FINDING SOLUTIONS FOR THE CLEANUP OF THE LARGEST LAND-BASED OIL SPILL IN THE UNITED STATES:

Utilizing a Neutral, Expert, Fact-Finding Panel in the Guadalupe Oil Field Mediation

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Abstract

Since 1997, CONCUR has mediated the Guadalupe Oil Field (GOF) mediation process involving the characterization and cleanup of a 3000-acre former oil field in coastal California. The GOF mediation is a highly complex, science-intensive case marked by enormous technical and scientific uncertainty. In addition, the oil field possesses environmental values of national significance, including several endangered species and wetland, coastal, and riparian resources. In this paper, we describe CONCUR's facilitation of the Pilot Test Panel (PTP), a neutral fact-finding panel of three experts in oil spill cleanup technologies which is part of the GOF mediation. Our aim in this paper is to inform readers interested in Alternative Dispute Resolution (ADR) of the opportunities and obstacles in utilizing a neutral panel for the purpose of joint fact-finding in a scientifically and technically complex case.

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I. Introduction

Cleaning up heavily polluted, environmentally sensitive landscapes has proved to be one of the most knotty and recalcitrant challenges facing environmental managers worldwide. For more than a decade, CONCUR has worked to mediate such complex environmental disputes and has used the techniques of joint fact-finding as a cornerstone of our practice.[2] In this paper we discuss one such case, the mediation of the Guadalupe Oil Field (GOF) cleanup, and the use of a neutral fact-finding panel of experts, the Pilot Test Panel (PTP).

The balance of this paper is organized into six sections. In Section II, we summarize the joint fact-finding process used in CONCUR's practice. In Section III, we offer an overview of the Guadalupe Oil Field site. In Section IV, we offer an overview of the GOF mediation process. Section V details the stepwise joint fact-finding process employed with the Pilot Test Panel. In Section VI, we discuss several obstacles that this case presented to CONCUR and which threatened to erode the neutrality and legitimacy of the process. Section VII contains discussions about the lessons learned and conclusions drawn from the PTP fact-finding process.

II. An Overview of Joint Fact-Finding

In a consensus-building process, joint fact-finding offers, in our view, the crucial and unique opportunity for disputing parties to cooperatively address information gaps and scientific uncertainty by pooling and translating the best available technical information. In this way, joint fact-finding helps to ensure that the very best scientific and technical information is collected and utilized to inform the decision-making process.

Joint fact-finding allows parties to a dispute to develop common understanding of issues and to develop a common knowledge base,[3] thereby helping the parties to clearly "map" areas of scientific agreement, and to narrow areas of disagreement and uncertainty. By bringing the

[2] The term mediation is often misunderstood. By mediation, we mean a negotiation-based process in which key parties talk face-to-face, assisted by a professional (or team of professionals) with the training and expertise to help them reach agreements. Unlike arbitration, mediation does not impose solutions on the parties. Mediation, as we conceive it, is in no way a replacement for the existing administrative, legislative, or judicial process; rather, it is a set of procedures that is intended to complement and strengthen the existing decision-making system. "Refining and Testing Joint Fact-Finding for Environmental Dispute Resolution: Ten Years of Success." Scott T. McCreary, John K. Gamman, et. al. *Mediation Quarterly, Volume 18 (4*). Forthcoming June, 2001.

[3] "Joint Fact-finding and the Use of Technical Experts," John R. Ehrmann and Barbara L. Stinson, Chapter Nine; "Resolving Science-Intensive Public Policy Disputes," Scott McCreary, Case 6. The Consensus Building Handbook, Sage Publications, 1999.

most relevant information to bear in complex cases, joint fact-finding elevates the level of understanding of technical issues among responsible agencies and members of the public.[4]

The fundamental premise of CONCUR's joint fact-finding approach is that supervised, direct interaction among scientists, decision makers, and other key stakeholders can bring forth innovative public policies which all interested parties can support.[5] In this way, joint fact-finding offers disputants an alternative to the adversarial science model, wherein parties hire competing technical experts to bolster their own divergent positions. Often, this process does little to clarify the areas of technical disagreement and uncertainty, results in increased expense, a protracted period devoted to development of competing information, and, many times, failure to clarify why experts disagree in the first place. Parties become locked in a cycle of producing and defending their positions and data, rather than working in a cooperative manner to generate and present the best available technical information.[6]

By comparison, we have found that joint fact-finding can

- enhance communication, help improve the dynamics of a group, and build understanding
- give participants confidence that they may be able to reach consensus
- result in agreements that are more credible, more creative, and more durable than they otherwise would be
- enable parties to build strong relationships based on the trust and rapport developed during the joint fact-finding process

All of these benefits help make for a more productive consensus-building process.

