

GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT



SPECIAL JOINT MEETING OF THE GREAT BASIN GOVERNING BOARD AND THE LOS ANGELES DEPARTMENT OF WATER AND POWER BOARD OF COMMISSIONERS

Meeting Date & Time

Friday, April 28, 2006, 10:00 a.m.

Meeting Location

Tri-County Fairgrounds, Home Economics Building
Sierra Street at Fair Drive
Bishop, California 93514

District Board

Henry "Skip" Veatch, Alpine County, Chairman
Richard Cervantes, Inyo County Vice-Chairman
Gunter E. Kaiser, Alpine County
Linda Arcularius, Inyo County
Tony Barrett, Town of Mammoth Lakes
D. "Hap" Hazard, Mono County
Byng Hunt, Mono County

Theodore D. Schade, Air Pollution Control Officer
157 Short Street, Bishop, California 93514
(760) 872-8211 E-mail: schade@greatbasinapcd.org



GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT

157 SHORT STREET, BISHOP, CALIFORNIA 93514-3537

TEL: 760-872-8211 FAX: 760-872-6109 gb1@greatbasinapcd.org

JOINT MEETING

**Governing Board of the Great Basin Unified Air Pollution Control District
Alpine, Inyo and Mono Counties**

and

**City of Los Angeles Department of Water and Power
Board of Water and Power Commissioners**

OWENS LAKE WORKSHOP

Friday, April 28, 2006, 10:00 a.m.

Home Economics Building, Tri-County Fairgrounds, Bishop, California
(Please note change in building location)

Agenda

1. Introductions
2. (a) Overview by Great Basin staff regarding the history and regulatory framework of Owens Lake air pollution issue
(b) Overview by LADWP staff regarding the Owens Lake Dust Mitigation Program
3. Other regulatory agency comments
4. Discussion by Board members
5. Opportunity for the public to address the Boards on the items listed above
(Speakers may be limited in speaking time depending upon the number of persons wishing to address the Boards.)

NOTICE

Additional information regarding this meeting may be found on the District's website:
www.gbuapcd.org

This workshop includes informal discussion of items that may be presented for action at a regular business meeting of the Board of the Great Basin Unified Air Pollution Control District or Board of Water and Power Commissioners. No action will be taken on items discussed at this workshop. Meeting will be tape recorded.



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BOARD REPORT

Meeting

Date: April 28, 2006

To: District Governing Board

From: Theodore D. Schade, Air Pollution Control Officer

Subject: Owens Lake Workshop – Joint Meeting of the Great Basin Governing Board
and the Los Angeles Department of Water and Power Board of Commissioners

On behalf of the Great Basin Governing Board, District staff welcomes the Los Angeles Department of Water and Power Board of Commissioners to the Owens Valley to discuss the current status of the air pollution control efforts at Owens Lake. District staff will present a brief history of the Owens Lake dust control project that will identify some of the current issues that the two Boards may wish to discuss. As this is a workshop meeting, no formal action will be taken.

The District's Owens Lake air pollution problem

Owens Lake is the largest single source of particulate matter (PM₁₀) air pollution in the United States. In the five years between 2000 and 2004, of the 100 highest 24-hour PM₁₀ value days measured in the entire United States, 78 days occurred at Owens Lake, 21 days occurred at Mono Lake and one day occurred elsewhere (El Paso, TX). The District estimates that in the year 2000, Owens Lake emitted over 80,000 tons of PM₁₀. The air pollution at Owens and Mono Lakes is caused by the City of Los Angeles' diversion of water from the Eastern Sierra to the City via the Los Angeles Aqueduct.

There have been a considerable number of high PM₁₀ days in the southern Owens Valley this year. The federal 24-hour PM₁₀ standard is 150 µg/m³ and the state 24-hour standard is 50 µg/m³. The District calls a Stage 1 Health Advisory when hourly PM₁₀ levels exceed 400 µg/m³ and a Stage 2 Health Advisory when hourly PM₁₀ levels exceed 800 µg/m³. The District recommends that during a Stage 2 health advisory, everyone refrain from strenuous outdoor activities in the impacted area. Local schools generally require children to remain in their classrooms on Health Advisory days. During the 93-day period between January 15 and April 17, 2006, the hourly PM₁₀ levels exceeded Stage 1 Health Advisory levels 21 times and Stage 2 Health Advisory levels were exceeded 10 times. Due to the controls that have been completed by the City, the maximum PM₁₀ levels being measured by the District are considerably lower than in previous years. However, there are still frequent dust storms that exceed the standard, the PM₁₀ levels are extreme and much of the dust is coming from the uncontrolled areas remaining on the lake bed.

Summary

The effort to control wind-blown dust from the dried bed of Owens Lake has been a 25-year process marked by a series of agreements between the City and the District separated by long periods of scientific data-gathering by the District to better understand the causes and potential alternative solutions to the air pollution problem.

- The first agreement occurred in 1983 when the City sought state legislation to exempt the City's water gathering operations from air pollution permit requirements after the District contended that a permit was needed for the City's Aqueduct operations. This resulted in the passage of a state law (SB 270) that required the City to implement reasonable control measures to control the air pollution caused by their water-gathering activities. SB 270 also required the City to provide funding for the District to investigate and develop solutions to the wind-blown dust problem.
- For the next 14 years the District studied the environment at Owens Lake, quantified the dust problem, conducted dust control measure research and developed a plan to control the dust. This plan is known as a State Implementation Plan (SIP).
- The second agreement was the result of a process started in 1997, when the District adopted the 1997 Owens Lake SIP. The City objected to the SIP and appealed it, along with the District's annual fee to fund District operations, to the California Air Resources Board (CARB). The District prevailed at the CARB and in court on the fee issue. However, the CARB Board deadlocked on the City's SIP appeal and instructed the District and the City to negotiate a settlement. In 1998, a new SIP was negotiated and agreed to by the City and the District. This plan required the City to implement PM₁₀ control measures on 16.5 square miles of the lake bed by 2003, and for the District and City to assess the longer-term control requirements in a 2003 SIP revision. The 1998 SIP was approved by the State and the U.S. EPA.
- For the next five years, the City implemented dust controls on the lake bed and the District collected PM₁₀ and wind erosion data. In 2003, the District and the City negotiated and agreed to a revised SIP that was approved by the District, the City and the CARB. The 2003 SIP requires the City to control 29.8 square miles of lake bed by the end of 2006. The City is on schedule to complete this work. The 2003 SIP also requires the City to implement Supplemental Control Measures (SCM) on all additional areas of the lake bed that are found to cause or contribute to exceedances of the PM₁₀ standard.
- In December 2005, the District made a technical determination as required by the 2003 SIP that Supplemental Control Measures are needed, using the protocol agreed to by the City in October 2003. The City, citing the expense of the supplemental controls, is currently challenging the technical basis for the District's determination. The District reviewed all the issues raised by the City and has found that the City's analyses are not supported by the data collected at Owens Lake. After investigating the issues raised by the City, the District has determined that an additional 8.66 square miles of uncontrolled lake bed will require dust controls in order to meet the PM₁₀ standard.

The District has a responsibility to protect the public health and plans to continue to implement all the requirements in the 2003 SIP. These requirements were agreed to by both the District and the City and have been approved by the State.

Overview of the history and regulatory framework of Owens Lake air pollution issue

SB 270

In 1983, a dispute developed between the District and the City regarding the particulate matter air pollution caused by the City's operation of the Los Angeles Aqueduct. The District attempted to require the City to secure an air pollution control permit for particulate matter emissions caused by the City's aqueduct operations (i.e., the dust emissions from the Owens Lake bed). The City contended that their water-gathering activities were not subject to air pollution permits. As a result of the dispute, the City sponsored legislation to preclude the District from affecting the flow of water through the aqueduct. The draft legislation was known as "Senate Bill 270" or "SB 270."

After much negotiation on the contents of SB 270, a compromise was reached and SB 270 was enacted as law in Section 42316 of the California Health & Safety Code (attached). SB 270 became effective on September 1, 1983. SB 270 allows the District to require the City to undertake reasonable measures to mitigate the air quality impacts of its water-gathering activities in the District. It also allows the District to require the City to pay reasonable fees based on an estimate of the District's actual costs for dust control measure development and related air quality work. The District may not affect the City's right to divert water and cannot require the City to secure a permit for their water-gathering operations.

SB 270 also allows the City to appeal any fees or measures imposed by the District to the CARB. The CARB must conduct an independent hearing on the reasonableness of the fees or validity of the air pollution control measures. The City must pay all fees regardless of whether they are appealed, but measures are stayed pending the CARB hearing. Either the District or the City may bring a judicial action to challenge a decision by the CARB.

1997 and 1998 SIP Development

From the mid-1980s through the mid-1990s, the District worked to understand the nature of and develop a solution to the dust problem at Owens Lake. It set up a monitoring network to measure the source and magnitude of the PM₁₀ emissions. It also conducted extensive groundwater, soil and vegetation investigations and worked on research projects to develop and test measures to control the PM₁₀ problem. Control measures that have been tested by the District over the years have included: flooding, gravel, grasses, shrubs, trees, chemical suppressants, surface compaction, tilling, sprinklers, moats & rows, sand fences, slash/brush piles and salt flats. As most of the lake bed is owned by the State of California, the State Lands Commission encouraged the use of controls that preserved or enhanced public trust values.

In 1997, in order to meet the requirements of the federal Clean Air Act, the District adopted a PM₁₀ SIP that required the City to implement flooding, vegetation and gravel on 35 square miles of the Owens Lake bed by the end of 2001 in order to control Owens Lake PM₁₀ emissions. The City appealed the 1997 SIP and \$1.2 million in disputed SB 270 fees to the CARB and refused to pay the \$1.2 million in fees to the District.

