PETROLEUM TECHNOLOGY TRANSFER COUNCIL

SEMI-ANNUAL TECHNICAL PROGRESS REPORT—FY02

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EXECUTIVE SUMMARY

The Petroleum Technology Transfer Council (PTTC) continued pursuing its mission of helping U.S. independent oil and natural gas producers make timely, informed technology decisions. Networking opportunities that occur with a Houston Headquarters (HQ) location are increasing name awareness. Focused efforts by Executive Director Don Duttlinger to interact with large independents, national service companies and some majors are continuing to supplement the support base of the medium to smaller industry participants around the country. PTTC is now involved in many of the technology-related activities that occur in high oil and natural gas activity areas. Access to technology remains the driving force for those who do not have in-house research and development capabilities and look to the PTTC to provide services and options for increased efficiency.

Looking forward to the future, the Board, Regional Lead Organization (RLO) Directors and HQ staff developed a 10-year vision outlining what PTTC needs to accomplish in supporting a national energy plan. This vision has been communicated to Department of Energy (DOE) staff and PTTC looks forward to continuing this successful federal-state-industry partnership. As part of this effort, several more examples of industry using information gained through PTTC activities to impact their bottom line were identified. Securing the industry pull on technology acceptance was the cornerstone of this directional plan.

PTTC's regions worked hard to maintain activities near the record levels set during FY01, coming close but both the number of workshops and attendance are down slightly compared to 1st Half FY01. Contacts, however, remained strong reflecting the level of effort. Looking forward through FY02, continued commitment will be required to achieve FY01 activity levels. It must be noted that resource constraints are now affecting some activities.

- **Workshops conducted** – 74 (versus 147 in all of FY01)
- **Workshop attendance** – 2,721 (versus 6,338 in all of FY01)
  (Averaging 37 attendees per workshop)
- **Outreach contacts** – 8,199 (versus 16,051 in all of FY01)

More than 80% of workshop attendees are from industry. Of those who respond to the question: "Have you used any new technologies based on knowledge gained through PTTC?" more than one-third respond, "Yes." Follow-up efforts with these "Yes" responders have led to several successes being documented as a direct result of technology options made available through PTTC technology transfer efforts. PTTC recognizes that there are many more successful cases out there, but resources limit follow-up. Repeat attendance, defined as the % of industry attendees who have previously attended a regional event, is 64%. This high percentage reflects both the value industry receives by coming back and the nature of the definition itself. It is significant, though, that even after nearly 10 years, PTTC continues to draw a significant number of first-time attendees. Recent focus on building awareness and increased communications efficiency will enable PTTC to continue expanding its audience.

At the national level, PTTC continued its 16-page quarterly newsletter, *PTTC Network News,* and the *Petroleum Technology Digest*, a case study-oriented effort coordinated with Gulf Publishing and its *World Oil* magazine. Monthly "Tech Connections" columns are now being published in *The American Oil & Gas Reporter*, as well as periodic "Technology at Work" columns in *World Oil*. A new effort, "Technology Alerts" via e-mail on an approximate bi-weekly basis is showing promising early results. Continually ongoing website enhancements round out the communications picture.

A cooperative Traveling Workshop series with DOE delivered results from DOE field-oriented R&D projects (from the Stripper Gas Well and Technology Development with Independents programs) to independents across the country. Another cooperative series, "Optimized Horizontal Drilling" by Maurer Technology Inc., was extremely well received and instances of application are already known.

