to furnace or incinerator flue	N/A	N/A
Distance between collocated monitors	N/A	N/A
Unrestricted airflow (degrees)	270	270
Probe material	N/A	N/A
Residence time	N/A	N/A
Will there be changes within the next 18 months?	Yes	Yes
Is it suitable for comparison against the annual PM _{2.5} ?	No. CFR 40 part 58.11 (e) assessments in progress for Grimm 180 at a collocated site.	N/A

Site Name: Crescent City

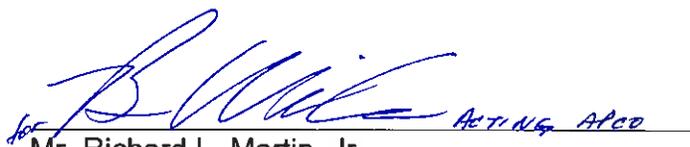
The Crescent City site was established in 1998. It is located at the Del Norte County Health Department near HWY 101 and is expected to represent neighborhood scale air quality.

Site Name	Crescent City
AQS ID	060150006
GIS coordinates	103.90908E 4624.31858N WGS84
Location	Del Norte County Health Department
Address	880 Northcrest Dr
County	Del Norte
Dist. to road	600 meters to HWY 101 200 meters to Northcrest
Traffic count	38,500 ADT HWY101 8,222 ADT Northcrest
Groundcover	Paved/grass
PEP audit	Information maintained by EPA
NPAP audit	Information maintained by EPA
Flow audit	Performed every 15 sampling runs by NCUAQMD, Performed annually by EPA, Performed annually by ARB
Date of most recent ARB audit	December 10, 2013
Dates of two most recent semi-annual flow audits	Aug 8, 2013 March 20, 2014
Representative Area	Del Norte County, Micropolitan Statistical Area, Crescent City Urban
Pollutant	PM ₁₀
Parameter Code	85101 & 81102
POC	1
Basic Monitoring Objectives	NAAQS comparison
Site Type	Population exposure
Monitor Type	SLAMS
Spatial scale	Neighborhood
Sampling method	High Volume RFPS-1287-063
Instrument manufacturer and model	Thermo HVol
FRM/FEM/ARM	FRM
Collecting Agency	NCUAQMD
Analytical Lab	NCUAQMD
Reporting Agency	ARB
Start date	Mar-1998
Current Sampling Frequency	1:6 Note: sampling discontinued Dec 31, 2013
Sampling season	Year round
Probe height	5.5 meters
Distance from supporting structure	1.5 meters

Site Name	Crescent City
Pollutant	PM ₁₀
Distance from obstructions on roof	N/A
Distance from obstructions not on roof	N/A
Distance from trees	90 meters
Distance to furnace or incinerator flue	N/A
Distance between collocated monitors	N/A
Unrestricted airflow (degrees)	360
Probe material	N/A
Residence time	N/A
Will there be changes within the next 18 months?	Yes
Is it suitable for comparison against the annual PM _{2.5} ?	N/A

Signature

The Executive Office of the North Coast Unified Air Quality Management District hereby verifies this plan has gone through a 30 day public comment period, and approves the "Air Monitoring Network Plan for 2014". Staff is directed to begin implementation effective immediately.

 ACTING APCO

Mr. Richard L. Martin, Jr.
Air Pollution Control Officer

4/30/14

Date

