

The Home Stretch

## 2005 Clean Fuels Challenge

Westin Galleria  
Houston, Texas  
August 9 – 10, 2005



## Schedule of Events

### August 9, 2005

11:30 am – 1:30 pm	Lunch / Tabletop Exhibition	Woodway 1 Room	
1:30 pm – 2:15 pm	<b>Keynote Session</b> <b>Clean Fuels: The Outside View</b> <i>Loren Steffy, Business Columnist, Houston Chronicle</i>	Galleria I, II, III Room	
2:15 pm – 5:00 pm	<b>Q&amp;A Session</b> • <i>Shaun Boardman, Jacobs</i> • <i>Paul Fisher, Lion Oil</i>	Galleria I, II, III Room • <i>David French, TOTAL</i> • <i>Mike Hunter, Haldor Topsoe</i>	• <i>Ron Meeker, Chevron Products</i> • <i>Neil Naiman, Marathon Oil</i>
5:00 – 7:00 pm	Reception / Tabletop Exhibition	Woodway I Room	

### August 10, 2005

8:00 am – 9:15 am	<b>Concurrent Workshops:</b> <b>Track 1: Reliability</b>  Post Oak Room <b>Analyzer Reliability Challenges</b> <i>Kevin Landreth, ConocoPhillips</i>	<b>Track 2: Planning &amp; Economics/Operations</b> Tanglewood Room <b>Potential ULSD Tank Farm Issues</b> <i>Michael Ulowetz, Motiva Enterprises</i> <i>Ted Impson, Lion Oil</i>	<b>Track 3: Process Technology Update</b> Bellaire Room <b>Critical Factors in Maximizing Catalyst Cycle Length for ULSD Production</b> <i>Larry Kraus, Albemarle</i>
9:30 am – 10:45 am	<b>Track 1: Reliability</b>  Post Oak Room <b>Preparing for the Materials and Corrosion Impacts of Clean Fuels Modifications</b> <i>Erin Jolly, Chevron Energy</i>	<b>Track 2: Planning &amp; Economics/Operations</b> Tanglewood Room <b>Distribution to Retail: Challenges for ULSD</b> <i>James Scandola, Buckeye Pipeline</i>	<b>Track 3: Process Technology Update</b> Bellaire Room <b>Reactor Operations</b> <i>Mike Treybig, Shell Global Solutions U.S.</i>
11:00 am – 12:15 pm	<b>Track 1: Reliability</b>  Post Oak Room <b>Clean Fuels' Impacts on Amine Systems and Sulfur Recovery</b> <i>Phillip Oberbroeckling, LYONDELL-CITGO Refining</i>	<b>Track 2: Planning &amp; Economics/Operations</b> Tanglewood Room <b>A 20/20 View of Diesel Program Flexibilities</b>  <i>Clayton McMartin, Clean Fuels Clearinghouse</i>	<b>Track 3: Process Technology Update</b> Bellaire Room <b>Hydrogen Management in the Clean Fuels Environment</b> <i>Alan Zagoria, UOP LLC</i> <i>Cameron Eveland, BP</i>
12:15 pm – 2:00 pm	Lunch / Tabletop Exhibition	Woodway I Room	
2:00 pm – 3:30 pm	<b>Concurrent Workshops:</b> <b>Track 1: Reliability</b>  Post Oak Room <b>Reliability of Gasoline-treating Units</b> <i>Mike Wessels, Flint Hills Resources</i> <i>Lynn Fulton, BP</i>	<b>Track 2: Planning &amp; Economics/Operations</b> Tanglewood Room <b>Turnaround Strategies</b> <i>Greg Gentry, Premcor Refining Group, Inc.</i> <i>Brad Hase, Flint Hills Resources, LP</i> <i>Tom Henry, TOTAL Petrochemicals USA, Inc.</i>	<b>Track 3: Process Technology Update</b> Bellaire Room <b>Process Technology Panel</b> <i>Gary Everett, LYONDELL-CITGO Refining</i>

August 9 - 10, 2005

## **2005 Clean Fuels Challenge: The Home Stretch**

This biennial meeting focuses on the challenges of producing low-sulfur fuels to meet federal standards that will be implemented from 2004 to 2010. The 2005 meeting will focus on refiners' experiences starting up and operating hydrotreaters and other operations that produce low-sulfur gasoline and diesel fuels and apply those lessons learned to future challenges. The meeting format offers a keynote address, workshops, discussion groups, and a Q&A session on refining technology and reliability where experts share their experiences and valuable insights. There is also an exhibition of related products and services.



**NPRA**

# General Session

**Day One**

**Tuesday  
August 9, 2005**

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1:30 pm – 2:15 pm  
Galleria I, II, III Room

**Keynote Session**



**Loren Steffy**  
Business Columnist  
Houston Chronicle

**Clean Fuels:  
The Outside View**

Loren Steffy will examine two key questions:

- Does the public appreciate or understand the impact that clean fuels programs have had on the environment?
- Does public misconception or lack of understanding about the refining industry in general overshadow its understanding of clean fuels programs?

