

# **South Coast Air Basin Coherence Air Quality Control Demonstration - Initial Report: Aug 3rd - Aug 20th 1990**

## **Background**

After demonstrating the value of Coherence Technology™ for large urban areas in 1987 and 1989, the research and development group from Coherence Industries decided to demonstrate this effect for the Los Angeles area during the summer of 1990.

## **The Coherence Technology Effect for large urban areas**

In April of 1987 Coherence Technology was applied to the San Diego County area. The results included less general stress and strain in the environment, improved performance of electronic equipment and the establishment of the method by which the technology could be applied to large urban areas. In April of 1990 the technology was applied to the metropolitan area of New Delhi, India. The results included a dramatic improvement in visibility and a complete clearing of the air for the entire area.

## **How the Technology is applied**

Using specific Coherence Technology units the technology is applied throughout an entire urban electrical grid.

## **What the Technology does for the environment**

Coherence Technology has been shown to neutralize the potentially harmful effects of electromagnetic radiation. When it is applied to the electricity for a large urban area it relieves the environment of an electronic tension which is generated by random electromagnetic fields which are produced by all man-made electronic systems.

## **Air Quality and Coherence Technology**

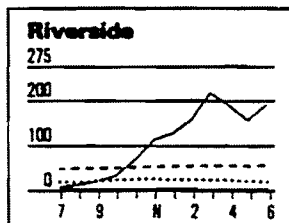
Electromagnetic randomness or chaos in the environment holds smog close to the earth and decreases the ventilation of highly polluted areas. When the tension and chaotic effects of electricity are neutralized for a large urban area then the environmental cycles normalize and remove pollutants from the air. Coherence Technology re-establishes the interrelationships between the many elements and cycles found in the ecosystem. When the technology is applied many changes take place in the direction of returning the environment to equilibrium or balance even if the load of pollution remains high.

## **The fate of specific pollutants once Coherence Technology has been applied**

As the overall functioning of the ecosystem comes into balance, the first effect on the specific pollutants is that they are cleared by an apparent change in weather. Next specific patterns in the ecosystem appear which actually remove the pollutants so that they are spread out and do not concentrate in small areas where they can do harm to the health of the local ecosystem. With future research we may find that atmospheric water and specific cycles such as the carbon and nitrogen cycles play an important role in the removal of specific pollutants.

The South Coast Air Basin has the most serious air quality problem in the nation. The Basin cannot absorb large amounts of pollutant emissions without exceeding health-based air quality standards. When applied to this area Coherence Technology can reduce the measured levels of the significant pollutants to federally set levels for human health and below within a short period of 2-4 weeks and can maintain this effect over time. Currently during the demonstration period of August 1990 the pollutant of greatest concern is ozone. Ozone is generated by the interaction of sunlight with high concentrations of pollutants. The federal standard or limit for the maximum tolerable level of ozone is .100 PPM. This level is exceeded 135 days out of the year in the South Coast Air Basin.

Statistically speaking, during the month of August the San Bernardino and Riverside areas have the highest levels of ozone. Below is a printout from the Los Angeles Times showing the high levels of ozone that occur during summer days in the San Bernardino, Riverside monitoring areas. The following graph is from Thursday July 19th, 1990 and shows a level above 200 which is a stage one episode.



— Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing  
 --- Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing.  
 .... Carbon monoxide (CO): invisible, reduces blood's oxygen.  
 PM<sub>10</sub> (10 micron particulates): invades deep into lungs, reduces visibility. (forecast only)

**Pollutant Standard Index (PSI):**  
 Ozone, hourly avg.; carbon monoxide, 8-hr avg.; nitrogen dioxide, 24-hr. avg.  
 0- 50: good  
 51-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 275+ : hazardous.

### The Demonstration

On August 3rd, 1990 the technology was introduced to the South Coast Air Basin. Up until Aug. 12th the usual pattern of high ozone was obvious in the reports. Then on Aug. 12th the ozone levels fell and have been right at or below federal standards since that time. Up until August 30th there have been no first stage alerts such as the ones which are common in the Riverside and San Bernardino areas during this time of year. Table 1 Shows the average winter and summer concentrations of ozone which is the most serious pollutant measured during this time of year. 0.100 ppm is the federal clean air standard.