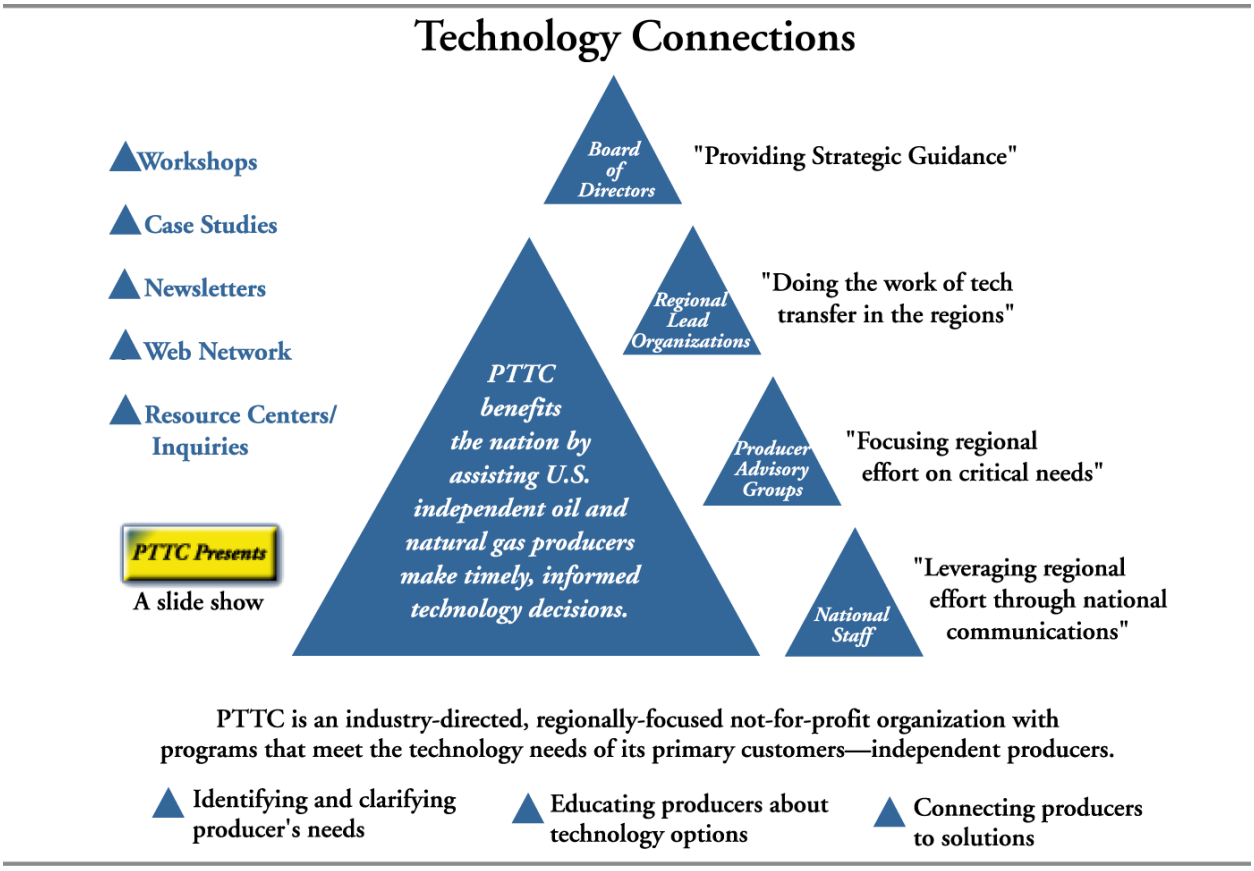
I. INTRODUCTION

Following a series of studies in the early 1990s, industry and government energy experts recognized the urgent need for improved technology transfer processes for the U.S. upstream petroleum industry. As a result, domestic oil and natural gas producers established the Petroleum Technology Transfer Council (PTTC), a national not-for-profit organization, in 1993. Well recognized as a growing organization, PTTC is now working towards greater efficiency and quality in its activities, as well as a broadened scope.

All involved—the National Board, Regional Lead Organizations (RLOs), Producer Advisory Groups (PAGs) and Headquarters (HQ) staff—focus their efforts on achieving PTTC's mission. **Figure 1** provides a visual picture of how efforts and resources are combined and leveraged.

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

Figure 1—Who Is PTTC?