Mr. Steffy will discuss the public's overall support for clean fuels, and contrast that with its lack of understanding about the refining and petrochemical industries and what can be done to raise public awareness of clean fuels programs. In addition, there will be discussion in some areas where clean fuels have not been addressed, such as the airline industry, what the impact might be in those areas, and how the public is likely to react.

Mr. Steffy is the business columnist for the Houston Chronicle. He is a two-time winner of the Society of American Business Editors and Writers Best in Business Award and an eight-time recipient of the Dallas Press Club's Katie Award for business reporting. He won the Dallas Bar Association's Stephen H. Philbin Award for Excellence in Legal Reporting in 2001 and 2003. Before joining the Chronicle in April 2004, he worked for Bloomberg News in Dallas for 12 years, most recently as Texas bureau chief and senior writer for Bloomberg Markets magazine.

Steffy has a BA degree in journalism from Texas A&M University and is the past president of the Former Journalism Students Association.

**2:15 pm – 5:00pm**  
**Galleria I, II, III Room**

A panel of six industry experts from NPRA member companies will respond to questions that were received in response to an industry-wide call for questions. The questions are divided into the following categories:

**Q&A Session**

- Operations
- Reliability
- Planning and Implementation
- Process Technology

One or more of the panel members will respond to each question and then time will be allowed for follow-up questions from the attendees. Attendees may also offer their own comments and advice after the panel has responded. A transcript of the session will be distributed to all meeting attendees at a later date.

**Shaun Boardman**

Jacobs Engineering Group Inc.



Shaun Boardman is a Senior Consultant with Jacobs Consultancy with more than 22 years experience in the oil refining and petrochemical industries. Recent projects he has executed have focused on clean fuels and ultra low-sulfur diesel applications in North America. He has also led studies in residue hydroprocessing, distillate hydrocracking and distillate hydrotreating options. Mr. Boardman holds a BSChE from the University of Natal's Howard College in South Africa.

**Paul Fisher**

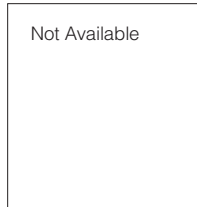
Lion Oil Company



Paul Fisher is the special projects manager for Lion Oil Company's El Dorado refinery. He has over 20 years experience in process and project engineering in the refining industry. Mr. Fisher earned a BS degree in mechanical engineering from the University of Arkansas.

**David French**

TOTAL  
Petrochemicals USA, Inc.



David French is currently Performance Control Supervisor at the TOTAL Port Arthur, TX, refinery where he is responsible for refinery planning, optimization and reporting functions. He has held various planning and optimization positions at the refinery during the last 12 years involving CAA compliance, feedstock and product coordination, and LP experience. Prior to working at the Port Arthur refinery, he held corporate Supply, Transportation and Terminating positions for 10 years. Mr. French holds a BA degree from UNCC.

**Mike Hunter**

Haldor Topsoe, Inc.



Mike Hunter is a Senior Engineer in the Hydroprocessing Catalyst and Technology division of Haldor Topsoe, Inc. He is responsible for catalyst specifications, reactor design, basic process engineering and technical services for Topsoe hydrotreating and hydrocracking technology. Mike's 25 years in refining include experience with Unocal and with the MW Kellogg Company. He earned BS and MS degrees in Chemical Engineering from Arizona State University.

**Ron Meeker**

Chevron Products Company



Ron Meeker is the Engineering Services Manager for Chevron's Hydroprocessing Technology and Marketing Group. He worked at the Pascagoula refinery in engineering, planning and operations before transferring to the Process Design Group in Richmond, CA where he was responsible for the process designs of hydrocrackers and hydrotreaters worldwide. Later, he was assigned as a Team Leader accountable for all hydroprocessing consultation to the Chevron refineries. In 1998, Ron was named the Hydroprocessing Best Practice Master for Chevron.

**Neil Naiman**

Marathon Oil Corporation



Neil coordinates the development and planning of transportation and logistics special projects that impact Marathon's Refining, Supply and Marketing organizations. The transportation, storage and handling of ULSD is one of these special projects. He has worked for Marathon Pipeline Company, Marathon Oil Company and Marathon Ashland Petroleum in a variety of engineering, operations and management positions. He holds a BSEE from Ohio Northern University and an MBA from Bowling Green State University.

