

**TARGETED TECHNOLOGY TRANSFER TO
US INDEPENDENTS-
2004 YEARLY TECHNICAL PROGRESS REPORT**

START DATE: 10/01/03

END DATE: 9/30/04



SUBMITTED TO:

**U.S. DEPARTMENT OF ENERGY'S
OFFICE OF FOSSIL ENERGY**

FOR WORK PERFORMED FOR THE

**STRATEGIC CENTER FOR NATURAL GAS AND OIL
WITHIN THE NATIONAL ENERGY TECHNOLOGY LABORATORY**

IDENTIFICATION NO. DE-FG26-03NT15394



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JANUARY 2005

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EXECUTIVE SUMMARY

The Petroleum Technology Transfer Council (PTTC) continued pursuing its mission of assisting U.S. independent oil and gas producers with timely, informed technology decisions during Fiscal Year 2004 (FY04). PTTC has active grassroots programs through its 10 Regional Lead Organizations (RLOs) and 2 satellite offices. They bring research and academia to the table via their association with geological surveys and engineering departments. The regional directors interact with independent oil and gas producers through technology workshops, resource centers, websites, newsletters, technical publications and other cooperative outreach efforts. PTTC's Headquarters (HQ) staff receives direction from a National Board of Directors predominantly comprised of American natural gas and oil producers to plan and manage the overall technology transfer program. PTTC HQ implements a comprehensive communications program by interconnecting the talents of the National Board, 10 Regional Producer Advisory Groups (PAG) and the RLOs with industry across the U.S.

PTTC effectively combines federal funding through the Department of Energy's (DOE) Office of Fossil Energy, namely the Strategic Center for Natural Gas and Oil with state and industry contributions to share application of upstream technologies. Ultimately, these efforts factor in to provide a safe, secure and reliable energy supply for American consumers. This integrated resource base, combined with industry volunteers guiding PTTC's activities and the dedication of national and regional staff, are achieving notable results regarding domestic production figures. PTTC is increasingly recognized as a critical resource for information and access to technologies by providing direct contact with research, development and demonstration (RD&D) results. A key to the program is demonstrating proven technologies that can be applied broadly and rapidly.

This technical progress report summarizes PTTC's accomplishments during FY04. Activities remained at high levels. Board and staff interaction has defined strategic thrusts to further outreach. Networking, involvement in technical activities and an active exhibit schedule are increasing PTTC's sphere of influence with both producers and the service sector. PTTC's reputation for unbiased bottom line information stimulates cooperative ventures with other organizations. Efforts to build the contact database and a growing E-mail Technology Alert service are expanding PTTC's audience.

National-Level Program

PTTC's Board of Directors met three times during FY04. Early in FY04 the Board reviewed and approved FY04 regional plans and budgets. Strategic thrusts were identified as strengthening the PAGs and expanding the Service and Large E&P Companies Board positions into subcommittees. In March 2004 the Board elected new leadership with Brook Phifer, Nico Resources, LLC, Littleton, Colorado, becoming Chairman and Brian Sims, Independent, Madison, Mississippi, becoming Vice Chairman. In March 2004 HQ staff reviewed a recently completed analysis of PTTC impact in selected technology areas. The RLO Directors, who were meeting jointly with the Board, described the evolution of their regional programs and presented success stories illustrating how industry was taking action with information received. Both Board members and the RLO Directors participated in subsequent Hill Visits. In July 2004 the Board focused on the upcoming annual planning cycle, progress in formation of Board subcommittees and strategic thinking about strengthening volunteer involvement.

Executive Director Don Duttlinger and Houston staff worked with members from the Service and E&P Company board seats to form 2 subcommittees. From the operator's standpoint, a field trial subcommittee would focus on validation and demonstration of emerging technologies. The service subcommittee would seek demonstration projects for under-applied technologies with the operator group to prove up concepts and develop case study examples to further transfer technical information. Kathy Chapman, Director of Business Affairs, oversaw a smooth transition to the new grant and manages the financial/accounting function from the Washington, DC area. Chapman successfully changed over to a new accounting package to streamline reporting. National Project Manager Lance Cole continued to serve PTTC on a contract basis from Sand Springs, Oklahoma. He coordinates efforts among the regions and has primary responsibility for national

communications and technology products. High recognition is given to the regional staffs who make technology transfer happen effectively on a day-to-day scale.

PTTC's national organization continued oversight of the regional programs. Repeat attendance at regional workshops, a measure of customer satisfaction and value received, remained strong at 56%. Forty per cent of participants responding to a question about applying technologies based on knowledge gained through PTTC respond "Yes." This feedback confirms that producers are taking action with the information they receive. RLO Directors reported success stories, which collectively illustrate the myriad ways PTTC impacts industry. PTTC estimated economic impact to producers and the vendor community in eleven technology areas. Considering the timing and quantity of PTTC activities, as well as follow-up industry participation and feedback, industry-reviewed impact factors (% of activity that could logically be attributed to PTTC effort) estimated for each area ranged from 5% to 25%. Overall PTTC impact factor was estimated at 7%. Feedback from the Washington community concerning this analysis has been favorable.

PTTC continued publishing monthly case studies in the *Petroleum Technology Digest* in *World Oil*. Begun in September 1999, the *Digest* is a joint effort of PTTC and Gulf Publishing. *World Oil's* circulation exceeds 35,000 readers worldwide. Since inception, PTTC has delivered 65 case studies through the *Digest*. Feedback is overwhelmingly positive. Producers have noted that they learned about and applied technologies new to their operations. Several technology providers have indicated that exposure through the *Digest* brought them new customers, from new service areas.

PTTC posts summaries of regional workshops on its website as *Solutions From the Field*. This allows those not attending the workshop to gain from the insights presented. Ten summaries were posted during FY04, bringing the total, not counting pre-1997 workshops, to 105 summaries.

With cooperation from the Independent Petroleum Association of America (IPAA), PTTC developed a short tech session preceding IPAA's annual meeting in New Orleans in October 2003 and is participating in the development of a technical session that will be part of an "Emerging Technologies" conference following IPAA's 2004 annual meeting.

Seven of 10 regions incorporated findings from DOE-supported R&D within their technology workshop program, with some able to do so in several events. HQ staff monitored awards and R&D progress within DOE's Stripper Well Consortium, actively looking for tech transfer opportunities. All 10 regions co-sponsored or participated in some fashion in events involving professional societies or producer associations. Many regions found multiple opportunities for cooperation.

PTTC continued its multi-faceted national communications program. Circulation of its 16-page quarterly newsletter, *PTTC Network News*, grew to about 17,000 individuals. About 60% are from the E&P industry with 58% of those being independents. Circulation for the E-mail Tech Alert has grown to more than 7,000. Monthly Tech Connections columns for the *American Oil and Gas Reporter*, whose circulation is 15,000, provides an additional venue for transferring technology insights from regional activities.

By yearend FY04, usage of the national website, www.pttc.org, had increased to nearly 20,000 user sessions per month with page views exceeding 54,000 per month. The website provides timely calendar information, an archive for technology insights and information, national links, in addition to serving as a gateway to the regional and satellite websites. PTTC Net, the intranet system for staff, Board and RLO communication, provides an effective, organized information system for internal activities.

Regional-Level Program

In FY04, PTTC's regions held a total of 141 workshops drawing 6,451 individuals. There were more than 25,000 reported contacts. Activity remained strong, although down some from record levels experienced during FY03. Attendance averaged 46 individuals per workshop with 85% of attendees coming from the E&P industry. Of the industry attendees, 56% are repeat attendees, that is, they have previously attended a PTTC workshop in that region. FY05 plans project continued high activity.

The regional resource centers continued to function as a focal point or hub for contact with industry. The products and services available through these centers include: (1) access to information and data resources, (2) expert response to contacts and inquiries, (3) demonstration and training for E&P software, (4) information products, (5) special purpose databases, and (6) other outreach efforts. Contact activity now averages nearly 10 contacts per region per working day. Six regions reported more than 1,000 contacts during the year. Most inquiries are for basic oil and gas data or calendar/event information. A small percentage of contacts, estimated in the 10 to 20 percent range, are true technical inquiries requiring professional expertise to respond.

Combined, the regions conducted 22 software-training courses with 19 of those coming from the Rocky Mountain Region. Other regions performing software training included the Appalachian, Eastern Gulf, and North Midcontinent regions. The Rocky Mountain Region also supports a Simulation Users Group. Strong support from other partners (AAPG, Colorado School of Mines, private donors, and software vendors) enables the Rocky Mountain Region to maintain its extensive software-training schedule.

Where appropriate, regions develop information products. The Central Gulf Region, developer of an early Louisiana Desktop Well Reference, is now finishing a pilot Louisiana Parish Well Reference project that has more detailed information on a parish level. Major state funding would be required to develop this on a statewide basis. The Midwest Region and the Illinois State Geological Survey are developing base and custom mapping products. Previously the Southwest Region developed a New Mexico Well Location CD.

Data access is an on-going industry priority, so all regions work to facilitate access to existing databases, exemplified by the Southwest Region's work improving access to New Mexico production data and the North Midcontinent Region's support of the Digital Petroleum Atlas. Due to changing state priorities, the Eastern Gulf no longer supports the geological-oriented website developed by the Mississippi Office of Geology. Working closely with the Illinois State Geological Survey (ISGS), the Midwest Region aggressively educates industry about capabilities of the ILOIL Internet information system. The Michigan satellite continually expands its digital offerings. In the Appalachian Region, staff is obtaining updated data for interactive GIS databases of horizontal, coalbed methane and Trenton-Black River activity. The Rocky Mountain Region is developing a Core Locator project, a map-based display system for wells having cores and where those cores are stored. Initial work has focused on portions of the holdings of the Texas Bureau of Economic Geology.

Various outreach programs also emanate from the resource centers. The Central Gulf, Midwest, North Midcontinent and Southwest regions make targeted visits to producers. PUMPer contacts in California as part of the PTTC's DOE-supported PUMP project provide numerous one-on-one and small group interactions. Student internship programs, COMET in the West Coast Region and Futures in Energy in the Rocky Mountain Region, benefit students and sponsors alike. Numerous other examples exist showing how the regions cooperate with their parent organizations or other groups to conduct mutually beneficial outreach.

Regional websites focus on calendar/event information, workshop summaries and presentations, case studies, technical reports of R&D project results, access to databases, and useful links to other sites. Overall, current traffic is about 90,000 user sessions per month. Three regions (North Midcontinent, Southwest and Texas when one includes the technology-related outreach by TIPRO) draw significantly higher traffic volumes and usage is increasing rapidly in the Midwest in both Illinois and Michigan. Focused website sections such as the Barnett Shale Resources section in Texas and CBM On-line Symposium in the Rockies are promising.

Seven of 10 regions have a printed regional newsletter. The Appalachian Region relies solely on a lengthy on-line newsletter, while the Central Gulf and West Coast regions rely on contributions to their respective producer association's communications. Of the printed newsletters, four are quarterly and three are semi-annual (Midwest, North Midcontinent and Southwest). Combined circulation is more than 23,000. Most newsletters are new PTTC efforts, but some continue the newsletter tradition of the RLO organization. Some regions also develop special electronic newsletters for their websites.

Forty per cent of workshop attendees responding to a question about applying technologies based on knowledge gained through PTTC respond "Yes." This confirms that producers are taking action with the information they receive. Examples of actions that industry has taken, at least partially from information received through PTTC, have been documented for each region.

I. INTRODUCTION

In the early 1990s industry and government energy experts recognized the urgent need for improved technology transfer involving the U.S. upstream petroleum industry. As a result, domestic oil and natural gas producers established the Petroleum Technology Transfer Council (PTTC) in 1994 as a national not-for-profit organization. Well recognized as a growing organization, PTTC is demonstrating greater efficiency as it continues to demonstrate high activity levels. Industry feedback confirms increasingly recognition of PTTC's value to them.

Strategic planning conducted during 2003 during the process of preparing for a new five-year contract drives PTTC's current direction. Led by a Strategic Planning Subcommittee of the Board, PTTC reviewed the prior Formal Strategic Plan developed in FY00, extracted insights from the proposal/contracting process, and surveyed Board members about current strategic planning needs. Strategic planning during FY04 continued building upon this effort, focusing on strengthening volunteer involvement and establishing subcommittees. Strategic planning has confirmed that PTTC's mission, stated below, is still right on target.

PTTC benefits the nation by assisting U.S. independent oil and natural gas producers with timely, informed technology decisions.

PTTC is a unique example of how an organization can utilize federal, state, and industry funding to achieve important goals for all of these sectors. This integrated funding base, combined with the guidance of industry volunteers and the dedication of its national and regional staff, is achieving notable results as evidenced by the organizational milestones presented in **Appendix A**. PTTC is increasingly recognized as a critical resource for information and access to technology—especially for smaller companies.

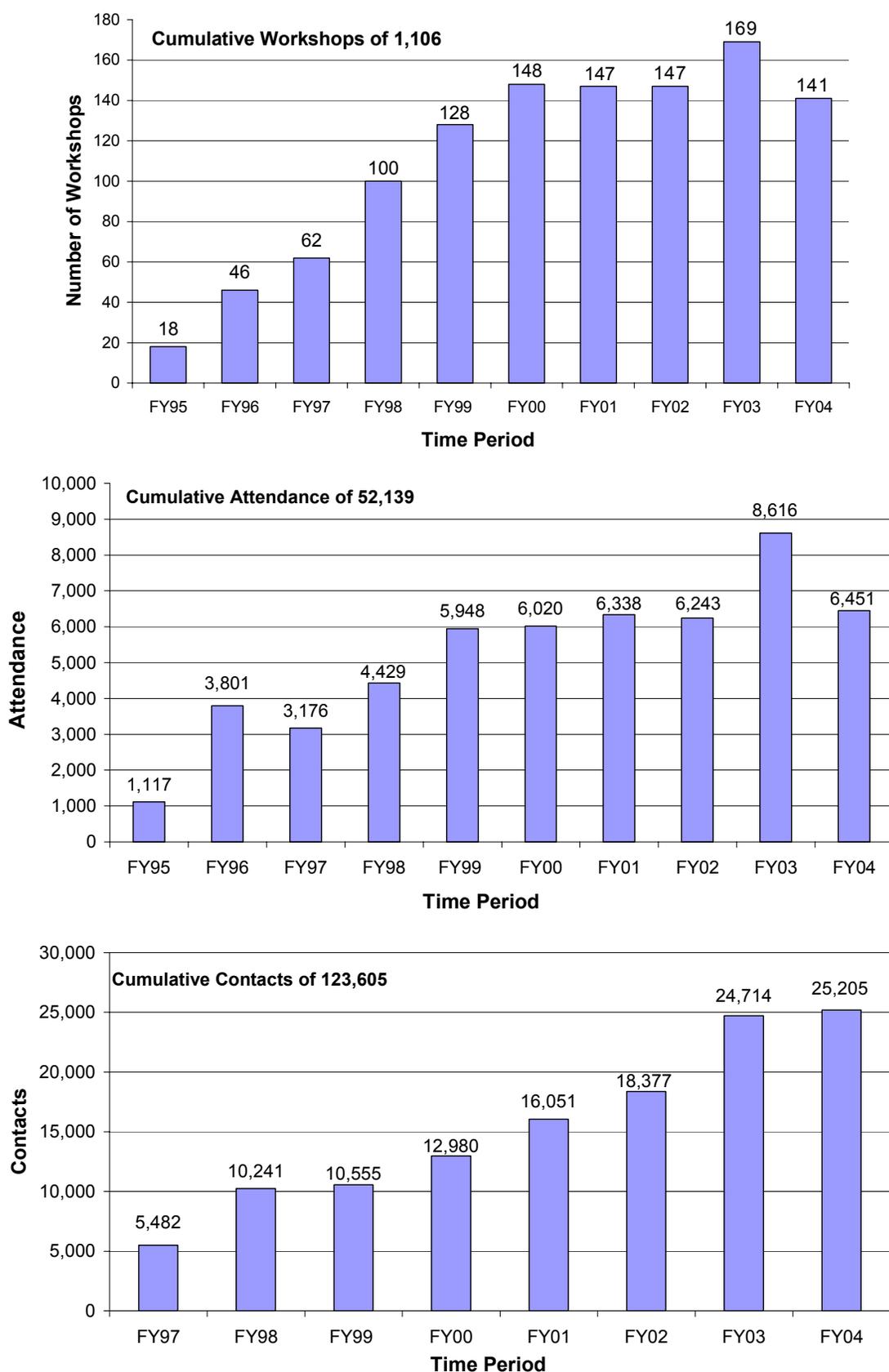
Although falling from FY03 record levels, regional activity remains high, in line with historical data. Regional activity is summarized in both tabular (**Table 1**) and graphical (**Figure 1**) form. Average workshop attendance was 46, and contact activity represents nearly 10 per day per region. FY05 plans are to perform about 150 workshops.

Table 1—Measures of PTTC's Regional Activities

Time Period	Workshops		Attendance		From E&P Industry		Outreach Contacts	
	Annual	Cumulative	Annual	Cumulative	Attendance	%	Annual	Cumulative
FY95	18	18	1,117	1,117				
FY96	46	64	3,801	4,918		83		
FY97	62	126	3,176	8,094		85	5,482	5,482
FY98	100	226	4,429	12,523	3,235	73	10,241	15,723
FY99	128	354	5,948	18,471	4,935	83	10,555	26,278
FY00	148	502	6,020	24,491	4,923	82	12,980	39,258
FY01	147	649	6,338	30,829	5,227	82	16,051	55,309
FY02	147	796	6,243	37,072	5,177	83	18,377	73,686
FY03	169	965	8,616	45,688	7,335	85	24,714	98,400
FY04	141	1,106	6,451	52,139	5,486	85	25,205	123,605
Averaging 46 attendees per workshop					Approaching 10 contacts per day/region			

Federal funds partially supporting PTTC's operation come through a multi-year grant awarded by DOE's Office of Fossil Energy National Energy Technology Laboratory. This five-year grant began with the start of FY04. This report covers PTTC's technical progress during FY04, and illustrates PTTC's increasing impact on the domestic E&P industry.

Figure 1—Regional Outreach Statistics



Although a national organization, PTTC is regionally focused. Therefore, this report is divided into two primary sections:

- **Section II** addresses PTTC's progress at the national level.
- **Section III** reports progress at the regional level and, for the most part, aggregates information for the 10 regions so that common trends and results can be identified. This section is organized according to the core technology transfer functions that guide the RLOs.

Appendix A presents national organizational milestones. **Appendix B** presents detailed information by region of FY04 regional accomplishments. Remaining appendices, which include Board and RLO Director rosters among others, provide background information.

II. RESULTS AT THE NATIONAL LEVEL

The Petroleum Technology Transfer Council (PTTC) functions as a cohesive national organization that implements industry's directives through both its national and regional programs. The role of the national Headquarters (HQ) includes planning and managing all aspects of the PTTC program, conducting nation-wide technology transfer activities, and implementing a comprehensive communications effort.

A. Planning and Managing the PTTC Program

There are many aspects of planning and managing the overall program. The financial aspects are documented in a separate Financial Report to DOE, which is submitted quarterly. This Technical Progress Report will focus on several other key areas – those involving human resources, strategic planning, and oversight of the regional programs.

1. Human Resources

Responsibilities in human resources require that there are experienced and knowledgeable staff members and contractors available to fulfill the requirements of PTTC's commitment with DOE and to perform the valuable technology transfer activities. It also involves working with industry to ensure that PTTC's Board and regional Producer Advisory Groups (PAGs) are filled with active volunteers.

a. *Headquarters Staff*

The HQ staff, which continued to work as a team in FY04 to accomplish many goals, includes:

—Donald F. Duttlinger, Executive Director, continues to provide overall leadership to staff and the RLOs in executing the Board's direction. This year there was a strong focus on working with Board members to form new Board subcommittees and the Producer Advisory Groups (PAGs) to assist in providing regional and national program guidance. Due to the tremendous input from industry participation, the contact database has grown significantly. By adding a continued active exhibit schedule, PTTC is reaching more people than ever. Work continues to develop improved ways to capture program metrics and communicate results of the organizations collective efforts.

—Lance Cole, National Project Manager, Sand Springs, Oklahoma, continues to serve under contract overseeing all of the RLO activities for compliance with PAG direction and national policies and coordinating inter-regional efforts. He also pulls together technical reporting, supports national communications efforts, serves as technical adviser and assists in strategic planning. With his consistent contact with industry, Cole is the focal point of industry views and feedback, which benefit the organization immensely.

—Kathy Chapman, Director of Business Affairs, who works remotely from the Washington area, has been with PTTC from its beginning. She is responsible for all contractual matters with DOE, the Regional Lead Organizations (RLOs), and other contractors. Because of her efforts, the transition to a new grant occurred smoothly. Chapman also serves as a liaison to DOE Headquarters and other groups located in the nations capital. In addition, she manages the financial and accounting systems and coordinates with Duttlinger and Cole on strategic issues.

—Norma Gutierrez, Office Manager, continues to provide records management, meeting planning, and exhibiting support services, plus all headquarter scheduling. Gutierrez has assumed greater responsibility with the contact database, newsletter and coordination of temporary staff. She provides a critical communications link between HQ and the Board, RLOs and industry.

—Karina Fay, Information Management Specialist, left PTTC in summer 2004. Fay worked on database, website issues and assisted in newsletter development.

—Kristi Lovendahl, Tulsa, Oklahoma, serves PTTC on a contract basis providing: (1) desktop publishing services for the national newsletter, *PTTC Network News*, (2) website maintenance and design services, (3) database support, (4) E-mail Tech Alert support and (5) other publications- or report-oriented projects. This occasionally includes providing administrative support for Cole. Outsourcing of these vital services has proven very cost effective for PTTC.

For selected technology-oriented tasks, such as the *Petroleum Technology Digest*, workshop summaries, and *PTTC Network News*, HQ retains consultants on an as-needed basis to perform specific tasks. Being of a technical nature, their efforts are mostly coordinated by Cole.

b. Board of Directors

Twenty-one industry volunteers serve on PTTC's Board of Directors. Their time and commitment to the mission of transferring technology to American producers ensured the program is properly guided. They include independent oil and gas producers representing the 10 regions, in addition to the Board Officer positions of Chairman, Vice Chairman and Immediate Past Chairman. Other Board members include representatives from national industry organizations, large E&P companies, service companies and professional societies. *Brook Phifer*, Nico Resources, LLC, Littleton, Colorado, and *Brian Sims*, Independent, Madison, Mississippi, were elected as Chairman and Vice Chairman respectively. Other Board member changes include 5 new producers:

- American Association of Petroleum Geologist Representative, Eddie David, David Petroleum
- Large E&P Company Representative, Robert Lestz, ChevronTexaco
- Society of Petroleum Engineers Representative, Ken Oglesby, Oak Resources Inc.
- Society of Exploration Geophysicists Representative, Hugh Rowlett, ConocoPhillips
- Midwest Region PAG Chairman, Richard Straeter, Continental Resources of Illinois

A Nominating Committee, composed of four members including the Chairman, Immediate Past Chairman, and two PAG Chairmen, coordinates nominations for leadership changes and some committees, while the Chairman appoints other committees.