The District contended that the disputed fees had to be paid as a condition of filing a CARB appeal and filed a lawsuit against the City for their failure to pay the fees. Both the Superior Court and the State Appellate Court found for the District and ordered the City to pay all fees first, and then appeal to the CARB.

In 1998, the CARB held a hearing on the City's appeal of the 1997 SIP and the disputed fees. The CARB found that the fees were reasonable, including the City's payment of the District's legal costs. However, on the question of the reasonableness of the 1997 SIP, the CARB vote was tied. The CARB Chairman instructed the District and the City to meet and try to negotiate a resolution.

After several months of unsuccessful negotiations with the mayor and legislative analyst's offices, the new General Manager of the Department of Water and Power, S. David Freeman, took over negotiations. Within a few weeks, the two parties reached an agreement and executed a Memorandum of Agreement. The City committed to its responsibility to reduce the dust emissions from the lake bed and to meet the PM₁₀ standards. They also agreed to begin work implementing dust controls on the lake and committed to having 16.5 square miles of controls in place by the end of 2003. In return, the District gave the City the flexibility to choose which controls to place on the lake bed and the District supported a 5-year extension of the project completion date—to the end of 2006. The District also agreed to implement a newly developed "Dust ID Program" to more precisely determine which areas of the lake bed would require controls in order to meet the PM₁₀ standards. The District agreed to revise the SIP in 2003 to incorporate the results of the Dust ID Program.

A revised SIP that incorporated the elements of the District/City agreement was adopted by the District Board in November 1998. It was approved by the CARB in December 1998 and the U.S. EPA approved it in August 1999. The 1998 SIP specified that shallow flooding, managed vegetation and gravel were the three approved Best Available Control Measures or "BACM" for Owens Lake dust control and the City was allowed to install any combination of these three measures within a 35 square-mile footprint in order to meet their commitments.

2003 SIP Development

The LADWP began work on the lake bed in November 2000 and had the first 12 square miles of shallow flooding dust controls operational by January 2002. By January 2003, there were 13.5 square miles of shallow flooding in operation. By June 2002, the LADWP had constructed 3.6 square miles of managed vegetation and by the end of 2003 had 16.5 square miles of dust controls constructed and operational. With one minor exception, the LADWP met all their obligations for dust controls to be in place and operational during this period.

During the period from 1999 through 2002, the District continued to collect air quality and sand motion data on the lake bed as set forth in the protocol for the Dust ID Program. In 2003, the District began working with City staff and their consultants to incorporate the results of the Dust ID Program into a 2003 SIP revision. For many years the District has publicly documented that between 35 and 46.5 square miles of Owens Lake would eventually require dust controls in order to meet the PM₁₀ standard. In 1988, the District approved a SIP that stated 46.5 square miles of the lake bed needed to be controlled. Both the 1997 and 1998 Board-approved SIPs indicated that 35 square miles of control measures would be needed to meet the PM₁₀ standards. However, the District's 1998 agreement with the City required that the control area included in the 2003

SIP revision only use data from the 1999 through 2002 period. This was a period of less than normal (and certainly less than maximum) dust storm activity on the lake bed. Nevertheless, the District agreed to use this data and the joint District/City analysis of this data indicated that 29.8 square miles of the lake bed caused PM₁₀ standards violations during this period.

During 2003, the District and City frequently met to negotiate the contents of the 2003 SIP revision. The SIP revision would formalize the remaining amount of dust controls that the City would be required to construct prior to the end of 2006 (29.8 square miles) and provide for actions that would need to take place after 2006. During these negotiations the City expressed a need for the revised SIP to contain provisions that would allow them to incorporate new dust control approaches and transition from one type of control measure to another as improved measures were developed in the future. This modification/transition provision is contained in the 2003 SIP in a section titled “Modifying BACM for Owens Lake.”

There was also a need for the 2003 SIP to contain a procedure to require additional dust controls should the 29.8 square miles required by the end of 2006 be insufficient to meet the PM₁₀ standard. This need was both a legal requirement (see “contingency measures,” below) and it was based on the District’s data showing that between 35 and 46.5 square miles of controls would ultimately be needed to meet the standard. This provision is contained in the 2003 SIP and is known as the “Supplemental Control Requirements.” It uses the Dust ID Program to identify any areas outside the 29.8 square mile footprint that cause or contribute to PM₁₀ violations. The District also prepared a project-level Environmental Impact Report in 2003 that would allow the City to immediately begin constructing the additional dust controls on the lake bed.

The federal Clean Air Act requires SIPs to contain what are known as “contingency measures.” Contingency measures are PM₁₀ control measures that will be implemented in case the strategy set forth in the 2003 SIP (29.8 square miles of controls) fails to bring the Owens Lake area into attainment with the PM₁₀ standards. The Clean Air Act requires contingency measures to be automatic—they must be triggered without any further action by the State or the U.S. EPA. The Supplemental Control Requirements procedure discussed above is the contingency measure contained in the 2003 SIP.

The District committed to continue collecting data to determine which areas of the lake bed caused PM₁₀ standard violations. This data is to be analyzed according to a detailed protocol set forth in the SIP. Starting with data collected after July 2002, the Air Pollution Control Officer (APCO) is required to make annual determinations as to whether any additional areas of the lake bed, outside the 29.8 square miles ordered for control by the end of 2006, will require controls in order to meet the PM₁₀ standards. The SIP also specifies that, because of the Clean Air Act requirement that contingency measures are automatic and not subject to State approval, the annual supplemental control determination cannot be appealed to the CARB. The 2003 SIP does allow the City to challenge the annual determination in court. The City was also allowed to appeal the 2003 SIP to the CARB within 30 days of its adoption, if they objected to any of its provisions.

In November 2003, after much discussion and negotiation with the City, the District Governing Board adopted the 2003 SIP revision and issued a Board order to the City. After reviewing the final draft of the proposed 2003 SIP revision, the City agreed in writing with the provisions of the SIP. (The City’s October 7, 2003 letter agreement is attached to this report.) As the letter

states, the City specifically agreed that all the SIP provisions were “valid and reasonable” and they agreed that City staff would recommend against any appeal to the CARB. The City was present when the Board adopted the 2003 SIP and supported its adoption.

The City did not appeal the 2003 SIP to the CARB within the 30-day time limit provided by SB 270. The 2003 SIP was then approved in its entirety by the CARB in February 2004.

2005 Supplemental Control Requirements

The LADWP has been working continuously since 2003 to complete the 29.8 square miles of dust controls ordered in the 2003 SIP. All of the controls constructed since 2002 have been shallow flooding. The final phase of shallow flooding is currently under way and is scheduled for completion in November 2006, so that all control measures will be fully operational by the end of 2006. The final mix of control measures will be approximately 26 square miles of shallow flooding and 4 square miles of managed vegetation.

As required by the 2003 SIP, the District continues to collect Dust ID Program data. This data generally consists of PM₁₀ measurements collected at 7 stations around the lake bed and in surrounding communities, meteorological data collected at 12 locations and sand motion data from over 135 electronic monitors located across over 50 square miles of dry lake bed. In addition, the District uses human and video observations of emissive areas taken during dust storms and on-lake mapping of emission areas after dust storms to determine the boundaries of emissive areas.

After collecting this supplemental control requirements (SCR) data for two years (from July 2002 through June 2004), the District began meeting with City staff to discuss the results of the data collection and the analysis as per the SCR protocol. District and City staff met many times during 2004 and 2005 to discuss the data and analysis. On December 21, 2005, the APCO completed the required SCR analysis and issued a determination that, based on the July 2002 through June 2004 data, an additional 9.31 square miles of the lake bed would require dust controls in order to meet the PM₁₀ standards.

On January 20, 2006 the City filed an appeal of the APCO’s determination with the CARB. The City objects to the determination that an additional 9.31 square miles of lake bed requires controls and contends that the District’s imposition of an additional 9.31 square miles of dust control measures is unreasonable. The District’s position is that such an appeal is barred, both 1) because the 30-day time period of SB 270 expired in 2003 with no appeal being taken, and 2) because of the City’s October 2003 express, written agreement with the SIP’s provisions. (A January 26, 2006 letter detailing the District’s position regarding the City’s appeal is attached to this report.)

The 2003 SIP provides 60 days for the City to prepare and submit an alternative analysis of the data used by the District to make the SCR determination. On February 22, 2006 the City submitted an analysis that argued *none* of the additional areas of the lake bed required controls. The City argued that the construction activities occurring on the lake bed caused the 9.31 square miles to become emissive and that when construction is complete at the end of 2006, the dust emissions will cease. The City also argues that the District used “improper and unauthorized modeling approaches, corrupt and biased model input data, flawed analyses, and noncompliant information collection techniques.” (The City’s February 22, 2006 cover letter transmitting their

alternative analysis and summarizing their positions is attached to this report.) The SIP provides 30 days for the District to review and respond to the City's alternative analysis.

On April 4, 2006, the District responded to the City's SCR determination alternative analysis. On the City's main points, that construction activities caused the additional areas to become emissive and that the District's analyses were flawed, the District found that the City presented no compelling evidence or analysis to warrant reducing the supplemental control areas to zero. The City's assertion that the dust emissions will cease when construction activities end was not adequately or convincingly supported by the evidence presented. The City also failed to provide evidence that the District's analyses were flawed or did not follow the provisions set forth in the SIP. However, the District agreed with the City on one procedural issue and reduced the area requiring additional controls to 8.66 square miles. (The District's April 4, 2006 cover letter summarizing its conclusions is attached to this report. This letter transmitted five volumes of response and analysis to the City's alternative analysis.)