**5:00 pm – 7:00 pm**  
**Woodway I Room**

**Reception / Tabletop Exhibition**

**Operations****Notes**

1. What are refiners planning to do with their recycle gas scrubbers given that more ammonia and H<sub>2</sub>S will be formed?
2. When operating at levels below 10 ppmw sulfur, what is the experience with accurately determining the sulfur content of the product? How do these differentiate between online analyzers, lab analyzers, and field analyzers (e.g. pipelines and terminals)? Have there been any advances in this technology?
3. How will the fuel (ULSD, gasoline or both?) be certified before it leaves the refinery? What is being done to minimize product contamination before it leaves the refinery?
4. What are the repeatability and reproducibility levels in the labs that you are using today for product that is less than 15 ppmw sulfur?
5. What blending issues have occurred to date with meeting Tier II specifications, and what is expected to change in the future with more rigorous specifications? How will the gasoline volumes be affected?
6. Taking sulfur levels into account, how are refiners and terminal operators planning to manufacture and blend #1 kerosene into ULSD? Will this be #1 ULSD?

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**Planning & Implementation****Notes**

1. The federal ULSD regulations specify a 15 ppmw sulfur cap at retail facilities. To be able to meet the retail specification pipeline companies have indicated that refinery deliveries to pipeline systems may have to be as low as 3 to 5 ppmw sulfur. How are refiners responding to this information?
2. What types of investments are pipeline companies planning to make to reduce sulfur contamination in transit?
3. Are refiners designing sufficient capacity into their ULSD units to handle future non-road, locomotive, and marine (NRLM) diesel production, as well as meeting "on-road" ULSD specifications? If not, what strategies will they employ for producing NRLM volumes at their future specifications?
4. To protect the quality of ULSD, will pipelines impose sulfur limits on all other fuels conveyed through the pipeline? If so, what limits are being considered?
5. What process/blending changes are refiners making to accommodate a wider use of ethanol in gasoline? Do refiners see a stranded-capital issue with isomerization units?
6. How do refiners' low-sulfur fuels production plans synchronize with marketing forecasts?
7. What has the industry learned from the April 2005 supplemental Solomon survey on diesel fuel pre-compliance that was commissioned by NPRA and API? Is the EPA considering any modifications to the implementation rules as a result of this survey?
8. What are the relative economics of hydrocracking light cycle oil vs. hydrotreating in a post ULSD clean fuels environment?
9. What margin on ULSD have refiners been applying in the cost analysis of their ULSD projects? What are likely to be influencing factors affecting the ultimate ULSD margins (compared to 500 ppm LSD)?
10. In light of crude and fuel prices, and the improved quality of ULSD, a strong argument can be made for a shift towards dieselization in the US. What impact would this have on the typical US-based refiner?

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**Process Technology****Notes**

1. ULSD production will require greater hydrodesulfurization/hydrodenitrication severity which will result in an increase in hydrogen consumption. What, if anything, are refiners doing about anticipated hydrogen consumption and balance? How is the increased requirement for gas circulation in hydrotreaters being handled?
2. What will refiners do with naphtha reformer hydrogen if the purity is too low for it to be used in hydrotreaters that will require increased quantities of higher purity make-up hydrogen to produce low-sulfur fuels?
3. Are there similar hydrogen issues for Tier II gasoline treaters?
4. For refiners operating FCC naphtha post-treatment technologies, what sort of octane losses have been measured? In general, is the octane loss experienced more or less than was projected? To what can this be attributed?
5. What have you done to mitigate higher than expected octane losses?
6. What is your operating strategy/target for meeting the 30 ppm sulfur annual average and 80 ppm cap for gasoline?
7. Much has been written regarding the necessity of having a "good" gas/liquid distributor to maximize catalyst utilization in the reactors that produce ULSD. Please explain the difference between custom-designed and "off-the-shelf" distributors, and quantify the differences in catalyst life.
8. What is the industry's proven experience with the newest generation of high dispersion reactor internals? Have they met expectations? Are data available that show the impact on distribution/maldistribution from start-of-run to end-of-run?
9. Will the new generation hydrotreating catalyst be able to be regenerated and restored to its initial activity?
10. How do refiners plan to manage catalyst in light of the tight supply situations in the foreseeable future?
11. Under what conditions can ULSD specifications be met at low-to-moderate (less than 700 psi) pressure? What are the important parameters that need to be in place for this to be viable?
12. Have the additive requirements for ULSD been adequately identified (e.g. conductivity and lubricity)?
13. How effective will cetane improvers be in ULSD?



**Reliability****Notes**

1. What is the advantage of a water wash at the amine scrubber inlet or outlet? On what basis is this choice made?
2. How is your water wash philosophy to protect against salting and corrosion in high-pressure exchangers changing with increased H<sub>2</sub>S and ammonia production?
3. With the ULSD specifications, refiners' ability to tolerate leakage in feed/effluent heat exchangers is significantly reduced. What are refiners doing to prevent, predict (e.g. inspections during turnaround), and detect/confirm leaks?
4. How will a refiner respond to a leak in a ULSD producing unit compared to a typical response for today's hydrotreaters?
5. What are refiners going to do with off-specification ULSD? How will refiners handle distillate hydrotreater upsets and scheduled turnarounds?