During FY04 PTTC's Board met three times: (1) on October 27, 2003 in New Orleans, Louisiana, in conjunction with IPAA's annual meeting; (2) on March 22, 2004 in Washington, D.C., as a joint meeting of the Board and RLOs and for visits to Capitol Hill; and (3) on July 12, 2004 in Dallas, Texas. Meetings allow the Board to complete required business, brainstorm about how to further PTTC, and hear industry presentations about new technologies or companies taking new approaches.

In October 2003 the Board reviewed and approved regional plans and budgets for FY04 activities. Staff provided an update of progress in PTTC's DOE PUMP contract, noting that a no-cost one-year extension had been requested and granted so the West Coast Region could fully utilize funding available from the California Energy Commission. Two small Headquarters special projects were approved. Following Board interaction, strategic thrusts for FY04 were identified as strengthening the PAGs and expanding the Service and Large E&P Company Board positions into subcommittees. IHS Energy made an invited presentation on their Field Direct services, demonstrating the type of presentation expected in regional lunch and learn presentations.

In March 2004 the Board elected new officers and ratified some new Board members. The formal auditor's report was approved and HQ staff was charged with implementing recommendations under the Management & Budget Committee's guidance. Don Duttlinger and Board Member Robert Lestz updated the Board on progress in forming the Service and Large E&P Company subcommittees. Matt Vavro, the training specialist involved in the highly successful "Well Tender and Safety" workshops in the Appalachian Region, gave a presentation. This gave Board members a first-hand feel so they could understand why the events had been so successful. Lance Cole summarized an impact/metrics analysis

that PTTC had developed with strong RLO involvement and some industry review. This analysis would later be reviewed with IPAA, DOE Headquarters and the Office of Management and Budget. RLO Directors, who were meeting jointly with the Board, gave brief presentations highlighting history, major accomplishments, lessons learned, concerns and future directions.

In July 2004 the Board focused on: (1) funding allocation for the regions, (2) status of actions initiated by financial audit, (3) progress in organizing Large E&P Company and Service subcommittees, and (4) consideration of several HQ special projects. Dave Morse, RLO representative to the Board, and Lance Cole facilitated a discussion of strengths/weaknesses of the RLOs (from the PAG Chairmen's perspective) and of the PAGs (from the RLO Directors' perspective). Both groups recognized the need for and wanted more active PAG involvement, all of which will occur with more frequent communication—an internal goal.

c. *Management & Budget Committee*

PTTC's Management & Budget (M&B) Committee, led by the Vice Chairman, provides guidance to the HQ staff between Board meetings. The group meets approximately monthly, or as needed, by conference call with the Executive Director and other key staff. The Committee closely monitored transition to the new grant and implementation of recommendations from the annual financial audit. They also played a lead role in reviewing PTTC's Impact/Metrics analysis (see next page) and the subsequent informational campaign in Washington. They also have a major role in planning Board meeting agendas. Typically, future leadership comes from those within the M&B Committee. Current members include Chairman Phifer, Vice Chairman Sims, Gene Ames, Texas PAG Chairman, and Robert McDougall, Rocky Mountain PAG Chairman.

d. *Producer Advisory Groups*

Each region has a group of voluntary industry representatives serving as a local advisory group for the program. These PAGs work very closely with their corresponding RLO Director and are responsible for guiding the regional program. Their participation is especially critical during the annual planning process, as the PAGs must approve a region's annual plan before submittal to PTTC. They also provide critical connections to the diverse groups present within each region. Following up on internal goals, the PAGs, RLO Directors and HQ staff worked together to add or change PAG members in several regions. Recognizing the energy provided by new volunteers, PTTC will continue its strategic emphasis on refreshing the PAGs.

2. *Oversight of Regional Programs*

HQ has oversight responsibility for the regions, an important aspect being the annual planning and budgeting process. RLO commitments, generally far above minimum levels, enable regional activity to remain at consistent high levels. Activity statistics include co-sponsored events, which are an important strategy for connecting with industry. Plans for FY05, approved during an October 2004 Board meeting, forecast continued high activity levels.

The Regional Directors met jointly with the Board in Washington in March 2004 and in Houston, Texas in August 2004 in preparation for the annual planning cycle. There were also a couple brief conference calls during the year. HQ staff participated in the vast majority of PAG meetings, either in person or via conference call. Duttlinger and Cole also attend selected workshops scattered among the regions to demonstrate support, gather insights about PTTC's primary "workshop" product, expand connections with industry and learn about new technologies. Serving as the primary HQ contact with the RLOs, Mr. Cole works with RLO Directors and staff regarding implementation of the annual plans, potential technology transfer opportunities, and regional input for national communications.

From the start, PTTC focuses to capture and report data that demonstrate its impact on the U.S. upstream oil and gas industry. Most data are activity-oriented statistics (# of workshops, attendance, resource center contacts, website usage, etc.). Since FY00 PTTC has been capturing and reporting the % of

industry attendees at a workshop who are repeat attendees. Of 117 workshops in FY04 where repeat attendance was reported, it averaged 56%. This is within the range experienced in recent years. The percentage is relatively high, reflecting that individuals see value and are coming back. Still, it is encouraging that after 10 years there is a significant percentage of new people coming to PTTC activities. Repeat attendees are defined as those individuals who have previously attended a workshop in the region since PTTC's beginning.

Some examples of producers taking action and realizing production/profit increases are available at both the regional and national levels (see **Table 3, Sec. III**). Other examples have been documented in prior years.

PTTC recognizes that producers consider information from many sources (PTTC, professional societies, DOE, technology providers, company experience) when they make technology decisions. During FY04 HQ staff and RLO Directors worked together to estimate economic impact to producers and the vendor community in just **eleven areas** where PTTC transfers technology. Individuals in industry knowledgeable of the topics reviewed the analysis for reasonableness and, from their knowledge of PTTC's activity, estimated a "PTTC Impact Factor." That is, of the total benefit to industry, what percentage could logically be attributed to PTTC's efforts considering timing and quantity of activities, industry participation and direct industry feedback. The overall analysis was reviewed by the National Board.

Areas where estimates were made include:

- Trenton-Black River in Appalachia
- Illinois Aux Vases (Mill Shoals Field)
- Michigan Horizontal Well Completions
- Kansas Polymer Gel in Arbuckle
- Kansas Coalbed Methane
- Kansas GasGun™ Stimulations
- Rockies Powder River Basin Coalbed Methane
- Rockies Software Training
- Oklahoma Hunton Play
- Oklahoma Coalbed Methane
- Permian Basin Wellbore Management

The combined industry reserves added in these eleven areas are estimated to be 1,266 million barrels of oil equivalent (BOE) with roughly 88 million BOE or seven percent resulting from PTTC's tech transfer effort calculated using industry-reviewed impact factors. Significant new reserves were developed and measurable operating cost reductions were realized. PTTC impact factors for the different areas varied from 5% to 25%. Additional value to producers, captured in dollars rather than reserves, from software training and wellbore management increase impact yet another third. The service provider community so vital to health of the domestic producing industry also realizes significant value from the industry activity. And this is only part of PTTC's total effort.

PTTC leadership subsequently reviewed this analysis with IPAA, DOE Headquarters and Office of Management and Budget. Response has been favorable and PTTC has been encouraged to continue measuring impact due to the organizations core technology transfer activities.

One standardized question on the feedback form used at workshops asks respondents for a "Yes/No" answer to the question: *Have you used any new technologies based on knowledge gained through PTTC?* With data now available from 534 workshops, 40% of those who respond say, "Yes." More than one third of those who respond "Yes" provide cryptic detail of the technology applied, but none provide sufficient

detail for metrics without extensive follow-up. Resource limitations preclude extensive follow-up, but HQ staff are striving to incorporate some follow-up calling within their work routine.

B. Conducting National Technology Transfer Activities

Although most of PTTC's technology transfer activities occur in the regions, the HQ staff also has significant responsibility in this area. There are many mechanisms for this function, through: (1) E-mail Tech Alerts and a national newsletter, *PTTC Network News*, (2) responding to inquiries received through the national office, (3) surveying producers' needs on a national level, (4) developing case study-oriented products, such as the *Petroleum Technology Digest*, (5) capturing the highlights of regional workshops in summaries posted on PTTC's website, (6) providing technical support for IPAA meetings, and (7) coordinating PTTC activities with DOE's oil and gas R&D programs and those of other national organizations.

1. Newsletter Articles and Alerts

Technology information is received from multiple sources for *PTTC Network News*. Staff proactively searches trade journals, professional society literature, association newsletters, and the Internet looking for technology advances perceived to be of interest to independent producers. Significant developments within the PTTC system or DOE's R&D program are also presented. State-of-the art summaries are focused on timely topics. Information from E-mail Tech Alerts, case studies, columns and workshop summaries is highlighted.

2. Answering National Inquiries

For the first time, HQ staff monitored their external (non-PTTC) contacts, averaging about 10 per working day. The majority is related to either industry initiatives that PTTC is implementing or technology developers looking for funding, more exposure to field-test results. Several each week are for technical information. Some come from industry directly while others are forwarded by regional staff. Where ever the source, HQ staff does their best to make the right connection to industry, the regions, government or academia. Many of the inquiries come from small technology developers. If the technology is supported by field data and perceived to be of interest to independent producers, HQ staff develops an alert or article to be published in *PTTC Network News* or encourages a case study for *Petroleum Technology Digest*. In many cases, PTTC staff makes referrals to other individuals or organizations that offer potential for further developing and/or commercializing the technology.

3. Problem Identification/Needs Assessment

PTTC last assessed technology needs on a national basis through a survey in August 1999. Although recognized as a need, PTTC has not yet implemented another national needs assessment exercise. This year DOE's National Energy Technology Laboratory retained Gelb Consulting to develop and implement a survey measuring the impact/effectiveness of DOE's oil-oriented RD&D program. HQ staff provided feedback on survey design and exposure through a Tech Alert and some targeted emails. Overall response rates have been disappointing. The regions perform ongoing needs assessment through feedback from workshop participants, contacts, PAG input, participation in local trade meetings, and other sources. Through contacts at trade shows HQ also obtains input on needs.

4. Petroleum Technology Digest

The *Petroleum Technology Digest*, begun in the fall of 1999, is a joint effort of PTTC and Gulf Publishing. PTTC solicits and compiles the case studies, and Gulf Publishing prints the *Digest* within its *World Oil* magazine. Case studies, which are authored by both producers and the appropriate technology providers, are brief—just 1,200 words or less, but they are written in the bottom-line format that producers desire. For producers the case studies represent an opportunity to learn about technologies that may not be widely used in their area. For technology providers the exposure provides access to geographical areas of the U.S. where they may not have a marketing presence.

Initially developed as supplements, then as quarterlies within *World Oil*, and now as a monthly magazine feature, the case studies reach more than 35,000 readers worldwide. Through the end of FY04, PTTC had published 65 case studies in the *Digest*. Industry response has been highly favorable and there are numerous responses from involved technology providers that producers are taking action with information received. Just a

few of these success stories have been captured on the national website within the impact/feedback section (www.pttc.org/impact/impact_connecting.htm).

Case studies published during FY04 include:

- *September 2004*—Air hammers cut Barnett Shale drilling time in half
- *August 2004*—Automated casing swab pump increases marginal gas well production
- *July 2004*—Water control becomes economically attractive to L.A. basin operators
- *June 2004*—Fracture mapping and modeling optimize CBM treatments
- *May 2004*—Optimized flow device eliminates CBM lift equipment, reduces costs
- *April 2004*—Well failure reduction program realizes benefits
- *March 2004*—Horizontal waterflooding increases injectivity and accelerates recovery
- *February 2004*—Progressing cavity pumps: Insights from 14 years in a southern Oklahoma waterflood
- *January 2004*—Internet data rooms save dollars, increases marketing efficiency
- *December 2003*—Characterization, 3D visualization spur successful offshore development
- *November 2003*—Gravel packing through the shoe saves horizontal openhole job
- *October 2003*—Integrated rod-pump controller cuts operating costs

PTTC continues to work towards having a few case studies ready for publication at any time and welcome all industry input on capturing technical applications.

5. Solutions From the Field

As early as 1997 PTTC began summarizing content of its regional workshops so that a larger audience could have access. Since August 1999 PTTC has been posting workshop summaries with key technology insights and speaker contact information on the national website as *Solutions From the Field*. Ten summaries were posted on-line during FY04, and not counting pre-1997 summaries, a total of 105 summaries are now posted on-line. Highlights from summaries posted during a quarter are also presented in *PTTC Network News*.

6. Technical Support for IPAA Meetings

From inception PTTC has worked cooperatively with IPAA to add a technology element to their meetings. In 1997 and 1998 Emerging Technologies Energy Conferences (ETECs) were held surrounding their annual meetings. PTTC hosted a short tech session at IPAA's annual meeting in New Orleans in Oct 2003. Plans are in place for a PTTC session on "Unconventional Gas" as part of a full day Emerging Technologies Conference at IPAA's Oct 2004 annual meeting. This conference will also include invited vendor presentations.

7. Coordinating with DOE and Other Groups

Where appropriate, PTTC incorporates R&D findings from DOE-funded projects into regional workshops. Activities during FY04 that included some DOE-funded results were:

- *Eastern Gulf Region*—workshop on 9/2/04 highlighted field studies on "Reservoir Simulation and Modeling: North Blowhorn Creek, Vocation Field and Womack Hill Field" in DOE-supported projects at the University of Alabama
- *Midwest Region*—workshops on 1/29/04 "Internet Mapping Service (IMS) and Illinois Basin Pay-Map Series" and on 3/5/04 on "PUMP II Deliverables, Illinois Pay-Map Series and IMS" leveraged ISGS's DOE-supported PUMP II project; workshop on 3/4/04 on "Produced Water and Associated Issues" leveraged PTTC's DOE-supported PUMP project in the South Midcontinent Region
- *North Midcontinent Region*—case study workshops on 2/24&25/04 on "Case Studies of Exploitation of a Mature Reservoir in Kansas Through Technology Applications" leveraged DOE-supported research at KU's Tertiary Oil Recovery Project (TORP) and case study documentation

supported by PTTC. Newsletter articles documented progress in the DOE-supported Lansing-Kansas City CO₂ pilot.

- *Rocky Mountain Region*—software training workshops for Boast (2/25/04) and Neuro3 (2/25/04) were part of the region’s “Low Cost Software and Data Fair.”
- *Southwest Region*—workshop on 4/1/04 on “Produced Water Management and Issues” highlighted DOE-supported research at New Mexico Tech’s PRRC group on water treatment technologies; workshop on 10/28-29/04 on “Brushy Canyon FEE Tool” provided training on tool developed with DOE funding support.
- *Texas Region*—workshop on 7/18/04 on “Produced Water and Associated Issues” in Tyler leveraged PTTC’s DOE-supported PUMP project in the South Midcontinent Region; workshop on 8/25/04 on “Polymer and Polymer-Gel Water Shut-off Treatments; What It Takes To Be Successful and Field Applications” highlighted DOE-supported research by New Mexico Tech’s PRRC group.
- *West Coast Region*—speakers representing DOE participated in “Anniversary Forum” on 12/18/03; workshop on 2/12/04 on “CEC-PTTC PUMP Water Control Project” gave progress report on PTTC’s DOE-supported PUMP project in the West Coast Region; workshop on 5/27/04 on “Power Consumption Reduction” reported on work indirectly funded by DOE through CPUC; DOE provides support for the COMET student internship program.

PTTC makes a special effort to acquaint independents with opportunities within DOE solicitations, particularly in the “Technology Development with Independents” program (no funding during FY04) and Stripper Well Consortium (SWC). Coverage of solicitations and awards is provided in *PTTC Network News* and within the E-mail Tech Alert. HQ staff monitors awards and progress within SWC projects, looking for technologies that are nearing the commercial stage where technology transfer would be appropriate. Several case studies in *World Oil’s Petroleum Technology Digest* summarize work in DOE-supported projects.

PTTC actively coordinates with the major professional societies and producer associations. For the most part, cooperative opportunities are pursued at the regional level. Example efforts during the year included:

- *Appalachian Region*—supported a workshop series with the West Virginia Development Office on coalbed natural gas (10/29/03), hydrogen (11/19/03), and energy infrastructure (12/11/03); workshop on 5/27/04 on “Horizontal Drilling; A Technology Update for the Appalachian Basin” in conjunction with Ohio Oil and Gas Association.
- *Central Gulf Region*—with the Eastern Gulf Region, workshop on 4/5/04 on “Drilling and Completion Technologies for Deep Shelf Gas” for New Orleans Geological Society (NOGS); workshop on 6/8/04 on “CBM Resources in the Southeast” with Univ. of Louisiana Lafayette
- *Eastern Gulf Region*—developed a tech session (10/15/03) for U.S. Oil and Gas Association; workshop on 5/26/04 on “Improving Operations From An Environmental Perspective” for Mississippi State Board of Registered Professional Geologists and AAPG Division of Professional Affairs; supported the NOGS workshop reported under Central Gulf; co-sponsored the 2004 International Coalbed Methane Symposium at the University of Alabama (5/3-4/04).
- *Midwest Region*—workshop on 3/4/04 on “Produced Water and Associated Issues” with the Illinois Oil and Gas Association; workshop on 3/19/04 on “Michigan Field Experience, Focus on the Niagaran” with SPE Northern Michigan; workshop on 9/23/04 on “Petroleum Systems of the Michigan Basin, A Look At Undiscovered Oil and Gas Resources” with Michigan Oil and Gas Association.
- *North Midcontinent Region*—luncheon presentation on 11/5/03 in “CBM Forum” with SPE Wichita; with South Midcontinent Region, “Independents’ Day” session on 4/20/04 at SPE/DOE Improved Oil Recovery Symposium; tech session on 9/17/04 at Eastern Kansas Oil and Gas Association annual meeting.
- *Rocky Mountain Region*—conference and field trip on 10/24-25/03 on “Coalbed Methane” with SPE; co-sponsored conference on 3/1-3/04 on “Gas Well Deliquification” with Artificial Lift Research and Development Consortium, Southwestern Petroleum Short Course and others;

workshop on 5/27/04 on “Hydraulic Fracturing; Measurement, Characterization and Analysis” with SPE Casper; workshop on 6/22/04 on “Improving Electrical Efficiency in E&P Operations” with Energy & Environmental Research Center, Univ. of North Dakota; two short courses on 8/8/04 at AAPG Rocky Mountain Section/Colorado Oil and Gas Association meeting; Bakken core workshop on 9/24/04 with Rocky Mountain Assoc. of Geologists.

- *South Midcontinent Region*—supported luncheon meetings of SPE Fort Smith, AR; with North Midcontinent Region, developed PTTC session for AAPG Midcontinent meeting (10/13/03); conference and field trip support for Oklahoma Aggregates Association (2/4-5/04); Cromwell Play workshops and field trip with Oklahoma Geological Survey, Tulsa and Oklahoma City Geological Societies; workshops on “Unconventional Energy” (3/9-10/04), “Jackfork and Atoka Deepwater Reservoirs” (8/18/04) with Oklahoma Geological Survey; partial support for 13 Marginal Well Commission workshops; AAPG/SEG Spring Student Expo at Univ. of Oklahoma with Oklahoma Geological Survey.
- *Southwest Region*—co-sponsored series of workshops on “Pit Rules and Guidelines, Public Forums” with New Mexico’s Oil Conservation Division.
- *Texas Region*—with Southwest Region and others, co-sponsored “2003 CO₂ Conference” in Dec 2003; supported Permian Basin Topical Working Group that BEG is leading; workshop on 6/15/04 on “Operators Working in Offshore Texas State Waters Royalty Leases” with STARR, Texas BEG; workshop on 5/18/04 on “Hand-held/Laptop Production Data Capture” for Panhandle Producers and Royalty Owners Association annual meeting; symposium on 6/22-23/04 on “Barnett Shale” with Ellison Miles Geoscience Center; workshop on 7/18/04 on “Produced Water and Associated Issues” with Texas Alliance of Energy Producers.
- *West Coast Region*—workshop on 2/12/04 on “PUMP Water Control” with California Energy Commission; short course on 3/9/04 on “Geologic and Engineering Analysis for CBM Resource Assessment” at 2004 Alaska Unconventional Gas Conference; workshop on 5/27/04 on “Case Studies of Power Consumption Reduction” with Global Power Systems.

HQ staff also coordinates with other national organizations, including the Drilling Engineering Association, Interstate Oil and Gas Compact Commission, and technology Consortia (such as the University of Tulsa Separation Technology Consortium). Where topics are perceived to be of direct interest to PTTC’s audience, PTTC may interact with private conference development firms, giving them suggestions regarding topics and speakers and, if invited, even speak.

8. Networking with Large Independents and The Service Sector

Executive Director Don Duttlinger’s focus has been to increase PTTC’s connections with large independents and the service company sector. This initially involved many one-on-one meetings with individuals from technical companies, discussing their needs and acquainting them with PTTC and its accomplishments. Effort during FY04 focused on creating Board-level “Service” and “Technology Field Trial” subcommittees. The Service Subcommittee would provide the technology provider sector more organized opportunities to contribute to PTTC events. The Technology Field Trial Subcommittee includes individuals from large and small operators who are willing, if they see a developing technology they think has potential for their company, to use their influence to get quick, organized field trials. This helps overcome a hurdle that many smaller technology developers face. The new Subcommittees (still being formed at FY04 yearend) will interact with each other, leveraging their efforts.

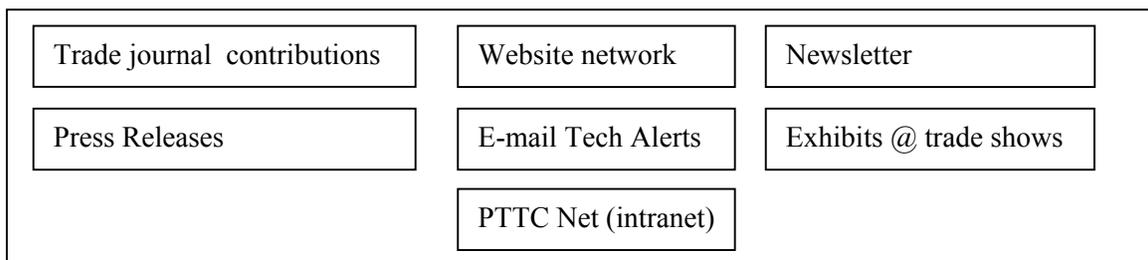
PTTC began separately reporting “lunch and learn” meetings during FY04. Formats vary from supporting professional society meetings to sessions sponsored by commercial technology providers. With higher industry activity levels producers appreciate the compact luncheon format. Luncheon meetings work well for the Simulation Users Group meetings in the Rocky Mountain Region and for the South Midcontinent Region to support a new SPE section in Fort Smith, Arkansas. This year only the Texas Region hosted vendor-sponsored lunch and learns. There staff screens technologies for relevance and

interest to small producers. If there is a match and the vendors are willing to buy lunch, the region then hosts the lunch and learns.

