


Honorable Leon Acebedo
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns you may have regarding known sacred sites or other traditional cultural properties within the proposed project area. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent David Sitchler USBP San Diego Sector at (619) 478-8650.

Sincerely,


For R. Janson

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure



**U.S. Customs and
Border Protection**

OCT 25 2007

Mr. Milford Wayne Donaldson, FAIA
California State Historic Preservation Officer
ATTN: Michael McGuirt
Office of Historic Preservation
1416 9TH Street, Room 1442-7
Sacramento, CA 95814

Subject: Environmental Assessment (EA) for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector

Dear Mr. Donaldson:

While no final decisions on the fence locations have been made, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP), a component of the Department of Homeland Security, is preparing an Environmental Assessment (EA) to address the potential environmental impacts and feasibility of constructing, maintaining, and operating tactical infrastructure in segments totaling approximately 9.86 miles in length within USBP San Diego Sector, California. In preparing the EA, CBP will be working directly with the United States Army Corps of Engineers, Fort Worth District (USACE), who will provide technical expertise and other support to CBP. At this time, in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, CBP wishes to initiate consultation with your office.


To assist USBP in gaining and maintaining operational control of the border, CBP proposes to construct, maintain, and operate tactical infrastructure to include primary pedestrian fence and access and patrol roads in 14 segments along the U.S./Mexico international border. Individual segments would range from approximately 0.09 mile to 4.0 miles in length. A map presenting the proposed project sites is enclosed.

Based on Congressional and Executive mandates, CBP and USBP are assessing operational requirements and land issues along the entire Southwest border. Preparing the EA does not necessarily mean the 9.86 miles of tactical infrastructure will be installed within USBP San Diego Sector. Rather, this effort is a prudent part of the planning process needed to assess any environmental concerns in accordance with the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act (NHPA), the Clean Water Act (CWA), and other applicable environmental laws and regulations.

Mr. Milford Wayne Donaldson
Page 2

We welcome your comments on this undertaking and look forward to hearing any concerns your office may have. A cultural resources survey is currently being conducted on the project corridor, and we will provide you a copy of the cultural resources report for your review and comment once it has been prepared. We will also provide a copy of the EA for your review and comment. If you have any questions, please contact Mr. Charles McGregor by mail at USACE, Fort Worth District, Engineering Construction Support Office, P.O Box 17300, Fort Worth, Texas 76102-0300 or by telephone at (817) 886-1585 or by contacting Assistant Chief Patrol Agent David Sitchler USBP San Diego Sector at (619) 478-8650.

Sincerely,


For R. Janson

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Palm Springs-South Coast Field Office

690 West Garnet Avenue

P.O. Box 581260

North Palm Springs, CA 92258-1260

(760) 251-4800 Fax (760) 251-4899



*Visit us on the Internet at
www.blm.gov/ca/palmsprings/*

IN REPLY REFER TO:

2800P

CA660.02

NOV 02 2007

Charles McGregor
Engineering Construction Support Office
Fort Worth District, Corps of Engineers
P.O. Box 17300
Fort Worth, Texas 76102-0300

Subject: PF225 Border Project Cooperating Agency

Dear Mr. McGregor:

This letter is in response to the U.S. Army Corps of Engineers (USACE), on behalf of the U.S. Customs and Border Protection-Border Patrol, regarding the Bureau of Land Management (BLM), Palm Springs-South Coast Field Office participation in the PF225 border fence project. The BLM retains sole decision-making authority for the lands and resources it administers. For this reason, we request full cooperator status in the development of NEPA analysis documents pertaining to the PF225 border fence projects in San Diego County, California.

A cooperating agency assists the lead Federal agency in developing an Environmental Assessment (EA) or Environmental Impact Statement (EIS). The CEQ regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (See CEQ Regulations for Implementing NEPA, 40 CFR:1501.6).

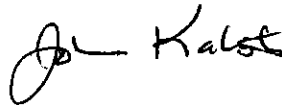
As cooperating agency, we agree to:

- Assist in the NEPA analysis at the earliest possible time.
- Participate in the scoping process, which helps define and frame the issues to be addressed in the NEPA document.
- Share freely any information and data relevant to the NEPA analysis, thereby facilitating rational, fact-based decision making.
- Defer all SHPO, Native American Consultation and Section 7 Consultation with U.S. Fish and Wildlife Service to USACE.
- BLM will issue its own decision for the EIS and FONSI for the EA.

Janaye Byergo, South Coast Project Manager, is designated as BLM's project coordinator for this effort. We request that our coordinator be kept apprised of project schedules as well as meetings with other agencies and consultants pertaining to these NEPA analyses. She can be contacted at 858-451-1767 or by email Janaye_Byergo@ca.blm.gov. In addition, please provide the BLM with all correspondence for Native American and SHPO consultation, biological and survey reports, and all correspondence with the U.S. Fish and Wildlife Service. We request that reasonable time be provided for review and comment on individual resource reports, administrative review copies of draft and final EAs or EISs, and any analysis of comments received on draft EAs or EISs.

As lead and cooperating agencies, we look forward to producing a thorough analysis sufficient for us to base our decisions.

Sincerely,

A handwritten signature in black ink, appearing to read "John Kalish". The signature is stylized with a large, looped initial "J" and a cursive "K".

John Kalish
Field Manager

Cc: Oscar Pena
USBP



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

November 5, 2007

Mr. Charles McGregor
United States Army Corps of Engineers
Fort Worth District
Engineering Construction Support Office
P.O. Box 17300
Fort Worth, TX 76102-0300

Dear Mr. McGregor:

Reference is made to various letters dated October 18, 2007, from Mr. Robert F. Janson, U.S. Customs and Border Protection, requesting us to become a cooperating agency with regard to the development of National Environmental Policy Act (NEPA) environmental documentation for the proposed construction, maintenance, and operation of tactical infrastructure throughout the international boundary. According to the letters, the following projects are being considered:

- 1) Environmental Impact Statement for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector;
- 2) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol San Diego Sector;
- 3) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol El Centro Sector;
- 4) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Yuma Sector;
- 5) Supplemental Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol El Paso Sector;
- 6) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Marfa Sector;

- 7) Environmental Assessment for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Del Rio Sector; and
- 8) Environmental Impact Statement for Proposed Construction, Maintenance, and Operation of Tactical Infrastructure, U.S. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol Rio Grande Valley Sector.

The United States Section, International Boundary and Water Commission (USIBWC) accepts your request to become a cooperating agency in the NEPA process. We look forward to working with you on issues related to the international boundary, specifically international treaties and agreements, issues related to USIBWC jurisdiction, and USIBWC real property. Due to the overwhelming list of Border Patrol initiatives along the international boundary, I have designated Mr. Richard Peace, Division Engineer, Operations and Maintenance Division, as the agency single point of contact for matters related to these projects. Mr. Peace can be reached at (915) 832-4158 for overall project coordination. If you have any questions feel free to contact me at (915) 832-4101.

Sincerely,



Carlos Marin, P.E.
Commissioner

January 31, 2008

**U.S. Customs and Border Protection Tribal Distribution List for the
PF 225 San Diego Sector Environmental Assessment**

Honorable Richard Milanovich, Chairperson
Agua Caliente Band of Cahuilla Indians
600 East Tahquitz Canyon Way
Palm Springs, California 92262

Honorable Rhonda Welch-Sealco,
Chairwoman
Barona Band of Mission Indians
1095 Barona Road
Lakeside, California 92040

Honorable John James, Chairman
Cabazon Band of Mission Indians
84-245 Indio Springs Pkwy
Indio, California 92203

Honorable H. Paul Cuero, Jr., Chairman
Campo Band of Kumeyaay Nation
36190 Church Road, Suite 1
Campo, California 91906

Honorable Harlan Pinto, Chairman
Cuyapaipe Band of Mission Indians
4054 Willows Road
Alpine, California 91903-2250

Honorable Leon Acebedo, Chairman
Jamul Indian Village, Kumeyaay Nation
13910 Lyons Valley Road
Jamul, California 91935

Honorable Gwendolyn Parada, Chairperson
La Posta Band of Indians
1048 Crestwood Road
Boulevard, California 92905

Honorable Catherine Saubel, Spokeswoman
Los Coyotes Band of Mission Indians
2300 Camino San Ignacio
Warner Springs, California 92086

Honorable Leroy Elliott, Chairman
Manzanita Band of Mission Indians
6 Old Mine Road
Boulevard, California 91905

Honorable Mark Romero, Chairman
Mesa Grande Band of Mission Indians
P.O. Box 270
Santa Ysabel, California 92070

Honorable Allen E. Lawson, Spokesman
San Pasqual Band of Diegueno Mission
Indians
27458 No. Lake Wolford Rd. Level #3
Valley Center, California 92082

Honorable Johnny Hernandez, Spokesman
Santa Ysabel Band of Diegueno Mission
Indians
P.O. Box 130
Santa Ysabel, California 92070

Honorable Daniel J. Tucker, Chairman
Sycuan Band of Kumeyaay Indians
5459 Dehesa Road
El Cajon, California 92021

Honorable Bobby L. Barrett, Chairman
Viejas Band of Mission Indians
1 Viejas Grade Road
Alpine, California 91901

Honorable Raymond Torres, Chairman
Torres-Martinez Band of Desert Cahuilla
Indians
66725 Martinez Road
Thermal, California 92274

Honorable Daryll Mike, Chairman
Twenty-Nine Palms Band of Mission
Indians
46-200 Harrison Street
Coachella, California 92236

January 31, 2008

Mr. Milford Wayne Donaldson, FAIA
California State Historic Preservation
Officer

Attn: Susan Stratton, Senior State
Archaeologist
Office of Historic Preservation
1416 9th Street, Room 1442-7
Sacramento, California 95814

Wanda Raschkow
Bureau of Land Management, Palm Springs-
South Coast Field Office
690 West Garnet Avenue
PO Box 581260
North Palm Springs, California 92258



**U.S. Customs and
Border Protection**

FEB 15 2008

Mr. Milford Wayne Donaldson, FAIA
California State Historic Preservation Officer
Attn: Susan Stratton, Senior State Archaeologist
Office of Historic Preservation
1416 9th Street, Room 1442-7
Sacramento, California 95814

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Mr. Donaldson:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

A cultural resources survey was conducted at each of the 10 proposed construction locations to identify historic properties that may be impacted by the proposed project. The survey resulted in the relocation and expansion of one bedrock milling site (SDI-14,425) and the identification of one isolated retouched flakes stone artifact. Site SDI-14,425 lies outside of the current construction area of potential effect, but is very close to the edge of the project corridor. The site was previously recorded in 1997 and determined to be ineligible for the National Register of Historic Places (NRHP) due to erosion and deflation of soils which destroyed the cultural context of the site and any related features or artifacts that may once have surrounded the site. The addition of a second locus, identified by the current survey, did not improve the integrity of the site as a whole. No soils, associated artifacts or subsurface features were identified at the site by the current survey. CBP has determined that site SDI-14,425 is still ineligible for inclusion in the NRHP. No other evidence of cultural resources was identified by the survey.

Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We ask for your concurrence with this determination. Copies of the report have also been sent to the Native American tribes on the attached list and to

Mr. Milford Wayne Donaldson, FAIA

Page 2

Ms. Wanda Raschkow, Archaeologist at the Bureau of Land Management, Palm Springs-South Coast Field Office. If you have any questions, please call Ms. Nancy Parrish, U.S. Army Corps of Engineers, at (817) 886-1725.

Sincerely,



Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)

cc: Ms. Wanda Raschkow
Archaeologist
Bureau of Land Management, Palm Springs-South Coast Field Office
690 West Garnet Avenue
PO Box 581260
North Palm Springs, California 92258



**U.S. Customs and
Border Protection**

FEB 15 2008

Ms. Wanda Raschkow
Archaeologist
Bureau of Land Management, Palm Springs-South Coast Field Office
690 West Garnet Avenue
PO Box 581260
North Palm Springs, California 92258

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

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Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We have asked the California State Historic Preservation Officer (SHPO) for concurrence with this determination. Enclosed is a copy of the letter sent to

Ms. Wanda Raschkow

Page 2

the California SHPO, along with a sample letter that was sent to the enclosed list of Native American tribes. If you have any questions, please call Ms. Nancy Parrish (U.S. Army Corps of Engineers) at (817) 886-1725.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Janson", written over the printed name.

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)

February 15, 2008

**U.S. Customs and Border Protection Tribal Distribution List for the
PF 225 San Diego Sector Environmental Assessment**

Honorable Richard Milanovich, Chairperson
Agua Caliente Band of Cahuilla Indians
600 East Tahquitz Canyon Way
Palm Springs, California 92262

Honorable Rhonda Welch-Sealco,
Chairwoman
Barona Band of Mission Indians
1095 Barona Road
Lakeside, California 92040

Honorable John James, Chairman
Cabazon Band of Mission Indians
84-245 Indio Springs Pkwy
Indio, California 92203

Honorable H. Paul Cuero, Jr., Chairman
Campo Band of Kumeyaay Nation
36190 Church Road, Suite 1
Campo, California 91906

Honorable Harlan Pinto, Chairman
Cuyapaipe Band of Mission Indians
4054 Willows Road
Alpine, California 91903-2250

Honorable Leon Acebedo, Chairman
Jamul Indian Village, Kumeyaay Nation
13910 Lyons Valley Road
Jamul, California 91935

Honorable Gwendolyn Parada, Chairperson
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Los Coyotes Band of Mission Indians
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Manzanita Band of Mission Indians
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66725 Martinez Road
Thermal, California 92274

Honorable Daryll Mike, Chairman
Twenty-Nine Palms Band of Mission
Indians
46-200 Harrison Street
Coachella, California 92236



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Richard Milanovich, Chairperson
Agua Caliente Band of Cahuilla Indians
600 East Tahquitz Canyon Way
Palm Springs, California 92262

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Milanovich:

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Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We have asked the California State Historic Preservation Officer for concurrence with this determination. Your comments on the enclosed report are welcome, and we respectfully request any information you may wish to share concerning the

The Honorable Richard Milanovich

Page 2

presence of traditional cultural properties you feel may be affected by the proposed undertaking. If you have any questions, please call Ms. Nancy Parrish (U.S. Army Corps of Engineers) at (817) 886-1725.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Janson", is positioned above the printed name.

Robert F. Janson

Acting Executive Director

Asset Management

U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Rhonda Welch-Sealco, Chairperson
Barona Band of Mission Indians
1095 Barona Road
Lakeside, California 92040

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairwoman Welch-Sealco:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Rhonda Welch-Sealco

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Sincerely,

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Robert F. Janson

Acting Executive Director

Asset Management

U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable John James, Chairman
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway
Indio, California 92203

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

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The Honorable John James

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Robert F. Janson

Acting Executive Director

Asset Management

U.S. Customs and Border Protection

Enclosure(s)



U.S. Customs and
Border Protection

FEB 15 2008

The Honorable H. Paul Cuero, Jr., Chairman
Campo Band of Kumeyaay Nation
36190 Church Road, Suite 1
Californiampo, California 91906

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
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The Honorable H. Paul Cuero, Jr.

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Harlan Pinto, Chairman
Cuyapaipe Band of Mission Indians
4054 Willows Road
Alpine, California 91903-2250

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Pinto:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We have asked the California State Historic Preservation Officer for concurrence with this determination. Your comments on the enclosed report are welcome, and we respectfully request any information you may wish to share concerning the

The Honorable Harlan Pinto

Page 2

presence of traditional cultural properties you feel may be affected by the proposed undertaking. If you have any questions, please call Ms. Nancy Parrish (U.S. Army Corps of Engineers) at (817) 886-1725.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Janson", is written over the printed name.

