



# Perf Newsletter

**84<sup>th</sup> Meeting  
of the  
Petroleum Environmental Research  
Forum (PERF)**

## **Emerging Environmental Challenges and Risks**

**Bartlesville, Oklahoma  
November 9 - 10, 2011**





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# Emerging Environmental Challenges and Risks

*The 84th PERF meeting is scheduled  
for November 9 and 10, 2011*

*and will be hosted by ConocoPhillips  
at their Technology Center in Bartlesville, OK.*



*The theme is “Emerging Environmental Challenges & Risks” and an agenda is in preparation and will be posted on the website. Topics proposed for discussion include hydraulic fracturing, water management trends, the water/energy nexus, trace constituent management, water challenges in heavy oil operations, refinery waste water treatment, reuse and recycle, outfall regulatory trends, air quality and emissions challenges (VOCs, PM, inventory measurement and estimating), and emerging biofuels challenges, among others. A reception and dinner is planned at the historic Frank Phillips Lodge at Woolaroc.*

*There is no charge for the conference, but you must register to attend. The registration form can be found [here](#).*

<https://www.SignUp4.net/Public/ap.aspx?EID=MJR810E&TID=5tK5heEoyHnhsZX8R8fNzq%3d%3d>

Those interested in presenting a paper at the meeting, please contact [Bruce Randolph](#) (Bruce.B.Randolph@conocophillips.com)

## Hotel Accommodations:

Each person is responsible for making his or her own hotel reservation. A block of rooms (please include the words “PERF ConocoPhillips” when making reservations) has been reserved at the Hilton Garden Inn located next to ConocoPhillips main downtown Complex. Credit Card details will be requested from those making a reservation. Rooms are guaranteed to be available by 3.00 p.m. on the day of arrival and must be vacated by noon on the day of departure.

All rooms are single, with breakfast, at a cost of \$115.00 US dollars per person per night which is a special rate. Please make your reservation by October 15th to avail of this rate. The Hilton Garden Inn recommends that you call to make reservations. To ensure you receive this rate, please inform the staff you are part of the PERF group.



ConocoPhillips Bartlesville Technology Center



## Logistical Information cont.

Hilton Garden Inn Bartlesville  
205 SW Frank Phillips Blvd  
Bartlesville, Oklahoma 74003  
Telephone: +1-918-336-0808  
Toll Free: 1-800-331-0706  
Fax: +1-918-336-0803  
Web Site for the Hilton Garden Inn can  
be found here



<http://hiltongardeninn.hilton.com/en/gi/hotels/index.jhtml?ctyhocn=BTVGIGI>

## **A shuttle service will be provided between the Hilton Garden Inn and event locations**

**Maps:** [Click here](#)

### **Additional lodging (without a special rate) includes the following:**

Click on each for hyperlink.

[Fairfield Inn & Suites](#)

[Hampton Inn](#)

[Holiday Inn Express](#)

[Candlewood Suites](#)

[Inn at Price Tower](#)

Bartlesville is approximately 44 miles north of  
Tulsa International Airport.

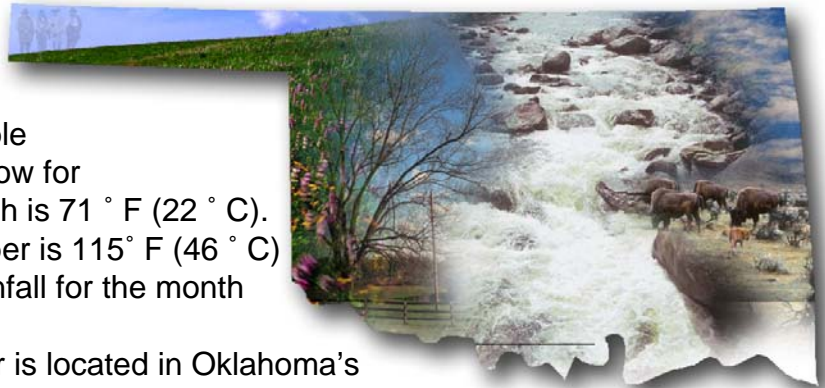
Taxi service to Bartlesville would be approx \$85.00.

Rental Cars are available from most national providers at Tulsa International Airport.

## Oklahoma Weather in November

As Oklahoma's favorite son Will Rodgers said, "If you don't like the weather in Oklahoma, wait a minute.". November in Oklahoma is unpredictable with a wide range of temperatures. The average low for November is 50° F (10° Celsius). The average high is 71° F (22° C). However the record high temperature for November is 115° F (46° C) and the record low is -16° F (-27° C). Average rainfall for the month is 3.5 inches.

The ConocoPhillips Bartlesville Technical Center is located in Oklahoma's Green country. Covering nearly 50 acres of land in Osage county, the BTC provides pilot plants and testing facilities for all ConocoPhillips operations worldwide.