C. Implementing a Comprehensive Communications Program

An effective national communications program is essential for increasing name awareness and impact. There are several facets to PTTC’s national communications program, as shown in **Figure 2**.

Figure 2—PTTC’s Multi-Faceted Communications Program



1. Booth/Display

PTTC maintains an active exhibit schedule, establishing a presence at national and strategic regional events. Costs are minimized where possible through providing promotional coverage in exchange for reduced exhibit fees. There is an intentional focus on exhibiting at strategic meetings in Texas since travel costs are relatively minor.

- *September 2004*—SPE (Houston), AAPG APPEX (Houston)
- *July 2004*—Gulf Coast Prospect Expo (Lafayette)
- *April 2004*—SPE/DOE IOR Symposium (Tulsa), AAPG (Dallas), East Texas Geological Society (Tyler), Texas Alliance of Energy Producers (Wichita Falls)
- *February 2004*—NAPE (Houston), Oklahoma Aggregates (Oklahoma City)
- *November 2003*—IPEC (Houston)
- *October 2003*—GCAGS (Baton Rouge), IPAA (New Orleans), SPE (Denver), SEG (Dallas)

2. Newsletter

PTTC’s 16-page national newsletter, *PTTC Network News*, has been published quarterly since 1995. It incorporates feature articles, R&D and technology alerts, field results, and information from DOE’s oil and natural gas programs as well as other technology providers. State-of-the-art articles begun during FY00 continue with 19 now having been issued. Some of these articles are developed internally by PTTC while guest authors develop others. Making periodic changes in content and layout keeps the newsletter refreshed, but its focus on technology-related information remains unchanged.

At FY04 yearend circulation had risen to more than 17,000, reflecting a strong focus on expanding connections with industry during the last couple years. Seven percent of subscriptions are for “electronic only.” Nearly 70% of those subscribing have indicated their employment category. As shown in **Figure 3**, 60% are from the E&P industry. Among those, 58% represent the independent sector. Consultants and service/supply sector represent the next largest sectors. Within the other distribution, the largest group are “miscellaneous unspecified.”

3. Technology Alert (Broadcast E-mail Service)

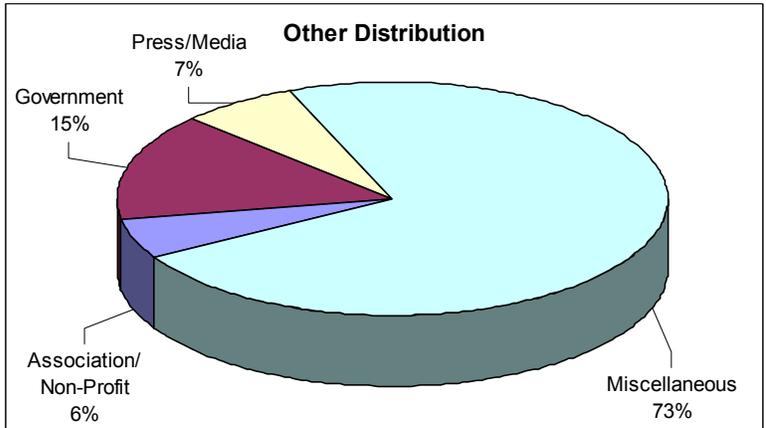
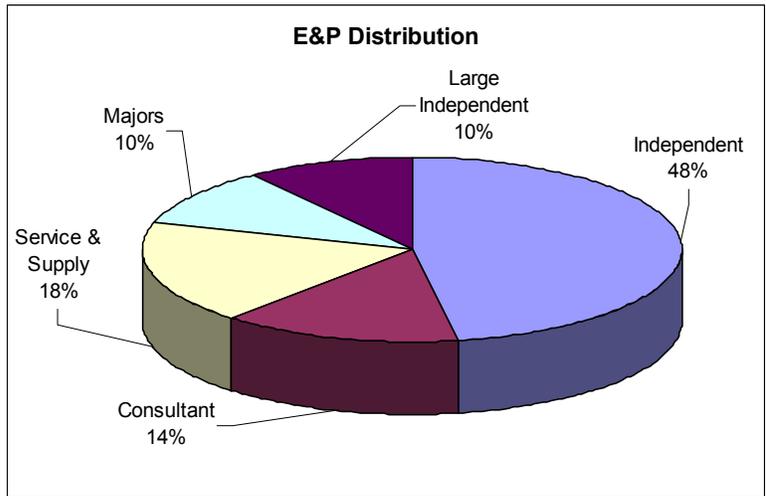
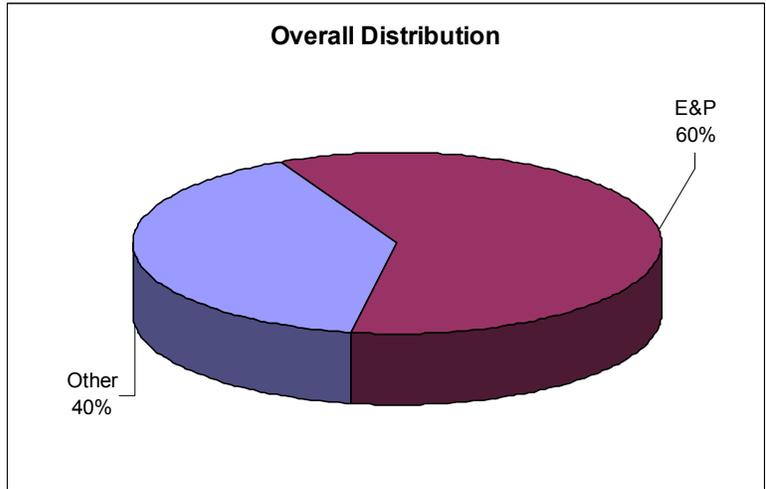
Since April 2002 PTTC has been issuing E-mail Tech Alerts on an approximately 3-week frequency (16 during FY04). These alerts provide highlights from DOE, PTTC and industry and calendar information about upcoming PTTC and industry events. Past alerts are archived on the website, plus those sent during a quarter are listed in *PTTC Network News*. Those currently on the distribution list are urged to forward to others they think may be interested. People can subscribe through the website or by contacting PTTC. The

distribution list has now grown to more than 7,000. Feedback regarding the Tech Alert has been very positive. It has proven to be a very effective tool for reminding PTTC's audience of events to be held soon.

4. Press Releases

In its early years PTTC placed a higher priority on press releases, releasing six or more per year. As PTTC has matured, PTTC is focusing more on expanding its newsletter and email distribution, exhibit schedule, and columns, case studies and articles to promote name recognition. No press releases were issued during FY04.

Figure 3—Newsletter Distribution



5. Contributions to Trade Publications

PTTC strives to leverage its outreach through the primary trade publications for independents—*Hart's E&P*, *World Oil*, and *American Oil & Gas Reporter*. PTTC has contributed a monthly Tech Connections column to *American Oil and Gas Reporter* since 2001. The column generally focuses on technical insights from recent regional activities. Column topics covered during FY04 include:

September 2004	Training Programs Help Ensure The Manpower Industry Needs
August 2004	Information Exchange Helps Producers Understand Trenton-Black River
July 2004	California Program Demonstrates Value of Cutting Power Consumption
June 2004	IOR Symposium Points Out Techniques For Making Money
May 2004	Michigan Independents Continue To Have Success With Niagaran Reefs
April 2004	California Consortium Identifies Techniques To Control Excess Water Production
March 2004	Inexpensive Software Featured On Site Organized by Rockies Region
February 2004	Awards Recognize Technology That Impacts California Operations
January 2004	Enhanced Recovery Intertwines Naturally With CO ₂ Sequestration
December 2003	Smaller Operators Finding Profitable Applications of Seismic Technology
November 2003	Denver Group Makes Simulation Available To The World
October 2003	New Mexico Tech Evaluates The Effectiveness of "Fuzzy Logic" Tool

When invited, PTTC also contributes other columns or articles to trade journals.

6. Website

Launched in 1995, PTTC's national website (www.pttc.org) provides key content of national interest and links the network of 10 regional and two satellite websites. It contains organizational information, a calendar of PTTC events, technical summaries, publications, press releases, selected links with descriptions of producer associations, and more. By serving as the gateway to the regional websites where extensive data, case studies and other technical information is contained, the website provides a valuable service to independents. It also provides a venue for special announcements, promotion of new products, and posting surveys. PTTC continued to place workshop summaries (*Solutions From the Field*), newsletters, links to *Digest* case studies, E-mail alerts and other technical articles on the website. There is also a strong focus on maintaining a current calendar of PTTC and other industry events with links to detailed information on the Internet.

Trends, not absolute measures, are the important factor in measuring website traffic. Statistics (generally measured using WebTrends™ software) indicate the regions are now experiencing about 90,000 user sessions per month (see **Table 2**). Although there are seasonal fluctuations, growth has been consistent. Major increases are often noted when regions make new data available on-line. **Figure 4** illustrates monthly averages for the national website (www.pttc.org). As with the regions, a consistent growth trend is evident. Traffic is now approaching 20,000 user sessions per month.

7. Board and RLO Communications—PTTC Net

PTTC’s intranet site, PTTC Net, continues to make Board and RLO information available in a timely fashion. It is accessible by both Board members and RLO staff by user name and password. It provides ready access to roster and contact information, quarterly and annual reports, and policies and guidelines. This provides an important filing function for all. For RLO staff it serves administrative functions, such as deliverables, reporting forms, and annual planning information. When staff changes occur this represents a ready reference point to familiarize them with the internal workings of PTTC.

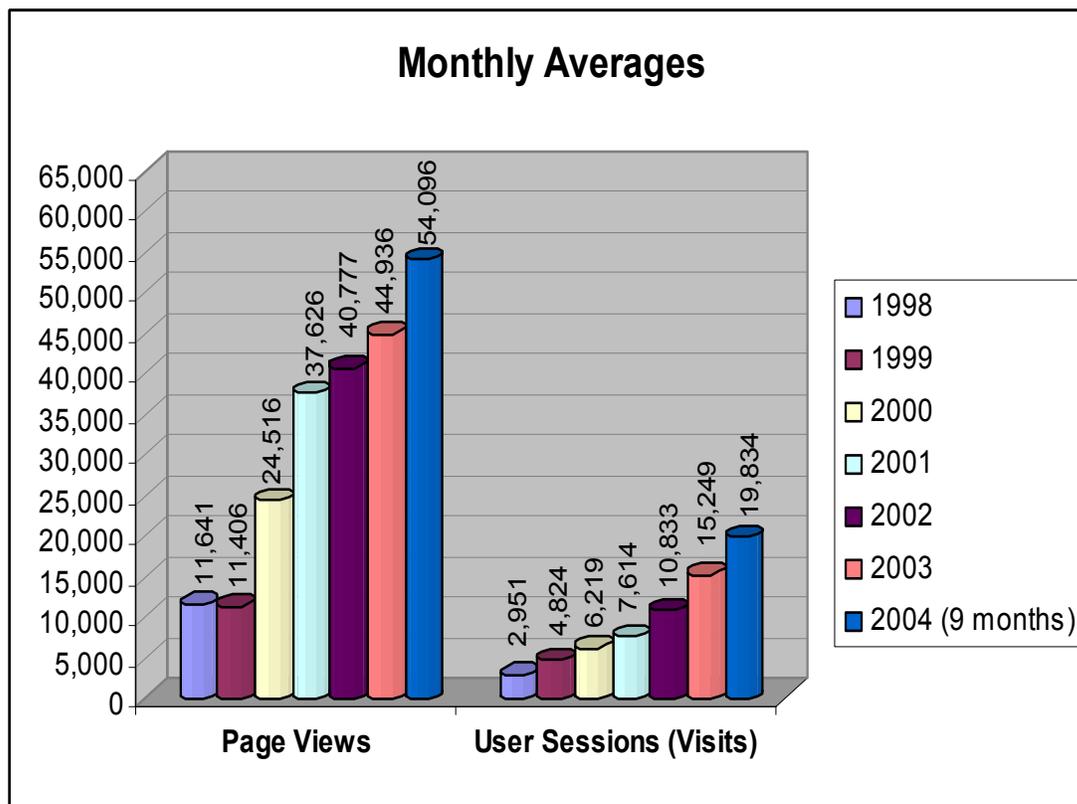


Figure 4—Usage Trends for National Website (www.pttc.org)

III. RESULTS AT THE REGIONAL LEVEL

PTTC's ten regions are the primary delivery mechanism for technology transfer. It is in the regions where PTTC connects most directly with independents—through workshops, resource centers, websites, newsletters, personal contacts, and other information sources.

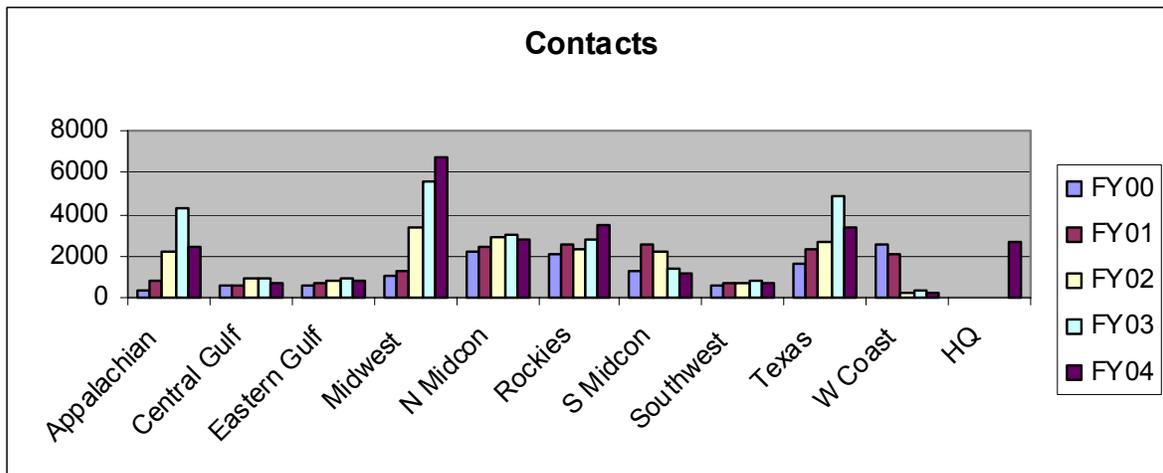
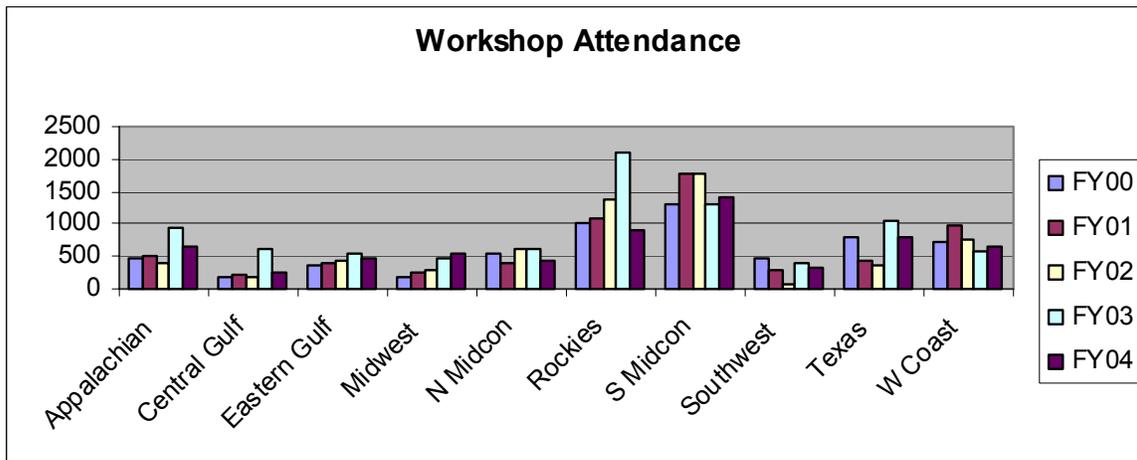
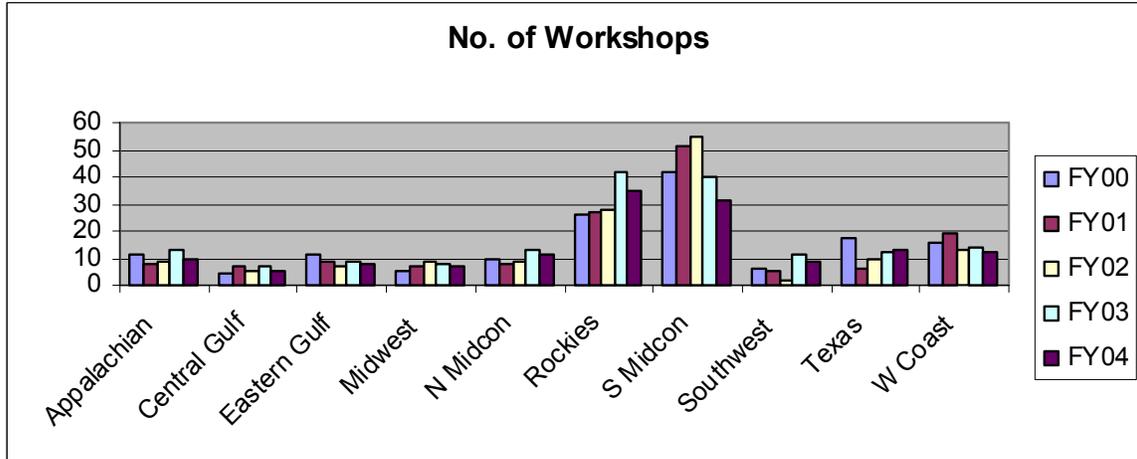
Table 2 documents FY04 activity by region. Strict regional comparisons are discouraged because differences among regions are influenced by a variety of factors, including: (1) differing guidance from regional Producer Advisory Groups (PAGs), (2) single- versus multi-state regions, (3) differing industry demographics, and (4) differing RLO Director philosophies. Notwithstanding, it is apparent that activity levels in some regions are significantly higher than in others. **Figure 5** presents regional activity for recent years, allowing one to see trends within and among regions. Although activity and attendance during FY04 did not reach FY03's record levels, activity is in line with historical levels seen in immediate prior fiscal years. The large contributions from the Rocky Mountain and South Midcontinent regions are obvious. It is significant though that six of 10 regions did conduct more than 10 workshops per year. Contact levels vary widely among the regions, reflecting different activity levels and the difficulty in consistent reporting of contact statistics. For the first time, Headquarters contact activity is being reported.

Table 2—FY04 Regional Activity

Region	Workshops					Contacts	Website User Sessions	Newsletter
	# of WS's	Total Attend.	Avg. Attend.	% from Industry	% Repeat Attend.		1 st Qtr / 4 th Qtr	
Appalachian	10	658	66	76	68	2,474	5,494 / 6,637	On-line newsletter
Central Gulf	5	256	51	76	37	654	5,159 / 5,039	Info/columns In Assoc. NL
Eastern Gulf	8	469	59	76	42	853	3,991 / 4,756	600 (Qtrly)
Midwest	7	542	77	81	57	6,779	14,501/10,400	3,200 (Semi)
N. Midcontinent	11	432	39	88	48	2,831	25,727/25,015	5,200 (Semi)
Rocky Mountain	35	915	26	92	72	3,460	4,624 / 4,120	2,085 (Qtrly)
S. Midcontinent	31	1,419	46	91	42	1,203	276/826	5,446+ (Qtrly)
Southwest	9	322	36	85	46	673	17,615 / 22,514	3,200 (Semi) + on-line
Texas	13	794	61	94	29	3,385 + TIPRO	8,434 / 9,305 + TIPRO	2,500 (Qtrly) + Assoc.
West Coast	12	644	54	71	91	269	2,224 / 2,867	Info. In CIPA weekly
Headquarters						2,624		Quarterly
All Regions	141	6,451	46	85	56 (calc.) 53 (avg.)	25,205	88,045/90,959	

Website usage varies significantly among the regions, reflecting: (1) size of the industry audience, (2) regional emphasis on the website, and (3) website content, particularly O&G data. Usage increased, although in some cases modestly, comparing 1st and 4th Quarter user sessions.

Figure 5—RLO Historical Activity



While recognizing that there are different tools and approaches to satisfy different needs throughout the country, each of PTTC's regions performs the following core technology transfer functions as a minimum level of effort. These include:

- *Technology workshops*—quarterly or more often (averaged monthly during FY04)
- *Problem identification*—now relying primarily on feedback from workshop attendees and contacts
- *Resource centers*—mostly virtual, responding to inquiries and developing products
- *Internet*—basic calendar and technical information, O&G data, emphasis varies by region
- *Newsletter*—regional newsletter or regular columns/announcements in association newsletters

A. Technology Workshops

Activity level, which includes both workshops and lunch and learns, decreased 17% versus record FY03 levels. Activity level is still at levels equivalent to years prior to FY03. Attendance of 6,451 represents a 25% decrease. Some decrease had been anticipated with a conscious focus on improving technical content/format as opposed to maintaining record FY03 activity levels. Still, the decrease was more than expected. Region-by-region changes were reviewed and the majority of the decrease could be attributed to fewer high-attendance co-sponsored events and, in the Appalachian Region, one versus five “Well Tender” workshops in FY03. The percentage of attendees from industry varies widely by region, from 29% to 91%. Of 117 workshops in FY04 where repeat attendance was reported, it averaged 53% (56% overall calculated), ranging from 28 to 79%. Repeat attendance is nearly the same as FY03—high enough to reflect customer satisfaction with attendees coming back and low enough to show that active outreach is still drawing a new audience. Repeat attendance is measured as the % of industry attendees that had previously attended a workshop in that region.

B. Problem Identification

Primary sources for industry input regarding the topics of interest in the region are: (1) feedback from workshop participants, (2) trends apparent from inquiries and informal contacts at the resource center, and (3) insights from the PAG. Occasionally, the regions have used surveys. Several regions, including Central Gulf, Midwest, North Midcontinent and Southwest, proactively visit producers to learn their needs. Interactions through the PUMP project in Oklahoma, Arkansas and California are providing additional insights to the South Midcontinent and West Coast regions regarding key production issues. As the Permian Basin Mentor, Bob Kiker gains key insights on the needs of independents there and across Texas, which is relevant to many mature onshore domestic producing areas. RLO staff maintains close ties with producer associations in most regions.