Staff Recommendation

This joint meeting of the Great Basin and LADWP Boards was called by the LADWP Board President. The District welcomes the comments and participation of the LADWP and the public. However, this is a no-action item for the District Board. Staff recommends that the Board hear presentations by both District and City staffs, followed by comments from other regulatory agencies and the public. The Board may provide direction to staff as a result of the discussions.

Enclosures:

- Page 8: Section 42316 of the Calif. Health & Safety Code (SB 270)
- Page 9: October 7, 2003 LADWP letter to District agreeing to the 2003 SIP revision (excerpt)
- Page 10: January 26, 2006 District letter to LADWP barring CARB appeal (excerpt)
- Page 14: February 22, 2006 LADWP alternative analysis cover letter (excerpt)
- Page 21: April 4, 2006 District cover letter response to LADWP alternative analysis (excerpt)

0604171

Text of California Health & Safety Code Section 42316 (SB 270)

Calif. H&S §42316. Authority to require City of Los Angeles to mitigate air quality impacts of its water production, storage, or conveyance; Fees

(a) The Great Basin Air Pollution Control District may require the City of Los Angeles to undertake reasonable measures, including studies, to mitigate the air quality impacts of its activities in the production, diversion, storage, or conveyance of water and may require the city to pay, on an annual basis, reasonable fees, based on an estimate of the actual costs to the district of its activities associated with the development of the mitigation measures and related air quality analysis with respect to those activities of the city. The mitigation measures shall not affect the right of the city to produce, divert, store, or convey water and, except for studies and monitoring activities, the mitigation measures may only be required or amended on the basis of substantial evidence establishing that water production, diversion, storage, or conveyance by the city causes or contributes to violations of state or federal ambient air quality standards.

(b) The city may appeal any measures or fees imposed by the district to the state board within 30 days of the adoption of the measures or fees. The state board, on at least 30 days' notice, shall conduct an independent hearing on the validity of the measures or reasonableness of the fees which are the subject of the appeal. The decision of the state board shall be in writing and shall be served on both the district and the city. Pending a decision by the state board, the city shall not be required to comply with any measures which have been appealed. Either the district or the city may bring a judicial action to challenge a decision by the state board under this section. The action shall be brought pursuant to Section 1094.5 of the Code of Civil Procedures and shall be filed within 30 days of service of the decision of the state board.

(c) A violation of any measure imposed by the district pursuant to this section is a violation of an order of the district within the meaning of Sections 41513 and 42402.

(d) The district shall have no authority with respect to the water production, diversion, storage, and conveyance activities of the city except as provided in this section. Nothing in this section exempts a geothermal electric generating plant from permit or other district requirements.

(Added Stats 1983 ch 608 § 1, effective September 1, 1983.)



JAMES K. HAHN
Mayor

Commission
DOMINICK W. RUBALCAVA, *President*
LELAND WONG, *Vice President*
ANNIE E. CHO
KENNETH T. LOMBARD
SID C. STOLPER
SUSAN C. PARKS, *Secretary*

DAVID H. WIGGS, *General Manager*
FRANK SALAS, *Chief Administrative Officer*

October 7, 2003

Dr. Ellen Hardebeck
Air Pollution Control Officer
Great Basin Unified Air Pollution Control District
157 Short Street, Suite 6
Bishop, California 93514

Dear Dr. Hardebeck:

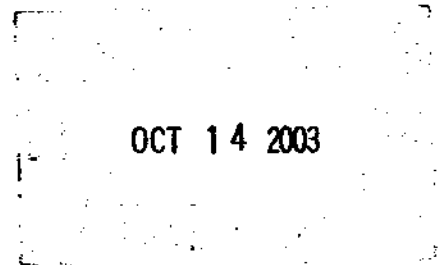
Subject: 2003 Owens Valley PM 10 Planning Area State Implementation
Plan (2003 SIP)

The City of Los Angeles Department of Water and Power (LADWP) has received the enclosed Great Basin Unified Air Pollution Control District's (District) Final Board Order 031113-01, Implementation of PM-10 Control Measures on the Owens Lake Bed (Board Order) which is incorporated into the District's Final 2003 SIP.

Based upon our extensive review and comments during the development of this 2003 SIP and Board Order, LADWP staff agrees that all of the provisions, including the measures, contained or referenced in the Board Order are valid and reasonable. If the Board of Water and Power Commissioners and/or the City of Los Angeles considers bringing any challenge to the 2003 SIP, Board Order, or the supporting documentation, or appealing the Board Order to the California Air Resources Board, LADWP staff agrees to recommend against any such challenge or appeal. Such acceptance is contingent on the Board Order remaining, upon adoption by the District Board, in substantially the same form and substance as the enclosed final document, including, but not limited to, the provision for LADWP to transition from one control measure to another as stated in Paragraph 5 of the Board Order and as described in Exhibit 3 therein, or as otherwise mutually agreed to in writing between LADWP and the District.

Sincerely,

Gerald A. Gewe
Chief Operating Officer - Water System



Enclosure

Water and Power Conservation ... a way of life

111 North Hope Street, Los Angeles, California Mailing address: Box 51111, Los Angeles 90051-0100
Telephone: (213) 367-4211 Cable address: DEWAPOLA





GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT

157 SHORT STREET, BISHOP, CALIFORNIA 93514-3537

TEL: 760-872-8211 FAX: 760-872-6109 gb1@greatbasinapcd.org

January 26, 2006

SENT VIA FACSIMILE AND U.S. MAIL

Richard Brown, Esq.
General Counsel
City of Los Angeles Department of Water and Power
111 North Hope Street, Suite 340
Los Angeles, California 90051-0100

Re: Notice of Appeal dated January 20, 2006 by the City of Los Angeles Department of Water and Power before the California Air Resources Board

Dear Mr. Brown:

On January 20, 2006, the Great Basin Unified Air Pollution Control District ("District") was notified that the City of Los Angeles Department of Water and Power ("DWP") filed a Notice of Appeal to the California Air Resources Board ("CARB") under the provisions of California Health and Safety Code Section 42316(b). The appeal purports to challenge the procedures and determination issued by the District December 21, 2005 regarding supplemental air pollution control requirements to address particulate emissions from the dried bed of Owens Lake.

For the reasons stated below, including the DWP's prior agreements with the District and the applicable law, the DWP's appeal to CARB is barred.

The District Order

As you know, District Board Order No. 031113-01 ("Order") was adopted by the District on November 13, 2003 to implement PM₁₀ control measures on the Owens Lake bed. A copy of the Order is enclosed for your reference. The Order was incorporated into the Owens Valley PM₁₀ Planning Area Demonstration of Attainment State Implementation Plan ("2003 SIP").

Paragraph 3 of the Order requires the District Air Pollution Control Officer ("APCO") to make an annual written determination as to whether any areas, in addition to the 29.8 square miles of Owens Lake that were ordered for control in 2003, meet the criteria for air pollution controls in

order to attain or maintain compliance with federal air quality standards for particulate matter under the Clean Air Act.

The federal Clean Air Act at 42 U.S.C. Section 7502(c)(9) requires that a SIP contain contingency measures that automatically go into effect when certain conditions are met. Thus, as required by federal law, the Order contains a supplemental control provision in Paragraph 3. *See also* Section 7.6 of the 2003 SIP which explains that the supplemental controls are the contingency measures required by federal law (Sec. 7.6). The Order at Exhibit 2 comprehensively lays out the conditions that trigger the automatic contingency measures. The APCO's only role is to determine when the conditions in Exhibit 2 are met.

As required by law, the APCO issued that determination under Paragraph 3 and Exhibit 2 of the Order on December 21, 2005. The DWP has 60 days to respond to that determination.

Paragraph 3.B of the Order specifies the procedure for the DWP to challenge this determination:

Unless the procedure for issuance of the written directive by the APCO, as provided in Paragraph 4 of this Order, is appealed by the City under Health & Safety Code Section 42316 within 30 days of the issuance of this Order [i.e. within 30 days of November 30, 2003], and unless the procedure is invalidated as a result of that appeal, any such directive is not, and shall not be construed to be, a further requirement for mitigation measures that may be appealed to the California State Air Resources Board under that Section. The District acknowledges that the issuance of such a directive is final agency action subject to challenge by the City in state court for review under the abuse of discretion standard.

(Emphasis added)

DWP Agreement Regarding the Order

The terms of the Order were the result of lengthy and detailed negotiations between the DWP and the District. DWP provided extensive review and comments during the negotiations and development of the Order resulting in the DWP and the District agreeing to the final terms and precise wording of the Order. On October 7, 2003, the DWP confirmed its agreement in writing to the District. A copy of this letter is also enclosed for your reference. In relevant part, the DWP stated:

Based upon our extensive review and comments during the development of this 2003 SIP and Board Order, LADWP staff agrees that all of the provisions, including the measures, contained or referenced in the Board Order are valid and reasonable.

The DWP also agreed to recommend against any challenge or appeal to the Order.

Finally, the Order contains an integration clause to provide a requirement of mutual agreement "in writing between the LADWP and the District" should there be changes to the Order.

DWP Waives Its Challenges to the Order

Based upon its agreement with the Order, the DWP supported the Order's adoption by the District, and the resulting SIP approvals by the District and the CARB. Given its supportive position, DWP brought no challenge to the Order within the time deadlines required by Health and Safety Code Section 42316, or under the Clean Air Act for challenge to the SIP provision. Similarly, the DWP submitted no adverse comment to the Order or the 2003 SIP.