**Track 1:  
Reliability**8:00 am – 9:15 am  
Post Oak Room**Analyzer Reliability Challenges***Kevin Landreth*, Process Instrument & Control Systems Specialist, ConocoPhillips

Meeting the latest regulatory sulfur specifications for gasoline and diesel fuels will require more accurate and more reliable measurement technologies. Today's sulfur analyzers provide critical information necessary for regulatory compliance as well as unit performance optimization, and therefore must quickly provide accurate and dependable data. Key questions that this workshop will address include:

- What are some of the more common problems related to sulfur analyzer reliability?
- Are there ways to improve measurement accuracy and precision?
- What different sampling designs could result in better detection?
- Are there new technologies for low-sulfur measurements?

**Track 2: Planning & Economics/Operations**8:00 am – 9:15 am  
Tanglewood Room**Potential ULSD Tank Farm Issues***Michael Ulowetz*, Process Engineer, Motiva Enterprises and *Ted Impson*, Manager, Planning & Economics, Lion Oil Company

Refiners are making significant investments in process technologies to produce on-road diesel with a maximum sulfur content of 15 ppm at the pump. However, if refiners are not careful, all that investment could be in vain. Product contamination in the tank farm could jeopardize a refiner's ability to ship on-spec product. This workshop will address certain areas that need to be reviewed for potential product contamination. Some topics to be discussed include: modification of common piping and manifolds, dedicated tankage, loss of tank farm flexibility, off-spec products, and more.

**Track 3:  
Process Technology Update**8:00 am – 9:15 am  
Bellaire Room**Critical Factors in Maximizing Catalyst Cycle Length for ULSD Production***Larry Kraus*, Technical Service Manager-Hydroprocessing Catalysts, Albemarle Catalyst Company LP

This presentation will address the critical factors for attaining maximum catalyst cycle length while meeting ULSD product specifications and operating objectives. The roles that catalyst selection, feed management, and feed distribution have in maximizing catalyst cycle length during ULSD production will be addressed. Specific topics that will be discussed include:

- The importance of proper catalyst/bed grading selection for balancing catalyst activity and unit operating capabilities, controlling catalyst bed poisoning and fouling, and managing hydrogen consumption.
- The benefits from managing feed properties, such as endpoint/final boiling point, nitrogen content, and aromatics content to match feed processing requirements with unit capabilities in ULSD production.
- The effect of catalyst loading and reactor internals on feed distribution and the impact of feed maldistribution on catalyst performance and cycle length.

**Track 1:****Reliability**

9:30 am – 10:45 am

Post Oak Room

**Preparing for the Materials and Corrosion Impacts of Clean Fuels Modifications***Erin Jolly*, Materials Engineer, Chevron Energy Technology Company

To meet clean fuels specifications, many existing hydroprocessing units are being retrofitted and the operating conditions changed. Topics covered in this presentation will include:

- An overview of typical corrosion and metallurgical degradation mechanisms in these units.
- Discussion on how changing to a clean fuels operation can alter the corrosion severity.
- Key variables to monitor and compare to projected and original design conditions.

**Track 2: Planning & Economics/Operations**

9:30 am – 10:45 am

Tanglewood Room

**Distribution to Retail: Challenges for ULSD***James Scandola*, Senior Manager, Transportation, Buckeye Pipeline

The presentation will cover the latest preparations that pipelines have been undertaking to get ready for moving ULSD including the handling requirements, oversight programs, and training that are being implemented.

**Track 3:****Process Technology Update**

9:30 am – 10:45 am

Bellaire Room

**Reactor Operations***Mike Treybig*, Hydroprocessing Advisor  
Shell Global Solutions U.S.

Most ULSD projects are nearing implementation having completed detailed design and are now approaching the end of the construction phase. Focus will be shifting from project execution to operation of these new, sophisticated hydrotreating machines. The days are limited when the distillate hydrotreater is considered an incidental polishing unit. The ULSD unit will soon be a high-powered process that must be operated with utmost precision to ensure the “chemical grade” specifications are achieved on a day-in, day-out basis.

This Reactor Operations Workshop will focus on key ULSD operating strategies as they differ from current distillate unit approaches. Topics include management of feed diet/quality, review of key “new” equipment considerations, discussion of reactor operating schemes, and optimization of product quality. These are critical elements to ensure the reliable production of on-spec ULSD while maximizing the profitability of the new ULSD asset.

**Track 1:  
Reliability**

11:00 am – 12:15 pm  
Post Oak Room

**Clean Fuels' Impacts on Amine Systems and Sulfur Recovery**

*Philip Oberbroeckling*, Operations Superintendent – Refinery Optimization & Logistics, LYONDELL-CITGO Refining, LP

Amine treating and sulfur recovery are often viewed as a “necessary utility” within the refinery schematic. Contrary to this view, amine/sulfur recovery facilities are fairly complex chemical processes that when neglected and improperly operated quickly become unreliable. In the clean fuels era, refineries will face major difficulties and unwanted shutdowns when the amine/sulfur recovery units are unavailable. This workshop will explore the impact of clean fuels on the amine/sulfur recovery facilities, and discuss the key reliability issues requiring focus for successful operations.