# Membership News

## New PERF Board of Directors Candidates

Under PERF's Charter Officers and Directors are elected every two years by the Members and Associate Members of PERF. The process starts with a nomination committee that is appointed by the then current chair. The nomination committee presents a slate of proposed Officers and Directors to the membership at the next annual meeting. If Members or Associate Members attending that meeting wish to nominate additional or competing candidates from the floor, they are permitted to do so as long as the nominee is eligible to hold the office in question under the PERF Charter. The membership in attendance then votes on the candidates presented. The nominating committee has presented the following slate for the upcoming meeting:

### Directors Candidates

Chair – Veronica Blackwell, Chevron

Vice Chair - Meredith Gustafsson, ExxonMobil

Treasurer - Karen Haynes, Shell

Sec/Web - Frederic Perie, Total

At Large Members

Brian McDaniels, ExxonMobil

Dave Fashimpaur, BP

Bruce Randolph, ConocoPhillips

Paulo Negrais Seabra, Petrobras

Ramzi Herjazi, Saudi Aramco

Past Chair-Todd Ririe, BP

## PERF Welcomes New Members and Liaisons

PERF welcomes one new member and three new liaisons in this issue.



Syncrude has recently completed the membership process, and appointed Warren Zubot as its PERF representative and Gail Buchanan as alternate.

RTI International, World Ocean Council and CEDRE have joined as liaisons, a status reserved for NGO, government, non-profit and academic institutions to encourage them to bring their ideas and input to PERF without reservations.



RTI International has appointed James Cunningham as its PERF representative, with Rebecca Nicholson as alternate.



World Ocean Council has appointed Paul Holthus as its representative to PERF.



CEDRE has appointed Georges Peigné, and Ronan Jézéquel have been appointed as PERF representative and alternate respectively.

Seven other new PERF members are in the processes of joining PERF, and PERF looks forward to welcoming them all soon.





# New Projects and Project Proposals

## **PERF 2011-02: On-line Monitoring Project:** Proposed by Chevron.

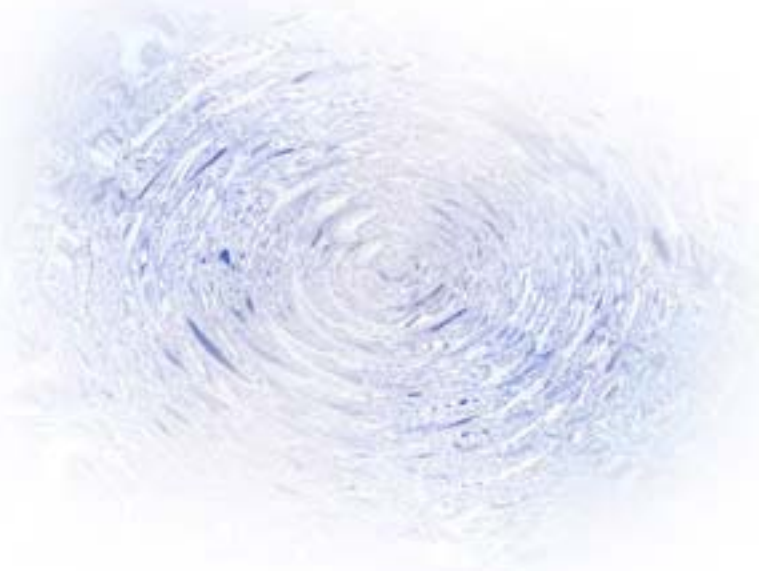
The PERF Online Monitoring project will start in 2011. The project will focus on the monitoring aspects of refinery wastewater effluent treatment plant (ETP). Early warning monitoring at the front end of ETP will increase the reliability of ETP operation. Process monitoring at the back end will increase compliance assurance. The project will proceed in 2 phases. Phase 1 is technology and current state assessment. It is mainly sharing of operational experiences with \$25K worth of in-kind contribution from each participant and \$5K each to fund a contractor to provide assessment and report. Phase 2 is testing. Details will be determined after Phase 1. The next conference call will be on September 7, 2011. Please contact Veronica Blackwell ([vblackwell@chevron.com](mailto:vblackwell@chevron.com)) or Dong Li ([dxli@chevron.com](mailto:dxli@chevron.com)) for more details.

## **PERF 2011-01: Ultra Low Nutrient Control in Wastewater Effluents**

Proposed by ExxonMobil

This program will explore technical options to achieve ultra-low nutrient discharge by both sharing existing methodologies for control / removal of nutrients from wastewater as well as summarizing the current state of the technologies and their feasibility specifically related to the petroleum industry. The goal is to identify cost-effective methodologies or end-of-pipe technologies to achieve low nutrient discharges. An initial conference call has taken place to scope out the program with interested participants, and an initial draft of a contract has been distributed.