For more than a decade, CONCUR has successfully organized, administered, and facilitated joint fact-finding processes in science-intensive disputes. The core features of CONCUR's joint fact-finding process include face-to-face dialogues among scientists, summarizing the most up-to-date information, and recording and documenting the deliberations. While these features are pillars of the joint fact-finding process, we have found that the process is flexible and versatile, allowing us to readily customize the details of the process to appropriately fit the particular case.

[4] "Refining and Testing Joint Fact-Finding for Environmental Dispute Resolution: Ten Years of Success." Scott T. McCreary, John K. Gamman, and Bennett Brooks. *Mediation Quarterly, Volume 18 (4*). Forthcoming June 2001.

[5] Ibid.

[6] Ibid.

III. Overview of the Guadalupe Oil Field Site

The GOF mediation is characterized by tremendous scientific uncertainty. The case centers on a 3000-acre former oil field that is among the most heavily polluted, environmentally rich, and hotly contested parcels of land in all of California.

The GOF is an expanse of undulating coastal sand dunes, marshes, freshwater ponds, and windswept beaches, criss-crossed with pipelines and other infrastructural remnants of the site's oil-drilling legacy. Situated in the southwest corner of California's San Luis Obispo County, the former oil field is bordered on the west by the Pacific Ocean, to the south by the Santa Maria River, on the east by agricultural fields, and to the north by a county park. Two aquifers underlie the site: one is shallow and roughly limited to the boundaries of the site; the other is a deep regional aquifer that provides drinking water to much of the Santa Maria River valley.

Over the span of four decades, Union Oil of California (Unocal) extracted oil from deep beneath the site and piped it to a nearby refinery. Oil recovery was enhanced by mixing the especially viscous crude with a kerosene-like thinning agent known as *diluent.* Over the lifetime of the oil field, vast quantities of diluent (estimated at between 8 million and 18 million gallons) spilled into the sandy soil from storage tanks, pipelines, pumps, and oil wells, making it the largest land-based oil spill in the United States. (By comparison, the 1989 Exxon Valdez spill was approximately 11 million gallons.) Most of the diluent is located in approximately 90 distinct plumes scattered across the site and situated atop the site's shallow aquifer. These diluent plumes threaten to pollute ground water and surface water resources on and near the GOF.

One of the great ironies of this case that the GOF, despite being intensively developed in certain portions as an oil field and heavily polluted in the process, is largely untouched on much of its surface and has become a safe haven for numerous rare plants and animals. The former oil field is part of the Guadalupe-Nipomo Dune complex, regarded as California's largest, most scenic, and ecologically diverse coastal dune-wetland complexes. More than 250 plant species, 30 fish species, 150 invertebrate species, and 275 species of terrestrial wildlife are known or suspected to reside at the site, including several federal- and state-listed threatened and endangered species.

In their approach to cleaning up the site, both Unocal and the Regional Water Quality Control Board (RWQCB), which represents the State of California's interests, wish to minimize

disturbance to this valuable and unique ecological resource. However, the site's biological assets, its dynamism, and the complexity of its physical systems represent profoundly complicating factors in the formulation and implementation of any cleanup plan. Simply stated, no "silver bullet" exists for the remediation of this one-of-a-kind landscape.

Given the nature and vastness of the GOF's contamination, the site's unique natural resource values, the tremendous financial and environmental stakes that any possible cleanup effort implies, and the technical uncertainty about the likely effectiveness of cleanup technologies, the decision was made to empanel a trio of neutral experts known as the Pilot Test Panel (PTP).

IV. Overview of the GOF Mediation Process

The decision to empanel the PTP was contained in Cleanup or Abatement Order (CAO) No. 98-38, an order issued by the RWQCB in 1997 and agreed to by Unocal as part of the settlement agreement. The settlement agreement resolved a Natural Resources Damages Assessment case between the State of California and Unocal, totaling $43.8 million, the largest such settlement in California history.