**Track 2: Planning & Economics/Operations**

11:00 am – 12:15 pm  
Tanglewood Room

**A 20/20 View of Diesel Program Flexibilities**

*Clayton McMartin*, President, Clean Fuels Clearinghouse

Workshop participants will learn about the three regulatory elements providing the most flexibility in the production and delivery of cleaner diesel fuels to the American consumer. Each element will be introduced and discussed individually, then drawn together to illustrate the interdependency between the ULSD highway and off-road programs. This session will reveal what diesel suppliers should know about how to leverage the most operating flexibility provided for within EPA's regulations.

**Track 3:  
Process Technology Update**

11:00 am – 12:15 pm  
Bellaire Room

**Hydrogen Management in the Clean Fuels Environment**

*Alan Zagoria*, Senior Engineering Consultant, UOP LLC and *Cameron Eveland*, Long Term Optimization Engineer, BP

The availability and cost of hydrogen has been and will increasingly become a challenge to refiners making clean fuels. More stringent gasoline and diesel specifications increase the demand for hydrogen while they constrain the hydrogen production of catalytic reformers. Techniques are available to effectively analyze, manage and improve the hydrogen network, but have not yet been universally adopted.

Participants in this session will have the opportunity to learn of new approaches for comprehensive refinery-wide hydrogen management, benefit from the experiences of a major refiner, and have the opportunity to share challenges and solutions with other participants in a workshop format.

**Track 1:****Reliability**

2:00 pm – 3:30 pm

Post Oak Room

**Reliability of Gasoline-treating  
Units Panel**

*Mike Wessels*, Lead Engineer,  
Flint Hills Resources and  
*Lynn Fulton*, BP

The workshop will focus on the reliability issues of gasoline and diesel hydrotreating units and how lessons learned in those units might be applied to new diesel hydrotreaters that are presently being designed and built. The presenters will focus on three key areas: operation and process reliability; rotating equipment reliability; and stationary equipment reliability (furnace valves, exchangers, other equipment).

**Track 2: Planning &  
Economics/Operations**

2:00 pm – 3:30 pm

Tanglewood Room

**Turnaround Strategies**

*Greg Gentry*, Manager, Operations  
Services, Premcor Refining Group, Inc.  
*Brad Hase*, Flint Hills Resources, LP  
*Tom Henry*, TOTAL Petrochemicals USA

Turnaround strategies will necessarily change following the addition of new or revamped process units to make low-sulfur gasoline and diesel fuels. Representatives from Flint Hills Resources, Premcor, and TOTAL will share their views on coordinating process unit turnaround cycles, total refinery turnarounds, and turnaround duration and how changes in these strategies will affect the budget process, feedstock selection and decisions to store or sell blendstocks. The workshop will also identify anticipated changes in the execution of turnarounds, including team organization, risk-based scope development, and schedule.

**Track 3:****Process Technology Update**

2:00 pm – 3:30 pm

Bellaire Room

**Process Technology Panel**

*Gary Everett*, Process Design and  
Technology Manager,  
LYONDELL-CITGO Refining, LP

Now that we are into our second full year of EPA's Tier II Gasoline compliance programs, an open forum discussion will be held for refiners to provide critical information about the lessons learned as they have implemented various technology applications for Tier II compliance. These technologies cover: FCC feed treating, FCC catalyst/additives and FCC post-treating applications that have been in commercial operation. A panel of technology providers will be on hand to add clarification and support information offered by the refiners. Technology providers are:

- Axens
- CDTECH
- ConocoPhillips
- ExxonMobil Research & Engineering
- Grace Davison
- UOP