For more information contact Meredith Gustafsson  
[meredith.b.gustafsson@exxonmobil.com](mailto:meredith.b.gustafsson@exxonmobil.com)





# Current Projects and Project Proposals

## **PERF project 2010-03: Drilling waste best practice/guidance**

Proposed by Saudi Aramco

Following PERF meeting which took place in London on April, 2010, (15) PERF members and consultants have shown interest in participating in the proposed PERF project 2010-03 "Drilling waste best practice/guidance". The objective of the project is to develop comprehensive guidelines, helpful to all international drilling operators, for the management of Drilling and Workover wastes. These guidelines should build upon existing guidance documents from API, UNEP, etc.

A power point presentation describing the project idea, type, objective and scope was prepared and emailed to potential project members. After consolidating all of the members' comments, a conference call was conducted on September 20th, 2010. The level of interest and the type of contribution whether cost, information or hybrid were discussed through several emails. A second conference call will follow once the type of contribution of all interested companies is determined. Other interested companies should contact [Ramzi Hejazi, Saudi Aramco](mailto:ramzi.hejazi@aramco.com)  
[ramzi.hejazi@aramco.com](mailto:ramzi.hejazi@aramco.com)

## **PERF 2009-01: Performance Evaluation of In Situ Chemical Oxidation of Petroleum Impacts in Soil and Groundwater,**

Proposal by ExxonMobil.

The ISCO work group initiative has gained momentum in 2010, with laboratory/field studies under way at selected pilot sites. ISCO field injections with activated persulfate and hydrogen peroxide have been completed at Shell and BP pilot sites, and field data collection as part of the research project are ongoing. Chevron's PERF contribution is a subset of a larger research project with ASU, and the tank scale treatability studies are in progress. Paul Johnson and his team at ASU are evaluating case study data from ISCO applications at Petroleum Hydrocarbon sites (supported by Aquifer Solutions, Chevron, ExxonMobil, and GES). The team is in the process to initiate a matrix for empirical data analysis. The next team call is scheduled for the 25th of January, and the next group meeting is scheduled for April 2011 in Tempe at ASU. Other interested companies should contact Scott Bushroe  
[scott.bushroe@exxonmobil.com](mailto:scott.bushroe@exxonmobil.com)





# Project Updates

## **PERF 2010-07: Understanding Biodiesel in Total Petroleum Hydrocarbon (TPH).** Proposed by Chevron

This proposed PERF project will be the first approach to understanding the impact of biodiesel to EPA analytical methods for TPH-D measurement. This project will evaluate different extraction and chromatographic techniques to determine suitable modification on method 8015B. Project will work closely with commercial labs for the method development as well as all interested petroleum industrial parties. The Project team are composed of ExxonMobil, Shell, TestAmerica(USA), Petrobras and Chevron. Project proposes to submit a modified analytical method to EPA under 40CFR136.4 and 40CFR210.21 to share findings with Federal Agency. Project team had finished the legal contract portion in May and is currently working on detailed project plan. The project scheduled to start in 3Q of 2011. To join the discussion, please contact Chevron's project sponsor-Deyuan(Kitty) Kong at [deyk@chevron.com](mailto:deyk@chevron.com) or 510-242-1654 for details.

## **2010-06: Air Emissions Cooperative** Proposed by BP

The objective of this current project is to improve emission factors and emissions inventory data by initiating a gap analysis for petroleum refinery VOCs and air toxics estimation procedures. The project started in June and is slated to finish by year-end. The project will review current procedures to identify inconsistencies, areas for improvement, existence of emission factor data, quality of emission factor data, and coordination with ongoing API and CONCAWE workgroups on emission factors. Specific sources for investigation: crude tanks - flashing losses, wastewater treatment plants, delayed coker unit emissions, combustion emissions, fugitive emissions, startup/shutdown/malfunction (SSM) emissions, and air toxics. Project members: API, BP, ExxonMobil, Suncor Energy, Total. For more information contact Dave Fashimpaur ([dave.fashimpaur@bp.com](mailto:dave.fashimpaur@bp.com))



**For a complete listing of proposals and projects, go to [www.perf.org](http://www.perf.org)**





# Recent Events

## Refinery Wastewater-Focused Workshop

Chevron hosted a PERF workshop in June at its San Ramon, California offices. The meeting objectives were to: 1) increase our understanding of issues and challenges associated with refinery wastewater treatment and methods for addressing these issues and challenges; 2) learn about the latest developments in the industry; and 3) identify and flesh out collaborative research projects. Almost 60 participants from industry, academia, consultancies and service companies attended to discuss refinery wastewater issues, including topics as diverse as vapor control and emissions estimating; monitoring; novel treatment methods; and safety and turnaround issues. Member companies have access to workshop presentations through the PERF website.

