

**GUADALUPE OIL FIELD  
SITE CHARACTERIZATION MEDIATION**

**SUMMARY OF PROGRESS AND AGREEMENTS  
September 1, 2002 – February 28, 2003**

**Drafted by Kreimes Associates, Inc.**

**Ratified by Representatives of Unocal  
and the California Regional Water Quality Control Board,  
Central Coast Region**

**Version 2.1**

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# INTRODUCTION

## **I. PURPOSE OF THE SUMMARY**

This document is a compilation of agreements reached by the staff of the California Regional Water Quality Control Board, Central Coast Region (RWQCB) and Unocal during the mediation and joint fact-finding process focusing on site characterization of the Guadalupe Oil Field in San Luis Obispo County, California during September 1, 2002 – February 28, 2003. The mediation team included:

Melody Kreimes, Kreimes Associates, Inc.  
Chuck Anders, Strategic Initiatives

The purpose of this Summary of Progress and Agreements is to outline the progress made by Unocal and the RWQCB during the last six months of the mediation process, and to memorialize the agreements reached regarding Guadalupe Oil Field site characterization.

**II. RATIFICATION OF SUMMARY OF PROGRESS & AGREEMENTS FOR THE PERIOD SEPTEMBER 1, 2002 – FEBRUARY 28, 2003**

We, the representatives of Unocal and the California Regional Water Quality Control Board, Central Coast Region, have reviewed, revised and ratified the attached Summary of Progress and Agreements, as indicated by our signatures below. Our signatures are an indication of 1) our participation as decision-makers in the Guadalupe Oil Field Mediation; 2) our support for the Summary of Progress and Agreements, and; 3) our commitment to implement the agreements contained herein.



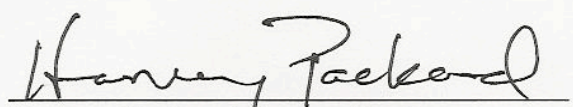
Kenneth Smith, General Manager  
Operations, Real Estate & Remediation Serv.  
Unocal



Brad Hagemann, Asst. Executive Officer  
California Regional Water Quality  
Control Board, Central Coast Region



Gonzalo Garcia  
Guadalupe Project Manager  
Central Coast Group, Unocal



Harvey Packard, Senior Engineer  
California Regional Water Quality  
Control Board, Central Coast Region

Signed by the parties on July 31, 2003.

### **III. BACKGROUND OF THE MEDIATION AND JOINT FACT-FINDING PROCESS**

An overview of the mediation and fact-finding process, and a list of participants, is provided below. More detailed information on the structure of the mediation process can be reviewed in the *Guadalupe Oil Field Site Characterization Mediation: Phase I Summary of Agreements*.

#### **Policy Group**

Policy discussions and decision-making occurred among upper-level management of Unocal and the RWQCB in mediated policy meetings or teleconference calls. The policy group held four sessions during this phase of mediation. Below is a list of policy representatives who attended meetings and/or reviewed documents.

Roger Briggs, Executive Officer, RWQCB  
Brad Hagemann, Asst. Executive Officer, RWQCB  
Harvey Packard, Senior Water Resources Control Engineer, RWQCB  
Kenneth Smith, General Manager, Operations, Real Estate & Remediation Services, Unocal  
Gonzalo Garcia, Operations Team Manager, Real Estate & Remediation Services, Unocal

#### **Joint Fact-Finding Working Group**

The technical staff and consultants of Unocal and the RWQCB met monthly to conduct joint fact-finding on technical site characterization issues as directed by the policy staff. The technical group had nine joint fact-finding meetings during this phase of the mediation and included the following individuals:

Katie DiSimone, RWQCB Staff  
John Catts, RWQCB Consultant  
Paul Lundegard, Unocal  
Don Eley, LFR Levine-Fricke, Unocal Consultant  
Eric Nichols, LFR Levine-Fricke, Unocal Consultant  
Kristine Schroeder, LFR Levine-Fricke, Unocal Consultant  
Robert Haddad, Applied Geochemical Strategies, Unocal Consultant  
Brad Sample, CH2M Hill, Unocal Consultant  
Charles Lambert, McDaniel Lambert, Inc., Unocal Consultant  
Ken Jenkins, BBL, Unocal Consultant

#### **Additional Agency Representation**

Several agency representatives participate in both the policy and joint fact-finding groups in order to address issues related to the ecological and human health risk assessments, as well as other issues related to water resources, endangered species, wetlands, etc. These agency representatives are as follows:

Regina Donohoe, California Department of Fish and Game, Office of Spill  
Prevention and Response  
Melissa Boggs-Blalack, California Department of Fish and Game, Office of Spill  
Prevention and Response  
Steve Henry, U.S. Fish and Wildlife Service  
Jeff Poel, San Luis Obispo County Environmental Health Department  
Jim Carlisle, Office of Environmental Health Hazard Assessment, RWQCB  
Consultant

### **Neutral Scientific Review**

During this period the following neutral scientific experts continued to provide peer review of draft work products and data related to hydrogeology and natural attenuation.