Robert F. Janson

Acting Executive Director

Asset Management

U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Leon Acebedo, Chairman
Jamul Indian Village, Kumeyaay Nation
13910 Lyons Valley Road
Jamul, California 91935

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Acebedo:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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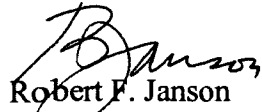
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The Honorable Leon Acebedo

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Gwendolyn Parada, Chairperson
La Posta Band of Mission Indians
1048 Crestwood Road
Boulevard, California 92905

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairwoman Parada:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Gwendolyn Parada

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Sincerely,

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Catherine Saubel, Spokeswoman
Los Coyotes Band of Mission Indians
2300 Camino San Ignacio
Warner Springs, California 92086

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Spokeswoman Saubel:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Catherine Saubel

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Sincerely,

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Leroy Elliott, Chairman
Manzanita Band of Mission Indians
6 Old Mine Road
Boulevard, California 91905

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Elliott:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Leroy Elliott

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Sincerely,

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Mark Romero, Chairman
Mesa Grande Band of Mission Indians
P.O. Box 270
Santa Ysabel, California 92070

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Romero:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Mark Romero

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Sincerely,

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Allen E. Lawson, Tribal Chairman
San Pasqual Band of Diegueno Mission Indians
27548 North Lake Wolford Road, Level #3
Valley Center, California 92082

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Lawson:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Allen E. Lawson

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Johnny Hernandez, Spokesman
Santa Ysabel Band of Mission Indians
P.O. Box 130
Santa Ysabel, California 92070

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Spokesman Hernandez:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

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The Honorable Johnny Hernandez

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



U.S. Customs and
Border Protection

FEB 15 2008

The Honorable Daniel J. Tucker, Chairman
Sycuan Band of Kumeyaay Nation
5459 Dehesa Road
El Californiajon, California 92021

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Tucker:

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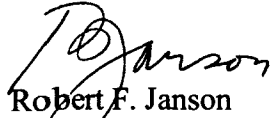
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Asset Management
U.S. Customs and Border Protection

Enclosure(s)



U.S. Customs and
Border Protection

FEB 15 2008

The Honorable Bobby L. Barrett, Chairman
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, California 91901

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Barrett:

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Raymond Torres, Chairman
Torres-Martinez Band of Desert Cahuilla Indians
66725 Martinez Road
Thermal, California 92274

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Torres:

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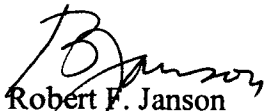
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The Honorable Raymond Torres

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Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)



**U.S. Customs and
Border Protection**

FEB 15 2008

The Honorable Daryll Mike, Chairman
Twenty-Nine Palms Band of Mission Indians
46-200 Harrison Street
Coachella, California 92236

Subject: National Historic Preservation Act, Section 106 Consultation - Draft Cultural
Resources Report Titled *A Class III – Intensive Field Survey for the Gapfiller Project,
San Diego County, California*

Dear Chairman Mike:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP) is preparing an Environmental Assessment (EA) for the construction and improvements of roads and fences from Tecate to the San Diego-Imperial County line, in the USBP San Diego Sector, San Diego County, California. The EA will analyze the potential for significant impacts of proposed construction of new roads at locations across the project corridor and road improvements along the entire 32-mile project corridor. A total of 4.4 miles of new roads would be constructed in these 10 locations.

A cultural resources survey was conducted at each of the 10 proposed construction locations to identify historic properties that may be impacted by the proposed project. The survey resulted in the relocation and expansion of one bedrock milling site (SDI-14,425) and the identification of one isolated retouched flakes stone artifact. Site SDI-14,425 lies outside of the current construction area of potential effect, but is very close to the edge of the project corridor. The site was previously recorded in 1997 and determined to be ineligible for the National Register of Historic Places (NRHP) due to erosion and deflation of soils which destroyed the cultural context of the site and any related features or artifacts that may once have surrounded the site. The addition of a second locus, identified by the current survey, did not improve the integrity of the site as a whole. No soils, associated artifacts, or subsurface features were identified at the site by the current survey. CBP has determined that site SDI-14,425 is still ineligible for inclusion in the NRHP. No other evidence of cultural resources was identified by the survey.

Enclosed please find a copy of the cultural resources report for your review and comment. Based on the results of this investigation, CBP has determined that no historic properties will be affected by the proposed undertaking. We have asked the California State Historic Preservation Officer for concurrence with this determination. Your comments on the enclosed report are welcome, and we respectfully request any information you may wish to share concerning the

The Honorable Daryll Mike

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presence of traditional cultural properties you feel may be affected by the proposed undertaking. If you have any questions, please call Ms. Nancy Parrish (U.S. Army Corps of Engineers) at (817) 886-1725.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Janson", is written over the printed name.

Robert F. Janson
Acting Executive Director
Asset Management
U.S. Customs and Border Protection

Enclosure(s)

APPENDIX C
Memorandum of Understanding

**Memorandum of Understanding
Among
U. S. Department of Homeland Security
and
U. S. Department of the Interior
and
U. S. Department of Agriculture
Regarding
Cooperative National Security and Counterterrorism
Efforts on Federal Lands along the United States' Borders**

I. Purpose and Scope

A. This Memorandum of Understanding (MOU) is made and entered into by the Department of Homeland Security (DHS), including and on behalf of its constituent bureau U.S. Customs and Border Protection (CBP) and the CBP Office of Border Patrol (CBP-BP); the Department of the Interior (DOI), including and on behalf of its constituent bureaus, the National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), and the Bureau of Reclamation (BOR); and the Department of Agriculture (USDA), including and on behalf of its constituent agency the U.S. Forest Service (USFS). Throughout this MOU, these three Departments, including their constituent agencies, may be referred to as "the Parties." Any reference to a bureau, agency, or constituent component of a Party shall not be deemed to exclude application to any appropriate bureau or constituent component of that Party. DHS recognizes that the BIA enters into this agreement only on its own behalf and not on behalf of any Indian tribe.

B. The geographic and jurisdictional scope of this MOU is nationwide. The Parties recognize the national security and counterterrorism significance of preventing illegal entry into the United States by cross-border violators (CBVs), including but not limited to the following: drug and human smugglers and smuggling organizations, foreign nationals, and terrorists and terrorist organizations. The Parties further recognize that damage to DOI and USDA-managed lands and natural and cultural resources is often a significant consequence of such illegal entry. The Parties are committed to preventing illegal entry into the United States, protecting Federal lands and natural and cultural resources, and - where possible - preventing adverse impacts associated with illegal entry by CBVs.

C. This MOU is intended to provide consistent goals, principles, and guidance related to border security, such as law enforcement operations; tactical infrastructure installation; utilization of roads; minimization and/or prevention of significant impact on or impairment of natural and cultural resources; implementation of the Wilderness Act, Endangered Species Act, and other related environmental law, regulation, and policy across land management agencies; and provide for coordination and sharing information

on threat assessments and other risks, plans for infrastructure and technology improvements on Federal lands, and operational and law enforcement staffing changes. This MOU provides guidance in the development of individual agreements, where appropriate, between CBP and land management agencies to further the provisions contained herein.

D. This MOU is entered into pursuant to the governing statutory authorities of each of the Parties.

E. The Parties acknowledge that CBP operation and construction within the sixty-foot "Roosevelt Reservation" of May 27, 1907 (along the US-Mexico border) and the sixty-foot "Taft Reservation" of May 3, 1912 (along the US-Canada border) is consistent with the purpose of those reservations and that any CBP activity (including, but not limited to, operations and construction) within the sixty-foot reservations is outside the oversight or control of Federal land managers.

F. This MOU supersedes any conflicting provision of any prior MOU or Memorandum of Agreement between the Parties or their subordinate bureaus or components.

II. Background

A. DHS, through its constituent bureaus (including CBP and its CBP-BP), is statutorily mandated to control and guard the Nation's borders and boundaries, including the entirety of the northern and southern land and water borders of the United States.

B. DOI and USDA, through their constituent bureaus, are statutorily charged as managers of Federal lands throughout the United States, including DOI and USDA lands in the vicinity of international borders that are administered as wilderness areas, conservation areas, national forests, wildlife refuges, units/irrigation projects of the Bureau of Reclamation, and/or units of the national park system. Tribal governments have primary management roles over tribal lands; however, the United States, through the BIA, may also have a stewardship or law enforcement responsibility over these lands. Many of these Federal and tribal lands contain natural and cultural resources that are being degraded by activities related to illegal cross-border movements.

C. The volume of CBVs can and has, in certain areas, overwhelmed the law enforcement and administrative resources of Federal land managers. In order to more effectively protect national security, respond to terrorist threats, safeguard human life, and stop the degradation of the natural and cultural resources on those lands, DOI and USDA land managers will work cooperatively with CBP to benefit from the enforcement presence, terrorist and CBV interdiction, and rescue operations of CBP.

III. Common Findings and Affirmation of the Parties

A. The Parties to this MOU recognize that CBP-BP access to Federal lands can facilitate rescue of CBVs on Federal lands, protect those lands from environmental damage, have a role in protecting the wilderness and cultural values and wildlife resources of these lands, and is necessary for the security of the United States. Accordingly, the Parties understand that CBP-BP, consistent with applicable Federal laws and regulations, may access public lands and waterways, including access for purposes of tracking, surveillance, interdiction, establishment of observation points, and installation of remote detection systems.

B. The Parties recognize that DOI and USDA have responsibility for enforcing Federal laws relating to land management, resource protection, and other such functions on Federal lands under their jurisdiction.

IV. Responsibilities and Terms of Agreement

A. The Parties Agree to the Following Common Goals, Policies, and Principles:

1. The Parties enter into this MOU in a cooperative spirit with the goals of securing the borders of the United States, addressing emergencies involving human health and safety, and preventing or minimizing environmental damage arising from CBV illegal entry on public lands;
2. The Parties will strive to both resolve conflicts at and delegate resolution authority to the lowest field operational level possible while applying the principles of this MOU in such manner as will be consistent with the spirit and intent of this MOU;
3. The Parties will develop and consistently utilize an efficient communication protocol respecting the chain of command for each of the Parties that will result in the consistent application of the goals, policies, and principles articulated in this MOU, and provide a mechanism that will, if necessary, facilitate the resolution of any conflicts among the Parties. If resolution of conflict does not occur at the local level, then the issue will be elevated first to the regional/sector office; if not resolved at the regional/sector level, then the issue will be elevated to the headquarters level for resolution;
4. The Parties will cooperate with each other to complete, in an expedited manner, all compliance that is required by applicable Federal laws not otherwise waived in furtherance of this MOU. If such activities are authorized by a local agreement as described in sub-article IV.B below, then the DOI, USDA, and CBP will complete the required compliance before executing the agreement;

5. The Parties will cooperate with each other to identify methods, routes, and locations for CBP-BP operations that will minimize impacts to natural, cultural, and wilderness resources resulting from CBP-BP operations while facilitating needed CBP-BP access;
6. The Parties will, as necessary, plan and conduct joint local law enforcement operations consistent with all Parties' legal authorities;
7. The Parties will establish a framework by which threat assessments and other intelligence information may be exchanged, including intelligence training to be conducted by all parties so that the intelligence requirements of each may be identified and facilitated;
8. The Parties will establish forums and meet as needed at the local, regional, and national levels to facilitate working relationships and communication between all Parties;
9. The Parties will develop and share joint operational strategies at the local, regional, and national levels, including joint requests for infrastructure and other shared areas of responsibility;
10. The Parties will share the cost of environmental and cultural awareness training unless otherwise agreed; and
11. The Parties will, as appropriate, enter into specific reimbursable agreements pursuant to the Economy Act, 31 U.S.C. §1535 when one party is to furnish materials or perform work or provide a service on behalf of another party.

B. Responsibilities and Terms Specific to DOI and USDA. The DOI and the USDA hereby recognize that, pursuant to applicable law, CBP-BP is authorized to access the Federal lands under DOI and USDA administrative jurisdiction, including areas designated by Congress as wilderness, recommended as wilderness, and/or wilderness study areas, and will do so in accordance with the following conditions and existing authorities:

1. CBP-BP agents on foot or on horseback may patrol, or pursue, or apprehend suspected CBVs off-road at any time on any Federal lands administered by the Parties;
2. CBP-BP may operate motor vehicles on existing public and administrative roads and/or trails and in areas previously designated by the land management agency for off-road vehicle use at any time, provided that such use is consistent with presently authorized public or administrative use. At CBP-BP's request, the DOI and the USDA will provide CBP-BP with keys, combinations, or other means necessary to

access secured administrative roads/trails. CBP-BP may drag existing public and administrative roads that are unpaved for the purpose of cutting sign, subject to compliance with conditions that are mutually agreed upon by the local Federal land manager and the CBP-BP Sector Chief. For purposes of this MOU, "existing public roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows members of the general public to operate motor vehicles, and "existing administrative roads/trails" are those existing roads/trails, paved or unpaved, on which the land management agency allows persons specially authorized by the agency, but not members of the general public, to operate motor vehicles;

- 3 CBP-BP may request, in writing, that the land management agency grant additional access to Federal lands (for example, to areas not previously designated by the land management agency for off-road use) administered by the DOI or the USDA for such purposes as routine patrols, non-emergency operational access, and establishment of temporary camps or other operational activities. The request will describe the specific lands and/or routes that the CBP-BP wishes to access and the specific means of access desired. After receiving a written request, the local Federal land manager will meet promptly with the CBP-BP Sector Chief to begin discussing the request and negotiating the terms and conditions of an agreement with the local land management agency that authorizes access to the extent permitted by the laws applicable to the particular Federal lands. In each agreement between CBP-BP and the local land management agency, the CBP-BP should be required to use the lowest impact mode of travel and operational setup reasonable and practicable to accomplish its mission. The CBP-BP should also be required to operate all motorized vehicles and temporary operational activities in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands. However, at no time should officer safety be compromised when selecting the least impactful conveyance or operational activity. Recognizing the importance of this matter to the Nation's security, the CBP-BP Sector Chief and the local Federal land manager will devote to this endeavor the resources necessary to complete required compliance measures in order to execute the local agreement within ninety (90) days after the Federal land manager has received the written request for access. Nothing in this paragraph is intended to limit the exercise of applicable emergency authorities for access prior to the execution of the local agreement. The Secretaries of the Interior, Agriculture, and Homeland Security expect that, absent compelling justification, each local agreement will be executed within that time frame and provide the maximum amount of access requested by the CBP-BP and allowed by law;

4. Nothing in this MOU is intended to prevent CBP-BP agents from exercising existing exigent/emergency authorities to access lands, including authority to conduct motorized off-road pursuit of suspected CBVs at any time, including in areas designated or recommended as wilderness, or in wilderness study areas when, in their professional judgment based on articulated facts, there is a specific exigency/emergency involving human life, health, safety of persons within the area, or posing a threat to national security, and they conclude that such motorized off-road pursuit is reasonably expected to result in the apprehension of the suspected CBVs. Articulated facts include, but are not limited to, visual observation; information received from a remote sensor, video camera, scope, or other technological source; fresh "sign" or other physical indication; canine alert; or classified or unclassified intelligence. For each such motorized off-road pursuit, CBP-BP will use the least intrusive or damaging motorized vehicle readily available, without compromising agent or officer safety. In accordance with paragraph IV.C.4, as soon as practicable after each such motorized off-road pursuit, CBP-BP will provide the local Federal land manager with a brief report;
5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources, or if other significant issues warrant consultation, then the Federal land manager and the CBP-BP will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;
6. CBP may request, in writing, that the land management agency authorize installation or construction of tactical infrastructure for detection of CBVs (including, but not limited to, observation points, remote video surveillance systems, motion sensors, vehicle barriers, fences, roads, and detection devices) on land under the local land management agency's administrative jurisdiction. In areas not designated as wilderness, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency. In areas designated or managed as wilderness, the local Federal land manager, in consultation with CBP, will promptly conduct a "minimum requirement," "minimum tool," or other appropriate analysis. If supported by such analysis, the local Federal land manager will expeditiously authorize CBP to install such infrastructure subject to such terms and conditions that are mutually developed and articulated in the authorization issued by the land management agency;

7. The DOI and USDA will provide CBP-BP agents with appropriate environmental and cultural awareness training formatted to meet CBP-BP operational constraints. The DOI and USDA will work with CBP-BP in the development and production of maps for use or reference by CBP-BP agents including, as appropriate, site-specific and resource-specific maps that will identify specific wildlife and environmentally or culturally sensitive areas;
8. The DOI and USDA will, as applicable, provide CBP-BP with all assessments and studies done by or on behalf of DOI or USDA on the effects of CBVs on Federal lands and native species to better analyze the value of preventative enforcement actions;
9. The DOI and USDA will assist CBP-BP in search and rescue operations on lands within the respective land managers' administration when requested;
10. The CBP-BP and land management agencies may cross-deputize or cross-designate their agents as law enforcement officers under each other agency's statutory authority. Such cross-deputation or cross-designation agreements entered into by the local land management agency and the field operations manager for the CBP-BP shall be pursuant to the policies and procedures of each agency; and
11. DOI and USDA will work at the field operations level with affected local CBP-BP stations to establish protocols for notifying CBP-BP agents when DOI or USDA law enforcement personnel are conducting law enforcement operations in an area where CBP-BP and DOI/USDA operations can or will overlap.