C. Resource Centers

Resource center operations are the hub from which PTTC generates most of its regional products and services, including: (1) access to information/data, (2) response to inquiries, (3) upstream software demo/training, (4) information products, (5) special purpose databases, and (6) other outreach efforts. Among the regions, two regions could be said to have satellite centers (Midwest with its Michigan outreach through Western Michigan University and Texas with its Mentor in the Permian Basin). In prior years there had been a Mississippi satellite in the Eastern Gulf Region, but it no longer exists due to changing needs and philosophies within state agencies.

1. Access to Information/Data

All resource centers provide access to basic information, data resources and libraries. Information resources are also available through the parent RLO organizations.

2. Response to Inquiries

Industry contacts (regions and HQ) average nearly 10 per entity per working day. Contact level varies widely among the regions reflecting differences in the regional audiences, differing activity levels among the regions, and differing outreach philosophies among the RLOs. By far the largest percentage of contacts is for calendar/event information, followed by basic oil and gas data/statistics. It is estimated that 10-20% of the inquiries are true technical inquiries that require some research to develop an appropriate response. For

these, the time required varies from a couple hours to a couple days. Beyond that level, referrals are made to appropriate consultants. Many of the responses involve connections to other individuals or organizations. HQ contacts are more apt to deal with new technologies or connections, as opposed to basic O&G data issues.

3. Upstream Software Demo/Training

Nearly all regions conduct workshops dealing with various aspects of Internet/data resources. Additional support from other sources, and a well-earned reputation, enables the Rocky Mountain Region to deliver a very active software-training program. Of the 22 software training workshops held during FY04, 19 were in the Rocky Mountain Region. Other regions occasionally provide software training—Appalachian, North Midcontinent and Eastern Gulf regions during FY04. Another six workshops (Midwest, Rocky Mountain, and Southwest regions) dealt with Internet data resources. The Rocky Mountain Region also supports a Denver-area Simulation Users Group. This group holds monthly luncheon meetings during the fall-spring, focusing on different options for reservoir simulation. They work to place simulation case studies on-line on the Rocky Mountain website. This year the Rocky Mountain Region also did extensive research on low cost data and software, creating an on-line “Low Cost Software and Data Fair” that provides users 24/7 access to information about low cost (generally less than \$1,000) software. Some of the software training in the Rockies featured this low cost software.

4. Information Products

Selected regions have developed information products to meet industry needs. Early on the Central Gulf Region developed the Louisiana Desktop Well Reference (LDWR) CD of well/lease data. Its success spurred the Louisiana Department of Natural Resources to develop the SONRIS Internet data site. PTTC has facilitated SONRIS improvements suggested by operators. The region is now finishing a pilot project called the Louisiana Parish Well Reference (LPWR) that has more detailed information, but only at the parish level. Hopes are that this pilot product will demonstrate sufficient value to attract the major state funding required should it be implemented statewide. The Midwest Region and the Illinois State Geological Survey (ISGS) provide base and custom mapping products. Previously the Southwest Region developed a New Mexico Well Location CD.

5. Special Purpose Databases

Data access has always been high priority for independent operators. Most regions work hard to provide electronic data access through regional websites. The North Midcontinent, Southwest and Midwest regions have a particularly strong digital data emphasis. In Kansas the Kansas Geological Survey leads the database effort, though major case study postings resulted from the North Midcontinent Region’s PTTC case study effort are a valuable addition. In New Mexico the Southwest Region developed a State Lands database/website, which is currently being maintained. Staff continues to work with New Mexico agencies to make basic O&G data available through the website in a user-friendly fashion.

Due to changes within state agencies, the Eastern Gulf Region’s support of a Mississippi geological-oriented website stopped this year. PTTC’s effort during earlier years did stimulate appropriate state agencies to work harder to make basic O&G data available digitally. The Midwest Region works closely with the Illinois State Geological Survey (ISGS) to further development and stimulate usage of ISGS’s ILOIL data system. For several years staff have been working to get Illinois Basin waterflood and core data in digital format; data should be added to ILOIL soon. Support included digitizing data from three core analysis collections. Midwest’s Michigan outreach center also places a strong focus on making Michigan data available on-line. The Appalachian Region has solicited updated data from regional geological surveys for its GIS-databases for horizontal, coalbed methane and Trenton-Black River activity. Consideration is being given to developing additional GIS layers for the Appalachian Region.

The Data Exchange Network, an on-line resource to facilitate the capture and exchange of data being lost to the industry, had been developed by the Rocky Mountain Region in earlier years. Usage never grew as anticipated and the concept has been dropped. Staff is now working to develop a GIS-based “Core

Locator” system where users can find what cores might be available within an area of interest, where those cores are stored and whom to contact about the cores. Core storage facilities often have listings of their holdings, but there is not a single source presenting the holdings of several institutions. Ultimate goal in this multi-year effort is to present information from all institutions having domestic cores. Portions of the Texas Bureau of Economic Geology’s core holdings are in the system and work is continuing with other institutions operating core storage facilities.

Specialized website information resources include a “Coalbed Methane On-line Symposium” section developed by the Rocky Mountain Region and a “Barnett Shale Resources” section (coming on-line early in FY05) developed by the Texas Region. The CBM effort was spawned by recognizing that individuals unable to attend meetings or conferences still need a way to stay current with recent CBM developments. In Texas the effort focuses on capturing information in one of the hottest domestic U.S. plays.

6. Other Outreach Efforts

Beyond responding to inquiries, selected regions implement proactive outreach programs. Several regions exhibit at O&G association meetings and staff attend these meetings with a focus on networking. Staff in several regions (Central Gulf, Midwest, North Midcontinent and Southwest) makes targeted visits to producers throughout their region. The Appalachian Region contacts PAG members and associations monthly. In the West Coast ongoing work in PTTC’s PUMP project provides opportunities for one-on-one and small group interactions. In the West Coast and Rocky Mountain regions student education programs (COMET in California and Futures In Energy in the Rockies) that receive PTTC support encourage student internships with independents. California’s COMET program has existed for several years, while FY04 was only the second year for the Rockies Futures in Energy program. The Texas Region experimented with an on-line discussion forum, but industry usage never grew so it has been discontinued. Texas does make use of ListServ capabilities for broadcasting targeted emails to specific lists. Several other regions employ email alerts to promote workshops.

North Midcontinent staff continues to support the Kansas CO₂ initiative, working closely with the Tertiary Oil Recovery Project at the University of Kansas. The Central Gulf Region continues to provide modest support for LSU’s Downhole Water Sink Consortium. South Midcontinent staff works closely with Oklahoma’s Marginal Well Commission supporting their Trade Fairs. They also are heavily involved in an AAPG Student Expo every spring, plus they orchestrate field trips and provide support for other groups such as the Oklahoma Energy Resources Board and Oklahoma Aggregates Association. In the Permian Basin Bob Kiker is extremely well networked with professional societies, associations, the Permian Basin International Oil Show, Southwestern Petroleum Short Course, and the press.

Martha Cather, Coordinator for the Southwest Region, leverages her role in leading New Mexico Tech’s Industry Service and Outreach Group for PTTC’s benefit. Cather has been particularly active in a variety of efforts related to produced water issues in New Mexico. Another outreach effort, also in conjunction with a DOE project, has involved discussions with producers, especially in southeast New Mexico, concerning issues of corrosion and scale. The State Lands database, a cooperative effort with the NM State Land Office, was in direct response to a request from producers. Connections with the Oil Conservation Division have led to co-sponsorship of workshops on “H₂S Safety” and “Pit Rules.” Director Robert Lee’s membership on the NM Oil Conservation Commission enables him to become very familiar with producer issues in the state.

Staff is involved in professional societies appropriate for their discipline, several at the national/international level. Eastern Gulf Director Ernie Mancini, who now serves as AAPG’s Editor, is providing leverage opportunities for PTTC. Independents’ Day sessions are now a regular feature at the SPE/DOE Improved Oil Recovery Symposium and on the West Coast. Rocky Mountain Director Sandra Mark often organizes short courses for AAPG national and Rocky Mountain Section meetings.

D. Internet

The regional websites are an evolutionary product continually undergoing refinement and expansion. Traffic levels vary significantly by region, depending upon regional emphasis, data/content and demographics of the regional audience. Overall, current traffic is about 90,000 user sessions per month. This does not include usage of the Michigan satellite website where WebTrends™ software cannot be used, or the high traffic volume of Texas's TIPRO outreach (now more than 250,000 user sessions per month). Six of 10 regions recorded an increase comparing 4th to 1st Qtr FY04 usage. Usage in some regions appears to have peaked, but history indicates that when there are major content additions further growth spurts will occur. When RLO staff looks at web traffic detail, they are able to determine what users view, which influences decisions about where to allocate future website effort. It is significant that several of the regions with smaller audiences still draw traffic over 4,000 user sessions per month.

Three regions draw significantly higher traffic—North Midcontinent, Southwest, and Texas when one includes the technology-related Internet outreach by TIPRO—and usage is increasing rapidly in the Midwest in both Illinois and Michigan. A strong digital data emphasis is the common denominator for the North Midcontinent, Southwest and Midwest regions, while Texas statistics reflect the large audience interested in Texas information.

E. Newsletters

Despite the digital revolution, PTTC recognizes that a good portion of its audience relies on printed material, so a newsletter function is still considered a core technology transfer function that each region must fulfill, through either a regional newsletter or regular columns/announcements in association newsletters. Seven of 10 regions have a printed newsletter, most of which are also placed on-line. The Appalachian Region relies solely on a lengthy on-line newsletter. The Central Gulf and West Coast regions rely on announcements in association communications. Of the printed newsletters, four are quarterly and three are semi-annual (Midwest, North Midcontinent and Southwest). Combined distribution of the regional newsletters is more than 23,000 (there may be some overlap). Several regions promote or advertise regional events in operator association or society newsletters. Funding realities dictate that PTTC tightly control newsletter expenses. Regions periodically review and pare down their mailing lists and distribution via email is encouraged. It has been and continues to be a challenge building extensive email databases.

F. Regional Success Stories, Producers Taking Technology Action

The most direct measure of regional success is the percent of respondents who answer "Yes" to the question: *Have you used technology you learned about through PTTC?* Overall, 40% of those who respond say "Yes" with more than one third providing at least cryptic details. Without extensive follow-up, comments are insufficient to quantitatively estimate impact. Percentages by region range from 23 to 47% range.

Table 3 presents examples that PTTC became aware of during FY04 of industry taking action with information presented in regional activities. The examples illustrate the myriad ways that PTTC is impacting industry. PTTC well recognizes that information from other sources is also considered when individuals make technology decisions. Similar examples have been documented in earlier years. Although finding it difficult to develop the methodology to quantitatively document total impact, PTTC has confidence that industry is taking action and reaping economic benefits far outweighing the invested Federal, state and industry funds.

Table 3—FY04 Success Stories, Producers Taking Technology Actions

PTTC Region (Subject area/benefit)	Bottom Line Description
Appalachian	Fulfilling a need identified during the Oct 2003 CBM event, a Northern Appalachian Basin CBM Research Consortium has been formed. Two speakers in the Oct 2003 “Data Management Skills” workshop saw potential and subsequently formed a cooperative venture. Interest in “Well Tender” workshops has spread to other regions.
Central Gulf	Because of networking at the 2003 GCAGS meeting, a regional service company has obtained P&A work in Mexico. Several parties have seriously looked at Goddard’s study of “Shallow Miocene Gas Potential.” Following discussions with staff, Metro Energy made a recompletion in Caddo Pine Island Field, resulting in 20 bopd. Learning about a Louisiana tax credit for reactivating marginal wells through PTTC, a producer reactivated 15 wells, which are producing 525 boe/day. Another 15 wells are being considered for reactivation.
Eastern Gulf	Shell staff recently visited PTTC for oil and gas data and information gathering purposes. This visit occurred because of several regional workshops and Director Mancini’s expertise in the Jurassic strata in the offshore Eastern Gulf. This supports the regional mapping work that Shell is currently conducting in the eastern Gulf.
Midwest	Michigan small operators have successfully applied 3-D seismic and horizontal drilling to develop new Niagaran reserves. These technologies and underbalanced drilling have been used in the Geneva Dolomite discoveries at Stephen Forbes State Park in Illinois. Horizontal drilling has been successfully applied in unlocking gas from the unconventional New Albany Shale gas play.
North Midcontinent	There has been a major effort both by KU’s Tertiary Oil Recovery Project and the region in transferring technology about polymer gel water-shutoff treatments. The number of operators applying this technology, the number of wells being treated and the application of these treatments in reservoirs other than the Arbuckle continue to increase. Kansas oil production has increased annually for the last five years and a significant portion of that increase can be attributed to these treatments.
Rocky Mountain	Acting on suggestions by attendees at the Horizontal Drilling Conference in Minot, a Bakken Core Workshop was presented at the USGS Core Research Center in Denver. Numerous comments from the 70 attendees indicated that the information would help to guide their leasing strategy and/or completion techniques in this hot play.
South Midcontinent	Producers continue to realize benefits from the play-oriented studies. Examples from the Hunton Play were outlined in FY03’s annual report. FY04 effort focused on the Cromwell Play and Jackfork/Atoka. Operators in southern Arkansas responded positively to information on recompleting/reworking mature wells.
Southwest	Data presentation via several websites maintained by the region has continued to improve. The produced water chemistry database has drawn a great deal of interest from producers, environmental consultants, and utility companies, as several producers within the state are now looking at treating and reuse of produced water.
Texas	Within one month after attending a “Produced Water/Wellbore Management” workshop, a producer operating about 200 wells that were experiencing high failure rates had already taken action—setting up a database and identifying poor practices—and was making more specific inquiries as further problems were identified.
West Coast	Within the PUMP project contracts have been signed with three producers—Brea Canyon, Breitburn and Plains Resources, for projects to demonstrate solutions for water control. Field work should begin in early 2005 and be completed by summer.

Through the years each region has established a unique identity, which is influenced by its audience, its interests and capabilities, and historical activities. Comments concerning regional identities follow. Leveraging these regional identities for industry's collective good remains a high priority goal for PTTC.

Appalachian—The region is recognized as the technology transfer center for information about the high interest Trenton-Black River play. Director Doug Patchen networks effectively with associations and professional societies across the region. He effectively uses his personal, national network within AAPG to support regional workshops. An on-line newsletter and GIS-oriented databases of horizontal, coalbed methane and Trenton-Black River activity cost effectively reach a dispersed audience.

Central Gulf— Strong legislative connections provide regular state funding, meaning the region never has to struggle with cost share. Early data products, the Louisiana Desktop Well Reference CD and others, met producers' data needs and have spawned state agency efforts. Strong LIOGA connections supplement PAG input to keep activities focused on independents' needs. Coordinator Don Goddard effectively uses his extensive personal network to get very knowledgeable topical speakers in regional workshops.

Eastern Gulf—The geological community relies heavily on exploration-oriented workshops, many of which evolve from other DOE-supported projects at the Univ. of Alabama. Mississippi on-line O&G sources would not be there today without earlier regional support for a Mississippi satellite. Activities are often co-sponsored with the Central Gulf Region. Director Ernie Mancini leverages his national involvement in AAPG. Coordinator Bennett Bearden is actively working to expand connections with the engineering/operations audience.

Midwest—Workshops are effectively tailored to the technology needs of "very small" independents. Both geological and engineering workshops focus on new approaches for increasing production and recovery, which is sorely needed in this very mature producing area. Practical operations workshops help operators control costs. Website systems in both Illinois and Michigan facilitate industry access to low cost O&G data. Regional events provide key networking opportunities for widely scattered producers to exchange technology ideas.

North Midcontinent—Activity caters to small operators in a very mature producing area, emphasizing engineering/operations issues and placing extensive O&G data on-line. Working together, TORP and PTTC have developed and placed extensive case study information on-line. Timely activities serve a growing coalbed methane industry. Because of his involvement in PTTC's PUMP "Produced Water Manual," Director Rodney Reynolds has been a valuable resource for workshops in other regions.

Rocky Mountain—From inception there has been a strong focus on providing software training on popular geological packages to help industry realize expected productivity improvements. Regular support is also provided to a Simulation Users Group. Although many workshops are in Denver, events are also regularly held in outlying states. Staff is not afraid to experiment with GIS-oriented data initiatives. Within the Rockies the region has earned a reputation as a reliable partner for co-sponsored events.

South Midcontinent—The region leverages workshop effort by providing partial support for field-oriented workshops developed by Oklahoma's Marginal Well Commission (MWC). Workshop support is also provided for play-based studies completed by the Oklahoma Geological Survey. More workshops address geological, geophysical and engineering topics. Outreach is strengthened through connections with SPE sections and the Tulsa and Oklahoma City Geological Societies. Recent changes have strengthened the program in Arkansas.

Southwest— The regional effort is characterized by: (1) strong emphasis on on-line data/information (GO TECH was one of original industry Internet sites), (2) leveraging other activities within New Mexico Tech's PRRC group, (3) strong connections with several state agencies, and (4) proactive outreach through targeted visits with independents. A varied program serves vastly different needs in northwest and southeast New Mexico. Cooperative efforts with the Texas and Rocky Mountain regions are common.

Texas—The region effectively serves a large dispersed audience in a very large state by: (1) seizing cooperative opportunities, (2) leveraging Bob Kiker’s knowledge and connections across Texas, (3) effectively using the digital world for communication and information transfer, and (4) leveraging Texas BEG’s technical work and Houston core facility. Staff works well with adjacent Central Gulf and Southwest regions serving their often over-lapping audience. Internet outreach through TIPRO expands the audience served.

West Coast—Regional events are known for: (1) PAG involvement, (2) technically challenging small independents by bringing in world class subject experts, (3) incorporating DOE results and speakers, and (4) stretching the information delivery envelope (webcast, remote speakers, etc.). A strong focus on field demonstration combined with Director Iraj Ershaghi’s ingenuity in securing state funding provide high leverage of PTTC funding. Through cooperative activities Alaska receives some support.

G. Planning and Managing Each Regional Program

PAGs provide key input and direction for regional programs. Within the constraints of maintaining the core technology transfer functions, considerable flexibility is allowed the PAGs/RLOs to accomplish the regional program. PAGs provide guidance on strategic redirections, if needed, to better serve the regional audience and they approve the general topics for most of the workshops planned during the coming year. They, along with the RLO Directors, determine relative emphasis of different elements of the PTTC program. HQ staff interacts extensively with both the PAGs and the RLO Directors during the annual planning process. During the year, HQ interactions are primarily with the RLO Directors. It is HQ’s responsibility to see that regional activity during the year remains within the loosely defined boundaries of the annual plan. Regional PAGs typically meet three times per year with most meetings occurring via conference call. One of those meetings occurs in the August time frame when the PAGs guide and approve the region’s annual plan and budget. PAG approval is subject to Board confirmation.

Staffing approaches vary by region. RLO Director roles vary from a managerial role to involvement in day-to-day details. Some regions spread the PTTC workload among several staff part-time, while others accomplish the work with only a few dedicated people. Both approaches have proven effective. Regional responsibilities include having to submit to HQ on a timely basis the required reports, invoices, workshop notebooks, and other information and deliverables. Financial management requires discipline. HQ is responsive to those regions that encounter unforeseen financial needs during the year. This flexibility has enabled PTTC to seize several opportunities.

PTTC's National Organizational Milestones

1993

- November—PTTC incorporated as national, not-for-profit organization
 - November—Founding Board of Directors meets (New Orleans, LA). Jim Russell voted Chair, Gene Ames, Jr. as Vice Chair, and Deborah Rowell as Executive Director
 - December—Initial meetings of Producer Advisory Groups (PAGs)
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1994

- January—Phase I funding from DOE/BDM begins.
 - January—All ten PAGs formed, Chair and Vice Chair elected in each region
 - February—First meeting of Permanent Board of Directors (Washington, DC). Same officers elected as by Founding Board.
 - March—Headquarters staff make visits to potential Regional Lead Organizations (RLOs)
 - March—Board adopts bylaws, elects Nominating Committee and members of Management and Budget (M&B) Committee. First M&B meeting held. (Dallas, TX)
 - April—First meeting of RLO Directors (Tulsa, OK)
 - May—First PTTC technical session at IPAA meeting (San Francisco, CA).
 - May—Office space obtained for national PTTC Headquarters (HQ) – Separate from IPAA
 - June—HQ staff hired
 - July—HQ establishes accounting system and database separate from IPAA
 - August—PTTC participates for first time in DOE oil program contractors review
 - September—PTTC submits 5-year Master Plan to DOE as main Phase I deliverable
 - September—PTTC's first national exhibit at conference - SPE annual meeting
 - October—Tax-exempt status approved by IRS.
 - November—Board conducts first (annual) strategic planning session (Phoenix, AZ)
 - November—Phase II funding from DOE/BDM begins
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1995

- January—First annual audit of HQ financial systems
 - February— First joint meeting of PTTC Board and RLO Directors (Norman, OK). Election of officers (Chris Hall voted Chair and Bob Nance as Vice Chair)
 - March—Contract signed with first RLO (North Midcontinent)
 - March—First issue of “PTTC Network News” published as national quarterly newsletter
 - April—PTTC participates for first time in DOE natural gas contractors review
 - May—PTTC Board meeting includes discussions with IPAA leaders about lack of industry support for DOE oil and gas technology programs
 - June—National website went on-line
 - July—One year funding begins from Gas Research Institute for HQ activities
 - July—PTTC Chair Chris Hall leads Washington meeting with DOE officials to confirm industry support for oil and gas technology programs
 - August—RLO staff meet to discuss coordinating PTTC websites (Albuquerque, NM)
 - December—HQ ended consulting contract with ICF Resources for technical assistance related to establishing new organization.
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1996

- January—PTTC presents preliminary problem identification results to DOE meeting with National Petroleum Council R&D Task Force members (Washington, DC)
 - March—Election of officers (Bob Nance voted Chair and Leo Schrider as Vice Chair) (Tuscaloosa, AL)
 - March—Problem Identification Report published based on series of workshops
 - April—Executive Director begins monthly conference calls with M&B Committee
 - May—PTTC Chair Bob Nance added as member of IPAA Program Committee
 - June—Board meets in Washington and issues first long-run strategic plan. Conducts first group visits to Capitol Hill.
 - July—Contract signed with tenth/final RLO (West Coast)
 - July—RLO Directors and HQ staff meet with DOE officials in Morgantown, WV
 - October—HQ expands technical coverage in “PTTC Network News” (from 8 to 16 pages)
 - November—Board ratifies updated bylaws. Adds 3 representatives from professional societies
 - November—DOE announces that its new outreach areas will be same as PTTC’s 10 regions
 - December—Final regional resource center opened (West Coast)
 - December—PTTC wins Honorable Mention award in contest for Organizational Excellence by American Society of Association Executives (ASAE)
 - December—RLO Directors meet with DOE Outreach Team Leaders (Washington, DC)
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1997