PTTC adopted a comprehensive business plan in 1988 and updates it annually through Board strategic thinking. During 1st Half FY02, PTTC (Board, RLO Directors and HQ staff) worked together to develop a new long-term vision for PTTC. This vision spells out what PTTC needs to accomplish and how to get there. This vision has been communicated to Department of Energy (DOE) staff and PTTC looks forward to discussions concerning continuance of the successful federal-state-industry partnership.

Activity in the regions during the first half of FY02, as shown in **Table 1**, is near record levels achieved in FY01, although down slightly comparing midyear results with FY01. Average workshop attendance has dropped about 10%, which may be a statistical fluke (some big workshops scheduled in coming months) or may reflect that industry is busier than ever and is finding it more difficult to attend workshops. More than 80% of attendees are from industry and 64% are repeat attendees—that is, they have previously been to a regional PTTC event. Together, PTTC's regional and national activities are increasingly impacting industry.

Table 1—Measures of PTTC's Regional Activities

	Workshops		Attendance		From E&P Industry	Outreach Contacts		
Time Period	**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 1st Half	**74**	**723**	**2,721**	**33,550**	**2,206**	**81**	**8,199**	**63,508**
Averaging 37 attendees per workshop **Averaging 6+ contacts per day/region**					**1st Half FY02 vs. 1st Half FY01** **--5% decrease in # of workshops** **--6% decrease in attendance** **--18% increase in contacts**			

Nationally, PTTC continues to reap great benefits from relocating its Headquarters to Houston, Texas. A Houston location allows Executive Director Don Duttlinger to interact extensively with major service companies and large independents, increasing their awareness of PTTC and laying the groundwork for greater industry financial support.

This report covers PTTC's technical progress during the 1st half of FY02 and illustrates its continuing active outreach to the independent oil and gas producing industry. The text is organized according to the specific tasks in PTTC's statement of work under its DOE contract. This report documents results in two parts. Chapter II presents PTTC's progress at the national level. Chapter III presents progress at the regional level, as reflected in PTTC's internal quarterly report for the 2nd Qtr FY02. Activity listings within Chapter III summarize FY02 activities through midyear, actions/impacts during the 2nd Qtr of FY02, and activities definitively scheduled during the 3rd Qtr of FY02.

II. RESULTS AT THE NATIONAL LEVEL

The Petroleum Technology Transfer Council (PTTC) implements industry's directives through both its national and regional programs. The role of the national headquarters (HQ) organization includes: (a) planning and managing the PTTC program so that industry directives are carried out, (b) conducting nation-wide technology transfer activities, and (c) implementing a comprehensive communications effort. These efforts are discussed below.

A. Planning and Managing the PTTC Program

There are many aspects of planning and managing the overall program, especially since there are so many people involved in PTTC's operations. The financial aspects are documented in a separate Financial Report to DOE, which is submitted quarterly. This section focuses on the role of the Board of Directors, building large independent and service sector network, oversight of regional programs, problem identification, and evaluating program effectiveness.

1. Board of Directors

Twenty three industry volunteers serve on PTTC's Board of Directors representing the ten regions, various national organizations, and three technology-related professional societies. The Board also includes one representative each from: (1) major exploration and production (E&P) companies, (2) the petroleum service industry, and (3) PTTC's Regional Lead Organizations (RLOs).

During the first half of FY02, PTTC's Board met twice: (1) on October 25, 2001 in Houston, Texas, and (2) on March 4, 2002 in Washington, DC.

In the October 2001 meeting, the Board: (1) approved the FY02 budget and regional plans, (2) brainstormed regarding PTTC's 10-year vision, , and (3) conducted other business related to ongoing PTTC operations. In a special "Meet Gulf Coast Independent Producers" session, Mr. Paul Bulmahn, president of ATP Corp., and Mr. Jim Beck, President of Seneca Resources Corp, gave insights about how their companies access and use technologies. A common theme was "time-restricted" staff, requiring that they use avenues, of which PTTC is one, for getting information and connecting with people.