## List of Exhibitors

**Location:**

Woodway I Room

**Hours:**

Tuesday, August 9

11:30 am – 1:30 pm

Lunch / Tabletop Exhibition Open

5:00 pm – 7:00 pm

Reception / Tabletop Exhibition Open

Wednesday, August 10

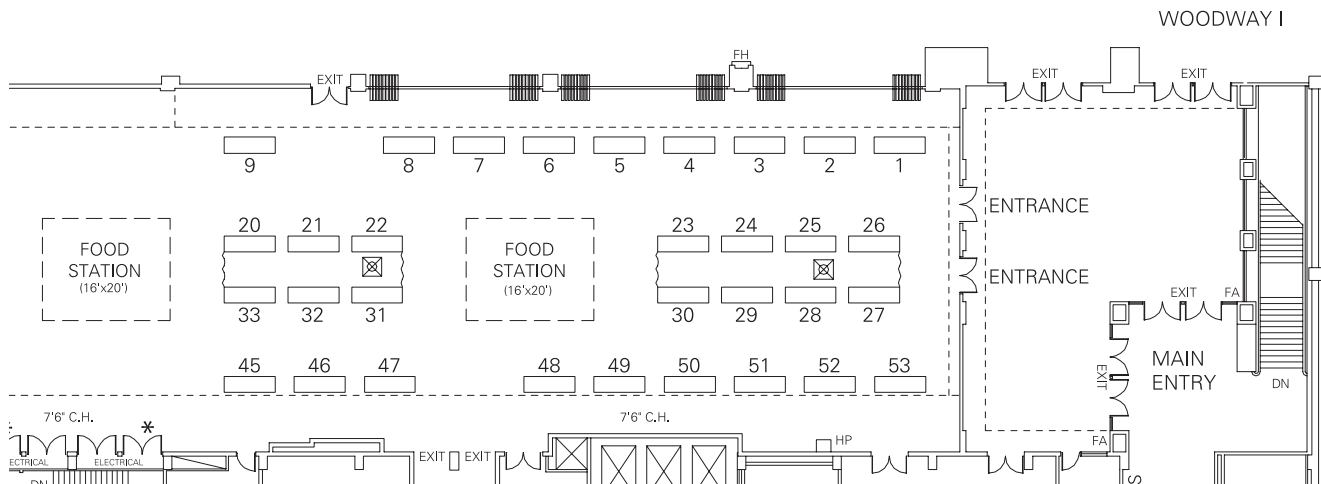
12:15 pm – 2:00 pm

Lunch / Tabletop Exhibition Open



**NPRA**

## Exhibition Floor Plan and Tabletop Exhibitors



### Exhibitors Listed Alphabetically By Company

#### National Petrochemical & Refiners Association 2005 Clean Fuels Challenge

Westin Galleria  
Houston, Texas  
August 9 – 10, 2005

Company Name	Table #	Company Name	Table #
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Engelhard Corporation	50	Quest TruTec, LP	30
ENPRO SYSTEMS	48	Repcon, Inc.	47
EST Group, Inc.	46	Saint-Gobain NorPro	21
FLIR Systems	52	STARCON/Scaffolding Dynamics	33
Foster Wheeler	24	Structural Preservation Systems	3
GE Energy	31	Sulzer Chemtech – USA	4
Grace Davison/ART	25/26	The Turnaround Management Co.	20
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Intertek Caleb Brett	9	Turner Industries Group	7
Jaeger Products, Inc.	45	XOMOX	49
JT Thorpe Company	53		

## Tabletop Exhibitors: Exhibitor List with Descriptions

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### **AltairStrickland (6)**

1605 S. Battleground  
La Porte, TX 77062  
281-478-6200  
Whitney Strickland  
wstrickland@altairstrickland.com  
AltairStrickland provides planning, management and execution of process unit revamps and turnarounds.

### **Bay Ltd. (2)**

4406 Rex Road  
Friendswood, TX 77546  
281-648-7000  
David Hicks  
hickd@bayltd.com  
An industrial construction and maintenance company with fabrication and heavy haul/lift capabilities.

### **Boardman Inc. (29)**

1135 S. McKinley  
Oklahoma City, OK 73108  
405-634-5434  
Jake W. Page  
jpage@boardmaninc.com  
Steel and alloy plate fabricator specializing in pressure vessels, towers, columns and FCCU components. Serving the Industry since 1910.

### **CAR-BER TESTING SERVICES (27)**

315 S. Loop 201, Hwy. 146  
Baytown, TX 77520  
281-837-8003  
Chris Pettitt  
cpettitt@carbortesting.com  
CAR-BER TESTING SERVICES is a specialty service company that provides a cold-cutting service and, utilizing their own proprietary equipment, provides line isolations for hot work and hydro tests of welds/vessel nozzles.

### **Daily Thermetrics (28)**

5700 Hartsdale  
Houston, TX 77036  
713-914-8425  
Kristin Corpporon  
sales@dailyinst.com  
The CatTracker, Catalyst Tracking System, has gained worldwide licensor and end user acceptance of temperature profiling of hydrotreaters by providing a lower cost solution and higher accuracy than competitive designs.

### **Engelhard Corporation (50)**

1800 St. James Pl.  
Suite 400  
Houston, TX 77056  
713-892-3810  
Teresa Garcia  
teresa.garcia@engelhard.com  
Based on our core competencies in surface and material science, Engelhard provides a variety of FCC technologies specially formulated to solve a refiner's performance and environmental needs.

### **ENPRO SYSTEMS (48)**

16315 Market Street  
Channelview, TX 77530  
281-452-5865  
Mark S. Taylor  
marktaylor@enprosys.com  
Heavy wall reactors, hydrotreaters, FCCU reactors, FCCU equipment, FCCU slide valves, expander butterfly valves and flue gas valves.

### **EST Group, Inc. (46)**

334 Godshall Drive  
Harleysville, PA 18964  
215-513-4300  
Drew Bergman  
drew.bergman@estgrp.com  
The EST Group manufactures tubular heat exchangers, condenser tube testing, sleeving and plugging equipment that includes: Pop-A- Plug Tube Plugs, Hydra-Loc Tube Sleeves and GripTight hydrotesting plugs. ISO-9001 Certified.

