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11 acting by and through the Department of Transportation

NO FEE PURSUANT TO GOV'T CODE § 6103

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**ADMINISTRATIVE PETITION FOR REVIEW TO THE
STATE OF CALIFORNIA WATER RESOURCES CONTROL BOARD**

THE PEOPLE OF THE STATE OF
CALIFORNIA, acting by and through the
Department of Transportation,

Petitioner

STATE OF CALIFORNIA, By and Through
the San Diego Regional Water Quality Control
Board and John Robertus, in his Official
Capacity as Executive Director of the San
Diego Regional Water Quality Control Board,

Respondents.

**PETITION IN RE: SAN DIEGO
REGIONAL WATER QUALITY
CONTROL BOARD NOTICE OF
VIOLATION NO. R9-2007-0090**

**PETITION IN RE: SAN DIEGO
REGIONAL WATER QUALITY
CONTROL BOARD INVESTIGATIVE
ORDER NO. R9-2007-0092 FILED
CONCURRENTLY**

**REQUEST FOR STAY FILED
CONCURRENTLY**

Pursuant to California Water Code, section 13320, Petitioner seeks review of the
Notice of Violation, No. R9-2007-0090 issued on June 1, 2007 by the San Diego Regional
Water Quality Control Board. The Petition requirements as listed in Title 23, Cal.Code Regs,
§2050 are provided after the general background. This Petition is filed concurrently with a
separate Petition for Order No. R9-2007-0092 and a Request for Stay.

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1 **BACKGROUND**

2 The California Department of Transportation, in conjunction with South Bay
3 Expressway, have developed the State Route 125 toll road in southern San Diego County. State
4 Route 125 is one of the public-private partnerships that were authorized by Streets and Highways
5 Code §143. Construction of the project is near completion, and it is anticipated the facility will
6 open to the traveling public this year. State Route 125 is an approximately ten-mile facility
7 which will join State Route 905 in the south to State Route 54 in the north. As part of the
8 construction permitting process, a Federal Clean Water Act (“CWA”) §404 Permit was
9 necessary. As such, a CWA §401 Water Quality Certification was also necessary. The San
10 Diego Regional Water Quality Control Board (“SDRWQCB”) issued the Certification on April
11 24, 2001. (Exhibit “A”.)

12 The CWA §401 Certification included a condition that Petitioner “shall *promote and*
13 *pursue* a regional air deposition study that will include the Sweetwater Reservoir Airshed.”
14 (Exhibit “A” at p. 2.) The Certification did not require any study be designed, funded or
15 delivered by Petitioner. At other points in the Certification, Petitioner was required to deliver or
16 meet specific requirements such as *submittal* of a Storm Water Pollution Prevention Plan;
17 *implementation* of a monitoring program for storm water, and *submission* of annual monitoring
18 reports. Moreover the study was to assess the regional *airshed*, not the Sweetwater watershed.

19 Construction of State Route 125 required the acquisition of certain parcels of real estate
20 owned by the Sweetwater Authority, the owner and operator of the Sweetwater Reservoir. The
21 acquisition could not be negotiated and a condemnation action was filed in the San Diego
22 Superior Court. In the condemnation action Sweetwater sought over \$25 million for claimed
23 future advanced water treatment costs. One of Sweetwater’s Statements of Valuation Data, as
24 required under California Code of Civil Procedure §1258.260, is attached as Exhibit “I”. The
25 claim is noted on the third page.

26 In an attempt to bolster its claim for \$25 million, Sweetwater urged the SDRWQCB to issue
27 a Notice of Violation relating to the CWA §401 Certification. (Exhibit “D”.) A Notice of
28 Violation was issued by the SDRWQCB on June 1, 2007. (Exhibit “B”.) Notably, the Notice of

1 Violation goes well beyond the “promote and pursue” language of the CWA§401 Certification
2 and instead demands a study be *designed, funded and reported* by Petitioner.

3 For the reasons stated below and in the Memorandum of Points and Authorities, Petitioner
4 respectfully urges that the Notice of Violation is fundamentally flawed and should be rescinded.

5
6 **PETITION**

- 7 1. Petitioner is the California Department of Transportation, District 11 which is located at
8 4050 Taylor Street, San Diego, CA 92110. The Petitioner is represented by Glenn B.
9 Mueller, Assistant Chief Counsel.
- 10 2. Petitioner seeks review of the Notice of Violation No. R9-2007-0090. A copy is attached
11 as Exhibit “C”.
- 12 3. The San Diego Regional Board acted through its Executive Director, Mr. John Robertus,
13 on June 1, 2007.
- 14 4. The Action was inappropriate and improper for several reasons, including but not limited
15 to the following facts and reasons.
- 16 • CWC §13350 is not applicable to this Notice since no discharge is alleged or has
17 occurred.
 - 18 • Petitioner has complied with the terms of the CWA §401 Certification.
 - 19 • The Notice of Violation is an improper and illegal modification of a §401 Water
20 Quality Certification issued after the issuance of the §404 Permit by USACOE.
- 21 5. Petitioner is aggrieved by the Notice of Violation, and its associated Investigation Order
22 in that the mandated study does not have any price tag and must be designed by
23 September 1, 2007. The first quarterly report is due by December 10, 2007. Without
24 spending authority, and without a State Budget in place, Petitioner cannot fund, obtain
25 the required consultants, and produce the requested work product in the time frame
26 demanded by the Investigative Order. Finally, Petitioner is threatened with civil and
27 criminal penalty should further enforcement actions be initiated by the SDRWQCB.
28 (Notice of Violation at pp. 1.)

1 Petitioner requests the State Board issue an Order 1.) Staying any enforcement
2 action or other deadlines contained in the Notice of Violation until at least 30 days after
3 the State Board has acted on the Petition; 2.) Finding the Petitioner's actions taken to date
4 constitute full compliance with any water quality certification requiring Petitioner to
5 “promote and pursue a regional air deposition study that will include the Sweetwater
6 Reservoir watershed” and 3.) Rescinding the Notice of Violation issued by the
7 SDRWQCB.

8
9 6. A Memorandum of Points and Authorities is included below.

10
11 7. This Petition has been sent to the SDRWQCB and to California Transportation Ventures'
12 successor in interest.

13
14 8. The substantive issues have been not been heard before the SDRWQCB because the
15 Notice of Violation and the Investigative Order were issued on June 1, 2007 and pursuant
16 to CWC §2050(a), this Petition needed to be filed within 30 days of June 1, 2007. A
17 prior request for supporting documents, including documents cited in the Investigative
18 Order, as well as an extension of time was denied on June 27, 2007.

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1 **MEMORANDUM OF POINTS AND AUTHORITIES**

2 Petitioner's Points and Authorities are numbered consistently with the issues identified in
3 Paragraph No. 4, above.
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5 **A. Legal Basis for The Notice of Violation**
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7 Petitioner maintains that the cited basis for the Notice of Violation does not provide a
8 valid, legally justifiable basis for the Notice. The Notice of Violation expressly notes it is based
9 on California Water Code (CWC) section 13350. Section 13350 applies to discharges and
10 circumstances where a Waste Discharge Report is mandated. The Notice of Violation does not
11 allege any non-permitted discharge.

12 **B. Petitioner has Complied with the Terms of the §401 Certification**
13

14 It is undisputed that Pursuant has been ordered to "promote and pursue" an air
15 deposition study of the airshed which includes the Sweetwater reservoir. Petitioner maintains it
16 has not only actively funded such a study which was conducted by the University of California
17 at Davis, but that it has taken all reasonable steps to "promote and pursue" a study.

18 The definitions of the words "promote" and "pursue" are not difficult and have ordinary
19 meaning:

20 "Promote"- To move forward, to raise or advance to a higher position or rank, to help
21 bring about or further the growth or establishment."
22

23 "Pursue"- to try to find, get, with, etc; strive for; seek after."
24

25 (Webster's New World Dictionary, Third College Ed., 1988.)
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1 In this instance not only has Petitioner funded an aerial deposition study by the
2 University of California (Exhibit "G"), but it has also made very tangible and public efforts to
3 "raise", "advance", "help bring about", "further", "try to find" another study.

4 These efforts included the funding and preparation of a research proposal through the
5 University of California, Davis and presentation of the research proposal to a national
6 organization which is a division of the National Research Council- the Transportation Research
7 Board of the National Academies. (See, e.g. <http://www.trb.org/TRB/about/About.asp>.)

8 A division of the Transportation Research Board, the National Cooperative Highway
9 Research Program reviewed the U.C. Davis study proposal and did not select it for further study
10 at this time.

11 Additionally, Petitioner promoted and pursued the regional deposition studies by raising
12 the issue at several workshops convened for the express purpose of "promoting and pursuing"
13 another study. These workshops were coordinated under the auspices of the San Diego
14 Association of Governments and included, at various times, representatives of the San Diego
15 Air Pollution Control District; the California Department of Health Services; the San Diego
16 County Water Authority; the Metropolitan Water District of Southern California; the United
17 States Geological Survey; Sweetwater Reservoir; the California Air Resources Board and the
18 State Water Resources Control Board. Sweetwater was aware of these efforts. (Exhibit "D", p.
19 2.)

20 A U.C. Davis memorandum, attached as Exhibit "J" at pages 1-3 provides a succinct
21 summary of the efforts to obtain interest in a research proposal. The efforts reflected in that
22 memorandum satisfy the even the most stringent definition of the phrase "promote and pursue."

23 Even the Notice of Violation itself acknowledges the efforts which Petitioner has made
24 to date, but that apparently is not enough. (Exhibit "C, p. 2, second ¶.)

25 Unfortunately, no agency has agreed to lead a regional analysis.

26 Petitioner and the SDRWQCB disagree over the interpretation of ordinary words.
27 Petitioner maintains, based upon the common definition of these ordinary words, as defined by
28 Webster, that Petitioner has fully complied with the CWA §401 Certification. Based on the

1 forgoing, and while Petitioner has not designed and funded another study, it has met the letter
2 and the spirit of the “promote and pursue” requirement of the §401 Certification. As such, the
3 Notice of Violation should be rescinded.

4
5 **C. The Investigative Order is an Improper and Illegal Modification of the §401**
6 **Certification**

7 The Notice of Violation is expressly based upon the §401 Certification that
8 authorized the issuance of a §404 permit. (Exhibit “C” at Finding No. 1 as well as the
9 “Alternative Form of Compliance” at p. 5 and the Investigation Order No. R9-2007-0092
10 also issued on June 1, 2007 and which is attached as Exhibit “B”.)

11 There is no reasonable doubt the Notice of Violation is, in fact, a fundamental,
12 material and unilateral modification of the terms of the §401 Certification issued more than
13 six years after the §401 certification was issued.

14 The material change in the Certification is the modification of the phrase “promote
15 and pursue” to a different mandate: That Petitioner either “partner” with Sweetwater
16 Authority and participate in an ongoing study which Petitioner feels is fundamentally flawed
17 or that Petitioner produce another study by December 2007. (Exhibit “C” at p. 2, third ¶;
18 Exhibit “B” at pp. 4-5.) This is an inappropriate Hobson’s Choice.

19 While Sweetwater Authority may seek Petitioner’s joinder in a study that is limited
20 to the Sweetwater Reservoir, which incidentally is not co-extensive with the airshed, but that
21 desire on the part of Sweetwater does not mandate Petitioner’s acquiescence nor does it
22 authorize a change in the terms of the CWA §401 Certification. The CWA §401
23 Certification did not mandate Petitioner to fund, design or issue any study. Nor did it even
24 identify any particular study being pursued or contemplated by any other party- including
25 Sweetwater Authority. This unilateral modification is a plain violation of the Due Process
26 rights of the Department of Transportation as well as a clear violation of federal law.

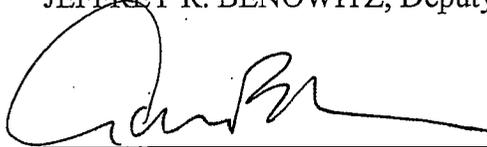
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Courts outside the Ninth Circuit Court of Appeals, including the U.S. Court of Appeals for the D.C. Circuit Court have either directly or impliedly held that once the §404 Permit has been issued by USACOE, no modification to the terms or conditions of the §401 Certification are authorized- and certainly not more than a year after the Permit has been issued. (*City of Shoreacres v. Texas Comm'n on Environmental Quality* (2005) 166 S.W.3d 825, 834-836; *Airport Communities Coalition v. Graves* (2003) 280 F.Supp.2d 1207, 1217; *Keating v. FERC* (1991) 927 F.2d 616, 623-624.)

In this instance, and because the §404 Permit has been issued years ago, the SDRWQCB was without the legal authority to seek to fundamentally and materially modify the terms and conditions of the §401 Water Quality Permit. The "plenary" authority of the State and Regional Water Quality Control Boards is limited by the source of their authority. In the case of §401 Water Quality Certifications, that source is the federal CWA and the rulings of the federal courts which have addressed that issue are binding.

Date: June 29, 2007

BRUCE A. BEHRENS, Chief Counsel
JEFFREY R. BENOWITZ, Deputy Chief Counsel

By: 

GLENN B. MUELLER, Deputy Attorney
Attorneys for Defendant, STATE OF
CALIFORNIA

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PROOF OF SERVICE

In Re: Petition for Review of IO No. R9-2007-0090

Declarant says: I am employed in the County of San Diego; I am over the age of eighteen years and am not a party to the within entitled action. My business address is 4050 Taylor Street, MS-130, San Diego, CA 92110.

On **July 2, 2007**, I served the within **Administrative Petition for Review** on those parties of record in said action listed below as follows:

- By electronic service on: See attached service list
- By facsimile transmission from this office prior to 5:00 p.m., and with transmission confirmation, to the following facsimile number:
- By Express Mail or other means of overnight delivery by depositing in a box or other facility regularly maintained by the express service carrier or delivered to an authorized courier or driver authorized by the express service carrier to receive documents, in a n envelope or package designated by the express service carrier with delivery fees paid or provided for, addressed to the person on whom it is to be served, at the office address as last given by that person on any document filed in the cause otherwise at the party's place of residence as noted on the attached Service List.
- By mail by placing a true copy thereof enclosed in a sealed envelope with postage thereon fully prepaid addressed on the attached Service List. I am "readily familiar" with the firm's practice of collection and processing correspondence for mailing. Under that practice it is given by me to the mail clerk and is then deposited with the U.S. Postal Service on that same day with postage thereon fully prepaid at San Diego, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing contained in this declaration.

I am employed in the offices of a member of the Bar of this Court, at whose direction service was made.

I declare under penalty of perjury the above is true and correct.

Executed on July 2, 2007, at San Diego, California



Lucille A. Olson
Declarant

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Service List on
In Re: Administrative Petition for Review on IO R9-2007-0090

State Water Resources Control Board Office of Chief Counsel Attn: Jeannette L. Bashaw Legal Secretary 1001 "T" Street, 22 nd floor Sacramento, CA 95814 jbashaw@waterboards.ca.gov	San Diego Regional Water Quality Control Board 9174 Sky Park Court, Ste. 100 San Diego, CA 92123-4353 Attn: Ms. Christina Arias carias@waterboards.ca.gov
South Bay Expressway, successor in interest to California Transportation Ventures 880 Kuhn Drive Chula Vista, CA 91914 Attn: Mr. Greg Hulsizer	

1 **BRUCE A. BEHRENS, Chief Counsel**
2 **JEFFREY R. BENO WITZ, Deputy Chief Counsel**
3 **GLENN B. MUELLER, Assistant Chief Counsel, (CBN 162967)**

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11 acting by and through the Department of Transportation

NO FEE PURSUANT TO GOV'T CODE § 6103

12 **ADMINISTRATIVE PETITION FOR REVIEW TO THE**
13 **STATE OF CALIFORNIA WATER RESOURCES CONTROL BOARD**

14 THE PEOPLE OF THE STATE OF
15 CALIFONRIA, acting by and through the
16 Department of Transportation,

Petitioner

**PETITION IN RE: SAN DIEGO
REGIONAL WATER QUALITY
CONTROL BOARD INVESTIGATIVE
ORDER NO. R9-2007-0092**

17 STATE OF CALIFORNIA, By and Through
18 the San Diego Regional Water Quality Control
19 Board and John Robertus, in his Official
20 Capacity as Executive Director of the San
21 Diego Regional Water Quality Control Board,

Respondents.

**REQUEST FOR STAY FILED
CONCURRENTLY**

**PETITION IN RE: SAN DIEGO
REGIONAL WATER QUALITY
CONTROL BOARD NOTICE OF
VIOLATION NO. R9-2007-0090 FILED
CONCURRENTLY**

22 Pursuant to California Water Code, section 13320, Petitioner seeks review of the
23 Investigative Order, No. R9-2007-0092 issued on June 1, 2007 by the San Diego Regional
24 Water Quality Control Board. The Petition requirements as listed in Title 23, Cal.Code Regs,
25 §2050 are provided after the general background.

BACKGROUND

26 The California Department of Transportation, in conjunction with South Bay
27 Expressway, have developed the State Route 125 toll road in southern San Diego County. State
28 Route 125 is one of the public-private partnerships that were authorized by Streets and Highways

1 Code §143. Construction of the project is near completion, and it is anticipated the facility will
2 open to the traveling public this year. State Route 125 is an approximately ten-mile facility
3 which will join State Route 905 in the south to State Route 54 in the north. As part of the
4 construction permitting process, a Federal Clean Water Act (“CWA”) §404 Permit was
5 necessary. As such, a CWA §401 Water Quality Certification was also necessary. The San
6 Diego Regional Water Quality Control Board (“SDRWQCB”) issued the Certification on April
7 24, 2001. (Exhibit “A”.)

8 The CWA §401 Certification included a condition that Petitioner “shall *promote and*
9 *pursue* a regional air deposition study that will include the Sweetwater Reservoir Airshed.”
10 (Exhibit “A” at p. 2.) The Certification did not require any study be designed, funded or
11 delivered by Petitioner. At other points in the Certification, Petitioner was required to deliver or
12 meet specific requirements such as *submittal* of a Storm Water Pollution Prevention Plan;
13 *implementation* of a monitoring program for storm water, and *submission* of annual monitoring
14 reports. Moreover the study was to assess the regional *airshed*, not the Sweetwater watershed.

15 Construction of State Route 125 required the acquisition of certain parcels of real estate
16 owned by the Sweetwater Authority, the owner and operator of the Sweetwater Reservoir. The
17 acquisition could not be negotiated and a condemnation action was filed in the San Diego
18 Superior Court. In the condemnation action Sweetwater sought over \$25 million for claimed
19 future advanced water treatment costs. One of Sweetwater’s Statements of Valuation Data, as
20 required under California Code of Civil Procedure §1258.260, is attached as Exhibit “T”. The
21 claim is noted on the third page.

22 In an attempt to bolster its claim for \$25 million, Sweetwater urged the SDRWQCB to issue
23 a Notice of Violation relating to the CWA §401 Certification. (Exhibit “D”.) A Notice of
24 Violation was issued by the SDRWQCB on June 1, 2007. (Exhibit “B”.) Notably, the Notice of
25 Violation goes well beyond the “promote and pursue” language of the CWA §401 Certification
26 and instead demands a study be *designed, funded and reported* by Petitioner.

27 For the reasons stated below and in the Memorandum of Points and Authorities, Petitioner
28 respectfully urges that the Notice of Violation is fundamentally flawed and should be rescinded.

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2 **PETITION**

- 3 1. Petitioner is the California Department of Transportation, District 11 which is located at
4 4050 Taylor Street, San Diego, CA 92110. The Petitioner is represented by Glenn B.
5 Mueller, Assistant Chief Counsel.
- 6 2. Petitioner seeks review of the Investigative Order No. R9-2007-0092. A copy is attached
7 as Exhibit "B".
- 8 3. The San Diego Regional Board acted through its Executive Director, Mr. John Robertus,
9 on June 1, 2007.
- 10 4. The Action was inappropriate and improper for several reasons, including but not limited
11 to the following facts and reasons.
- 12 • None of the cited sources in the Investigative Order provide a valid legal basis for
13 its issuance.
 - 14 • The Investigative Order was issued to compel Petitioner to fund improvements to
15 Sweetwater Reservoir's water treatment facilities which, if necessary, are caused
16 by industrial and transportation uses other than State Route 125.
 - 17 • The Investigative Order is not supported by sufficient findings of fact and the
18 findings of fact are not supported by the record
 - 19 • The Investigative Order is an improper and illegal modification of a §401 Water
20 Quality Certification issued after the issuance of the §404 Permit by USACOE.
 - 21 • The Investigative Order encroaches into regulatory matters of other agencies who
22 have exclusive regulatory authority. This encroachment will lead to
23 inconsistency, redundancy, confusion and waste.
- 24
- 25 5. Petitioner is aggrieved by the Investigative Order in that the mandated study does not
26 have any price tag and must be designed by September 1, 2007. The first quarterly report
27 is due by December 10, 2007. Without spending authority, and without a State Budget in
28 place, Petitioner cannot fund, obtain the required consultants, and produce the requested

1 work product in the time frame demanded by the Investigative Order. Finally, Petitioner
2 is threatened with civil and criminal penalty should further enforcement actions be
3 initiated by the SDRWQCB. (Investigative Order at pp. 5-6.)

4 Petitioner requests the State Board issue an Order 1.) Staying any enforcement action or
5 other deadlines contained in the Investigative Order until at least 30 days after the State
6 Board has acted on the Petition; 2.) Finding the Petitioner's actions taken to date
7 constitute full compliance with any water quality certification requiring Petitioner to
8 "promote and pursue a regional air deposition study that will include the Sweetwater
9 Reservoir watershed" and 3.) Rescinding the Investigative Order issued by the
10 SDRWQCB.

11 6. A Memorandum of Points and Authorities is included below.

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13 7. This Petition has been sent to the SDRWQCB and to California Transportation Ventures'
14 successor in interest.

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16 8. The substantive issues have been not been heard before the SDRWQCB because the
17 Investigative Order was issued on June 1, 2007 and pursuant to CWC §2050(a), this
18 Petition needed to be filed within 30 days of June 1, 2007. A prior request for supporting
19 documents, including documents cited in the Investigative Order, as well as an extension
20 of time was denied on June 27, 2007.

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MEMORANDUM OF POINTS AND AUTHORITIES

Petitioner's Points and Authorities are numbered consistently with the issues identified in Paragraph No. 4, above.

A. Legal Basis for The Investigative Order

Petitioner maintains that none of the cited bases for the Investigative Order proved a valid, legally justifiable basis for the Order. The Investigative Order expressly notes it was "issued pursuant to California Water Code (CWC) sections 13225, 13267 and 13383 . . ." and was based upon the Regional Board's interpretation of its authority as it relates to a §401 Water Quality Certification which was issued by the Regional Board on April 24, 2001 for the State Route 125 Toll Road. (File 99C-133 attached as Exhibit "A".) None of the cited CWC sections are applicable to the facts and circumstances surrounding the underlying §401 Certification and that the Investigative Order is without legal basis. Each basis for the Investigative Order is addressed separately below.

1. CWC §13383

The Investigative Order alleges it is based upon CWC §13383 (Investigative Order at ¶1.) CWC §13383 authorizes monitoring, inspection, etc. as to any person who discharges pollutants into navigable waters, etc. The Investigative Order does not allege any discharge has been made by Petitioner into navigable waters. As such, the Investigative Order does not allege sufficient facts that, if true, would satisfy the requirements of CWC §13383. Therefore the Investigative Order does not meet the plain requirements of CWC §13383 and the Investigative Order cannot be based upon that section.

2. CWC §13267

The Investigative Order further alleges it is based upon CWC §13267(b). (Investigative Order at ¶1.) CWC §13267(b), like CWC §13383, is expressly based upon persons "discharging or proposing to discharge waste". As the

1 Investigative Order does not allege that Petitioner is discharging or proposing to
2 discharge into California waters, CWC §13267(b) is not applicable. To the extent
3 the Investigative Order, at ¶¶9-11 infer that vehicles operating on State Route 125
4 may cause, through their emissions into the air, a discharge, then the language of
5 CWC §13267(b) is in direct conflict with the more specific Health and Safety
6 Code §§39002, 43000(c), 39658 and 39667. Moreover, and to the extent the
7 Investigative Order issued by the SDRWQCB constitutes a “regulation” of air
8 emissions, it violates the legislative requirement that the State proscribe uniform
9 procedures and standards relating to emission of air pollutants from vehicles
10 operating in California.

11 It is inconceivable that each RWQCB is individually vested with the
12 authority to mandate air quality and emissions standards which are inconsistent
13 with each other and which are inconsistent with the standards and regulations set
14 by CARB and/or USEPA. If that is indeed the intent or effect of CWC §13267
15 then the direct and cumulative effect of the Order is potentially significant and the
16 Investigative Order is subject to the requirements of the California Environmental
17 Quality Act. (See, e.g. Title 14 Cal. Code Regs, 15187.) The Investigative
18 Order’s reference, at Paragraph 12, to Title 14 Cal.Code of Regs, §15108 does not
19 appear to relate to the facts of this Petition and therefore appears to be a
20 typographical error. (Exh. “B” p. 3.)

21 **3. CWC §13225**

22 The Investigative Order also alleges it derives its authority from CWC §13225
23 which allows a RWQCB to require a State agency to investigate and report, but
24 *only if the burden, including costs, of such reports bear a reasonable relationship*
25 *to the need for the report and the benefits to be obtained.*

26 As is noted in the Request for Stay, filed concurrently with this Petition, a study is
27 apparently being conducted by Weston Solutions for the City of San Diego.
28 (Exhibit “B” p. 2, fn. 2.) Neither the study, nor the “Draft Summary Progress

1 Report” were included with the Investigative Order. Petitioner was apparently not
2 even made aware of its existence until the Investigative Order was issued.

3 The Investigative Order also notes that Phase 2 of the Mendez, Gregory
4 O., et al., “Water and Air Quality Monitoring of the Sweetwater Reservoir
5 Watershed” study is underway. (Exhibit “B” p. 5, fn. 5.) These studies are in
6 addition to the technical analyses already conducted and approved for State Route
7 125 pursuant to the California Environmental Quality Act and the National
8 Environmental Policy Act.

9 Additionally, another study titled “SR-125 South Route Alternatives:
10 Potential Air Emissions Impact on Sweetwater Reservoir” by Ogden
11 Environmental and Energy Services Co. was published in February 1997.
12 (Exhibit “E”.) Another study, conducted in 1999 by Byard and Giroux was
13 conducted to review “The Impact of SR 125 Vehicle Emissions on the Sweetwater
14 Reservoir, Transport, Environmental Fate, and Cancer Risk Assessment.”
15 (Exhibit “F”.)