In early March 2002, the Board and Regional Lead Organization (RLO) Directors met jointly in Washington. On Sunday, March 3, RLO Directors and HQ staff discussed PTTC's 10-year vision extensively, further refining it for the Board meeting the following day. During the March 4th Board meeting, the Board: (1) approved the election slate (keeping current officers for another year), (2) approved the Auditor's report, and (3) formed three new sub-committees, which are: Bylaws Committee chaired by Don Solonas, Audit Committee chaired by Brian Sims, and Compensation Committee chaired by Jim Bruning. There was extensive discussion among the Board, RLO Directors and HQ staff of PTTC's 10-year version. Incorporating the refinements that evolved during discussion, the Board fully supported the 10-year vision and actively communicated that support in person to Ms. Rita Bajura, Director of DOE's National Energy Technology Laboratory (NETL) who participated in part of the meeting. The next Board meeting was scheduled for July 2002 in Oklahoma, to be hosted by the South Midcontinent Region.

2. Building Service Sector/Large Independent Network

Historically, the audience for regional activities has been small independents, consultants and regional technology providers. Looking forward, PTTC recognizes the importance of developing a network among larger independents, national service companies and even major producers. The Houston HQ location has served Don Duttlinger well as he builds this network. For example, during a recent six to

eight week period, contacts were made with five large service companies (31 contacts) and eight majors/large independents (36 contacts). Not surprisingly, a great deal of time during these visits is spent highlighting PTTC's technology transfer model, detailing accomplishments, and exploring how companies could participate. As a tool, HQ staff has refined a Power Point presentation telling PTTC's story. This presentation has been placed on the website. In an encouraging vein, there are serious discussions with some major service suppliers regarding ways for them to provide financial support to PTTC.

Feedback from these visits, plus interactions with industry at trade shows, operator association meetings and regional events, indicates that building name awareness must remain a focus. Beyond the national communications program discussed later, HQ is focusing on: (1) a more active exhibit schedule, (2) active participation in the myriad technical events held in Houston and surrounding oilpatch cities, (3) interchanging national/regional mailing list information, (4) networking with producer associations, and (5) continual enhancement, both look and content, of the national website.

3. Oversight of Regional Programs

HQ has oversight responsibility of the ten regional programs, to ensure that they are effectively serving industry and implementing the annual plans approved by the Producer Advisory Groups (PAGs) and Board. To address issues that arise between Board meetings, the Management and Budget (M&B) Committee and HQ staff participate in occasional conference calls. Both Executive Director Don Duttlinger and Project Manager Lance Cole interact frequently with individual RLO Directors and their regional staff on region-specific issues. Communication within all parts of the organization is key to leveraging national-regional efforts. PTTC maintains communications through periodic mailings, but especially through the "PTTCNet" intranet system. Early in 2002, PTTC spent considerable effort reorganizing and enhancing PTTCNet's content to make it a more useful tool for the Board, RLOs, and staff.

Periodically, HQ staff and the RLO Directors (plus RLO coordinators as appropriate) meet in person to discuss common issues and share insights. As noted previously, before the Board meeting in Washington, RLO Directors and HQ staff brainstormed extensively about PTTC's 10-year vision, refining it for discussions with the Board the next day. RLO Directors also participated in Hill visits following the Board meeting. The RLO Directors re-elected Rodney Reynolds from the North Midcontinent Region as their non-voting member to the Board for the coming year. The decision regarding whether to hold a RLO meeting during late summer 2002 has not yet been made.

PTTC made major revisions—focused on consistency, usability and a common look—in the websites in its network in late spring 2001. With a new look and consistency in place, effort is focusing on content and website maintenance issues. These issues are important to increasing value to current users and to leaving a favorable impression as "new eyes" are driven to the site through the name awareness campaign.