- January—PTTC signs cooperative agreement with AAPG to conduct joint workshops
 - February—RLO staff meet to coordinate training on E&P software donated by industry (Golden, CO)
 - April—PTTC Chair Bob Nance gives presentation on industry needs at meeting of President’s Committee of Advisors on Science and Technology (Dallas)
 - May—PTTC releases “Best of PTTC Workshops” report
 - May—PTTC wins R&D award from National Energy Resources Organization
 - July—Board adopts new policies and procedures for HQ and regions
 - August—RLO Directors meet and ask HQ staff to convey their concerns to the M&B Committee about new policies and procedures (Dallas, TX)
 - September—PTTC hosts tour of Los Alamos National Lab for IPAA Governors
 - November—Board adopts “Producer Advisory Group Guidelines”
 - November—First national conference- ETEC ’97 with IPAA and Cambridge Energy Research Associates (Houston, TX)
 - December—PTTC national website named by ASAE as one of the nation’s Top 10 Information Clearinghouse websites
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1998

- January—HQ establishes RLO-NET to improve communication with RLOs via Internet
- February—First marketing brainstorming session with Board/RLO/HQ representatives (Golden, CO)
- May—DOE awards new grant to PTTC extending to April 2003 (replaces BDM contract)
- July—Board adopts new Business Plan with marketing focus
- August—RLO Directors and HQ staff visit Sandia National Labs
- September—HQ releases new logo and updated image for stationery, publications, etc.
- October—PTTC’s first webcast of a workshop (West Coast)
- November—PTTC holds second national conference ETEC ’98 with IPAA (New Orleans)
- November—HQ releases “E&P Software Sampler” on CD-ROM

- December—Board launches Industry Crisis Action Plan, ratifies new mission statement and adopts “Guidelines for Professional and Ethical Conduct”
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1999

- January—PTTC signs agreement with *World Oil* to publish case study digest
 - February—PTTC begins extending RLO subcontracts to April 2003
 - March—Board adopts “Conflict of Interest Policy” and elects officers (Leo Schrider elected as Chair and Clark Southmayd as Vice Chair)
 - June—PTTC Chair Leo Schrider speaks at first DOE Oil & Gas Conference (Dallas, TX)
 - July—Board meets in Washington, DC. Votes to add one RLO representative to Board
 - August—HQ releases “Solutions from the Field” report and starts adding workshop summaries to website.
 - September—Inaugural issue of “Petroleum Technology Digest” released as supplement of *World Oil*
 - November—Deborah Rowell, PTTC’s founding Executive Director, announces her intent to resign in June.
 - December—Executive Search Committee, chaired by Bob Nance, begins search for new Executive Director.
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2000

- January—PTTC signs agreement with Hart Publications to provide a state-of-the-art technology summary in each issue of *PTTC Network News*.
 - February—PTTC Chair Leo Schrider and HQ staff meet with DOE in Washington to discuss funding.
 - March—PTTC Board and RLO Directors meet jointly in Kansas City
 - April—West Coast region holds first PTTC event in Alaska.
 - May—Second issue of semi-annual publication, “Petroleum Technology Digest” released with *World Oil*
 - June—Don Duttlinger selected as next PTTC Executive Director (effective July 1, 2000)
 - November—Board approves strategic relocation of PTTC HQ to Houston after 7 years in Washington
 - December – Move of HQ Office to Houston completed within weeks
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2001

- January—PTTC begins monthly column “Tech Connections” with *The American Oil & Gas Reporter*
 - February—Begin implementing website enhancements focused on consistency and user friendliness.
 - March—Clark Southmayd of Oneok Resources Company is elected new Chairman and Jim Bruning named Vice Chair of PTTC National Board during meeting in Washington
 - Summer/Fall—PTTC co-sponsors Maurer Technology’s “Optimized Horizontal Drilling” workshop series
 - October—DOE and PTTC begin an eight-workshop Traveling Workshop series with DOE.
 - December – Move of HQ Office to Houston completed within weeks.
-

2002

- January—DOE white paper documenting impact and outlining long-term vision completed.
 - February—lessons learned from DOE/PTTC Traveling Workshop documented.
 - March—Time frame of joint Board/RLO meeting changed to increase impact of Hill visits
 - April—PTTC initiates Technology Alert service via broadcast E-mail
 - July—HQ expands mailing list and increases exhibit schedule
 - September—activity levels set new records
-

2003

- March—Board elects new leadership: James Bruning, Bruning Resources, LLC, Arkansas as Chairman; Brook Phifer, Nico Resources, LLC, Colorado, Vice Chairman
 - March—Board Members/RLO Directors conduct Hill visits during critical decision-making period
 - April—PTTC receives contract extension through September 2003
 - July—Board completes strategic planning survey and defines further planning needs
 - September—PTTC completes current contract, exceeding prior records for activity by significant levels
-

2004

- March—Board elects new leadership: Brook Phifer, Nico Resources, LLC, Colorado as Chairman; Brian Sims, Independent, Mississippi as Vice Chairman
 - March—Board Members/RLO Directors conduct Hill visits during critical decision-making period
 - June—PTTC presents “Impact/Metrics” analysis to Office of Management & Budget and DOE HQ
 - July—Chairman Brook Phifer presents testimony before House Subcommittee
 - September—Chairman Brook Phifer, Executive Director Don Duttlinger and selected RLO Directors meet with Office of Management & Budget and DOE HQ in Washington
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APPENDIX B

Summary of PTTC 4th Qtr FY04 Regional Data and FY04 Overall Activity

Region	Workshops			Industry Contacts	Website (mo. avg.)		Communications
	No.	Attend.	From E&P Industry (%)		User Session	Page Views	
Appalachian	2	119	117 (98%)	267	6,637	11,845	On-line newsletter—Apr & June 2004, Oct pending
Central Gulf	0	0	-----	177	5,039	9,914	LIOGA newsletters—May 2004, circ. 850
Eastern Gulf	2	49	36 (73%)	212	4,756	6,335	Qtrly newsletter—July Sep 2004, circ. 600
Midwest	1	106	74 (70%)	2,315	10,400	63,317	Semi-annual—next Nov 2004; circ. 3,900
N. Midcontinent	2	115	106 (92%)	739	25,015	84,671	Semi-annual—Sep 2004 circ. 5,200
Rocky Mountain <i>(lunch/learn)</i>	4 1	126 15	126 (100%) 15 (100%)	778	4,120	10,676	Qtrly newsletter – (8/04) circ. 2085 (8% electronic)
S. Midcontinent <i>(lunch/learn)</i>	3 1	187 26	157 (84%) 19 (73%)	310	826	Not Available	Qtrly newsletter – Aug 2004; circ. 5,446; mailings
Southwest	1	34	30 (88%)	181	22,514	106,276	Semi-annual PRRC; Aug 2004; circ. 3200
Texas	3	103	95 (92%)	441 (347 TIPRO)	9,305 (250,234 outreach)	17,032 (352,929 outreach)	Qtrly newsletter-last in Apr 2004, circ. 2500; assoc., SPE, Midland paper
West Coast	3	147	95 (65%)	61	2,867	8,593	Announcements in CIPA’s weekly email; email alerts
Regions—4th Qtr	21	986	836 (84%)	5,481	91,479	318,659	
<i>Lunch and learn</i>	2	41	34 (83%)				
HQ—4th Qtr	Not applicable			585	20,445	54,904	Qtrly-Sep 2004; circ. 17,111
Total 4th Qtr	21	986	836 (84%)	6,066	111,924	373,563	
<i>Lunch and learn</i>	2	41	34 (83%)				
FY04					FY04 versus FY03		
Workshops	121	6,019	5,071 (84%)	25,205		Only wkshps	All Events
<i>Lunch and learn</i>	20	432	415 (96%)		# Activities	- 29%	- 17%
FY04 Combined	141	6,451	5,486 (85%)		Attendance	- 30%	- 25%
FY03	169	8,616	7,335 (85%)	24,714	Contacts	2% overall	
					Plans: 39 events (1st Qtr FY05)		

Repeat Attendance at Workshops: Of 117 events during FY04 where repeat attendance was reported, the calculated average was 56 %. (Measured as % of industry attendees that had previously attended an event.)

Planned Regional Events Through December 2004			
Region	Topic	Location	Date
Appalachian	Exploration and Development of Fractured Reservoirs (AAPG Eastern Section)	Columbus, OH	10/6/04
Eastern Gulf	2004 O&G Forum & Technology workshop: Miocene of Mississippi and Alabama (U.S. O&G Assn.)	Jackson, MS	10/6/04
Rocky Mountain	What's New In Logging Measurements and Techniques (SPE Casper)	Casper, WY	10/6/04
Rocky Mountain	GeoPlus PETRA for Beginners	Golden, CO	10/7-8/04
Midwest	Pumpers & Well Operators Training (IL O&G Assn)	Mt Carmel, IL	10/12/04
North Midcontinent	Crash Course in Log Analysis, An Excel Spreadsheet	Lawrence, KS	10/14/04
North Midcontinent	PIEFFER Log Analysis Software	Lawrence, KS	10/15/04
<i>Rocky Mountain</i>	<i>Simulation Users Group: Fekete RTA Psi Transient</i>	<i>Denver, CO</i>	<i>10/19/04</i>
Central Gulf	Understanding The Oil and Gas Reservoir Using Material Balance	Lafayette, LA	10/21/04
West Coast	Coiled Tubing Application and Operations	Valencia, CA	10/21/04
Appalachian	Well Safety for Well Tenders	Marietta, OH	10/21/04
Rocky Mountain	GeoPlus PETRA Intermediate Cross Sections	Golden, CO	10/21/04
Central Gulf	Energy Summit 2004 (Center for Energy Studies)	Baton Rouge, LA	10/21-22/04
South Midcontinent	Stratigraphic & Structural Evolution of Quachita Mts. & Arkoma Basin (Oklahoma Geological Survey)	Poteau, OK	10/21-23/04
Rocky Mountain	GeoPlus PETRA Intermediate Engineering Tools	Golden, CO	10/22/04
HQ	PTTC Tech Session @ Independent Petroleum Association America Annual Meeting	Austin, TX	10/28/04
Texas	Tech Session @ Permian Basin Petroleum Association Annual Meeting	Midland, TX	10/28/04
Eastern Gulf	Alabama O&G Seminar (Alabama State O&G Board, Black Warrior Assn. Landmen, O&G Section of Alabama Bar)	Tuscaloosa, AL	10/28-29/04
Texas	Unconventional Gas Reservoirs Seminar (Ellison Miles)	Farmers Branch, TX	11/3/04
Texas	Produced Water Seminar (Texas Alliance)	Wichita Falls, TX	11/4/04
North/South Midcontinent	1 st Annual Midcontinent Coalbed Methane Symposium (OIPA, Midcontinent CBM Forum)	Tulsa, OK	11/7-9/04
Texas	Essentials of Subsurface Mapping and Integration	San Antonio, TX	11/10/04
Central Gulf	Well Abandonment Methods and Regulations	Lafayette, LA	11/10/04
Rocky Mountain	Hydrothermal Dolomite Conference (RMAG, CSM SEG Chapter)	Golden, CO	11/15/04
North Midcontinent	Practical Petroleum Reservoir Characterization and Modeling Using Free Web-based Software Tools	Lawrence, KS	11/16/04
Midwest	Annual Illinois Basin Coalbed Methane Symposium (Illinois Geological Survey)	Evansville, IN	11/17/04
<i>Rocky Mountain</i>	<i>Simulation Users Group: CBM Simulation ECLIPSE</i>	<i>Denver, CO</i>	<i>11/18/04</i>
Texas	Permian Basin Initiative: Work Group	Midland, TX	11/30/04
<i>Texas Lunch & Learn</i>	<i>Well Optimization Using New Technologies in Field Automation & Remote Monitoring (Metrix)</i>	<i>Midland, TX</i>	<i>12/1/04</i>
Southwest	Devonian FEE Software Training (PRRC)	Roswell, NM	12/1/04
Central Gulf	Reservoir Engineering Symposium: From the Matrix To The Market (Univ. of LA Lafayette)	Lafayette, LA	12/2/04
West Coast	Waterflood Enhancement and Management	Los Angeles, CA	12/3/04
Central Gulf	Productivity and Economic Potential of Inactive/Marginal Wells in LA (ChevronTexaco)	New Orleans, LA	12/7/04
Texas	Permian Basin Initiative: Work Group	Houston, TX	12/7/04
Texas	Deep Gas Well Stimulation (DOE)	Houston, TX	12/8/04
Midwest	Crash Course in Log Interpretation	Grayville, IL	12/9/04
Texas/Southwest	2004 CO ₂ Conference (CEED, many others)	Midland, TX	12/9-10/04
Texas/Southwest	Stranded Gas and Power Reduction	Midland, TX	12/15/04
<i>South Midcontinent</i>	<i>SPE Fort Smith Lunch and Learn</i>	<i>Fort Smith, AR</i>	<i>12/TBD</i>

PTTC Appalachian Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (13 events)			948	824(87%)	
FY 04 Attendance					
Improving The Bottom Line By Enhancing Your Data Management Skills	Morgantown, WV	10/2/03	28	22 (79%)	64%
Well Log Interpretation and Reservoir Characterization of Ordovician and Cambrian Reservoirs, Appalachian Basin	Columbus, OH	10/6/03	38	24 (63%)	75%
Coalbed Natural Gas (WV Development Office)	Roanoke, WV	10/29/03	165	136 (82%)	
Hydrogen (WV Development Office)	Roanoke, WV	11/19/03	67	36 (53%)	
Energy Infrastructure (WV Development Office)	Roanoke, WV	12/11/03	80	52 (65%)	
Horizontal Drilling, A Technology Update for the Appalachian Basin (Ohio Geol. Survey, OOGA)	Salt Fork, OH	5/27/04	78	69 (88%)	60% est
Trenton-Black River Play Update (WV Geol. Surv.)	Washington, PA	6/7/04	54	36 (67%)	72%
Introduction to GeoPlus PETRA (KY Geol. Survey)	Lexington, KY	6/15/04	29	11 (38%)	
An Integrated Coalbed Methane Exploration Model; Defining CBM Exploration Sweet Spots	Morgantown, WV	7/19/04	53	51 (96%)	
Well Safety for Well Tenders	Meadville, PA	9/2/04	66	66 (100%)	
FY04 Attendance (10 events)			658	503 (76%)	
Planned Events During 1st Qtr FY05					
Exploration & Development of Fractured Reservoirs	Columbus, OH	10/6/04			
Well Safety for Well Tenders	Marietta, OH	10/21/04			

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	5	378	270 (71%)	898	5,494	11,681	Only on-line newsletter, 2-3 times per year
2 nd Qtr	0			793	5,583	11,176	
3 rd Qtr	3	161	116 (72%)	516	6,105	10,553	
4 th Qtr	2	119	117 (98%)	267	6,637	11,845	
FY04 Total	10	658	503 (76%)	2,474	5,955	11,314	
FY04 Avg. Attendance = 66 vs. 73 in FY03 (10 Actual vs. 10 Originally Planned)							
FY05: 12 Workshops Planned (2 scheduled during 1st Qtr)							

Regional Website: There was a moderate but steady increase in website usage during the year. Popular sections continue to be the extensive on-line newsletter, GIS-oriented databases for horizontal drilling, coalbed methane and Trenton-Black River completions, and AAPG Eastern Section. Updated data for the GIS databases is being obtained from regional geological surveys and discussions are under way concerning additional layers of regional interest.

Workshops/Events: Ten workshops held in four different states drew combined attendance of 658. Compared to FY03 workshop activity decreased with attendance down 31% and number of workshops down 23%. Average attendance held strong at 66 individuals per workshop. The decrease in activities resulted from two things. First, PAG input during a January meeting modified what topics the region should address. Inevitable delays occurred when staff had to identify and recruit new speakers. Second, for one reason or another, several workshops planned during the final quarter had to be delayed or canceled. Overall attendance for the year also reflects only one "Well Tender and Safety" workshop during FY04, whereas five of these workshops during FY03 drew attendance of 585. Plans are to periodically repeat this popular workshop, but not at the level of the

initial series. This year the region supported a series of three workshops developed by West Virginia's Development Office. The topics—coalbed natural gas, hydrogen and energy infrastructure—drew 312 attendees. Coalbed methane, horizontal drilling and Trenton-Black River workshops were also well attended.

Resource Center: Staff focused on interacting with regional geological surveys to obtain updated data for GIS-oriented databases on the website. Information requests that are received continue to be efficiently answered by staff.

Outreach/Contacts/Newsletter: Compared to FY03 overall contacts decreased significantly—not unexpected since FY03 involved extensive interaction in preparation for AAPG's Eastern Section meeting in Pittsburgh, plus the initial highly successful Well Tender workshop series. Staff maintains monthly contact with PAG members and frequent contact with regional professional societies and associations. Director Doug Patchen frequently attends regional meetings for personal networking. Consortia at WVU provide other opportunities for interaction with industry. Patchen's national involvement in AAPG and the Potential Gas Committee provide additional connections that are often incorporated in the workshop program. Staff developed three issues (Dec 2003, Apr and June 2004) of the extended on-line newsletter. A planned fourth issue was delayed so that technical content from recent workshops could be included.

Problem Identification: Feedback from participants in the Oct 2003 "Coalbed Methane Road Mapping" workshop revealed the following key problems: (1) Ownership issue needs to be resolved. (2) Consistent rules and regulations need to be written and placed under one agency. (3) A more fully developed infrastructure must be built. (4) A clearinghouse for coalbed natural gas data needs to be created. (5) A government-industry-academic research consortium is needed to develop a research plan and fund and conduct research and technology transfer. During a January PAG meeting, members brainstormed extensively about potential workshop topics, prioritized those topics, and agreed which ones they would be willing to help with. Although requiring some reorientation of staff effort, this proactive guidance strengthened the workshop program.

Follow-up: In response to the Oct 2003 "Coalbed Methane Road Mapping" workshop, a Northern Appalachian Basin Coalbed Methane Research Consortium has been formed. Among its core activities, the Consortium will develop a coalbed methane database and evaluate research proposals submitted by Consortium members. In Sep 2000 the region hosted a workshop on the "Upper Devonian Sandstone Play" in Pennsylvania. Following the workshop, the speakers integrated their research and information resulting in a multi-disciplinary paper published in AAPG's Bulletin. An operator implemented a recommendation to develop coal beds above a waterflood that needed more water with the intent of using water during CBM de-watering to supplement injection. The coal beds did not produce as much water as expected. Following the Oct 2003 "Data Management Skills" workshop, two of the speakers formed a cooperative venture—an example of speaker-to-speaker connection. Speakers often receive further inquiries from attendees, and in some instances feelers about consulting work. Interest in "Well Tender" or "Pumper" workshops has spread to other regions.

PTTC Central Gulf Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (7 events)			620	558 (90%)	
FY04 Attendance					
IPAA PTTC mini-session	New Orleans, LA	10/27/03	45	40 (89%)	50%
Reservoir Fluids 2003 PVT and Beyond	Lafayette, LA	11/12/03	60	48 (80%)	10%
Soil Remediation (Texas Region)	Tyler, TX	1/21/04	Reported by Texas Region		
Application of Logging Tools for Improving Reservoir Characterization	Baton Rouge, LA	2/3/04	39	15 (38%)	39%
Drilling and Completion Technologies for Deep Shelf Gas (New Orleans Geol. Society, Eastern Gulf)	New Orleans, LA	4/5/04	28	27 (98%)	40%
Coalbed Methane Resources in the Southeast (ULL Energy Institute)	Lafayette, LA	6/8/04	84	65 (77%)	46%
FY04 Attendance (5 events, Plus 1 by Texas)			256	195 (76%)	
Planned Events During 1st Qtr FY05					
Understanding O&G Reservoir Using Mat. Balance	Lafayette, LA	10/21/04			
Energy Summit 2004 (Center for Energy Studies)	Baton Rouge, LA	10/21-22/04			
Well Abandonment Methods & Regulations	Lafayette, LA	11/10/04			
Reservoir Engineering Symposium, From The Matrix To The Market (ULLA)	Lafayette, LA	12/2/04			
Productivity and Economic Potential of Inactive/Marginal Wells in LA (ChevronTexaco)	New Orleans, LA	12/7/04			

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1st Qtr	2	105	88 (84%)	183	5,159	9,759	Only announcements in LIOGA newsletter
2nd Qtr	1	39	15 (38%)	171	5,098	9,260	
3rd Qtr	2	112	92 (82%)	123	4,078	8,007	
4th Qtr	0	0	-----	177	5,039	9,914	
FY04 Total	5	256	195 (76%)	654	4,844	9,235	
FY04 Avg. Attendance = 51 vs. 89 in FY03 (5 Actual vs. 6 Originally Planned)							
FY04: 8 Workshops Planned (5 scheduled during 1st Qtr)							

Regional Website: Following steady growth in prior years, usage appears to be leveling off at about 5,100 user sessions per month. Routine maintenance and updating were the website priority this year. Goddard's study on "Shallow Miocene Gas" potential (see followup) was posted on the website.

Workshops/Events: Compared to FY03 workshop activity decreased significantly—almost solely due to FY03's attendance being distorted by general co-sponsorship of a New Orleans Geological Society (NOGS) meeting that drew 333 people. This year the region sponsored only a separate technology workshop with NOGS, drawing a much smaller audience of 28. A planned workshop late in the year was also delayed due to circumstances beyond the region's control. Average attendance of 51 individuals per event is within the range experienced in other regions. A tech session that HQ coordinated for the IPAA meeting in New Orleans is included as a Central Gulf activity. The "Reservoir Fluids" workshop built upon an earlier successful event in Houston. The region worked with the Texas Region to bring a "Soil Remediation" workshop to Tyler, Texas. The workshop that drew the highest attendance of 84 focused on "CBM Resources in the Southeast." A second CBM workshop focusing on only Louisiana CBM is planned in spring 2005.

Resource Center: Early on the region developed the Louisiana Desktop Well Reference (LDWR) CD of well/lease data. Its success spurred the Louisiana Department of Natural Resources to develop the SONRIS Internet data site. PTTC has facilitated SONRIS improvements suggested by operators. The region is now finishing a pilot project called the Louisiana Parish Well Reference (LPWR) that has more detailed information, but only at the parish level. Hopes are that this pilot product will demonstrate sufficient value to attract the major state funding required should it be implemented statewide. Information requests that are received continue to be efficiently answered by staff.

Outreach/Contacts/Newsletter: Compared to FY03 overall contacts decreased about 25%. FY03 contacts though were higher than normal with the interest generated by the SONRIS workshop series. As an SPE distinguished lecturer, Andrew Wojtanowicz spoke before SPE sections across the U.S. about concepts for managing produced water downhole. He also spoke at multiple locations in India, Africa and Eastern Europe. Through the Downhole Water Sink Consortium there are many presentations, meetings and individual contacts. Director Bob Baumann developed a presentation on "Perspectives of Louisiana's Future Oil and Gas," which he has delivered before several audiences. Staff participated in LAGCOE and Gulf Coast Prospect Expo meetings, networking and having discussions with PAG members. Coordinator Don Goddard supports the HQ exhibit at NAPE and APPEX meetings. Announcements of upcoming regional events are placed in LIOGA's newsletter, which is circulated to about 850 people.