16 In response to the 1999 Byard and Giroux and the 1997 Ogden
17 Environmental studies, Petitioner commissioned yet another study through the
18 University of California at Davis. (Exhibit “G”.) The purpose of the UC Davis
19 study was “to review the relationship between Proposed SR 125 (including an
20 associated extension of SR 54) and its potential impact on water quality at the
21 Sweetwater Reservoir. Specifically, Caltrans asked UCD to review and comment
22 on two recent studies: “SR 125 South Route Alternatives; Potential Air Emissions
23 Impact on Sweetwater Reservoir (Ogden, 1997a and 1997b)”, and “The Impact of
24 SR 125 Vehicle Emissions on the Sweetwater Reservoir, Transport,
25 Environmental Fate, and Cancer Risk Assessment (Byard and Grioux, 1999.)”

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1 As part of that review, UCD examined health risk estimates in the
2 Sweetwater Authority-sponsored studies that estimated the relationship between
3 SR 125-generated air pollution and health risks to reservoir water users.”
4

5 The U.C. Davis study determined the two prior Sweetwater studies used
6 “conservative, *unrealistic assumptions* as part of their screening analysis. The
7 unrealistic results of the assumptions are evident from comparisons with existing
8 air and water quality data. *When more realistic assumptions are substituted for*
9 *the most important unrealistic assumptions in each report, estimated health risks*
10 *become negligible.* Additionally, the risk assessment methodologies employed by
11 –sponsored studies were flawed.” (Exhibit “G”, pp. ES-1 to ES-2, emphasis
12 added.)
13

14 The U.C. Davis study went on to plainly conclude:

- 15 1. “Based upon examination of the Sweetwater Authority’s consultant
16 reports and additional data collected by UCD, there are no significant health
17 effects that would result from SR-125-generated air emissions depositing on the
18 Sweetwater Reservoir.
- 19 2. “Both the Ogden report [] and the Byard report [] include unrealistic
20 assumptions that increase the estimated SR 125-related health risks to Sweetwater
21 Reservoir drinking water users.
- 22 3. “UCD briefly reviewed data fro other reservoirs located near highways;
23 *the review did not identify any evidence that roadway-related air emissions*
24 *degrade water quality.*
- 25 4. “*Regional scale air emissions (i.e. emissions from the entire metropolitan*
26 *region) already affect ambient air concentrations over the reservoir, and*
27 *contribute hundreds of times more pollutant deposition onto the reservoir than the*
28 *projected emissions from SR 125. Either there is an existing problem with water*

1 *quality in the reservoir, or common sense indicates that no measurable problem*
2 *will result in the future from SR 125.”* (“Exhibit “G”, pp. ES-2 to ES-3.)
3

4 The Investigative Order ordered Petitioner to expend further public monies on *a sixth*
5 *study of the same topic* beyond the Draft EIS/EIR and Final EIS/EIR. The conclusory
6 determinations of the Investigative Order, based upon a “draft progress report” for a study that
7 was not provided to Petitioner, and without even acknowledging the history of analyses of the
8 impacts of SR-125 on the Sweetwater Reservoir which have already been conducted, are not
9 supportable by the record. This is especially true in light of the fact the U.C. Davis study
10 addressed issues of mobile source emissions on drinking water reservoirs near State Highways.
11 (Exhibit “G”, pp. E-1 to E-3.)
12

13 Ultimately, the Investigative Order does not demonstrate a need for another study.
14 Similarly, the Investigative Order does not demonstrate that the *unknown* costs of another study
15 bears a reasonable relationship to any need or benefit. If anything, it demonstrates a waste of
16 public resources.
17

18 Petitioner respectfully maintains the evidence already before the RWQCB and this
19 Board demonstrates that the requirements of CWC §13225 cannot be met. Moreover, the
20 findings are not supported by substantial evidence and the findings ignore the past analyses.
21

22 **B. The Investigative Order is Being Used to Compel Petitioner to Fund Improvements**
23 **to Sweetwater Authorities’ Water Treatment Facilities**
24

25 The air quality Investigative Order appears to have been issued at the request of the
26 Sweetwater Authority (“Sweetwater”) as a means of achieving an advantage in ongoing
27 litigation between Petitioner and Sweetwater Authority. Sweetwater seeks to have the
28 Department of Transportation pay for an upgrade of Sweetwater’s water treatment facilities.

1 This conclusion is plainly supported by reference to a letter from Sweetwater to the
2 SDRWQCB dated January 9, 2007 at p. 3. The January 9, 2007 letter, attached as Exhibit
3 “D” was produced in litigation between Sweetwater and the Department of Transportation.

4 Petitioner was not sent a copy of the letter, but instead had to obtain it in the
5 aforementioned litigation. The “Alternative Form of Compliance” referenced at page 5 of
6 the Investigative Order confirms the ultimate rationale for the issuance of the Investigative
7 Order. Petitioner maintains that using the Regional Board’s Investigative Order authority as
8 a means to compel one party to fund another party’s obligations is a patently improper
9 exercise of authority.

10 11 **C. Insufficient Findings of Fact and Lack of Evidence in the Record**

12 The SDRWQCB did not make any effective findings that the burden of the
13 Investigation Order, including its undetermined costs, bear a reasonable relationship to the
14 need for the report and the benefits to be obtained because the Investigative Order did not
15 attempt to estimate the costs of any study nor did the Investigative Order find any stated
16 public benefits which, in light of a new study and periodic monitoring, which would be
17 obtained beyond those contemplated by the study already being conducted. (CWC
18 §13267(b).) As such, the record supporting the Investigative Order fails to include
19 substantial evidence necessary findings and support in the record as a whole and in effect
20 demands duplication and waste of public resources.

21 22 **D. The Investigative Order is an Improper and Illegal Modification of the §401**

23 **Certification**

24 The Investigative Order is expressly based upon the §401 Certification that
25 authorized the issuance of a §404 permit. (Exhibit “B” at Finding Nos. 3, 4, 5, 6, and 7 as
26 well as the “Alternative Form of Compliance” at p. 5 and the Notice of Violation No. R9-
27 2007-0090 also issued on June 1, 2007 and which is attached as Exhibit “C”.) There is no
28 reasonable doubt the Investigative Order is, in fact, a material and unilateral modification of

1 the terms of the §401 Certification issued more than six years after the §401 certification was
2 issued. This is a plain violation of the Due Process rights of the Department of
3 Transportation as well as a clear violation of federal law.

4 Courts outside the Ninth Circuit Court of Appeals, including the U.S. Court of
5 Appeals for the D.C. Circuit Court have either directly or impliedly held that once the §404
6 Permit has been issued by USACOE, no modification to the terms or conditions of the §401
7 Certification are authorized- and certainly not more than a year after the Permit has been
8 issued. (*City of Shoreacres v. Texas Comm'n on Environmental Quality* (2005) 166 S.W.3d
9 825, 834-836; *Airport Communities Coalition v. Graves* (2003) 280 F.Supp.2d 1207, 1217;
10 *Keating v. FERC* (1991) 927 F.2d 616, 623-624.)

11
12 In this instance, and because the §404 Permit has been issued years ago, the
13 SDRWQCB was without the legal authority to seek to modify the terms and conditions of
14 the §401 Water Quality Permit. The “plenary” authority of the State and Regional Water
15 Quality Control Boards is limited by the source of their authority. In the case of §401 Water
16 Quality Certifications, that source is the federal CWA and the rulings of the federal courts
17 which have addressed that issue are binding.

18
19 **E. The Investigative Order Encroaches Onto the Exclusive Jurisdiction of Other**
20 **Agencies**

21 The Investigative Order seeks to regulate air emissions. It is not targeted at
22 discharges to the land or waters of the State. As such, it is an impermissible encroachment
23 into areas where other agencies have exclusive regulatory authority. By allowing regulation
24 of air emissions by a RWQCB, the ultimate result will be inconsistency, duplication, waste
25 and delay in delivering transportation improvements to the State.

26 As is demonstrated above, the Investigative Order was based upon the §401
27 Certification. The CWA does not allow either federal or State regulation of air toxics
28 emissions. Air toxics emissions are instead regulated by the federal level by the

1 Environmental Protection Agency (42 U.S.C. §7521(l) (CAA §202). In fact, on February 26,
2 2007 the U.S.E.P.A. issued final administrative rulemaking regarding Mobile Source Air
3 Toxics. (72 Fed.Register 8428-01.)

4 At the State level, the California Legislature has, “except as otherwise provided in
5 this division” vested the regulation of air pollution from vehicular sources with the State Air
6 Resources Board (“CARB”). (Health & Safety Code §39002.) One of the stated Legislative
7 goals of CARB is to “. . . establish uniform standards which control or eliminate. . . “ the
8 emission of air pollutants. (Health & Safety Code §43000 (c).) CARB is also vested with the
9 legislative authority to create emissions standards and regulations relating to toxic air
10 contaminants. (Health & Safety Code §39658 and §39667.)

11 By its demand that Petitioner “study” air emissions of privately-owned vehicles the
12 RWQCB is in actuality attempting to intrude into an area that is within the sole regulatory
13 province of CARB. And while it may be seemingly innocuous for a water regulator to
14 require the Petitioner to investigate automotive emissions, the plain goal of the investigation
15 is to have the Petitioner pay for Sweetwater to upgrade water treatment facilities. (See, e.g.
16 letter from Sweetwater to SDRWQCB dated January 9, 2007, page 3, attached as Exhibit
17 “D”.) This is true even in light of the fact that even the unfinished study referred to in the
18 Investigative Order plainly stated that the particulates are derived from “industrial and
19 transportation uses.” Moreover, the Investigative Order does not conclude that SR-125 is the
20 sole, or even a significant source of “large particulates.” Plainly stated, it is not appropriate
21 to use an Investigative Order to “set up” Petitioner to fund the water treatment facilities of
22 another entity where even the Investigative Order acknowledges other sources of the
23 emissions.

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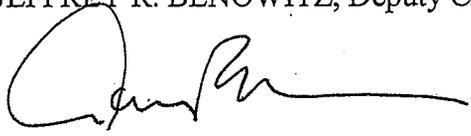
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Petitioner recognizes the need to protect and conserve California's resources. Petitioner would encourage the SDRWQCB to "partner" with, and provide its comments or concerns regarding air emissions to those agencies that are mandated to address those concerns. Using an Investigative Order, or other regulatory authority as provided to the State and Regional water quality control boards to implement piecemeal and ad-hoc regulations is inconsistent with California law and is simply a bad idea.

Date: June 29, 2007

BRUCE A. BEHRENS, Chief Counsel
JEFFREY R. BENOWITZ, Deputy Chief Counsel

By:



GLENN B. MUELLER, Deputy Attorney
Attorneys for Defendant, STATE OF
CALIFORNIA

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PROOF OF SERVICE

In Re: Petition for Review of IO No. R9-2007-0092

Declarant says: I am employed in the County of San Diego; I am over the age of eighteen years and am not a party to the within entitled action. My business address is 4050 Taylor Street, MS-130, San Diego, CA 92110.

On July 2, 2007, I served the within **Administrative Petition for Review** on those parties of record in said action listed below as follows:

- By electronic service on: See attached service list
- By facsimile transmission from this office prior to 5:00 p.m., and with transmission confirmation, to the following facsimile number:
- By Express Mail or other means of overnight delivery by depositing in a box or other facility regularly maintained by the express service carrier or delivered to an authorized courier or driver authorized by the express service carrier to receive documents, in a n envelope or package designated by the express service carrier with delivery fees paid or provided for, addressed to the person on whom it is to be served, at the office address as last given by that person on any document filed in the cause otherwise at the party's place of residence as noted on the attached Service List.
- By mail by placing a true copy thereof enclosed in a sealed envelope with postage thereon fully prepaid addressed on the attached Service List. I am "readily familiar" with the firm's practice of collection and processing correspondence for mailing. Under that practice it is given by me to the mail clerk and is then deposited with the U.S. Postal Service on that same day with postage thereon fully prepaid at San Diego, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing contained in this declaration.

I am employed in the offices of a member of the Bar of this Court, at whose direction service was made.

I declare under penalty of perjury the above is true and correct.

Executed on July 2, 2007, at San Diego, California



Lucille A. Olson
Declarant

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Service List on
In Re: Administrative Petition for Review on IO R9-2007-0092

State Water Resources Control Board Office of Chief Counsel Attn: Jeannette L. Bashaw Legal Secretary 1001 "I" Street, 22 nd floor Sacramento, CA 95814 jbashaw@waterboards.ca.gov	San Diego Regional Water Quality Control Board 9174 Sky Park Court, Ste. 100 San Diego, CA 92123-4353 Attn: Ms. Christina Arias carias@waterboards.ca.gov
South Bay Expressway, successor in interest to California Transportation Ventures 880 Kuhn Drive Chula Vista, CA 91914 Attn: Mr. Greg Hulsizer	

1 **BRUCE A. BEHRENS, Chief Counsel**
2 **JEFFREY R. BENOWITZ, Deputy Chief Counsel**
3 **GLENN B. MUELLER, Assistant Chief Counsel, (CBN 162967)**
4 State of California, Department of Transportation

5 Legal Division
6 4050 Taylor Street, MS-130
7 San Diego, California 92111
8 Tel: (619) 688-2531
9 Fax (619) 688-6905

10 Attorneys for Petitioner THE PEOPLE OF THE STATE OF CALIFORNIA,
11 acting by and through the Department of Transportation

NO FEE PURSUANT TO GOV'T CODE § 6103

12 **ADMINISTRATIVE PETITION FOR REVIEW TO THE**
13 **STATE OF CALIFORNIA WATER RESOURCES CONTROL BOARD**

14 THE PEOPLE OF THE STATE OF
15 CALIFONRIA, acting by and though the
16 Department of Transportation,

Petitioner

REQUEST FOR STAY

17 STATE OF CALIFORNIA, By and Through
18 the San Diego Regional Water Quality Control
19 Board and John Robertus, in his Official
20 Capacity as Executive Director of the San
21 Diego Regional Water Quality Control Board,

Respondents.

**IN RE: SAN DIEGO REGIONAL WATER
QUALITY CONTROL BOARD
INVESTIGATIVE ORDER NO. R9-2007-
0092 AND NOTICE OF VIOLATION NO.
R9-2007-0090**

22 **REQUEST FOR STAY OF ENFORCEMENT**

23 Pursuant to California Water Code, section 13320, and by way of a separate filing,
24 Petitioner seeks review of the Investigative Order, No. R9-2007-0092 issued on June 1, 2007 by
25 the San Diego Regional Water Quality Control Board.

26 Petitioner requests a Stay of Enforcement of said Investigative Order pursuant to Title 23
27 Cal. Code of Regs, Section 2053 as follows:

28 ///

1 1. Petitioner alleges substantial harm to itself and to the public will be suffered
2 because the INVESTIGATIVE ORDER requires the expenditure of substantial public funds to
3 conduct studies or analyses which have already been completed or are already ongoing (Exhibit
4 “A” at p. 2, ¶8; p. 2 at fn. 2; p. 6, ¶6.) Petitioner alleges substantial public harm, in terms of
5 inevitable regulatory inconsistency, confusion and delay in implementation of necessary regional
6 transportation improvements will occur if the Investigative Order is upheld.

7 2. Petitioner alleges a lack of substantial harm to other interested persons and to the
8 public interest if a stay is granted because no discharge is alleged in the Investigative Order.
9 Moreover, as is noted in the citations above, a study is apparently being conducted by Weston
10 Solutions for the City of San Diego. (Exhibit “A” p. 2, fn. 2.) It should also be noted that Phase
11 2 of the Mendez, Gregory O., et al., “Water and Air Quality Monitoring of the Sweetwater
12 Reservoir Watershed” study is also underway. (Exhibit “A” p. 5, fn. 5.) These studies are in
13 addition to the technical analyses conducted for State Route 125 pursuant to the California
14 Environmental Quality Act and the National Environmental Policy Act.

15 Additionally, a study titled “SR-125 South Route Alternatives: Potential Air Emissions
16 Impact on Sweetwater Reservoir” by Ogden Environmental and Energy Services Co. was
17 published in February 1997. (Exhibit “E”.)

18 Significantly, Petitioner already has gone beyond any reasonable interpretation of the
19 terms “promote and pursue a study” as contained in the State Route 125 §401 Certification
20 when it commissioned the U.C. Davis study which addressed the air deposition impacts of SR-
21 125 on the Sweetwater Reservoir.

22
23 Petitioner agrees that stewardship of California’s resources is a fundamental role of
24 government. Requiring Petitioner to expend further public monies on *a sixth study of the same*
25 *topic*, however, is a blatant waste of the public’s fiscal resources and goes well beyond any
26 reasonable interpretation of the terms of the §401 Certification.

27
28 ///

1 Additionally, it should be noted that Petitioner has previously sought to engage other
2 public agencies in its efforts to “promote and pursue” a regional air deposition study, including
3 representatives of the Office of Environmental Health Hazard Assessment, the California Air
4 Resources Board, the California Department of Health Services. Mr. James Bennett of the
5 State Water Resources Control Board was present as well. (See, e.g., Exhibit “H”,
6 correspondence from Mr. Charles Stoll to Mr. John Robertus, dated September 4, 2001.) The
7 San Diego Association of Governments (“SANDAG”) has also provided substantial input and
8 consultation on the issues related to regional air quality.

9 Had any of these sister agencies been of the opinion that the public’s health and safety
10 were in immediate danger because of State Route 125, or that another study was required, it is
11 more likely than not that another study on the issue would have been funded. To date none of
12 these sister agencies has provided financial or other assistance relating to a sixth study.

13
14 3. Petitioner alleges substantial questions of fact or law regarding the disputed action
15 exist. These issues include the ability of a RWQCB to compel the study, and therefore
16 regulate, air emissions from vehicles. The issues also include the question of whether a
17 RWRQCB may unilaterally impose a new Condition on a §401 water quality certification
18 years after the issuance of a §404 Permit by the USACOE. Additionally, the related factual
19 questions of what is meant by the phrase “promote and pursue” and whether such subjective
20 terms can reasonably be the basis of a Notice of Violation and/or an Investigation Order-
21 which could result in civil or criminal penalty- need to be addressed.

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For the forgoing reasons, Petitioner respectfully requests an immediate Stay of all enforcement action or other deadlines contained in the Investigative Order be issued pending final resolution or at least 30 days after this Board has taken final action on the Petition, whichever is later.

Date: June 29, 2007

BRUCE A. BEHRENS, Chief Counsel
JEFFREY R. BENOWITZ, Deputy Chief Counsel

By: 

GLENN B. MUELLER, Assistant Chief Counsel
Attorneys for Petitioner, The People of the STATE
OF CALIFORNIA, acting by and through the
Department of Transportation

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PROOF OF SERVICE

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Declarant says: I am employed in the County of San Diego; I am over the age of eighteen years and am not a party to the within entitled action. My business address is 4050 Taylor Street, MS-130, San Diego, CA 92110.

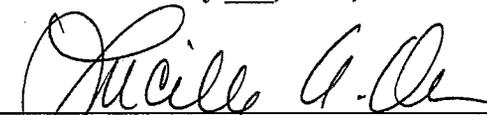
On **July 2, 2007**, I served the within **Request for Stay** on those parties of record in said action listed below as follows:

- By electronic service on: See attached service list
- By facsimile transmission from this office prior to 5:00 p.m., and with transmission confirmation, to the following facsimile number:
- By Express Mail or other means of overnight delivery by depositing in a box or other facility regularly maintained by the express service carrier or delivered to an authorized courier or driver authorized by the express service carrier to receive documents, in a n envelope or package designated by the express service carrier with delivery fees paid or provided for, addressed to the person on whom it is to be served, at the office address as last given by that person on any document filed in the cause otherwise at the party's place of residence as noted on the attached Service List.
- By mail by placing a true copy thereof enclosed in a sealed envelope with postage thereon fully prepaid addressed on the attached Service List. I am "readily familiar" with the firm's practice of collection and processing correspondence for mailing. Under that practice it is given by me to the mail clerk and is then deposited with the U.S. Postal Service on that same day with postage thereon fully prepaid at San Diego, California in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing contained in this declaration.

I am employed in the offices of a member of the Bar of this Court, at whose direction service was made.

I declare under penalty of perjury the above is true and correct.

Executed on July 2, 2007, at San Diego, California



Lucille A. Olson
Declarant

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In Re: Administrative Petition for Review on IO R9-2007-0092

State Water Resources Control Board Office of Chief Counsel Attn: Jeannette L. Bashaw Legal Secretary 1001 "I" Street, 22 nd floor Sacramento, CA 95814 jbashaw@waterboards.ca.gov	San Diego Regional Water Quality Control Board 9174 Sky Park Court, Ste. 100 San Diego, CA 92123-4353 Attn: Ms. Christina Arias carias@waterboards.ca.gov
South Bay Expressway, successor in interest to California Transportation Ventures 880 Kuhn Drive Chula Vista, CA 91914 Attn: Mr. Greg Hulsizer	

EXHIBIT "A"

California Regional Water Quality Control Board

San Diego Region

Internet Address: <http://www.swrcb.ca.gov/~rwqcb9/>
9771 Clairemont Mesa Boulevard, Suite A, San Diego, California 92124-1324
Phone (858) 467-2952 • FAX (858) 571-6972

CERTIFIED RETURN MAIL RECEIPT REQUESTED
Z 498 397 772

Action on Request for
Clean Water Act section 401 Water Quality Certification
for Discharge of Dredged and/or Fill Materials

PROJECT: State Route 125 South Toll Road (File No. 99C-133)

APPLICANT: Mr. Bruce April
California Dept. of Transportation (Caltrans)
P.O. Box 85406
San Diego, CA 92186-5406

Mr. Kent Olsen
California Transportation Ventures (CTV)
707 Broadway, Suite 1600
San Diego, CA 92101

ACTION:

1. Order for Standard Certification
2. Order for Technically-conditioned Certification
3. Order for Denial of Certification

STANDARD CONDITIONS:

The following three standard conditions apply to all certification actions, except as noted under Condition 3 for denials (Action 3).

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the California Water Code and section 3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the

California Environmental Protection Agency

Recycled Paper



application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. The validity of any non-denial certification action (Actions 1 and 2) shall be conditioned upon total payment of the full fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.

SPECIAL CONDITIONS:

This 401 Water Quality Certification applies to temporary and permanent fill associated with the construction of the project as proposed, and with the implementation of this project after build-out for the life of the project.

The 401 Water Quality Certification from the Regional Water Quality Control Board, San Diego Region (Regional Board) applies only to the four-lane freeway and the following interchanges: Otay Mesa Road, Olympic Parkway, Telegraph Canyon / Otay Lakes Road, and East H Street.

The 401 Water Quality Certification does not apply to 1) future lane additions, 2) the freeway to freeway interchange with Route 905, 3) the construction of proposed local interchanges with Lonestar Road, future Rock Mountain Road, and future Birch Parkway, 4) the construction of the proposed extension of La Media Road and the second bridge structure at Otay River Valley and 5) the two additional bridges over the Sweetwater River Valley.

To the extent that such additional construction associated with this project requires any federal permit, license, or approval, Caltrans and California Transportation Ventures shall submit new applications for 401 water quality certification.

Caltrans shall promote and pursue a regional air deposition study that will include the Sweetwater Reservoir Airshed.

A. Responsible Parties

1. The California Department of Transportation (Caltrans) and California Transportation Ventures (CTV) shall be individually responsible for complying with this certification.

2. Caltrans and CTV are considered to have full responsibility for correction of any and all problems that arise in the event of a failure which results in an unauthorized release of waste or wastewater. In the event of an inability to determine individual responsibility for a particular discharge, Caltrans shall be responsible for correcting any and all problems arising from such a discharge.

B. Construction

1. Caltrans and CTV shall, at all times, fully comply with the engineering plans, specifications and technical reports submitted with Caltrans' application for 401 Water Quality Certification and all subsequent submittals required as part of this certification. Subsequent submittals to the Regional Board will enable staff to review all changes pertaining to ultimate discharge points from the project and BMP structural controls prior to their construction.
2. Regional Board approved Biological Monitors shall be present during construction and grading to verify that appropriate protocols are followed and that construction remains within the permitted areas for all aquatic resources. Biological Monitors shall be present for a minimum of 4 hours per day when road construction or grading is occurring in or adjacent to "waters of the U.S." and for a minimum of 4 hours per week when grading is occurring elsewhere on the project. Semi-annual updates from the Biological Monitors shall be sent to the Regional Board for review.
3. In accordance with Section 13260 of the CWC, Caltrans and CTV shall file with the Board a report of any material change or proposed change in the character, location, or quantity of this waste discharge. Any proposed material change in operation shall be reported to the Executive Officer at least 30 days in advance of the proposed implementation of any change. This shall include, but not be limited to, all significant additional unforeseen grading, all proposed expansion of development, or any change in the ultimate discharge locations. For the purpose of this 401 Certification, this includes any proposed change in the boundaries of the wetland or streambed fill sites.

In addition, in accordance with Water Quality Order No. 99-08-DWQ, Section A, 4a., "The discharger shall amend the SWPPP whenever there is a change in construction or operations which may affect the discharge of pollutants to surface waters, ground waters, or a municipal separate storm sewer system (MS4). The SWPPP shall also be amended if the discharger violates any condition of this General Permit or has not achieved the general objective of reducing or eliminating pollutants in storm water discharges. If the Regional Board determines that the discharger is in violation of this General Permit, the SWPPP shall be amended and implemented in a timely manner, but in no case more than 14-calendar days after notification by the Regional Board. All amendments should be dated and directly attached to the SWPPP."

4. Prior to discharge, Caltrans and CTV shall notify the Regional Board of any plans to discharge ground water or other non-storm water that has accumulated in utility trenches or in other portions of the project, as this action may require a separate permit, unless the discharge is treated by a structural BMP prior to discharge from the project site.

C. Project Design

1. Caltrans and CTV shall design the project to ensure that there will be no increase in the existing peak flow rate of a 25-year, 6-hour frequency storm event from the project site to prevent flows from exceeding pre-development values.

2. Jurisdictional waters of the U.S. that are crossed by roadways associated with the project shall have a bridge or culvert that will accommodate a 100-year storm event.

3. Bridges or culverts on San Miguel Creek (Sta 166+50) or at Proctor Valley Road (Sta 147+00) shall be of sufficient width to provide velocities that will not require any hardscape downstream to attenuate flows. If culverts are used at these sites, the natural streambed within the culvert shall not be hardscaped. (Arch culverts may be used at these sites. Hardscape material may be placed immediately upstream of the culvert to prevent undercutting.)

D. Storm Water Compliance

1. Caltrans and CTV shall comply with the requirements of the State Water Resources Control Board Order No. 99-06-DWQ. Prior to approval of Caltrans' Storm Water Management Plan (SWMP) Caltrans and CTV shall comply with the requirements of Regional Board Order No. 97-08.

2. Caltrans and CTV shall comply with the State Water Resource Control Board Order No. 99-08-DWQ, General Permit for Storm Water Discharges Associated with Construction Activity.

3. Caltrans and CTV shall submit their Storm Water Pollution Prevention Plan (SWPPP) for the project at least 30 days prior to the beginning of construction.