### **FLIR Systems (52)**

16 Esquire Rd.  
N. Billerica, MA 01862  
281-304-9799  
Barry Hirst  
barry.hirst@flir.com  
FLIR infrared cameras can maximize plant safety, optimize process system integrity and increase production throughout by monitoring the condition of critical equipment and components and identifying problems before they occur.

### **Foster Wheeler (24)**

2020 Dairy Ashford Rd.  
Houston, TX 77077  
281-597-3156  
Ann Hooper  
ann\_hooper@fwhou.fwc.com  
Foster Wheeler is a global EPC company in business 100+ years with a solid reputation of designing and building safe, reliable and on-schedule projects for the refining and petrochemical industries.

### **GE Energy (31)**

1333 West Loop S #800  
Houston, TX 77027  
713-803-0974  
Lorena Enriquez  
lorena.enriquez@ge.com  
GE Energy Oil & Gas provides engineering refurbishing and field services for all types of rotating equipment in the oil and gas industry for GE original and all major brand designs.

### **Grace Davison/ART (25/26)**

7500 Grace Drive  
Columbia, MD 21044  
410-531-8226  
Betsy Mettee  
betsy.mettee@grace.com  
FCC's, FCC additives and hydroprocessing catalysts that enable refiners to meet clean fuels regulations efficiently and economically.

### **Infinity Construction Services, LP (51)**

2301 S. Battleground Road  
La Porte, TX 77571  
281-476-3142  
Rod Daigle  
rdaigle@infinitycs.us  
Turnkey General Mechanical Contractor providing civil, mechanical, E&I and piping fabrication to the industrial market.

### **Intertek Caleb Brett (9)**

2200 West Loop South  
Suite 200  
Houston, TX 770227  
713-844-3248  
Angel Fontenot-Staley  
Angel.fontenot@intertek.com  
Laboratory testing inspection services provided globally through network of 217 laboratories. Products analyzed include, petroleum, chemicals, food, agri products, consumer goods, pharmaceuticals and more.



**Jaeger Products, Inc. (45)**

1611 Peachleaf Street  
Houston, TX 77039  
281-449-9500  
Bernardo Lucero  
blucero@jaeger.com  
Jaeger products offers a full line of mass transfer devices including reactor internals. The company has confidentiality agreements in place and has built reactor internals for several companies including Shell, Chevron/Texaco and Fluor.

**JT Thorpe Company (53)**

6833 Kirbyville  
Houston, TX 77095  
713-644-0141  
Andy Piper  
tap@thorpecorp.com  
JT Thorpe Company specializes in the engineering, construction and maintenance of refractory linings for SRU's, hydrogen reformers and other fired equipment. Other areas of expertise include tube seals and high emissivity coatings.

**JV Industrial Companies (22)**

642 Cantwell Lane  
Corpus Christi, TX 78408  
361-884-4022  
Christina Cruz  
ccruz@jvpiping.com  
Specialty welding, bolt torqueing, engineering, tower revamps, boilers, exchangers and bundle extraction.

**KBC Advanced Technologies, Inc. (5)**

14701 St. Mary's Lane  
Suite 300  
Houston, TX 77079  
281-293-8200  
Tamra Daniels  
tdaniels@kbcacat.com  
KBC Advanced Technologies, Inc. is the leading independent technical consultancy group providing specialized services and software to improve operational efficiency and profitability.

**Matrix Service (1)**

10701 East Ute Street  
Tulsa, OK 74116  
360-815-5388  
Gene Carter  
gcarter@matrixservice.com  
Matrix Service is an industrial contractor providing construction, repair and maintenance services. We offer our clients high-quality, cost-effective innovative ways to safely meet the Clean Fuels Challenge.

**Merichem Company (23)**

5450 Old Spanish Trail  
Houston, TX 77023  
713-428-5280  
Tara Johnson  
tjohnson@merichem.com  
Full-service process technology licensing, engineering and technical services for the refining and petrochemical industries.

**Monsanto Enviro-Chem Systems (8)**

14522 South Outer Forty Road  
Chesterfield, MO 63017  
314-275-5787  
Cristina Kulczycki  
cristina.r.kulczycki@monsanto.com  
Monsanto Enviro-Chem will be featuring its proprietary DynaWave Reverse Jet Scrubber. The Dynawave has been applied in several refinery applications, including sulfur recovery unit and S Zorb tail gas treating.

**Quest TruTec, LP (30)**

11005 W. Fairmont Pkwy  
LaPorte, TX 77571  
281-471-8970  
Margaret Bletsch  
m.bletsch@questtrutec.com  
Quest TruTec resource management program identifies and captures key performance data that can impact availability and reliability - both online and offline. Our unique, proprietary tools and analytical models are used to take critical measurements for Process Diagnostics and Condition Assessment. We then mine this highly quantitative data for use in Resource Management and Process Solutions.