The settlement agreement called upon the parties to initiate a mediated dispute resolution process. Soon thereafter, both parties independently contacted CONCUR to design and implement such a process leading to cleanup of the oil field. CONCUR is overseeing completion of a series of agreements enabling the parties to (1) characterize the nature and extent of pollution at and around the oil field, and (2) agree on a series of remediation steps leading to cleanup.

CONCUR has used a two-table approach throughout the mediation, whereby policy discussions and joint technical fact-finding occur in different meetings with appropriate staff from both the RWQCB and Unocal. Under CONCUR's auspices, policy discussions and decision making occur among upper-level management of Unocal and the RWQCB in monthly mediated policy meetings.

The mediated joint fact-finding team, comprised of technical staff and consultants of the RWQCB and Unocal and neutral scientific consultants chosen to support the mediation process under the auspices of CONCUR, is helping policymakers reach agreement on site characterization issues. The joint fact-finding team has conducted a coordinated search for science-based consensus on the assumptions, methodologies, and interpretations of complex field studies focusing on the location and extent of pollution.

Members of upper-level management of Unocal and the RWQCB regularly attend PTP meetings. Members of the joint fact-finding team have made presentations and provided information to the PTP on occasion, as needed. Otherwise, the PTP process has operated largely independently of the mediation and fact-finding efforts that constitute the two-table approach.

V. The Joint Fact-finding Process Employed with the Pilot Test Panel

In our professional experience, the joint fact-finding process lends itself to a stepwise approach occurring within the framework of several distinct stages: (1) organizing start-up and preparation; (2) the fact-finding deliberations; (3) linking fact-finding results to the decision-making process.

Stage One: Organizing start-up and preparation

Step 1: Determine broad scope of process and identify key issues

In this initial step, stakeholders jointly determine the broad scope of the joint fact-finding process and the full set of issues of concern that require technical analysis. As part of this step, stakeholders formulate the technical questions that the expert or experts will be asked to resolve. It is our recommendation that joint fact-finding start as early as possible in any consensus-building process.

In the PTP process, the broad framework for the Panel's work was spelled out in the CAO. The CAO directed the PTP to:

- Identify existing, new, or modified remediation technologies that are preferable to excavation on any basis. (Excavation is a proven but very invasive remedial technology. At the GOF, this approach would likely result in serious harm to the fragile dune-wetland environment.)
- Evaluate possible remedial technologies based on effectiveness, cost, and short-term and long-term environmental impacts.
- Within six months of first meeting, recommend up to three technologies for pilot testing.

How were the results of the pilot tests to be used? According to the CAO, the results would inform the decision-making process on which technology (or technologies) would be deployed as part of the ultimate cleanup remedy at the former oil field.

Step 2: Identify and select experts

To create a fair recruitment process, we recommend that the disputing parties jointly discuss the expertise needed and whether one individual or a team of experts is required. We recommend that parties then discuss the best possible candidates and select an expert or experts

by consensus, if at all possible. This small step, in and of itself a consensus-building effort, can take some time.

The PTP selection process was set forth in the CAO by the State and Unocal (prior to CONCUR's involvement in the case) and facilitated step-by-step by CONCUR. In cooperation with the RWQCB and Unocal, CONCUR prepared and circulated a job description for Panel members and recruited a pool of candidates, from which each party selected a few promising individuals to interview. As called for in the CAO, each party then selected one panel member; a third panel member was chosen by the first two panelists selected. Desired qualifications of panelists included: (1) an advanced degree in environmental engineering, hydrogeology, or microbiology; (2) experience in more than one of these fields; (3) a thorough understanding of, and direct experience with, large-scale petroleum remediation projects; (4) a combination of academic, research, and consulting experience; (5) good communication skills and the ability to describe technical issues in layperson's terms; and (6) prior experience with creative problem solving in an interdisciplinary setting.

Step 3: Define specific steps in the joint fact-finding process

In consultation with the stakeholders, the experts should jointly define the best process for gathering and analyzing information and answering the questions posed of them.