In summary, the DWP appeal to CARB is barred for at least the following reasons.

1. DWP's action is a breach of its agreement to the terms of the Order. The District's supplemental control measure determination is mandatory and automatic as required by federal law. In recognition of this fact, the DWP explicitly agreed to the terms of the Order regarding the timing and procedure for issuance of the supplemental control measures. The DWP also agreed not to appeal the Order. In addition, the DWP agreed that the District's determination is not a further requirement for mitigation measures that may be appealed to the California State Air Resources Board.
2. DWP has agreed that the measures provided in the Order are valid. Under Health & Safety Code Section 42316(b), the standard of review is whether the measure is valid. Because DWP has already stipulated to this fact, its appeal is meritless and filed without a good faith basis. The DWP is further estopped from repudiating its unqualified support for the Order. The DWP supported the Order during the District and CARB administrative process to adopt the Order and the SIP. Those agencies relied upon the administrative record, including DWP's agreement, in issuance of their respective approvals.
3. The DWP appeal is time-barred. The requirement for automatic contingencies is provided in federal law, and the procedures for implementing that requirement were subject to challenge under Health & Safety Code Section 42316 upon the District's adoption of the Order. Thus, the 30-day time limit for the City's appeal under Section 42316 began to run on November 13, 2003, the date of the District's adoption of the Order, and has long since past.
4. The DWP's appeal is a direct violation of a District Order. Paragraph 3.B of the Order specifically precludes the filing of the DWP's appeal.¹ The Order is part of the applicable legal requirements of the DWP under the Health & Safety Code. *See, e.g.* Health & Safety Code Section 42402, *et seq.*

¹ Indeed, to the extent the appeal causes delay in implementing the supplemental control measures, it may result in unintended consequences for the DWP. Please refer to the provisions of the Order at Paragraph 7.D which are intended to protect public health, safety and the environment during any such delay. This provision requires the DWP to construct two additional square miles of dust controls per year until the standard is attained or any challenge is resolved.

Given the recent cooperative history between the DWP and the District, and the changes in DWP management, the District believes that the appeal may have been filed in error without full knowledge of the DWP's prior agreements. The District has appreciated the DWP's prior efforts and the joint approach of the agencies to address the environmental issues presented in a mutually agreeable manner. Accordingly, the District provides this letter as notice of those facts and to establish that any further action by DWP is undertaken with full knowledge and due deliberation as to the applicable legal requirements.

The DWP should affirm its intention to comply with its agreements and the law. The District therefore requests that the DWP file a Notice of Withdrawal of Appeal to CARB and the District within ten days of this letter. Otherwise, the District has a duty to enforce the law. If the appeal is not withdrawn, the District plans to issue a Notice of Violation to DWP for violation of a Board Order. The District otherwise explicitly reserves all of its other rights and remedies in this matter.

We urge the DWP to respect its prior agreements and the District's obligation to issue the mandatory supplemental control determination as required by federal and state law. As those agreements demonstrated, we believe the City of Los Angeles, the DWP and the District share the common objective of protecting the environment, the public health and the citizens of the District.

Sincerely,

Theodore D. Schade
Air Pollution Control Officer

Enc.: District Board Order No. 031113-01 (2003 SIP)
October 7, 2003 letter from DWP

Cc: Mary Nichols, DWP
Catherine Witherspoon, CARB
Ron Deaton, DWP
Mary Dennis, Esq., DWP
Richard Harasick, DWP
Craig A. Moyer, Esq., Manatt, Phelps & Phillips
Mark D. Johnson, Esq. Manatt, Phelps & Phillips

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BARBARA E. MOSCHOS, Secretary

RONALD F. DEATON, General Manager

February 22, 2006

Mr. Theodore D. Schade
Air Pollution Control Officer
Great Basin Unified Air Pollution Control District
157 Short Street
Bishop, California 93514-3537

Dear Mr. Schade:

Pursuant to the provisions of the Owens Valley PM₁₀ Planning Area Demonstration of Attainment, State Implementation Plan – 2003 Revision (2003 SIP) and Order #031113-01 (Order) issued by the Great Basin Unified Air Pollution Control District (District), the City of Los Angeles Department of Water and Power (City) hereby submits its response to the 2004/2005 Determination (Determination) by the Air Pollution Control Officer (APCO) of the District that supplemental control requirements are warranted on an additional 9.31 square miles of the Owens Lake playa in excess of the 29.8 square miles of controls required under the 2003 SIP and preliminary design for 0.66 square miles designated as "watch" areas are also required (enclosed). The Determination that the City must implement controls on these 9.31 square miles and "watch" areas has been issued despite the fact that the City has only completed implementation of dust control measures on approximately 23 square miles of the Owens Lake playa. Thus, the Determination attempts to substantially expand the City's obligations before the effectiveness of the control measures that the City has agreed to implement under the 2003 SIP can even be evaluated.

The City vigorously contests the APCO's Determination. The Determination purports to identify areas of the Owens Lake playa that have changed due to natural circumstances and are now sufficiently emissive to prevent attainment of the PM₁₀ National Ambient Air Quality Standards (NAAQS or standards) by the December 31, 2006 attainment deadline of the 2003 SIP. In fact, as a result of the District's use of improper and unauthorized modeling approaches, corrupt and biased model input data, flawed analyses, and noncompliant information collection techniques, the Determination that additional areas require controls is clearly in error. Underlying the fundamental inadequacy of the Determination is the inability of the District's analytical approach to

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properly address, or even account for in any fashion, the temporary impacts of construction of the control measures that the City is implementing under the 2003 SIP. This unforeseen, and unplanned for, impact invalidates the analytical foundation of the District's approach.

The dust generation mechanisms associated with construction impacts on PM₁₀ and how they relate to the District's analytical approach are described in great detail in the City's response (enclosed) to the Determination. However, at the most basic level, despite the City's concerted efforts to minimize dust generation to the full extent practicable, construction of dust control measures (e.g., installation of pipelines, construction of berms and roads, furrowing of the playa surface to cultivate managed vegetation, etc.) unavoidably disturbs large areas of the Owens Lake bed, thereby causing additional sand and sand-sized particles to become available on the surface. The movement of these particles, in turn, affects areas downwind of the construction, inflating the sand motion levels recorded there. This elevated sand motion has, as a result, then wrongly caused these areas to be flagged for dust control. Other than to cease construction, the City has no feasible alternative for avoiding this unintended, temporary construction impact. Notwithstanding the clearly disruptive impact of the construction, the District has not taken any steps to modify its analytical approach, or to account in any way for the effects of construction.

In addition to its failure to modify its analytical approach to address construction-related impacts, the District has violated other provisions of the 2003 SIP, including: (1) the unauthorized use of substitute data for areas of the playa where data is unavailable (referred to as "data filling"); (2) the improper use of data from areas that will be subject to dust control measures by the end of 2006 (i.e., the data are not representative of the controlled conditions that the model is intended to evaluate); (3) the use of data that has been impaired by man-made disturbance; (4) the placement of data collection equipment in locations that do not adequately represent the areas to which they apply or that are impacted by nearby irregularities; and (5) the failure to comply with requirements for the conduct of inspections to verify the boundaries of areas of the Owens Lake bed believed to be emissive. The cumulative effect of these defects is evident from the unacceptable performance level of the modeling relied upon by the District: over a large range of dust (PM₁₀) concentrations, the predictive capability of the model is essentially zero. At best the predictive capability of the model is below 30 percent. When dust (PM₁₀) levels are low to moderate, the model erroneously flags areas for supplemental control over half the time.

These flagrant defects in the District's analytical methods and implementation of the model illustrate that the Determination has no real evidentiary support, and that any decision of the District to uphold any requirement for supplemental controls would be arbitrary and capricious and contrary to requirements of the 2003 SIP and Order.

More broadly, the District's issuance of the Determination evidences a patent disregard for overarching public policy considerations. Specifically, the regulatory provisions upon which the Determination is based are intended to address the possibility that areas of the Owens Lake playa that are not targeted for dust control measures in the 2003 SIP might: (1) become more emissive due to long-term natural changes in the condition of the Owens Lake bed, and (2) thereby, prevent attainment of the NAAQS. The Determination fails on both counts.

With respect to the first issue, the City has provided in this submittal irrefutable evidence that changes in the playa are temporary, and are not due to natural changes, but rather to construction-related disturbances to the Owens Lake playa. These construction-related impacts on the sand motion data collected by the District will cease as soon as implementation is complete and the dust control measures replace the pulverized crust associated with disturbed areas of the playa. In fact, the evidence provided herein demonstrates convincingly that, once completed, the dust control measures essentially eliminate dust emissions from the control area and substantially reduce dust emissions in adjacent areas (i.e., those not slated for dust controls). The District provided no evidence that areas of the Owens Lake bed have changed on a long-term basis due to natural conditions, nor has the District provided evidence presented to counter the overwhelming evidence herein that the changes in the playa are short term and construction-related.

As to the issue of whether the implementation of dust control measures on 29.8 square miles will result in attainment by the December 31, 2006 deadline, the Determination completely ignores the reasonable further progress (RFP) milestones identified in the 2003 SIP. Under the Clean Air Act, the RFP milestones, and not the NAAQS, serve as the basis for determining whether sufficient progress is being made towards attainment during the period leading up to the attainment deadline. In this case, available evidence indicates that overall levels of dust emitted from the playa on an annual basis are declining ahead of pace with the RFP milestone projections (See Figure 1 below), despite the temporary and disrupting influence of construction-related dust emissions generated by the City's implementation of dust control measures. Even more compelling is the downward trend in the number of air quality exceedances around

Mr. Theodore D. Schade

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Owens Lake. Figure 1 shows that average number of annual exceedances at three long-term monitoring stations has declined substantially during the period that the City has been constructing dust control measures, and reaffirms the 2003 SIP's premise that there is a direct correlation between implementation of dust control measures on the 29.8 square miles and reduction in PM₁₀ emissions from the Owens Lake playa. It is estimated that even in 2004 when the project was only two-thirds complete, that the dust concentrations had been reduced by nearly 70 percent with 11 square miles of dust control still to be built.