STATION	WINTER		SUMMER	
	PEAK HOUR(S), PST	AVERAGE CONCENTRATION, PPM	PEAK HOUR(S), PST	AVERAGE O <sub>3</sub> CONCENTRATION, PPM
Lennox	11 am-4 pm	0.017	1-3 pm	0.050
El Toro	1-2 pm	0.027	12 noon	0.073
Anaheim	1 pm	0.023	1 pm	0.073
Los Angeles	2 pm	0.030	1 pm	0.097
La Habra	1-2 pm	0.027	2 pm	0.093
Reseda	11 am-3 pm	0.023	12 noon	0.097
Azusa	1-3 pm	0.033	1 pm	0.163
Fontana	1 pm	0.037	1 pm	0.200
Riverside	3 pm	0.033	1-2 pm	0.150
San Bernardino	11 am-3 pm	0.023	2 pm	0.173
Lake Gregory	12 noon-2 pm	0.033	3-4 pm	0.163
Perris	11 am-3 pm	0.023	2 pm	0.133
Palm Springs	1-3 pm	0.037	6 pm	0.087

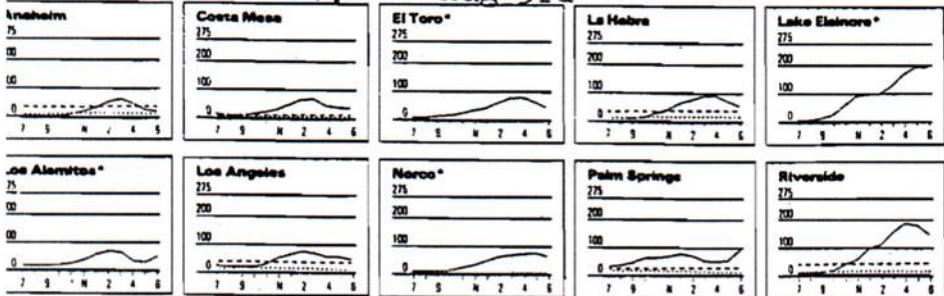
# Air Quality Reports from August 3rd thru August 20th

The following graphs are reproduced from the air quality section of the Orange County edition of the Los Angeles Times. They show the steady drop of ozone levels during the initial onset of the technology from August 3rd until August 12th. After August 12th note that the pollution levels remain below federal standards and in general continue to drop lower. Forecasts for the next days levels also show how the predicted levels are much higher than the actual measured levels the next day.

## DAY'S AIR QUALITY

daily average pollution, 7 a.m. to 6 p.m.

AUG. 3<sup>rd</sup> Aug 3<sup>rd</sup>



— Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing.  
 - - - Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing.  
 . . . Carbon monoxide (CO): invisible, reduces blood's oxygen.  
 PM<sub>10</sub> (10 micron particulates): invades deep into lungs, reduces visibility. (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr. avg.; nitrogen dioxide, 24-hr. avg.  
 0-60: good  
 61-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 275+: hazardous

### TODAY'S FORECAST

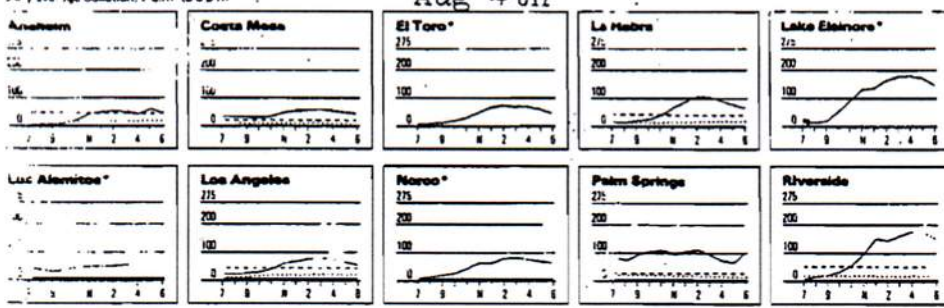
Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	75	50	15	46
Coastal areas	75	40	30	34
San Fernando, Santa Clarita	138	40	20	53
San Gabriel, Pomona	205	40	30	54
San Bernardino, Riverside	205	40	15	90
Hemet-Elsinore area	150	20	15	72
Inland Orange County	78	30	15	37
Downtown San Diego	50	not forecast		
Escondido	59	not forecast		
High deserts	163	20	15	53
Low deserts	75	20	15	75
Big Bear Lake	67	20	15	13
Banning area	75	20	15	27

Source: South Coast Air Quality Management Dist.