4. Problem Identification

RLO Directors and PAGs continually reassess regional needs, while HQ staff monitors industry publications and problem identification studies. HQ staff has coordinated with DOE in their roadmapping and R&D needs meetings. PTTC is working with the Drilling Engineering Association (DEA) and several other industry sponsors (including DOE) on a two-day workshop in May 2002 that will focus on technology needs for "drilling rigs" and "wells" of the future. PTTC actively participates in DOE's Stripper Well Consortium, encouraging industry participation in appropriate venues. In October 2001, PTTC began implementing its PUMP (Preferred Upstream Management Practices) project in its South Midcontinent and West Coast regions. This effort, although not officially part of this contract, will

provide very focused problem and needs identification in California and Oklahoma-Arkansas. Results will be leveraged nation-wide. PTTC also seizes opportunities, such as participating in a "problem and preferred practices" identification workshop (part of West Virginia University Research Corporation's DOE PUMP project) in January 2002. As results from the several DOE PUMP projects become available, PTTC anticipates interfacing with them to transfer preferred practices to industry. Among other things, PTTC recognizes that an overlying need for all technology transfer efforts is that they must be focused and time-efficient.

5. Evaluating Program Effectiveness

PTTC monitors three key statistics of website usage: (1) number of user sessions, (2) number of page views, and (3) average session length. To further enhance consistency, all regions are asked to use a common Web Trends software package to gather those statistics. In the regions, the number of user sessions (excluding Mississippi, Michigan, and Permian Basin traffic) are currently above 60,000 sessions per month. Usage shows consistent growth, especially in those regions that focus on increasing access to digital data. The number of page views, while growing, can be affected by website design changes. Session length typically ranges from 10 to 25 minutes.

Starting in 1999, the regions began using standardized questions in their workshop feedback forms. To measure PTTC's effectiveness in stimulating individuals to apply new or underutilized technologies, one of the key questions asks respondents: "Have you used any new technologies based on knowledge gained through PTTC?" Through FY01, more than one-third of those answering the question respond, "Yes." This statistic considers data from 214 workshops. For those who do respond, "Yes," about half provide at least brief comments on the technology they applied, but it is rare that any quantitative information is provided. Attendees are also asked if they would be willing to share information. More than 60% say, "Yes." Feedback forms for FY02 activities have not yet been analyzed since it takes time for feedback forms to filter from the regions to national, but percentages have remained in the same range since data began being collected.

Early in 2002, The University of Tulsa (TU) updated its analysis of PTTC's impact. PTTC provided them with activity statistics, successful application examples from industry participants and access to workshop feedback forms. TU reviewed feedback forms where people had responded "Yes" to applying technologies and provided some indication of how they had applied technology. From this sample, TU selected about 20 individuals that they wished to interview. PTTC contacted these individuals and obtained their permission for TU to talk with them. TU was able to connect with most of them. From this effort, several previously unknown success stories were identified. There is a direct relationship to amount of resources spent and successful applications documented and with eight years of history behind the program, this will be an interesting area to explore in more detail. Comparison to success rates of other technology transfer programs around the world has typically shown that the early accomplishments will not reveal much of an impact in barrels of oil equivalent produced or booked as reserves. However, as programs approach 10 years of operation, it becomes more viable to quantify the direct result or return on investment that was accomplished. An example area PTTC would like to focus on in the future is the impact from play-based workshops, one of many transfer tools the organization employs. Increased permitting and drilling shows dramatic increases following regional workshops highlighting specific information on a basin where many independent producers are or want to become active in an attempt to capture bypassed or difficult to harvest oil and natural gas. PTTC believes this will be a true direct indicator of the success this partnership program has provided American taxpayers.

Beginning with some FY99 workshops, PTTC has been monitoring repeat attendance. For its purposes, PTTC defines "repeat attendance" as the % of E&P industry attendees at a workshop who have been to a previous PTTC workshop in that region. PTTC considers attendees' willingness to attend more

events a direct measure of the value they assign to the information received, particularly when those in industry are pressed for time. Percentages for FY00, FY01 and 1st Half FY02 are, respectively 45, 51and 64. As more time passes, the percentage should be expected to increase. Significantly, after nearly 10 years, a third of the audience at PTTC events are "first time" attendees. PTTC's awareness campaign should continue to draw new people into regional and national activities.