And yet the District has determined that over nine square miles more is needed. It is reasonable to assume that when the final 11 square miles of dust control required by the 2003 SIP are implemented, the dust emissions will be reduced even further such that the NAAQS will be met following completion of the dust control measures on the 29.8 square miles at the end of 2006. It is equally unreasonable to suggest that it will take over nine square miles in addition to reduce what might amount to a less than significant amount of dust.

In sum, the District's Determination fails to properly identify the underlying causes, mechanisms, and locations of dust source areas, and applies an improper standard to measure progress towards attainment. In the absence of evidence that dust emissions are long term and caused by natural changes on the playa, the 2003 SIP only permits the District to impose contingency measures if the RFP milestones in Table 7.1 of the 2003 SIP are not met. The District has presented no evidence—and no evidence exists—that the 2003 SIP has failed to keep pace with the RFP milestones.

The considerable burden and severe impacts that the District's proposed action would impose on the City should not be underestimated. The City will invest over \$400 million to implement dust control measures on the 29.8 square miles required by the 2003 SIP. The City believes that this investment is well-founded and serves an extremely beneficial purpose. To construct dust control measures on the additional 9.31 square miles will cost from \$90 to \$120 million. Unfortunately, the lack of environmental necessity for the additional 9.31 square miles casts great doubt on the wisdom of investing up to \$120 million without determining whether the controls on the 29.8 square miles will indeed result in attainment of the NAAQS, particularly where all trend information indicates that the standards will indeed be met.

Given these circumstances, the legal requirements of the 2003 SIP and the associated Order, public policy considerations, and common sense, the District must rescind the

Determination in its entirety. The information provided in this submittal also strongly supports the conclusion that the District must wait until construction of dust control measures is completed at the end of December of 2006, and the analytical deficiencies of the current 2003 SIP are corrected in an amended SIP, before it can properly assess the need for supplemental controls. At that time, the 2003 SIP control strategy will have been fully implemented, the construction equipment will have been removed from the Owens Lake bed, and the needed improvements will have been made. After allowing sufficient time for the playa surface to heal (that is, to return to a less mechanically disturbed condition), a new post-construction, post-dust control data set will have to be collected for use in the modeling analysis. In the meantime, LADWP will redouble its efforts to assist the District in making the necessary refinements to the data collection and modeling process. Only then will it be appropriate to rerun the Dust ID Model and to assess the need for supplemental dust control on the Playa. Our common goal is a more accurate, defensible, and effective long-term dust control program on the Owens Lake playa.

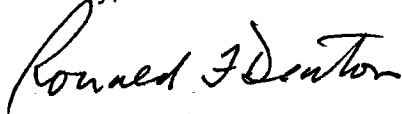
The enclosed document, Volume 1, Summary of Key Points, and Volume 2, Appendices, set forth the evidence upon which the above statement is based. Section 2 of Volume 1 provides contextual background for the current situation at Owens Lake. Section 3 explains the legal and policy provisions that govern the District's decision. Section 4 of this submittal describes, in detail, the nature of each of the above-referenced violations, irregularities, and flawed approaches. Section 5 explains how one or more of these violations, irregularities, and flawed approaches apply to each of the 34 supplemental control areas (SCAs) that comprise the 9.31 square miles and, in turn, the "watch area" identified in the Determination. Section 6 provides conclusions and recommendations based on the evidence provided. Volume 2 provides additional technical information to support the information provided in Volume 1.

Things have changed in the Owens Valley. The air is cleaner throughout the Owens Valley Planning area because less dust is coming off of Owens Lake as a result of the City's efforts in constructing and operating dust control measures. The City takes pride in its commitment to improve air quality and in these results. It would be extremely unfortunate for the District to impose new requirements on the City based on hastily made or uncertain analyses, even as construction continues of facilities required in the 2003 SIP. Those facilities should be allowed a chance to do their appointed job. Therefore, the City does not think it unreasonable for the District to take time out to refine the processes and procedures to identify dust on Owens Lake so as to decrease the uncertainties, and increase our collective confidence before any more dust control is conceived to be done.

Mr. Theodore D. Schade
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February 22, 2006

Please contact Mr. Richard F. Harasick of my staff at (213) 367-0910, if you have questions or need additional information. We look forward to your review of our analysis and our mutual efforts at Owens Lake.

Sincerely,



Ronald F. Deaton
General Manager

RFH:mm

Enclosures

c:w/encs. separate cover

Mr. Tony Barrett, GBUAPCD Board Chairman
Mr. Larry Biland
Ms. Sylvia Oye
Mr. Richard F. Harasick

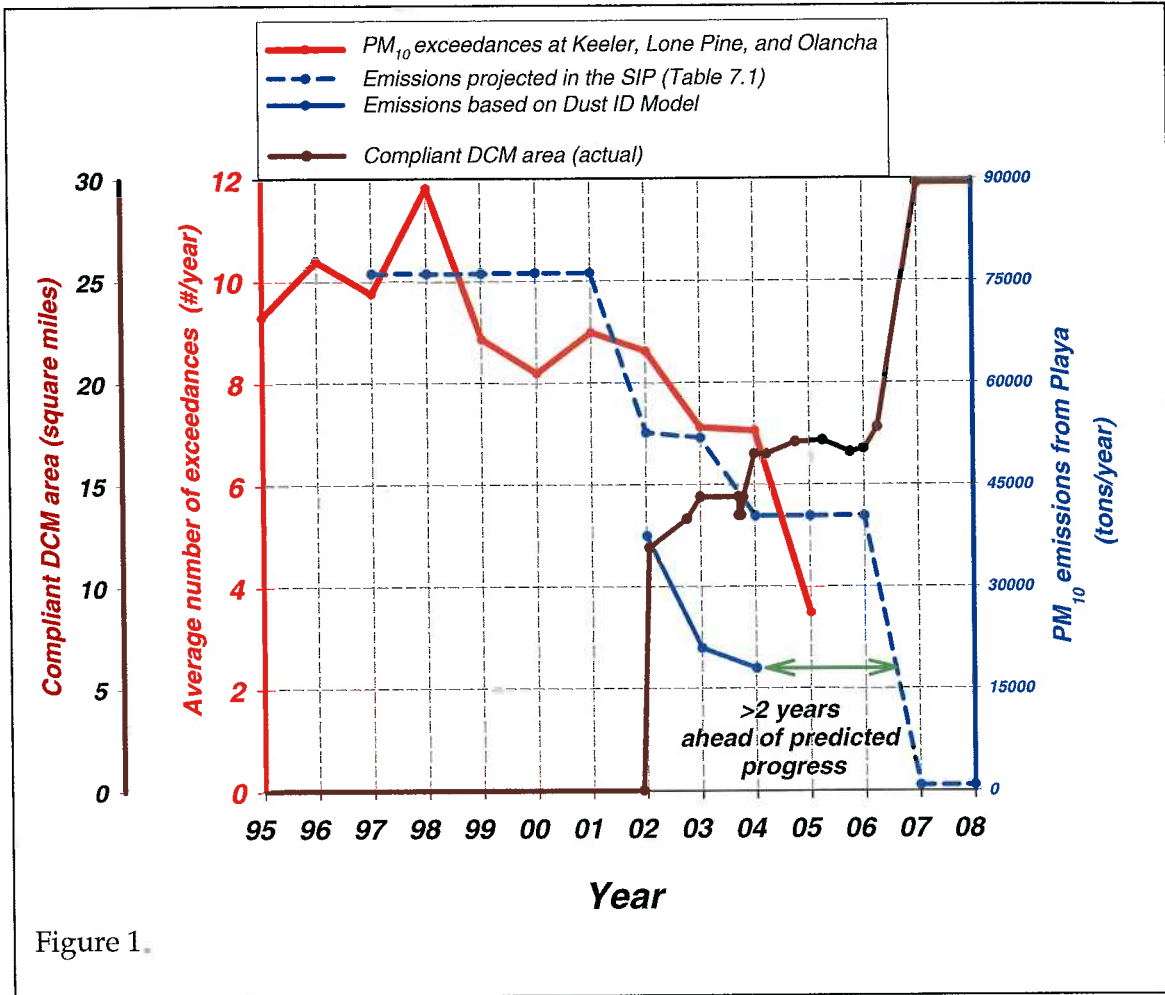


Figure 1.



GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT

157 SHORT STREET, BISHOP, CALIFORNIA 93514-3537

TEL: 760-872-8211 FAX: 760-872-6109 E-MAIL: schade@greatbasinapcd.org

April 4, 2006

Mr. Ronald F. Deaton
General Manager
Los Angeles Department of Water and Power
111 Hope Street
Los Angeles, California 90012-2607

Subject: Modified Determination and Response to the City of Los Angeles' Alternative Analysis of the Air Pollution Control Officer's 2004/2005 Supplemental Control Requirements Determination

Dear Mr. Deaton:

This letter and the enclosed supplemental materials constitute the Great Basin Unified Air Pollution Control District's (District's) response to the City of Los Angeles Department of Water and Power's (City's) alternative analysis of the District's 2004/2005 Supplemental Control Requirements Determination (SCR determination). As a result of the District's review of the City's alternative analysis, the District has modified its SCR determination as described in more detail below.