## TURSDAY'S AIR QUALITY

daily average pollution, 7 a.m. to 6 p.m.

Aug 4<sup>th</sup>



— Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing.  
 - - - Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing.  
 . . . Carbon monoxide (CO): invisible, reduces blood's oxygen.  
 PM<sub>10</sub> (10 micron particulates): invades deep into lungs, reduces visibility. (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr. avg.; nitrogen dioxide, 24-hr. avg.  
 0-60: good  
 61-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 275+: hazardous

### TODAY'S FORECAST

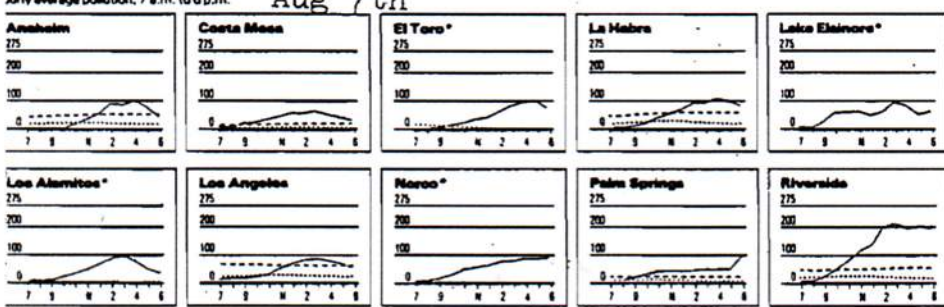
Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	100	50	20	55
Coastal areas	92	40	30	41
San Fernando, Santa Clarita	188	50	20	62
San Gabriel, Pomona	205	40	30	63
San Bernardino, Riverside	205	40	15	96
Hemet-Elsinore area	186	20	15	75
Inland Orange County	83	30	15	38
Downtown San Diego	50	not forecast		
Escondido	59	not forecast		
High deserts	163	20	15	61
Low deserts	83	20	15	61
Big Bear Lake	67	20	15	21
Banning area	113	20	15	4

Source: South Coast Air Quality Management Dist.

## FRIDAY'S AIR QUALITY

daily average pollution, 7 a.m. to 6 p.m.

Aug 7<sup>th</sup>



— Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing.  
 - - - Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing.  
 . . . Carbon monoxide (CO): invisible, reduces blood's oxygen.  
 PM<sub>10</sub> (10 micron particulates): invades deep into lungs, reduces visibility. (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr. avg.; nitrogen dioxide, 24-hr. avg.  
 0-60: good  
 61-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 275+: hazardous

### TODAY'S FORECAST

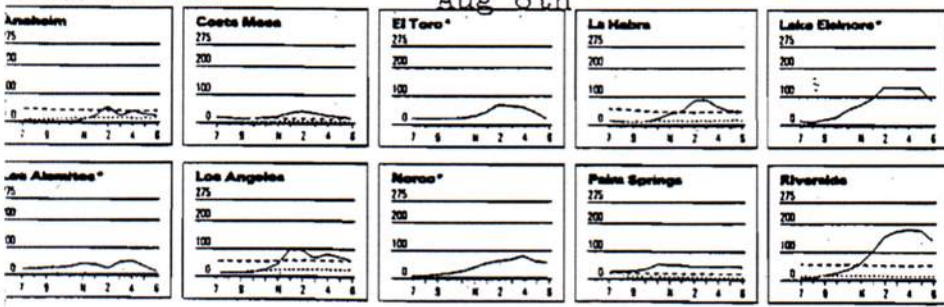
Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	113	60	30	56
Coastal areas	67	50	40	48
San Fernando, Santa Clarita	138	60	30	55
San Gabriel, Pomona	188	50	30	62
San Bernardino, Riverside	188	50	15	119
Hemet-Elsinore area	163	20	15	73
Inland Orange County	83	40	15	37
Downtown San Diego	50	not forecast		
Escondido	67	not forecast		
High deserts	125	20	15	76
Low deserts	75	20	15	53
Big Bear Lake	58	20	15	32
Banning area	92	20	15	64