4. Caltrans and CTV shall employ all appropriate standard BMPs to reduce or eliminate pollutants in storm water discharges from the construction sites to the Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT). At a minimum erosion control BMPs shall be designed for a 2-year, 6-hour rain event, and sediment control basins shall be designed in accordance with the General Construction Permit, Water Quality Order No. 99-08-DWQ, Section A, No. 8.

5. Caltrans and CTV shall cover exposed slopes with appropriate BMPs within 14 days of completion of the slope. The minimum slope incline to be covered shall be at 10:1. Clearing or grading shall occur at a minimum needed only to facilitate the active phase of the project. Landscaping of each segment between interchanges must be initiated prior to the start of grading or construction of the next phase of the project, unless the next phase of the project requires soil disturbance to balance earthwork. If this is the case, then appropriate soil stabilization controls shall be deployed within 14 days from the cessation of soil-disturbing activities or one day prior to the onset of precipitation, whichever occurs first.

6. Caltrans and CTV shall plant permanent landscape material and begin irrigation within one year of ground disturbances. The areas between future Olympic Parkway (Orange Ave.) and Route 54 shall be completely landscaped with appropriate irrigation by opening day of this section of the toll road.

7. Caltrans and CTV shall use post-construction BMP devices that best meet the maximum extent practicable (MEP) performance standard. Post-construction BMPs shall be designed to meet at least a 80% efficiency removal rate for total metals, and at least an 80% efficiency removal rate for Total Suspended Solids (TSS)/sediments. BMPs shall be designed to remove oil & grease, pathogens, and trash to the maximum extent practicable. There shall be no net increase in nutrient concentrations from the BMPs.

8. Caltrans and CTV shall ensure funding for maintenance for features necessary to satisfy conditions of water quality certification; such funding shall be first priority for any allocation of revenue from tolls collected.

E. Storm Water and Receiving Water Monitoring

1. Caltrans and CTV shall implement a monitoring program that ensures removal effectiveness standards are met from the project at discharge points below BMPs at five sites (located in tributary drainage areas 2, 9, 13, 15, & 18, See Table 1) during all specified rain events, and at five discharge locations downstream of the BMPs that are randomly selected for each specified rain event. Tributary drainage areas are identified in the "State Route 125 Toll Road Water Quality Data and Best Management Practices Evaluation" document, received on February 26, 2001. Monitoring shall occur during all storm events with a rainfall totals of 0.25 inches at 75% probability, beginning when construction starts (for construction BMPs that are in use and for permanent BMPs that have been installed and are in use). Monitoring shall continue for at least five years following project construction completion. Five years after construction completion Caltrans and CTV may make a request to the Regional Board that water quality monitoring be discontinued or that the monitoring program be changed. The storm event must be preceded by an antecedent dry period of a minimum of 48 hours, with a period of 72 hours preferred. For safety reasons, no monitoring shall occur starting 6 p.m. December 24th and ending 6 a.m. December 26th and also starting 6 p.m. December 31 and ending 6 a.m. January 2nd of each year.

Table 1. State Route 125 Sampling locations

Trib. Area	To	From	Selected BMP	Tributary Area Hectares	Reasoning
	Stations				
2	44+00	65+00	EDB	14.1	discharges to La Media Road and ultimately to Otay.
9	116+00	120+50	Treatment Train	6.23	discharging to Telegraph, treatment train sampling will give us effectiveness of combination.
13	139+00	142+20	Bioswale + SFD	2.6	discharges to H St. and it is a bioswale with a SFD combination, effectiveness has not been fully determined for this treatment train.
15	147+80	161+00	SFD	21.86	Large CDS unit - will provide supporting data statewide.
18	178+20	196+00	SFD	15.5	end of project, some of flow could be due to SR54 traffic.

SFD- Small Footprint Device

Discharges from BMPs shall be monitored for, but not limited to chromium, copper, lead, nickel, zinc, pH, total suspended solids, total dissolved solids, nitrate, ammonia, orthophosphorus, total phosphorus, oil & grease, total polycyclic aromatic hydrocarbons, fecal coliform, total coliform, and any pesticides that are used at the project site.

Receiving waters located on the Otay and Sweetwater Rivers shall be sampled quarterly for water quality and annually for sediment quality. Monitoring shall begin when construction starts and continue for at least five years following project construction completion. Five years after construction completion Caltrans may make a request to the Regional Board that water quality monitoring be discontinued or that the monitoring program be changed. Receiving waters shall be monitored for the constituents listed above as well as acute toxicity, temperature and dissolved oxygen. Sediments shall be monitored for, but not limited to, acute toxicity, aluminum, cadmium, chromium, copper, lead, nickel, zinc, total polycyclic aromatic hydrocarbons, oil & grease, and any pesticides that are used at the project site.

2. Annual monitoring reports and semi-annual updates with the analysis results shall be submitted to the Regional Board.
3. Caltrans and CTV shall submit a final water and sediment quality monitoring plan to the Regional Board for review 30 days prior to construction or grading.
4. All construction BMPs shall be inspected before and after each storm event and once every 24 hours during extended storm events to verify BMP effectiveness and implement repairs or design changes as soon as feasible.
5. All post-construction BMPs shall be inspected at least monthly, and after each rain event of 0.25 inches at 75% probability, and weekly during extended periods of wet weather to ensure that they are functioning properly for the life of the project.
6. Each inspection shall be documented. Annual inspection summary reports including inspection, maintenance, and repair information shall be submitted to the Regional Board by April 1st of each year for the previous calendar year, and may be incorporated into the Caltrans Annual Report submitted as required by Order 99-06.

F. Mitigation for Wetland and Streambed Losses

1. Prior to grading the project areas, the Caltrans and CTV shall execute and record a perpetual conservation easement in a form acceptable to the U.S. Fish & Wildlife Service (USFWS) for biological conservation purposes. The conservation easement or other legal limitation on the mitigation property shall be adequate to demonstrate that the site will be maintained without future development or encroachment on the site or which could otherwise reduce the functions and values of the site for the variety of beneficial uses of waters of the U.S. that it supports. The conservation easement or other appropriate legal limitation which shall prohibit, without exception, all residential, commercial, industrial, institutional, and transportation development,

and any other infrastructure development that would not maintain or enhance the wetland functions and values of the site. Other infrastructure development to be prohibited includes, but is not limited to, additional utility lines, paved maintenance roads, and areas of maintained landscaping for recreation.

2. Caltrans and CTV shall submit a Conceptual Restoration and Management Plan, as required by the USFWS Biological Opinion, for all mitigation no later than 30 days prior to the start of construction or grading of the project and shall submit a Final Restoration and Management Plan for all mitigation no later than 30 days prior to the start of construction of the mitigation site(s).

3. Caltrans and CTV shall submit annual mitigation monitoring reports to the Regional Board by April 1st of each year for the previous calendar year.

4. In addition to the proposed vernal pool mitigation of 0.70 acres of pool basin area (2:1 ratio) on a 12 acre site on Otay Mesa, Caltrans and CTV shall preserve and/or enhance an additional 0.32 acres of vernal pools (2:1 ratio for impacts to functional pools on Otay Mesa) to be located on Otay Mesa in perpetuity, and shall preserve the associated watershed for each basin in perpetuity.

G. Discharge Prohibitions

1. The direct discharge of wastes, including trash/ litter, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plains, is prohibited.

2. The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

3. The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

4. The discharge of decant water from active dredging or fill sites, or from dredged material stockpile or storage areas to surface waters or surface water drainage courses, is prohibited, except as conditionally allowed following the submittal of a discharge plan.

5. The groundwater in the vicinity of the project shall not be degraded as a result of the placement of fill for the project.

7. The discharge of materials other than storm water, which are not otherwise regulated by a separate NPDES permit or allowed by this Certification, to "waters of the U.S." or "waters of the State" are prohibited.

8. The discharge of drilling mud to "waters of the U.S." or "waters of the State" is prohibited.

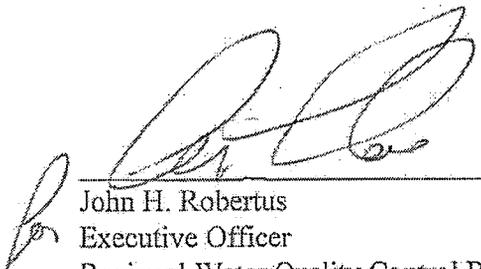
REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Cynthia Gorham-Test
California Regional Water Quality Control Board, San Diego Region
9771 Clairemont Mesa Blvd., Suite A
San Diego, CA 92124
858-467-4285

WATER QUALITY CERTIFICATION:

I hereby certify that the proposed discharge from the **State Route 125 South Toll Road** (File No. 99C-133) will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. Should new information come to our attention that indicates a water quality problem, the Regional Board may issue waste discharge requirements at that time.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicants' project description and/or on the attached Project Information Sheet, and (b) on compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).



John H. Robertus
Executive Officer
Regional Water Quality Control Board

4/24/01
Date

Attachments 1 and 2

**ATTACHMENT 1
PROJECT INFORMATION**

Applicant:	Mr. Bruce April California Dept. of Transportation P.O. Box 75406 San Diego, CA 92186-5406 Phone: 619-688-6754 Fax: 619-688-3192
Applicant Representatives:	Same
Project Name:	State Route 125 South Toll Road (File No. 99C-133)
Project Location:	The proposed project is located in southeastern San Diego County east of Chula Vista. The road extends approximately 11 miles in a north-south direction from Otay Mesa Road (Route 905) to Spring Valley Road (Route 54). The project site is situated within the USGS 7.5 minute Otay Mesa, CA and Jamul Mountains, CA quadrangles.
Type of Project:	Freeway and Interchanges
Project Description:	The proposed project consists of construction of a four-lane freeway (with plans for expansion to eight-lanes) extending from Otay Mesa Road (Route 905) to Spring Valley Road (Route 54). The following interchanges are included in this project: Otay Mesa Road, Olympic Parkway, Telegraph Canyon / Otay Lakes Road, and East H Street
Federal Agency/Permit:	U.S. Army Corps of Engineers, Individual Permit, Terry Dean
Other Required Regulatory Approvals:	California Department of Fish and Game Streambed Alteration Agreement, Don Chadwick
California Environmental Quality Act (CEQA) Compliance:	Caltrans approved the Final Environmental Impact Report (SCH No. 89011118) on December 30, 1999 and the Federal Highway Administration approved the Report on January 21, 2000.
Receiving Water:	Sweetwater Rivers, Otay Rivers, San Miguel Creek, Spring Valley Creek, and Unnamed tributary of San Miguel Creek.

Impacted Waters of the United States:	Implementation of the proposed project will permanently impact 5.61 acres of wetlands and 2.15 acres of streambed. In addition, the project would temporarily impact 5.13 acres of wetlands.
Dredge Volume:	166,387 cubic yards
Related Projects Implemented/to be Implemented by the Applicant(s):	Within the next five years, no additional projects are scheduled to be implemented, however, there are future plans to expand the freeway from four to eight lanes and to add additional interchanges to the highway.
Avoidance/Minimization Measures:	General site layout has resulted in avoidance and minimization at many wetland/ streambed locations. Negotiations have included re-routing the freeway to avoid vernal pools.
Compensatory Mitigation:	<p>Impacts to waters of the U.S. are addressed in Section 4.6 of the FEIS dated January 2000, and in the Biological Assessment dated January 8, 1999. Mitigation for permanent wetlands impacts will include restoration of 15.78 acres of vireo quality habitat (ratio of 3:1) at one of the two sites: Dulzura Creek on Daley Ranch, or Otay River on Otay Ranch. Mitigation for temporary wetlands impacts will include 4.15 acres at the Otay River Bridge crossing and 0.98 acres at Sweetwater Bridge crossing of onsite restoration of non-vireo quality habitat. Mitigation for the fill of unvegetated streambed will include 2.15 acres of vireo quality habitat at Dulzura Creek on Daley Ranch, or Otay River on Otay Ranch. Mitigation for vernal pool impacts will involve restoration of 0.38 and 0.32 acres (2:1 ratio) of vernal pool surface area and supporting upland habitat on 12 acres of mitigation site on Otay Mesa.</p> <p>In addition to the above mitigation requirements this Certification has a special condition requiring that, Caltrans and CTV shall preserve and/or enhance an additional 0.32 acres of vernal pools (2:1 ratio for impacts to pools on Otay Mesa) located on Otay Mesa in perpetuity and shall preserve the associated watershed for each basin in perpetuity.</p>
Best Management Practices:	<p>Construction BMPs are described in the FEIS dated January 2000. Post-construction BMPs are described in the document: "State Route 125 Toll Road Water Quality Data and Best Management Practices Evaluation".</p> <p>Special conditions concerning BMPs are included in this certification. Caltrans storm water permits must be followed at all times. The General Construction storm water permit must be followed at all times.</p>

**ATTACHMENT 2
DISTRIBUTION LIST**

Mr. Terry Dean, U.S. Army Corps of Engineers, San Diego Field Office

Mr. Paul Michel, U.S. Environmental Protection Agency, Region 9

Ms. Allison Rolfe, Audubon Society of San Diego

Mr. Tim Stevens, State Water Resources Control Board, Division of Water Quality

EXHIBIT "B"



California Regional Water Quality Control Board

San Diego Region

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June 1, 2007

Mr. Pedro Orso-Delgado
District Director
Department of Transportation, District 11
4050 Taylor Street
San Diego, CA 92110

CERTIFIED MAIL
7007-0220-0000-4691-0510

In reply refer to:
WPS: 18-1999133.02:ariac

INVESTIGATIVE ORDER NO. R9-2007-0092
REQUEST FOR REGIONAL AERIAL DEPOSITION STUDY INCLUDING THE
SWEETWATER RESERVOIR AIRSHED

Dear Mr. Orso-Delgado and Mr. Hulsizer:

Enclosed is Investigative Order No. R9-2007-0092 (Order) of the California Regional Water Quality Control Board, San Diego Region (Regional Board) concerning an aerial deposition study that is required to comply with the special condition in Clean Water Act §401 Water Quality Certification No. 99C-133, which was issued on April 25, 2001. This Investigative Order is issued pursuant to California Water Code (CWC) sections 13225, 13267, and 13383 and directs you to submit a study plan and monitoring reports associated with a regional aerial deposition study to include the Sweetwater Reservoir Airshed.

Please note the requirements contained within the Order. Specifically, all technical reports submitted to the Regional Board shall be accompanied by the certification, under penalty of law, that the information is true, accurate, and complete.

Failure to meet the requirements may subject you to further enforcement action by the Regional Board, including administrative civil liability pursuant to CWC sections 13268 and 13385. Any request for extensions of submittal dates must be submitted in writing and are denied absent written approval of the Executive Officer of the Regional Board.

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to." In order to assist us in the processing of your correspondence please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

California Environmental Protection Agency

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Mr. Orso-Delgado

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June 1, 2007

Mr. Hulsizer

NOTICE OF INVESTIGATIVE ORDER NO. R9-2007-0092

Questions regarding this Notice should be directed to Ms. Christina Arias. She may be reached by phone at (858) 627-3931, or email at carias@waterboards.ca.gov. Written correspondence pertaining to this Notice should be sent via email to Ms. Arias.

Respectfully,



JOHN H. ROBERTUS

Executive Officer

San Diego Regional Water Quality Control Board

JHR:mm:dg:ca

Cc:

Mr. Greg Hulsizer

Chief Executive Officer

South Bay Expressway, LP

California Transportation Ventures, Inc.

880 Kuhn Drive

Chula Vista, CA 91914

California Environmental Protection Agency

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

INVESTIGATIVE ORDER NO. R9-2007-0092

FOR

Department of Transportation, District 11
4050 Taylor Street
San Diego, CA 92110

AND

California Transportation Ventures, Inc.
880 Kuhn Drive
Chula Vista, CA 91914

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. California Water Code Sections 13267(b) and 13383 contain criteria that allow the Regional Board to conduct investigations and to establish technical, monitoring, inspection, entry, reporting, and record keeping requirements from any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste in accordance with the conditions in the section.
2. California Water Code Section 13225(c) directs the Regional Board to require local agencies to investigate and report on any technical factors involved in water quality control or to obtain and submit analyses of water.
3. On April 23, 2001, the Regional Board adopted Resolution No. 2001-51 approving Clean Water Act §401 Water Quality Certification for the State Route 125 South Toll Road Project (Resolution). This Resolution was issued to the California Department of Transportation (Caltrans), and California Transportation Ventures (CTV), the applicants, provided they would adhere to the stated conditions in the Order. On page no. 2 of the Resolution, a special condition states that "Caltrans shall promote and pursue a regional aerial deposition study that will include the Sweetwater Reservoir Airshed."
4. The Resolution requirements that were considered and adopted by the Regional Board were based on testimony provided during the public hearing on the matter. At the public hearing on April 23, 2001, Mr. Gary Gallegos, Caltrans District 11

California Environmental Protection Agency

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INVESTIGATIVE ORDER NO. R9-2007-0092

- Director, stated "We are committed to being a part of a regional study that would look [at] what the impacts of airborne pollutants would have on drinking water. And we think it would be a broad regional study that may be looked, the whole San Diego region, and we would commit to being a part of that."¹
5. In a letter dated November 5, 2001 to Mr. Charles Stoll, Deputy District Director for Caltrans District 11, the Regional Board described the expectation that Caltrans would comply with the special condition. This expectation included taking "an active, rather than a passive, role in the design and implementation of a study that would include actual measurements of the deposition of air pollutants in a region that includes the Sweetwater Reservoir Airshed."
 6. In a report dated March 30, 2007, Caltrans reported that it has complied with the special condition, and describes their activities to date. Activities include developing a research proposal in 2005 with the assistance of the University of California, Davis, and the San Diego Association of Governments to address regional-scale cross-media impacts from on-road mobile source emissions. In February 2006, a Caltrans representative attended a workshop held by the California Air Resources Board and State Water Resources Control Board to discuss aerial pollutant deposition, stormwater runoff, and impacts to water bodies.
 7. The Regional Board review of the 401 Certification and supporting documents (file number 18-1999133.02) revealed no evidence that a regional aerial deposition study consisting of actual measurements of the deposition of aerial pollutants has been initiated by Caltrans and CTV. Nor is it evident that Caltrans and CTV have participated in any ongoing regional aerial deposition study that includes the Sweetwater Reservoir Airshed. For these reasons, the Regional Board finds Caltrans and CTV to be in violation of the special condition described in the Resolution.
 8. An aerial deposition study is needed because it is unknown if aeriually deposited metals or other pollutants from SR-125 are contaminating waterways. Preliminary results from a recent regional aerial deposition study² indicate that elevated levels of copper and zinc are found in areas that are in proximity to industrial and **transportation** land uses. Study authors state that if a continual source, such as automobiles, is emitting large particulates, these particulates may travel great distances given a long enough time and with enough wind to mobilize them. Modeling results show that the greatest local deposition of brake wear particles would be expected within approximately 250 meters of a roadway,

¹ Audio tapes for Regional Board meeting, April 23, 2001. Tape 3, side B.

² *City of San Diego Aerial Deposition Study Draft Summary Progress Report*. Weston Solutions, September 11, 2006.

INVESTIGATIVE ORDER NO. R9-2007-0092

and that total deposition rates decrease to 1/100 of their maximum values approximately 3 km from the roadway.

9. SR-125 runs in close proximity to the Sweetwater Reservoir and the Sweetwater River; aerially-born metals and other pollutants from this roadway may be deposited from SR-125 onto the surfaces of the Sweetwater River and Reservoir.
10. In accordance with California Water Code section 13267 (b) these findings provide Caltrans with a written explanation with regard to the need for an aerial deposition study and identify the evidence that supports the requirement to submit such a study.
11. Pollutant loading from SR-125 may result in increased municipal water supply treatment costs at the Perdue Treatment Plant supplied from the Sweetwater Reservoir. Pollutant loadings from SR 125 may also cause or contribute to exceedances of receiving water quality objectives in the receiving waters. Such exceedances may be considered in the development and implementation of total maximum daily loads (TMDLs). The costs associated with the aerial deposition study are therefore justified.
12. This action is being taken for the protection of the environment and, as such, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 2100 Et seq.) in accordance with Section 15108, Chapter 3, Title 14, California Administrative Code.

IT IS HEREBY ORDERED that, pursuant to Sections 13225, 13267, and Section 13383 of Division 7 of the California Water Code, Caltrans shall conduct an aerial deposition study and shall prepare and submit periodic monitoring and technical reports to the Regional Board.

- 1) The technical reports shall contain, but not be limited to, the following information:
 - a) **Aerial Deposition Data Collection and Assessment.** A study design, followed by quarterly monitoring reports shall be submitted to the Regional Board to assess, at a minimum, the effects of the construction of SR-125 onto the Sweetwater River and Reservoir. Each report shall contain raw and summary data and an assessment of the fate and transport of a representative suite of airborne pollutants associated with vehicle exhaust. Each report shall include data in tabular and graphical form, and electronic data shall be submitted to the Regional Board upon request. A certified contract laboratory shall perform all sampling, laboratory, quality assurance, and analytical procedures.
 - i) Caltrans shall propose monitoring stations that would be used to assess whether or not pollutants from the SR-125 are transported to the Sweetwater

River and Reservoir. The monitoring stations shall include at least one location upwind of SR-125 (or other suitable reference site), at least one location downwind of SR-125 and upwind of Sweetwater River, and at least one location downwind of SR-125 and upwind of Sweetwater Reservoir, along the transect of the predominant wind direction.

- ii) Aerial deposition data shall be obtained, analyzed, and reported for the purpose of completing the assessment described in item (a) above. Measurements should include, but not be limited to, the following constituents at the following frequencies³:

Parameter	Reporting Unit	Monitoring Frequency
A representative suite of Volatile Organic Compounds (VOCs)	$\mu\text{g}/\text{m}^2/\text{day}$	Composite sample collected at least once per month
A representative suite of Polycyclic Aromatic Hydrocarbons (PAHs)	$\mu\text{g}/\text{m}^2/\text{day}$	Composite sample collected at least once per month
Trace metals: copper, lead, zinc	$\mu\text{g}/\text{m}^2/\text{day}$	Composite sample collected at least once per month

Note: $\mu\text{g}/\text{m}^2/\text{day}$ = micrograms per square meter per day

- iii) Caltrans may propose water and/or sediment sampling to supplement aerial deposition samples for the purpose of completing the assessment described in item (a) above.

- 2) **Report Schedule.** The study design shall be submitted to the Regional Board no later than September 1, 2007. For subsequent reports, the report period will be quarterly, with the report of data and analysis due to the Regional Board no later than the 10th day of the month beginning December 10, 2007.
- 3) **Final Report.** A final report shall be submitted by June 30, 2009. The final report shall contain an assessment of all data collected under the monitoring program. The assessment shall include discussions of the fate and transport of constituents related to the construction of SR-125 and the impacts they may have on the Sweetwater River and Reservoir. The assessment shall also consist of a statistical analysis of the data. The report shall include data in tabular and graphical form, and electronic data shall be submitted to the Regional Board upon request.

³ Caltrans and CTV may propose alternate constituents and frequencies if supporting rationale is provided.

Mr. Hulsizer

INVESTIGATIVE ORDER NO. R9-2007-0092

- 4) **Data Quality Assurance.** If water quality data is obtained, sampling and analysis shall conform to a Quality Assurance Project Plan compatible with the Surface Water Ambient Monitoring Program (SWAMP).⁴
- 5) **Certification Statement.** Each monitoring and technical report submitted to the Regional Board shall include the following certification statement signed by either the principal executive officer, ranking elected official, or duly authorized representative of that person:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

- 6) **Alternative Form of Compliance.** Alternatively, Caltrans may meet the special condition in Resolution No. 2001-51 and the requirements of this order if they partner with the Sweetwater Authority and the United States Geological Survey in the aerial deposition study that is underway.⁵

NOTIFICATIONS

1. Requirements established pursuant to Water Code Sections 13267(b) or 13383 are enforceable when signed by the Executive Officer of the Regional Board.
2. Pursuant to California Water Code section 13268, any person failing or refusing to furnish technical or monitoring program reports as required by Section 13267, or falsifying any information provided therein, is guilty of a misdemeanor, and may be liable civilly in an amount which shall not exceed one thousand dollars (\$1,000) for each day in which the violation occurs.

⁴ The State Water Resource Control Board (SWRCB) has prepared an electronic template for Quality Assurance Project Plans (QAPP) to assist in QAPP development, to provide a common format that will allow for review to be expedited, and to provide information on SWAMP consistency. Additional information and the template are available on-line at <http://www.waterboards.ca.gov/swamp/qapp.html>.

⁵ The results of Phase I of the study is described in: Mendez, Gregory O., *et al.*, Water and Air-Quality Monitoring of the Sweetwater Reservoir Watershed, San Diego County, California—Phase One Results, Continued, 1999-2001. Phase II of the study is underway.

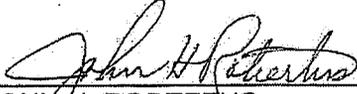
Mr. Orso-Delgado
Mr. Hulsizer

- 6 -

June 1, 2007

INVESTIGATIVE ORDER NO. R9-2007-0092

3. Pursuant to Section 13385 of the Water Code, a violation of a requirements established pursuant to Water Code Section 13383 may subject you to civil liability of up to \$10,000 per day for each day in which the violation occurs.



JOHN H. ROBERTS
Executive Officer

1 June 2007
Date

California Environmental Protection Agency

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EXHIBIT "C"



Linda S. Adams
Secretary for
Environmental Protection

California Regional Water Quality Control Board San Diego Region



Arnold Schwarzenegger
Governor

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June 1, 2007

CERTIFIED MAIL

7007-0220-0000-4691-0503

In reply refer to:

WPS: 18-1999133.02:ariac

Mr. Pedro Orso-Delgado
District Director
Department of Transportation, District 11
4050 Taylor Street
San Diego, CA 92110

Mr. Greg Hulsizer
Chief Executive Officer
South Bay Expressway, LP
California Transportation Ventures, Inc.
880 Kuhn Drive
Chula Vista, CA 91914

**SUBJECT: VIOLATION OF CLEAN WATER ACT §401 WATER QUALITY
CERTIFICATION NO. 99C-133 FOR THE SOUTH BAY EXPRESSWAY (SR-125
SOUTH).**

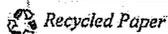
Dear Mr. Orso Delgado and Mr. Hulsizer:

On April 23, 2001, the San Diego Regional Water Quality Control Board (Regional Board) adopted Resolution No. 2001-51 approving Clean Water Act §401 Water Quality Certification for the State Route 125 South Toll Road Project (Resolution). This Certification was issued to the California Department of Transportation (Caltrans), and California Transportation Ventures (CTV), the applicants, provided that they would adhere to the stated conditions in the Resolution.