THE PTP'S STEPWISE JOINT FACT-FINDING PROCESS

Stage One: Organizing start-up and preparation

- **Step 1**: Determine broad scope of process and identify key issues
- **Step 2**: Identify and select experts
- **Step 3**: Define specific steps in the joint fact-finding process

Stage Two: Fact-finding deliberations

- **Step 4**: Review background materials and identify data gaps
- **Step 5**: Identify and implement steps necessary to fill data gaps or resolve unanswered questions
- **Step 6**: Develop screening criteria and apply to the full range of possible options
- **Step 7**: Define performance evaluation criteria and apply to the range of plausible options
- **Step 8**: Prepare final report/recommendations using single text
- **Step** 9: Ratification

Stage Three: Linking joint fact-finding to decision-making

- **Step 10**: Brief parties and present results
- **Step 11**: Implement the resulting recommendations

In the PTP process, following the Panel's selection and prior its first meeting, CONCUR conducted exhaustive background research on the case, a level of detailed preparation that we have found to be vital to the timely and successful implementation of joint fact-finding processes. We reviewed numerous technical documents including a multi-volume feasibility study, remedial action plan, and environmental impact reports from the GOF case. We then compiled our findings into a summary memorandum for members of the PTP.

Based on the information gathered during our background research, we then prepared a draft Mission Statement and a draft set of ground rules to be reviewed, revised, and ratified by the participants. These foundational documents are intended to structure and guide the fact-finding process and to create an agreement-building framework. We find that having participants reach consensus on these documents sets the stage for the larger agreement-building process yet to come. In consultation with the parties, CONCUR drafted an agenda for the first PTP meeting, which was held on March 24, 1999.

At this meeting, participants began the process of translating the PTP's general framework from the CAO into specific questions posed to the experts. The results—a list of the steps necessary for the Panel to gather information, analyze it, and develop recommendations—were articulated in an approach memorialized in the PTP Mission Statement and ground rules. The ground rules also spelled out the confidentiality needs, roles and responsibilities of participants, expected duration of the process, general intentions of how the recommendations were to be used, and the reporting requirements.

We stress that the parties did not anticipate nor request that Panel members reach consensus in their recommendations about which technologies to pilot test. The parties, in fact, welcomed a divergence of opinions by Panel members on their approaches to site cleanup. The PTP's Mission Statement included the passage, "All findings of the Pilot Test Panel, including any unanimous recommendations and descriptions of all areas of agreement and disagreement, will be forwarded to the Executive Officer of the Regional Water Quality Control Board…"[7]

Stage Two: Fact-finding deliberations

Step 4: Review background materials and identify data gaps
In this step, the experts identify the information they need to understand the issues identified by the stakeholders and to resolve the questions posed of them.

Fact-finding deliberations dominated the first three months of the Panel's time. The Panel met monthly for all-day facilitated meetings and corresponded between meetings via telephone, conference calls, and email. In meetings, the PTP received briefings from technical experts working as part of the Guadalupe Oil Field mediation on the nature and extent of the site's contamination, the physical systems, past cleanup efforts, and a range of other scientific and technical topics. Prior to each meeting, CONCUR staff coached presenters to ensure the highest and best use of face-to-face meeting time.

As facilitator of the PTP process, CONCUR was responsible for ensuring that the fact-finding deliberations were coherent, relevant, transparent, and accurately recorded and summarized. In addition to coaching presenters, CONCUR's tasks related to the administration and management of the process included the creation of agendas, agenda packets, scheduling meeting dates, and coordinating venues.

Step 5: Identify and implement steps necessary to fill data gaps or resolve unanswered questions

[7] PTP Mission Statement, drafted by CONCUR and the Pilot Test Panel. Ratified by the PTP March 24, 1999.

In this step, experts develop technical questions to address identified data gaps and conduct (or arrange to have conducted) the necessary technical studies and/or analyses.

In the PTP process, Panel members conducted a variety of investigations, ranging from modeling the expected longevity of the pollutants at the GOF under various remedial scenarios to performing a bench-top laboratory experiment of one remedial technology using samples from the GOF.

Step 6: Develop screening criteria and apply to the full range of possible options

In this step, experts prepare screening criteria and then apply them to the full range of possible options. This screening results in a range of plausible options warranting further consideration.

In the PTP process the Panel screened technologies based on consideration of: (1) a range of potential remedial goals anticipated by the PTP; (2) the practicability of those classes of technologies, based on the collective experience of the PTP; and (3) the value of the knowledge likely to be gained by a pilot test of that technology, especially its usefulness in the final remedy selection process. The result of this screening was a list of seven technologies, each deemed by the Panel to be representative of a different class of remediation technology that had the potential to be employed in the future at the GOF.