Source: South Coast Air Quality Management Dist.

## WEDNESDAY'S AIR QUALITY

daily average pollution, 7 a.m. to 6 p.m.

Aug 8<sup>th</sup>



— Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing.  
 - - - Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing.  
 . . . Carbon monoxide (CO): invisible, reduces blood's oxygen.  
 PM<sub>10</sub> (10 micron particulates): invades deep into lungs, reduces visibility. (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr. avg.; nitrogen dioxide, 24-hr. avg.  
 0-60: good  
 61-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 275+: hazardous

### TODAY'S FORECAST

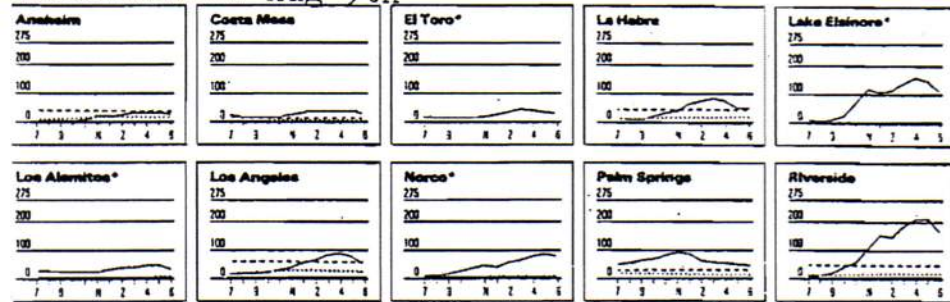
Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	100	50	20	53
Coastal areas	83	50	25	41
San Fernando, Santa Clarita	150	60	25	57
San Gabriel, Pomona	175	50	30	61
San Bernardino, Riverside	175	50	15	96
Hemet-Elsinore area	138	20	15	71
Inland Orange County	82	40	15	40
Downtown San Diego	50	not forecast		
Escondido	67	not forecast		
High deserts	100	20	15	62
Low deserts	92	20	15	61
Big Bear Lake	67	20	15	27
Banning area	113	20	15	43

Source: South Coast Air Quality Management Dist.

**THURSDAY'S AIR QUALITY**

hourly average pollution, 7 a.m. to 6 p.m.

Aug 9th



Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing  
 Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing  
 Carbon monoxide (CO): invisible, reduces blood's oxygen  
 PM<sub>10</sub> (10 micron particulates): invisible deep into lungs, reduces visibility (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr avg.; nitrogen dioxide, 24-hr. avg.  
 0-50: good  
 51-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 276+: hazardous

**TODAY'S FORECAST**

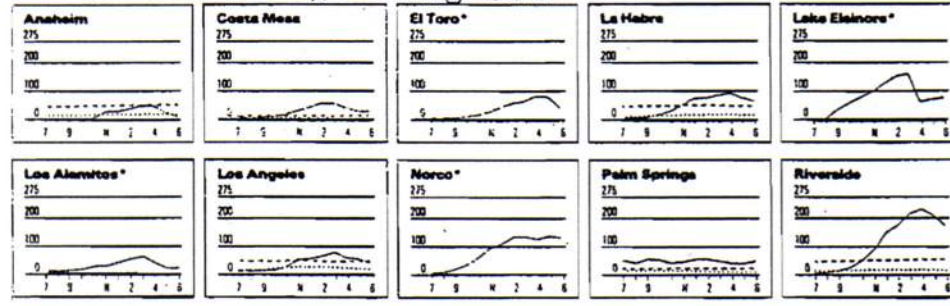
Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	100	50	20	48
Coastal areas	50	50	30	38
San Fernando, Santa Clarita	150	60	25	50
San Gabriel, Pomona	175	50	30	56
San Bernardino, Riverside	175	50	30	98
Hemet-Elsinore area	138	20	15	78
Inland Orange County	83	40	15	39
Downtown San Diego	50	not forecast		
Escondido	59	not forecast		
High deserts	125	20	15	59
Low deserts	92	20	15	58
Big Bear Lake	75	20	15	29
Banning area	125	20	15	59