Problem Identification: Industry needs and directions for future activities are determined by feedback from workshop participants, contacts at trade shows, inquiries, some targeted visits and PAG input.

Follow-up: At the GCAGS meeting in Oct 2003, Don Goddard spoke with a PEMEX representative. This led to an arrangement between a regional service company for some P&A work in Mexico. In a Center for Energy Studies project, Goddard developed a study of "Shallow Miocene Gas Potential." Although no one has taken action yet, several parties have seriously looked at the study. Staff provided SONRIS-generated logs of wells in Caddo Pine Island Field to Metro Energy, suggesting that the upper Cretaceous Buckrange reservoir be tested. Metro Energy implemented the suggestion and the well produced 20 bopd.

PTTC Eastern Gulf Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (9 events)			529	457 (86 %)	
FY04 Attendance					
AVO Technology	Jackson, MS	10/9/03	38	35 (92%)	71%
E&P Technology Session (US Oil & Gas Assn)	Point Clear, AL	10/15/03	65	58 (89%)	19%
Alabama Oil and Gas (Alabama O&G Board)	Tuscaloosa, AL	12/5/03	71	59 (83%)	17%
Seismic Micro-Technology, New Tools in the Kingdom Suite Version 7.3	Raymond, MS	2/16/04	11	4 (36%)	91%
Drilling and Completion Technologies for Deep Shelf Gas (New Orleans Geol. Society, Central Gulf)	New Orleans, LA	4/5/04	Reported by Central Gulf Region		
International Coalbed Methane Symposium	Tuscaloosa, AL	5/3-4/04	197	139 (71%)	4%
Improving Operations From An Environmental Perspective (MS State Board of Registered Professional Geologists, AAPG Division of Professional Affairs)	Jackson, MS	5/26/04	38	25 (66%)	50%
Reservoir Simulation and Modeling: North Blowhorn Creek, Vocation Field, and Womack Hill Field	Jackson, MS	9/2/04	25	16 (64%)	92%
Seismic Attributes for Reservoir Characterization	Jackson, MS	9/22/04	24	20 (83%)	92%
FY04 Attendance (8 events, Plus 1 by Central Gulf)			469	356 (76 %)	
Planned Events During 1st Qtr FY05					
2004 O&G Forum (US O&G Assn)	Jackson, MS	10/6/04			
Alabama O&G Seminar	Tuscaloosa, AL	10/28-29/04			

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1st Qtr	3	174	152 (87%)	220	3,991	5,361	Qtrly newsletter, switching to biannual; circ. 600
2nd Qtr	1	11	4 (36%)	228	3,986	5,797	
3rd Qtr	2	235	164 (70%)	193	4,211	6,048	
4th Qtr	2	49	36 (73%)	212	4,756	6,335	
FY04 Total	8	469	356 (76%)	853	4,236	5,885	
FY04 Avg. Attendance = 59 vs. 59 in FY03 (8 Actual vs. 8 Originally Planned)							
FY05: 8 Workshops Planned (2 scheduled during 1st Qtr)							

Regional Website: Website usage continues to steadily increase, increasing more than 30% on a year-to-year comparison with FY03. Beyond routine maintenance and updating, staff focuses on adding technical reports (Basin Analysis and Petroleum Reservoir Characterization, Transgressive-Regressive Cycles, Reservoir Modeling and Simulation).

Workshops/Events: Compared to FY03 there was a modest decline in attendance during FY04, attributed to doing one less event. There was one large co-sponsored event, the International Coalbed Methane Symposium in Tuscaloosa. Excluding this large event attendance averaged 39 individuals per workshop. Consistent with history there was a strong focus on exploration/geology-oriented topics. The "Reservoir Modeling and Simulation" workshop highlighted studies completed in DOE-supported projects at the University of Alabama. Cooperative events with the U.S. Oil and Gas Association, Alabama Oil and Gas Board, and the Mississippi State Board of Registered Geologists strengthened regional ties. The region worked with the Central Gulf

Region to support a “Drilling and Completions” workshop at the New Orleans Geological Society meeting. One seismic software-training course was conducted.

Resource Center: Due to changing philosophies within Mississippi state agencies, support is no longer provided for the data-oriented website developed by the Mississippi Office of Geology. Staff still works with Mississippi state agencies supporting their on-line data work.

Outreach/Contacts/Newsletter: Contact activity remained essentially level with FY03. Coordinator Bennett Bearden has worked to increase connections with the engineering/operations audience. Director Ernie Mancini was elected AAPG Editor, a position that is providing leverage opportunities for PTTC. Distribution for the region’s quarterly newsletter is about 600. Beyond announcements, the newsletter summarizes technology insights presented during recent workshops or in reports relevant to the region.

Problem Identification: Industry needs and directions for future activities are determined by feedback from workshop participants, contacts at trade shows, inquiries, some targeted visits and PAG input. Recent visits with engineers in Jackson have provided insights on their needs. Standard practice at the end of each workshop is to spend a few minutes interacting with producers about things they want to learn more about.

Follow-up: Shell staff recently visited PTTC for oil and gas data and information gathering purposes. This visit occurred because of several regional workshops and Director Mancini’s expertise in the Jurassic strata in the offshore Eastern Gulf. This supports the regional mapping work that Shell is currently conducting in the eastern Gulf.

PTTC Midwest Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (8 events)			456	337 (74%)	
FY04 Attendance					
Trenton-Black River Reservoirs in Michigan	Mt. Pleasant, MI	10/23/03	91	73 (92%)	64%
Internet Mapping Service (IMS) and Illinois Basin Pay-Map Series	Mt. Vernon, IL	1/29/04	45	38 (84%)	60%
Produced Water and Associated Issues (O&G Assn)	Evansville, IN	3/4/04	37	31 (84%)	93%
PUMP II Deliverables, Illinois Pay-Map Series and IMS	Evansville, IN	3/5/04	60	60 (100%)	50%
Michigan Field Experience, Focus on the Niagaran (N. Michigan SPE)	Mt. Pleasant, MI	3/19/04	161	134 (83%)	69%
Desktop Mapping; More Bang For The Buck From Your Well Data	Mt. Vernon, IL	3/31/04	42	30 (71%)	21%
Petroleum Systems of the Michigan Basin, A Look at Undiscovered Oil and Gas Resources (Michigan O&G Association)	Grand Rapids, MI	9/23/04	106	74 (70%)	44%
FY04 Attendance (7 events)			542	440 (81%)	
Planned Events During 1st Qtr FY05					
Pumpers & Well Operators Training	Mt Carmel, IL	10/12/04			
Annual Illinois Basin CBM Symposium	Evansville, IN	11/17/04			
Crash Course in Log Interpretation	Grayville, IL	12/9/04			

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	1	91	73 (92%)	1,350	14,501	24,256	Biannual newsletter
2 nd Qtr	5	345	293 (85%)	1,545	11,675	70,457	
3 rd Qtr				1,569	8,654	47,907	
4 th Qtr	1	106	74 (70%)	2,315	10,400	63,317	
FY04 Total	7	542	440 (81%)	6,779	11,308	51,484	
FY04 Avg. Attendance = 77 vs. 57 in FY03 (7 Actual vs. 6 Originally Planned)							
FY05: 9 Workshops Planned (3 scheduled during 1st Qtr)							

Regional Website: Usage in the Illinois Basin increased 2.5 times when the ILOIL (interactive mapping data) server developed by the Illinois State Geological Survey (ISGS) in it's PUMP project came on-line. Usage also continues to steadily increase in the Michigan satellite.

Workshops/Events: Compared to FY03 attendance increased 19%, even though one less event was held. Attendance at recent Michigan workshops has been especially strong, averaging 119 for the three workshops held in FY04. A common thrust in these workshops was finding new reserves in a very mature producing area. Illinois Basin attendance averaged 46, still strong for a small, scattered producer audience. In the Illinois Basin there has been a strong push to educate industry about the new digital capabilities through ILOIL. Workshops are intentionally not scheduled during summer field-work periods.

Resource Center: The region works closely with the ISGS to further development and stimulate usage of ISGS's ILOIL data system. For several years staff has been working to get Illinois Basin waterflood and core data in digital format; data should be added to ILOIL soon. Staff also coordinates scanning bulletins, circulars, core analysis collections, etc. to make them digitally available. Midwest's Michigan outreach center also places

a strong focus on making Michigan data available on-line. Major efforts include scanning wireline logs and scout tickets. They continue to receive cuttings/cores. Bill Harrison is leading the charge to obtain funding for a new core repository at Western Michigan University. Although officially retired from Western Michigan University, Bill Harrison remains actively involved with PTTC through the Michigan Core Lab. Dr. Mike Grammer, Geosciences professor at Western Michigan University, assumed the Principal Investigator role for the Michigan satellite. Linda Harrison continues as coordinator.

Outreach/Contacts/Newsletter: Overall contact activity increased 22%, particularly increasing late in FY04 as producers were more active with continued higher prices. Topics for Illinois contacts include CBM, shale gas, and ILOIL data/capabilities. In Michigan many of the increased contacts were core-related. Interactions associated with “very well attended” workshops also increased Michigan contacts. Staff in both Illinois and Michigan actively participates in relevant professional societies and are well networked with the O&G associations. Working through PAG leadership, several new PAG members came on board in both the Illinois and Michigan basins. Their new energy and perspectives will strengthen future efforts. Early in the year staff interacted with Illinois Basin associations with the goal of increasing the mailing list. The effort paid off as circulation jumped from 2,700 to 3,900. Although planned as a bi-annual, only one issue was developed during FY04 (January). The next newsletter is planned for Nov 2004.

Problem Identification: Industry needs and directions for future activities are determined by feedback from workshop participants, contacts at trade shows, inquiries, some targeted visits and PAG input. Well data remain atop the list. There is high interest in the geology and development of new plays. New technologies, such as multi-lateral drilling, CO₂ EOR, improved well stimulation, underbalanced drilling, etc. are of interest.

Follow-up: Following development in FY03 and FY04 of the Interactive Map Service (IMS) well data website (ILOIL) within ISGS’s DOE PUMP program and presentation of PTTC instructional workshops, operators have been developing prospects, identifying key wells and gathering data previously locked up in ISGS’s database. Usage now averages 63 visits per day and has been steadily increasing. Even more data such as waterflood unit statistics, production curves and much more will be a part of this service. The region will maintain the successful and innovative ILOIL website now that the PUMP contract has been completed.

PTTC North Midcontinent Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (13 events)			608	470 (77 %)	
FY04 Attendance, Planned Events During Upcoming Quarter					
Crash Course in Log Analysis: An Excel Spreadsheet (Kansas Geological Survey)	Lawrence, KS	10/23/03	16	14 (87%)	38%
Practical Log Analysis Guide to O&G Fields in Kansas (Kansas Geological Survey)	Lawrence, KS	10/24/03	13	10 (77%)	23%
<i>Coalbed Methane Forum (SPE Wichita Luncheon)</i>	<i>Wichita, KS</i>	<i>11/05/03</i>	42	38 (90%)	50%
Case Studies of Exploitation of a Mature Reservoir in Kansas Through Technology Applications	Wichita, KS	2/24/04	40	34 (85%)	78%
Case Studies of Exploitation of a Mature Reservoir in Kansas Through Technology Applications	Hays, KS	2/25/04	33	30 (90%)	36%
Reading The Rocks From Wireline Logs (Kansas Geological Survey)	Lawrence, KS	3/12/04	24	20 (83%)	42%
<i>Reducing Rod Pump Expenses (SPE Wichita Luncheon)</i>	<i>Wichita, KS</i>	<i>3/17/04</i>	26	25 (96%)	77%
Petroleum Technology Fair 2004	Wichita, KS	3/24/04	82	70 (85%)	54%
Independents' Day @ SPE/DOE IOR Symposium (South Midcontinent)	Tulsa, OK	4/20/04	41	35 (85%)	10%
Reducing Well Failure Frequency	Wichita, KS	9/8/04	50	43 (86%)	68%
Tech Session @ Eastern Kansas O&G Association Annual meeting	Chanute, KS	9/17/04	65	63 est (97%)	
FY04 Attendance (11 events)			432	382 (88 %)	
Planned Events During 1st Qtr FY05					
Crash Course in Log Analysis, Excel SS	Lawrence, KS	10/14/04			
PfEFFER Log Analysis Software	Lawrence, KS	10/15/04			
1 st Annual Midcontinent CBM Symposium	Tulsa, OK	11/7-9/04			
Practical Petroleum Reservoir Characterization and Modeling Using Free Web-based Software Tools and Data	Lawrence, KS	11/16/04			

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	3	71	62 (87%)	575	25,727	73,957	Biannual newsletter
2 nd Qtr	5	205	179 (87%)	845	29,114	82,475	
3 rd Qtr	1	41	35 (85%)	672	23,501	90,878	
4 th Qtr	2	115	106 (92%)	739	25,015	84,671	
FY04 Total	11	432	382 (88%)	2,831	25,839	82,995	
FY04 Avg. Attendance = 39 vs. 47 in FY03 (11 Actual vs. 12 Originally Planned)							
FY05: 12 Workshops Planned (4 scheduled during 1st Qtr)							

Regional Website: At FY04 yearend usage, compared to the first 9 months of 2003, has increased 56%. Usage of on-line maps has increased significantly. KGS staff continues to maintain ongoing items and make both incremental improvements and major additions, which includes case study pages.

Workshops/Events: Compared to FY03 workshop activity decreased significantly with attendance being down 29%. Average attendance of 39 individuals per event is within the range observed in other regions when adjustments are made for selected large co-sponsored events. Since FY03 data included four tech sessions at

KIOGA's annual meeting, FY04 activity with 11 separate events is actually higher. The region worked with HQ to develop an "Independents' Day Session" for SPE/DOE Improved Oil Recovery Symposium, including making several presentations. The Petroleum Technology Fair, which is held on alternating years with TORP's annual conference, is intended to present timely subjects that are useful, yet cannot justify a workshop on their own. It combines brief vendor presentations with an exhibit area. It continues to be well attended. The Case Study workshops held in Wichita and Hays summarized earlier work by TORP and PTTC on (1) Arbuckle polymer gel water-shutoff treatments, (2) GasGunTM solid propellant stimulation treatments, and (3) smaller scale 3-D seismic surveys. Workshops delivered by KGS focused on log analysis. Supporting the rapidly growing Kansas CBM industry, staff worked with SPE Wichita in a luncheon CBM Forum. Tim Carr with KGS also assumed a lead role in planning for the "1st Midcontinent CBM Symposium" scheduled in Tulsa early in FY05. Director Rodney Reynolds and Texas Permian Basin Program Director Bob Kiker delivered their "Produced Water" workshop in the Texas and Midwest regions with another workshop planned in Wichita Falls, Texas early in FY05. The region hosted a variation of this workshop focusing on "Reducing Well Failure Frequency."

Resource Center: Extensive case study information developed by TORP and PTTC in three subject areas (see above) has been placed on-line. This allows users considering applying one of those technologies to "see for themselves" how it has worked in other regional wells. KGS continually refines or expands O&G information offered through their website.

Outreach/Contacts/Newsletter: Overall contact level remained high, averaging more than 250 per month. This contact level, plus recognition that most workshops are developed by staff (as opposed to just bringing someone in), keeps human resources strained. Staff attends and is frequently involved in KIOGA and EKOGA annual meetings, plus solid relationships exist with the professional societies. As time and resources permit, staff will attend national events (SPE annual meeting, as an example) to learn about new technologies and broaden contacts. The semi-annual regional newsletter is distributed to about 5,200 people. Progress has been slow in developing an email database, which offers the potential for lowering outreach costs.

Problem Identification: Industry needs and directions for future activities are determined by feedback from workshop participants, contacts at industry events, inquiries, and PAG input. Occasionally, Director Rodney Reynolds will schedule visits across Kansas, discussing technology needs and discovering some new technology applications. Participation in "Produced Water" workshops across the country strengthen those insights.

Follow-up: There has been a major effort both by KU's Tertiary Oil Recovery Project and the region in transferring technology about polymer gel water-shutoff treatments. The number of operators applying this technology, the number of wells being treated and the application of these treatments in reservoirs other than the Arbuckle continue to increase. Kansas oil production has increased annually for the last five years and a significant portion of that increase can be attributed to these treatments and the supporting technology transfer. Liquid CO₂ applications have been featured in the Tech Fair. Made possible with the availability of CO₂ from ethanol plants in the state, operators have been experimenting with CO₂ cyclic injection (huff-n-puff treatments) and formation pre-conditioning with CO₂ to improve acidizing. Through a workshop and Tech Fair, local operators learned about Permian Basin well failure reduction practices, including the use of polylined tubing. Operators are using polylined tubing and the supplier, Western Falcon, is now distributing their product in Kansas through Sunrise Supply.

PTTC Rocky Mountain Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (42 events)			2,116	1,852 (88 %)	
FY04 Attendance					
GeoPlus PETRA Basic Training	Golden, CO	10/15-16/03	18	18 (100%)	89%
PETRA "extra credit" Training	Golden, CO	10/17/03	12	12 (100%)	100%
<i>Simulation Users Group Luncheon: Exodus</i>	<i>Denver, CO</i>	<i>10/23/03</i>	<i>6</i>	<i>6 (100%)</i>	<i>100%</i>
Coalbed Methane Conference & Field Trip (SPE)	Snowbird, UT	10/24-25/03	116	105 (91%)	11%
GeoGraphix Training, Overview and Refresher	Golden, CO	11/14/03	10	9 (90%)	70%
CrossLog Software Training	Golden, CO	11/19/03	6	5 (83%)	67%
<i>Simulation Users Group Luncheon: Vertex 1000</i>	<i>Denver, CO</i>	<i>11/20/03</i>	<i>10</i>	<i>10 (100%)</i>	<i>90%</i>
Low Cost Software and Data Fair	on-line	Jan & Feb			
USGS Free Data Resources for GIS Applications	Golden, CO	1/14/04	19	17 (89%)	90%
CorelDraw Graphics for Cross Sections	Denver, CO	1/16/04	10	10 (100%)	70%
<i>Simulation Users Group Luncheon: IFLOW Frontier</i>	<i>Denver, CO</i>	<i>1/29/04</i>	<i>13</i>	<i>11 (85%)</i>	<i>92%</i>
Well File 5 Data, Mapping, Cross Sections, & More	Golden, CO	2/11/04	5	2 (40%)	40%
Surfer 8 Contouring, Gridding and Surface Mapping	Golden, CO	2/17/04	11	6 (55%)	72%
Jlog Petrophysics, Wireline Log Analysis	Golden, CO	2/19/04	6	3 (50%)	50%
DOE Neuro3 Neural Network Software	Golden, CO	2/25/04	9	6 (67%)	89%
DOE Boast Black Oil Simulator	Golden, CO	2/25/04	14	10 (71%)	93%
Gas Well Deliquification (ALRDC, SWPSC, others)	Denver, CO	3/1-3/04	277	265 (96%)	85%
GeoPlus PETRA Basic Training	Golden, CO	3/9-10/04	19	15 (79%)	79%
SMT Kingdom: Data Importing, 2d/3d Pak Basics	Golden, CO	3/23/04	21	20 (95%)	91%
SMT Kingdom Suite, 2d/3d Pak Interpretation II	Golden, CO	3/24/04	17	16 (94%)	100%
<i>Simulation Users Group—Using History Match "Miss-Matches" to Adjust Reservoir Description</i>	<i>Denver, CO</i>	<i>3/24/04</i>	<i>13</i>	<i>13 (100%)</i>	<i>92%</i>
SMT Kingdom Suite EarthPAK	Golden, CO	4/6/04	7	7 (100%)	71%
SMT Kingdom Suite VuPAK	Golden, CO	4/7/04	12	12 (100%)	83%
<i>Simulation Users Group: Streamline-Based Simul.</i>	<i>Denver, CO</i>	<i>4/28/04</i>	<i>13</i>	<i>13 (100%)</i>	<i>100%</i>
Oil SPCC Plan Development for Producers	Minot, ND	5/2/04	12	12 (100%)	8%
<i>Simulation Users Group: CO2 and CBM Modeling</i>	<i>Golden, CO</i>	<i>5/26/04</i>	<i>20</i>	<i>20 (100%)</i>	<i>90%</i>
Hydraulic Fracturing: Measurement, Characterization and Analysis (SPE Casper)	Casper, WY	5/27/04	32	24 (75%)	75%
GeoPlus PETRA Training for Encana Summer Interns	Golden, CO	6/1-2/04	11	11 (100%)	9%
GeoGraphix Overview and Refresher	Golden, CO	6/2/04	11	11 (100%)	82%
GeoPlus PETRA Basic Training	Golden, CO	6/3-4/04	19	19 (100%)	89%
Futures in Energy Student Internship (on campus)	Golden, CO	6/13-18/04	13 students, 20 teachers, 8 internships		
Improving Electrical Efficiency in E&P Operations (Energy & Env. Research Center, Univ. of ND)	Bismarck, ND	6/22/04	25	14 (56%)	12%
4 Short Courses @ AAPG-RMS and COGA mtg: >> Identifying and Appraising Coalgas Reservoirs >>Horizontal Technology (Canceled) >> Gas Markets and Pricing Factors >> Influence of Depositional Environments on Coal Stratigraphy (Canceled)	Denver, CO Denver, CO Denver, CO Rock Springs, WY	8/8/04 8/8/04 8/8/04 8/5-8/04	17 19	17 (100%) 19 (100%)	47% 26%
Internet Data Resources: CO, NM, UT (Southwest)	Farmington, NM	9/9/04	To be reported by Southwest		
GeoPlus PETRA Intermediate Mapping	Golden, CO	9/16/04	20	20 (100%)	90%
<i>Simulation Users Group</i>	<i>Denver, CO</i>	<i>9/22/04</i>	<i>15</i>	<i>15 (100%)</i>	<i>87%</i>
Bakken Core Workshop (RMAG)	Denver, CO	9/24/04	70	70 (100%)	89%
FY04 Attendance (35 events, Plus 1 by Southwest, Futures in Energy)			915	843 (92 %)	
Planned Events During 1st Qtr FY05					
What's New in Logging Measurements & Techniques	Casper, WY	10/6/04			
GeoPlus PETRA for Beginners	Golden, CO	10/7-8/04			
<i>Simulation Users Group: Fekete RTA</i>	<i>Denver, CO</i>	<i>10/19/04</i>			
GeoPlus PETRA Intermediate Cross Section	Golden, CO	10/21/04			

GeoPlus PETRA Intermediate Engineering Tools	Golden, CO	10/22/04		
Hydrothermal Dolomite Conference	Golden, CO	11/15/04		
Simulation Users Group: CBM Simulation ECLIPSE	Denver, CO	11/18/04		

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	7	178	165 (93%)	858	4,624	13,795	Quarterly newsletter
2 nd Qtr	13	434	394 (91%)	990	3,977	21,342	
3 rd Qtr	10	162	143 (88%)	834	3,860	16,268	
4 th Qtr	5	141	141 (100%)	778	4,120	10,676	
FY04 Total	35	915	843 (92%)	3,460	4,145	15,520	
FY04 Avg. Attendance = 26 vs. 50 in FY03 (34 Actual vs. 40 Originally Planned)							
FY05: 47 Workshops Planned (7 scheduled during 1st Qtr)							

Regional Website: Website usage is steadily growing on a year-by-year basis. Early in FY04 staff developed the “Low Cost Software and Data Fair.” The Fair provides information about software, organized by application, for software generally costing less than a \$1,000. Training was provided for some of these lesser-known packages. This year staff added the “Coalbed Methane On-line Symposium,” a collection of recent papers and presentations. Intent is to provide an information resource for those unable to attend meetings or conferences. The Core Locator, a map-based index showing where cores are, has been launched. A large subset of Texas BEG data has been posted. Staff is now adding data for the USGS core collection. A proposal supporting further development through a HQ special project was recently approved (Oct 2004). In return for advertising, the region continues to maintain a website for the Wyoming Geological Association.