C. Responsibilities and Terms Specific to the CBP. DHS hereby agrees as follows:

1. Consistent with the Border Patrol Strategic Plan, CBP-BP will strive to interdict CBVs as close to the United States' international borders as is operationally practical, with the long-term goal of establishing operational control along the immediate borders;
2. If the CBP-BP drag any unpaved roads for the purpose of cutting sign under provision IV.B.2 above, then CBP-BP will maintain or repair such roads to the extent that they are damaged by CBP-BP's use or activities;
3. If CBP-BP agents pursue or apprehend suspected CBVs in wilderness areas or off-road in an area not designated for such use under

paragraph IV.B.5, then the CBP-BP will use the lowest impact mode of travel practicable to accomplish its mission and operate all motorized vehicles in such a manner as will minimize the adverse impacts on threatened or endangered species and on the resources and values of the particular Federal lands, provided officer safety is not compromised by the type of conveyance selected;

4. CBP-BP will notify the local Federal land manager of any motorized emergency pursuit, apprehension, or incursion in a wilderness area or off-road in an area not designated for such use as soon as is practicable. A verbal report is sufficient unless either CBP-BP or the land managing agency determines that significant impacts resulted, in which case a written report will be necessary;
5. If motorized pursuits in wilderness areas, areas recommended for wilderness designation, wilderness study areas, or off-road in an area not designated for such use are causing significant impact on the resources as determined by a land manager, or if other significant issues warrant consultation, then the CBP-BP and Federal land manager will immediately meet to resolve the issues subject to paragraphs IV.A.2 and IV.A.3 of this MOU;
6. CBP will consult with land managers to coordinate the placement and maintenance of tactical infrastructure, permanent and temporary video, seismic and other remote sensing sites in order to limit resource damage while maintaining operational efficiency;
7. CBP-BP will ensure that current and incoming CBP-BP agents attend environmental and cultural awareness training to be provided by the land management agencies;
8. CBP-BP will provide land management agencies with appropriate and relevant releasable statistics of monthly CBV apprehensions, search and rescue actions, casualties, vehicles seized, drug seizures and arrests, weapons seizures and arrests, and other significant statistics regarding occurrences on the lands managed by the land manager;
9. CBP-BP will consult with land managers in the development of CBP-BP's annual Operational-Requirements Based Budgeting Program to ensure affected land managers can provide input and are, in the early stages of planning, made aware what personnel, infrastructure, and technology the CBP-BP would like to deploy along the border within their area of operation; and
10. CBP-BP will work at the field operations manager level with affected local land management agencies to establish protocols for notifying

land management agency law enforcement officers when BP is conducting special operations or non-routine activities in a particular area.

V. Miscellaneous Provisions

A. Nothing in this MOU may be construed to obligate the agencies or the United States to any current or future expenditure of funds in advance of the availability of appropriations, nor does this MOU obligate the agencies or the United States to spend funds for any particular project or purpose, even if funds are available.

B. Nothing in this MOU will be construed as affecting the authority of the Parties in carrying out their statutory responsibilities.

C. This MOU may be modified or amended in writing upon consent of all Parties, and other affected Federal agencies may seek to become a Party to this MOU.

D. The Parties shall retain all applicable legal responsibility for their respective personnel working pursuant to this MOU with respect to, *inter alia*, pay, personnel benefits, injuries, accidents, losses, damages, and civil liability. This MOU is not intended to change in any way the individual employee status or the liability or responsibility of any Party under Federal law.

E. The Parties agree to participate in this MOU until its termination. Any Party wishing to terminate its participation in this MOU shall provide sixty (60) days written notice to all other Parties.

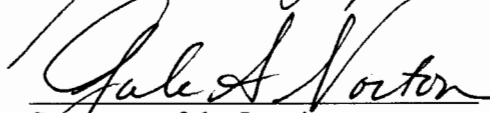
F. This document is an intra-governmental agreement among the Parties and does not create or confer any rights, privileges, or benefits upon any person, party, or entity. This MOU is not and shall not be construed as a rule or regulation.

In witness whereof, the Parties hereto have caused this Memorandum of Understanding to be executed and effective as of the date of the last signature below.

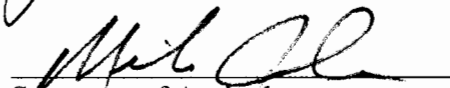
Date: 3/24/06


Secretary of Homeland Security

Date: 3/31/06


Secretary of the Interior

Date: 3/29/06


Secretary of Agriculture

APPENDIX D
Hydrology Report

NYMAN & ASSOCIATES

3168 Sherry Drive

Baton Rouge, LA 70816-5009

March 3, 2003

Kate Koske Roussel
Natural Resources
Gulf South Research Corporation
7602 GSRI Avenue
Baton Rouge, Louisiana 70820

Subject: Environmental assessment of proposed INS wells in the Smith/La Gloria canyon areas along the U.S./Mexico border, San Diego County, California.

Dear Ms. Roussel:

As you requested, I have made a thorough study of the hydrologic literature that included southeastern San Diego County, California, for the purpose of writing an environmental assessment for the areas of interest to the Immigration and Naturalization Service (INS). The literature search was done to estimate the environmental impact that two water wells, each producing about 50,000 gallons/year, would have on the general hydrology of the area. Geologic maps from the California Department of Conservation (Geological Survey), the San Diego County Water Authority, and several theses on hydrogeology written by students at San Diego State University have provided a good insight toward answering this question. Total recharge for the 2001 recharge season (late winter and spring) was estimated for the Campo Creek basin using stream-hydrograph separation and pro-rated for the Smith/La Gloria canyon watersheds on a unit-recharge basis (recharge/mile²) and compared to 30 years of past streamflow.

Purpose and Location of Investigation

The INS plans to have two wells installed along the U.S./Mexico border in Smith and La Gloria canyons, San Diego County, California. Smith and La Gloria canyons are located about 1.0 to 2.5 miles east of the town of Campo (Figure 1). The INS plans to have a well drilled near the national border in each canyon. Each well would be drilled in granite (crystalline rock), each well is expected to be pumped at the rate of 1.0 to 1.5 gal/min, and would be used to maintain a 10,000-gal holding tank needed to support the INS activities in each canyon (Figure 2).

Regional Hydrogeology

San Diego County lies within the Peninsular Range geomorphic province, the mountains of which are largely composed of granitic (crystalline) rocks of the Southern California Batholith, which was emplaced during the Cretaceous period of geologic time. Regional uplift resulted in the erosion of most of the overlying rocks and currently this batholith is exposed over most of southern San Diego County (Figure 1) from elevations of 500 ft to more than 6,000 ft (NGVD)(Pollock, 1991, p.53).

Groundwater movement is primarily through pore spaces developed by weathering and decomposition of the crystalline rocks and through granular alluvium, as well as through fractures in the bedrock. Regional groundwater movement in crystalline rock is preferentially along lineaments and associated fracture zones (Lower, 1977, p. 173).

Lineaments

Lineaments are linear topographic features that are geologically controlled and are most obvious from studies of high-altitude imagery that shows unusually straight valleys, river courses, and other topographic features. In San Diego County, according to Lower (1977, p. 11), lineaments formed because of zones of weakness in crystalline rocks as the rocks cooled and were uplifted as the Peninsular Ranges. Lineaments are topographic features created because of the weathering and erosion of this zone of weakness (frequent jointing and shear zones). The most common trends for lineaments are N 20°W and N 20°E, although north-south and east-west trends are also present. Minor faults in the Southern California Batholith may also have the same trends (Figures 1, 3).

Lineaments are hydrologically important because they provide major avenues for groundwater movement and storage in crystalline rock. Lineaments are often the upstream limit of etchbasins (shallow intermountain basins that contain valley fill) (Lower, 1977, p.39) and large etchbasins are often formed where lineaments cross from two different directions. Etchbasins are important because they store water from surface runoff and groundwater flow from connecting lineaments (Lower, 1977, p.44).

Smith and La Gloria canyons both fit the description of lineaments because they are reasonably straight and are oriented N 20°W in this area. Many of the faults in this area also have an approximately N 20°W trend (Figures 2,3), suggesting that Smith and La Gloria canyons may be fault controlled but may not be indicated as such because they have not been studied in detail. Campo Valley is probably a large etchbasin that is the beneficiary of surface and groundwater flow from Smith and La Gloria canyons, and other adjacent canyons.

Water Availability in Crystalline Rocks

There is considerable literature regarding water wells in crystalline rock. Domestic water supplies in many parts of the U.S., and in other countries, are dependent on such wells because there is no other groundwater source available. Crystalline rocks include all classes of igneous and metamorphic rocks, which include granitic rocks, schist, and gneiss. All of these types of rock, for all practical purposes, have essentially no primary permeability, i.e. the minerals that constitute crystalline rocks are essentially impermeable (pass an insignificant amount of water). However, there is secondary permeability (permeability created after the original rock was emplaced) created by fractures, joints, and shearing that can provide useful amounts of groundwater to wells.

Shallow fractures in crystalline rock are often created by stress relief due to unloading of overlying rocks because of erosion. Tectonically produced fractures adjacent to fault zones and areas of intense folding can occur at any depth (Nommensen, 1989, p.15). According to Nommensen (1989, p.14), the weathering of crystalline rock is primarily a near-surface phenomenon that is generally restricted to a zone within about 300 feet of the earth's surface.

Availability of Water from Crystalline Rocks in San Diego County

According to Nommensen, (1989, p.21), wells in the Southern California Batholith range from 95 to 1,950 feet in depth and have a median depth of about 410 feet and most have casing cemented to a depth of 50 feet or more. Well yields averaged as much as 39.5 gal/min (p.32).

Pollock (1991, p.54), investigated the relationship between well depth and well yield in the fractured crystalline rocks of San Diego County. His investigation was based on 2,618 wells completed in the Southern California Batholith in San Diego County. The well records are on file at the Department of Health Services. Of these records a subset of 146 wells was selected because the records included well location, total depth, total yield, static water level, and included the continuous monitoring of yield with depth.

Records for 91 "valley" wells were studied statistically and it was found that wells less than 100 ft deep had average yields ranging from 0 to about 1.5 gal/min/20-ft of saturated depth, wells 200 ft deep had average yields ranging from about 0.5 to nearly 2.0 gal/min/20-ft of saturated depth, wells to 300 ft deep had average yields ranging from 0.5 to nearly 2.5 gal/min/20-ft of saturated depth (Pollock, 1991, Fig.10, p.67). The average yield of all valley wells is about 1.0 gal/min/20-ft of saturated depth to a depth of about 600 ft. In other words, a 600-ft well with a static water level 100 ft below land surface therefore may yield about 25 gal/min. The average yield per 20-foot depth interval for wells on hillsides and hilltops ranges from 0 to 1.0 and 0 to 0.5 gal/min/20-ft of saturated depth, respectively. According to Pollack (1991, p.95), the relatively high yields in the valleys may be the result of (1) valleys tend to form along structurally weak zones that may contain fractured rocks, and (2) groundwater recharge from streams and the presence of residuum and alluvium probably increase yields in valleys. (3) Erosion in upland areas exposes relatively unweathered rock thus reducing the yield to wells on hillsides and hilltops, and (4) fractures on the hills and hillsides collect water that drains toward the valleys.

Static water levels in valley topography in San Diego County generally range from 0 to 50 ft below land surface (Pollock, 1991, p.66). According to Mower and Nace (1957), the presence of cottonwood trees indicates a water table about 4 to 5 feet below land surface, the presence of willow indicates a water table within about 2 feet of land surface.

Phreatic Water Consumption

According to Lower (1977, p.13), vegetation in San Diego County at the higher elevations generally consists of coniferous and mixed forest trees. Mature pine and oak trees in this class annually transpire up to 1.8 acre-feet of water per acre of trees (Todd, 1970). At lower elevations the vegetation consists of scrub oak and shrubs constituting chaparral and mixed

chaparral. According to Todd (1970) chaparral growths are reported to transpire up to 1.7 acre-feet of water per acre annually (p. 14). Flora around springs and along streams in canyon floors often consist of live oak, cottonwood, willow, alder, and maple, and these trees can transpire from 2.7 to 4.5 acre-ft of water per acre annually (p.16).

Groundwater Recharge

Groundwater recharge is the replenishment of the zone of saturation with water derived from sources above the earth's surface (Meinzer, 1942). It is the most important parameter of the groundwater system (Lower, 1977, p 53) because it is required to maintain the groundwater system. Recharge involves three steps (1) infiltration into the soil or other openings, (2) percolation downward through the unsaturated zone, and (3) recharge—the movement of some of the soil water to the saturated zone (water table) to become part of the groundwater system (Lower, 1977, p. 53). Recharge calculations by Lower (1977, p. 61) indicate that recharge near the village of Mount Laguna, 20 miles north of Campo, occurred primarily from February through April, during his studies from October 1973 to May 1976. Based on stream flow data during this period, bedrock recharge contributed 0.23 acre-ft/acre annually of groundwater to stream channels along lineaments in the Mount Laguna area. Based on spring discharge data during this period, annual recharge of 0.19 acre-foot/acre was related to crystalline rock and etchbasins (Lower, 1977, p.172). Decomposed roots and animal borings augment infiltration in etchbasins. When the rate of rainfall exceeds the infiltration rate surface runoff is created and this water is lost to the groundwater system. Snowfall accounted for 43% of the total annual precipitation at Mount Laguna and snow is very desirable from a recharge point of view because snow generally melts slowly continually wetting the soil thus providing continual infiltration. In the fractured crystalline rocks, groundwater percolates through open fractures to the zone of saturation. Chemical weathering of the bedrock also occurs, slowly enlarging the fractures. Percolation to the zone of saturation continues unless the water is intercepted by plants and is removed by evapotranspiration. Because plants are most active during the spring and summer most of the recharge occurs during the winter and early spring months.

Blain (1981, p.70) established eight rain gages at different elevations at Honey Springs Ranch (Figure 1), about 18 miles WNW of Campo, estimated the relationship between elevation and the amount of precipitation for an area ranging in elevation from 1,145 to 1,900 feet. A plot of average rainfall at the eight stations indicated a linear trend and suggested a 25% increase in rainfall for each 500-foot rise in elevation (Fig. 16, p.71). Blain (p.87, 90, 359) also concluded that the water table rose following wet periods not because of infiltration through the soil but by infiltration and drainage through highly permeable near-surface fractures in the exposed crystalline rock areas nearby. Smith and La Gloria canyons are incised about 1,000 ft into the Southern California Batholith.

Recharge in the Campo Creek Basin

The soils in the Campo Creek Basin are mostly decomposed crystalline rock and are therefore very granular and highly permeable--6.3 to 20 inches/hr on the hilltops and hillsides (Tollhouse soils) and greater than 20 inches/hr in the valley bottoms (Mottsville soil) (USDA, 1973, p.56, 58)—however, because of steep slopes runoff may also be very rapid. The

distribution of these soils are mapped as MvC (Mottsville) and ToG and ToE2 (Tollhouse) as shown in Figure 5. When such soils become saturated these highly permeable soils facilitate the movement of recharging rainwater to the water table and subsurface fractures.

It would be very useful to be able to calculate the volume of water in storage in the soils and fractures in the crystalline rock. A commonly used method of determining total recharge is by observing the water-table rise following a rain event (Lerner, 1997, p.142). Because of the lack of monitor wells and the irregularity of the volume in fractures and pore spaces calculating the volume of water represented by the water-table rise is uncertain in this area.

Another method of estimating the total recharge over a whole catchment area (river basin) is based on the analysis of river hydrographs (Lerner, 1997, p.143). The basic equation is:

$$\text{Recharge} = \text{baseflow} + \text{withdrawals (stresses)} + \text{rate of storage depletion}$$

Baseflow is streamflow maintained by natural groundwater discharge (springs and seepage from the surrounding aquifer). Baseflow is the flow after a storm surge has passed when streamflow is maintained by groundwater discharge from the soil and surrounding bedrock. Withdrawals and depletion of aquifer storage can be avoided here because the Bureau of Land Management restricts anthropogenic development in Smith and La Gloria canyons and recharge occurs primarily in the later winter and early spring when vegetative stress is minimal on the groundwater system (Lower, 1977). The method for estimating groundwater recharge from streamflow records has been thoroughly tested and described by Rutledge and Daniel (1994). The volume of recharge is calculated for each individual rainfall event. The basic equation is:

$$R = \frac{2(Q_2 - Q_1)(K)}{2.3026}$$

where:

R = total volume of recharge (in cfs, ft³/sec);

Q1 = groundwater discharge (cfs) at the critical time (days) as extrapolated from the streamflow recession preceding the peak;

Q2 = groundwater discharge (cfs) at critical time (days) as extrapolated from the streamflow recession following the peak; and

K = the time (days) required for groundwater discharge to decline through one log cycle and is determined by extending the trend line of the rate of recession across a log cycle.

The method also requires the calculation of the critical time period (T_c , days), which is:

$$T_c = 0.2144K$$

This graphical analysis is shown in Figure 6 for the gauging station Campo Creek near Campo for the period January through April 2001. The station is operated by the U.S. Geological Survey and these average daily discharge readings are available from their internet website (USGS, 2001). The results for two calculations are shown on Figure 6. There was one large event (3.4 cfs, 3/7/2001), and six small events (0.46, 0.32, 0.44, 0.65, 0.57, 0.58, on 1/11, 1/28, 2/13, 3/1, 4/12, and 4/21, respectively). The calculations indicate that during the large event about 11.67 cfs (7.54 Mgal) of recharge had entered the groundwater system. On each of the small events about 6.25 cfs (4.04 Mgal) of recharge had entered the groundwater system. A total of about 24 Mgal had entered the groundwater system during the six small events and the total recharge was therefore about 32 Mgal for the Campo Creek Basin during the late winter and spring of 2001.