Step 7: Define performance evaluation criteria and apply to the range of plausible options

The result of this step can be a ranking or, as in the case of the PTP process, a narrative interpretation of the results accompanied by a matrix containing the actual findings.

In this step, the PTP applied a set of performance criteria to the range of seven plausible technological options identified in Step 6 above. These performance criteria, as directed by the CAO, included (1) effectiveness of the technology, (2) relative cost of the technology, and (3) short-term and long-term environmental impacts of the technology. The Panel added a fourth criteria to this list—practicality of the technology—and added numerous specific technical sub-criteria.

Step 8: Prepare final report/recommendations using single text

We recommend that participants in a joint fact-finding process use a single negotiating text to record their results. A single text is often used in a consensus-building process to develop and record agreements, instead of developing competing versions of facts and recommendations. This document represents the contributions of all parties to the negotiations, is used to focus the negotiation process, and produces a tangible record to bring the fact-finding effort to closure. Usually this document is revised through several working drafts.

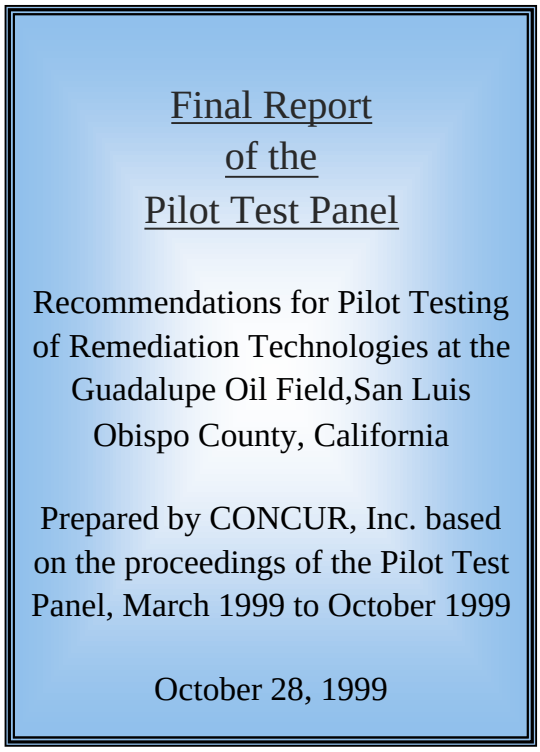
CONCUR served as the secretariat for developing the PTP's final report, taking responsibility for helping to create a working table of contents, collating comments on interim drafts, and producing revised drafts for Panel review. The process of hammering out the details on the specific language, conclusions, and recommendations of the final report occupied the better part of two months.

By any objective standard, the PTP fact-finding process produced an unusually high degree of consensus, especially given the complexity of issues involved. Although creating a consensus opinion among the experts was not a goal of the PTP process, Panel members achieved a consensus opinion and declined repeated offers to include minority reports or dissenting opinions in the final report.

Step 9: Ratification

Ratification serves several purposes; it creates clarity in the final agreement, so that parties know what agreements they've made; it gives the negotiators a sense of ownership; and it collectively binds the parties together by specifying what actions need to be take by certain dates.

On October 28, 1999, after seven months of deliberation, the PTP ratified and submitted its final report, as per the CAO, to the Executive Officer of the RWQCB. The report was also provided to Unocal staff.



Stage Three: Linking joint fact-finding to the decision-making process

Step 10: Brief parties and present results

If the stakeholders desire, the experts can present the jointly created information to decision makers in a special briefing.

Several months after submitting their final report, the PTP provided key decision makers from both parties a briefing on their deliberations, final report, and recommendations. At the briefing, both the RWQCB and Unocal expressed gratitude to the Panel for its efforts and praised the PTP for the rigorous synthesis of scientific information and the technical findings contained in its final report.

Step 11: Implement the resulting recommendations

Following the briefing and after further review of the PTP's final report, each party compiled a list of questions for the Panel regarding its findings. Based on the responses to these questions, the Panel revised its final report and re-ratified it on April 3, 2000.

In accordance with the CAO, six months after the Panel first submitted its final report, the Executive Officer of the RWQCB issued a letter requiring Unocal to implement the Panel's recommendations in their entirety.