Procedural Background

On December 21, 2005, the Air Pollution Control Officer (APCO) issued the SCR determination for the July 1, 2002 through June 30, 2004 data collection period. The SCR determination is required by federal and state law, including the federal Clean Air Act, 42 U.S.C. Section 7502(c)(9), and District Board Order #031113-01 contained in the 2003 Revision to the *Owens Valley PM₁₀ Planning Area Demonstration of Attainment State Implementation Plan* (2003 SIP). The City agreed in writing to the terms of the Board Order, including the procedures for the SCR determination, in October 2003.

The 2003 SIP is the District- and State-approved plan for meeting the PM₁₀ National Ambient Air Quality Standard (NAAQS) in the southern Owens Valley. It sets forth the requirements for the District's collection and analysis of data and it prescribes the procedure to be followed to allow the City a full review, comment and alternative analysis of the District's efforts. The APCO is legally required to follow the SIP requirements—for both the original SCR determination and the review of the City's alternative analysis.

On February 27, 2006, the City submitted to the District a letter dated February 22, 2006 from the General Manager of the Los Angeles Department of Water and Power, and a two-volume document prepared by the consulting firm CH2M Hill titled *Alternative Analysis of 2004-2005 Owens Lake Supplemental Control Determination* dated February 2006. The District requested additional information from the City, some of which was submitted electronically on March 16 and 17, 2006. The District has thereby provided the City with the opportunity to comment on the SCR determination as provided for in the 2003 SIP. The City's comments on the SCR determination are also referred to as the "alternative analysis."

The District has reviewed and considered all the information in the City's alternative analysis of the data under the 2003 SIP. The District's review of the City's alternative analysis also provides an opportunity to assess how the SIP procedures that the District and City jointly developed in 2003 have performed in guiding the City's efforts to meet the PM₁₀ standards for the dust emissions from the dry bed of Owens Lake.

Summary of City's Alternative Analysis

The City's alternative analysis and supporting data are analyzed in detail in the accompanying materials to this letter. In summary, the City argues that the SCR determination was flawed and concludes that no additional areas on the Owens Lake bed require dust controls, for the following reasons:

1. The District did not discount the impacts of dust created by the City's temporary construction activities;
2. The District used substitute data that had not been authorized by the City;
3. The District included data from areas that will be controlled by the end of 2006, and therefore should not be part of a supplemental control analysis;
4. The District used data that had been impaired by man-made disturbances (e.g., vehicle traffic)
5. The District placed data collection equipment in locations that did not provide a representative sample of those areas;
6. The District did not comply with the requirements to verify the boundaries of emissive areas;
7. The SCR determination used a model that erroneously indicates the areas of the lake bed that require dust controls;
8. The City should not be required to implement additional expensive dust control measures until it completes its current dust control work on 29.8 square miles of the lake bed.

Summary of District's Review and Response

1. The District did not discount the impacts of dust created by the City's temporary construction activities.

The District extensively reviewed and analyzed the information presented by the City regarding dust created by temporary construction activities. The District concludes that the City has provided an insufficient demonstration supporting its alternative analysis, and also finds that

construction activities had no apparent impact on the data associated with the SCR determination.

First, almost all the sites inside the construction areas showed less erosion during construction than prior to construction. This may be due to the active dust suppression measures implemented by the City during construction activities. It may also be due to the increased roughness of disturbed surfaces and the fact that surface disturbance exposes moist sub-surface soils which tend to resist wind erosion. However, there does not appear to be evidence of significant increased dust generation during the construction activities. If the City's theory that construction caused an increase in sand flux was true, then the areas closest to the construction activity, more specifically those inside the construction boundaries, would have to show an increase in sand flux.

The City's site-by-site analysis of the monthly sand flux and the timing of construction activities showed this same result. However, the City's submissions did not analyze the reduction in sand flux at the sites closest to the construction activities and therefore omitted this analysis that contradicts its argument.

Second, during the SCR determination period of July 2002 through June 2004, the City's construction activities disturbed a total of only 1.53 square miles of lake bed. There is no credible evidence submitted by the City or otherwise presented in the administrative record that construction activities on 1.53 square miles caused nearly nine square miles of lake bed to become emissive.

Third, similar to the construction areas themselves, the measurements of sand flux in a wider area than in the temporary construction areas also do not show an increase during construction periods. Figure 1 below shows monthly total sand flux values for all 47 Sensit sand flux monitors in the central areas of the lake bed from January 2002 through June 2005. It can be seen that during the Phase 3 construction across this central area (green shading) that the sand flux values for the entire area actually went down. Figure 2 below shows sand flux values in the central area of the lake bed plotted against distance to construction activities during the Phase 3 construction across that portion of the lake bed. Contrary to the City's claims, it can be seen that there is no correlation between sand flux and distance to construction. This evidence, in addition to significant additional analysis presented in our response, supports the finding that construction activities do not cause widespread impacts across the lake bed.

Fourth, the 2003 SIP and its associated Environmental Impact Report require the City to prepare and implement plans for controlling the dust generated by the construction activities. As noted above, the City's construction contractors provided and properly implemented dust control plans for the work on the lake bed. The District monitored good compliance with the dust control plans. The City's construction managers also noted such compliance throughout the duration of construction. The alternative analysis does not show that the City's control of dust from its activities was so ineffective as to materially impact the District SCR Determination.