The Resolution requirements that were considered and adopted by the Regional Board were based on testimony provided during the public hearing on the matter. At the public hearing on April 23, 2001, Mr. Gary Gallegos, Caltrans District 11 Director, stated "We are committed to being a part of a regional study that would look [at] what the impacts of airborne pollutants would have on drinking water. And we think it would be a broad regional study that may be looked, the whole San Diego region, and we would commit to being a part of that."¹ The adopted Resolution included a special condition

¹ Audio tapes for Regional Board meeting, April 23, 2001. Tape 3, side B.

California Environmental Protection Agency



Mr. Hulsizer

NOTICE OF VIOLATION NO. R9-2007-0090

on page no. 2 that establishes that "Caltrans shall promote and pursue a regional air deposition study that will include the Sweetwater Reservoir Airshed."

In a letter dated November 5, 2001 to Mr. Charles Stoll, Deputy District Director for Caltrans District 11, I described the Regional Board's expectation that Caltrans comply with the special condition. This expectation included taking "an active, rather than a passive, role in the design and implementation of a study that would include actual measurements of the deposition of air pollutants in a region that includes the Sweetwater Reservoir Airshed."

In a report dated March 30, 2007, Caltrans reported that it has complied with the special condition, and describes their activities to date. Activities include developing a research proposal in 2005 with the assistance of the University of California, Davis, and the San Diego Association of Governments to address regional-scale cross-media impacts from on-road mobile source emissions. In February 2006, a Caltrans representative attended a workshop held by the California Air Resources Board and State Water Resources Control Board to discuss air pollutant deposition, storm water runoff, and impacts to water bodies.

The Regional Board does not consider the reported actions by Caltrans sufficient in themselves to constitute fulfillment of the special condition of the Resolution as clarified and defined in the Regional Board's letter dated November 5, 2001. Furthermore, Caltrans has been given ample opportunity to comply with this requirement via partnership with the Sweetwater Authority. In 1998, the Sweetwater Authority, in conjunction with the United States Geological Survey, initiated an air deposition study.²

One of the goals of this study was to compare chemical concentrations of samples from air, water, and bed sediment, and determine if any changes in reservoir water quality were the result of atmospheric deposition of organic chemicals and metals originating from the construction and operation of SR-125. The Sweetwater Authority has made repeated attempts and requests to Caltrans requesting assistance with this study.³ Caltrans has provided no evidence that it has participated with the Sweetwater Authority on the study. For the reasons described above, the Regional Board finds Caltrans and CTV to be in violation of the special condition described in the Resolution (Notice of Violation No. R9-2007-0090).

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence please include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.

² Mendez, Gregory O., *et al.*, Water and Air Quality Monitoring of the Sweetwater Reservoir Watershed, San Diego County, California—Phase One Results, Continued, 1999-2001.

³ Letter dated January 9, 2007 to John Robertus, Regional Board Executive Officer, from Dennis Bostad, General Manager, Sweetwater Authority.

Mr. Orso-Delgado
Mr. Hulsizer
NOTICE OF VIOLATION NO. R9-2007-0090

- 3 -

June 1, 2007

Questions regarding this Notice should be directed to Ms. Christina Arias. She may be reached by phone at (858) 627-3931, or email at carias@waterboards.ca.gov. Written correspondence pertaining to this Notice should be sent via email to Ms. Arias.

Respectfully,



JOHN H. ROBERTUS
Executive Officer

JHR:mm:dg:ca

Enclosure
Notice of Violation No. R9-2007-0090

California Environmental Protection Agency

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Secretary for
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California Regional Water Quality Control Board San Diego Region

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Governor

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(858) 467-2952 • Fax (858) 571-6972
<http://www.waterboards.ca.gov/sandiego>

June 1, 2007

IN THE MATTER OF:

Mr. Pedro Orso-Delgado
District Director
Department of Transportation, District 11
4050 Taylor Street
San Diego, CA 92110

Mr. Greg Hulsizer
Chief Executive Officer
South Bay Expressway, LP
California Transportation Ventures, Inc.
880 Kuhn Drive
Chula Vista, CA 91914

**NOTICE OF VIOLATION
NO. R9-2007-0090**

**CWA §401 Water Quality
Certification No.**

99C-133

In reply refer to:
WPS: 18-1999133.02:ariac

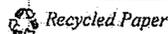
Subject Sites: South Bay Expressway (SR-125 South)

YOU ARE HEREBY NOTIFIED THAT:

VIOLATION OF CLEAN WATER ACT §401 WATER QUALITY CERTIFICATION NO. 99C-133 FOR THE SOUTH BAY EXPRESSWAY (SR-125 SOUTH).

Such violation subjects you to possible enforcement action by the California Regional Water Quality Control Board, San Diego Region (Regional Board). California Water Code (CWC) Section 13350 states, in part, "(a) Any person who (2) in violation of any waste discharge requirement, waiver condition, **certification**, or other order or prohibition issued, re-issued, or amended by a regional board...shall be liable civilly, and remedies may be proposed, in accordance with subdivision (d) or (e)." Section (e) states, in part, (1) "The civil liability on a daily basis may not exceed five thousand dollars (\$5,000) for each day the violation occurs." Further, section (e) (1) (B) states "When there is no discharge, but an order issued by the Regional Board is violated...the civil liability shall not be less than one hundred dollars (\$100) for each day in which the violation occurs."

California Environmental Protection Agency



Findings:

1. On April 23, 2001, the Regional Board adopted Resolution No. 2001-51 approving Clean Water Act §401 Water Quality Certification for the State Route 125 South Toll Road Project (Resolution). This Certification was issued to the California Department of Transportation (Caltrans), and California Transportation Ventures (CTV), the applicants, provided they would adhere to the stated conditions in the Order. On page no. 2 of the Resolution, a special condition states that "Caltrans shall promote and pursue a regional air deposition study that will include the Sweetwater Reservoir Airshed."
2. In a letter dated November 5, 2001 to Mr. Charles Stoll, Deputy District Director for Caltrans District 11, the Regional Board described the expectation that Caltrans would comply with the special condition. This expectation included taking "an active, rather than a passive, role in the design and implementation of a study that would include actual measurements of the deposition of air pollutants in a region that includes the Sweetwater Reservoir Airshed."
3. In a report dated March 30, 2007, Caltrans reported that it has complied with the special condition, and describes their activities to date. Activities include developing a research proposal in 2005 with the assistance of the University of California, Davis, and the San Diego Association of Governments to address regional-scale cross-media impacts from on-road mobile source emissions. In February 2006, a Caltrans representative attended a workshop held by the California Air Resources Board and State Water Resources Control Board to discuss air pollutant deposition, stormwater runoff, and impacts to water bodies.

Summary of Violation:

FAILURE TO PROMOTE AND PURSUE A REGIONAL AIR DEPOSITION STUDY

The Regional Board review of the 401 Certification and supporting documents (file number 18-1999133.02) revealed no evidence that a regional air deposition study consisting of actual measurements of the deposition of air pollutants had been initiated by Caltrans and CTV, nor that Caltrans and CTV have participated on any ongoing regional air deposition study that includes the Sweetwater Reservoir Airshed. For these reasons, the Regional Board finds Caltrans and CTV to be in violation of the special condition described in the Resolution.

The heading portion of this letter includes a Regional Board code number noted after "In reply refer to:" In order to assist us in the processing of your correspondence please

Mr. Orso-Delgado
Mr. Hulsizer
NOTICE OF VIOLATION NO. R9-2007-0090

June 1, 2007

include this code number in the heading or subject line portion of all correspondence and reports to the Regional Board pertaining to this matter.



JOHN H. ROBERTUS
Executive Officer

1 June 2007
Date

JHR:mm:dg:ca

EXHIBIT "D"



SWEETWATER AUTHORITY

505 GARRETT AVENUE
POST OFFICE BOX 2328
CHULA VISTA, CALIFORNIA 91912-2328
(619) 420-1413
FAX (619) 425-7469
<http://www.sweetwater.org>

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JAMES C. ALKIRE, VICE CHAIR
JAMES "JIM" DOUD
RON MORRISON
W.D. "BUD" POCKLINGTON
TERRY THOMAS
MARGARET COOK WELSH

January 9, 2007

DENNIS A. BOSTAD
GENERAL MANAGER
MARK N. ROGERS
OPERATIONS MANAGER

Mr. John H. Robertus
Executive Officer
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

Courts Ex 535
Case # 91083818
Rec'd _____
Dept. 73 Clk _____

Dear Mr. Robertus:

Subject: STATE ROUTE 125 – 401 WATER QUALITY CERTIFICATION
SWA FILE: ROUTE 125 – GENERAL

This letter is sent to you regarding compliance by the California Department of Transportation (Caltrans) and California Transportation Ventures (CTV) with their 401 Water Quality Certification. As you are aware, the construction of State Route 125 (SR 125) is progressing, with completion expected within one year. You are also aware that a portion of this roadway is in close proximity to the Sweetwater Reservoir. Sweetwater Authority (Sweetwater) has historically been, and continues to be, concerned with a potentially significant increase in the ambient airborne particulates from all vehicles that use this roadway and traverse the Sweetwater Reservoir property. This, in turn, could create the need for installing advanced water treatment facilities at Sweetwater's Robert A. Perdue Water Treatment Plant. Sweetwater is also cognizant of increasing stringent regulations by the U.S. Environmental Protection Agency regarding air and water contamination.

Caltrans and CTV were issued a 401 Water Quality Certification by the Regional Water Quality Control Board dated April 24, 2001, File No. 99C-133, for this project. On page 2, Special Conditions, the last paragraph requires Caltrans and CTV to promote and pursue a regional air deposition study that includes the Sweetwater Reservoir airshed. It is our understanding that Caltrans submitted a letter dated September 4, 2001 to your attention, stating it had complied with this condition. However, a letter dated November 5, 2001, under your signature, was sent to Caltrans noting that the information provided in its letter did not fulfill this condition. Your letter was quite emphatic:

"I call your attention to the highlighted words in the preceding paragraph. To comply with the Special Condition cited above, I would expect Caltrans to take an active, rather than a passive role in the design and implementation of a study that would include

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BY: _____

*A Public Water Agency
Serving National City, Chula Vista and Surrounding Areas*

Mr. John H. Robertus
Re: State Route 125 – 401 Water Quality Certification
January 9, 2007
Page 2 of 4

actual measurements of the deposition of air pollutants in a region that includes the Sweetwater Reservoir Airshed.”

Your statement that Caltrans “...would remain a willing participant in any further efforts by an appropriate multi-disciplinary team of technical specialists to consider the issue of airborne pollutants on drinking water reservoirs ...” does not reflect an active role in pursuing studies on the part of Caltrans.

Subsequently, Sweetwater has learned that the next purported detailed correspondence on the air deposition study was an Annual Report dated April 1, 2006 (some five years later), as submitted by EDAW, Inc. This report provided information related to all of the conditions in the 99C-133 certification for a period between January 1 and December 31, 2005. Specific to the regional air deposition study requirement, the report notes on pages 2 and 3 that a research proposal was developed by the University of California Davis, and subsequently submitted to various regulatory agencies for funding. This includes the California Air Resources Board and the State Water Resources Control Board. It is our understanding that no funding has been received, including that by Caltrans itself, therefore, no studies have been conducted. At no time was Sweetwater notified, consulted, contacted, or written to on this matter.

At this time, it may be beneficial to understand that Sweetwater has proceeded to conduct an air deposition study for Sweetwater Reservoir. This study, which commenced in 1999, is being performed by the United States Geological Survey. Sweetwater has repeatedly made attempts with Caltrans to partner in this study. The USGS study is intended to measure air quality before, during, and after construction and operation of this roadway. In its simplest form, this study intends to measure the difference in air quality before and after operations, and to determine the significance of this difference. Sweetwater has made repeated attempts and requests to Caltrans asking for its assistance both scientifically and economically in this study. These requests occurred well before the issuance of the 99C-133 certification. Enclosed are copies of all correspondence sent indicating these offers.

It is our belief that Caltrans and CTV will not pursue a study, as they do not believe there are any impacts, and will only proceed (if at all) if funding is provided by others. Mr. Charles (Muggs) Stoll at a recent deposition by Sweetwater’s Legal Counsel, Mr. Don Detisch, provided these responses to the questions asked:

Mr. John H. Robertus
Re: State Route 125 – 401 Water Quality Certification
January 9, 2007
Page 3 of 4

Q. "Exhibit 3-184, it says, 'Muggs said that since we do not impact the reservoir, we cannot justify monitoring it.' Was that your opinion at that time, sir?"

A. "Yes."

Q. "This was based on scientific studies that you conducted?"

A. "No."

Q. "Do you know how to conduct an air study?"

A. "No."

Q. "Caltrans would have nothing with which to tie the cost of monitoring. It could not justify the expenditure of public funds. Was that your opinion?"

A. "Yes."

Q. "Okay, is that still your opinion today, sir?"

A. "It's still my opinion today."

Stoll Deposition – December 12, 2006,
p. 105, line 25; p. 106, lines 1-91

Sweetwater believes that Caltrans has not complied with the 401 requirements, and only recently has presented you with a report because Sweetwater raised its failure to comply with the Board's special condition in the eminent domain proceeding by and between Sweetwater and Caltrans.

Importantly, if negative impacts are directly shown, then Sweetwater would expect financial contributions towards the appropriate mitigation, such as advanced water treatment facilities, necessary to return Sweetwater's water quality to its "before construction status."

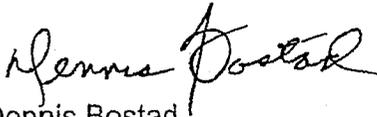
In conclusion, Sweetwater requests that you provide us with your written response, indicating whether Caltrans and CTV have complied with the conditions of providing a regional air deposition study that includes the Sweetwater Reservoir airshed. If there is other correspondence between your

Mr. John H. Robertus
Re: State Route 125 – 401 Water Quality Certification
January 9, 2007
Page 4 of 4

office and Caltrans/CTV on this matter that Sweetwater may not be aware of, then we would appreciate a copy.

Thank you for assisting us in this matter. You may contact me at (619) 409-6701, or Mr. Jim Smyth, Director of Engineering, at (619) 409-6750 if you have any questions.

Sincerely,



Dennis Bostad
General Manager

DB:JLS:ss

enclosures: as cited

cc: Mr. Jim Smyth, Sweetwater Authority
Mr. Don Thomson, Sweetwater Authority
Mr. Rick Alexander, Sweetwater Authority
Don Detisch, Esquire, Law Offices of Don Detisch

EXHIBIT "E"

Court No.	520
Case No.	01238184
Rec'd	
Dept.	TS

SR-125 South Route Alternatives: Potential Air Emissions Impact on Sweetwater Reservoir

Prepared for
Sweetwater Authority
505 Garrett Avenue
Chula Vista, California 92912

Prepared by
Ogden Environmental and Energy Services Co., Inc.
5510 Morehouse Drive
San Diego, California 92121
(619) 458-9044

February 1997
Project No. 316940000

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EXHIBIT "F"

THE IMPACT OF SR125 VEHICLE EMISSIONS
ON THE SWEETWATER RESERVOIR

*Transport, Environmental Fate and
Cancer Risk Assessment*

PREPARED FOR THE SWEETWATER AUTHORITY

BY

JAMES L. BYARD, PH. D., D.A.B.T
TOXICOLOGY CONSULTANT

WITH

AIR MODELING

BY

GIROUX & ASSOCIATES

April, 1999

SUMMARY

The Sweetwater Authority has initiated a risk assessment of the impact on the Sweetwater Reservoir of pollutants from the new SR125 highway. This initial report assesses the cancer risk of more than a hundred priority chemicals known to be in vehicle emissions. The analysis considers pollutants from vehicles likely to travel on SR125 in the years 2000 and 2015, including a large component of Mexican vehicles. Highway pollutants are modeled to the Reservoir by the USEPA Industrial Source Complex3 Computer Model. Several additional factors were considered that influence the final concentration of priority chemicals in the distribution system to consumers. These include: resuspension of particulate matter (PM) deposited on the ground, volatilization of polycyclic aromatic hydrocarbons (PAHs) from PM deposited on the ground, surface runoff from the catchment basin carrying deposited PM into the Reservoir, the gradient of airborne deposition in the Reservoir from the southwest to the northeast, settling of PM to the bottom of the Reservoir, resuspension of PM on the sides and bottom of the reservoir due to surface runoff and due to thermal inversion, and recycling into the water column of PAHs deposited on the bottom of the Reservoir. These additional factors are compensated for in the health-protective assumptions used in the stepwise determination of cancer risk. The cancer risks estimated in the analysis were consistent with the known carcinogenic properties of highway emissions and exceed current regulatory benchmarks of significant risk. For example, the Proposition 65 significant cancer risk level is estimated to be exceeded by 10-fold. Many factors that may be unique to the Sweetwater Reservoir account for the finding of significant cancer risks. These include the highway on three sides of the Reservoir, a large highway close to a small reservoir, a large component of higher polluting Mexican vehicles, and the Reservoir downwind of the highway. More detailed analysis of the many factors contributing to these health-protective risk estimates, coupled with an ongoing program of chemical analysis, should lead to more accurate estimates of these risks and other potential health effects that might result from exposure to vehicle emission chemicals.

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INTRODUCTION

The Sweetwater Reservoir stores up to 28,079 acre-feet of water for domestic service to 177,000 customers in the south San Diego area (Figure 1). The Sweetwater Authority manages the Reservoir, the treatment plant, and the distribution system that provides potable water to domestic users. Historically, the Authority has taken several steps to protect the quality of the water. For example, surface runoff is intercepted along the developed shores of the Reservoir. With the imminent construction of State Route 125 (SR125) next to the Reservoir, the Sweetwater Authority is faced with a new potential threat to the quality of the water that it provides to its consumers.

Vehicles traveling along SR125 release pollutants that are carried by prevailing winds to the Reservoir. Large traffic flows of more polluting trucks and Mexican vehicles, close proximity to a relatively small body of water, and prevailing winds moving from the highway to the Reservoir all contribute to a heavy loading of vehicle emission chemicals. To assess the health impacts of these chemicals, the Sweetwater Authority authorized a risk assessment by James L. Byard, Toxicology Consultant with air modeling by Giroux and Associates. This report represents the initial findings of the assessment.

The first scope of the analysis was to assess all highway emission chemicals for both carcinogenic and noncarcinogenic endpoints. Throughout the project, the scope has increased almost daily with the discovery of new variables in the analysis and new chemicals in vehicle emissions. The scope became so great that the focus had to be narrowed twice. First, all chemicals were reduced to polycyclic aromatic hydrocarbons (PAHs) and the more toxic volatile organic chemicals (VOCs, THC, HC). The second narrowing was to a priority list of carcinogenic and/or genotoxic PAHs and VOCs. This final priority list contains the chemicals that appear to have the greatest potential hazard at trace exposures. Therefore, the focus of this initial analysis is on carcinogenic and/or genotoxic organic chemicals known to be in vehicle emissions. Genotoxic chemicals are those known to injure the genetic material and are therefore likely to be carcinogenic or at least to be initiators of carcinogenesis.

EXHIBIT "G"

Court's Ex	725
Case #	910838118-1
Rec'd	
Dept	73 Clk

**Proposed State Route 125 South Air Emissions and
the Sweetwater Reservoir:
A Review of Recent Reports Sponsored by the
Sweetwater Authority**

July 2, 1999

UCD-ITS-RR-99-9

By
Douglas Eisinger*
Tom Kear
Dr. Daniel Chang
Kellie Dougherty
Dr. Michael Stallard
Dr. Michael Johnson

The University of California, Davis
UC Davis / Caltrans Air Quality Project

Prepared for
Environmental Program
California Department of Transportation
1120 N Street
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Institute of Transportation Studies
University of California, Davis
One Shields Avenue
Davis, CA 95616

*Program Manager for the U.C. Davis/Caltrans Air Quality Project, and the author to whom correspondence may be addressed. Mr. Eisinger is with Sonoma Technology, Inc. All other authors are with U.C. Davis.

Disclaimer

The statements and conclusions presented in this document are those of the authors. They do not necessarily represent the opinions and policies of the U.C. Davis Institute of Transportation Studies or the California Department of Transportation.

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EXECUTIVE SUMMARY

ES.1 SUMMARY CONCLUSION

Based upon examination of the Sweetwater Authority's consultant reports and additional data collected by University of California, Davis, there are no significant health effects that would result from SR 125-generated air emissions depositing onto the Sweetwater Reservoir.

ES.2 BACKGROUND OF STATE ROUTE 125 AND THE SWEETWATER RESERVOIR

A new north-south highway, named State Route 125 South (SR 125), is planned for the San Diego region. Scheduled to open in the year 2002, SR 125 South will be an 11.2-mile highway connecting the Otay Mesa Port of Entry with the San Diego regional highway network (connecting SR 54 at its northern terminus to SR 905 at its southern terminus). The highway was originally proposed in the early 1960s and was added to the San Diego area's Regional Transportation Plan in 1984. The project plan calls for a privately financed toll road; starting as a four-lane highway in the year 2002, and expanding to an eight-lane highway by the year 2015. A short portion, approximately 1½ miles, of SR 125's 11-mile length will pass adjacent to the Sweetwater Reservoir. For most of this short portion, SR 125 will be located approximately 200 to 600 meters downstream from the reservoir (Stoll, 1999; California Department of Transportation, 1999).

ES.3 OBJECTIVE OF THIS REPORT

The California Department of Transportation (Caltrans) asked scientists at U.C. Davis (UCD) to review the relationship between proposed SR 125 (including an associated extension of SR 54) and its potential impact on water quality at the Sweetwater Reservoir. Specifically, Caltrans asked UCD to review and comment on two recent studies: "SR 125 South Route Alternatives: Potential Air Emissions Impact on Sweetwater Reservoir (Ogden, 1997a and 1997b)," and "The Impact of SR 125 Vehicle Emissions on the Sweetwater Reservoir, Transport, Environmental Fate, and Cancer Risk Assessment (Byard and Giroux, 1999)." As part of that review, UCD examined health risk estimates in the Sweetwater Authority-sponsored studies that estimated the relationship between SR 125-generated air pollution and health risks to reservoir water users.

ES.4 KEY PROBLEMS WITH THE SWEETWATER AUTHORITY-SPONSORED REPORTS

Both Sweetwater Authority-sponsored studies use conservative, unrealistic assumptions as part of their screening analysis. The unrealistic results of the assumptions are evident from comparisons with existing air and water quality data. When more realistic assumptions are substituted for the most important unrealistic assumptions in each report, estimated health risks

become negligible. Additionally, the risk assessment methodologies employed by the Sweetwater Authority-sponsored studies were flawed. Key problems include:

- The Sweetwater Authority-sponsored analyses neglected to evaluate the relative importance of regional-scale emissions from upwind portions of the San Diego metropolitan area. These existing background pollution sources are far more important than the emissions assumed to come from the new highway.
- The calculations used in the analyses violate conservation of mass principles. This problem applies to the analysis of air emissions moving from vehicles towards the reservoir; the problem relates to the assumed deposition velocity. For example, if deposition assumptions were consistently applied, estimated air concentrations over the reservoir would have been lower due to plume depletion occurring between the highway and the reservoir.
- The reports fail to properly estimate mass transfer at the air/water interface. An important example involves a well established chemical principle, called Henry's Law, which states that the equilibrium concentration of a volatile chemical in water is proportional to its vapor concentration in the atmosphere above the water. A volatile chemical will dissolve from the air into water only until this relationship is satisfied. The assumptions in the Sweetwater Authority-sponsored studies fail to account for this scientific principle and allow more of the pollutant to enter the water than is physically possible. The rate of deposition into the reservoir of fine particles emitted by vehicles is also unrealistically high. The result is an over-estimation of pollutant concentrations in the water body by several orders of magnitude.
- The reports use a variety of assumptions that are incorrect, are based on outdated information, or otherwise serve to overestimate predicted pollutant concentrations, exposure, and resulting health risks. These unrealistic assumptions range across numerous categories and affect the risk assessment at every major analytical point—from emissions estimation, to pollutant dispersion and deposition, to the transfer of pollutants from the reservoir to water users. The result is a gross overprediction in estimated health risks. As an example of these problems, one of the reports estimates more than three times the pollutant mass leaving the reservoir than entering the reservoir, a physical impossibility.

ES.5 FINDINGS

In summary, the most important UCD findings follow:

1. Based upon examination of the Sweetwater Authority's consultant reports and additional data collected by UCD, there are no significant health effects that would result from SR 125-generated air emissions depositing onto the Sweetwater Reservoir.
2. Both the Ogden report (especially the draft version, Ogden 1997a, as well as the final version, Ogden 1997b) and the Byard report (Byard and Giroux, 1999) include unrealistic assumptions that increase the estimated SR 125-related health risks to Sweetwater Reservoir drinking water users.

3. UCD briefly reviewed data from other reservoirs located near highways; the review did not identify any evidence that roadway-related air emissions degrade water quality.
4. Regional scale air emissions (i.e., emissions from the entire metropolitan region) already affect ambient air concentrations over the reservoir, and contribute hundreds of times more pollutant deposition onto the reservoir than the projected emissions from SR 125. Either there is an existing problem with water quality in the reservoir, or common sense indicates that no measurable problem will result in the future from SR 125.

ES.6 RECOMMENDATIONS

Given the relative importance of regional scale vs. SR 125 air emissions, the Sweetwater Authority should evaluate whether current regional air pollution contributes to water quality problems. Such an evaluation should consider, at a minimum, the total contribution of San Diego metropolitan area emissions to air pollutant concentrations observed over the reservoir, the resulting concentration of pollutants in the water body, the exposure of individuals to those pollutant concentrations, and the risk, if any, that results.

In addition, UCD recommends that a broader review of air pollution and drinking water be undertaken to determine what, if any, long-term research efforts ought to be conducted. Such research may be appropriately undertaken by a variety of public health and/or environmental management agencies.

1. INTRODUCTION AND SUMMARY

The California Department of Transportation (Caltrans) asked University of California, Davis (UCD)¹ scientists to evaluate whether air emissions from proposed State Route 125 South (SR 125), which will be located near the Sweetwater Reservoir, would generate adverse health risks to reservoir users. The Sweetwater Authority has been concerned that air pollution from vehicles using SR 125 will deposit onto the reservoir, contaminate the drinking water, and cause excess cancer risks to reservoir users. UCD reviewed the proposed project and its proximity to the reservoir and determined that emissions from SR 125 will have a negligible impact on health risk. This finding is contrary to that of two studies commissioned by the Sweetwater Authority. Both Sweetwater Authority-sponsored studies use conservative, unrealistic assumptions as part of their screening analysis. When more realistic assumptions are substituted for the most important unrealistic assumptions in each report, estimated health risks become negligible.

¹ The acronym UCD will be used for convenience to denote the individuals that contributed to the report. Its use does not imply, nor is it intended to imply, endorsement of the report's conclusions by the University of California.

