



PERF Newsletter

June 2006

Environmental,
Health,
& Safety
Solutions for the
Petroleum Industry

71st PERF Quarterly Meeting Air Emissions and Control Technologies July 12-13



The upcoming Summer PERF Meeting will be held July 12-13 with Lawrence Berkeley National Laboratory and hosted by Chevron. The meeting will be held at the Chevron Richmond Technology Center (Richmond, CA) and the Lawrence Berkeley National Laboratory (Berkeley, CA). The meeting will include technical presentations on air emissions and control technologies, and a tour of relevant projects at the National Laboratory. The usual Upstream and Downstream Discussion Groups and PERF Business Meeting will be held during the second day of the meeting, and the PERF Board of Directors will meet the day before the meeting.

There will be no charge to attend the meeting but you must register to attend. For additional information and to register, go to registration by clicking [here](#). Registration should be completed and sent to Sandra Salas at Sandra@chevron.com no later than Tuesday, June 27, 2006.

Presentations for the meeting are being sought and nominations should be addressed to Roland Borey at RBorey@chevron.com or 713-954-6957.

A block of rooms are being held for the meeting at a rate of \$149.95/night at the DoubleTree EMC Berkeley Marina until June 20. Attendees are responsible for their own reservations. The hotel is about 15 miles from the Oakland airport (OAK) and about 25 miles from the San Francisco airport (SFO). The hotel address and contact information is:

[DoubleTree EMC Berkeley Marina](#)
200 Marina Boulevard
Berkeley, CA 94710
510-548-7920 or 1-800-465-4329
([Link to Hotel](#))

Shuttle service will be provided between the hotel and meeting locations. Limo service is available from the airports to the hotel and can be obtained from the following:

Black Tie 800-445-0444
Legacy Limo 866-534-2292
Precision Limo 800-559-6200
Preferred Limo 800-701-4077
Royal Limo 800-692-4040

Inside this issue

PERF 20 Year Celebration	2
New Projects	3
Welcome New Members	3
Spring Meeting Highlights	4
PERF Organization News	5

Board of Directors

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[John Wilkinson, ExxonMobil](#)

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Legal Counsel:
[F. Joseph Gormley, Esq.](#)



The agenda and additional information on the summer meeting are available on the PERF website at www.perf.org.

PERF Celebrating 20 years

PERF was established in 1986 to stimulate cooperative research and development of environmental control technologies for the petroleum industry. Although initially formed in the US, we have grown more international over the years. Our current 19 member companies, and 10 government and academic institutions with which we maintain liaison relationships, reflect this more global perspective.

PERF meetings have a multidisciplinary atmosphere with participation by scientists and engineers with backgrounds including: chemistry, microbiology, chemical and environmental engineering, and other fields. Meetings are hosted every 3-4 months by members on a rotational basis. To enhance technology exchange, each meeting has a specific topic theme, and we seek to co-host with an organization with expertise in that area. As an example, our first international meeting with a theme of Remediation was co-hosted by Elf and NICOLE (Network for Contaminated Land Europe) in Lyon in 1999.

Meetings serve as the platform for **PERF's main mission -- Joint Research**. Since its inception, PERF members have completed **81 projects with a value of 63 M\$**. There are also 13 projects currently underway valued at >2.2 M\$; and there are 11 projects under consideration.

We will celebrate our 20th anniversary at our fall meeting on October 25 & 26. It will be co-hosted by BP and Argonne National Laboratories in the Chicago area. We are inviting all past PERF Chairpersons, and are planning sessions on PERF's future direction, as well as current technology needs. The theme of the meeting will be Remediation Issues.

Please join us to celebrate PERF's 20 years! For more information on PERF, our projects and the fall meeting, visit our web site.