**Repcon, Inc. (47)**

7501 Up River Road  
Corpus Christi, TX 78409  
713-628-8854  
Mark Williams  
mswilliams@repconinc.com  
Turnaround services for the refining and petrochemical industries. Services include turnkey turnaround planning, management and execution, blind to blind exchanger services and complete process tower services including ASME repairs and modifications.

**Saint-Gobain NorPro (21)**

3840 Fishcreek Road  
Stow, OH 44224  
330-677-3512  
Paul A. Szymborski  
paul.szymborski@saint-gobain.com  
Catalyst supports and top bed gradings for the refining and petrochemical industry.

**STARCON/Scaffolding Dynamics (33)**

1102 Howard Ave.  
Deer Park, TX 77536  
832-324-7100  
Jim Osicka  
josicka@starcon.org  
A full service mechanical contractor, including, scaffolding and insulation. Specializing in project work, turnarounds and maintenance for the petrochemical industry.

**Structural Preservation Systems (3)**

1003 Clay Ct.  
Deer Park, TX 77536  
281-478-5300  
Amy Makris  
amakris@structural.net  
SPS is the Nation's largest contracting firm dedicated to the repair, restoration and strengthening of concrete structures.

**Sulzer Chemtech – USA (4)**

4106 New West Dr.  
Pasadena, TX 77507  
281-604-4158  
Alan Szymanski  
alan.szymanski@sulzer.com  
Supply of both new design and replacement mass transfer equipment; trays packing (both structural and random) column internals. Also, process technology capabilities and field installation service facilities worldwide including; Tulsa, OK, and Mexico City in North America.

## Tabletop Exhibitors: List with Descriptions

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### **The Turnaround Management Co. (20)**

17629 El Camino Real  
Suite 125  
Houston, TX 77058  
281-461-9340  
David Frinsco  
frinsco@tamanagement.com  
Provide turnaround management services. P3 & P3E training inspection services.

### **Thermo Electron (32)**

9303 W. Sam Houston Parkway S.  
Houston, TX 77099  
713-253-1893  
Mike Landers  
mike.landere@thermo.com  
On-line, At-line and lab sulfur analyzers with turn key supply and complete technical support.

### **Turner Industries Group (7)**

8687 United Plaza Blvd.  
Baton Rouge, LA 70809  
713-470-9082  
Lewis Paxton  
lpaxton@turner-industries.com  
Turner Industries Group has provided a single vendor solution in maintenance, construction and industrial services for 50 years. Turner is ranked as one of the nation's top maintenance contractors.

### **XOMOX (49)**

4444 Cooper Road  
Cincinnati, OH 45224  
713-671-4705  
Louis Teykl  
louis.teykl@xomox.com  
XOMOX provides customer driven solutions for applications in the process and related industries. XOMOX is a global manufacturer of Tufline valves, actuators and accessories.

## Sponsors

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### **Tuesday Afternoon Coffee Break**

Air Liquide America Corporation



### **Wednesday Morning Coffee Break**

Criterion Catalysts and Technologies



## 2005 Clean Fuels Challenge Program Committee

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*Matt Baebler*  
Tesoro Petroleum Corporation

*Barry Brodwater*  
Sunoco Inc.

*David Brossard*  
Chevron Lummus Global

*Jeff Buck*  
Shell Chemical Company

*Keith Chism*  
Tesoro Petroleum Corporation

*Gary Everett*  
LYONDELL-CITGO Refining, LP

*Shailendra Gupta*  
BP p.l.c.

*Ted Hallen*  
Haldor Topsoe, Inc.

*Tom Henry*  
TOTAL Petrochemicals USA, Inc.

*Dave Holbrook*  
UOP LLC

*Mark Korsmo*  
ConocoPhillips

*Dave Mendrek*  
Murphy Oil USA, Inc.

*Brian Moyse*  
Haldor Topsoe, Inc.

*Sal Torrasi*  
Criterion Catalysts and Technologies L.P.

*Kevin Proops*  
Flint Hills Resources

**NPRA Meeting Schedule  
2005 – 2006**

**Notes**

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September 19-20, 2005

**Environmental Conference**

The Fairmont Hotel  
Dallas, TX

October 18-21, 2005

**Q&A and Technology Forum**

Gaylord Texan Resort & Convention  
Center  
Grapevine, TX  
(Includes Plant Automation & Decision  
Support Conference)

November 10-11, 2005

**International Lubricants &  
Waxes Meeting**

InterContinental Hotel  
Houston, TX

March 19-21, 2006

**Annual Meeting**

Grand America Hotel  
Salt Lake City, UT

March 26-28, 2006

**International Petrochemical  
Conference**

Henry B. Gonzalez Convention Center  
San Antonio, TX

May 23-26, 2006

**Reliability & Maintenance  
Conference and Exhibition**

Henry B. Gonzalez Convention Center  
San Antonio, TX

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**NPRA**

National Petrochemical & Refiners Association

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Washington, DC  
20036.3896

202.457.0480  
[www.npra.org](http://www.npra.org)