2. OVERVIEW

2.1 BACKGROUND ON THE SR 125 PROJECT

A new north-south highway, named State Route 125 South (SR 125), is planned for the San Diego region. Scheduled to open in the year 2002, SR 125 South will be an 11.2-mile highway connecting the Otay Mesa Port of Entry with the San Diego regional highway network (connecting SR 54 at its northern terminus to SR 905 at its southern terminus). Figures 2-1 and 2-2 illustrate the location of the proposed road. The highway project has been planned for many years to accommodate the San Diego region's population and employment growth. The highway was originally proposed in the early 1960s and was added to the San Diego area's Regional Transportation Plan in 1984. The project plan calls for a privately financed toll road, starting as a four-lane highway in the year 2002, and expanding to an eight-lane highway by the year 2015. The ultimate facility will consist of up to eight mixed flow lanes and a median wide enough to accommodate two high occupancy vehicle lanes or transit facilities. A short portion, approximately 1½ miles, of SR 125's 11-mile length will pass adjacent to the Sweetwater Reservoir. For most of this short portion, SR 125 will be located approximately 200 to 600 meters downstream from the Reservoir (Stoll, 1999; California Department of Transportation, 1999).

2.2 U.C. DAVIS REVIEW OF SR 125 AIR EMISSIONS AND POTENTIAL ADVERSE CONSEQUENCES FOR SWEETWATER RESERVOIR USERS

Caltrans asked scientists at UCD to review the relationship between proposed SR 125 and its potential water quality impacts at the Sweetwater Reservoir. As part of that review, UCD examined health risk estimates in Sweetwater Authority-sponsored studies that estimated the relationship between SR 125-generated air pollution and health risks to reservoir water users.

Specifically, Caltrans asked UCD to review and comment on two recent studies: "SR 125 South Route Alternatives: Potential Air Emissions Impact on Sweetwater Reservoir" (Ogden 1997a and 1997b), and "The Impact of SR 125 Vehicle Emissions on the Sweetwater Reservoir, Transport, Environmental Fate, and Cancer Risk Assessment" (Byard and Giroux, 1999). UCD faculty and staff have worked over the past two years to review and comment on these studies, and to share findings and recommendations with the report authors, the Sweetwater Authority, and with Caltrans. This report presents the major findings from these UCD reviews.

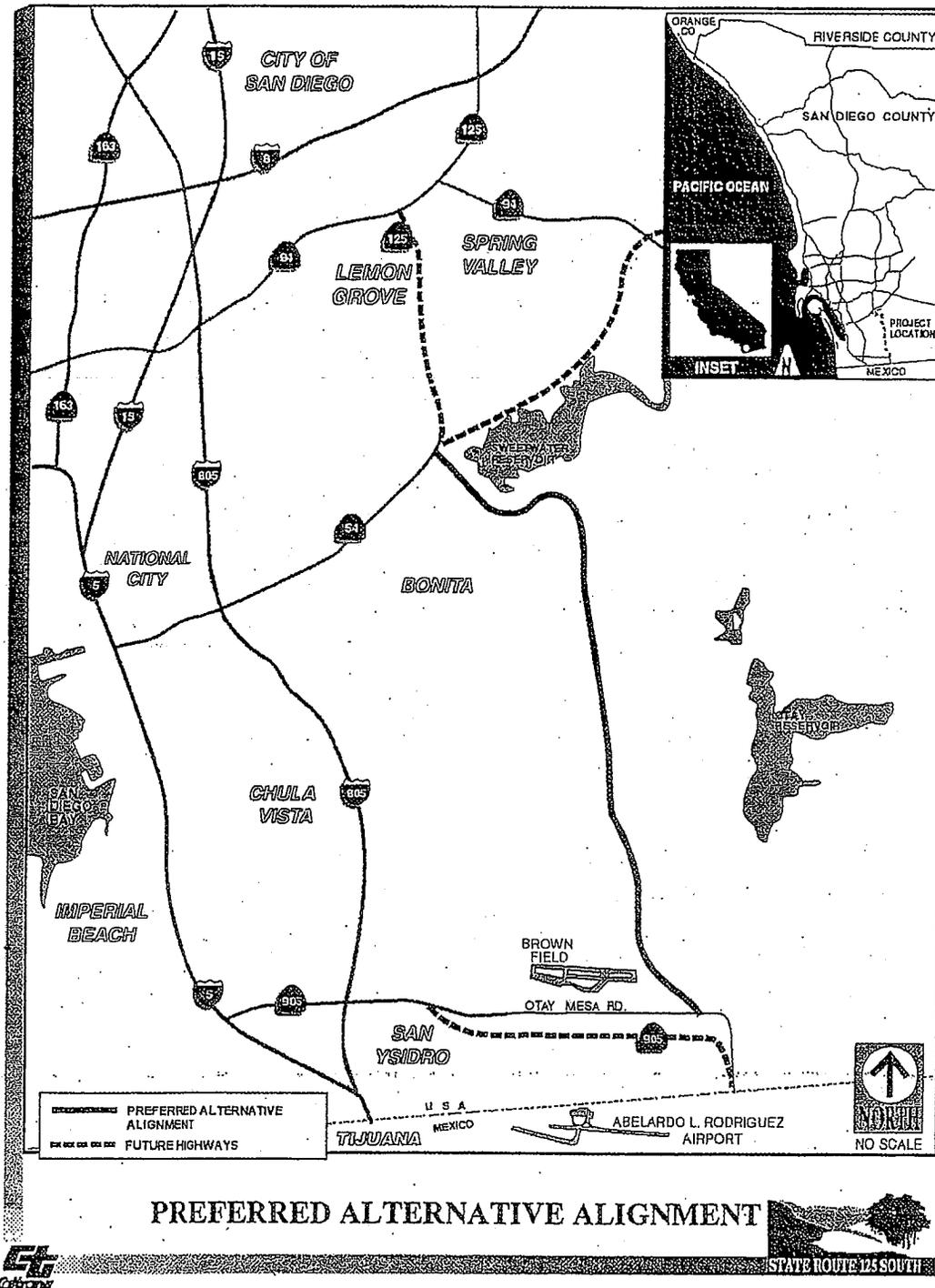


Figure 2-1. The SR-125 project in relation to the San Diego metropolitan area.

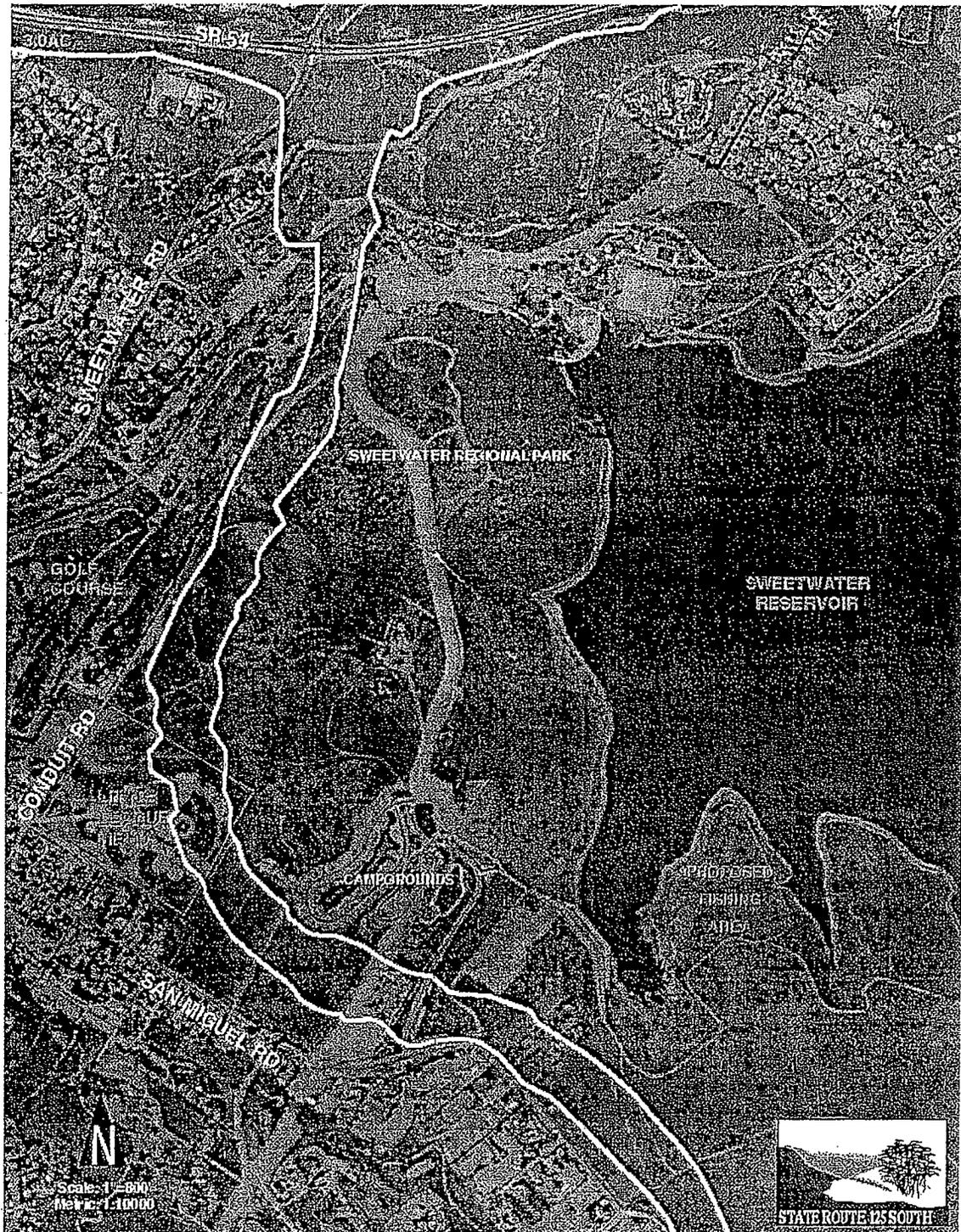


Figure 2-2. Aerial view of SR-125 in relation to the western edge of the Sweetwater Reservoir.

2.3 SUMMARY FINDINGS AND RECOMMENDATIONS

In summary, the most important UCD findings follow:

1. An examination of the Sweetwater Authority's consultants reports and additional data collected by scientists at UCD indicates that no significant health effects would result from SR 125-generated air emissions depositing onto the Sweetwater Reservoir.
2. Both the Ogden report (especially the draft version, Ogden, 1997a, as well as the final version, Ogden, 1997b) and the Byard report (Byard and Giroux, 1999) include unrealistic assumptions that increase the estimated SR 125-related health risks to Sweetwater Reservoir drinking water users.
3. UCD briefly reviewed data from other reservoirs located near highways; the review did not identify any evidence that roadway-related air emissions degrade water quality.
4. Regional scale air emissions (i.e., emissions from the entire metropolitan region) already affect ambient air concentrations over the reservoir and contribute far more pollutant deposition onto the reservoir than the projected emissions from SR 125 (even using the overly conservative assumptions in the Byard report). Either there is an existing problem with water quality in the reservoir, or common sense indicates that no measurable problem will result in the future from SR 125.
5. Given the relative importance of regional scale vs. SR 125 air emissions, Sweetwater Authority should evaluate whether current regional air pollution contributes to water quality problems. Such an evaluation should consider, at a minimum, the total contribution of San Diego metropolitan area emissions to air pollutant concentrations observed over the reservoir, the resulting concentration of pollutants in the water body, the exposure of individuals to those pollutant concentrations, and the risk, if any, that results.

2.4 A COMMENT ON SCREENING LEVEL ANALYSES VERSUS MORE COMPLETE RISK ASSESSMENTS

Both the Ogden and Byard studies present health risk information that contradicts UCD's analysis of health risks resulting from SR 125 air pollution impacts on the Sweetwater Reservoir. The explanation for this discrepancy lies in the assumptions made by the Ogden and Byard report authors. The Ogden and Byard reports can be characterized as a type of "screening level" analysis. Such analyses typically utilize conservative assumptions to quickly "screen" for potentially adverse health impacts. If, using conservative assumptions, no adverse risks are estimated, then analysts are generally comfortable concluding that the exposed populace is not at risk under real world conditions. Typically, if a screening analysis estimates an adverse impact, more refined analyses, with more realistic assumptions, are conducted to determine whether the health risk is a significant concern or simply an artifact of the assumptions used in the analyses. In the case of the Ogden and Byard reports, the health risk analyses used a number of unrealistic analytical assumptions and concluded by significantly over-estimating health risks. UCD found that estimated risks fell to negligible levels when these assumptions were replaced with more realistic information.

An important example of an overly conservative assumption in both the Byard and Ogden reports concerns the exchange of pollutants between water bodies and the air circulating above the water surface. There is a scientific principle, Henry's Law, which governs the partition of a chemical between its concentration in water and its corresponding vapor concentration in the atmosphere. Simply put, as the concentration of certain pollutants increases in water, their tendency to escape out of the water becomes greater and soon the amount that enters the water from the air equals the amount that leaves the water. The equilibrium concentration in the water is dependent upon, among other things, the atmospheric concentration of the pollutant. It is not physically reasonable to have more of a pollutant enter the water than its equilibrium concentration for a given airborne concentration. The assumptions in both the Ogden and Byard studies fail to account for this scientific principle and allow more of the pollutant to enter the water than is physically reasonable. The result is an over-estimation of pollutant concentrations in the water body. The revised Ogden report acknowledges the existence of Henry's Law but does not apply it. The Byard report does not acknowledge the effect of Henry's Law on limiting water concentrations.²

Screening analyses are an acceptable first approach to conducting health risk assessments. However, if the results of such analyses will be used to establish policy or provide the basis for significant and costly decision making, it is incumbent upon the analysts to revisit their work and correct unrealistic assumptions before using the results. UCD revisited key analysis steps in the Byard and Ogden studies, corrected for unrealistic assumptions, and found resulting health risks to be negligible.

2.5 REPORT ORGANIZATION

The remainder of this report covers the following material:

- Section 3 provides a conceptual discussion of how to analyze the relationships between sources of air pollutant emissions and drinking water quality at reservoirs.
- Section 4 summarizes UCD's comments on the Ogden study (draft and final reports).
- Section 5 summarizes UCD's comments on the Byard study.
- Section 6 provides additional observations related to other reservoirs, air quality regulations, and regulatory efforts to reduce mobile source-related toxic emissions.
- Section 7 summarizes the overall conclusions from UCD's reviews over the past two years.
- Section 8 lists recommendations for further research.

In addition, several appendices are included to provide additional information.

² A good overview discussion of the pollutant exchange between air and water is provided by the U.S. Environmental Protection Agency in their Second Report to Congress on "Deposition of Air Pollutants to the Great Waters" (U.S. Environmental Protection Agency, 1997; pp. 74-76).

3. CONCEPTUAL DISCUSSION: ANALYZING THE RELATIONSHIPS AMONG SOURCES OF AIR POLLUTANT EMISSIONS AND DRINKING WATER QUALITY AT RESERVOIRS

When assessing the impact of vehicular emissions over a broad area, such as a reservoir, the relative strength of the emission source in question must be weighed against the background pollution concentrations and the distance between the source in question and the receptor. San Diego's background pollution is created from the contribution of hundreds of thousands of upwind industrial, domestic and vehicular sources (e.g., combustion sources in Ocean Beach, Pacific Beach, Point Loma, San Diego, Mission Valley, National City, and vehicles on local roadways and highways such as Interstate-5, Interstate-805, Interstate-8). Because atmospheric dispersion combined with pollutant-specific reactivity rates quickly mix a roadway's emissions into the ambient air, concentrations decay rapidly as one moves further downwind from the road. Generally, after several hundred meters the emissions from a highway source blend into, and become indistinguishable from, the background pollutant levels.

One example of how regional emissions are more important than individual roadway emissions involves the pollutant benzene. The California Air Resources Board (ARB) currently measures average annual benzene concentrations at Chula Vista and El Cajon. Chula Vista is southwest of the Sweetwater Reservoir, and El Cajon is north of the reservoir. Averaged together, the monitored benzene concentrations from these two neighborhood-scale monitors provide an approximation of the general background conditions for the San Diego metropolitan area. The most recent data available (1997) documents benzene concentrations occurring today at these sites that are roughly 250 times larger than the SR 125-generated benzene concentrations that the Byard report projects will occur over the reservoir. Further, the Byard report assumes benzene emission rates based on vehicle data that pre-dates the California reformulated gasoline (RFG) program. Since RFG has lowered ambient benzene concentrations by about 50 percent, it can be shown that regional benzene emissions will be approximately 500 times more important than the Byard report's projected benzene emissions related to SR 125. Thus, if significant risks actually were to occur from SR 125, they must already exist at a much greater level in the reservoir now from ambient benzene alone. The Sweetwater Authority has not reported any data indicating that there is an existing problem from benzene in the water. Thus, future increases in concentration or corresponding risk from SR 125 would be immeasurable. If excess cancers such those as projected by the Byard report are in fact occurring, such a situation would call for significant assessment and mitigation of regional, as opposed to project-level, emissions. However, there is no evidence of significant benzene levels in the Sweetwater Reservoir, and this lack of evidence implies that the Byard analysis is faulty. Appendix A details the background information on benzene³.

The most appropriate approach for analyzing air pollution impacts on the Sweetwater Reservoir is to look at regional air pollution, rather than air pollution from a single roadway. A

³ It is worth noting that background ambient air benzene levels in San Diego are generally comparable to or lower than those measured elsewhere in the state. The health effects associated with these benzene levels would be expected to result from inhalation-based exposure, not through reservoir-issued drinking water that has been in contact with polluted air.

graphic illustration of that concept is presented in Appendix B. Appendix B includes two figures illustrating the relationship between regional carbon monoxide (CO) emissions and the Sweetwater Reservoir. Since CO is emitted almost entirely by motor vehicles, CO emissions serve as an excellent surrogate for motor vehicle emissions activity. The two figures demonstrate that Sweetwater Reservoir is downwind of most of the San Diego metropolitan area's vehicular emissions. The motor vehicle emissions contributed by SR 125 would be a negligible fraction of the region's overall motor vehicle emissions.

4. COMMENTS ON THE OGDEN STUDY

UCD research staff reviewed the February 1997 Sweetwater Authority report prepared by Ogden Environmental Services: "SR-125 South Route Alternatives: Potential Air Emissions Impact on Sweetwater Reservoir" (Ogden, 1997a). The February 1997 report examined 37 chemicals and/or groupings of chemicals that were assumed to come only from SR 125. UCD determined that the February 1997 report contained numerous errors. A twenty-three page summary of UCD's findings that were specific to the report's methodology was shared with the Sweetwater Authority and its consultant so that they could revise their report accordingly.⁴

The main emphases of the written comments shared with the Sweetwater Authority are outlined below.

- Methodology: Conservative assumptions regarding the mass transfer mechanism to the reservoir and pollutant degradation rates were unrealistic. It was recommended that the report be revisited, and that, at a minimum, mass transfer at the air/water interface be accounted for properly (i.e., recognizing Henry's Law).
- Fleet Make-up: The February report assumed that mini-vans and sport utility vehicles (SUVs) would have emissions identical to those of heavy-duty trucks. Emission rates were calculated as if 30 percent of the vehicles on SR 125 would be heavy-duty trucks, an overestimation of roughly 600 percent. The report also used 1995 fleet emissions to represent 2001, neglecting several years of continued reductions in fleet average emissions as a result of the retirement of the oldest vehicles.
- Emission Rate Estimation: Emission rates were generated using a version of ARB's EMFAC model that was three releases out of date. The version of the model used did not account for any of the fuel or Smog Check program enhancements associated with the California 1994 ozone (O₃) State Implementation Plan (SIP).
- Speciation: The report failed to account for reductions in toxicity due to changes in chemical constituents of both volatile organic compound (VOC) emissions and road dust. The toxic constituents in VOC emissions were reduced with the phase-in of California RFG in 1996. The make-up of dust emissions also varies between roads. Older roadways have lead-bound soil adjacent to them; that soil can be re-entrained along with wind blown dust. Roads built after the phase out of leaded gasoline do not have residual lead contamination, and thus any re-entrained dust will be lead-free (or have dramatically lower levels).
- Dispersion Modeling: The Ogden report used the CALINE4 dispersion model, developed by Caltrans, to estimate ambient levels of pollutants over the entire Sweetwater Reservoir. This report incorrectly applied a model intended for short travel distances (e.g., less than about a few hundred meters from the emission source).

During a May 21, 1997, conference call with the Sweetwater Authority, broader comments on the selected methodology were also discussed. UCD researchers explained that

⁴ This correspondence is included in a package of correspondence released by the Sweetwater Authority entitled: "Sweetwater Authority, Route 125 Correspondence, 1986 through 1999."

emissions from a single road do not have a measurable impact when compared to regional emissions, and that to do an appropriate health risk assessment, one needed to look at emissions from the entire region. UCD explained that the methodology used to prepare the February 1997 report was deficient, because it failed to place SR 125-related impacts in the context of impacts generated by the entire metropolitan region.

In an October 1997 revision to the report, Ogden accounted for some of the information Caltrans and UCD had shared, and concluded "...it is anticipated that the potential human health risks [from SR 125 air emissions] are within acceptable levels" (Ogden, 1997b, page 2-52).

5. COMMENTS ON THE BYARD STUDY

5.1 OVERVIEW AND SUMMARY

UCD reviewed the April 1999 version of the Byard report (Byard and Giroux, 1999) and determined that the report did not present credible scientific information to suggest that SR 125 air emissions pose a significant health risk to Sweetwater Reservoir users. Overly conservative assumptions already brought to the attention of the Sweetwater Authority and partially corrected in the earlier Ogden study were once again ignored. Key points illustrate this finding:

1. Major unrealistic assumptions in the Byard report overestimate health risks by a factor of at least 1,000 times (i.e., at least three orders of magnitude). This means that the Byard report's estimated year-2015-excess cancer risk of 10 cancers per 100,000 exposed people should really be no more than 0.01 cancers per 100,000 people, or, in other words, 1 excess cancer per 10 million people. That risk is well within accepted guidelines of 1 excess cancer per 1 million people. Although the report contains other flaws, the major flaws alone mean the health risks from SR 125 air emissions are within acceptable levels.
2. Numerous other flaws exist in the Byard study, virtually all of which serve to further overestimate risk.
3. A "real world" check of pollution problems at other reservoirs supports the conclusion that air emissions from nearby roads do not contribute significantly to water pollution or health risk.
4. Current regional motor vehicle emissions that are carried downwind in the ambient air and over the Sweetwater Reservoir are far in excess of the concentrations that SR 125 will generate at the reservoir.
5. The worst case assumptions embedded throughout the Byard study serve to grossly overpredict health risks associated with airborne pollutants from SR 125. Common sense, in conjunction with the existing ambient air data and modeled concentrations at the reservoir, indicates that negligible changes in water quality will occur as a result of the SR 125 project.

The remaining discussion, as well as the appendices, provides more detail about these comments.

5.2 KEY CONCERNS WITH THE BYARD REPORT

The Byard study reports a year 2015-excess lifetime cancer risk of approximately 10 excess cancers per 100,000 exposed people (worst case presented) (Byard and Giroux, 1999; Tables 11 through 13). In general, the report uses numerous unrealistic assumptions that inflate the risk estimates. Important flaws include (1) an overestimate of the air pollutants depositing onto the reservoir and (2) an overestimate of the pollutant concentration in the waters that exit the reservoir. These two problems alone indicate that the Byard report's estimated excess cancer risk of 10 cancers per 100,000 exposed people should really be closer to 0.03 cancers per 100,000 people (in other words, 3 excess cancers per 10 million people, well within the accepted

guidelines of 1 excess cancer per 1 million people).⁵ A brief description of these two problems follows:

1. Pollutant deposition velocities for particles overestimate by a factor of about 100 times the pollution depositing onto the reservoir. The Byard report assumes a deposition velocity of 2.0 cm/sec; a more realistic and appropriate number to use for a refined calculation is approximately 0.02 cm/sec for the assumed PAH-containing particles in the size range emitted by diesel- and gasoline-powered vehicles (Allen et al., 1996; Venkataraman et al., 1994; Venkataraman and Friedlander, 1994). Use of an irreversible deposition velocity is inappropriate for use with many of the VOCs such as benzene, MTBE, and vapor phase PAHs. The Byard report assumptions dramatically overstate the air pollution depositing onto the reservoir. Appendix C provides a more detailed discussion of this concern.
2. Pollutant steady state equilibrium assumptions made in the Byard report overestimate by a factor of about 3 times the concentration of pollutants exiting the reservoir. Independent of the pollutant deposition rates, pollutant concentration steady state conditions in the reservoir are inappropriately described. Most VOCs will approach equilibrium in the water with the ambient air level. Those compounds can deposit in or leave the reservoir depending upon whether the ambient air concentrations are greater or lower than those that would be in equilibrium with the water. For non-volatile and semi-volatile compounds, water concentrations reported in the Byard report are from 6 to 25 times too large; and for volatile compounds (e.g., benzene), the factor ranges up to greater than 150 times too high. Particulate matter (PM) steady state conditions overestimate the amount of average pollutant mass per unit time that could possibly exit the reservoir by a factor of 3. VOC steady state conditions fail to consider Henry's Law coefficients and other factors that significantly reduce the pollutant concentration. Note that UCD expressed similar concerns two years ago when UCD reviewed the draft Ogden report (1997a). Appendix D provides a more detailed discussion of this concern.

5.3 EXAMPLES OF OTHER BYARD STUDY FLAWS

In addition to the two major problems discussed above, the report contains numerous other flaws that serve to exaggerate the potential risk by an additional factor of about 10 times. Some notable examples:

5.3.1 Vehicle Activity

- The report assumes unrealistically high growth rates in vehicle traffic. Despite recent vehicle activity growth rates of approximately 3.5 percent per year (Byard and Giroux, p. 5), the report assumes a 10 percent rate of growth in annual vehicle traffic for northbound crossings at Otay Mesa. This may overpredict vehicle activity by a factor of 2 to 3.

⁵ It should be noted that the estimated cancer risk numbers do not mean that people will actually develop that number of cancers because the potency factors are generally believed to provide a conservative estimate. However, relative changes in the numbers provide a sense of whether a given change reduces or increases the risk.