At Assistant Secretary for Fossil Energy Mike Smith's request during March 2002, PTTC made another special effort to capture success stories. Each region was asked to develop two to three stories. The most meaningful success stories, **Table 2 and Figure 2**, were communicated to DOE in follow-up correspondence about PTTC's 10-year vision. Excitement can grow as these successes are totaled up, yet it is apparent the resources needed are significant for this follow-up with industry to gather the necessary data. This becomes an area where additional effort would produce supporting evidence as to the value of the technology communicated throughout industry.

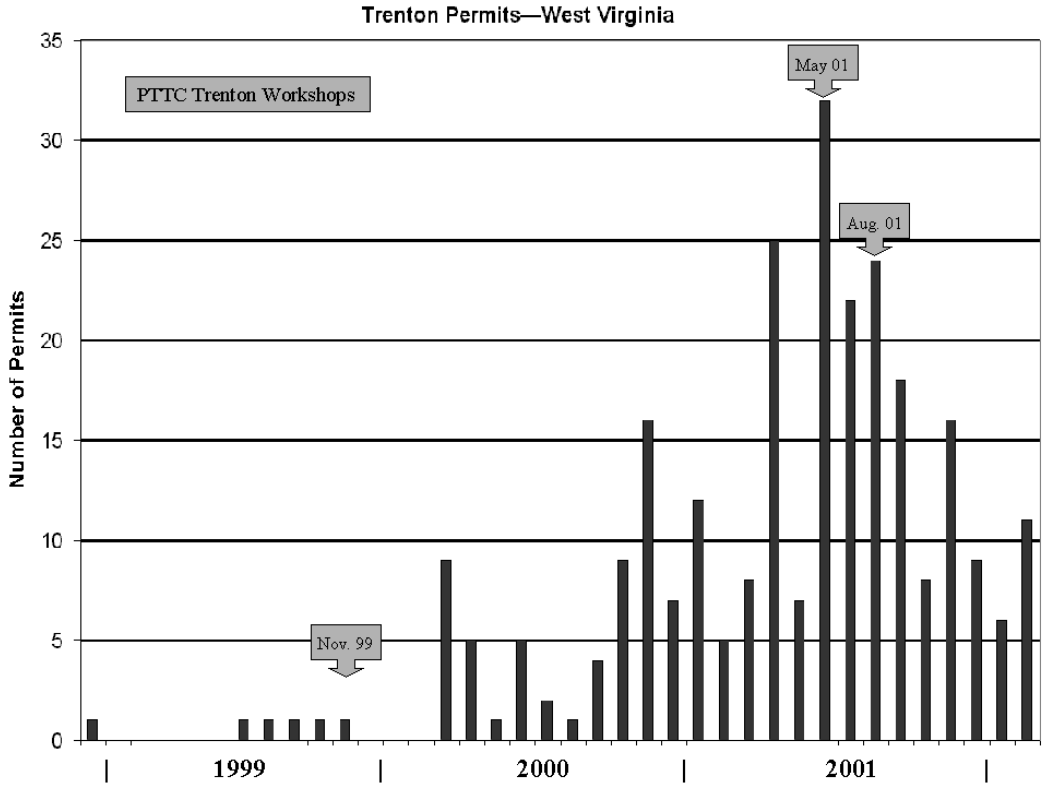
Table 2—Application Anecdotes—Industry Applying Technology