The following four collaborative project pre-proposal ideas were identified at the workshop:

- Industry database of biodegradation constants to improve emissions estimates from wastewater treatment systems
- Selenium removal from wastewater
- API separator bottom sludge removal
- Vapor control on API separators and dissolved air flotation units

These topics will be further developed by the end of July for circulation among member companies to gauge the level of interest in the projects and to identify potential project participants. In the meantime, please contact Veronica Blackwell at [vblackwell@chevron.com](mailto:vblackwell@chevron.com) if any of these projects are of interest.

## 83rd PERF Meeting: *Managing Environmental Risks in the Oil and Gas Industry*

The spring 2011 PERF meeting was hosted by Total at its headquarters in Paris, France to outline current and future concerns and generate joint industry research projects to address these needs. Objectives of this meeting were to identify gaps in practices between geographical areas, to understand limits and technical aspects of risk evaluation and eventually identify and build collaborative research projects and perspective. Benefits were to share experiences on managing environmental risks and needs of model and approach validation.

This meeting was focused on both technical and management aspects of environmental risks. There were over 65 attendees from oil and gas companies and consultancies located all over the world.

The meeting agenda included 2 sessions: the first session focused on technical aspects of managing environmental risks, outlining new concerns regarding air, water, and carbon capture and storage. The second session focused on ways of efficiently managing environmental risks including





# Recent Events

protection and prevention programs as well as early leak detection.

The meeting was closed by a half-day breakout session to allow more discussions and lay the groundwork for future projects. The attendance was split up into 4 groups:

- *Environmental risk management methodologies focusing on standards and validation needs.*
- *Modeling and monitoring tools in water, including new potential ways to validate new methods and models.*
- *Early detection of leaks*
- *Environmental risks and public perception/reputational impact*



Participants concluded that further and more focused discussions would be useful on environmental risk evaluation approaches to work on common practices and guidelines. A draft agenda of a 2 day focused workshop resulted. If you would be interested in this workshop, please advise Frederic Perie ([Frederic.perie@total.com](mailto:Frederic.perie@total.com)).

The agenda and all meeting presentations are posted to PERF website, [www.perf.org](http://www.perf.org), for PERF member company access."





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	<b>+1-(714)-670-3062</b>
<b>Vice Chair:</b>	<b>Meredith Gustafsson</b>
	<a href="mailto:meredith.b.gustafsson@exxonmobil.com">meredith.b.gustafsson@exxonmobil.com</a>
	<b>+1 (703)-846-4629</b>
<b>Teamwork</b>	<b>Together we achieve the extraordinary!</b>

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 research information relating to practical and theoretical science and technology concerning the petroleum industry and a mechanism to establish joint research projects in the field.

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

### PERF External Group Liaisons

PERF encourages external groups such as trade associations, national laboratories, and research institutions 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)  
 CEDRE  
 Department of Energy (USDOE)  
 Gas and Technology Institute (GTI)  
 Lawrence Berkley 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)  
 Energy & Environmental Research Center (EERC)  
 VITO - Flemish institute for technological research  
 RTI International  
 World Ocean Council

### Member Companies & Representatives

<b>Amerada Hess Co.</b>	<b>Gerry Bresnick</b>
<b>Saudi Aramco</b>	<b>Ramzi F. Hejazi</b>
<b>BP</b>	<b>Dave Fashimpaur</b>
<b>Chevron</b>	<b>Veronica R. Blackwell</b>
<b>ConocoPhillips</b>	<b>Bruce Randolph</b>
<b>ExxonMobil</b>	<b>Jill Kerr</b> <b>Meredith Gustafsson</b>
<b>INA-Naftaplin</b>	<b>Domagoj Zelic</b>
<b>Petro-Canada</b>	<b>Doug Evans</b>
<b>Petrobras</b>	<b>Paulo Negrais Seabra</b>
<b>Repsol YPF</b>	<b>Marta Garcia Ariza</b>
<b>Shell</b>	<b>Karen G. Haynes</b>
<b>Statoil</b>	<b>Stale Johnsen</b>
<b>Suncor</b>	<b>Anthony Congram</b>
<b>Total</b>	<b>Frederic Perie</b>
<b>Syncrude</b>	<b>Warren Zubot</b>

### Associate Members & Representatives

<b>Canadian Petroleum Products Institute (CPPI)</b>	<b>Adolfo Silva</b>
<b>Champion Technologies, Inc.</b>	<b>Ashley Dunham</b>
<b>Questor</b>	<b>Wilson McGarel</b>
<b>Veolia Water</b>	<b>Karim Essemiani</b>

**Petroleum Environmental Research Forum**

[WWW.PERF.ORG](http://WWW.PERF.ORG)