According to the USGS, the gauging station near Campo monitors a drainage area of 85 square miles (mi^2) (Appendix A). A unit recharge area can therefore be calculated indicating 0.38 Mgal/ mi^2 . Smith and La Gloria canyons constitute about 4 mi^2 (Figure 7) of the 85 mi^2 in the Campo Creek basin. The available recharge to the well sites was therefore estimated to be about 1.5 Mgal during the late winter and spring of 2001. Although the amount of recharge varies from year to year it should be noted that rain events have been reasonably persistent since the late 1970s (Figure 8). Figure 8 shows that there was very little flow in Campo Creek from 1970 to 1977, but since then there have been rather regular rain events during the recharge season that have replenished the groundwater system from year to year. Figure 8 is based on average monthly discharge recorded at the Campo Creek near Campo gage (Appendix A) and monthly rainfall at Campo (from the Western Regional Climate Center, Appendix B).

Environmental Assessment

The studies in San Diego County mentioned above quantify at their location that there is significant recharge and groundwater contribution to springs, rivers, and crystalline rocks. When Campo Creek is at baseflow the flow represents the excess of groundwater after the deep groundwater system has been essentially filled. The two wells proposed for Smith and La Gloria Canyons would each supply the INS about 50,000 gal/yr, or 100,000gal/yr total. The recharge to the groundwater system in the canyons was about 1.5 Mgal during the recharge season of 2001 and there have been repeated significant rain events each year during the recharge season for the past 20 years (Figure 8). The amount of water that is to be pumped by these two INS wells is insignificant compared to the amount of water removed from the natural system by river and spring flow, and the thousands of acres of forest surrounding Smith and La Gloria canyons.

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http://waterdata.usgs.gov/nwis/monthly/?site_no=11012500&agency_cd=USGS

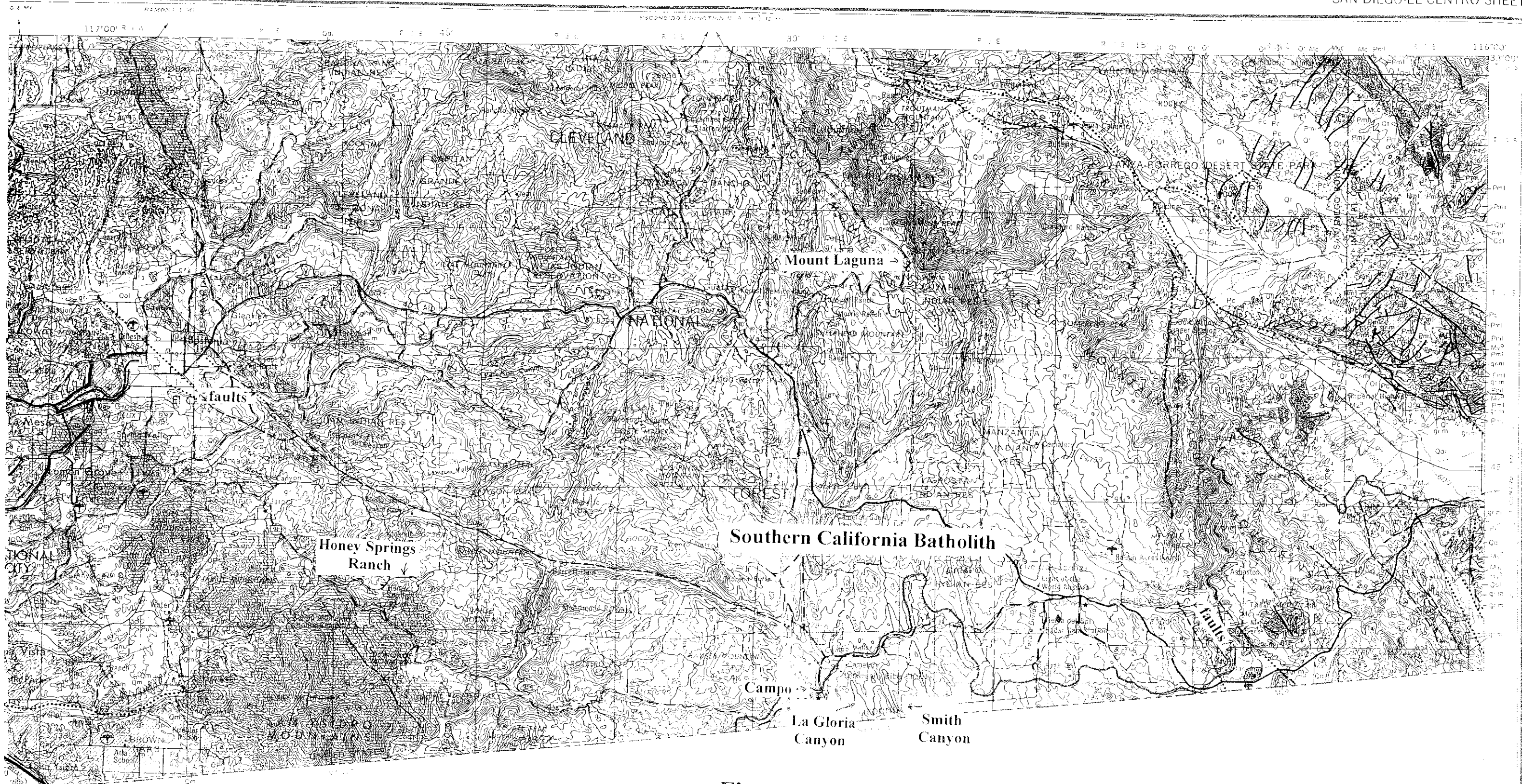


Figure 1. Geologic Map of California, San Diego-El Centro Sheet
[compiled by R.G. Strand, 1962]

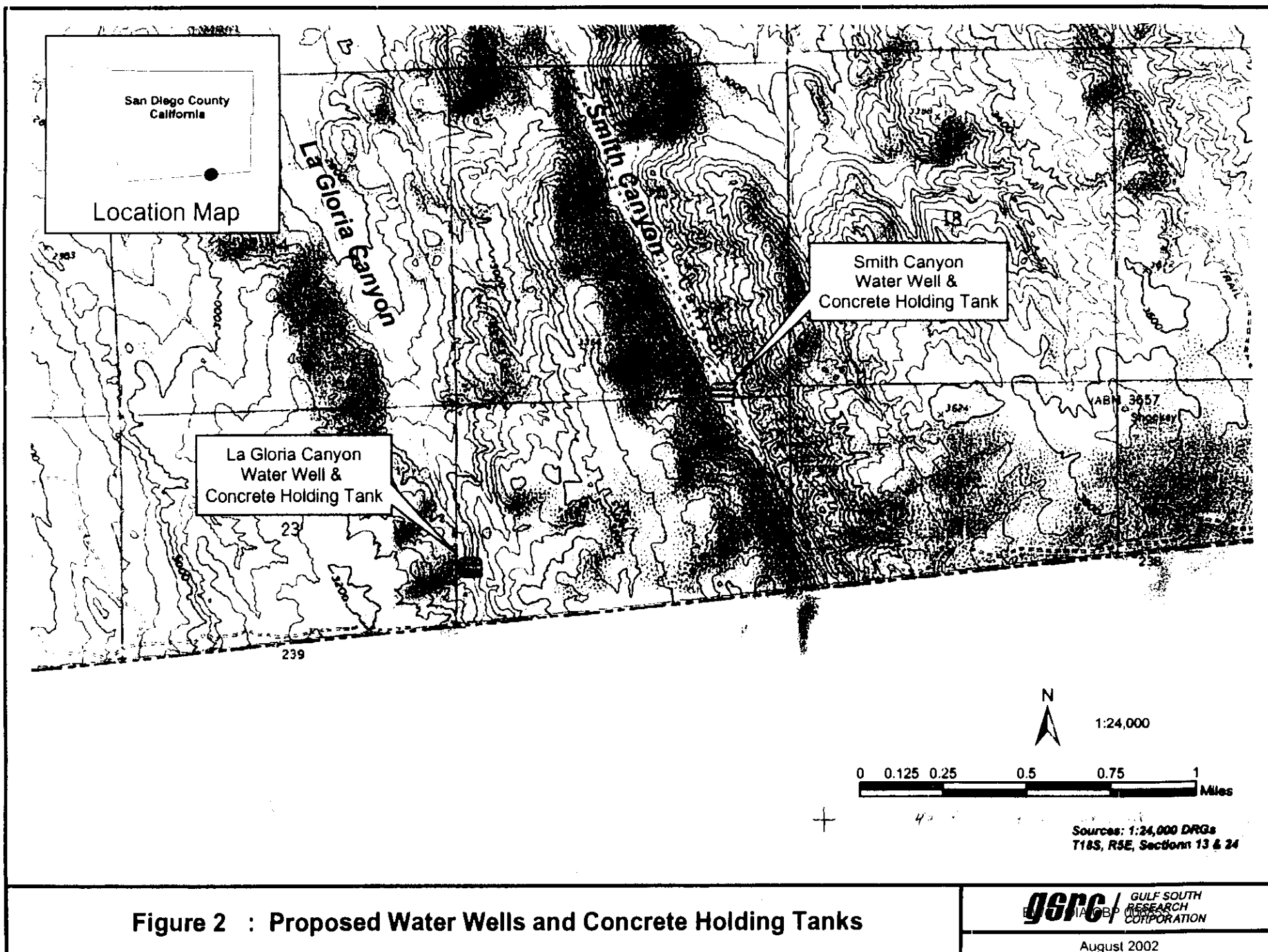
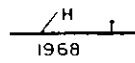
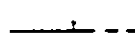
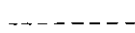


Figure 2 : Proposed Water Wells and Concrete Holding Tanks

-EXPLANATION-

	Holocene fault	Fault with most recent displacement in Holocene time (past 10,000 years). Trace marked by scarps or other physiographic features identified on aerial photographs and inspected in the field or compiled from published sources. Historic movement indicated by date adjacent to trace; may be due to movement on other near by faults. Bar and ball on downdropped side.
	Pleistocene fault	Fault with most recent displacement in Pleistocene time (past 2,000,000 years). Trace marked by eroded scarps, displaced older alluvium, or other physiographic features identified on aerial photographs. Most were inspected in the field or compiled from published sources. Most are late Pleistocene in age of most recent displacement, but some may be Holocene. Dashed line indicates inferred fault. Bar and ball on downdropped side.
	Lineament	Trace characterized by aligned vegetation and scarps which appear to displace sediments or surfaces of Quaternary age. Not field checked. May represent movement along joints or bedding planes. Only those which appear to have significant movement are shown.

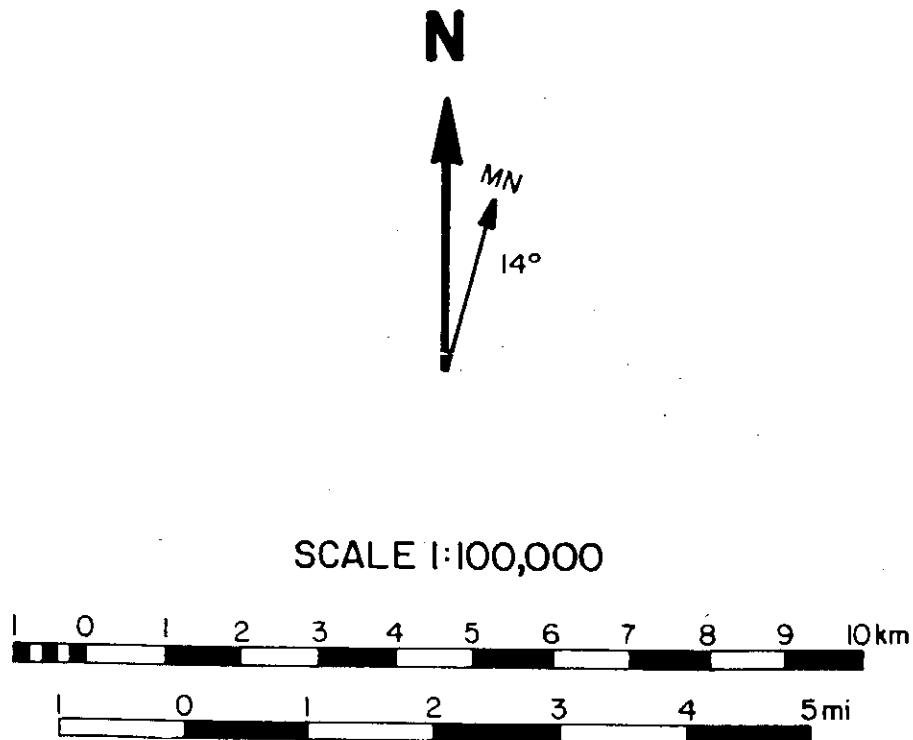


Figure 4. Explanation to Figure 3.



FIGURE 5. Soil associations in the Campo area, California (USDA, 1973)

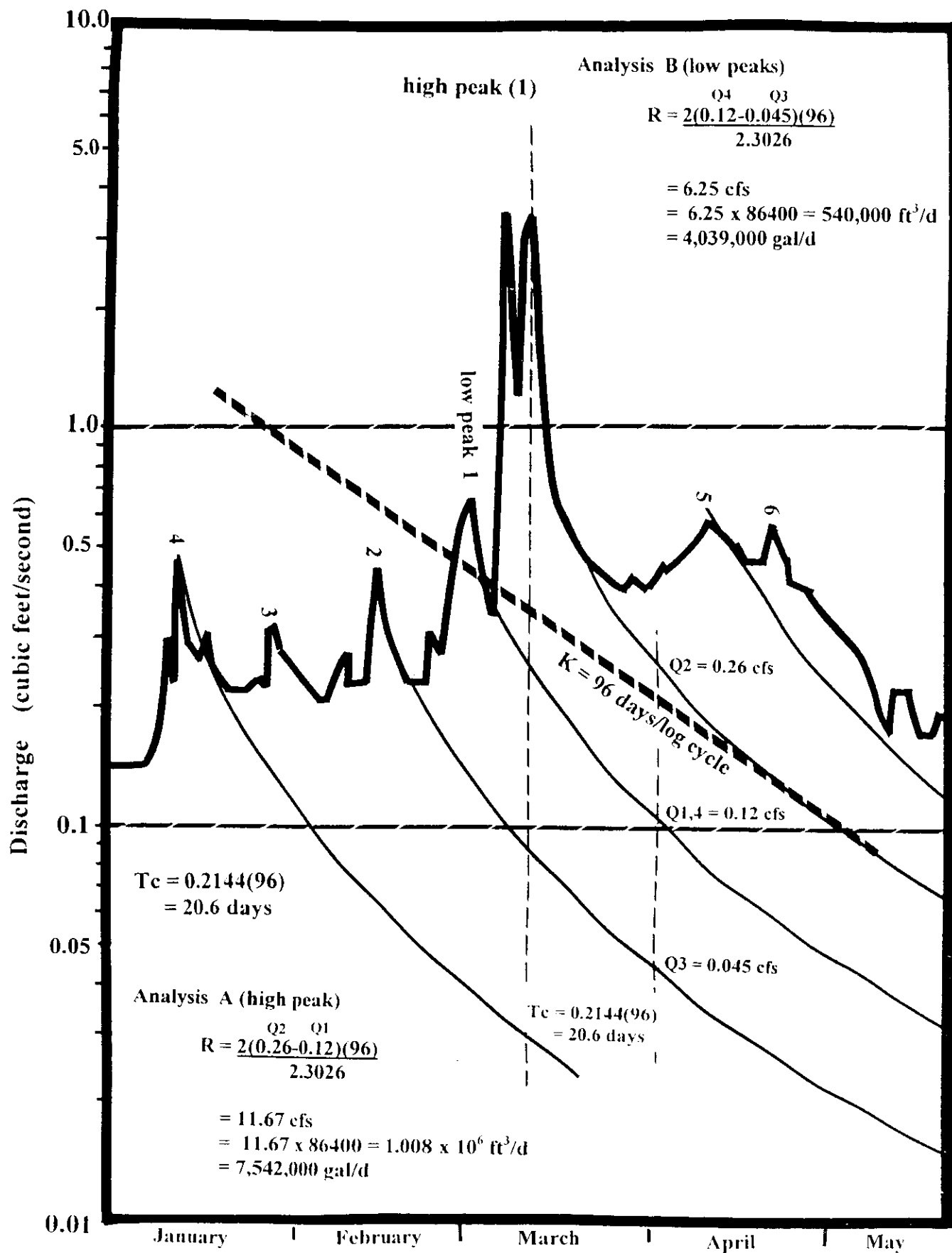


Figure 6. Graphical analyses of recharge in the Campo Creek basin during the late winter and spring of 2001, based on U.S.G.S. streamflow data.