Next Steps in the Panel Process

Having completed the recommendations phase of the joint fact-finding process, the Panel is now, in keeping with the CAO and the Mission Statement, consulting with the parties on the design of the pilot studies that it recommended. Concurrently, the Panel is formulating criteria with which it will evaluate the performance of the tests following their completion. Throughout all aspects of the test design phase and during implementation of the pilot tests, the Panel will continue to provide guidance to the parties. Once the tests are completed and the field results compiled, the Panel will interpret the results using the evaluation criteria it previously formulated, and prepare a report containing its interpretations of the field data and discussions of the technological implications of the test results.

VI. Overcoming Obstacles

In addition to the difficult technical obstacles this case presented the neutral experts, CONCUR was confronted with several process-related obstacles that threatened to erode the neutrality and legitimacy of the process. Navigating these obstacles while safeguarding and propelling the process was an exercise in invention, flexibility, and negotiation.

The source of these obstacles was the CAO, the regulatory order that established the PTP. In its treatment of the PTP process, the CAO was quite spare, lacking specific, detailed instructions on numerous key technical and procedural elements of the PTP process.

In our experience, this lack of specificity yielded an atmosphere more conducive to an adversarial rather than a collaborative approach. In these circumstances, it was incumbent

upon CONCUR to creatively and proactively negotiate the missing details of the CAO with the parties and to maintain the collaborative approach to agreement building.

Obstacle #1: The PTP selection process

As noted earlier, the CAO stipulated that each party was to select one panel member and that the third panel member was to be chosen by the first two panel members selected. Rather than focusing on creating a Panel with the ideal blend of expertise necessary to make the best decisions on the best available information, this selection process favored a more adversarial approach.

To counter this, CONCUR negotiated with the parties to have them discuss with each other the ideal composition of the Panel. With CONCUR's encouragement, the parties did indeed exchange information and speak openly about the selection process. CONCUR was able to broker these discussions and negotiate the missing details of the selection process by drawing on the successes that had been previously achieved in the GOF mediation prior to the establishment of the PTP.

Obstacle #2: Lack of specific remedial goals and timeframes

In most remediation projects, the remedial goals and timelines are established prior to the development of a remedial strategy. In turn, the site-specific remedial goals usually drive the selection of a cleanup technology. The CAO, however, specified neither remedial goals nor timeframes. The CAO simply instructed the PTP to identify ways to remove diluent from beneath the GOF without resorting to excavation.

This lack of key details led to extended and sometimes divisive debate about the intended remedial goals and to speculation about the probable evolution of these goals. As we observed, this debate tended to push the experts, particularly the two selected by the parties, into adversarial camps reflective of their general philosophical approach to site cleanup, approaches that no doubt made them attractive to the party that selected them in the first place.

The same lack of detail within the CAO that created the opportunity for division provided once again the elbow room for CONCUR, negotiating with the parties and the Panel, to be creative and inventive in maneuvering past this obstacle. In this case, after much deliberation, the PTP agreed to the following approach: on the issue of remedial goals, the Panel agreed to use goals based on what it anticipated the goals would become over time, based on the Panel member's collective experience in this field. On the issue of remedial time frames, the Panel agreed to use a range of time frames, none of which was deemed generally "acceptable" or "unacceptable".

VII. Lessons Learned and Conclusions

In our professional practice assisting parties build agreements, we have enjoyed marked success using joint fact-finding to enable parties to work together cooperatively in scoping, gathering, reviewing, and synthesizing technical information. We have found that collaborative fact-finding can contribute to stronger, more cohesive relationships; to enhanced communication; to great confidence on all sides toward resolving disputes; and to results that are implementable, stable, and durable.

We believe that by all these measures, the PTP joint fact-finding process was (and continues to be) a success. Beyond these measures of success lies one more. Partway through the PTP process, the parties voluntarily agreed to extend the process to the cleanup other contaminated sites. As a result, the Remediation Technology Panel (RTP) was established by the RWQCB and Unocal as a collaborative fact-finding effort to address the characterization and potential remediation of two former petroleum tank farm sites not far from the GOF. The parties agreed that the process would be facilitated by CONCUR and that the same trio of PTP panel members would provide the parties with neutral technical expertise. To-date, the RTP joint fact-finding process is also enjoying success.

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