Paul Johnson, Neutral Natural Attenuation Expert  
Dave Peterson, Neutral Hydrogeology Expert

## **PROGRESS AND AGREEMENTS REACHED**

A number of agreements were reached and joint fact-finding tasks completed between September 1, 2002 and February 28, 2003. Various documents, which describe the results of completed work products in detail, have been made part of the RWQCB public record. Table I summarizes work products completed and pending, and tracks when these documents were ratified or scheduled for ratification. Throughout this Summary of Progress and Agreements, all *italicized* documents are ratified and became part of the public record on the date ratified.

### **IV. SITE-WIDE ECOLOGICAL AND HUMAN HEALTH RISK ASSESSMENTS**

The site-wide ecological and human health risk assessments were priority fact-finding tasks during this period of mediation. Individual work products drafted and ratified as part of the risk assessment process are summarized below.

#### **Site-Wide Human Health Risk Assessment**

During the previous phase of mediation, several versions of the Human Health Risk Assessment (HHRA) were revised by fact-finding participants. After one final fact-finding review during this period, the *Human Health Risk Assessment, Version 2.1* was ratified at the November 21, 2002 policy meeting.

Charles Lambert, McDaniel Lambert, Inc. then presented the conclusions of the ratified HHRA, to staff of both San Luis Obispo and Santa Barbara counties. Jim Carlisle, OEHEA, also attended the meeting with Santa Barbara County.

## **Site-Wide Ecological Risk Assessment**

During this phase of mediation, fact-finding participants revised the Site-Wide Ecological Risk Assessment (EcoRA), Preliminary Draft Version 1.0. Several working sessions and fact-finding meetings were conducted to revise the table of contents to reflect agreed upon changes, and to revise sections 1 and 2, the introduction and approach. It was agreed that subsequent chapters would not be revised in detail until Preliminary Draft Version 1.1 is distributed. Version 1.1 is scheduled for review by fact-finders beginning at the April 10, 2003 fact-finding meeting.

## **V. NATURAL ATTENUATION ASSESSMENT**

Evaluation of natural attenuation (NA) was also a priority fact-finding task during this period of mediation. Several fact-finding meetings and working sessions were conducted, with progress made on the following NA work products.

### **Source Zone Natural Attenuation - Field Data and Interpretation**

At several fact-finding meetings and working sessions, participants reviewed data relevant to an evaluation of source zone natural attenuation (SZNA). This evaluation focuses on mobile or immobile non-aqueous-phase-liquid (NAPL) diluent sources, and will address the following questions:

1. Is SZNA occurring at the GOF?
2. What mechanisms are contributing to SZNA at the oil field?
3. What are the rates of removal associated with SZNA at the oil field?
4. What are the longer-term implications of SZNA to groundwater impacts at the oil field?

A Source Zone Natural Attenuation Discussion Paper summarizing and interpreting the data was drafted by Paul Johnson, Neutral Natural Attenuation Expert, and is currently under revision by working session participants. It is expected to be ratified in the end of 2003.

### **Plume Stability Discussion Paper**

Fact-finding participants also reviewed data to be used in evaluating plume stability. The purpose of this evaluation is twofold:

1. Define the dissolved plume boundary at different times, and
2. Evaluate the data to determine if trends in the position of the dissolved plume boundary change with time (stable, growing or shrinking).

Paul Johnson drafted a Plume Stability Discussion Paper that will continue to be revised at fact-finding meetings during the next period of mediation. It is expected to be ratified in the end of 2003.