Completed Projects

	Number of Projects			TOTAL	M\$			TOTAL
	U/S	D/S	Both		U/S	D/S	Both	
Air		18	2	20		12.9	7.3	20.2
Water	4	13	2	19	0.7	2.4	1.7	4.8
Remediation	4	4	16	24	2.3	3.6	25.6	31.5
Waste	4	6	1	11	3.0	1.6	0.1	4.7
NDE		3		3		1.0		1.0
Oil Spill			4	4			0.8	0.8
TOTAL	12	44	25	81	6.0	21.5	35.5	63.0

New Projects

2006-01 Whole Effluent Assessment

Total has proposed a project to improve whole effluent assessment (WEA) methodology. The objectives of the project are: method validation, to prove the relevance of risk assessment with this method, and comparison with *in situ* impact assessment. The project will explore if WEA accurately predicts real ecosystem risks. This project can be funded and "shared" research. The project would start in 2007 and last 2 or 3 years.

The technical or regulatory drivers for this project are that industry needs to be involved in developing new methodology, be present in the discussion with regulators, and to have industrial adapted tools. There is currently a research program with OSPAR, but it is to improve the WEA methodology regarding bioaccumulation and not to prove predictive risk. Without this project it would be difficult to predict effluent impact especially in large rivers, and it is important to have such a tool in case of new industrial project. Additional leveraging opportunities may be available with other groups such as CONCAWE.

The deliverables would include reports for each industrial example, 3 industrial plants could be used to validate this approach. Participation requirements: one *in situ* impact assessment: 50-100 k\$ for each WEA plus 50 k\$ for validation; at least 3 sites should be chosen: $150 \times 3 = 450$ k\$ total project cost.

Contact: Anne Bassères (anne.basseres@total.com)

2006-02 VOC IR Camera Sharing Cooperative

Total and **BP** have proposed a project to share knowledge regarding infrared cameras for VOC leak detection. The project type would be shared with a projected participation cost \$50,000 of shared value research.

Lessons learned from field trials with different IR camera technologies can be shared among participants. This would help in selecting the right camera for the right purpose, by extending the field of investigation and the type of camera tested.

There are several IR camera vendors that are commercially available: Flir, PAT, GasOptics, Bertin,



etc. Some cameras are portable and some are fixed mounted. Some technologies can analyze for specific hydrocarbons and quantify emissions. Each participating member company conducts a field trial with a different technology, then that field test data can be leveraged and shared among participants. This project would include different products, different sites, and different possible application. For more information contact: Marie-France Benassy (marie-france.benassy@total.com) or Dave Fashimpaur (dave.fashimpaur@bp.com).

2006-03 Waste Water Treatment Plant - Fate and Effects of Pollutants

Total has proposed a downstream water handling, treatment, and disposal project. The project type would be both shared and funded (cost TBD). Wastewater treatment plants (WWTP) in the petroleum industry consist of a series of separate unit operations (settler, flotation, biological process, clarifier) in which the pollutants are removed by different mechanisms. WWTP operations are generally well-understood under normal operating conditions with adequate hydraulic capacity; however, WWTP operations may be optimized by studying the fate and effects of pollutants for each unit operation. The data from this study could be very useful in responding to, or minimizing, WWTP upset conditions.



The objective of this project is to determine the pollutant transfer rates, and pollutant removal pathways, from the liquid phase to the solid phase (sludge) and the gas phase for all the unit operation of the wastewater treatment plant.

This project will lead to a better understanding of the environmental impact of each pollutant and better optimization of each process to reduce the environmental impacts. The project would focus on 5-10 pollutants, and would be conducted in a phased approach that would study each pollutant's fate and effects individually. Contact: Nicolas Lesage (nicolas.lesage@total.com)

Spring Meeting hosted by Total - Environmental risk assessment methodologies: analytical and biological aspects

The Spring 2006 PERF Meeting was hosted by TOTAL in Paris La Défense, France. About 60 people attended the meeting. Most of them were representatives from the oil industry, CONCAWE, NICOLE, research institutes or laboratories.

The meeting focused on "Environmental risk assessment methodologies: Biological and analytical aspects". Analytical and biological approaches are complementary to describe alterations of the ecosystem: the analytical approach is necessary to characterize the nature of pollution and the biological approach is necessary to evaluate the bioavailability and the real effects on live organisms. Data generated have to be used for relevant risk assessment studies.