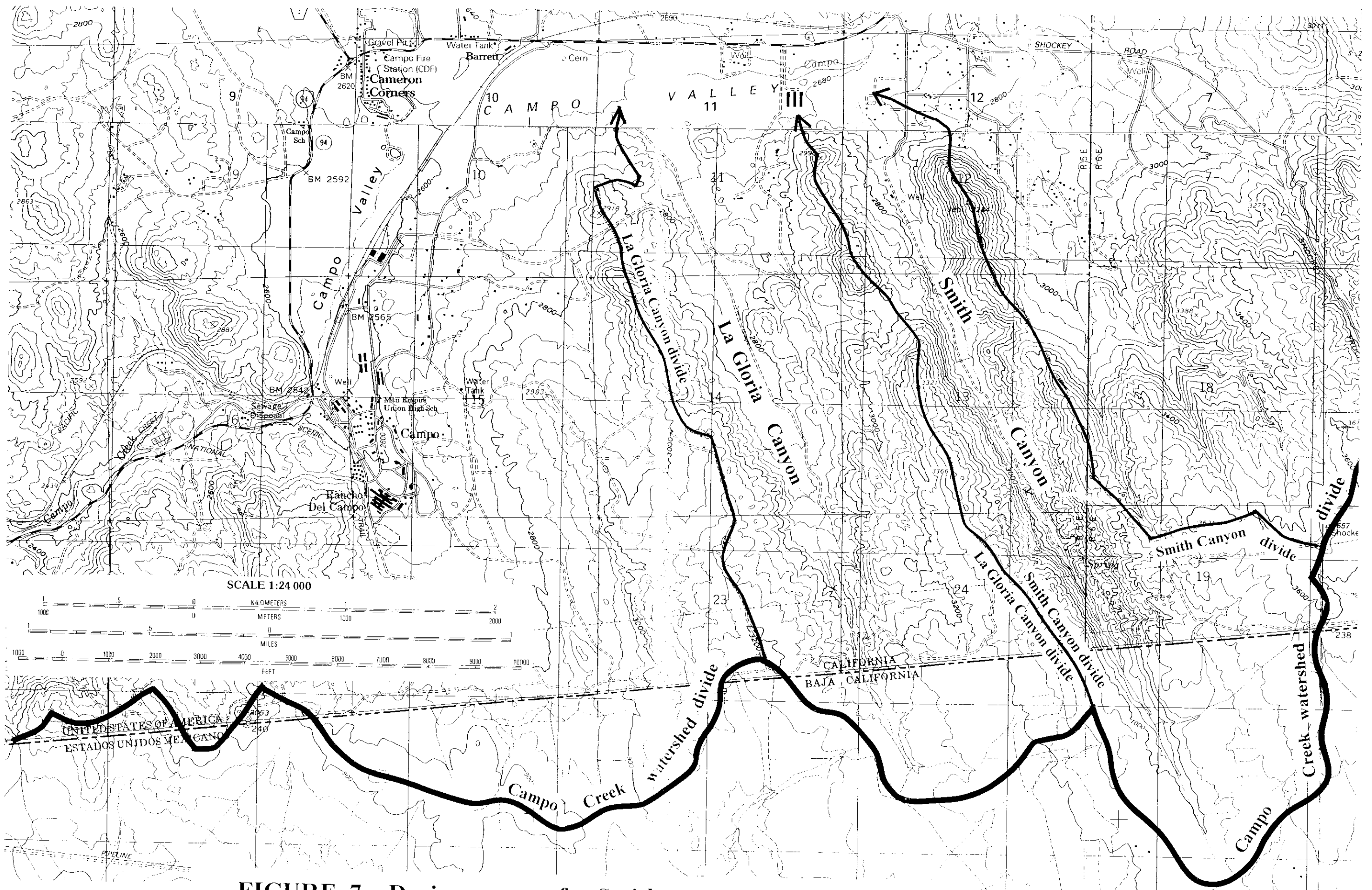


FIGURE 7. Drainage areas for Smith and La Gloria canyons.

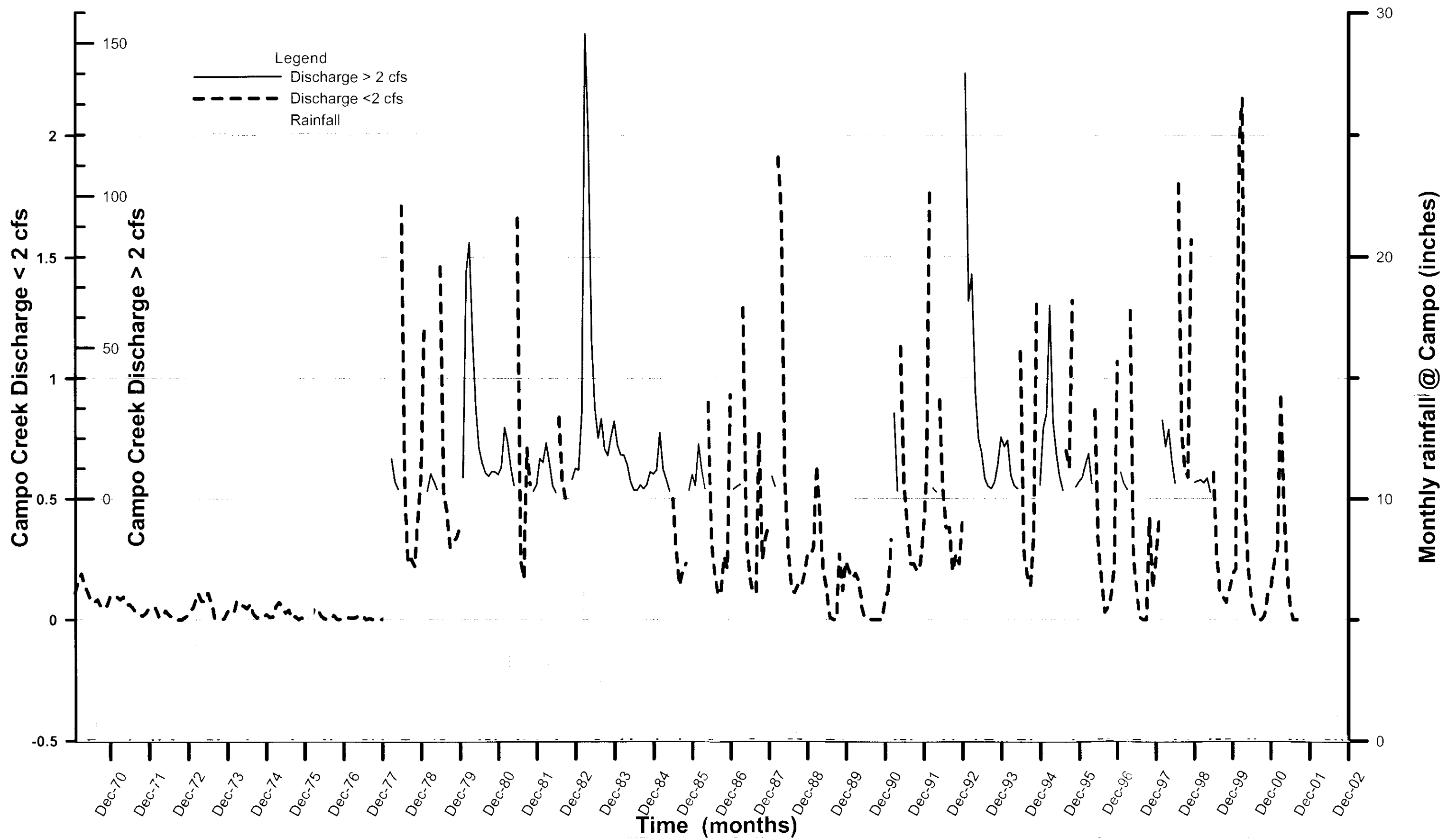


FIGURE 8. Rainfall and average monthly discharge hydrographs, Campo Creek nr. Campo, California

Appendix A. Monthly streamflow for the USGS gaging station
Campo Creek near Campo, 1970 to 2001 used in Figure 8

Monthly Streamflow Statistics for the Nation

USGS 11012500 CAMPO C NR CAMPO CA

Available data for this site Surface-water: Monthly streamflow statistics GO

San Diego County, California Hydrologic Unit Code 18070305 Latitude 32°35'28", Longitude 116°31'29" NAD27 Drainage area 85.0 square miles Gage datum 2,179.08 feet above sea level NGVD29	Output formats HTML table of all data Tab-separated data Reselect output format
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YEAR	Monthly mean streamflow, in ft ³ /s											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1936										.000	.10	.47
1937	1.24	31.2	19.5	14.3	6.35	2.26	.56	.21	.10	.16	.91	5.21
1938	4.37	11.3	38.4	10.6	7.22	2.56	.56	.19	.10	.12	.73	7.97
1939	10.8	19.1	12.5	7.85	3.30	.46	.20	.13	1.29	.87	1.61	2.62
1940	4.75	9.69	4.43	5.44	.90	.27	.068	.058	.090	.19	.24	8.95
1941	3.78	9.74	32.8	54.6	25.1	12.1	5.86	5.23	4.43	8.83	9.12	13.1
1942	14.7	12.4	12.4	9.15	5.42	1.91	.34	.074	.093	.24	1.22	3.01
1943	14.4	10.8	15.1	10.3	2.95	1.09	.31	.18	.16	.42	.70	3.24
1944	5.26	26.7	17.3	8.73	4.29	2.43	.58	.10	.097	.40	6.23	5.17
1945	6.77	7.36	17.1	7.24	2.36	.79	.22	.65	.27	.38	.68	9.50
1946	7.07	5.59	5.64	4.22	1.06	.070	.013	.000	.18	.084	.86	1.30
1947	1.29	1.54	.80	.24	.094	.030	.000	.000	.000	.000	.043	.17
1948	.14	.17	.17	.12	.058	.020	.000	.000	.000	.068	.000	.000
1949	.15	.73	.89	.42	.17	.027	.000	.000	.000	.000	.000	.003
1950	.14	.17	.12	.083	.035	.000	.000	.000	.000	.000	.000	.000
1951	.010	.018	.12	.12	.045	.000	.000	.000	.000	.000	.000	.000
1952	.48	.15	12.5	3.60	1.52	.63	.49	.052	.000	.042	.19	.25
1953	.23	.22	.67	.35	.14	.063	.000	.000	.000	.000	.000	.087
1954	.25	.17	.91	.24	.10	.003	.000	.000	.000	.000	.000	.094
1955	.20	.14	.11	.10	.097	.000	.35	.071	.000	.000	.000	.003
1956	.13	.097	.000	.077	.052	.000	.000	.000	.000	.000	.000	.000

http://waterdata.usgs.gov/nwis/monthly/?site_no=11012500&agency_cd=USGS

12/26/2002

1957	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1958	.000	.000	.000	1.04	.039	.000	.000	.000	.000	.000	.000	.000
1959	.000	.046	.10	.053	.016	.000	.000	.000	.000	.000	.000	.000
1960	.000	.000	.000	.013	.029	.000	.000	.000	.000	.000	.000	.000
1961	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1962	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1963	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1964	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.003
1965	.000	.004	.003	.010	.000	.000	.000	.000	.000	.000	.013	.006
1966	.003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.003
1967	.000	.000	.068	.087	.077	.000	.000	.000	.000	.000	.000	.000
1968	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1969	.006	.32	.92	.89	.72	.42	.20	.20	.20	.071	.084	.090
1970	.11	.16	.19	.14	.11	.077	.072	.083	.054	.046	.059	.098
1971	.088	.094	.083	.094	.062	.063	.047	.029	.020	.016	.027	.051
1972	.051	.047	.011	.012	.037	.020	.010	.001	.000	.000	.010	.018
1973	.039	.071	.11	.077	.075	.11	.071	.010	.000	.000	.004	.032
1974	.042	.031	.077	.058	.057	.045	.065	.023	.009	.010	.007	.021
1975	.010	.010	.054	.071	.046	.027	.039	.003	.013	.000	.007	.000
1976	.000	.010	.044	.045	.015	.004	.000	.000	.017	.001	.001	.001
1977	.010	.006	.005	.010	.020	.014	.000	.004	.000	.000	.000	.001
1978	.011	.040	13.1	5.52	3.10	1.71	.56	.23	.25	.22	.40	.59
1979	1.21	2.49	8.25	5.87	3.19	1.46	.53	.45	.30	.32	.34	.38
1980	7.01	74.5	84.6	53.6	30.5	16.8	11.8	8.60	7.40	8.97	8.87	7.97
1981	10.4	23.6	18.6	10.1	4.38	1.66	.24	.17	.71	.56	2.43	4.68
1982	13.2	12.0	18.4	11.9	4.11	2.04	.84	.57	.50	.51	6.32	10.0
1983	9.49	28.5	153	121	52.2	30.4	20.1	26.5	16.5	14.3	20.7	25.7
1984	17.7	14.5	14.4	11.2	5.69	2.82	2.79	4.50	3.30	4.63	8.81	8.16
1985	9.45	21.8	9.70	6.32	2.49	.50	.29	.14	.20	.23	2.79	7.97
1986	4.25	18.1	9.45	3.38	.90	.32	.19	.10	.12	.26	.21	.93
1987	3.06	3.89	4.56	1.29	.35	.18	.11	.11	.078	.25	.34	.39
1988	7.27	4.08	1.91	1.68	.60	.31	.13	.11	.14	.13	.18	.26
1989	.26	.30	.64	.43	.20	.12	.009	.000	.000	.027	.12	.24
1990	.20	.17	.19	.16	.046	.007	.000	.000	.000	.000	.000	.069
1991	.12	.33	28.3	2.53	1.13	.56	.40	.23	.23	.20	.23	.37
1992	.59	1.77	3.37	2.21	.91	.55	.38	.38	.20	.27	.23	.40
1993	140	65.3	74.1	35.7	19.9	15.2	6.54	4.00	3.30	5.54	11.4	20.3
1994	17.2	19.3	7.73	4.33	3.37	1.11	.28	.18	.14	.35	1.31	4.48

1995	23.3	28.2	63.8	25.5	15.0	7.45	2.73	.70	.63	1.32	3.85	5.63
1996	6.98	11.3	14.9	5.11	.87	.29	.15	.030	.050	.095	.22	1.07
1997	8.79	5.10	3.12	1.28	.25	.12	.009	.000	.000	.042	.13	.25
1998	.42	25.9	17.2	22.9	12.3	5.14	1.80	.78	.63	.59	1.57	5.33
1999	5.83	6.13	5.22	6.78	2.20	.61	.27	.11	.094	.072	.13	.19
2000	.21	1.96	2.15	.43	.20	.066	.017	.000	.000	.018	.11	.13
2001	.24	.29	.94	.48	.20	.047	.000	.000	.000			
Mean of monthly streamflows	5.60	7.96	11.6	7.39	3.49	1.77	.93	.85	.64	.78	1.44	2.57

Questions about data h2oteam@usgs.gov
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**Appendix B. Monthly rainfall data for Campo, California,
for 1970 to 2001 used in Figure 8**
(provided by the Western Regional Climate Center)

1971 - 2000

- Daily Temp. & Precip.
 - Daily Tabular data (~23 KB)
 - Monthly Tabular data (~1 KB)
 - NCDC 1971-2000 Normals (~3 KB)
-

1961 - 1990

- Daily Temp. & Precip.
 - Daily Tabular data (~23 KB)
 - Monthly Tabular data (~1 KB)
 - NCDC 1961-1990 Normals (~3 KB)
-

Period of Record

- Station Metadata
- Station Metadata Graphics

General Climate Summary Tables

- Temperature
- Precipitation
- Heating Degree Days
- Cooling Degree Days
- Growing Degree Days

Temperature

- Daily Extremes and Averages
- Spring 'Freeze' Probabilities
- Fall 'Freeze' Probabilities
- 'Freeze Free' Probabilities
- Monthly Temperature Listings
 - Average
 - Average Maximum
 - Average Minimum

Precipitation

- Monthly Average
- Daily Extreme and Average
- Daily Average
- Precipitation Probability by Duration.
- Precipitation Probability by Quantity.
- Monthly Precipitation Listings
 - Monthly Totals

<http://www.wrcc.dri.edu/cgi-bin/cliHist.pl?cacamo+sca>

12/26/2002

Snowfall

- [Daily Extreme and Average](#)
- [Daily Average](#)
- [Monthly Snowfall Listings](#)
[Monthly Totals](#)

Snowdepth

- [Daily Extreme and Average](#)
- [Daily Average](#)

Heating Degree Days

- [Daily Average](#)

Cooling Degree Days

- [Daily Average](#)

Period of Record Data Tables

- [Daily Summary Stats \(~55 KB\)](#)
 - [Monthly Tabular data \(~2 KB\)](#)
-

Western Regional Climate Center,
wrcc@dri.edu

CAMPO, CALIFORNIA

Monthly Total Precipitation (inches)

(041424)

File last updated on Nov 21, 2002

*** Note *** Provisional Data *** After Year/Month 200208

a = 1 day missing, b = 2 days missing, c = 3 days, ..etc..,

z = 26 or more days missing, A = Accumulations present

Long-term means based on columns; thus, the monthly row may not
sum (or average) to the long-term annual value.