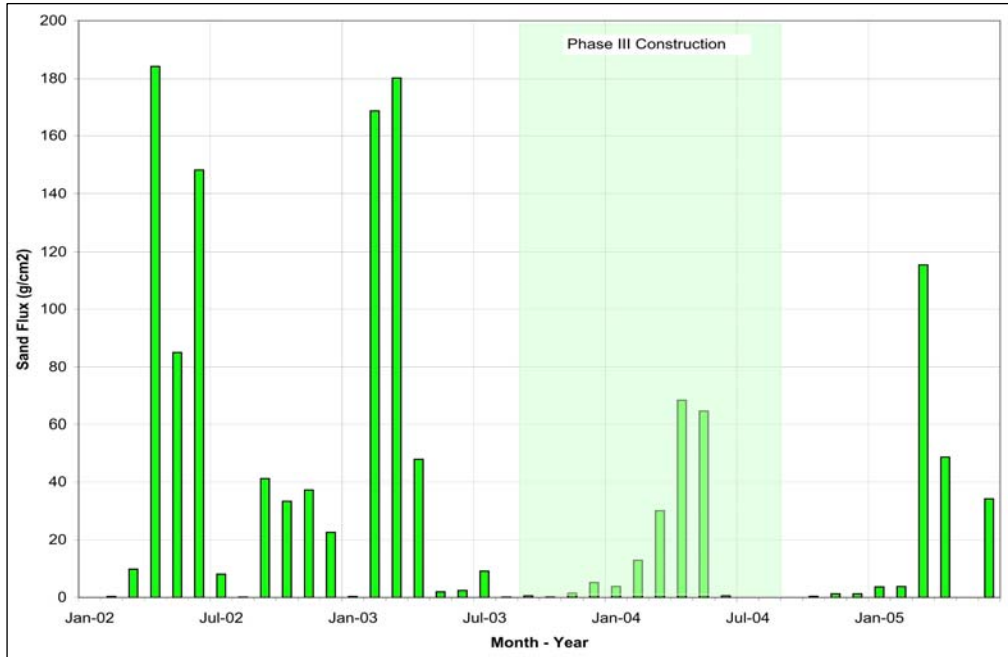


Figure 1 – Central zone composite monthly sand flux – 47 monitoring stations

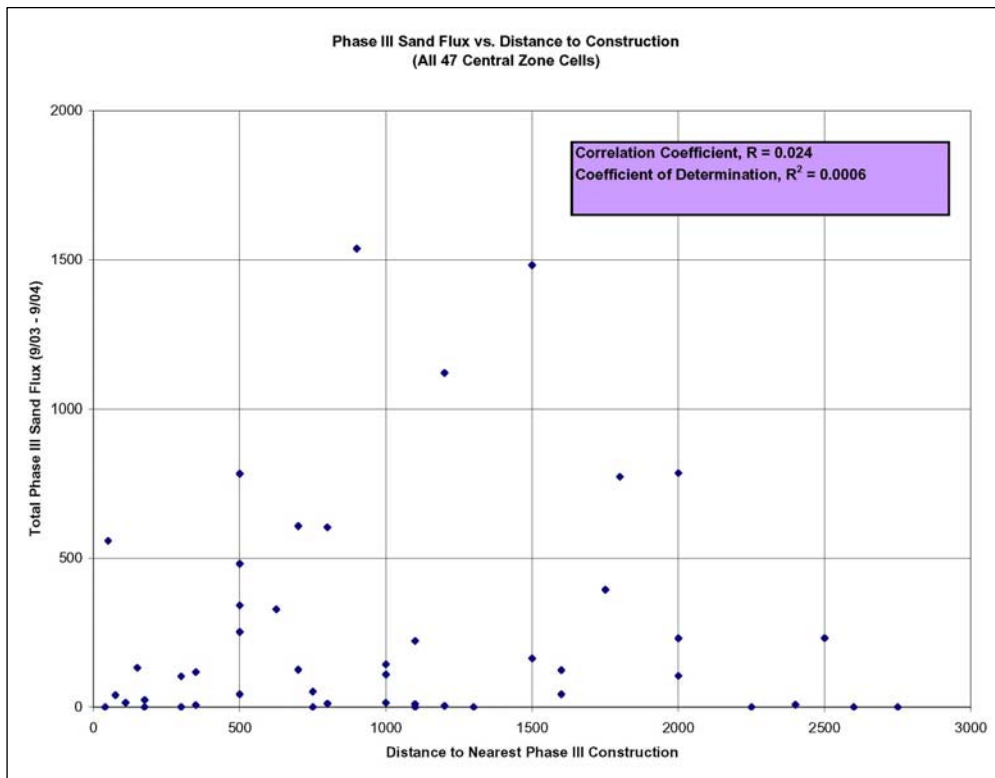


Figure 2 – Central zone sand flux vs. distance to Phase 3 construction

Fifth, the City's conclusion that dust generated by its temporary construction activities are the cause of exceedances of the PM₁₀ standards is largely based upon assumptions that are neither valid under the scientific method of testing a hypothesis, nor supported by the data. To test a hypothesis, a scientist would examine all the variables that could affect the results of a test, not just one, and a very limited one at that. For example, the City failed to investigate other lines of evidence that could have been used to determine if construction was truly the cause of the erosion activity, such as; did the timing of the SCA events only coincide with construction activities, did all areas close to construction sites show an increase in erosion during construction, did erosion activity coincide with regional and/or seasonal erosion patterns. The City examined only one variable, construction activities, and their investigation was limited to SCA areas ignoring the larger pool of information from inside and outside the construction zones. The record before the District contains significant evidence that the City's construction activities were not the cause of dust emissions from the supplemental control areas on the Owens Lake bed.

2. The District used substitute data that had not been authorized by the City.

As part of the analysis of areas of the lake bed that require dust control measures, the City and the District agreed upon a protocol in the 2003 SIP, known as the Dust Identification Program, that would utilize a data collection procedure and modeling analysis to identify the actual sources of Owens Lake dust. The Dust ID program uses sand flux data from over 130 lake bed monitor sites, meteorological data from 13 stations and PM₁₀ data from seven ambient monitor sites above the historic shoreline. Following the 2003 SIP Dust ID protocol, hourly PM₁₀ emissions from each dust source area are estimated by multiplying the measured sand flux by periodic K-factors that are determined by comparing model predictions to observed concentrations at the PM₁₀ monitor sites. Previous research found that due to variable lake bed conditions, K-factors change periodically and, due to varying soils, K-factors can be different in different areas of the lake bed.

The City was concerned that some active source areas were missed by the sand flux monitoring network and that these missing sources were causing higher K-factors, which in turn increased the PM₁₀ emissions from the monitored source areas. Finding missing sources of sand flux and putting them into the Dust ID model was a high priority for the City and their consultants. At the City's request, the District included in the Dust ID model an alternate data filling method (Gillette model) for a 40-acre area used for construction staging (Charlie's Line-up) and an 18-acre emissive area near Keeler. Based upon its discussions with City staff, District staff understood that the City agreed with the use of this data-filling method.

After the District issued its SCR Determination in December 2006, the City, for the first time, challenged the use of the Gillette model as the alternate data filling method. Because the 2003 SIP requires an explicit written agreement between the Air Pollution Control Officer and the LADWP General Manager prior to the use of such alternative methods, the District concludes that it cannot rely upon the verbal communications with the City's staff, nor the course and scope of their joint use of the Gillette model, as a binding consent of the City for this alternate data filling method.

The District has therefore removed the use of the alternate data filling method from the December 2005 SCR Determination. As required by the 2003 SIP, default K-factors will be used in the model for periods when these two source areas were included. However, the entire two year modeling period was not affected. The periods when the sand flux data was filled using the Gillette model was July 2003 through June 2004 for Charlie's Line-up (south area K-factors), and March 2004 for the 18-acre area near Keeler (central area K-factors).

The result of removing the 18-acre area from the SCA list, and applying default K-factors for the north and central areas for March 2004, and for the south area for July 2003 through June 2004, is the removal or modification of five control SCR areas totaling 0.61 square miles. The SCR Determination is modified to reflect this change.

3. The District used data from areas that will be controlled by the end of 2006.

The City is not satisfied with the SCR Determination because the District used sand flux data from monitors located within areas designated for dust control by the 2003 SIP. Eight Sensit sand flux monitors used in the SCR determination are located within areas designated for control by the end of 2006. However, seven of the Sensits were located in areas in which no construction activities occurred during the 24-month SCR data collection period (July 2002 through June 2004). The District declines to accept the City's argument that only data collected after the dust control measures are implemented should be utilized in determining whether supplemental control measures are needed. The District believes the 2003 SIP protocols implicitly direct that all available, relevant data be considered. The District followed proper SIP procedures to identify and refine the SCAs using a longer data collection period—thereby improving the confidence in the boundaries. The source boundaries in question in the SCA determination were based on multiple lines of data which include: sand flux, observational maps, surface investigations and GPS mapping—all of these data were collected from the 2002-2004 SCA period, including data from the eight Sensit sand flux monitors. The City has presented no credible evidence that would justify excluding the Sensit data from seven of the eight areas.

However, the District did use sand flux data from one Sensit (7655) that was located within the existing managed vegetation DCM area and applied sand flux data collected from within the DCM to an area outside the DCM boundaries. This did not accurately represent the conditions outside the DCM. Therefore, SCA 7655 will be removed from the SCA list. This results in removing 0.04 square miles from the total SCR area. The SCR Determination is modified to reflect this change.

4. The District used data that had been impaired by man-made disturbance.

The City claims that Sensit sand flux monitors placed too near roads cannot accurately represent the surface conditions in those areas. A value of 75 yards is then used as a threshold for the exclusion of data. The City makes no demonstration that there was a bias in the data from the location of the sites in question near the roads. There is also no supporting discussion on how the City selected the value of 75 yards or the significance of this number.

Based upon all the information in the record, the District concludes that these roads did not impact the data—in fact, well-maintained roads create hard pavement-like surfaces that do not allow for sand and dust emissions to occur.

The City also suggests that when the District travels by All-Terrain-Vehicle (ATV) to Sensit sand flux monitoring sites to collect data, that the protective salt crust is destroyed. The City contends that by traveling to the Sensit sites, the data have been biased and should be discarded. However, the City presents no quantitative data or evidence to support this claim. The City shows no correlation between man-made disturbances and SCAs, and no study demonstrating a cause and effect relationship.

The District concludes that the City's alternative analysis is inadequately supported regarding the effect on lake bed surfaces from ATV's. The District's observations confirm that while there is occasional damage to the surface, most of the time the crust is neither damaged nor destroyed. The pressure exerted by an ATV on the surface of the lake bed is between 2 to 4 pounds per square inch. This is about the same pressure exerted by a 160 pound person walking on the lake bed. The District uses the same careful procedures to access all the instruments on the lake bed, including those that do not indicate the need for SCAs. The District concludes that the City has presented insufficient evidence or analysis that man-made disturbances have biased the data.

5. The District placed data collection equipment in locations that did not adequately represent the areas to which they apply.

The City claims that the sand flux collected by the District does not adequately represent the areas where they are located and that the sand flux data would be better represented by soil surface polygons mapped by the City in the summer of 2005 (outside the fall through spring "dust season" and one year after the end of the SCR period). The City's claim is in conflict with the results of 10 soil and surface surveys conducted on the lake bed between 1982 and 2002 and is based on a small data set which has never been quantitatively evaluated with data from the Dust ID program. The District has specifically evaluated past soil and surface surveys and determined that the best approach for delineating source areas and assigning sand flux values is to use a method that evaluated multiple lines of evidence. These data are intended to corroborate each other, thereby generating a comprehensive picture of the location of lake bed dust sources.

The bed of Owens Lake is a very dynamic place that responds quickly and dramatically to changes in moisture, temperature and wind conditions. Many of the erodable surfaces present on the lake bed are repeatable in time and space, as well as from year to year and season to season. However, many other erodable surfaces are less predictable and are present or absent in longer-period cycles. The first phases of dust control were based on a temporally-limited data set—30 months of data were used for those areas delineated in the 2003 SIP. Many of the areas present on the lakebed that were not included in the 2003 SIP had been observed by the District to be active sources prior to 2000 (beginning of the Dust ID project) but were not included because of an agreement between the City and the District to limit the source areas in the 2003 SIP to data collected between January 2000 and June 2002 (30 months). Based on the 24 months of additional data collected from July 2002 through June 2004, the record supports the finding that additional areas of dust control are required. As in the past, these areas became emissive due to natural changes and not due to construction activities. For over 20 years the District has well documented its contention that somewhere between 35 and 46 square miles of the Owens Lake bed would eventually require controls (see the District's 1988 and 1997 SIPs).

The City shows no correlation between the data from their summer 2005 surface mapping and the sand flux monitoring and dust storms that occurred in 2002 through 2004. The City also provides no demonstration that the District's source area delineation would be better represented differently. As such, the City has presented insufficient credible evidence that would justify using its soil condition survey polygons.

6. The District failed to comply with the requirements to verify the boundaries of emissive areas.

The City claims that the dust observations and GPS surveys were not conducted properly and that procedural error by the District caused areas to be incorrectly included in the SCR determination. Based on a review of the material presented and the delineation data collected during the SCR period by the District, the District finds that 1) the accuracy of the dust plume observation boundaries are well within that specified in the development of the SIP and 2) GPS surveys were carefully conducted following the procedures provided in the SIP. The GPS surveys were conducted following the definition of a source boundary provided in the SIP and correctly included areas of wind-blown salt deposits and sand deposition. GPS survey events were conducted appropriately with respect to precipitation events and the interiors of the areas surveyed were checked for surface character. GPS surveys were conducted 42 different times during the SCA period. Data from these surveys were used in conjunction with sand flux data, real-time dust plume observations, dust video from time lapse cameras, and expert surface inspections to correctly identify the source area configurations used in the dispersion modeling.