Workshops/Events: With 35 events during FY04 activity level was **highest among the regions**. Still, compared to FY03 the number of workshops decreased 19% and attendance was down 58%. Four large FY03 co-sponsored events that drew 1,238 attendees did not reoccur during FY04. This difference alone accounts for the drop in attendance. Nineteen software training workshops, where attendance is limited to 20, averaged 12 attendees per workshop. Simulation Users Group meetings, once established, regularly drew 15 people. Excluding one large co-sponsored event (Gas Well Deliquification workshop), attendance at technology workshops averaged 42, on the lower end of the range experienced in other regions. Workshops were delivered in four states, plus there was a cooperative workshop with the Southwest Region in Farmington. The region supported an SPE CBM Conference and developed four short courses (2 canceled) for AAPG’s RMS meeting.

Resource Center: The combined resources of Colorado School of Mines, PTTC and others provide for the PC-based laboratory that is essential for software training. The region has built up a cadre of experienced industry instructors, some of whom will teach in other regions when requested. An earlier project, the website Data Exchange Center, was discontinued because industry usage never grew.

Outreach/Contacts/Newsletter: Compared to FY03 overall contacts increased about 25%. Staff exhibits at selected events (Prospect Fair, Colorado Legislative Reception, Williston Basin Horizontal Drilling Conference, Rocky Mountain Natural Gas Conference). Director Sandra Mark is well networked within the AAPG community. With strong commitment from the PAG, this year’s “Futures in Energy” student internship program drew 13 students and 20 teachers. Internships were found for eight students. More than \$21,000 of support was raised. Circulation for the region’s eight-page quarterly newsletter has grown to nearly 2,100. In addition to technical articles and workshop announcements, a popular feature is interviews with PAG members.

Problem Identification: Industry needs and directions for future activities are determined by feedback from workshop participants, contacts at industry events, inquiries, and PAG input.

Follow-up: Acting on attendee suggestions from the Horizontal Drilling Conference, a Bakken Core Workshop was presented at the USGS Core Research Center in Denver. Numerous attendee comments indicated that the information would help guide their leasing strategy and/or completion techniques in this hot play.

PTTC South Midcontinent Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (40 + MWC Trade Fair)			1,300	1,147 (88%)	
FY04 Attendance, Planned Events During Upcoming Quarter					
<i>Lunch and Learn: Evaluating Hydraulic Fractured Gas Wells (AOGC/SPE)</i>	<i>Ft. Smith, AR</i>	<i>10/1/03</i>	32	32 (100%)	0%
AAPG Midcontinent PTTC Session	Tulsa, OK	10/13/03	40	30 (75%)	50%
Polymer Treatments, High Water Cut Wells (MWC)	Tulsa, OK	10/14/03	25	24 (96%)	32%
Polymer Treatments, High Water Cut Wells (MWC)	Oklahoma City, OK	10/15/03	22	20 (91%)	30%
Cromwell Play (Oklahoma Geological Survey)	Norman, OK	10/22/03	87	72 (83%)	93%
Trouble Shooting Rod-Pumped Wells (MWC)	Woodward, OK	11/4/03	24	24 (100%)	52%
<i>Lunch and Learn: New Tilted Bed Fracturing Model (AOGC/SPE)</i>	<i>Ft. Smith, AR</i>	<i>11/5/03</i>	24	24 (100%)	50%
Trouble Shooting Rod-Pumped Wells (MWC)	Pawhuska, OK	11/6/03	27	22 (81%)	48%
Cromwell Field Trip (Oklahoma Geological Survey)	Ada, OK	11/12-13/03	40	29 (73%)	90%
Cromwell Play (OGS, OCGS)	Oklahoma City, OK	11/17/03	27	23 (85%)	74%
Cromwell Play (OGS, TGS)	Tulsa, OK	12/3/03	28	23 (82%)	68%
Basics of Gas Quality and Gas Processing (MWC)	Tulsa, OK	1/14/04	26	24 (92%)	19%
Basics of Gas Quality and Gas Processing (MWC)	Oklahoma City, OK	1/15/04	21	19 (90%)	19%
Oklahoma Aggregates Association (field trip)	Oklahoma City, OK	2/4/04	48	48 (100%)	
Oklahoma Aggregates Association (meeting)	Oklahoma City, OK	2/5/04	132	132 (100%)	
Asphaltene and Paraffin (MWC)	Oklahoma City, OK	2/4/04	23	23 (100%)	35%
Asphaltene and Paraffin (MWC)	Tulsa, OK	2/10/04	27	25 (93%)	26%
Asphaltene and Paraffin (MWC)	Pawhuska, OK	2/11/04	7	7 (100%)	29%
<i>Lunch and Learn: SPE President (AOGC, SPE)</i>	<i>Ft. Smith, AR</i>	<i>2/17/04</i>	35	35 (100%)	
Oil and Gas Measurement (MWC)	Enid, OK	3/2/04	17	17 (100%)	7%
<i>Lunch and Learn: Bore Hole Imaging (AOGC, SPE)</i>	<i>Ft. Smith, AR</i>	<i>3/3/04</i>	40	40 (100%)	
Unconventional Energy Resources in the Southern Midcontinent (Oklahoma Geological Survey)	Oklahoma City, OK	3/9-10/04	344	310 (90%)	53%
Oil and Gas Measurement (MWC)	Ada, OK	3/9/04	3	3 (100%)	0%
Oil and Gas Measurement (MWC)	Tulsa, OK	3/16/04	27	25 (93%)	30%
Oil and Gas Measurement (MWC)	Oklahoma City, OK	3/17/04	32	31 (97%)	38%
<i>Lunch and Learn: Why Shut The Well In, Already Got the Data (AR O&GC, SPE Ft. Smith)</i>	<i>Fort Smith, AR</i>	<i>4/14/04</i>	25	25 (100%)	
Independents' Day @ SPE/DOE IOR Symposium (North Midcontinent)	Tulsa, OK	4/20/04	To Be Reported by North Midcontinent		
AAPG Student Expo & Field Trip	Norman, OK	4/22-24/04	190 @ expo; 15 on field trip		
<i>Optimized Gas Well Completions and Operations (AR O&GC, SPE Ft. Smith)</i>	<i>Fort Smith, AR</i>	<i>5/19/04</i>	23	23 (100%)	
Coalbed Methane (AOGC, OGS)	Fort Smith, AR	7/22/04	59	54 (92%)	
Jackfork and Atoka Deepwater Reservoirs (OGS)	Norman, OK	8/18/04	75	53 (71%)	84%
Methods of Recompleting Wells and Workovers	El Dorado, AR	9/29/04	53	50 (94%)	43%
<i>Lunch and Learn: Arkoma Basin Roots of Managed Pressure Drilling In Marine Environments (SPE)</i>	<i>Fort Smith, AR</i>	<i>9/30/04</i>	26	19 (73%)	
FY04 Attendance (31 events, Plus 1 by North Midcontinent)			1,419	1,286 (91%)	
Planned Events During 1st Qtr FY05					
Stratigraphic and Structural Evolution of the Quachita Mountains & Arkoma Basin	Poteau, OK	10/21-23/04			
MWC Trade Fair	Oklahoma City, OK	10/26/04	A significant outreach event		
1 st Annual Midcontinent CBM Symposium	Tulsa, OK	11/7-9/04	To be reported by North Midcontinent		
<i>SPE Ft Smith Lunch and Learn</i>	<i>Ft Smith, AR</i>	<i>12/TBD</i>			

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	11	376	323 (86%)	274	276		Quarterly newsletter, plus broad OGS mailings
2 nd Qtr	14	782	739 (95%)	310	614		
3 rd Qtr	2	48	48 (100%)	309	346		
4 th Qtr	4	213	176 (83%)	310	826		
FY04 Total	31	1,419	1,286 (91%)	1,203	516		
FY04 Avg. Attendance = 46 vs. 33 in FY03 (31 Actual vs. 35 Originally Planned)							
FY05: 27 Workshops Planned (2 plus 1 w North Midcontinent scheduled during 1st Qtr)							

Regional Website: Intentionally, considering industry feedback, there has not been a strong emphasis on the website. It serves basic calendar/connections functions. Statistics, which have been captured only since mid-2003 and are not those captured by WebTrends™ software, do show a modest increase. Basic O&G data, a draw in many regions, are available through NRIS and others. Usage of MWC website is not reflected in above since PTTC provides support for only some of their workshops and their Trade Fair.

Workshops/Events: With 31 events during FY04 activity level was **second highest among the regions**. Still, compared to FY03 the number of workshops decreased 44%. Two factors contributed to the decrease. First, with decreased funding support for MWC, PTTC now only co-sponsors part of their workshop program—13 activities in FY04 versus 26 in FY03. Second, eight PUMP-related workshops were held in FY03. Even with the decrease in number of activities, overall attendance actually increased. In large part this is due to the very successful OGS two-day conference on “Unconventional Resources,” which was attended by 344 people. Another well attended meeting was the Oklahoma Aggregates Association meeting. Excluding these two large events, attendance averaged 33 individuals per workshop, which is the same as FY03. The program in Arkansas has been strengthened. PTTC supports SPE luncheon meetings in Fort Smith (7 in FY04) plus one or two workshops per year in both northern and southern Arkansas. PTTC continues tech transfer support (5 events in FY04) for play-based work completed by OGS.

Resource Center: Although not part of PTTC, OPIC (Oklahoma Petroleum Information Center), the new core facility operated by OGS, deserves mention as a major resource now available to operators. The CBM database developed by OGS also serves industry well. When needed, full information resources are available through OU’s Youngblood Energy Library.

Outreach/Contacts/Newsletter: Overall contact activity was down slightly, some 12%. General outreach is achieved through exhibiting (AAPG national meeting), exhibiting/sponsoring (Oklahoma Aggregates Association, AAPG Spring Student Expo) and developing activities for selected organizations. This year’s AAPG/SEG Student Expo exposed more than 200 future professionals to PTTC. As an example of developing activities for others, OGS hosted OERB’s 2004 Educator Retreat, providing a workshop and field trip for 88 science school teachers and OERB staff. A field trip has been developed for IOGCC’s annual meeting (Oct 2004). And as it has done for years the region will support MWC’s Trade Fair (Oct 2004 in Oklahoma City).

Problem Identification: Industry needs and directions for future activities are determined by feedback from workshop participants, contacts at industry events, inquiries, and PAG input.

Follow-up: Producers continue to realize benefits from the play-oriented studies. Examples from the Hunton Play were outlined in FY03’s annual report. FY04 effort focused on the Cromwell Play and Jackfork/Atoka. Operators in southern Arkansas responded positively to information on recompleting/reworking mature wells.

PTTC Southwest Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (11 events, plus 1 by Texas)			402	340 (85 %)	
FY04 Attendance					
Brushy Canyon FEE Tool	Albuquerque, NM	10/28-29/03	18	4 (22%)	
Electronic Resources for NM Producers	Roswell, NM	11/13/03	21	18 (86%)	30%
2003 Annual CO ₂ Conference (CEED, others)	Midland, TX	12/9-12/03	Reported by Texas Region		
Produced Water Management & Issues	Farmington, NM	4/1/04	51	41 (80%)	37%
Soil Remediation (Texas)	Hobbs, NM	6/16/04	39	29 (74%)	7%
Pit Rules and Guidelines Public Forums (NM OCD)	Santa Fe, NM	6/21/04	11	10 (95% est.)	35% est.
Pit Rules and Guidelines Public Forums (NM OCD)	Hobbs, NM	6/22/04	50	48 (95% est.)	35% est.
Pit Rules and Guidelines Public Forums (NM OCD)	Artesia, NM	6/23/04	40	38 (95% est.)	35% est.
Pit Rules and Guidelines Public Forums (NM OCD)	Farmington, NM	6/24/04	58	55 (95% est.)	35% est.
Internet Data Resources: Colorado, New Mexico, Utah (Rocky Mountain)	Farmington, NM	9/9/04	34	30 (93%)	35%
FY04 Attendance (9 events, plus 1 by Texas)			322	273 (85%)	
Planned Events During 1st Qtr FY05					
Devonian FEE Tool Training (PRRC)	Roswell, NM	12/1/04			
2004 CO ₂ Conference (Texas)	Midland, TX	12/9-10/04	To be reported by Texas		
Stranded Gas and Power Reduction (Texas)	Midland, TX	12/15/04	To be reported by Texas		

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	2	39	22 (56%)	159	17,615	73,245	Column in biannual PRRC newsletter; on-line
2 nd Qtr				147	21,865	120,459	
3 rd Qtr	6	249	221 (89%)	186	20,776	87,311	
4 th Qtr	1	34	30 (88%)	181	22,514	106,276	
FY04 Total	9	322	273 (85%)	673	20,693	96,823	
FY04 Avg. Attendance = 36 vs. 37 in FY03 (9 Actual vs. 6 Originally Planned)							
FY05: 6 Workshops Planned (1 plus 2 w Texas scheduled during 1st Qtr)							

Regional Website: Website usage, which includes the primary GO-TECH website, the PTTC website and the relatively new State Lands website, continues to rise steadily, exceeding 22,000 user sessions per month in 4th Qtr FY04. Beyond routine calendar and maintenance functions, most effort goes toward improving access to public domain data. Substantial effort during FY04 has been expended on improving both data quality and presentation, as well as website functionality.

Workshops/Events: Compared to FY03 workshop activity and attendance decreased modestly, some 20%. Average attendance of 36 is on the lower end of the range seen in other regions, not unexpected considering industry concentration in New Mexico. Cooperative workshops with the Texas Region included the 2003 CO₂ Conference, Soil Remediation, and the PUMP-developed "Produced Water" workshop. The region also worked with the Rocky Mountain Region in an "Internet Data Resources" workshop in Farmington. OCD's "Pit Rules and Regulations" workshop, which was held in four locations, was another cooperative event. Cooperative workshops have proven to be very successful, as all producing regions of the state extend across state boundaries.

Resource Center: Usage of the State Land Office Database and website is now in the range of 2,000 user sessions per month. Existing on-line databases are continually being refined and/or expanded. New functionality has added flexibility to the website, permitting users to access and summarize data in different ways.

Outreach/Contacts/Newsletter: Compared to FY03 there was a modest decrease in overall contacts, some 15%. Staff continues their proactive tradition of visiting producers in both southeast and northwest New Mexico. Data projects create opportunities for frequent interaction with appropriate state agencies. Technical work and technology transfer from DOE-supported projects at PRRC are yet another avenue for industry contact. The semi-annual PRRC newsletter, in which PTTC has a column, is circulated to about 3,200 people. There is also an on-line newsletter.

Problem Identification: Industry needs and directions for future activities are determined by feedback from workshop participants, contacts at industry events, inquiries, and PAG input. Long standing produced water and data access issues remain a priority. A New Mexico Request for Proposals for new ways to conserve and create water increased producers' interest even more. Pit issues, which were partially addressed in the series of workshops with OCD, arose as new/impending rules would adversely affect drilling costs in some areas.

Follow-up: Of particular interest this year was the notice that industry is taking of produced water issues – not just management and reduction, but reuse. The region has sponsored several workshops over the past couple of years that have addressed this issue, and partly as a result of these workshops, interest is quite high. Contacts with state government officials have increased their awareness of this issue, and this has resulted in the establishment of a “Governor’s Water Initiative Fund,” some of which will be used to study produced water treatment. The DOE-sponsored PUMP project at PRRC to create a produced water inventory for the state has resulted in an extensive database that will be released soon on the regional website. We have already had a number of contacts from industry regarding this database as producers become eager to learn more about produced water quality and quantity within the state. PRRC’s Industry outreach group was also awarded a small contract from the New Mexico State Land Office (SLO) to investigate ways of increasing interest/revenues from state oil and gas lease sales. Previous work with the SLO involved making more of their data available on the Internet. Positive results and industry feedback from this prompted SLO to look at more ways of utilizing the Internet, including the possibility of allowing Internet bidding during lease auctions.

PTTC Texas Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (12 events, plus 4 by others)			1,054	967 (92 %)	
FY04 Attendance, Planned Events During Upcoming Quarter					
<i>Lunch & learn: Low-Cost Rod Pump Control (eP Solutions)</i>	Midland, TX	10/16/03	26	26 (100%)	35%
<i>Lunch & learn: Low-Cost Rod Pump Control (eP Solutions)</i>	Houston, TX	10/21/03	19	16 (84%)	13%
2003 Annual CO ₂ Conference (CEED, others)	Midland, TX	12/9-12/03	287	270 (93%)	
PTTC/BEG Permian Basin (Topical Work Group)	Midland, TX	1/15/04	60	57 (95%)	32%
Soil Remediation (Central Gulf)	Tyler, TX	1/21/04	42	39 (93%)	7%
<i>Lunch & learn: Low-Cost Rod Pump Control (eP Solutions)</i>	Farmers Branch	3/18/04	12	12 (100%)	8%
<i>Lunch & learn: Low-Cost and Efficient Digital Collection of Production Data Using Hand-Held Units (IHS Energy)</i>	Midland, TX	3/31/04	12	12 (100%)	42%
Hand-held/Laptop Production Data Capture (PPOA)	Amarillo, TX	5/18/04	12	12 (100%)	100%
Operators Working in Offshore Texas State Waters Royalty Leases (STARR, Texas BEG)	Houston, TX	6/15/04	21	20 (95%)	10%
Soil Remediation (Southwest)	Hobbs, NM	6/16/04	To Be Reported by Southwest		
Barnett Shale Symposium (Ellison Miles)	Farmers Branch	6/22-23/04	200	190 (95%)	
Produced Water & Associated Issues (TX Alliance)	Tyler, TX	7/18/04	25	25 (100%)	
Reservoir Fluids (Core Labs)	Houston, TX	7/28/04	44	40 (91%)	32%
Polymer and Polymer-Gel Water Shutoff Trtmts: What It Takes To Be Successful & Field Applns	Houston, TX	8/25/04	34	30 (88%)	7%
FY04 Attendance (13 events, plus 1 by Southwest)			794	749 (94 %)	
Planned Events During 1st Qtr FY05					
Tech Session @ PBPA	Midland, TX	10/28/04			
Tech Session @ IPAA (Headquarters)	Austin, TX	10/28/04	HQ-coordinated event within Texas		
Unconventional Gas Reservoirs Symp.	Farmers Branch	11/3/04			
Produced Water Seminar (Texas Alliance)	Wichita Falls, TX	11/4/04			
Essentials of Subsurface Mapping	San Antonio, TX	11/10/04			
Permian Basin Initiative Workgroup	Midland, TX	11/30/04			
<i>Lunch & learn: Well Optimization Using New Automation & Remote Monitoring Tech. (Metrix)</i>	Midland, TX	12/1/04			
Permian Basin Initiative Workgroup	Houston, TX	12/7/04			
Deep Gas Well Stimulation (DOE)	Houston, TX	12/8/04			
2004 Annual CO ₂ Conference (CEED & others)	Midland, TX	12/9-10/04			
Stranded Gas and Power Cost Reduction (Swest)	Midland, TX	12/15/04			

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	3	332	312 (94%)	1,122	8,434	19,512	Quarterly newsletter
2 nd Qtr	4	126	120 (95%)	969	8,494	21,543	
3 rd Qtr	3	233	222 (95%)	853	7,823	14,298	
4 th Qtr	3	103	95 (92%)	441	9,305	17,032	
FY04 Total	13	794	749 (94%)	3,385	8,514	18,096	
FY04 Avg. Attendance = 61 vs. 88 in FY03 (13 Actual vs. 9 Originally Planned)							
FY05: 14+ Workshops Planned (10 plus 1 w HQ scheduled during 1st Qtr)							

Regional Website: Compared to FY03 website usage increased about 50%. Traffic to TIPRO's website, considered as general outreach, has now risen to some 250,000 user sessions per month. The Discussion Forum that the region initiated late in FY03 never received the usage anticipated and has been discontinued. ListServ capabilities are used extensively for outreach. The website is periodically examined and changes are often made to increase content, usability, and sometimes just the look itself. With the Barnett Shale being one of the hottest plays in the U.S., staff developed a website subsection devoted strictly to the Barnett Shale to serve industry's voracious demand for information. Website registration has proven to be a valuable time saver for staff.

Workshops/Events: Compared to FY03 workshop activity attendance decreased about 25%, although the number of activities was essentially the same as FY03. There were three large co-sponsored events in FY03 compared to two in FY04 (2003 CO₂ Conference, Barnett Shale Symposium). The cooperative Barnett Shale Symposium was a huge success, drawing 200 people. Ellison Miles is a satisfied partner and there will be future cooperative events there. Excluding the two large co-sponsored events this year, attendance averaged 28, which is on the low end compared to other regions. The region is adept at recognizing cooperative opportunities to supplement planned workshop activities. A prime example is the "Polymer Gel" workshop in Houston. New Mexico Tech's PRRC group was finishing a major research effort and wanted PTTC to help them deliver a workshop in Houston. Staff from the region and HQ worked together for this to happen. Events provided good coverage in Texas—the Permian Basin, Dallas/Fort Worth area, East Texas, South Texas and Houston. Staff worked with both the Central Gulf and Southwest regions in co-sponsoring some events. Several *lunch and learn events* provided vendors (who bought lunch) an opportunity to present their new technologies. North Midcontinent Director Rodney Reynolds and Texas Permian Basin Program Director Bob Kiker delivered their "Produced Water" workshop in Tyler. This workshop was also presented in the Midwest Region, and it will be presented early in FY05 in Wichita Falls. Other "Work Group" events leveraged work proceeding at BEG.