MAXIMUM ALLOWABLE NUMBER OF MISSING DAYS : 5

Individual Months not used for annual or monthly statistics if more than 5 days are missing.

Individual Years not used for annual statistics if any month in that year has more than 5 days missing.

YEAR (S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1948	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00	0.00	0.22	1.10	0.00	2.56	3.88
1949	4.33	2.24	1.39	0.11	0.41	0.00	0.00	0.00	0.00	0.77	1.09	2.42	12.76
1950	2.74	1.19	1.68	0.48	0.01	0.00	0.10	0.00	0.22	0.00a	0.41	0.34	7.17
1951	4.00	1.39	1.12	3.57	0.27	0.00	0.44	1.34	0.01	1.09	0.82	7.19	21.24
1952	5.05	0.95	8.40	1.62	0.00	0.00	1.24	0.00	0.00	0.00	2.85	3.13	23.24
1953	1.04	1.05	2.28	1.24	0.49	0.01	0.04	0.01	0.00	0.00	1.14	0.18	7.48
1954	4.89	2.49	6.45	0.16	0.18	0.05	1.42	0.03	0.13	0.00	0.68	0.75	17.23
1955	3.85	1.23	0.68	0.52	1.95	0.00	0.82	1.90	0.00	0.00	1.14	1.77	13.86
1956	1.70	1.75	0.00	2.36	0.45	0.00	0.65	0.00	0.00	0.07	0.00	0.40	7.38
1957	7.05	0.78	1.57	1.09	2.60	0.28	0.01	0.65	0.44	2.17	0.84	1.34	18.82
1958	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00z	0.00
1959	1.12	5.61	0.00	0.17	0.14	0.00	0.03	0.16	0.34	0.50	0.13	2.93	11.13
1960	2.97	4.10	0.45	1.95	0.49	0.00	0.17	0.03	1.59	0.16	1.67	0.07	13.65
1961	1.09	0.16	2.28	0.00	0.02	0.00	0.00	0.62	0.00	0.37	0.77	2.08	7.39
1962	3.61	4.53	2.12	0.00	0.90	0.11	0.00	0.00	0.00	0.07	0.00	0.65	11.99
1963	0.18g	3.03	1.72	1.86	0.00	0.13	0.00	0.63	2.45	1.35	1.77	0.31	13.25
1964	2.12	1.34	3.22	0.95	0.67	0.00	0.00	0.03	0.07	0.39	1.88	1.83	12.50
1965	0.80	0.00z	1.20	6.03	0.05	0.00	0.36	0.13	0.00z	0.00	9.03	4.31	21.91
1966	1.35	1.40	1.16	0.05	0.07	0.22	0.39	0.19	0.20	0.46	0.83	0.00z	6.32
1967	1.42	0.00	1.03	3.54	0.48	0.06	0.34	0.49	0.82	0.00	3.65	4.23	16.06
1968	0.58	0.73	2.19	0.85	0.28	0.03	1.88	0.06	0.00	0.05	0.72	1.66	9.03
1969	8.30	5.67	1.96	0.10	0.43	0.12	0.01	0.00	0.20	0.02	1.85	0.26	18.92
1970	0.85	0.96	3.95	1.18	0.00	0.03	0.03	2.66	0.08	0.12	1.28	2.66	13.80
1971	1.12	1.22	0.40	1.46	0.67	0.00	0.07	1.00	0.25	1.18	0.05	3.60	11.02
1972	0.00	0.18	0.00	0.24	0.14	0.31	0.00	0.04	0.14	1.87	2.60	2.55	8.07
1973	1.70	3.13	5.24	0.29	0.09	0.00	0.00	0.09	0.00	0.05	1.69	0.11	12.39
1974	4.29	0.07	1.24	0.24	0.16	0.00	1.28	0.13	0.31	2.32	0.39	1.24	11.67
1975	0.40	1.02	3.40	1.58	0.11	0.12	0.09	0.00	0.18	0.07	2.15	0.63	9.75
1976	0.07	5.47	1.81	1.85	0.06	0.00	0.61	0.00	2.85	0.24	1.02	0.76	14.74

1977	3.10	0.35	0.85	0.19	1.15	0.00	0.00	1.18	0.00	0.88	0.25	0.00z	7.95
1978	7.79	5.38	5.45	1.48	0.53	0.00	0.00	0.01	0.16	0.06	3.05	4.45	28.36
1979	3.99	1.95	4.88	0.03	0.19	0.00	0.00	0.16	0.04	0.82	0.26	0.69	13.01
1980	11.82	8.82	3.72	1.87	0.80	0.00	0.55	0.00	0.00	0.28	0.00	0.54	28.40
1981	0.91	2.64	4.22	0.80	0.10	0.00	0.05	0.03	0.31	0.19	1.35	0.03	10.63
1982	5.14	2.15	4.30	0.82	0.12	0.00	0.33	0.56	0.37	0.13	4.42	3.44	21.78
1983	2.23	4.82	9.92	2.23	0.19	0.00	0.01	4.05	0.68	1.16	2.45	3.20c	30.94
1984	0.12	0.00	0.04	0.24	0.00	0.55	1.51	2.29	0.67	0.18	1.43	4.25	11.28
1985	0.00z	1.59	1.46	0.27	0.04	0.09	1.74	0.00	0.33	0.69	4.53	1.76	12.50
1986	0.75	3.53	3.47	0.28	0.01	0.00	0.35	0.06	1.32	2.12	0.57	0.72	13.18
1987	1.66	2.55	2.58	0.31	0.08	0.01	0.00	0.65	0.48	3.13	2.48	1.82	15.75
1988	3.49	1.94	0.72	2.48	0.36	0.00	0.02	1.65	0.00	0.00	1.08	2.12	13.86
1989	1.05	1.18	1.65	0.21	0.13	0.00	0.00	0.00	0.17	0.36	0.03	0.29	5.07
1990	3.06	1.78	0.70	0.99	0.23	0.22	0.11	0.18	0.62	0.04	0.56	1.30	9.79
1991	1.35	2.23	0.00z	0.05	0.00	0.00z	0.62	0.00	0.35	0.58	0.30	2.83	8.31
1992	3.24a	5.05	4.94	0.68	0.23	0.00	0.75	2.05	0.00	0.24	0.06	4.04	21.28
1993	18.61	6.51	1.53	0.00	0.12	0.16a	0.00	0.00	0.00	0.30	1.49	1.16	29.88
1994	1.70	4.14	3.14	1.35	0.00	0.00	0.00	1.22	0.00	0.19	0.68	0.97	13.39
1995	10.12	3.28	6.63	1.26	1.10	0.48	0.06	0.64	0.28	0.00	0.08	0.57	24.50
1996	1.54	3.20	2.76	0.53	0.07	0.00	0.00	0.07	0.03	1.56	0.92	1.98	12.66
1997	4.33	1.53	0.02	0.22	0.00	0.00z	0.00z	0.07	1.93	0.16	1.75	4.21	14.22
1998	1.60	10.37	4.40	2.35d	1.17	0.02	0.10	0.20	0.20	0.03	1.17	1.42	23.03
1999	1.66	0.83	0.62	3.31	0.00	0.46	0.00z	0.00	0.14	0.00	0.00	0.21	7.23
2000	0.75	4.20	1.47	0.46	0.00	0.21	0.00	0.13	0.30	0.65	0.39	0.04	8.60
2001	2.92	4.12	1.76	1.45	0.03	0.00	0.12	0.00	0.24	0.00	1.11	1.02	12.77
2002	0.40	0.12	1.12	0.39	0.00	0.00	0.19	0.00	1.06a	0.00c	0.26j	0.00z	3.28

Period of Record Statistics

MEAN	3.13	2.61	2.49	1.09	0.34	0.07	0.32	0.47	0.38	0.52	1.34	1.82	14.99
S.D.	3.37	2.24	2.18	1.17	0.50	0.13	0.49	0.82	0.61	0.72	1.54	1.55	6.57
SKEW	2.49	1.32	1.36	1.86	2.63	2.16	1.78	2.38	2.54	1.77	2.75	1.06	0.89
MAX	18.61	10.37	9.92	6.03	2.60	0.55	1.88	4.05	2.85	3.13	9.03	7.19	30.94
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	5.07
NO YRS	51	52	52	53	53	51	52	54	53	54	53	51	44

APPENDIX E
Threatened and Endangered Species List

Scientific Name	Common Name	Lead	Status	R.P.	CH	LA	O	SB	Riv	SD	Imp	Fed R
PLANTS												
<i>Acanthomintha ilicifolia</i>	San Diego thornmint	CFWO	T							X		63:549
<i>Allium munzii</i>	Munz's onion	CFWO	E		D-05				X			63:549
<i>Ambrosia pumila</i>	San Diego ambrosia	CFWO	E						X	X		64:725
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	CFWO	E							X		61:523
<i>Arenaria paludicola</i>	marsh sandwort	VFO	E	F 98		X		X				58:413
<i>Arenaria ursina</i>	Bear Valley sandwort	CFWO	T					X				63:490
<i>Astragalus albens</i>	Cushenbury milk-vetch	CFWO	E	D2	D-02			X				59:436
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	VFO	E	F 99		X	X					62:417
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella Valley milk-vetch	CFWO	E		P-04				X			63:535
<i>Astragalus magdalenae</i> var. <i>peirsonii</i>	Peirson's milk-vetch	CFWO	T		D-04					X	X	63:535
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	Ventura marsh milk-vetch	VFO	E		D-04	X	X					66:279
<i>Astragalus tener</i> var. <i>titi</i>	coastal dunes milk-vetch	VFO	E	D		X				X		63:431
<i>Astragalus tricarinatus</i>	triple-ribbed milk-vetch	CFWO	E					X	X			63:535
<i>Atriplex coronata</i> var. <i>notatior</i>	San Jacinto Valley crownscale	CFWO	E		P-04				X			63:549
<i>Baccharis vanessae</i>	Encinitas baccharis	CFWO	T							X		61:523
<i>Berberis nevinii</i>	Nevin's barberry	CFWO	E			X		X	X	X		63:549
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	CFWO	T		P-04	X	X	X	X	X		63:549
<i>Castilleja cinerea</i>	ash-gray Indian paintbrush	CFWO	T					X				63:490
<i>Castilleja grisea</i>	San Clemente Island Indian paintbrush	CFWO	E	F 84		X						42:406
<i>Ceanothus ophiochilus</i>	Vail Lake ceanothus	CFWO	T						X			63:549
<i>Cercocarpus traskiae</i>	Catalina Island mountain-mahogany	CFWO	E			X						62:426
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	CFWO	E							X		61:523
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	VFO	C			X	X	X				64:575
<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	salt marsh bird's beak	CFWO	E	F 85		X	X			X		43:448
<i>Deinandra (Hemizonia) conjugens</i>	Otay tarplant	CFWO	T	D 03	D-02					X		63:549
<i>Delphinium variegatum</i> ssp. <i>kinkiense</i>	San Clemente Island larkspur	CFWO	E	F 84		X						42:406
<i>Dodecahema leptoceras</i> (<i>Centrostegia</i> L.)	slender-horned spineflower	CFWO	E	D		X		X	X			52:362
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	Santa Monica Mountains dudleya	VFO	T	F 99		X	X					62:417
<i>Dudleya stolonifera</i>	Laguna Beach live-forever	CFWO	T				X					63:549
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana River woolly-star	CFWO	E	D			X	X	X			52:362
<i>Erigeron parishii</i>	Parish's daisy	CFWO	T	D2	D-02			X	X			59:436

<i>Eriogonum kennedyi</i> var. <i>austromontanum</i>	southern mountain wild buckwheat	CFWO	T					X			63:490
<i>Eriogonum ovalifolium</i> var. <i>vineum</i>	Cushenbury buckwheat	CFWO	E	D2	D-02			X			59:436
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button celery	CFWO	E	F 98					X	X	58:413
<i>Fremontodendron mexicanum</i>	Mexican flannelbush	CFWO	E							X	63:549
<i>Hazardia orcuttii</i>	Orcutt's hazardia	CFWO	C							X	69:248
<i>Helianthemum greenei</i>	Island rush-rose	VFO	T	F 00			X				62:409
<i>Lesquerella kingii</i> ssp. <i>bernardina</i>	San Bernardino Mountains bladderpod	CFWO	E	D2	D-02			X			59:436
<i>Lithophragma maximum</i>	San Clemente Island woodland star	CFWO	E	F 84			X				62:426
<i>Lotus dendroideus</i> var. <i>traskiae</i>	San Clemente Island lotus	CFWO	E	F 84			X				42:406
<i>Malacothamnus clementinus</i>	San Clemente Island bush mallow	CFWO	E	F 84			X				42:406
<i>Monardella linoides</i> ssp. <i>viminea</i>	willowy monardella	CFWO	E							X	63:549
<i>Navarretia fossalis</i>	spreading navarretia	CFWO	T	F 98	P-04		X		X	X	63:549
<i>Orcuttia californica</i>	California Orcutt grass	CFWO	E	F 98			X		X	X	58:413
<i>Oxytheca parishii</i> var. <i>goodmaniana</i>	Cushenbury oxytheca	CFWO	E	D2	D-02			X			59:436
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta	VFO	E	F 99			X				62:417
<i>Phacelia stellaris</i>	Brand's phacelia	CFWO	C				X		X	X	69:248
<i>Poa atropurpurea</i>	San Bernardino bluegrass	CFWO	E					X		X	63:490
<i>Pogogyne abramsii</i>	San Diego mesa mint	CFWO	E	F 98						X	43:448
<i>Pogogyne nudiuscula</i>	Otay mesa mint	CFWO	E	F 98						X	58:413
<i>Rorippa gambellii</i>	Gambel's watercress	VFO	E	F 98			X	X	X	X	58:413
<i>Sibara filifolia</i>	Santa Cruz Island rock-cress	CFWO	E				X				62:426
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	Parish's checkerbloom	VFO	C					X			
<i>Sidalcea pedata</i>	pedate checker-mallow	CFWO	E	F 98				X			49:344
<i>Taraxacum californicum</i>	California taraxacum	CFWO	E					X			63:490
<i>Thelypodium stenopetalum</i>	slender-petaled mustard	CFWO	E	F 98				X			49:344
<i>Trichostema austromontanum compactum</i>	Hidden Lake bluecurls	CFWO	T						X		63:490
<i>Verbesina dissita</i>	big-leaved crown beard	CFWO	T					X			61:523

INVERTEBRATES

<i>Branchinecta lynchii</i>	vernal pool fairy shrimp	SAC	T		D-03				X		59:481
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	CFWO	E	F 98	RP		X			X	62:492
<i>Euphilotes battoides allyni</i>	El Segundo blue butterfly	CFWO	E	F 98			X				41:220
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	CFWO	E	F 03	D-02			X	X	X	62:231
<i>Glaucopsyche lygdamus palosverdensis</i>	Palos Verdes blue butterfly	CFWO	E	F 84	D		X				45:449

<i>Pyrgus ruralis lagunae</i>	Laguna Mountains skipper	CFWO	E						X		62:231
<i>Rhaphiomidas terminatus abdominalis</i>	Delhi Sands flower-loving fly	CFWO	E	F 97				X	X		58:498
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	CFWO	E	F 98	D-05	X	X		X	X	58:413

FISH

<i>Catostomus santaanae</i>	Santa Ana sucker	CFWO	T		D-05	X	X	X	X		65:196
<i>Cyprinodon macularius</i>	desert pupfish	R02	E	F 93	D				X	X	51:108
<i>Eucyclogobius newberryi</i>	tidewater goby	VFO	E	D 04	D		X			X	59:549
<i>Gasterosteus aculeatus williamsoni</i>	unarmored threespine stickleback	VFO	E	F 85		X		X		X	35:160
<i>Gila bicolor mohavensis</i>	Mohave tui chub	VFO	E	F 84				X			35:160
<i>Gila elegans</i>	bonytail chub	R06	E	F 90	D			X	X		45:277
<i>Oncorhynchus mykiss</i>	southern steelhead	R09	E			X	X			X	62:439
<i>Ptychocheilus lucius</i>	Colorado squawfish	R06	E	F 91				X	X		50:301
<i>Xyrauchen texanus</i>	razorback sucker	R06	E		D			X	X		56:549