Fact-finding participants also revised the natural attenuation component of the *Monitoring Plan for Water Monitoring and Remediation Activities, Version 3.1*

## **VI. MONITORING PLAN**

The Monitoring Plan was revised at several working sessions with Unocal and the RWQCB staff during this phase of mediation. At the December 18, 2002 policy meeting, participants provisionally ratified the Monitoring Plan, Draft Version 2.2, pending additional detailed review of a few of the monitoring programs, as follows: site-wide, post-excavation groundwater, NA, and deeper hydrostratigraphic units (DHUs). The remainder of the programs were implemented according to the provisionally ratified Monitoring Plan in the first quarter 2003. The *Monitoring Plan, Version 3.1* was then ratified in its entirety at the February 27, 2003 policy meeting.

## **VII. SURFACE WATER EVALUATION**

During this phase of mediation, Unocal compiled site-specific data for surface water bodies that:

1. have an upgradient source but no planned remedial action,
2. lack data, and
3. are affected but without a known upgradient source.

RWQCB reviewed these site-specific data compilations and provided comments to Unocal. The surface water monitoring component of the *Monitoring Plan for Water Monitoring and Remediation Activities, Version 3.1* was also revised. It was agreed at the February 27, 2003 policy meeting that the revised surface water monitoring program addressed the majority of the RWQCB staff's data needs. At some point in the future, an evaluation of surface water monitoring data is to be drafted.

## **VIII. CONFINING UNIT INTEGRITY REPORT**

The Confining Unit Integrity Report summarizes existing data related to groundwater flow and the potential for contamination to flow from the dune sand aquifer (DSA) through the confining unit (CU) into the principal aquifer (PA). The Report was jointly developed and authored by Unocal and RWQCB staff and consultants. Participants agreed there is a high level of confidence in the data in the Report, however, there is still some uncertainty due to limited data in certain instances. The *Confining Unit Integrity Report, Version 2.1* was ratified at the February 27, 2003 policy meeting.

### **Memorandum: Evaluation of TPH Detections in the DHUs**

As part of the evaluation of the confining unit integrity, it was agreed during the previous period of mediation that LFR would evaluate historical TPH detections in groundwater from the deeper hydrostratigraphic units (DHUs) based on the *Approach for Cataloguing TPH Detections in Groundwater from the DHUs, Version 2.1, April 27, 2002*. During this period, the findings of this evaluation were summarized in a report titled



Evaluation of TPH Detections in the DHUs, which was reviewed and revised at several fact-finding meetings.

The *Evaluation of TPH Detections in the DHUs, Version 2.0* was ratified at the February 27, 2003 policy meeting. The report concludes that a few locations have produced groundwater samples with TPH detections consistent with diluent. The conclusions of this Report are also referenced in the *Confining Unit Integrity Report, Version 2.1, February 27, 2003*. It was agreed that Unocal and the RWQCB will jointly develop an approach for addressing such TPH detections in the DHUs during the next period of mediation.

## **IX. LOCAL GROUNDWATER FLOW MODEL**

After revision during the previous phase of mediation, the *Local Groundwater Flow Model Report Addendum, Version 3.0* was ratified at the October 24, 2002 policy meeting. This Addendum documents the revisions and improvements made to the *Local Groundwater Flow Model, Version 3.0*, which was also ratified on October 24, 2002. The Local Groundwater Flow Model (LGFM) 3.0 has a more accurate water balance, has better calibration, more closely complies with the conceptual model for the site, and provides a more useful tool for fact-finding evaluations, such as confining unit integrity and natural attenuation.

## **X. OUTSTANDING DATA GAPS**

Significant progress has been made on addressing outstanding data gaps and historical information requests through the mediation process. At the beginning of this phase, only three of the original data gaps remain:

1. Memorandum on Historic Use and Storage of Chemicals
2. Sump Data Interpretation Report
3. Memorandum on Oil Well Operation

Due to the priority of other fact-finding tasks, the Technical Memorandum on Historic Use and Storage of Chemicals was postponed. The status of the other two outstanding data gaps is described below.

### **Memorandum: Oil Well Operation**

The Memorandum: Oil Well Operation was revised at several fact-finding meetings during previous phases of mediation. The *Memorandum: Oil Well Operation, Version 2.4* was ratified on October 24, 2002. RWQCB staff commented on the usefulness of this Memo for future remedial decision-making.

### **Sump Data Interpretation Report**

Sections 11: Evaluation and 12: Categorization of the Sump Data Interpretation Report were reviewed and revised at a fact-finding meeting in October 2002. Due to the priority of the risk assessments and the natural attenuation evaluation, distribution of

the next full version of the Report was postponed until mid-2003. It is expected that the Report will be ratified in July 2003 after a final fact-finding review.