5.4 ADDITIONAL COMMENTS

There are a number of other concerns about the report that are not detailed here. Examples include the following:

1. It is assumed that 100 percent of the PAH particles pass through the water treatment plant and are available for ingestion. Sweetwater Reservoir's existing water treatment facilities will likely filter out larger particles (particles that could actually have deposition velocities corresponding to the 2.0 cm/s assumed) before they reach water consumers (the water is filtered through sand and anthracite coal). The Byard report does not assume any pollutant removal due to water treatment. It has been estimated that only about 20 percent of the particles pass through treatment facilities (Ishimaru et al., 1990).
2. Of the 17 major compounds cited as causing a health risk due to carcinogenicity, only 7 of those compounds are listed in any database as actually or potentially carcinogenic. The Byard report's listing of the compounds as carcinogenic is based on evidence of mutagenicity. However, neither the EPA, nor the U.S. Department of Health and Human Services considers this evidence sufficient to list the compound as actually or potentially carcinogenic. Based on this point alone, the correct risk should be only about 38 percent of the risk estimated by the Byard report. Consequently, the Byard report overestimates the cancer risk by approximately a factor of 3.
3. The assumption of the exposure analysis is that the exposure due to inhalation and dermal contact is 50 percent of the exposure due to ingestion. PAHs do not usually enter the skin under normal conditions. Dermal exposure could only result from contact with products or oils containing high concentrations of PAHs (U. S. Department of Health and Human Services, 1998). This type of exposure does not pertain to the present analysis, and dermal exposure is expected to be negligible. The loss of the dermal exposure pathway reduces the overall exposure by 15 to 20 percent.
4. Conservation of mass is ignored in the transport of pollutants from the roadway to the reservoir. If deposition velocities as large as 2 cm/s were realistic and were used, appreciable mass would deposit before highway-related air emissions reached the reservoir. However, if realistic deposition velocities are used, insignificant mass will deposit and that is not a problem.

Virtually all of the above concerns relate to assumptions that serve to exaggerate potential health risks.

5.5 SUMMARY ANALYSIS OF BYARD REPORT

The report's analysis methodology includes numerous assumptions that unrealistically bias the risk estimates. Report assumptions:

- Pick the worst case vehicle activity data (e.g., older data, rather than more recent data); then

- The report assumes the highest identified percent of Mexican vehicles crossing the border from Mexico into the United States. This figure, 50 percent, is used even though the report documents that it is the oldest data reported (1993) and that more recent data support a smaller estimate. For example, the report documents a 1996 survey that shows 37 percent Mexican vehicular activity and a 1997 report that shows 29 percent (Byard and Giroux, p. 4). This assumption may overpredict Mexican vehicular activity by about a factor of 2.
- The report assumes high numbers of Mexican vehicles using SR 125. It forecasts that Mexican trucks will comprise 2 to 3 percent of the total vehicular traffic on SR 125, based on 64,000 vehicles per day in the year 2000 and 2000,000 vehicles per day in 2015 (Byard and Giroux, 1999, Table 1). However, SANDAG estimates reduced Mexican vehicular traffic, especially truck traffic, on SR 125 due to (1) planned tolls for using SR 125 and (2) an assumption that many Mexican trucks simply transfer their loads to United States vehicles and return to Mexico. In addition, the analysis contained in SR 125's draft EIR/EIS forecasted that Mexican trucks would represent less than one percent of SR 125's total vehicular volume (Stoll, 1999).

5.3.2 Emissions Information

- The report identifies motor vehicle emissions information from various sources, many of which are outdated. As one example, information concerning benzene emissions from gasoline use is drawn from a study that predates the implementation of California's RFG program which significantly reduced gasoline's benzene content. [See Appendix A for a more complete discussion of this topic.]
- The report includes unusually high emission rates for Mexican vehicles compared to U.S. vehicles. The Byard report uses ARB estimates for Mexican vehicle emissions, and then multiplies those emissions by an additional factor of 4.5. Dr. Byard informed UCD verbally that the justification for these data were from the El Paso, Texas/Juarez, Mexico border area. However, a recent remote sensing study conducted by the Desert Research Institute (Walsh and Gertler, 1997) found that, on average, Mexican vehicles in the El Paso/Juarez area emit approximately 2 to 2.5 times more CO and HC than Texas vehicles.
- The information that the Byard report used to characterize diesel emissions did not reflect recent California fuel regulations. Researchers have found that unburned fuel is a major source of the lower molecular weight PAH found in diesel exhaust particles (Miguel et al., 1998). Therefore, changes in fuel composition could impact emissions of these compounds. In 1993, new regulations were instituted in California mandating that the aromatic content of diesel fuel could not exceed 10 percent, which is about one-third of the level of pre-1993 diesel fuel. In addition, the 1993 reformulation of California diesel fuel has resulted in a 25 percent reduction in PM emissions, and reductions in air toxics emissions, including emissions of benzene and of PAH (California Air Resources Board, 1997).

6. OTHER OBSERVATIONS

As part of the SR 125 and Sweetwater Reservoir review, UCD identified information related to other reservoirs, existing air quality regulations, and the status of motor vehicle control programs related to air toxics. Highlights of the findings are included here.

6.1 "REAL WORLD" CHECK AGAINST MONITORED POLLUTANTS AT OTHER RESERVOIRS

A "real world" check on water quality at other reservoirs helped confirm that SR 125 air emissions are not likely to generate any significant health risks for Sweetwater Reservoir users. UCD identified other California reservoirs in close proximity to roads, and did a brief analysis to identify whether vehicle-related air pollutants posed a problem for water quality. The review, which included discussions with reservoir staff, identification of meteorological data to determine prevailing winds near reservoirs, and report reviews, found no scientific evidence to suggest nearby roadway air pollutant emissions contribute significantly to water pollution.

An example of the findings from this review includes MTBE data from Castaic Lake. Castaic Lake has a water residence time approximately equal to that of the Sweetwater Reservoir (i.e., one year) and is located downwind of Interstate-5. MTBE tends to be more persistent in the water supply than other chemicals and thus serves as a conservative signature for motor vehicle-related pollution. If MTBE is not found at problem concentrations, that is a good indicator that other vehicle-related compounds are also not likely to be present at harmful concentrations. In reviewing MTBE data, it is important to separate MTBE that may be discharged directly into the water from recreational boating from MTBE that has been emitted into the air from motor vehicles. At Castaic Lake, where recreational boating is allowed, one way to reduce the influence of recreational boating is to observe winter-time MTBE levels, when recreational boating is reduced. Winter-time MTBE levels (1997) at Castaic Lake were below California water quality standards. Even if all the MTBE observed during the winter were from atmospheric deposition, rather than any recreational boating (an unlikely assumption), the low pollutant levels observed help illustrate why roadway-related VOC atmospheric deposition is not a likely significant contributor to pollution in a nearby reservoir. Appendix E includes more information from this UCD review.

not true

6.2 EXISTING AIR QUALITY REGULATIONS

SR 125 complies with state and federal air quality regulations. The U.S. Environmental Protection Agency (EPA), together with the Federal Highway Administration (FHWA), has established regulations specifically designed to evaluate transportation projects and to insure that such projects conform to a region's air quality control efforts. These regulations, referred to as the "conformity" requirements, are designed to scale air quality analyses to scientifically appropriate levels. Simply put, regional pollution problems, such as O₃ and PM, are handled by evaluating pollution from all sources throughout a metropolitan area, including the region's transportation system as a whole, rather than by evaluating individual projects. Regional analyses also have to consider pollutants transported into a region from upwind areas. For

- Use the worst case assumptions for emissions from each of those vehicles (e.g., use outdated data; use diesel vehicle information to characterize gasoline vehicle emissions); then
- Assume the worst case for pollutant deposition (fail to consider atmospheric interactions and lifetimes of chemicals and use inappropriate deposition rates); then
- Incorrectly calculate the pollutant concentrations in the reservoir (fail to consider Henry's Law and other factors that affect steady state concentrations); and then
- Assume worst case for exposure (e.g., assume none of the pollutants are removed by water treatment, and that greater amounts of pollutant leave the reservoir than enter it).

The resulting health risk estimates are overstated. Actual risks easily fall within acceptable limits of 1 excess cancer per 1 million people by adjusting two of the most problematic assumptions (those relating to pollutant deposition velocities, and pollutant steady state equilibrium assumptions). More importantly, the ambient air data illustrate that imperceptibly small increases in deposition will occur in the reservoir compared to current deposition rates given the existing air quality near the reservoir.

example, a portion of the San Diego area's air pollution problems is attributed to polluted air being transported from the Los Angeles region; regional analyses consider the contribution from such pollutant transport. In contrast to PM and O₃, CO problems are addressed on a project-specific basis. The control of CO from motor vehicles is one of the air quality community's major success stories, and CO is no longer considered problematic in the San Diego region. The SR 125 project conforms to all CO, PM, and O₃ requirements.

6.3 OTHER COMMENTS ON AIR TOXICS CONTROL ISSUES

As stated earlier in this report, UCD finds no evidence to suggest that SR 125 air toxics emissions will be a concern. UCD reached this conclusion, in part, by reviewing the underlying assumptions in the Byard and Ogden reports. Independent of the problems associated with the Byard and Ogden reports, however, air toxics emissions from vehicles using SR 125 are likely to be reduced over time. The federal and state governments have ongoing active diesel and gasoline fuel reformulation programs to reduce benzene and other air toxics from motor vehicle emissions. For example, California Governor Gray Davis recently announced that the fuel additive MTBE must be phased out of California's gasoline supply no later than December 31, 2002. At the federal level, the EPA is under a court-ordered deadline to propose national mobile source air toxics requirements by late 1999. The EPA has published a draft "Integrated Urban Air Toxics Strategy," which describes the EPA's plan to issue a notice of proposed rulemaking for mobile source standards in 1999 and a final rulemaking in the year 2000 (U.S. Environmental Protection Agency, 1998).⁶

⁶Note that the EPA is expected to finalize and publish a final version of its "Integrated Urban Air Toxics Strategy" by early July 1999 (after completion of this report). In addition, the EPA is negotiating to extend the court-ordered deadline for publication of its mobile source air toxics rulemaking. The final strategy document, and subsequent court negotiations, may revise the EPA's mobile source air toxics rulemaking schedule.

7. CONCLUSIONS

Sweetwater Authority-sponsored reports (Ogden, 1997a and 1997b; Byard and Giroux, 1999) significantly overstate the health risks associated with air emissions from SR 125. The reports overpredict emission rates, use dispersion and mass transfer models that result in an over-prediction of pollutant levels in the reservoir, and neglect to account for processes that remove the pollutants from the water prior to consumption. Correcting these errors and using more realistic, refined assumptions produce estimated risks that fall below the significance thresholds established by the regulatory community. In fact, the Sweetwater Authority-sponsored Ogden report (1997b) also concludes that "...the potential human health risks [from SR 125 air emissions] are within acceptable levels."

Overall, the risk assessment methodologies used by the Sweetwater Authority-sponsored reports are inappropriate. By focusing on emissions from SR 125 alone, the reports have neglected to account for existing regional emissions that are at least 250 to 500 times more important than potential future emissions from SR 125. If air pollution contributes to the degradation of surface waters, then regional impacts, rather than project impacts, would be the appropriate scale at which to conduct studies and take mitigatory action, if needed. Indeed, if the Byard report assumptions were correct, then the existing ambient air conditions at the reservoir would indicate about 200 excess cancers in Sweetwater Reservoir's customers today from benzene alone, in contrast to the Byard report's estimate that 0.8 excess cancers will be associated with SR 125 benzene emissions. The Sweetwater Authority reports no detection of chemicals such as benzene in their water quality monitoring program, and common sense indicates that the projected impacts of SR 125 would therefore be immeasurably small.

8. RECOMMENDED FURTHER RESEARCH

If further research is considered, UCD recommends that a broader review of air pollution and drinking water be undertaken to determine what, if any, long-term research efforts might be useful. Such research may be appropriately undertaken by a variety of public health and/or environmental management agencies, and UCD does not recommend which agencies are most appropriate for conducting such work. These research efforts, if pursued, would need to comprehensively measure and evaluate numerous factors, including the following:

- regional air pollutant transport;
- ambient background pollutant concentration levels in all areas adjacent to the water body;
- the methods by which pollutants deposit onto, evaporate out of, settle from, and are mixed into the water body;
- the relative pollutant contributions made by various pollution sources; and
- the effectiveness of routine and existing water treatment processes in removing potentially harmful compounds originating in the air.

Conceptually, we recommend dividing future research efforts into six phases. The phases are roughly sequential so that findings of concern during one phase should motivate continued research efforts and movement to subsequent research phases. The six phases include:

Phase 1: Use the Byard report's analytical approach to predict the concentration of pollutants expected in the water supply, based upon existing regional air toxics concentrations. The goal would be to compare pollutant concentrations predicted by the Byard methodology to "real world" values.

Phase 2: Evaluate existing drinking water data from various reservoirs located near major roadways. The goal would be to determine whether air pollution is contributing significant additional health risks to drinking water supplies.

Phase 3: Establish a study protocol to evaluate whether regional air pollution problems degrade water quality in California drinking water reservoirs. The study design could include specific tasks to evaluate project-level impacts, but we recommend that, given the much greater importance of regional pollution, the protocol should first focus on regional pollution problems. The goal would be to reach consensus among air and water quality experts as to the best, scientifically sound approach for evaluating the relationship between regional air pollution and water quality.

Phase 4: Implement short-term (i.e., one- to three-year) monitoring at several study locations to measure air pollution concentrations and pre- and post-treatment water pollution concentrations. The goal would be to implement the first part of the study protocol (developed under Phase 3), and to determine whether there is any evidence to support the need for long-term monitoring, data analysis, and risk assessment work.

Phase 5: Evaluate monitoring results. The goal would be to document the relationship between air pollution and water quality. If the research findings suggest a cause for concern, longer-term monitoring programs can be initiated.

Phase 6: Implement long-term air and water quality monitoring but only if prior research suggested a need to do such monitoring, and only if available measurement methodologies are sufficiently sensitive.

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APPENDIX A

BENZENE EXAMPLE OF REGIONAL VS. PROJECT-LEVEL POLLUTION

Highlights

- Regional benzene emissions will be about 500 times more important than SR 125-specific benzene emissions in determining benzene concentrations in the Sweetwater Reservoir.
- The Byard report uses outdated emissions information which doubles the benzene emissions expected from vehicles using SR 125.
- The Byard report uses a number of unrealistic assumptions that drastically overstate anticipated health risks from benzene in the water supply.
- Ignoring the problems of overstated benzene concentrations in the water supply, the implications of the Byard report are that by the year 2015, more than 400 Sweetwater Reservoir users would experience excess cancer risk due to benzene exposure, less than 1 case of which would be associated with SR 125 emissions. If significant risks actually were to occur from SR 125, they must already exist at a much greater level in the reservoir now from benzene alone. There is no evidence to indicate that this has happened.

Background

The Byard report predicts significant cancer risks associated with air emissions from vehicles using SR 125. A closer examination of those risks helps to illustrate how the report (1) overestimates health concerns from SR 125 and (2) fails to appropriately evaluate this issue as a regional problem. This discussion uses the pollutant benzene as an example. Benzene exists in gasoline and, therefore, in motor vehicle emissions. The Byard report estimates that SR 125's build-out will contribute enough benzene emissions to trigger about 10 excess cancers per million people exposed through the Sweetwater Reservoir's water supply.

- Byard estimates benzene air concentrations to be 1.9 parts per trillion (ppt) over the reservoir, due to SR 125-related traffic.
- Background benzene concentrations monitored by ARB (in 1997) in the San Diego area were 600 ppt at El Cajon, and 428 ppt at Chula Vista (an average of 514 ppt, or about 250 times more than the 1.9 ppt associated with SR 125).

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- Thus, the urban background concentration is approximately 250 times greater than the concentration predicted by the Byard report with respect to SR 125. In other words, benzene concentrations observed in the reservoir would be overwhelmingly dominated by regional emissions (250 times more important) than from SR 125.
- Even these numbers overestimate the impacts of SR 125, however, for two reasons: (a) the Byard study makes unrealistic assumptions that artificially inflate the concentration of benzene in the water, and (b) benzene emissions from SR 125 traffic will further be reduced to about one-half the levels predicted by the Byard study, when RFG use is considered. [As background information, RFG has been in use in the San Diego area since 1995 and has lowered ambient benzene concentrations by approximately 30 to 60 percent; the Byard study used data that pre-dates the implementation of RFG.]
- Thus, without further adjusting for other unrealistic assumptions included in the Byard study, it is reasonable to say that regional benzene emissions will be about 500 times more important than SR 125-related emissions when considering the concentration of benzene in the Sweetwater Reservoir.
- Further risk reductions are appropriate, however, because the Byard report substantially overpredicts the pollutant concentrations occurring in the reservoir.

Some Further Details on the Computed Air, Water and Risk Calculations for Benzene

- Byard estimates that in 2015, assuming Alternate 2 (the Caltrans preference) is built, approximately 16.5 lifetime cancers would be expected among the 177,000 Sweetwater Reservoir users. This estimation translates to 93 cancers per million people exposed during their lifetime.
- Fifty percent of the Byard report's risks come from just four pollutants, one of which is benzene.
- Byard estimates that benzene contributes 11 percent of the total health risk.
- The Byard report, therefore, estimates that exposure to benzene from nearby traffic on SR 125 and SR 54 will lead to an approximate excess cancer risk of 10 cancers per million people (11 percent of 93).
- The report's health risk assumptions are based on benzene from SR 125 and from SR 54 resulting in an average air quality concentration over the reservoir of 1.9 parts per trillion (ppt) of benzene.
- The ARB currently monitors for ambient benzene levels in El Cajon and Chula Vista. These stations are "neighborhood scale" stations sited to be representative of background air quality over a spatial area of one-half to a few kilometers. The ARB reports that the average ambient benzene concentration in 1997 was 600 ppt at their El Cajon site and 427 ppt at their Chula Vista monitoring site—suggesting that 1997 background benzene levels at the Sweetwater Reservoir are about 250 times greater than the conservatively high estimated 2015 impact from the project.

- Using the Byard report's methodologies, projected calculations would show that ambient, pre-project benzene levels would result in 2,500 cancers per million (250 times the 10 cancers per million people associated with SR 125 emissions), or roughly 443 of Sweetwater Reservoir's current customers (443 is 17.7 percent of 2,500; 177,000 reservoir users is 17.7 percent of a million people). Nevertheless, there are no data to suggest that current benzene levels exceed drinking water quality standards. Common sense indicates that the assumptions used in the Byard report are faulty.
- In addition, Byard's data pre-dates the implementation of the federal and California RFG programs. Those programs, begun in 1995, have been demonstrated to reduce benzene concentrations by 30 to 60 percent.
- Considering implementation of RFG programs, the air concentrations of benzene over Sweetwater Reservoir from SR 125 and SR 54 are approximately 500 times less than the ambient background concentrations monitored at El Cajon and Chula Vista.

If benzene from air pollution is truly a public health concern for Sweetwater Reservoir users, then only about 1/500th of the problem will be associated with the operation of SR 125, and the rest of the problem will be associated with general background conditions.

Bear in mind that this look at benzene does not address the other unrealistic assumptions made by the Byard report in projecting how ambient air concentrations translate into water pollution and public health risks.

Brief Documentation Illustrating How Benzene Has Been Reduced by RFG

Several studies show that significant decreases in ambient benzene concentrations (30 to 60 percent) have occurred following the implementation of RFG in California (and in other parts of the US). To help meet clean air standards, the Clean Air Act Amendments of 1990 (CAAA) required the use of RFG in the nine worst O₃ nonattainment areas of the country. San Diego is one of the areas required to implement this program. A key difference between Federal Phase I RFG and conventional gasoline is that RFG has significant reductions in benzene and total aromatic hydrocarbon levels in the fuel and consequently in the exhaust and evaporative emissions. The federal RFG requirement has two key phase-in milestones: Phase I RFG was required to be available at gasoline retail operations beginning January 1, 1995. Phase II RFG, which will require further hydrocarbon and toxic reductions, is required to be available in the year 2000. In addition, California has had separate fuel requirements that also require gasoline reformulation that target benzene reductions (implemented in early 1996). Following are data references that document a 30 to 60 percent reduction in ambient benzene: ARB (Hammond, 1996), University of California, Berkeley (Kirchstetter et al., 1999), Sonoma Technology, Inc. (Main et al., 1998, 1999a, 1999b), and Desert Research Institute (O'Connor et al., 1998; Zielinska et al., 1997).

Appendix A References

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APPENDIX B

EMISSIONS DENSITY PLOTS FOR THE SAN DIEGO REGION

Discussion

Attached are two figures that show CO emissions in the San Diego metropolitan area. **Figure B-1** covers much of southern California, including Los Angeles and San Diego. **Figure B-2** is an enlargement of the San Diego metropolitan area, with the Sweetwater Reservoir indicated. Also, **Figure B-2** displays prevailing wind direction and wind speeds. The figures illustrate the latest available spatially plotted data for CO emissions in the San Diego region.

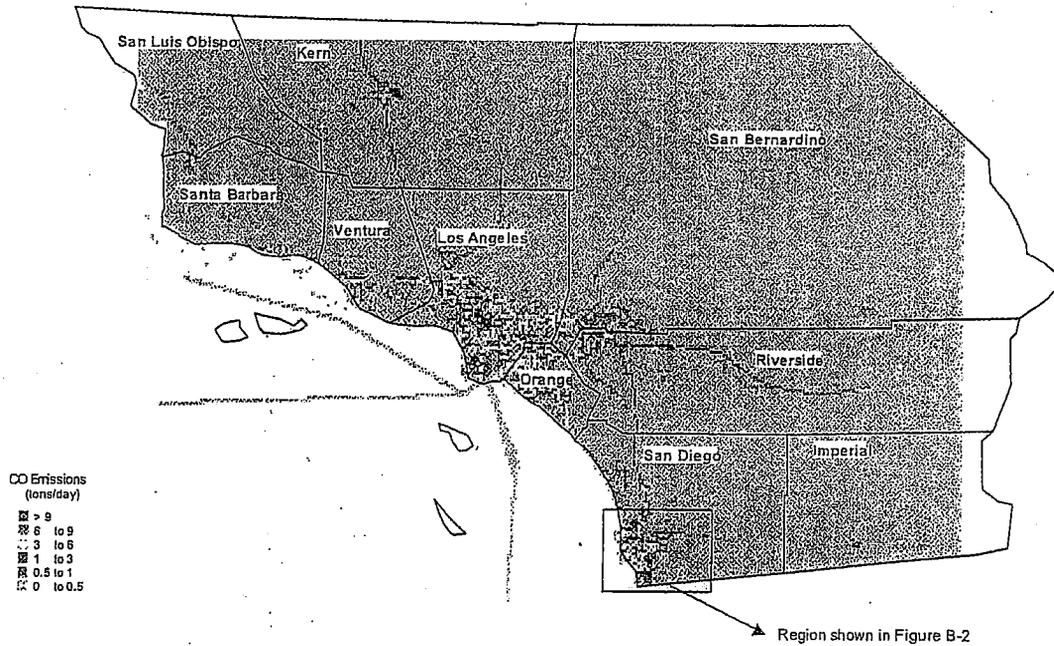
Since the vast majority (typically 70 to 90 percent) of all CO emissions are from mobile sources, these plots are a surrogate for portraying air pollution from motor vehicles in the San Diego area. Although the exact quantity and location of CO emissions will differ now compared to the 1990 data presented, the data are still valid indicators of the broad patterns of where motor vehicle emissions occur in the San Diego region. The plots demonstrate several points:

1. Most of the motor vehicle emissions occur in the highly developed western regions of the San Diego metropolitan area.
2. Prevailing winds generally carry motor vehicle emissions to the east and southeast.
3. The vast majority of the region's motor vehicle emissions are directly upwind of the Sweetwater Reservoir.

These figures help to illustrate that roadway-related air emissions from SR 125 will be only a small fraction of the overall mobile source emissions carried over the reservoir.

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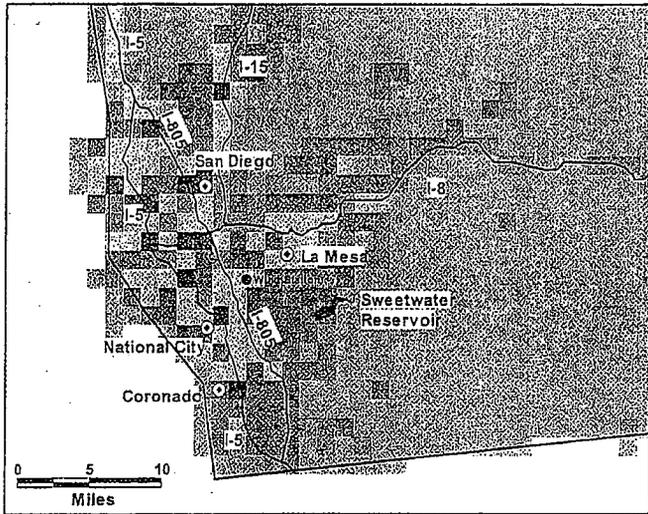
B-3



Source of Emissions Data: 1990 South Coast Ozone Study (SCOS) emission inventory obtained from ARB; emissions for point, area, mobile, and biogenic sources. This is the most recently available gridded emission inventory for the South Coast region.

Figure B-1. Carbon monoxide emissions density plot for southern California.

CO Emissions in the Southwestern Portion of San Diego County

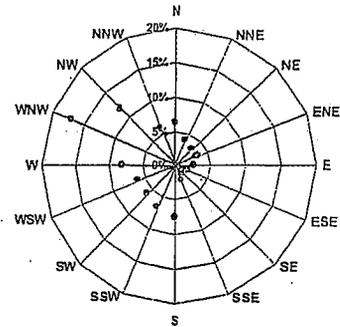


CO Emissions
(tons/day)

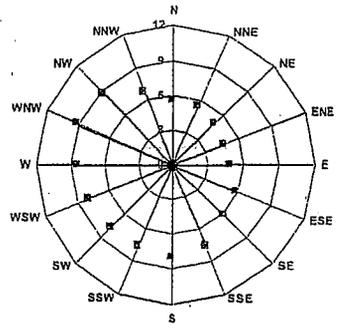
- 9 to 25
- ▨ 6 to 9
- ▩ 3 to 6
- ▧ 1 to 3
- ▦ 0.5 to 1
- ▤ 0 to 0.5

Source of Emissions Data: 1990 South Coast Ozone Study (SCOS) emission inventory obtained from ARB; emissions for point, area, mobile, and biogenic sources. This is the most recently available gridded emission inventory for the South Coast region.

Average Annual Wind Direction



Average Annual Wind Speed
(miles/hour)



Wind plots based on 15 years worth of surface meteorological data collected in San Diego (ARB Aerometric Data Division; *California Surface Wind Climatology*, 1984).

B-4

Figure B-2. Carbon monoxide emissions density plot and meteorological information for the San Diego metropolitan area.

APPENDIX C

CONCERNS WITH BYARD REPORT DEPOSITION VELOCITY ASSUMPTIONS

Overview

The "deposition velocity" is a modeling construct used to provide an estimate of the flux of material (gases or particles) depositing on a surface, given that an average concentration at some reference height above that surface and other environmental parameters are known. The deposition velocity does not represent the "true" physics or chemistry of the deposition process, nor does it account for partitioning of vapors between the gas phase and particle surfaces. In its more general forms, the deposition velocity incorporates both gravitational settling and turbulent and molecular diffusion processes. The current modeling guidelines used by the ARB permit use of the deposition velocity algorithm used in the USEPA ISC3 models. The majority of Gaussian plume models used for screening and refined analysis (e.g., SCREEN) do not incorporate plume depletion and hence do not conserve total mass. However, the latest version of ISC3 does; but, as noted elsewhere, it requires size distribution data. If size distribution data are available, they can be used to compute the deposition flux with a model such as ISCST3 with air district approval.