AMPHIBIANS

<i>Batrachoseps aridus</i>	desert slender salamander	CFWO	E	F 82					X		38:146
<i>Bufo californicus</i>	arroyo toad	VFO	E	F 99	D-05	X	X	X	X	X	59:648
<i>Rana aurora draytoni</i>	California red-legged frog	SAC	T	F 02	RP-04	X	X	X	X	X	61:258
<i>Rana muscosa</i>	mountain yellow-legged frog	CFWO	E		P-05	X		X	X		64:717

REPTILES

<i>Gopherus agassizii</i>	desert tortoise	VFO	T	F 94	D			X	X		55:121
<i>Uma inornata</i>	Coachella Valley fringe-toed lizard	CFWO	T	F 85	D				X		45:638
<i>Xantusia riversiana</i>	island night lizard	CFWO	T	F 84		X					42:406

BIRDS

<i>Amphispiza belli clementeae</i>	San Clemente sage sparrow	CFWO	T	F 84			X				42:406
<i>Brachyramphus marmoratus</i>	marbled murrelet	POR	T	F 97	D	X					57:453
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	SAC	T	D 01	D-05	X	X			X	58:128
<i>Charadrius montanus</i>	mountain plover	R02	W*			X	X	X	X	X	64:758
<i>Coccyzus americanus</i>	yellow-billed cuckoo	SAC	C			X	X	X	X	X	66:386
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	R02	E	D	RP-04	X	X	X	X	X	60:107
<i>Gymnogyps californianus</i>	California condor	VFO	E	F 96		X		X			61:540

<i>Haliaeetus leucocephalus</i>	bald eagle	R03	T	F 86		X	X	X	X	X	X	60:360
<i>Lanius ludovicianus mearnsi</i>	San Clemente loggerhead shrike	CFWO	E	F 84		X						42:406
<i>Pelecanus occidentalis</i>	brown pelican	VFO	E	F 83		X	X	X	X	X	X	50:494
<i>Phoebastria albatrus</i>	short-tailed albatross	JFO	E			X	X			X		65:466
<i>Polioptila californica californica</i>	coastal California gnatcatcher	CFWO	T*		RP	X	X	X	X	X		58:167
<i>Rallus longirostris levipes</i>	light-footed clapper rail	CFWO	E	F 85		X	X			X		35:160
<i>Rallus longirostris yumanensis</i>	Yuma clapper rail	R02	E						X		X	32:400
<i>Sterna antillarum browni</i>	California least tern	CFWO	E	F 85		X	X		X	X	X	35:845
<i>Vireo bellii pusillus</i>	least Bell's vireo	CFWO	E	D 98	D	X	X	X	X	X	X	51:164

MAMMALS

<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	CFWO	E		D-02	X		X	X			63:510
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	CFWO	E	D 97				X	X	X		53:384
<i>Enhydra lutris nereis</i>	southern sea otter	VFO	T/X*	D 00		X	X			X		52:297
<i>Ovis canadensis</i>	peninsular bighorn sheep	CFWO	E	F 00	D-01				X	X	X	63:131
<i>Panthera onca</i>	jaguar	R02	E						X		X	62:391
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	CFWO	E	F 98		X	X			X		59:497
<i>Spermophilus tereticaudus chlorus</i>	Palm Springs ground squirrel	CFWO	C						X			64:575
<i>Urocyon littoralis catalinae</i>	Santa Catalina Island Fox	CFWO	E			X						69:103

E: Listed as a federally endangered species

T: Listed as a federally threatened species

XN: Experimental population; * southern sea otter first listed as threatened Jan. 14, 1977 42:2968

PE: Proposed as federally endangered

PT: Proposed as federally threatened

C: Federal candidate species

R.P.: Recovery Plan, F= Final, D= Draft, those lacking date are in progress

CH: Critical Habitat **P**-Proposed; **D**-Designated

R: Remanded

RV: Remanded and CH designation vacated; RVp = partially vacated

RP: CH Remanded and now repropoed

T*: Proposed DPS

W* = was proposed as threatened but withdrawn 2003

Note: Santa Catalina Isl. and San Clemente Isl. Are in L.A. County

Scientific Name	Common Name	Lead	Status	R.P.	CH	LA	O	SB	Riv	SD	Imp	Fed R
PLANTS												
<i>Acanthomintha ilicifolia</i>	San Diego thornmint	CFWO	T							X		63:549
<i>Allium munzii</i>	Munz's onion	CFWO	E		D-05				X			63:549
<i>Ambrosia pumila</i>	San Diego ambrosia	CFWO	E						X	X		64:725
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>	Del Mar manzanita	CFWO	E							X		61:523
<i>Arenaria paludicola</i>	marsh sandwort	VFO	E	F 98		X		X				58:413
<i>Arenaria ursina</i>	Bear Valley sandwort	CFWO	T					X				63:490
<i>Astragalus albens</i>	Cushenbury milk-vetch	CFWO	E	D2	D-02			X				59:436
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	VFO	E	F 99		X	X					62:417
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella Valley milk-vetch	CFWO	E		P-04				X			63:535
<i>Astragalus magdalenae</i> var. <i>peirsonii</i>	Peirson's milk-vetch	CFWO	T		D-04					X	X	63:535
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	Ventura marsh milk-vetch	VFO	E		D-04	X	X					66:279
<i>Astragalus tener</i> var. <i>titi</i>	coastal dunes milk-vetch	VFO	E	D		X				X		63:431
<i>Astragalus tricarinatus</i>	triple-ribbed milk-vetch	CFWO	E					X	X			63:535
<i>Atriplex coronata</i> var. <i>notatior</i>	San Jacinto Valley crownscale	CFWO	E		P-04				X			63:549
<i>Baccharis vanessae</i>	Encinitas baccharis	CFWO	T							X		61:523
<i>Berberis nevinii</i>	Nevin's barberry	CFWO	E			X		X	X	X		63:549
<i>Brodiaea filifolia</i>	thread-leaved brodiaea	CFWO	T		P-04	X	X	X	X	X		63:549
<i>Castilleja cinerea</i>	ash-gray Indian paintbrush	CFWO	T					X				63:490
<i>Castilleja grisea</i>	San Clemente Island Indian paintbrush	CFWO	E	F 84		X						42:406
<i>Ceanothus ophiochilus</i>	Vail Lake ceanothus	CFWO	T						X			63:549
<i>Cercocarpus traskiae</i>	Catalina Island mountain-mahogany	CFWO	E			X						62:426
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	CFWO	E							X		61:523
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	VFO	C			X	X	X				64:575
<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	salt marsh bird's beak	CFWO	E	F 85		X	X			X		43:448
<i>Deinandra (Hemizonia) conjugens</i>	Otay tarplant	CFWO	T	D 03	D-02					X		63:549
<i>Delphinium variegatum</i> ssp. <i>kinkiense</i>	San Clemente Island larkspur	CFWO	E	F 84		X						42:406
<i>Dodecahema leptoceras (Centrostegia L.)</i>	slender-horned spineflower	CFWO	E	D		X		X	X			52:362
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	Santa Monica Mountains dudleya	VFO	T	F 99		X	X					62:417
<i>Dudleya stolonifera</i>	Laguna Beach live-forever	CFWO	T				X					63:549
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana River woolly-star	CFWO	E	D			X	X	X			52:362
<i>Erigeron parishii</i>	Parish's daisy	CFWO	T	D2	D-02			X	X			59:436

<i>Eriogonum kennedyi</i> var. <i>austromontanum</i>	southern mountain wild buckwheat	CFWO	T					X			63:490
<i>Eriogonum ovalifolium</i> var. <i>vineum</i>	Cushenbury buckwheat	CFWO	E	D2	D-02			X			59:436
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button celery	CFWO	E	F 98					X	X	58:413
<i>Fremontodendron mexicanum</i>	Mexican flannelbush	CFWO	E							X	63:549
<i>Hazardia orcuttii</i>	Orcutt's hazardia	CFWO	C							X	69:248
<i>Helianthemum greenei</i>	Island rush-rose	VFO	T	F 00			X				62:409
<i>Lesquerella kingii</i> ssp. <i>bernardina</i>	San Bernardino Mountains bladderpod	CFWO	E	D2	D-02			X			59:436
<i>Lithophragma maximum</i>	San Clemente Island woodland star	CFWO	E	F 84			X				62:426
<i>Lotus dendroideus</i> var. <i>traskiae</i>	San Clemente Island lotus	CFWO	E	F 84			X				42:406
<i>Malacothamnus clementinus</i>	San Clemente Island bush mallow	CFWO	E	F 84			X				42:406
<i>Monardella linoides</i> ssp. <i>viminea</i>	willowy monardella	CFWO	E							X	63:549
<i>Navarretia fossalis</i>	spreading navarretia	CFWO	T	F 98	P-04		X		X	X	63:549
<i>Orcuttia californica</i>	California Orcutt grass	CFWO	E	F 98			X		X	X	58:413
<i>Oxytheca parishii</i> var. <i>goodmaniana</i>	Cushenbury oxytheca	CFWO	E	D2	D-02			X			59:436
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta	VFO	E	F 99			X				62:417
<i>Phacelia stellaris</i>	Brand's phacelia	CFWO	C				X		X	X	69:248
<i>Poa atropurpurea</i>	San Bernardino bluegrass	CFWO	E					X		X	63:490
<i>Pogogyne abramsii</i>	San Diego mesa mint	CFWO	E	F 98						X	43:448
<i>Pogogyne nudiuscula</i>	Otay mesa mint	CFWO	E	F 98						X	58:413
<i>Rorippa gambellii</i>	Gambel's watercress	VFO	E	F 98			X	X	X	X	58:413
<i>Sibara filifolia</i>	Santa Cruz Island rock-cress	CFWO	E				X				62:426
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	Parish's checkerbloom	VFO	C					X			
<i>Sidalcea pedata</i>	pedate checker-mallow	CFWO	E	F 98				X			49:344
<i>Taraxacum californicum</i>	California taraxacum	CFWO	E					X			63:490
<i>Thelypodium stenopetalum</i>	slender-petaled mustard	CFWO	E	F 98				X			49:344
<i>Trichostema austromontanum compactum</i>	Hidden Lake bluecurls	CFWO	T						X		63:490
<i>Verbesina dissita</i>	big-leaved crown beard	CFWO	T					X			61:523

INVERTEBRATES

<i>Branchinecta lynchii</i>	vernal pool fairy shrimp	SAC	T		D-03				X		59:481
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	CFWO	E	F 98	RP		X			X	62:492
<i>Euphilotes battoides allyni</i>	El Segundo blue butterfly	CFWO	E	F 98			X				41:220
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	CFWO	E	F 03	D-02		X	X	X	X	62:231
<i>Glaucopsyche lygdamus palosverdensis</i>	Palos Verdes blue butterfly	CFWO	E	F 84	D		X				45:449

<i>Pyrgus ruralis lagunae</i>	Laguna Mountains skipper	CFWO	E						X		62:231
<i>Rhaphiomidas terminatus abdominalis</i>	Delhi Sands flower-loving fly	CFWO	E	F 97				X	X		58:498
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	CFWO	E	F 98	D-05	X	X		X	X	58:413

FISH

<i>Catostomus santaanae</i>	Santa Ana sucker	CFWO	T		D-05	X	X	X	X			65:196
<i>Cyprinodon macularius</i>	desert pupfish	R02	E	F 93	D				X	X	X	51:108
<i>Eucyclogobius newberryi</i>	tidewater goby	VFO	E	D 04	D		X			X		59:549
<i>Gasterosteus aculeatus williamsoni</i>	unarmored threespine stickleback	VFO	E	F 85		X		X		X		35:160
<i>Gila bicolor mohavensis</i>	Mohave tui chub	VFO	E	F 84				X				35:160
<i>Gila elegans</i>	bonytail chub	R06	E	F 90	D			X	X		X	45:277
<i>Oncorhynchus mykiss</i>	southern steelhead	R09	E			X	X			X		62:439
<i>Ptychocheilus lucius</i>	Colorado squawfish	R06	E	F 91				X	X		X	50:301
<i>Xyrauchen texanus</i>	razorback sucker	R06	E		D			X	X		X	56:549

AMPHIBIANS

<i>Batrachoseps aridus</i>	desert slender salamander	CFWO	E	F 82					X			38:146
<i>Bufo californicus</i>	arroyo toad	VFO	E	F 99	D-05	X	X	X	X	X		59:648
<i>Rana aurora draytoni</i>	California red-legged frog	SAC	T	F 02	RP-04	X	X	X	X	X		61:258
<i>Rana muscosa</i>	mountain yellow-legged frog	CFWO	E		P-05	X		X	X			64:717

REPTILES

<i>Gopherus agassizii</i>	desert tortoise	VFO	T	F 94	D			X	X		X	55:121
<i>Uma inornata</i>	Coachella Valley fringe-toed lizard	CFWO	T	F 85	D				X			45:638
<i>Xantusia riversiana</i>	island night lizard	CFWO	T	F 84		X						42:406

BIRDS

<i>Amphispiza belli clementeae</i>	San Clemente sage sparrow	CFWO	T	F 84		X						42:406
<i>Brachyramphus marmoratus</i>	marbled murrelet	POR	T	F 97	D	X						57:453
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	SAC	T	D 01	D-05	X	X			X		58:128
<i>Charadrius montanus</i>	mountain plover	R02	W*			X	X	X	X	X	X	64:758
<i>Coccyzus americanus</i>	yellow-billed cuckoo	SAC	C			X	X	X	X	X	X	66:386
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	R02	E	D	RP-04	X	X	X	X	X	X	60:107
<i>Gymnogyps californianus</i>	California condor	VFO	E	F 96		X		X				61:540

<i>Haliaeetus leucocephalus</i>	bald eagle	R03	T	F 86		X	X	X	X	X	X	60:360
<i>Lanius ludovicianus mearnsi</i>	San Clemente loggerhead shrike	CFWO	E	F 84		X						42:406
<i>Pelecanus occidentalis</i>	brown pelican	VFO	E	F 83		X	X	X	X	X	X	50:494
<i>Phoebastria albatrus</i>	short-tailed albatross	JFO	E			X	X			X		65:466
<i>Polioptila californica californica</i>	coastal California gnatcatcher	CFWO	T*		RP	X	X	X	X	X		58:167
<i>Rallus longirostris levipes</i>	light-footed clapper rail	CFWO	E	F 85		X	X			X		35:160
<i>Rallus longirostris yumanensis</i>	Yuma clapper rail	R02	E						X		X	32:400
<i>Sterna antillarum browni</i>	California least tern	CFWO	E	F 85		X	X		X	X	X	35:849
<i>Vireo bellii pusillus</i>	least Bell's vireo	CFWO	E	D 98	D	X	X	X	X	X	X	51:164

MAMMALS

<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	CFWO	E		D-02	X		X	X			63:510
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	CFWO	E	D 97				X	X	X		53:384
<i>Enhydra lutris nereis</i>	southern sea otter	VFO	T/X*	D 00		X	X			X		52:297
<i>Ovis canadensis</i>	peninsular bighorn sheep	CFWO	E	F 00	D-01				X	X	X	63:131
<i>Panthera onca</i>	jaguar	R02	E						X		X	62:391
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	CFWO	E	F 98		X	X			X		59:497
<i>Spermophilus tereticaudus chlorus</i>	Palm Springs ground squirrel	CFWO	C						X			64:575
<i>Urocyon littoralis catalinae</i>	Santa Catalina Island Fox	CFWO	E			X						69:103

- E:** Listed as a federally endangered species
- T:** Listed as a federally threatened species
- XN:** Experimental population; * southern sea otter first listed as threatened Jan. 14, 1977 42:2968
- PE:** Proposed as federally endangered
- PT:** Proposed as federally threatened
- C:** Federal candidate species
- R.P.:** Recovery Plan, F= Final, D= Draft, those lacking date are in progress
- CH:** Critical Habitat **P**-Proposed; **D**-Designated
- R:** Remanded
- RV:** Remanded and CH designation vacated; RVp = partially vacated
- RP:** CH Remanded and now repropoed
- T*:** Proposed DPS
- W*** = was proposed as threatened but withdrawn 2003
- Note:** Santa Catalina Isl. and San Clemente Isl. Are in L.A. County

BLM Sensitive Species Known or Suspected to Occur within the Palm Springs/South
Coast Office Area of Responsibility