PTTC Region (Subject area/benefit)	**Bottom Line Description**
Appalachian (Play-Based)	The Trenton-Black River play in the Appalachian Region is one of the hottest plays in the country. Early on, PTTC's Appalachian Region decided to become a knowledge leader. The region has delivered three workshops presenting geological and engineering information, and, in West Virginia, one can see increased permitting activity (see **Figure 2**) following workshops. A Tennessee operator has also shared how insights and confidence gained through PTTC has led them to embark upon a 10-well deepening program in Tennessee. In 2002, additional workshops are scheduled for Ohio and Kentucky, which widens geographical coverage.
Central Gulf (Power Cost Savings)	Three regional workshops (October 1998, March 1999 and May 2000) have focused on power cost issues, including on-lease power generation. In the Cotton Valley Field in Webster Parish, one operator purchased microturbine units which paid out in 22 months versus projected 28-32 months. Two other operators in the area used this data to negotiate more favorable rates. Collectively, lease operating savings were estimated to be $215,000 for 175,000 barrels of oil. This equates to savings of about $1.20 per barrel of oil produced, or $0.37 per barrel of total fluid produced.
Eastern Gulf (Horizontal Drilling)	Through attending Maurer Technology's "Optimized Horizontal Drilling" workshop in Mississippi, TMR Exploration (TMR) of Bossier City, Louisiana recognized the potential that horizontal drilling might have in their mature Livingston Field Wilcox production. TMR authorized a study at Louisiana State University (LSU). Results included two alternative drilling scenarios—one involving two lateral wells to produce 1.85 MMBO and the second with five wells to produce 2.2 MMBO. Combined with a recommended CO_2 flood in another section of the field, total recovery is estimated at 3.0 MMBO. TMR plans to drill the first scenario (1.85 MMBO) and recently attended the two-day horizontal drilling workshop in New Orleans.
Midwest (Behind-Pipe Reserves)	Barger Engineering (Barger) in Indiana learned the ratio method (log analysis technique) to determine water saturation during a PTTC workshop. Barger uses the method daily to determine whether behind-pipe zones contain oil. Recompletions were planned in two wells, until the ratio method indicated they would be unsuccessful. Barger saved $20,000 by not recompleting the two wells. Had Barger known of the technique earlier, they could have saved $40,000 on earlier unsuccessful jobs.
North Midcontinent (R&D Funding)	For small independent producers in Kansas, PTTC has been a primary resource to learn about new technologies, and opportunities through DOE to get funding to reduce the risk of applying unfamiliar technologies. Through multiple workshops, newsletters and staff outreach, independents have learned of and successfully competed for DOE awards, which include: a *Class Revisit*, *PUMP I*, and *four Technology Development with Independents* projects in Kansas. These projects are encouraging other independents to apply newer technologies.
Rocky Mountain (Software/Environmental) (Coalbed methane)	*Software/environmental*. A Denver-based environmental consultant employs sophisticated visualization software they learned about through PTTC to model pollution plumes. Hours are saved in the plume modeling effort and visualization enhances credibility of the results. The consultant reports that plume models were vital in at least five cases involving suits against petroleum companies. All cases were decided in favor of the companies with savings ranging from $20,000 to $1,000,000. *Coalbed Methane.* Like several PTTC regions, the Rocky Mountain Region works cooperatively with operator associations and professional societies to keep the stream of technology information flowing to industry in active coalbed methane plays. As shown in **Figure 2**, staff from one Rocky Mountain independent attended PTTC workshops, and their company developed significant coalbed methane production. PTTC anticipated a need by smaller independents for CBM information.