Problems with Byard Report Approach

From our discussion with Dr. Byard, the ISC3 algorithm was apparently not used for the PAH particle size distribution. Thus, just as the Byard report's analysis did not conserve mass when estimating pollutant outflow from the reservoir, the report also did not conserve mass when estimating the pollutant plume moving from an emission source towards the reservoir (i.e., the report did not properly estimate "plume depletion"). When the source is located at ground level, is distant (scenario #3), and a large deposition velocity is used (e.g., 2 cm/s, as the Byard report assumed) mass in the plume is not conserved and deposition is badly overestimated.

Note that the deposition velocity assumption (independent of assuming no plume depletion) is multiplicative with the overestimate of the mass flux out of the reservoir. Hence the overall error associated with those two calculations was at least a factor of 100 to 300 times too large.

Whereas ISC3 is often thought of as an air model that is more "refined", the application of ISC3 in this case was not "refined." There are measured size distributions of atmospheric aerosols and diesel particle size distributions, and, at worst, they should have been used (Allen et al., 1996; Venkataraman et al., 1994; Venkataraman and Friedlander, 1994). Furthermore, the analysts did not provide any enhanced vertical dispersion, which many studies have shown

occurs over roadways. A volume source should have been used in that case, but that error is probably not as large an overestimate because of the distance from the road to the reservoir, particularly the segment of the SR 54 extension that contributes over half of the calculated risk in the Byard report.

The deposition velocity used in the Byard report (2 cm/s) is acceptable for PM_{10} . However, measurements indicate that the majority of the PAH mass in "fresh" vehicle emissions is associated with particles in the ultrafine and fine modes (0.05 - 0.12 μm diameter) (Venkataraman et al., 1994; Miguel et al., 1998). In more "aged" urban particles, the PAH distribution contains a second peak in the 0.5-1 μm size range (Venkataraman et al., 1994; Allen et al., 1996). The fraction of PAH associated with smaller particles increases as molecular weight increases (Allen et al., 1996). The semi-volatile (4-ring) PAH are primarily on particles in the accumulation mode (0.5-1.0 μm) after aging. The nonvolatile PAH (5-ring and larger) are found mainly on particles in the ultrafine mode (0.05-0.12 μm range) (Venkataraman and Friedlander, 1994). Because of the proximity of the emission source to the reservoir the travel time is short, and there is little time for the redistribution of mass from the ultrafine particles to the fine particle mode.

For the particle sizes with which PAHs are associated in ambient conditions, 2 cm/s is too large a deposition velocity. Slinn and Slinn (1980) modeled the deposition velocities of particles over water surfaces. For the particles that contain the majority of PAH mass in fresh vehicle emissions (those in the 0.05 - 0.12 μm size range), the deposition velocity would be approximately 0.02 cm/s. For the PAH in aged aerosols (particles 0.5 to 1.0 μm in diameter), the predicted deposition velocity would also be about 0.02 cm/s. Thus, the PAH deposition was overestimated by a factor of 100.

The PAHs and VOCs that are in the gas phase will not deposit according to an irreversible dry deposition law. They will partition according to Henry's Law and, during periods when cleaner air moves over the surface of the water, they will be volatilized from the water body. Thus, the assumption of accumulation of two months of VOC has no scientific basis or merit.

Neglecting gas-water equilibrium can lead to an overestimation of the water concentrations of VOCs. Benzene can be used to demonstrate this point. The Byard report predicts an average benzene air concentration over the reservoir of 1.9 ppt for Alternative 2 in Year 2015. Applying Henry's Law to this air concentration would result in an equilibrium water concentration of 0.027 $\mu g/L$. Byard predicts a concentration of 6.22 $\mu g/L$, which is over 200 times larger than the equilibrium concentration calculated with Henry's Law and above drinking water standards. Given existing ambient air concentrations of benzene, there should already be routine violations of the drinking water standard for benzene if the assumptions in the Byard report are correct. The fact that such violations are not currently detected help illustrate that the Byard report overpredicts pollutant concentrations, exposure, and risk.

Appendix C References

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- California Air Resources Board (1997) California Diesel Fuel. Fact Sheet. California Air Resources Board, Sacramento. March. (Accessed via the Internet at <http://www.arb.ca.gov/diesel/dieselfs.pdf>.)
- Miguel, A. H., Kirchstetter T. W., Harley R. A., and Hering S. V. (1998) On-Road Emissions of Particulate Polycyclic Aromatic Hydrocarbons and Black Carbon from Gasoline and Diesel Vehicles. *Environmental Science & Technology*, 32(4), 450-455.
- Slinn S. A. and Slinn W.G.N. (1980). Predictions for Particle Deposition on Natural Waters. *Atmospheric Environment*. 14, 1013-1016.
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- Venkataraman C., Lyons J.M. and Friedlander S.K. (1994) Size Distributions of Polycyclic Aromatic Hydrocarbons and Elemental Carbon. 1. Sampling, Measurement Methods, and Source Characterization. *Environmental Science & Technology*, 28(4), 555-562.

APPENDIX D

CONCERNS WITH BYARD REPORT STEADY STATE EQUILIBRIUM ASSUMPTIONS

Introduction

This appendix discusses two problems associated with Byard report equilibrium pollutant concentration calculations: (1) problems with PM, and (2) problems with VOCs.

Problem Discussion 1: Conservation Of Mass Problems With Particulate Based Pollutant Analysis

The estimates of the concentrations of various contaminants within the reservoir are central to the overall assessment. The Byard report assumed that inputs to the reservoir would be by two paths: 1) the chemicals sorbed to and carried by particles that are deposited in the reservoir and 2) volatile chemicals that dissolve into the water from the air above the reservoir.

The Byard report reasoned that chemicals sorbed to PM emitted along the freeway would be carried into the reservoir with the PM deposited onto the maximum reservoir surface. Byard assumed that although the reservoir level and surface area would fluctuate over time, at some point within any year the reservoir would be full. All PM that had been deposited on the reservoir bottom when it was exposed now would be suspended in the water. The Byard report assumed that there would be no reaction, volatilization, resuspension into the atmosphere, or other losses from the PM deposited on the exposed soil. The Byard report further assumed that there is no sedimentation, decomposition, or other losses within the reservoir. These are an unrealistically conservative set of assumptions.

Accepting all these assumptions, however, the maximum possible concentration for PM will occur at steady state. This approach must satisfy a simple materials balance over long periods of time, such as a lifetime of exposure or even shorter durations. If there is no other source of a chemical, more cannot be exiting the reservoir than is deposited into it.

The mass rate of PM deposition over the reservoir was projected in the Byard report using an air model for each of the various freeway alignment alternatives, assuming a mass emissions rate of 1.9823 tons of PM emitted per mile of freeway each year. The deposition rate was then scaled for actual projected emissions rates of 2.42 tons per mile per year in 2000 and 3.51 tons per mile per year in 2015. Assuming that the overestimated emission rates were correct, which they are not, and using the average outflow from the reservoir, the average mass of PM leaving the reservoir per unit time can be calculated using the Byard report water concentrations. This can be compared with the mass of particles deposited into the reservoir per

unit time provided in the Byard report by adding the deposition rate from SR 54 to the different deposition rates from SR 125 alignment scenarios 1, 2, and 3.

Conservative estimates of contaminant concentration can be obtained by assuming that the only outflow from the reservoir is water use. In conversations with Dr. Byard and the Sweetwater Authority, we have been told that the flow rate of water out of the reservoir is about 23,000 acre-ft per year.

The deposition rate for Scenario 2 in the year 2015 is used as an example and is summarized in Table D-1. For the SR 54 extension, Byard calculated a deposition rate for PM of 403 kg/yr. For SR 125 Alternative 2, the deposition rate used was 324 kg/yr. The total deposition rate for Scenario 2 (sum of SR 54 and SR 125 Alternative 2 contributions) was 727 kg/yr. This represents the yearly input of PM into the Sweetwater Reservoir from the project. Byard predicts a PM water concentration in the year 2015 of 84.3 ug/L for Scenario 2. Multiplying this concentration by the yearly water flow rate (23,000 acre-ft/yr) yields an outflow rate for PM of 2394 kg/yr. This represents the yearly output of PM from the reservoir. Thus, the assumed particulate mass exiting the reservoir is 3.3 times (2394 kg/yr / 727 kg/yr) the mass entering the reservoir.

Table D-1. Summary of PM mass balance for Scenario 2 in year 2015.

Column 1	Column 2	Column 3	Column 4	Column 5
Routing (Scenario 2)	Dep rate (ton/yr)	Dep rate (kg/yr)	PM water concentration from Byard report (ug/L)	PM exiting reservoir at outflow of 23,000 acre-ft/yr (kg/yr)
SR54	0.444	403	46.7	1326
Alt 2	0.358	324	37.6	1068
Total Values for Scenario 2	0.802	727	84.3	2394
Mass in/mass out ratio:	3.3 (Equal to Column 5 divided by Column 3)			

It is seen that in the year 2015 the amount of PM mass exiting the reservoir is a factor of 3.3 greater than deposited into the reservoir, an impossibility. The same methodology was used in the year 2000, yielding a factor of 2.4 overestimate. Concentrations of specific polycyclic aromatic hydrocarbons (PAHs) deposited with particles were estimated by multiplying the concentration of the specific PAH in PM by the concentration of PM in the reservoir. Thus, the particulate associated pollutant concentrations are overestimated by a minimum of a factor of 2.4 in the year 2000 and 3.3 in the year 2015. In addition, Dr. Byard assumed that some of the PAHs partition to the gas phase, but those pollutants should then have been treated using the Henry's Law approach. For a compound such as phenanthrene, which is semi-volatile, the overestimated water concentrations are about a factor of 25 too large.

Problem Discussion 2: Overestimation of VOC Deposition Due To Air – Water Equilibrium / Exchange Problems (i.e., Henry’s Law)

Volatile contaminants may enter the reservoir by dissolving from the air above the reservoir surface. The maximum concentration for this route, assuming that there is no release of a volatile compound from the deposited PM and without any transformations in the reservoir, will occur when the reservoir is at equilibrium with the air. The partial pressure of a VOC in the air and the equilibrium concentration in the water are related by the Henry’s Law coefficient for that VOC. The Byard report did not use Henry’s Law to calculate the VOC water concentrations. Instead, the report used the same irreversible deposition model that was used for PM. This is inappropriate, since VOCs do not exhibit the same deposition behavior as particles.

The equilibrium water concentrations of benzene in the various scenarios are presented in **Table D-2**. Benzene is a volatile compound that occurs almost exclusively in the exhaust vapor phase. The water concentrations predicted by the Byard report are also shown. A comparison between the values shows that the Byard report overpredicts the benzene concentrations in the year 2000 by more than a factor of 150 and by more than a factor of 200 in the year 2015.

Table D-2. Estimated concentrations of benzene in the Sweetwater Reservoir resulting from SR 54 and alternative alignments for SR 125.

	Calculated Concentration of Benzene in Reservoir Accounting for Henry’s Law		Byard Report’s Estimate of Benzene Concentration in Reservoir, Neglecting Henry’s Law	
	2000 (µg/L)	2015 (µg/L)	2000 (µg/L)	2015 (µg/L)
Alternative 1	0.0290	0.0309	4.79	6.83
Alternative 2	0.0255	0.0272	4.21	6.22
Alternative 3	0.0215	0.0229	3.55	5.50

Henry’s Law coefficient used for calculations: 0.18 mol/L·atm at standard temperature and pressure.

APPENDIX E

BRIEF REVIEW OF INFORMATION ON RESERVOIRS NEAR HIGHWAYS

Introduction

UCD researchers identified several examples of California reservoirs located near highways. UCD then contacted reservoir management staff to gather background information and to identify available water quality data. Table E-1 summarizes some of the information collected.

Table E-1. Summary information for reservoirs near major roadways.

Source Water	Residence Time of Drinking Water in the Reservoir	Max Capacity (acre-ft)	Distance to Roadway (in meters)	Monitoring Results
Castaic Lake	1+ year	350,000	~100-200m from I-5 (southern end of lake)	MTBE – average values below 10 ug/L in 1997
Silverwood Lake	~1 month	78,000	~150m from Hwy 138 at closest point	MTBE – average values below 5 ug/L in 1997
Los Angeles Reservoir	~ 8 days	10170	~ 180m from I-5 at closest point	MTBE – 11 samples over two years, all ND
Crystal Springs		~57900	~ 200m from Hwy 280	MTBE – monitored for a couple of years, all ND; very low number of detects for anything other than disinfection by-products
San Andreas		~ 19000	~ 200m from Hwy 280	MTBE – monitored for a couple of years, all ND; very low number of detects for anything other than disinfection by-products
Sweetwater Reservoir	~ 1 year	~ 28,000, but operates below capacity most of the time	~200 to 600m from SR 125, depending on configuration chosen.	According to their Annual WQ reports, ND for all organics tested in the treated water, with the exception of THMs. THM values averaged 0.073 mg/L (0.1 is standard) in 1998*

* Trihalomethanes (THMs) are not emitted from vehicles in measurable quantities and are largely formed by chlorination of natural waters for disinfection purposes.

Table Sources: Metropolitan Water District (1998) for Castaic and Silverwood Lake data; Miller (1999) for Los Angeles Reservoir data; Caskey (1999) for San Andreas and Crystal Springs Reservoir data; Sweetwater Authority (1999) and Byard and Giroux (1999) for Sweetwater Reservoir.

Summary Discussion of Research

UCD researchers spoke with representatives from the Los Angeles Department of Water and Power (Los Angeles Reservoir), Metropolitan Water District of Southern California (Castaic Lake, Silverwood Lake), and San Francisco Department of Water (San Andreas, Crystal Springs). In general, reservoir representatives did not express concern about contamination from motor vehicle emissions; their biggest concern appears to be disinfection by-products [e.g., trihalomethanes (THMs)].

Most of the agencies interviewed do not test their source water for VOCs. The Los Angeles Department of Water and Power tested the Los Angeles Reservoir for MTBE intermittently between 1996 and 1998. All samples were "not detect" (ND) at a detection limit (DL) of 5 ug/L (Miller, 1999).

Castaic and Silverwood Lake Discussion

In 1997, the Metropolitan Water District of Southern California tested their source water for gasoline hydrocarbons to determine the impact of recreational activities on water quality. Two of the reservoirs tested are near highways. Castaic Lake, which is east of Interstate-5, and Silverwood Lake, which is east of Highway 138, were tested for MTBE. Motorized water recreation is allowed at both lakes year round.

Castaic Lake

In the summer months (April through September) the lake is thermally stratified and recreational use is high. The MTBE concentrations ranged from 2 to 29 ug/L in the epilimnion (upper layer of the lake). The concentrations ranged from ND to 2.6 ug/L in the hypolimnion (lower depth of lake). During the winter (when no stratification occurs and recreational activity is limited), the values ranged from ND to 3.8 ug/L. The majority of the MTBE detected was due to recreational activities on the lake, especially vehicles with two-stroke engines (e.g., jet skis). (Metropolitan Water District, 1998).

Silverwood Lake

Silverwood Lake usually has high levels of aquatic recreation. During the summer recreational period (March through September), the MTBE concentrations in the epilimnion ranged from 1.8 to 6.9 ug/L and from 2.2 to 4.1 ug/L in the hypolimnion. In the winter, when the lake is destratified, the values ranged from ND to 1.1 ug/L. Very low levels of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) compounds were also detected near the lake surface throughout the sampling period. (In general, BTEX compounds originate from petroleum sources.) These compounds volatilize quickly, so they were not considered to be a persistent problem in the lake (Metropolitan Water District, 1998).

In both lakes, the epilimnion concentrations were higher than the hypolimnion concentrations during the summer. This was due to the development of a thermocline, which

essentially isolated the upper layers of the lakes from the lower layers, and the high recreational activity. In the fall, the lakes become destratified, leading to mixing of the water from the hypolimnion and epilimnion. The recreational activity also decreases, leading to the lower concentrations found during the winter months (Metropolitan Water District, 1998).

The current action level for MTBE in California is 13 ug/L, and the secondary MCL is 5 ug/L (California Department of Health Services, 1999). Thus, even if the MTBE concentrations in Castaic and Silverwood Lakes in the winter months are due solely to atmospheric deposition, the levels are still below California water quality standards. The low observed levels of BTEX compounds in the lakes is not surprising, since MTBE tends to be more persistent in water than other petroleum hydrocarbons. MTBE is more soluble than most gasoline constituents and does not volatilize or biodegrade as quickly (Office of Science and Technology, 1997).

Appendix E References

- Byard J. and Giroux & Associates (1999) The Impact of SR 125 Vehicle Emissions on the Sweetwater Reservoir. Prepared for the Sweetwater Authority, April.
- California Department of Health Services (1999). *California Drinking Water Standards, Action Levels, and Unregulated Chemicals Requiring Monitoring*.
- Caskey, P. (1999) San Francisco Department of Water - Water Quality Laboratory, personal communication.
- Metropolitan Water District (1998) *Methyl Tertiary Butyl Ether Monitoring Program at the Metropolitan Water District of Southern California*.
- Miller G. (1998) Los Angeles Department of Water and Power - Water Quality Office, personal communication.
- Office of Science and Technology (1997) *Interagency Assessment of Oxygenated Fuels*. Washington D.C.: Office of Science and Technology, National Science and Technology, Executive Office of the President of the United States.
- Sweetwater Authority (1999) Annual Water Quality Report 1998.
- Tahoe Research Group (1998) Sources, Fate and Transport of MTBE in Sierra Nevada Multiple Use Lake.

EXHIBIT "H"

DEPARTMENT OF TRANSPORTATION

DISTRICT 11

P.O. BOX 85406, M.S. 25
SAN DIEGO, CA 92186-5406
PHONE: (619) 688-6136
FAX: (619) 688-3192



September 4, 2001

Mr. John H. Robertus
Executive Officer
San Diego Regional Water Quality Control Board
9771 Clairemont Mesa Boulevard, Suite A
San Diego, CA 92124-1324

Dear Mr. Robertus:

This correspondence is in reference to the Clean Water Act Section 401 Water Quality Certification dated April 24, 2001, issued by your office for the State Route 125 South project in San Diego County (File No. 99C-133). Specifically, it is to inform you of activities performed pursuant to the Special Condition listed on Page 2 of the Water Quality Certification which states, "Caltrans shall promote and pursue a regional air deposition study that will include the Sweetwater Reservoir Airshed."

In a recent letter we received from the Sweetwater Authority (SWA) on June 15, 2001, which was also copied to you, we were invited "into a partnership" involving the SWA's air quality monitoring program. It suggests that doing so would fulfill the Special Condition noted above. Although we do not believe the Special Condition requires our participation in SWA's air monitoring program, we want to make you aware of the substantial efforts we have participated in to date that do address the Special Condition.

The California Department of Transportation (Department) has a long history of addressing the issue of air pollutant deposition in the vicinity of the Sweetwater Reservoir. Beginning in 1997 when the SWA submitted its first of two reports assessing the impacts of SR 125 vehicle emissions on the Sweetwater Reservoir, we worked with air and water quality scientists from the University of California at Davis to review and comment on the reports. The University of California, Davis team participated along with Department staff in several meetings with SWA representatives and consultants. The team produced a report in July 1999, "Proposed State Route 125 South Air Emissions and the Sweetwater Reservoir," which concluded that the latest SWA report overestimated health risks and offered no compelling evidence to suggest that air pollution from SR 125 would pose a health hazard to Sweetwater Reservoir users. We concluded that if the issue was to be pursued further, it should be considered only on a regional basis and not at a project-specific level. A copy of the report and other supporting material was provided to your staff and Board during the consideration of the Section 401 Water Quality Certification for the SR 125 South project in December 2000.

Mr. John H. Robertus
September 4, 2001
Page 2

Subsequent to the University of California, Davis report, the Department enlisted the support of the regional planning agency, the San Diego Association of Governments (SANDAG), to coordinate a series of meetings involving federal, state, and regional agencies with expertise in the fields of transportation, air quality, and water quality to assess the relationship of urban air quality to health risks from drinking water. A series of three meetings were convened on October 20, 1999, December 8, 1999, and January 20, 2000, at the SANDAG office in San Diego. Meeting participants included representatives from the San Diego Air Pollution Control District, the California Department of Health Services, the San Diego County Water Authority, the Metropolitan Water District of Southern California, the City of San Diego Water Department, the United States Geological Survey, and the Sweetwater Authority. In addition, Art Coe from your office attended the meeting on October 20, 1999. The meetings resulted in the establishment of a working group to decide if further study/research was warranted and, if so, to develop a plan or scope for the research. The working group determined that additional expertise in the areas of water quality and health risk assessment was needed and that several additional state agencies should be involved to properly assess this subject. As a result, a meeting hosted by the California Environmental Protection Agency was held on March 23, 2000, in Sacramento to consider the issue further. Attending was a select group of technical specialists representing the Office of Environmental Health Hazard Assessment, the California Air Resources Board, and the California Department of Health Services. Mr. James Bennett of the State Water Resources Control Board was also present. The meeting resulted in no further action.

We believe that the efforts of our Department, as described, fulfill the requirements of the Special Condition; and we do not intend to accept the invitation from the SWA to participate or fund their ongoing monitoring efforts at the Sweetwater Reservoir. It is our belief that the consensus of the agencies involved was that further study/research on this issue was not warranted. However, should that consensus change, we would remain a willing participant in any further efforts by an appropriate multi-disciplinary team of technical specialists to consider the issue of airborne pollutants on drinking water reservoirs, including the Sweetwater Reservoir, as long as the approach is regionally based, and not project specific.

Should you have further questions, please do not hesitate to contact me.

Sincerely,



CHARLES "MUGGS" STOLL
Deputy District Director
Environmental/SR 125 Tollway Project Manager

c: Mr. Al R. Sorenson, SWA
Mr. Eric Pahlke, SANDAG

bc: Brian Smith, HQ Planning
Mike Brady, HQ Env
Bruce April
Susanne Glasgow
Cid Tesoro

EXHIBIT "I"

1 LAW OFFICES OF DON DETISCH
Donald W. Detisch, Esq. (SBN 47675)
2 110 West A Street, Suite 750
San Diego, California 92101
3 Telephone: (619) 515-1140
Facsimile: (619) 235-9100

4 Attorneys for Defendants Sweetwater Authority
5
6
7

8 **SUPERIOR COURT OF THE STATE OF CALIFORNIA**
9 **FOR THE COUNTY OF SAN DIEGO**

10
11 **THE PEOPLE OF THE STATE OF CALIFORNIA,**
acting by and through the Department of
12 **Transportation,**

13
14 **Plaintiff,**

15
16 **v.**

17
18 **SWEETWATER AUTHORITY, and DOES ONE**
through FIFTY, inclusive,
19

20 **Defendants.**
21

) **CASE NO.: GIC 838118-1**
) **{c/w GIC 838119-1;**
) **GIC 838120-1}**

) **Parcel Nos. 32142; 32144;**
) **32152**

) **TRANSMITTAL OF**
) **SECOND REVISED**
) **STATEMENT OF**
) **VALUATION**

) **Judge: Steven R. Denton**
) **Department: 73**
) **Action Filed: Nov. 23, 2004**
) **Trial Date: April 6, 2007**

22
23
24 **TO: ALL PARTIES AND THEIR ATTORNEYS OF RECORD:**

25 Transmitted herewith is the Second Revised Statement of Valuation filed herewith for
26 and on behalf of Mr. Kenneth Keagy. Since the filing of the Original Statement of Valuation and
27 First Revised Statement of Valuation, the U.S.G.S. Service, a federal agency, has refused to
28 allow Dr. Michael Majewski to testify and who was listed in the referenced statements.

1 Sweetwater has designated Mr. Michael McGuire and Dr. Rula Deeb to testify as expert
2 witnesses. Dr. Deeb and Dr. McGuire have already been deposed by Plaintiff, which is aware of
3 Mr. Keagy's reliance upon them. This was specifically expressed in Mr. Keagy's Declaration of
4 March 5th, 2007 filed in connection with Cal Trans Motion in Limine to exclude evidence. Mr.
5 Keagy is available immediately for a further deposition if Plaintiff so desires. Defendant will
6 waive formal notice and any statutory notice period. To schedule his deposition, Plaintiff should
7 call (619) 515-1140 immediately.

8
9 Dated: March 29, 2007

LAW OFFICE OF DON DETISCH

10
11
12 By 

13 Donald W. Detisch, Esq., Attorney for Defendants,
14 Sweetwater Authority

SAN DIEGO SUPERIOR COURT CASE NO.: GIC 839120

County of San Diego v. Sweetwater Authority

SECOND REVISED STATEMENT OF VALUATION DATA

Name: Kenneth A. Keagy, MAI
Address: 8321 Lemon Avenue, La Mesa, CA

The conclusions of fair market value and just compensation expressed herein are based on all currently-available information, including revised Caltrans R/W maps received by Keagy Real Estate on November 10, 2006. Should additional, pertinent information become available from studies, plans, designs, expert testimony and other similar sources during the discovery and litigation preparation process, such new information will be considered in the appraisal process. The conclusions of value below, therefore, are potentially subject to change either upward or downward.

The following opinions include severance damages for the past and anticipated future costs of air and water quality monitoring studies relating to SR-125 impacts to Sweetwater Reservoir. The air and water quality studies mitigate the diminution in value that would otherwise occur by effectively preserving the ability of Sweetwater to bring a defensible legal claim against Caltrans in the future should a causal link between the freeway and the magnitude of the water quality degradation be precisely and/or conclusively confirmed. For this reason, the opinion of severance damages only includes the cost of the air and water quality studies, but does not include the diminution in value that would occur absent the studies. Should the court determine that Sweetwater cannot effectively preserve its right to bring a future legal claim against Caltrans for water quality degradation, and that the water quality issue must be adjudicated in the current litigation, I will opine that the diminution in value, or severance damages, is \$24,589,505.

The following opinions of value presume acceptable design/build solutions to the outstanding access, pipeline protection, drainage, flowage, trail, fencing and security issues outlined in Section A (West Parcel - 32152) of attached Exhibit A. The opinions below presume that the grant of property rights to Caltrans will be subject to a reservation of easement rights to Sweetwater Authority for vehicular access, general utility, and flowage rights. The opinions below presume that all obligations and commitments of Otay River Constructors and San Diego Expressway LP to Sweetwater Authority set forth in the Agreement For Protection Of Water Facilities (dated September 23, 2004) will be honored.

Subject to the above caveats, if called, I will testify to the matters and opinions set forth in subdivisions (A) and (B) herein.