Common Name	Scientific Name
San Diego ambrosia	<i>Ambrosia pumila</i>
Otay manzanita	<i>Arctostaphylos otayensis</i>
Deane's milk-vetch	<i>Astragalus deani</i>
Jacumba milk-vetch	<i>Astragalus douglasii</i> var. <i>perstrictus</i>
San Diego rattleweed	<i>Astragalus oocarpus</i>
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>
Lakeside ceanothus	<i>Ceanothus cyaneus</i>
Flat-seed spurge	<i>Chamaesyce platysperma</i>
Tecate cypress	<i>Cupressus forbesii</i>
Tecate tarplant	<i>Deinandra floribunda</i>
Many-stemmed dudleya	<i>Dudleya multicaulis</i>
California bedstraw	<i>Galium californicum</i> ssp. <i>primum</i>
San Gabriel bedstraw	<i>Galium grande</i>
Orcutt's hazardia	<i>Hazardia orcuttii</i>
Gander's pitcher-sage	<i>Lepechinia ganderi</i>
Borrego Valley pepper-grass	<i>Lepidium flavum</i> var. <i>felipense</i>
Little San Bernadino Mountains linanthus	<i>Linanthus maculatus</i>
Orcutt's linanthus	<i>Linanthus orcuttii</i>
Mountain Spring bush lupine	<i>Lupinus excubitus</i> var. <i>medius</i>
Robison monardella	<i>Monardella robisonii</i>
San Diego goldenstar	<i>Muilla clevelandii</i>
Munz cholla	<i>Opuntia munzii</i>
San Diego current	<i>Ribes canthariforme</i>
Parry's tetracoccus	<i>Tetracoccus dioicus</i>
White-eared pocket mouse	<i>Perognathus alticola</i>
Palm Springs little pocket mouse	<i>Perognathus longimembris bangsi</i>
Desert bighorn sheep	<i>Ovis canandensis nelsoni</i>
California leaf-nosed bat	<i>Macrotus californicus</i>
Spotted bat	<i>Euderma maculatum</i>
Western mastiff bat	<i>Eumops perotis californicus</i>
Townsend's western big-eared bat	<i>Plecotus townsendii</i>
Pallid bat	<i>Antrozous pallidus</i>
Fringed myotis	<i>Myotis tghaysanodes</i>
Small-footed myotis	<i>Myotis ciliolabrum</i>
Long-eared myotis	<i>Myotis evotis</i>
Cave myotis	<i>Myotis velifer</i>
Yuma myotis	<i>Myotis yumanensis</i>
Burrowing owl	<i>Athene cunicularia</i>
Tricolored blackbird	<i>Agelaius tricolor</i>
Gray vireo	<i>Vireo vicinior</i>
Bendire's thrasher	<i>Toxostoma bendirei</i>
California horned lizard	<i>Phrynosoma coronatum frontale</i>
Flat-tailed horned lizard	<i>Phrynosoma macalli</i>
Colorado Desert fringe-toed lizard	<i>Uma notata notata</i>
Coronado skink	<i>Eumeces skiltonianus interparietalis</i>

Two-striped garter snake	<i>Thamnophis hammondi</i>
Southwestern pond turtle	<i>Emys marmorata pallida</i>
San Sebastian leopard frog	<i>Rana yavapaiensis</i>
Western spadefoot toad	<i>Scaphiopus hammondi</i>
Thorne's hairstreak butterfly	<i>Callophrys thornei</i>

APPENDIX F
Air Quality Calculations

CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION

Assumptions for Combustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	2	300	10	160	960000
Diesel Road Compactors	1	100	10	160	160000
Diesel Dump Truck	2	300	10	160	960000
Diesel Excavator	1	300	10	160	480000
Diesel Hole Cleaners/Trenchers	2	175	10	160	560000
Diesel Bore/Drill Rigs	2	300	10	160	960000
Diesel Cement & Mortar Mixers	3	300	10	160	1440000
Diesel Cranes	2	175	10	160	560000
Diesel Graders	1	300	10	160	480000
Diesel Tractors/Loaders/Backhoes	0	100	10	160	0
Diesel Bull Dozers	1	300	10	160	480000
Diesel Front End Loaders	1	300	10	160	480000
Diesel Fork Lifts	3	100	10	160	480000
Diesel Generator Set	10	40	10	160	640000

Emission Factors							
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr	CO2 g/hp-hr
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740	536.200
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740	536.300
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740	535.800
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730	529.700
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730	529.700
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730	530.200
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740	536.300
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950	691.100
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740	536.300
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740	536.200
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950	690.800
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

CALCULATION SHEET-COMBUSTABLE EMISSIONS-PROPOSED ACTION

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.465	2.190	5.808	0.434	0.423	0.783	567.045
Diesel Road Paver	0.065	0.261	0.864	0.060	0.058	0.130	94.543
Diesel Dump Truck	0.465	2.190	5.808	0.434	0.423	0.783	567.045
Diesel Excavator	0.180	0.688	2.433	0.169	0.164	0.391	283.681
Diesel Hole Cleaners/Trenchers	0.315	1.506	3.585	0.284	0.272	0.457	330.653
Diesel Bore/Drill Rigs	0.635	2.423	7.564	0.529	0.518	0.772	560.380
Diesel Cement & Mortar Mixers	0.968	3.682	11.552	0.762	0.746	1.158	840.570
Diesel Cranes	0.272	0.802	3.530	0.210	0.204	0.450	327.197
Diesel Graders	0.185	0.719	2.502	0.175	0.169	0.391	283.681
Diesel Tractors/Loaders/Backhoes	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Diesel Bull Dozers	0.190	0.730	2.518	0.175	0.169	0.391	283.681
Diesel Front End Loaders	0.201	0.820	2.645	0.185	0.180	0.391	283.628
Diesel Fork Lifts	1.047	4.105	4.528	0.735	0.714	0.503	365.406
Diesel Generator Set	0.853	2.652	4.211	0.515	0.501	0.571	414.211
Total Emissions	5.842	22.766	57.548	4.665	4.541	7.174	5201.722

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-PROPOSED ACTION

Construction WorkerPersonal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	120	160	10	10	0.29	0.34	0.63
CO	12.4	15.7	120	160	10	10	2.62	3.32	5.95
NOx	0.95	1.22	120	160	10	10	0.20	0.26	0.46
PM-10	0.0052	0.0065	120	160	10	10	0.00	0.00	0.00
PM 2.5	0.0049	0.006	120	160	10	10	0.00	0.00	0.00

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Heavy Duty Trucks Delivery Supply Trucks to Construction Sight									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	160	2	2	0.01	0.01	0.02
CO	1.32	3.21	60	160	2	2	0.03	0.07	0.10
NOx	4.97	12.6	60	160	2	2	0.11	0.27	0.37
PM-10	0.12	0.33	60	160	2	2	0.00	0.01	0.01
PM 2.5	0.13	0.36	60	160	2	2	0.00	0.01	0.01

OBP Commute to New Site									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	0	0	0	-	0.00	-
CO	12.4	15.7	60	0	0	0	-	0.00	-
NOx	0.95	1.22	60	0	0	0	-	0.00	-
PM-10	0.0052	0.0065	60	0	0	0	-	0.00	-
PM 2.5	0.0049	0.006	60	0	0	0	-	0.00	-

POV Source: USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway vehicle emission factor model.

Fleet Charactorization: 20 POVs commuting to work were 50% are pick up trucks and 50% passenger cars

CALCULATION SHEET-FUGITIVE DUST-PROPOSED ACTION

Fugitive Dust Emissions at New Construction Site (1)					
Construction Site	Emission Factor tons/acre/month (1)	Total Area- Construction Site/month	Months/yr	Total PM-10 Emissions tns/yr	Total PM-2.5 (2)
Fugitive Dust Emissions	0.11	42.70	6	28.18	5.64

1. Environmental Protection Agency (EPA) 2001. Procedures Document for National Emission Inventory, Criteria Air Pollutants 1985-1999. EPA-454/R-01-006. Office of Air Quality Planning and Standards Research Triangle Park NC 27711. Midwest Research Institute, Inventory of Agricultural Tiling, Unpaved Roads, Airstrips and construction Sites., prepared for the U.S. EPA, PB 238-929, Contract 68-02-1437 (November 1977)

2. 20% of the total PM-10 emissions are PM-2.5 (EPA 2006).

Coastruction Site Area	Demension (ft)			Total Acres/month
Proposed Prioject	Length	Width	Units	
Construction Area-New Road				13.70
Construction Area-Road Improvements				29.00
Low Water Crossings (LWC)				-
Total				42.70

Conversion Factors	Miles to feet	Acres to sq ft	Sq ft to acres	Sq ft in 0.5 acres
	5,280	0	43,560	21,780

CALCULATION SHEET-SUMMARY OF EMISSIONS-PROPOSED ACTION

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂
Combustable Emissions	5.84	22.77	57.55	4.67	4.54	7.17
Construction Site-fugitive PM-10	NA	NA	NA	28.18	5.64	NA
Construction Workers Commuter & Trucking	0.65	6.04	0.83	0.01	0.01	NA
Total emissions	6.49	28.81	58.38	32.86	10.19	7.17
De minimis threshold	100.00	100.00	100.00	NA	NA	NA

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3

Assumptions for Combustable Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Water Truck	1	300	10	240	720000
Diesel Road Compactors	1	100	10	240	240000
Diesel Dump Truck	2	300	10	240	1440000
Diesel Excavator	2	300	10	240	1440000
Diesel Hole Cleaners/Trenchers	2	175	10	240	840000
Diesel Bore/Drill Rigs	2	300	10	240	1440000
Diesel Cement & Mortar Mixers	2	300	10	240	1440000
Diesel Cranes	2	175	10	240	840000
Diesel Graders	2	300	10	240	1440000
Diesel Tractors/Loaders/Backhoes	2	100	10	240	480000
Diesel Bull Dozers	2	300	10	240	1440000
Diesel Front End Loaders	1	300	10	240	720000
Diesel Fork Lifts	2	100	10	240	480000
Diesel Generator Set	10	40	10	240	960000

Emission Factors							
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr	CO2 g/hp-hr
Water Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Road Compactors	0.370	1.480	4.900	0.340	0.330	0.740	536.200
Diesel Dump Truck	0.440	2.070	5.490	0.410	0.400	0.740	536.000
Diesel Excavator	0.340	1.300	4.600	0.320	0.310	0.740	536.300
Diesel Trenchers	0.510	2.440	5.810	0.460	0.440	0.740	535.800
Diesel Bore/Drill Rigs	0.600	2.290	7.150	0.500	0.490	0.730	529.700
Diesel Cement & Mortar Mixers	0.610	2.320	7.280	0.480	0.470	0.730	529.700
Diesel Cranes	0.440	1.300	5.720	0.340	0.330	0.730	530.200
Diesel Graders	0.350	1.360	4.730	0.330	0.320	0.740	536.300
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950	691.100
Diesel Bull Dozers	0.360	1.380	4.760	0.330	0.320	0.740	536.300
Diesel Front End Loaders	0.380	1.550	5.000	0.350	0.340	0.740	536.200
Diesel Fork Lifts	1.980	7.760	8.560	1.390	1.350	0.950	690.800
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

CALCULATION SHEET-COMBUSTABLE EMISSIONS-ALTERNATIVE 3

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Water Truck	0.349	1.642	4.356	0.325	0.317	0.587	425.284
Diesel Road Paver	0.098	0.391	1.296	0.090	0.087	0.196	141.814
Diesel Dump Truck	0.698	3.285	8.712	0.651	0.635	1.174	850.568
Diesel Excavator	0.540	2.063	7.300	0.508	0.492	1.174	851.044
Diesel Hole Cleaners/Trenchers	0.472	2.259	5.378	0.426	0.407	0.685	495.979
Diesel Bore/Drill Rigs	0.952	3.634	11.346	0.793	0.778	1.158	840.570
Diesel Cement & Mortar Mixers	0.968	3.682	11.552	0.762	0.746	1.158	840.570
Diesel Cranes	0.407	1.203	5.295	0.315	0.305	0.676	490.796
Diesel Graders	0.555	2.158	7.506	0.524	0.508	1.174	851.044
Diesel Tractors/Loaders/Backhoes	0.979	4.343	3.819	0.725	0.704	0.503	365.564
Diesel Bull Dozers	0.571	2.190	7.554	0.524	0.508	1.174	851.044
Diesel Front End Loaders	0.302	1.230	3.967	0.278	0.270	0.587	425.443
Diesel Aerial Lifts	1.047	4.105	4.528	0.735	0.714	0.503	365.406
Diesel Generator Set	1.280	3.978	6.316	0.772	0.751	0.857	621.316
Total Emissions	9.218	36.162	88.925	7.427	7.222	11.607	8416.441

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-ALTERNATIVE 3

Construction Worker Personal Vehicle Commuting to Construction Sight-Passenger and Light Duty Trucks									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	120	240	15	15	0.65	0.77	1.41
CO	12.4	15.7	120	240	15	15	5.90	7.47	13.38
NOx	0.95	1.22	120	240	15	15	0.45	0.58	1.03
PM-10	0.0052	0.0065	120	240	15	15	0.00	0.00	0.01
PM 2.5	0.0049	0.006	120	240	15	15	0.00	0.00	0.01

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Heavy Duty Trucks Delivery Supply Trucks to Construction Sight									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	240	2	2	0.01	0.02	0.03
CO	1.32	3.21	60	240	2	2	0.04	0.10	0.14
NOx	4.97	12.6	60	240	2	2	0.16	0.40	0.56
PM-10	0.12	0.33	60	240	2	2	0.00	0.01	0.01
PM 2.5	0.13	0.36	60	240	2	2	0.00	0.01	0.02

OBP Commute to New Site									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	0	0	0	-	0.00	-
CO	12.4	15.7	60	0	0	0	-	0.00	-
NOx	0.95	1.22	60	0	0	0	-	0.00	-
PM-10	0.0052	0.0065	60	0	0	0	-	0.00	-
PM 2.5	0.0049	0.006	60	0	0	0	-	0.00	-

POV Source: USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway vehicle emission factor model.

Fleet Characterization: 20 POVs commuting to work were 50% are pick up trucks and 50% passenger cars

CALCULATION SHEET-TRANSPORTATION COMBUSTABLE EMISSIONS-ALTERNATIVE 3

Conversion factor:	gms to tons
	0.000001102

CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 3

Fugitive Dust Emissions at New Construction Site.					
Construction Site	Emission Factor tons/acre/month (1)	Total Area- Construction Site/month	Months/yr	Total PM-10 Emissions tns/yr	Total PM-2.5 (2)
Fugitive Dust Emissions	0.11	18.55	12	24.48	4.90

1. Mid-Atlantic Regional Air Management Association (MARAMA). Fugitive Dust-Construction Calculation Sheet can be found online at: http://www.marama.org/visibility/Calculation_Sheets/. MRI= Midwest Research Institute, Inventory of Agricultural Tiling, Unpaved Roads, Airstrips and construction Sites., prepared for the U.S. EPA, PB 238-929, Contract 68-02-1437 (November 1977)

2. 20% of the total PM-10 emissions are PM-2.5 (EPA 2006).

Coastruction Site Area	Demension (ft)			Total
Proposed Prioject	Length	Width	Units	Acres/month
Construction Area-Fence	2,640	130	1	7.88
Construction Area-New Road	5,280	28	1	3.39
Construction Area-Road Improvements	5,280	60	1	7.27
Low Water Crossings (LWC)	40	25	1	0.02
Total				18.55

Conversion Factors	Miles to feet	Acres to sq ft	Sq ft to acres	Sq ft in 0.5 acres
	5280	0.000022957	43560	21780

Assumptions	Sections/day	Length of Section (ft)	Length/day (ft)	Days/Month	Length/Month (ft)
Fencing installed per day (1)	11	10	110	24	2640
Length of fence/month (miles)	0.50				
Length of new road per month	1				
Length of road improvements/month	1				

1. OBP reported that construction crew complete 22 sections of fence per day. Alternative 3 requires 2 fences to be built per section and there twice as long to complete per section. Therefore, instead of assuming that 22 sections of fence will be completed per day, we are assuming th fence will be completed per day.

CALCULATION SHEET-FUGITIVE DUST-ALTERNATIVE 3

Miles/Month
0.50

efore will take
at 11 sections of

CALCULATION SHEET-SUMMARY OF EMISSIONS-ALTERNATIVE 3

Proposed Action Construction Emissions for Criteria Pollutants (tons per year)						
Emission source	VOC	CO	NOx	PM-10	PM-2.5	SO ₂
Combustable Emissions	9.22	36.16	88.92	7.43	7.22	11.61
Construction Site-fugitive PM-10	NA	NA	NA	24.48	4.90	NA
Construction Workers Commuter & Trucking	1.44	13.52	1.59	0.02	0.02	NA
Total emissions	10.66	49.68	90.52	31.93	12.14	11.61
De minimis threshold	100.00	100.00	100.00	NA	NA	100.00