Source: South Coast Air Quality Management District

**FRIDAY'S AIR QUALITY**

hourly average pollution, 7 a.m. to 6 p.m.

Aug 11th Aug 10th



Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing  
 Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing  
 Carbon monoxide (CO): invisible, reduces blood's oxygen  
 PM<sub>10</sub> (10 micron particulates): invisible deep into lungs, reduces visibility (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr avg.; nitrogen dioxide, 24-hr. avg.  
 0-50: good  
 51-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 276+: hazardous

**TODAY'S FORECAST**

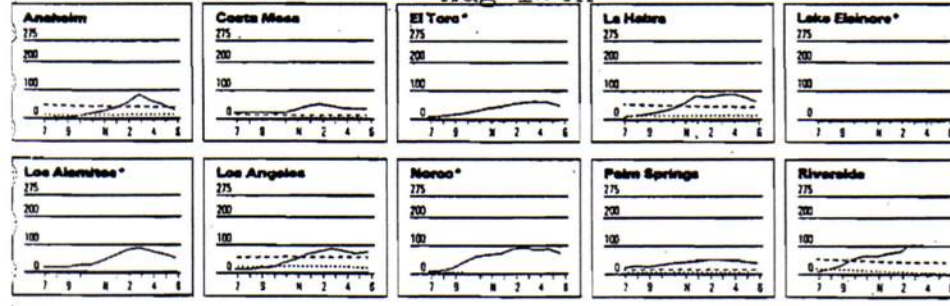
Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	83	50	25	5
Coastal areas	67	40	30	4
San Fernando, Santa Clarita	188	50	30	5
San Gabriel, Pomona	200	50	30	6
San Bernardino, Riverside	215	40	15	10
Hemet-Elsinore area	188	20	15	7
Inland Orange County	83	30	16	3
Downtown San Diego	50	not forecast		
Escondido	59	not forecast		
High deserts	150	20	15	6
Low deserts	100	20	15	6
Big Bear Lake	67	20	15	1
Banning area	150	20	15	1

Source: South Coast Air Quality Management District

**SATURDAY'S AIR QUALITY**

hourly average pollution, 7 a.m. to 6 p.m.

Aug 12th



Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing  
 Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing  
 Carbon monoxide (CO): invisible, reduces blood's oxygen  
 PM<sub>10</sub> (10 micron particulates): invisible deep into lungs, reduces visibility (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr avg.; nitrogen dioxide, 24-hr. avg.  
 0-50: good  
 51-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 276+: hazardous

**TODAY'S FORECAST**

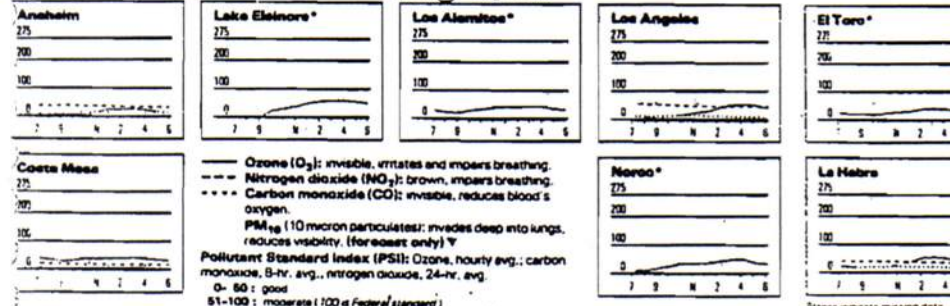
Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	125	50	20	1
Coastal areas	83	50	35	1
San Fernando, Santa Clarita	175	60	25	1
San Gabriel, Pomona	210	60	30	1
San Bernardino, Riverside	205	50	30	1
Hemet-Elsinore area	175	20	15	1
Inland Orange County	87	40	15	1
Downtown San Diego	50	not forecast		
Escondido	59	not forecast		
High deserts	150	20	15	1
Low deserts	83	20	15	1
Big Bear Lake	50	20	15	1
Banning area	100	20	15	1