The District concludes that the City has not presented sufficient if any quantifiable evidence to indicate there were errors in the methods used for plume observations and GPS source area delineation, or that the source areas identified caused mistakes in determining SCAs. Furthermore, the City has not demonstrated that the District's data for the source area delineations resulted in misguided spatial assignment of emissions for the SCAs. The City has not quantitatively supported their arguments and has used vague subjective language when evaluating the work done by the District. The District has been and continues to be very careful in following the procedures and protocols required in the 2003 SIP. Based upon the materials submitted in the alternative analysis, the District finds no errors or procedural violations in the way the source area data were applied as part of the Dust ID program.

7. The District relied on a model that erroneously indicates the areas of the lake bed that require dust controls.

The District considered the arguments in the City's alternative analysis and found no justification for the removal of SCAs on the basis of poor model performance. The City and the District have been working together since 1999 on a collaborative effort to develop and improve model performance and understand Owens Lake's emission processes. In its alternative analysis, the City implicitly disclaims its own prior cooperative work and presents a critique of the modeling procedures with the apparent objective of justifying removal of SCAs from the Determination. The District's general responses to the City's alternative analysis of SCA modeling are as follows:

- A model performance analysis is not a requirement of the 2003 SIP for identification of SCAs and there was no agreed-to minimum level of model performance, certainly none using the biased techniques the City used in their alternative analysis.

- The “predictive capability” of the modeling procedures is not essentially zero. The modeling procedures meet EPA recommended performance criteria and are able to predict the distribution of observed concentrations for the data set as a whole and for each monitoring site over three orders of magnitude of PM₁₀ concentration.
- Candidate SCAs were typically identified for the largest PM₁₀ events that occurred during the two year period, not the low predicted and/or observed PM₁₀ concentration events that the City says have less certainty.
- The alternative analysis omits the prior negotiations and consent of the City in October 2003 to the SCR protocols. During those negotiations, the District agreed at the City’s request to a 33% margin of error in their favor in the 2003 SIP, which used a 200 µg/m³ threshold to select SCA’s instead of the 150 µg/m³ level of the PM₁₀ standard. In the alternative analysis, the City for the first time argues that the SCA threshold should be 1,000 µg/m³, which would make it virtually impossible to attain the PM₁₀ standard.
- The City’s alternative analysis judges model performance on a single paired-in-time statistical measure. Given the inherent uncertainties of the dispersive mechanisms being simulated, it is an unreasonable expectation that even the best formulated model will perform well using this measure. Further, the US EPA does not require good paired-in-time performance as suggested by the City.
- Criticism is directed throughout the City’s alternative analysis towards poor model performance. However, by insisting on the use of low K-factors, which lowers PM₁₀ emissions, the City is apparently willing to sacrifice improved model performance, as long as fewer SCAs are identified.
- The alternative analysis recommends certain SCAs be removed on the basis of poor model performance. Although the District does not agree model performance should only be judged using paired-in-time statistics, the SCAs listed in the alternative analysis occurred during some of the episodes exhibiting the best model performance in the entire data set using these statistics.
- The District reviewed the data set provided by the City in the alternative analysis and found the City’s database to be corrupt with periods of missing data replaced with data pairs from different periods and locations.

The SCAs identified by the dispersion modeling analysis are only a candidate list for consideration. Other lines of evidence are used by the District to support the inclusion of the area on the final list. In some instances the District removed SCAs when we felt the predictions were less certain and the evidence was not overwhelming. Based upon the record, the District concludes that more than substantial evidence supports the use of the model for the modified SCR Determination.

8. The City should not be required to implement additional expensive dust control measures until it completes its current dust control work on 29.8 square miles of the lake bed.

There is no legal or procedural basis for the City’s “wait and see” position. Neither is there sufficient evidence, or any evidence, to support the City’s optimistic position that the dust emissions from almost nine square miles will suddenly stop when the City completes controls elsewhere. The District has carefully reviewed and considered the City’s arguments against the

necessity for any supplemental control measures, following the legal requirements set forth in the SIP. The results of the SIP process, as well as expert observations, indicate that additional areas of the Owens Lake playa will require dust controls in order for the southern Owens Valley to attain the PM₁₀ standards. The City has speculated that at least some of the PM₁₀ emissions may be related to construction activities or some other temporary, transient disturbances. But the City's alternative analysis is both flawed and lacking in sufficient credible evidence to prove that the dust emissions from the lake bed are anything other than natural changes that can and do occur unpredictably in time and place every year. As a public agency entrusted with protecting public health, the District finds that the law and the data in the administrative record require that the City proceed immediately with implementing the additional of dust controls required to attain the PM₁₀ NAAQS at Owens Lake.

Extreme levels of PM₁₀ emissions from Owens Lake continue to be measured in the communities in the Owens Valley. The valley's residents continue to breathe the highest levels of PM₁₀ air pollution in the country. The record demonstrates that these emissions were caused, in part, by almost nine square miles of unprotected, uncontrolled lake bed—lake bed that is emissive not because of construction activities, or because the data collection equipment is located in the wrong place, or because ATVs drove on the lake bed, or because the air quality model is not perfect—the emissions continue to occur because of the City's water diversions. And the emissions will continue to occur until the City controls all the emissive areas of the lake bed, including the SCR areas in this modified determination.

Conclusion

The District concludes that the procedures set forth in the 2003 SIP provide meaningful guidance toward meeting the PM₁₀ standards in the southern Owens Valley, and that the requirements set forth in the 2003 SIP are applied in the modified Determination and supported by substantial evidence for the determination of supplemental control area requirements. The City's alternative conclusion that no additional dust controls are required is insufficiently supported and contrary to the weight of the evidence in the record. The City's assertion that the excess dust emissions from Owens Lake will cease when temporary construction activities end is also not adequately or convincingly supported by the evidence in the City's alternative analysis.

Modified Determination

This modified determination incorporates by reference all enclosed materials, as well as the City's alternative analysis and all information associated with the original December 21, 2005 determination. The APCO has used the data collected during the 2-year period from July 1, 2002 through June 30, 2004 and has analyzed that data following the procedures set forth in the 2003 SIP. Based on the original analysis, as well as a careful and complete review of the City's alternative analysis, the APCO has determined that the original determination dated December 21, 2006 should be modified. This modified determination requires air pollution control measures to be implemented on an additional 8.66 square miles of the Owens Lake bed. This is a reduction of 0.65 square miles from the December 21, 2006 preliminary determination. These areas are referred to as "Control" areas in the attached maps and tables. A map (Map 1), table of supplemental control area coordinates (Table 1) and table of supplemental control areas with episode dates (Table 2) are attached.

In addition, 0.79 square miles of lake bed has been identified for preliminary air pollution control measure design under Section 2.3 of Exhibit 2 in the 2003 SIP. These areas are referred to as “Watch” areas in the attached maps and tables. This is an increase of 0.13 square miles from the original December 21, 2006 determination.

In accordance with the requirements set forth in the Great Basin Unified Air Pollution Control District’s Board Order 031113-01, which was adopted by the Great Basin Governing Board on November 13, 2003, the APCO directs the City of Los Angeles to implement, operate and maintain air pollution control measures on the 8.66 square miles of lake bed described in Map 1 and Table 1. The City may use any combination of the three approved Best Available Control Measures (BACM) described in the 2003 SIP to control emissions from these areas. The APCO also directs the City to prepare a 30 percent design for BACM on 0.79 square miles of “Watch” area also described in Map 1 and Table 1.

For the purposes of the time provided in the 2003 SIP for the implementation of supplemental control measures (2003 SIP, Exhibit 2, Section 2.8), the date of the APCO’s “written determination” shall be April 4, 2006. Within one year (by April 4, 2007), the City must choose the BACM it wishes to implement on the 8.66 square-mile Control area and the 0.79 square-mile Watch area, prepare 30 percent construction design documents, complete the environmental analysis document (if necessary) and apply for all necessary permits for construction. Within two years of the date of the final written determination from the APCO (by April 4, 2008), the City must have all infrastructure for BACM constructed and operational on the 8.66 square-mile Control area. The City shall have BACM fully operational and compliant within 2½ years (by October 4, 2008) if implementing Shallow Flood, otherwise within four years (by April 4, 2010) if implementing any other BACM.

Sincerely,



Theodore D. Schade, P.E.
Air Pollution Control Officer

Enclosures:

- Map 1 – Owens Lake supplemental control areas, July 2002 through June 2004
- Table 1 – Coordinate description of supplemental control areas
- Table 2 – Table of supplemental control areas with episode dates
- Review and response to City’s alternative analysis

Cc: Henry “Skip” Veatch, GBUAPCD Board Chairman
Mary Nichols, President, LADWP Board of Commissioners
Larry Biland, USEPA, Region 9
Sylvia Oey, Calif. Air Resources Board

Richard Harasick, LADWP
Julie Conboy, LADWP
Richard Coles, CH2M Hill
Richard Cervantes, GBUAPCD Board Vice-Chairman
Linda Arcularius, GBUAPCD Board
Tony Barrett, GBUAPCD Board
Gunter Kaiser, GBUAPCD Board
D. "Hap" Hazard, GBUAPCD Board
Byng Hunt, GBUAPCD Board

Transmittal Letter and Modified Determination

Map 1 Owens Lake Supplemental Control Areas

July 2002 through June 2004