Topics such as environmental management of emissions, the Whole Effluent Assessment and the control of risk from produced water discharge were presented.



The optical technologies for air monitoring and the health effects of soil after treatment were explained. The Network for Contaminated Land in Europe (NICOLE) and the Oil companies' European Association for Environment, health and safety in refining distribution (CONCAWE) gave some presentations on ecological assessment and environmental risk assessment related to petroleum products and groundwater.

Prior to the technical meeting, the PERF Board met on March 20th. The technical meeting included one day of presentations on general, Air and Water Session (March 21). The second day of presentations described key environmental issues on Soil, Groundwater and Petroleum Products (March 22). Upstream and Downstream Discussions and PERF business items (status report and project proposals) took place the same day in the afternoon. The presentations can be viewed, or downloaded, at: http://www.perf.org/index.php?act=meeting_2006-03_overview

Welcome New Board Members



Two PERF board seats were filled recently. We welcome **Todd Ririe**, BP, back to the board as an at-large board member. We also welcome **Vanessa Tassas**, Total, to become the Secretary/Webmaster. Vanessa is replacing **Virginie Vitiello** who has left Total. We will miss Virginie and wish her well in her future endeavors.

**Environmental, Health, & Safety
Solutions for the Petroleum Industry**

**Petroleum Environmental Research Forum
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Vice Chair:	Bob Finley
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	+1 (713) 432-5358
Teamwork	Together we achieve the extraordinary!

The Petroleum Environmental Research Forum (PERF)* is a research and development joint venture, formed to provide a stimulus to and forum for the collection, exchange, and analysis of research information relating to the development of technology for health, environment & safety, waste reduction and system security in the petroleum industry. PERF is a non-profit organization of Members which are corporations engaged in the petroleum industry that recognize the importance of a clean, healthy environment and are committed to support cooperative research and development. PERF does not itself participate in research projects but provides a forum for Members to collect, exchange, and analyze research information relating to practical and theoretical science and technology concerning the petroleum industry, and a mechanism to establish joint research projects in that field.

*The name Petroleum Environmental Research Forum and its acronym PERF are registered service marks.



We're on the web:
<http://www.perf.org/>

**PERF External
Group Liaisons**

PERF encourages external groups such as trade associations, national laboratories, and research institutes to join as Liaison members. PERF values the partnerships that we have with these external groups and they frequently join PERF projects and contribute valuable research.

Liaison members appoint Representatives that have the right to attend and participate in meetings of PERF and its committees, but they do not have the right to vote or to serve as an officer of PERF. Liaisons are not required to pay the fee paid by Members.

- American Petroleum Institute (API)
- Department of Energy (USDOE)
- Gas Technology Institute (GTI)
- Lawrence Berkeley National Laboratory (LBNL)
- Water Environmental Research Foundation (WERF)
- Argonne National Laboratory (ANL)
- Electronic Power Research Institute (EPRI)
- International Association of Oil and Gas Producers (OGP)
- Oak Ridge National Laboratory (ORNL)
- University of Manchester Institute of Science and Technology (UMIST)

**Member Companies
& Representatives**

- | | |
|---------------------|---------------------------|
| Amerada Hess Co. | Gerry Bresnick |
| Aramco Services Co. | Robert Finley |
| BP | Dave Fashimpaur |
| Chevron | Roland B. Borey |
| ConocoPhillips | Sung-I Johnson |
| EniTecnologie | Renzo Boni |
| ExxonMobil | Jill Kerr |
| INA-Naftaplin | Ivo Omrcen |
| Petro-Canada | David McIntyre |
| Repsol YPF | Fernando Temprano-Posadas |
| Shell | Karen G. Haynes |
| Statoil | Stale Johnsen |
| Suncor | Anthony Congram |
| Total | Pierre Scherrer |

**Associate Members
& Representatives**

- | | |
|--|------------------|
| BOC | Ram Ramachandran |
| Canadian Petroleum Products Institute (CPPI) | Adolfo Silva |
| Champion Technologies, Inc. | Mark Edwards |
| Pall | Tom Wines |