- | | | |
|-----|---|--|
| (A) | 1. Fair Market Value of Larger Parcel: | <u>\$300,000.000</u> |
| | 2. Value of Parts Taken: | <u>\$ 135,315</u> |
| | R/W Parcel 32152: \$174,418 | |
| | 3. Amount of Severance Damages: | <u>\$ 3,476,520</u> |
| | 4. Amount of Benefits: | <u>None</u> |
| | 5. Total Real Property Compensation: | <u>\$ 3,611,835</u> |
| | 6. Amount of Other Compensation: | <u>None</u> |
| (B) | Basic Data and Opinions: | |
| | 1. Estate or interest valued: | <u>Fee Simple, subject to access, utility and flowage easement reservations</u> |
| | 2. Date of Valuation | <u>November 23, 2004</u> |
| | 3. Opinion of Highest and Best Use | <u>Public drinking water reservoir/dam with treatment plant and water transmission system</u> |
| | 4. Zoning of subject property | <u>S80, County</u> |
| | 5. Opinion of probability of zone change | <u>Absent reservoir use, probable change to low-density residential zoning</u> |
| | 6. Description of Larger Parcel | <u>Sweetwater Authority reservoir-related parcels totaling 1,754.77 acres (see Exhibit B for list of APNs)</u> |
| | 7. Market data is attached hereto as Exhibit C and incorporated herein. | |
| | 8. Studies | |
| | i. Depreciated Replacement Cost | |
| | a. Cost of reproduction or replacement of improvements | <u>\$295,000.000</u> |
| | b. Amount of depreciation | <u>\$ 36,250.000</u> |
| | c. Method of calculations used to determine depreciation | <u>Professional judgment</u> |
| | ii. Capitalization | <u>Not applicable</u> |

(C) My opinion is based in part on the opinion of:

1. Name: James Smyth
2. Address Sweetwater Authority, 505 Garrett Ave., Chula Vista 91912
3. Business, occupation or profession: Engineering
4. Subject matter of opinion: Engineering issues, cost to cure

5. Name: Michael J. McGuire, PhD, PE
6. Address 1821 Wilshire Blvd., Suite 302, Santa Monica, CA 90403
7. Business, occupation or profession: Environmental Consultant & Engineer
8. Subject matter of opinion: Water Quality Engineering & Costs

9. Name: Rula Deeb, PhD
10. Address 2000 Powell Street, Suite 1180, Emeryville, CA 94608
11. Business, occupation or profession: Environmental Consultant
12. Subject matter of opinion: Water quality

I, Kenneth A. Keagy, have read the above statement of valuation data and it fairly and correctly states my opinions and knowledge as to the matters stated therein.

Kenneth A. Keagy 3/29/07
Signed Dated

EXHIBIT A

SR-125 PROJECT COMMENTS TO 100% PLANS BY SWEETWATER AUTHORITY

SR 125 Project
Comments to 100%~~95%~~ Plans and ~~Bridge Plans~~ by Sweetwater Authority
July 22, 2004

(Modified July 26, 2004)

(Modified December 7, 2004)

(Modified June 28, 2005 including comments received from ORC dated June 15, 2005)

(Updated June 12, 2006)

A. West Parcel - 32152

1. Fencing/Security

- a. Per ORC, design pending for relocation of existing fencing to new right-of-way east of bridge. Gate would be needed at new property line between Caltrans and SWA. Also, Plans now reflect existing gate and fencing to remain (at south end of SWA property)? Need clarification on location of fencing and gates. This is subject to discussion with County of SD and proposed trails. See 2b.
- b. Need discussion with Caltrans as SWA needs 7/24/365 access.

2. Maintenance/Access/Trails

- a. Plan notes that access road (Now denoted as "MA 1") as an "existing trail." No legal trail exists on Sweetwater property. Plan should note this correctly as a "proposed trail." THIS IS A CRITICAL DISCUSSION POINT. THERE IS NO LEGAL TRAIL ON SWA PROPERTY. HOWEVER, ROAD CAN BE DESIGNED TO ACCOMMODATE TRAIL USE. SEE NEXT ITEM.
- b. ~~Realigning existing road at three two areas by new trails HT 11-10 (20 feet wide), 18 & 19 & HT 4 (10 feet wide).~~ Do not understand how the Plans show trails "redesigned to avoid/minimize impacts to existing dirt access road?" Need to define design for both SWA vehicles and trails (e.g., split rail fence separating traffic and trail) for use on "existing trail" (formerly HT 11). FEIR/S did not address SWA comments on this issue.
- c. New trails HT 9 & 10 4 within SWA property. Understood that SWA to deed land to Caltrans.
- ~~d. Refer to copy of letter sent to County Parks and Rec on trails.~~
- e. Understood that Conduit Road between San Miguel Road and beyond the existing gate (south end of SWA property line) will be open during construction for trail use as well as for construction traffic by ORC. Gate needs to be closed and locked when no construction activity by ORC and its subcontractors. This is generally understood to be after work is completed at end of weekday, weekends and holidays.
- f. Still need a separate meeting with County of San Diego Parks and Rec. to discuss trail issues in more detail. Issues are not resolved.
- g. Per 2e above there is no protection for the 36" pipeline located in Conduit Road from heavy construction traffic (larger than one ton). This is located south of the existing concrete protection already installed (generally between

SR 125 Sta. 190 and 194). Need an understanding of maximum size vehicle equipment using this road. Do not understand ORC's comments regarding utility plans reflect protection of facilities? Sheet U-10 does not show concrete pad over SWA 36" pipeline? Understood from ORC that no heavy equipment larger than one ton will be using Conduit Road where 36" pipeline is unprotected.

3. 36"/42" Transmission Pipelines

- a. ~~Equipment use and traffic will cross 36" and 42" for what period of time? 36" is much older than 42". Issues are vibrations from traffic and equipment to construct column footings and bridge decking. Sweetwater to retain Geotech to establish guidelines for work in vicinity. Require video camera inside both pipes to obtain "baseline" conditions. This is problematic at this time of the year due to warm weather and higher than average demands.~~
- b. ~~False work for bridge decking needs to allow a minimum 20-foot open corridor for both pipes. No plans received to date. Need to review and approve design as it relates to construction adjacent to the 36" and 42" pipelines and ingress/egress to Sweetwater Dam. Need 7/24/365 access. Plan reviewed and approved with monitoring conditions. SWA held harmless to falsework failure due to pipeline failure or flooding via spill from Sweetwater Dam.~~
- c. ~~All parties need to understand the seriousness of losing either of these pipelines. This is especially critical between May 15 and October 15. Treated water availability in summer or warm weather is of great concern. SWA pumps raw water from Sweetwater Reservoir for treatment in summer. Loss of either pipeline or 42" upstream of the 36"/42" wye requires Sweetwater to contact other agencies for emergency supplies through existing emergency connections. However, the flows are significantly less than what may be needed if these lines need to be taken out of service due to damage. As mitigation: a) install temporary hi line with two 24" or 30" wet taps on existing 42" pipeline. Hi line would be minimum 30" diameter and can be HDPE material and 2) permanent emergency connection to City of San Diego transmission pipeline in Bonita Road to Sweetwater's existing 36" pipeline. SWA to contact City on this.~~
- e. ~~Add fencing to protect 42" upstream of 36"/42" wye from all equipment.~~
- d. ~~Permanent crossing protection needed on 36" due to new access road (no current designation but former IIT 11) MA1. This is a changed condition to the 36" pipeline not addressed in past. Mitigation required to protect. No design received to date.~~
- e. ~~Project has impacted alignment for future 36" pipeline in vicinity of bridge. Will discuss with Caltrans regarding permanent casements needed to SWA standards.~~
- f. ~~Grading sheet G-10 reflects fill over existing 36" pipeline. Move fill or pipeline to mitigate. Also, surface drainage over 36" pipeline and MA1. How will road and ground surface over pipeline be protected from erosion?~~

g. Does ORC have survey data for actual location of SWA 36" and 42" pipeline based on SWA mark outs in field? If yes, may SWA have a copy of the data (electronically preferred).

4. Other

- ~~a. Will access be maintained to existing County of San Diego water meters. Impacts from grading?~~
- b. ~~Powder building is not impacted, but access is impacted. Relocate structure offsite. Specific location to be either Perdue Treatment Plant or Fishing Program.~~
- c. Haz material response plan needed per FEIR/S request by SWA. Not addressed in latest comments.
- ~~d. Blasting requirements not fully addressed. Need clarification on blasting plan, threshold, and schedule.~~
- e. Drainage improvements conflict with 12" and 42" on Quarry Road? Need better plans. Conflict with easement for 42"? RFC plans not received to date. Information received May 30, 2006. SWA staff evaluating.
- f. Request copy of drainage study. Not addressed in latest comments.
- ~~g. Will require Utility Relocation Agreement executed by all parties for conditions herein noted.~~
- ~~h. Does ORC understand potential flows in river from: a) periodic discharge from Urban Runoff Diversion System and b) Spills over dam from intense rainfall?~~
- i. Need easement from Caltrans for access, existing and future pipelines, maintenance, etc., within proposed Caltrans property plus within portion of existing and proposed road new (formerly HT 11). SWA will define needed right-of-way/easement.
- ~~j. Comments to the bridge plans will follow in near future. Status of updated bridge plans?~~
- k. Landscape and irrigation plans? Service by which agency?
- l. Where are Drainage sheets?
- m. Grading sheets G-22&23. Drainage and grading over 42" pipeline. Move fill and protect ground surface where pipeline is located.

B. East Parcels - 32142 & 32144

1. Fencing/Security

- a. Need clarification on whether the new 6 feet high chain link fencing will have barbed wire (vertical alignment acceptable).
- ~~b. Add new fencing on northside of new Summit Road and tie to fencing proposed around detention basin with a gate on SWA road.~~
- c. Current plans do not show new trails HT 2 and HT 5; therefore, assumed no longer in design. Comment relating to FEIR/S issue is not relevant in context of allowing access to SWA property without its approval.

- d. Need understanding on what temporary vs. final fencing will be installed. Assumption is new trail and fencing installed prior to taking old trail out of service. See Item 2a. Please define RFC. Plans have not been received to date.
- e. Need better transition for vehicles between HT1 and existing trail at east end of SWA property (@ Sta HT1 12+06). Plans have not addressed this.

2. Maintenance/Access/Trails

- a. ~~Confirm new trail HT1 (10-foot wide) will be inside or outside Caltrans ROW? Resolution of environmental impacts? (covered by updated EIS?). West connection to existing trail is incorrect. Do Plans reflect slope away from reservoir. Where is point of discharge on Plans? Design trail on south side of fence? Understood that new trail will be built prior to existing trail taken out of service to eliminate threat of public not obeying temporary trail closure signs proposed by ORC.~~
- b. Design for SWA vehicle transition from east end of new trail HT1 (east end of SWA property) to existing trail heading north. Not addressed in latest comments.
- c. Eliminate new trails HT1 (east end only) and HT5 as new breach to SWA property. Comment relating to FEIR/S issue is not relevant in context of allowing access to SWA property without its approval.
- d. ~~Eliminate new trail HT3 as Sweetwater is eliminating this trail due to environmental protection.~~
- e. ~~Provide Caltrans/ORC with copy of letter sent to County Parks and Rec on trails.~~
- f. ~~Trail HT4 (10-foot wide). Need design for vehicle and trail use (e.g., split rail fence separating traffic and trail). See next item.~~
- g. "Old Summit Road" is not an existing trail. Modify not to read "proposed trail." Design traveled road for two-way traffic plus accommodate trail use. Need to better understand design for SWA use, Caltrans maintenance access to drainage basin and trail use. Not addressed on latest comments.
- h. Need understanding of design of Summit Road and width for traffic and trails. Not addressed in latest comments.
- i. Still need a separate meeting with County of San Diego Parks and Rec. to discuss trail issues in more detail. Issues are not resolved.
- j. Need easement from Caltrans for access, pipelines, maintenance, etc., within new Summit Road. Replaces existing easement in existing Summit Road. SWA will define needed right-of-way/easement.
- k. Understand existing trail easement legal description will be developed by Caltrans and recorded for HT1.

3. Other

- a. Proposed 16" PVC (SM1) in San Miguel Road and Summit Road by SWA not shown on Plans (U sheets?). To be installed by SWA. Need ORC to contact SWA at least 90 days in advance for preliminary window of construction and 30 days in advance for specific construction start date. A minimum of 30

calendar days is needed to complete the work. A preconstruction meeting is also required with ORC at least 10 calendar days in advance of construction.

- b. SWA has interest in acquiring property east of Thompson parcel. Will discuss with Caltrans.
- c. 12" ACP drain pipe south side of Southdike. Allow for drainage. Need to reflect on Plans.
- d. Status of irrigation service of freeway by Otay in SWA service area.
- e. Haz material response plan needed per FEIR/S request by SWA. Not addressed in latest comments.
- ~~f. Will require Utility Relocation Agreement executed by all parties for conditions herein noted.~~
- g. Resolution needed on recent discussions between and among Caltrans, County of SD and Sweetwater on Sweetwater landfill.
- h. Need easement from Caltrans for access, pipelines, maintenance, etc., within new Caltrans property. SWA will define needed right-of-way/easement.
- i. Where are Drainage sheets?

EXHIBIT B
COUNTY ASSESSOR PARCELS
CONSTITUTING THE LARGER PARCEL

<u>APN</u>	<u>ACRES</u>
579-140-22	2.27
580-010-08	30.94
580-010-09	4.16
584-200-56	1.40
584-200-57	1.78
584-572-23	2.94
584-100-52	3.12
585-100-15 (por)	6.94
585-160-04	21.26
585-160-09	8.19
585-160-13	5.28
585-160-14	5.26
585-160-15	97.02
585-161-01	119.25
585-161-03	184.09
585-161-04	1,087.45
585-170-06 & 07 (por)	33.96
585-170-04	6.82
585-170-05	40.34
585-170-17	22.35
585-170-18	69.36
<u>586-060-10</u>	<u>0.59</u>
Total	1,754.77

EXHIBIT C

LAND SALES SUMMARY							
Sale No.	Location	Buyer Seller	Sale Price Terms	Recording Date Document No.	Lot Size (AC) Shape		
1	Village 15, Otay Ranch, east of Lower Otay Lake	State of California McMillin Otay Ranch LLC	\$19,500,000 Cash	January 2, 2004 0001301	729.26 AC Irregular		
2	Village 14 and Planning Area 16, Otay Ranch, on Proctor Valley Road	US Fish & Wildlife Service Otay Land Company LLC	\$22,500,000 Cash	April 24, 2003 0475276	1,445.9 AC Irregular		
3	Planning Area 18A, Otay Ranch, north of Lone Star Rd., south of Otay River	South County Investors LLC NM Homes Two Inc.	\$12,000,000 Cash	August 6, 2002 660382-84	892 AC Irregular		
4	W & S side Proctor Valley Rd., S. of Bonita Meadows Lane, Bonita	Caltrans Buie-Bonita Meadows LLC	\$4,788,000 Cash	October 8, 2001 723835	231.43 AC Irregular		
5	Sweetwater River at Dehesa Rd., north of McGinty Mtn.	Sycuan Tribal Development LaSalle Bank, N.A.	\$25,000,000 Cash	December 29, 2004 1226061	1,236 AC Irregular		
6	S. of Olympic Parkway at Huute Parkway, Otay Ranch	Brookfield Shea Otay LLC NM Homes Two, Inc.	\$34,000,000 Cash	May 18, 2000 0259409	1,203.72 AC Irregular		
7	W/S Dairy Mart Rd., opposite Camino de la Plaza, Tijuana River	County of San Diego Hanson Aggregates Pac. SW	\$1,387,500 Cash	December 20, 2002 116412	75.59 AC Rectangular		
8	NEC Hollister St. & Sunset Ave., Tijuana River Valley	County of San Diego Marathon Land & Cattle Co.	\$1,203,400 Cash	June 5, 2003 664012	63.93 AC Rectangular		

3 **PROOF OF SERVICE**

4 I, Amy Brownfield, am employed by the Law Offices of Don Detisch which is in the County
5 of San Diego, State of California. I am over the age of 18 and not a party to the within action. My
6 business address where the mailing occurs is 110 West "A" Street, Suite 750, San Diego, California
7 92101. I further declare that I am readily familiar with the business' practice for collection and
8 processing of mail with the U.S. Postal Service this day in the ordinary course of business.

9 On March 29, 2007, I served the foregoing document(s) described as:

10 **TRANSMITTAL OF SECOND REVISED STATEMENT OF VALUATION**

11 on the interested party(ies) in this action by placing a true copy thereof enclosed in a sealed
12 envelope(s) addressed as follows:

13 **SCOTT FRIDELL, Assistant Chief Counsel**
14 State of California Department of Transportation
15 4050 Taylor Street, MS-130
16 San Diego, California 92110
17 *Via Facsimile & Via U.S. Mail*

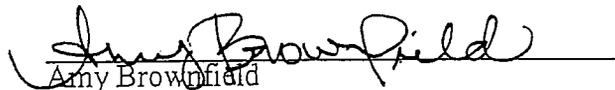
18 **JIM SMYTH**
19 505 Garrett Avenue
20 P.O. Box 2328
21 Chula Vista, California 91912
22 *Via U.S. Mail Only*

23 XXX MAIL I placed for collection each such envelope for mailing with the United
24 States Postal Service. I know that each such sealed envelope was sealed
25 and deposited with the postage thereon fully prepaid in the United States
26 Postal Service on the same day this declaration was executed in the
27 ordinary course of business.

28 XXX FACSIMILE I caused the above-referenced document(s) to be transmitted by facsimile
transmission to the above-named persons at the above-referenced facsimile
telephone number(s). Attached to this declaration is a facsimile
"Confirmation Sheet" confirming the status of transmission.

 PERSONAL I personally served the foregoing document(s) on the interested parties
indicated above.

I declare under penalty of perjury under the laws of the State of California that the
foregoing is true and correct. Executed on March 29, 2007, at San Diego, California.


Amy Brownfield

*** TX REPORT ***

TRANSMISSION OK

TX/RX NO 3446
CONNECTION TEL 6886905
SUBADDRESS
CONNECTION ID DEPT OF TRANSPOR
ST. TIME 03/29 15:18
USAGE T 02'27
PGS. SENT 15
RESULT OK

LAW OFFICES of DON DETISCH
Attorney at Law

Donald W. Detisch, Esq.
Jackie Ni Mhartin, Esq.
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FAX TRANSMISSION COVER SHEET

DATE: March 29, 2007
To: Scott Fridell
Fax: (619) 688-6905
RE: The People of the State of California v Sweetwater Authority
San Diego Superior Court Case No. GIC 838118-1
Sender: Amy Brownfield, Assistant to Don Detisch, Esq.

Please find attached hereto Defendant's Transmittal of Second Revised
Statement of Valuation.

XX Original to follow via First Class Mail
— This transmission is the intended ORIGINAL
— Other:

*YOU SHOULD RECEIVE 15 PAGE(S), INCLUDING THIS COVER SHEET.
IF YOU DO NOT RECEIVE ALL OF THE PAGES, PLEASE CALL (619) 515-1140*

CONFIDENTIAL ATTORNEY-CLIENT COMMUNICATION:
This facsimile transmittal may contain confidential information protected by attorney-client privilege, or it may contain an attorney-work product.

EXHIBIT "J"

UC DAVIS - CALTRANS AIR QUALITY PROJECT

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University of California, Davis
Engineering III, Room 2001
One Shields Avenue
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FAX (916) 653-1447
TDD (916) 654-4014

MEMORANDUM

March 7, 2006

TO: Muggs Stoll, Caltrans District 11
CC: Mike Brady, Caltrans Headquarters
FROM: Doug Eisinger, Deb Niemeier
SUBJECT: Report on Progress to Pursue an Air-to-Water, Cross-Media Research Project

This memorandum provides a summary of our efforts to assist Caltrans with research related to the potential for air pollution to deposit onto water bodies and affect water quality.

Background

U.C. Davis (UCD) has worked with Caltrans since the late 1990s to evaluate air pollution deposition on water bodies. In 1999, we completed the study, "Proposed State Route 125 South Air Emissions and the Sweetwater Reservoir: A Review of Recent Reports Sponsored by the Sweetwater Authority." At that time, we concluded that project-level air emissions would have a negligible impact on a nearby drinking water reservoir. We recommended that if there was interest in evaluating the relationship between air pollution deposition onto water bodies, and resulting impacts to water quality, that such analyses be conducted at the regional scale to better account for total air pollutant deposition.

Following completion of the 1999 report, UCD worked with Caltrans and the San Diego Association of Governments (SANDAG) to coordinate three meetings involving federal, state, and regional agency staff with expertise in transportation, air quality, and water quality. Meeting participants discussed how to assess the relationship between urban air quality and health risks from drinking water. The meetings took place on October 20, 1999, December 8, 1999 and January 20, 2000 at the SANDAG office in San Diego. In addition to UCD, Caltrans and SANDAG, participants included representatives from the San Diego Air Pollution Control District, the California Department of Health Services, the San Diego County Water Authority, the Metropolitan Water District of Southern California, the City of San Diego Water Department, the United States Geological Survey, and the Sweetwater Authority (the operator of the Sweetwater Reservoir in San Diego County). Also, a representative from the San Diego Regional Water Quality Control Board participated in the October 20, 1999 meeting. The meetings resulted in the establishment of a working group to decide if further research was warranted.

As a result of the October 1999 through January 2000 meetings, an additional meeting was held in Sacramento on March 23, 2000 to consider the issue further. The California Environmental Protection Agency hosted the March 2000 meeting. The meeting involved the Office of Environmental Health Hazard Assessment, the California Air Resources Board (CARB), the State Water Resources Control Board (SWRCB) and the California Department of Health Services, in addition to Caltrans (UCD did not participate). At that time, there was insufficient interest to generate a specific proposal for follow-up action, and the group did not meet again.

During this time period, the U.S. Geological Survey (USGS) implemented a field study at the Sweetwater Reservoir to monitor air and water quality. The USGS effort focused on gathering data to determine whether completion of the SR 125 project would have any observable effects on air or water quality at the reservoir.

Recent UCD-Caltrans Efforts to Pursue Support for a Cross Media (Air-to-Water) Study

Over the past two years, UCD has taken several steps to help Caltrans further explore whether support exists in the research community to evaluate regional-scale air-to-water pollutant deposition problems.

1. UCD discussed the status of research at the Sweetwater Reservoir with the USGS, to better understand the scope of the ongoing research they are conducting.
2. UCD developed a research proposal, with SANDAG's assistance, to address regional-scale cross-media impacts from on-road mobile source emissions. We designed the proposal to build upon and expand the USGS work. A copy of the research proposal is attached.
3. UCD shared the research proposal with the Transportation Research Board (TRB) Transportation and Air Quality committee (ADC-20), at the committee's June 2005 summer research meeting. The Transportation Research Board is a division of the National Research Council (NRC; the NRC serves as an independent adviser to the federal government and others on scientific and technical questions of national importance; the NRC is jointly administered by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine).
4. Via TRB's ADC-20 committee, we asked TRB staff to see if the proposal could be considered for funding by the National Cooperative Highway Research Program (NCHRP). NCHRP works with representatives from state Departments of Transportation across the U.S. to identify and fund research needs of national significance. The feedback we received from the ADC-20 committee chair indicates that the proposal as written did not garner sufficient interest for NCHRP. TRB may contact with us with suggestions on how to redesign the proposal to attract further interest; however, as of this date, we have yet to receive TRB suggestions on how to modify the proposal to attract additional interest.

In February 2006, CARB and the SWRCB held a public workshop to discuss air pollutant deposition, stormwater runoff, and impacts to water bodies. UCD did not participate in the

February meeting; however, it is our understanding that Mike Flake attended to represent the Caltrans stormwater program. It is also our understanding that, at the February 2006 workshop, CARB and the SWRCB announced their intention to inventory pollution sources and develop a plan to reduce pollutant deposition. Given the recent interest in these issues, it may be possible that CARB or the SWRCB would consider including the Sweetwater watershed in their upcoming research efforts. UCD is currently providing assistance to Caltrans in contacting CARB and SWRCB to determine what interest, if any, either agency has at this time in the research proposal we have developed.

Attachment: Cross-media research proposal to "Evaluate Regional On-Road Mobile Source Air Emission Impacts on Drinking Water Reservoirs"

16

Attachment: Research Scope of Work Shared with TRB During 2005

National Cooperative Highway Research Program (NCHRP): Project Proposal

Proposing Agencies

California Department of Transportation, San Diego Association of Governments

Project Title

Evaluate Regional On-Road Mobile Source Air Emission Impacts on Drinking Water Reservoirs

Project Description

Research is needed to understand how regional on-road mobile source air emissions affect the quality of drinking water reservoirs. Managers of the Sweetwater Reservoir in southern California (San Diego County) have expressed concern that mobile source-related air emissions could deposit onto the reservoir and contaminate drinking water supplies. Various California agencies have reviewed the Sweetwater Reservoir situation, and have determined that air emission impacts from a single roadway operating near the reservoir would be negligible compared to any impacts that might result from regional air pollution. What remains unclear is whether, at the regional scale, urban air pollution poses a threat to consumers of reservoir-supplied drinking water.

This research is envisioned to be performed as three sequential work phases, with completion of the second and third phases being contingent upon the results from the prior work phases. Phase I would be an initial data collection and scoping effort. The Phase I goal is to determine whether scientific evidence supports further investigation into the relationship between regional-scale mobile source air emissions and the quality of reservoir-supplied drinking water. The U.S. Geological Survey (USGS) has been investigating the issue at the Sweetwater Reservoir, and the Phase I work effort would include a review and analysis of USGS-collected data. In addition, Phase I would include a brief literature review, collection and analysis of related and readily available data, and a determination of whether further research and analysis is deemed necessary. The concluding Phase I determination shall be made jointly by the research team and a technical project review panel assembled by NCHRP to act as study peer-reviewers. If the research team and the peer-review team agree that further investigation is merited, Phase II will commence. The Phase II goal would be to develop and implement necessary short or long-term data collection. The initial task of Phase II would be to establish study sites, one of which is expected to be the Sweetwater Reservoir in San Diego County. Data collection, including retrieval of any needed air and water quality samples, would take place at appropriately selected sites to enable the research team to identify whether regional-scale air pollution adversely affects drinking water, under what conditions such adverse affects can occur, and what portion of those affects can be attributed to on-road mobile sources. If Phase II results in measured adverse impacts, Phase III would commence. The Phase III goal would be to forecast how any observed Phase II impacts would be expected to change over time given forecasted changes in air emissions.

Any work conducted should distinguish between contaminants that have deposited onto a water body from the air, and contaminants introduced into the water body via other means. For example, motor vehicle air emissions may contain methyl tertiary-butyl ether (MTBE) if vehicles

are fueled with gasoline containing MTBE. However, motor boats fueled with MTBE-containing gasoline have released MTBE into reservoirs, and leaking underground gasoline storage tanks have deposited MTBE into water supplies. Researchers need to distinguish between contamination resulting from air deposition or other contamination routes.