Resource Center: Through BEG extensive data and information resources are available for those willing to come to Austin (and now the Houston core facility). An on-line searchable database developed by BEG of all geologic and geophysical materials helps users know what is available for them in BEG's facilities. BEG is also cooperating with the Rocky Mountain Region as they develop their Core Locator project. Early in the year Bob Kiker took on the task of talking with operators and their pumpers to learn what different hardware/software systems they were using for capturing field data digitally, and how they felt about what they were doing. He shared insights in *PTTC Network News* and has developed a workshop format to convey information.

Outreach/Contacts/Newsletter: Compared to FY03 overall contacts decreased about 30%, but it must be noted that FY03 contacts were significantly above historical norms. A significant number of Internet-related contacts are also made by TIPRO. Through TIPRO and sometimes PTTC itself, the region has a presence at TIPRO and Texas Alliance meetings. This year's annual meeting of the Panhandle Producers and Royalty Owners Association (PPROA) was supported with the "Field Data Capture" workshop. For the last two years Kiker has developed a tech session for Permian Basin Petroleum Association's annual meeting. Circulation for the region's quarterly newsletter has grown to 2,500. Kiker's monthly column in the Energy Section of the Midland Reporter-Telegram (circ. 25,000) has proved extremely valuable for promoting events. Announcements are also made in association and SPE Permian Basin newsletters. Director Scott Tinker makes frequent presentations across Texas (and the U.S. for that matter), and Kiker also frequently gives presentations (Southwest Petroleum Short Course, NAPE, AAPG Midcontinent for example this year).

Problem Identification: Industry needs and directions for future activities are determined by feedback from workshop participants, contacts at industry events, inquiries, and PAG input. The region is also alert to "opportunities" that frequently arise for co-sponsored events.

Follow-up: Bob Kiker and Rodney Reynolds delivered their "Produced Water/Wellbore Management" workshop in Wichita Falls in early Nov 2004. Within one month, a producer operating about 200 wells that were experiencing high failure rates had already taken action—setting up a database and identifying poor practices—and was making more specific inquiries as problems were identified.

PTTC West Coast Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) Industry	
Workshop History: FY03 Attendance (14 events plus COMET)			583	383 (66 %)	
FY04 Attendance, Planned Events During Upcoming Quarter					
Economics of Oilfield Automation	Valencia, CA	10/30/03	41	34 (82%)	91%
Technology and Economics of Horizontal and Multilateral Wells	Valencia, CA	11/20/03	56	39 (70%)	87%
Economic Optimization in Marginal Fields— Anniversary Forum w Tech Transfer Awards	Los Angeles, CA	12/18/03	38	32 (84%)	88%
A Diatomite Workshop	Valencia, CA	1/29/04	93	71 (76%)	97%
CEC-PTTC PUMP Water Control Workshop	Los Angeles, CA	2/12/04	59	47 (80%)	83%
Fracturing Stimulation for California Oilfields	Valencia, CA	2/26/04	67	45 (67%)	91%
Short Course: “Geologic and Engineering Analysis for Coalbed Methane Resource Assessment and Development” at Alaska 2004 Unconventional Gas	Anchorage, AK	3/9/04	39	30 est (77%)	
Facilities Design, Rebuilding and Repairing	Valencia, CA	4/22/04	58	30 (52%)	90%
Case Studies of Power Consumption Reduction in California Oilfields (Global Power Systems)	Los Angeles, CA	5/27/04	46	36 (78%)	92%
COMET Student Internship (USC, Others)	Los Angeles, CA	6/20-25/04	15 students, 2 teachers, 3 internships		
Role of Faults in California Oilfields, workshop	Valencia, CA	8/18/04	57	30 (53%)	93%
Role of Faults in California Oilfields, field trip	Valencia, CA	8/19/04	41	31 (76%)	90%
Revitalizing California Mature Oilfields; Incentives, Opportunities and Challenges	Valencia, CA	9/23/04	49	34 (69%)	97%
FY04 Attendance (12 events plus COMET)			644	459 (71 %)	
Planned Events During 1st Qtr FY05					
Coiled Tubing Application and Operations	Valencia, CA	10/21/04			
Waterflood Enhancement and Management	Los Angeles, CA	12/3/04			

FY04 Statistical Summary By Quarter							
	Workshops			Industry Contacts	Website (mo. Avg.)		Newsletter
	#	Attend	Industry No. (%)		User Sessions	Page Views	
1 st Qtr	3	135	105 (78%)	76	2,224	6,526	Only CIPA announcements; email alert
2 nd Qtr	4	258	193 (75%)	66	2,424	6,552	
3 rd Qtr	2	104	66 (63%)	66			
4 th Qtr	3	147	95 (65%)	61	2,867	8,593	
FY04 Total	12	644	459 (71%)	269	2,505	7,224	
FY04 Avg. Attendance = 54 vs. 42 in FY03 (12 Actual vs. 13 Originally Planned)							
FY05: 11 Workshops Planned (2 scheduled during 1st Qtr)							

Regional Website: Usage, which appears to be slowly increasing, is now approaching 3,000 user sessions per month. Beyond routine maintenance and updating, the primary website focus is posting speaker presentations when permission is obtained. Postings for three FY04 events, one in video format, were added this year.

Workshops/Events: Twelve events, including one in Alaska, drew combined attendance of 644. This represents a modest increase compared to FY03. The majority of the California workshops were held in Valencia, which is accessible to both Los Angeles Basin and Bakersfield audiences. Average attendance increased to more than 50 individuals per workshop. Highest attendance of 93 was at the “Diatomites” workshop in January. Topics covered the full spectrum of geology, engineering and operations issues. Speakers that are recognized industry experts typically present concepts that, although sometimes difficult for smaller independents to apply, offer potential. PAG members serve as moderators for most workshops. The annual Anniversary Forum in December

focused on “Economic Optimization in Marginal Fields.” It included remote video presentations from DOE speakers and was webcast live in its entirety. Two workshops especially had a case study focus: the February “CEC-PTTC Water Control” workshop as part of PTTC’s PUMP project and the May Global Energy Partner workshop on “Power Consumption Reduction in California Oilfields.” The Power Consumption workshop, which included remote participation from Houston, was also webcast. PAG members are actively involved in regional workshops, helping shape agendas and often serving as moderators. PAG members contributed 553 hours during FY04. Speakers contributed another 1,066 hours during the year.

Resource Center: As part of the PUMP project, staff has developed templates that will help operators recognize, based on the pattern exhibited by water:oil ratio (WOR) versus cumulative oil recovered plots, probable underlying causes of excessive water production. At yearend templates were being tested against a number of wells in the California waterflood database. When refined, these templates will become public information.

Outreach/Contacts/Newsletter: In recent years the region has made tech transfer awards to companies whose products have helped small- and medium-size companies in California. During the December Anniversary Forum Schlumberger received two awards—for their Wireline-Conveyed Well Tractor and for their InterACT real time data system. Hydraulic Rod Pump International also received an award for their hydraulic rod pump. Another valuable outreach program, California Oilfield Mentoring Entrepreneurial Training (COMET) educates promising students about the O&G industry, exposes them to field operations through field trips and provides follow-on summer internships. This year 15 students and two science teachers participated. The region does not publish a newsletter, instead alerting industry to upcoming events through CIPA and email alerts. Findings from the region’s PUMP work were leveraged through a paper delivered by Don Duttlinger at the International Petroleum Environmental Conference in Oct 2003. Two abstracts submitted on PUMP work have been accepted for the SPE Western Regional meeting in spring 2005.

Problem Identification: The region relies heavily on input from past workshop participants, shaped by PAG insights, to determine workshop topics. Each year’s agenda typically covers topics across the spectrum. Personal interactions within the PUMP project provided additional insight, much of it regarding problems associated with excess water production.

Follow-up: Within the PUMP project contracts have been signed with three producers—Brea Canyon, Breitburn and Plains Resources, for projects to demonstrate solutions for controlling excess water production. Field work should begin late 2004/early 2005 and be completed by summer 2005.

Roster—PTTC Regional Lead Organizations

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**Petroleum Technology Transfer Council
Board of Directors**

OFFICERS:

Chair	Brook Phifer	Nico Resources, LLC	Littleton, CO
Vice Chair	Brian Sims	Independent	Madison, MS
Immed. Past Chair	James E. Bruning	Bruning Resources, LLC	Fort Smith, AR
Exec. Director & Sec/Treas (non-voting)	Don Duttlinger	PTTC	Houston, TX

(Note: Officers serve 1-yr. terms that extend through the next annual meeting of the Board)

DIRECTORS**REPRESENTING:***REGIONS:*

Appalachian	Bernie Miller	Bretagne Corp.	Lexington, KY
Central Gulf	Joe Jacobs	Gas Masters of America, Inc.	Monroe, LA
Eastern Gulf	Karl Kaufmann	Valioso Petroleum Co.	Flowood, MS
Midwest	Richard Straeter	Continental Resources of IL	Mount Vernon, IL
Rocky Mountain	Robert McDougall	Westland Energy Inc.	Cody, WY
Southwest	David Boneau	Yates Petroleum Corp.	Artesia, NM
North Midcontinent	Mark Shreve	Mull Drilling Co., Inc.	Wichita, KS
South Midcontinent	Fletcher Lewis	Fletcher Lewis Eng.	Oklahoma City, OK
Texas	Gene Ames III	The Nordan Trust	San Antonio, TX
West Coast	Mark Kapelke	Tidelands Production Co.	Long Beach, CA
Regional Lead Orgs.	Dave Morse	Illinois Geological Survey	Champaign, IL

ORGANIZATIONS:

Indep. Petrol. Assoc. Of America	Steve Layton	E&B Natural Resources	Los Angeles, CA
Interstate Oil & Gas Compact Comm.	John T. King	MI Public Service Comm.	Lansing, MI
American Assoc. of Pet. Geologists	Eddie David	David Petroleum Corp.	Roswell, NM
Society of Explor. Geophysicists	Hugh Rowlett	ConocoPhillips	Houston, TX
Society of Petroleum Engineers	Ken Oglesby	Oak Resources Inc.	Tulsa, OK

INDUSTRY SECTORS:

Service Cos.	Jay Haskell	Schlumberger Oil Field Svcs.	Houston, TX
Large E&P Cos.	Robert Lestz	ChevronTexaco	Houston, TX

Alternate Directors

Representing:

Appalachian	David Wozniak	Belden & Blake Corp.	North Canton, OH
Central Gulf	Bob Meredith	Vada Energy LLC	Port Allen, LA
Eastern Gulf	Bob Schneeflock	Paramount Petroleum	Ridgeland, MS
Midwest	Michael T. Gibbons	Elysium Energy LLC	Crossville, IL
Rocky Mountain	Bob Lamarre	Lamarre Geol. Enterprises	Denver, CO
Southwest	T. Greg Merrion	Northstar Oil & Gas	Farmington, NM
North Midcontinent	James Daniels	Murfin Drilling Co., Inc.	Wichita, KS
South Midcontinent	Vacant		
Texas	Allen Gilmer	Vecta Exploration, LTD	Austin, TX
West Coast	James C. Hall	Drilling and Production	Torrance, CA
Regional Lead Orgs.	Douglas Patchen	West Virginia University	Morgantown, WV
IOGCC	Freed Steece	SD Dept of Env./Nat Res	Rapid City, SD
SEG	Robert Graebner	The Information Store	Houston, TX
SPE	Michael Gatens	MGV Energy, Inc	Calgary, AB Can
Service Cos.	Jay Haskell	Schlumberger	Houston, TX
Large E&P Cos.	Greg Reep	ChevronTexaco	San Ramon, CA

Management & Budget (M&B) Committee

Position:

M&B Committee Chair, and Board Vice Chair	Brian Sims	Madison, MS
Current Board Chair	Brook Phifer	Littleton, CO
Immediate Past Board Chair	James E. Bruning	Fort Smith, AR
M&B Committee Member	Robert McDougall	Cody, WY
M&B Committee Member	Gene Ames	San Antonio, TX
Executive Director (ex-officio, non-voting)	Don Duttlinger	Houston, TX

Notes from the by-laws:

- The terms served by Alternate Directors are the same as for the Directors they represent.
- Officers do not have Alternates. Officers may succeed themselves.
- Members of the Nominating Committee and the Management & Budget Committee who are Officers have terms on these committees that are linked to their terms as Officers. Other committee members have terms that are concurrent with their Board membership.

Petroleum Technology Transfer Council

Guide for Professional and Ethical Conduct

The Petroleum Technology Transfer Council (PTTC) is a national not-for-profit organization that is tax-exempt under Section 501(c)(3) of the IRS code. PTTC is not a membership organization, although there are volunteer members of the Board of Directors, its committees, and the Producer Advisory Groups. This Guide for Professional and Ethical Conduct applies to all members of those groups, as well as the national and regional PTTC staff and contractors. These dedicated professionals recognize their responsibility to PTTC and those it serves in carrying out the organization's mission:

"PTTC benefits the nation by helping U.S. independent oil and gas producers make timely, informed technology decisions."

PTTC, embodied by its representatives and staff, recognizes its responsibility to pursue its mission while maintaining the high standards of professional and ethical conduct summarized below.

- **Ethical Behavior:** PTTC will be guided in all of its affairs by high standards of business ethics and professional conduct, striving to maintain honesty, integrity, fairness, impartiality, and trust. PTTC will strive to avoid making false, misleading, or unwarranted statements or representations.
- **Service, Quality, Professionalism:** Every PTTC action and activity will be performed in a manner that fosters the organization's mission. PTTC will professionally deliver products and services of the highest possible quality.
- **Confidentiality:** When those being served by PTTC require secrecy, PTTC will treat as confidential any knowledge of proprietary data or information as directed by those providing such data or information.
- **Referrals, Self-Interest:** For those it serves, PTTC will provide unbiased referrals to the best solution providers for their problems. PTTC will deny any use of its structure or program for individual or organizational self-interest. Any potential conflict of interest that might influence (or appear to influence) the judgment, fairness, and quality of PTTC's performance in any way will be disclosed immediately.
- **Copyrights, Cooperation:** PTTC will honor the copyrights and other intellectual property rights of speakers, authors, and other sources of published information. PTTC will appropriately recognize the work done by others, avoid plagiarism, and avoid accepting credit due to others.
- **Opportunity:** PTTC will make every effort to ensure that its structure and programs are carried out without bias due to race, religion, gender, age, national origin, or handicap.
- **Public Welfare:** PTTC will hold paramount the safety, health, and welfare of the public in all of its programs and activities, and act in accordance with all applicable laws.

Note: Statement adopted by the PTTC Board of Directors on December 6, 1998

Petroleum Technology Transfer Council

Conflict of Interest Policy Statement

The Petroleum Technology Transfer Council (PTTC) strives to carry out all of its activities in accordance with the “Guidelines for Professional and Ethical Conduct,” as adopted by the Board of Directors on December 6, 1998. To further clarify PTTC’s position on issues related to conflict of interest and confidentiality, the Board hereby adopts this “Conflict of Interest Policy Statement.”

Need for Policy

Most individuals involved with PTTC have multiple interests and affiliations and many hold various positions of responsibility within the industry and community. In matters related to the mission of PTTC, Board members and alternates (which includes elected officers) are expected to uphold the interests of the Council and its obligations to the public trust.

This policy applies only to conflicts of interest in personal or business interests; it does not apply to political, philosophical, or professional differences of opinion. It recognizes that both real and apparent conflicts of interest sometimes occur in the course of conducting PTTC affairs. As a not-for-profit educational organization that is tax-exempt, it is important for PTTC to avoid even the appearance of a conflict of interest.

Conflict of Interest Policy

PTTC adopts this policy to serve as an official process through which any potential conflict of interest problems can be rendered harmless to all concerned. The policy requires that the following steps are taken:

- A. All Board members and alternates shall disclose any real or apparent conflicts of interest in connection with PTTC’s activities that they discover, or that have been brought to their attention. In this event, a written description of the situation shall be provided to the Executive Director who will take appropriate steps as needed, under the guidance of the Management and Budget Committee.
- B. Any Board members and alternates making such a disclosure is prohibited from being involved in PTTC affairs that are specifically related to such conflicts, including making motions, voting, executing agreements, or taking any other similar action.
- C. The official meeting minutes shall reflect that such disclosure was made, and that the Board member or alternate was absent from any discussion and vote on the matter in question.
- D. A copy of this conflict of interest policy shall appear in the orientation materials for new directors and shall be included in all official reference materials for the Council.

Note: Statement adopted by PTTC Board of Directors on March 30, 1999



Statement of Identity

The Petroleum Technology Transfer Council (PTTC) enables independent operators to make timely, informed exploration and production (E&P) decisions through practical, targeted information and connections to technology solutions. As a regionally focused national non-profit organization, PTTC has an 8-year record of growth in meeting the technology needs of US independent oil and gas producers. PTTC's primary customers are independent producers, who drill 85 percent of all US wells. As a group, they produce 60 percent of US natural gas and 40 percent of crude oil.

Independents face technology decisions every day, such as whether to address an opportunity or problem with technology, what solution to use, whether it is cost-effective and how to use it. The PTTC program helps producers make these decisions through its three core services. First, it helps identify and clarify producers' problems and makes them aware of technology opportunities. Second, it educates producers about technology solution options. Third, it connects producers to these solution sources. Thus, by providing problem identification, education, and connections, PTTC achieves its mission:

"To strengthen the U.S. independent oil and natural gas industry for the benefit of consumers and the nation by helping producers make timely, informed technology decisions."

Through its 10 Regional Resource Centers, PTTC offers expert assistance, information resources, and referrals. Services also include demonstrations of E&P software solutions, and technology workshops held around the country on a variety of topics. In addition, PTTC's newsletters, websites, case studies and reports cover a range of information and databases.

All PTTC products and services – nationally and regionally – can be grouped into program lines: (1) exploration (2) drilling & completion, (3) development & reservoir, (4) operations & production, and (5) environmental.

PTTC is more than just an information clearinghouse. It supports producer technical decision processes – from early awareness of problems and opportunities to the point that the customer selects the right solution provider.

In addition to independent producers, PTTC focuses on two other market segments. The first group, technology solution providers, include service companies/vendors, the US Department of Energy, national labs, consultants, the Gas Research Institute, academia, professional societies, industry R&D organizations, etc. The other group is PTTC's supporters/funders.

PTTC delivers value to all the market segments it serves. Solution providers benefit when PTTC educates producers about technologies. Producers benefit when PTTC helps solution providers understand the needs of independent producers. Both groups benefit when technologies solve problems, leverage opportunities, and strengthen the industry.

The nation and energy consumers benefit when US petroleum supplies are made more reliable and secure by industry's improved access to E&P technology. , PTTC is the independent petroleum industry's

"Bridge to Solutions"

PTTC is primarily funded by the U.S. Department of Energy's Office of Fossil Energy through its National Energy Technology Laboratory.

Petroleum Technology Transfer Council

PTTC's Goal Categories

PTTC has chosen five categories of goals to direct its actions. Each is captured in a single word, which makes them more memorable; and each has several vision statements describing what success will be like.

1. AWARENESS

- PTTC is aware of its customers' problems and understands the context/underlying issues.
- Independent producers are aware of PTTC and its services at their local level, as well as nationally.
- Independents understand their technology needs, focusing beyond the symptoms of their problem.
- Independents are aware of the range of solutions available and of the benefits/risks of each.
- Technology solution providers are aware of PTTC and that it can help them reach independents.
- Solution providers understand the problems of independent producers, and their value as a market.

2. CONNECTIONS

- Independent producers rely on PTTC for connections to a range of technology solution options.
- Solution providers rely on PTTC for contacts with independent producers and access to that market.
- Independents learn how to successfully apply technologies as a result of PTTC referrals.
- Independents credit PTTC for their success in finding the right sources for technologies/information.
- Technology solution providers credit PTTC for improving their access to independents.

3. PERFORMANCE

- Producers make inquiries to PTTC as a result of its workshops, newsletters, websites, etc.
- Independent producers contact PTTC more than once for help, and request new products/services.
- Case studies about U.S. field-tested technologies are offered to PTTC for industry dissemination.
- Independents publicly commend PTTC's products/services and refer other producers to the RLOs.
- Technology solution providers offer financial support for PTTC events and other functions.
- Other groups want to conduct jointly-sponsored events or activities with PTTC.

4. CREDIBILITY

- PTTC is perceived by independents as the best choice for access to practical, real-world solutions.
- PTTC is recognized by technology solution providers as the best pathway to reach independents.
- The Board, PAGs, and committees have active participation and effective volunteer leaders.
- The Dept. of Energy values PTTC's unique abilities to strengthen the domestic oil and gas industry.
- PTTC has high name recognition in the industry and a positive image in outside markets.

5. FINANCES

- PTTC has achieved financial strength, which engenders confidence about the organization's future.
- PTTC activities are not limited by the number of customers that it can serve
- PTTC has the required cash flow and financial reserves to explore new outreach projects.
- RLOs receive sufficient funds on a timely basis so that regional programs remain effective.
- PTTC can charge enough for services and products to make them generally self supporting.

Petroleum Technology Transfer Council

PTTC Program Lines

Since PTTC was formed in 1993, its programs have mainly focused on transferring individual technologies. Although very effective, it has been difficult to identify gaps, overlaps, or conflicts in various technologies across regions and topics. As part of the new business model, PTTC has selected five program lines that encompass the services and products being delivered to its customers. They were chosen to be general enough to survive for the long term, yet provide flexibility by topic and region:

PTTC Program Lines:

- **Exploration**
- **Drilling and Completion**
- **Development and Reservoir**
- **Operations and Production**
- **Environmental**

The transition from individual technology focus to program lines will be initiated during FY2000. Working together, the HQ and RLO staff will start finding ways to accomplish the following steps:

- Organize current products and services by program line.
- Identify and prioritize gaps in needed products and services, according to regional and other factors.
- Take action to close high-priority gaps by assembling the required resources (contacts with solution providers, workshop speakers, etc.) to provide comprehensive services/products in each program line.
- Develop quality assurance criteria to guide performance of each service and product.

The concept is that resources (information, reports, network of experts, etc.) would not necessarily be required in every region, but somewhere within the national PTTC organization. Each program line will include not only services, but also products. PTTC is beginning to build up more marketable products as it captures the results of regional workshops and other activities.

Several benefits are expected from the establishment of program lines:

- Having memorable names for program lines makes it easier for customers to find PTTC's services.
- It should be easier to measure effectiveness, completeness, and quality of products and services.
- HQ can better monitor PTTC's national and regional program, enabling efficiencies through streamlining and better sharing across regions.
- PTTC programs can be marketed more effectively to specific market segments.
- The system should enhance inter-regional technology transfer activities and reduce duplication of programs that can be more efficiently packaged as a generic product/service.
- Program lines should help emphasize PTTC's marketing message.
- It demonstrates PTTC's commitment to serve independent oil and gas producers with solution options that span across the total E&P technology spectrum.