Source: South Coast Air Quality Management District

**SUNDAY'S AIR QUALITY**

hourly average pollution, 7 a.m. to 6 p.m.

Aug 13th



Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing  
 Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing  
 Carbon monoxide (CO): invisible, reduces blood's oxygen  
 PM<sub>10</sub> (10 micron particulates): invisible deep into lungs, reduces visibility (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr avg.; nitrogen dioxide, 24-hr. avg.  
 0-50: good  
 51-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 276+: hazardous

**TODAY'S FORECAST**

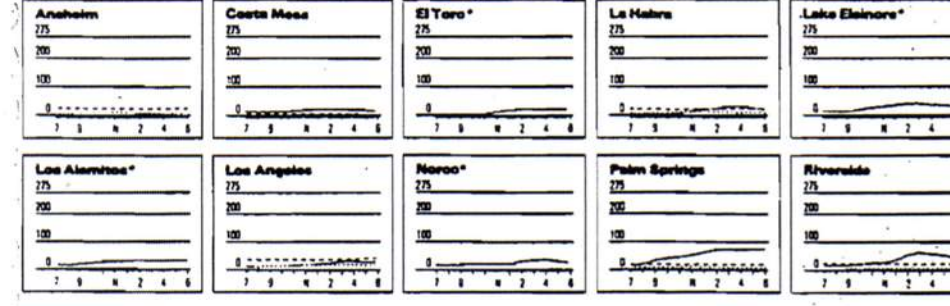
Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	92	50	15	46
Coastal areas	83	40	25	38
San Fernando, Santa Clarita	175	50	15	32
San Gabriel, Pomona	200	50	30	53
San Bernardino, Riverside	200	40	30	87
Hemet-Elsinore area	113	20	15	52
Inland Orange County	87	30	16	32
Downtown San Diego	50	not forecast		
Escondido	50	not forecast		
High deserts	163	20	15	51
Low deserts	67	20	15	62
Big Bear Lake	58	20	15	28
Banning area	75	20	15	57

Source: South Coast Air Quality Management District

**TUESDAY'S AIR QUALITY**

hourly average pollution, 7 a.m. to 6 p.m.

Aug 14th



Ozone (O<sub>3</sub>): invisible, irritates and impairs breathing  
 Nitrogen dioxide (NO<sub>2</sub>): brown, impairs breathing  
 Carbon monoxide (CO): invisible, reduces blood's oxygen  
 PM<sub>10</sub> (10 micron particulates): invisible deep into lungs, reduces visibility (forecast only)  
 Pollutant Standard Index (PSI): Ozone, hourly avg.; carbon monoxide, 8-hr avg.; nitrogen dioxide, 24-hr. avg.  
 0-50: good  
 51-100: moderate (100 is Federal standard)  
 101-200: unhealthy (200 is 1st stage episode)  
 201-275: very unhealthy (275 is 2nd stage episode)  
 276+: hazardous

**TODAY'S FORECAST**

Area	O <sub>3</sub>	NO <sub>2</sub>	CO	PM <sub>10</sub>
Metropolitan Los Angeles	83	50	15	
Coastal areas	75	40	30	
San Fernando, Santa Clarita	100	50	20	
San Gabriel, Pomona	125	40	30	
San Bernardino, Riverside	138	40	30	
Hemet-Elsinore area	113	20	15	
Inland Orange County	80	30	18	
Downtown San Diego	50	not forecast		
Escondido	50	not forecast		
High deserts	100	20	15	
Low deserts	83	20	15	
Big Bear Lake	67	20	15	
Banning area	100	20	15	

Source: South Coast Air Quality Management District