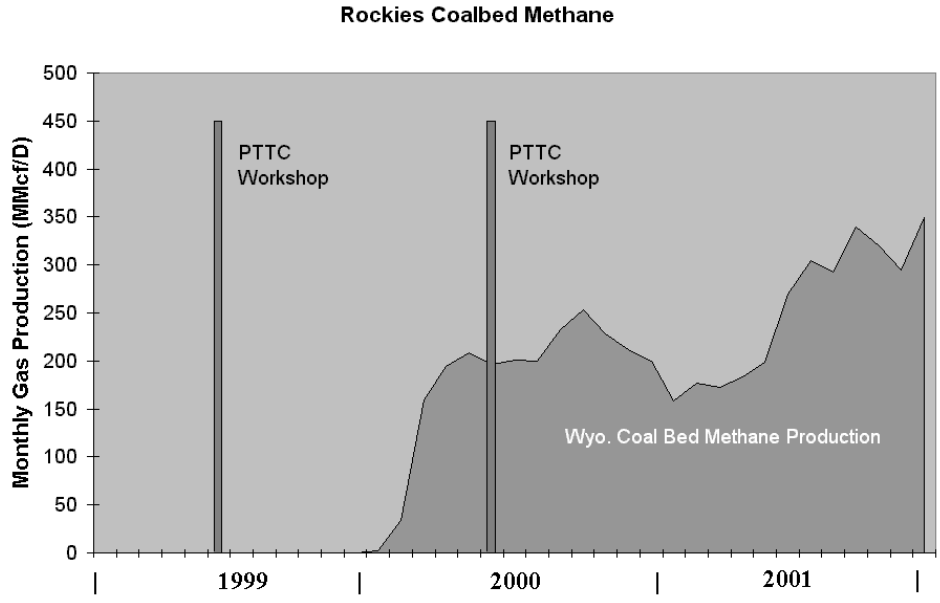
Table 2—Application Anecdotes—Industry Applying Technology (cont)

PTTC Region (Subject area/benefit)	**Bottom Line Description**
South Midcontinent (Play-Based)	In early 2002, Continental Resources wanted to drill a gas well in Blaine County to develop Springer reserves. Continental had rights to the deeper Springer, while another operator had rights to the overlying Morrow. Other operators protested Continental's well and spacing relief application because they considered the zone that Continental was targeting to be a Morrow zone. Using information about how to distinguish Morrow and Springer zones gained from the Springer play workshop, Continental prevailed before the Oklahoma Corporation Commission and won their case. Such a well could produce one BCF or more of natural gas.
Southwest (Corrosion Work Groups)	Through one-on-one and small group interactions, regional staff learned of industry's strong interest in corrosion and water topics. To meet the need and tailor technology transfer, corrosion work groups were formed within the New Mexico Institute of Technology for both the northwestern (San Juan Basin) and southeastern portions of New Mexico. The Petroleum Recovery Research Center at New Mexico Tech developed a successful proposal for DOE's PUMP program addressing water quality issues. Problem identification spurred R&D activity that focuses directly on regional problems.
Texas (Vapor Recovery)	Mini-workshops, developed by Bob Kiker, Permian Basin PUMPer, described new options for vapor recovery. One speaker described Vapor Jet technology, which is appropriate for low volume applications. Hybon Corporation, a large well-known company that offers vapor recovery equipment and services, also participated in the workshop. Becoming aware of Vapor Jet technology through the workshop, HyBon purchased the Vapor Jet patent and is now marketing it. Four companies—ChevronTexaco, Flying J, Amerada Hess and Marathon—have purchased systems, together recovering nearly 150 mcfd.
West Coast (Behind-Pipe Reserves)	Through a PTTC workshop in late 2001, Pacific Operators Offshore Inc. (POOI) learned about Schlumberger's through-casing resistivity logging tool for determining water saturation behind pipe. In the offshore California Carpinteria Field, wells produce from as many as 10 different zones, so it is critical to know saturations. Within three months after the workshop, POOI had applied Schlumberger's CHFR tool in one well. Based on log results, POOI squeezed off selected intervals and returned the well to production, producing 80 bopd and greatly reduced water production. This also increases government revenues in the form of royalties collected.
National (*Petroleum Technology Digest*)	Working with Gulf Publishing and industry authors, national staff develops field case studies that are published in *World Oil* as the *Petroleum Technology Digest*. Case studies are now being published quarterly and distributed worldwide to *World Oil's* more than 30,000 readers. Several technology providers have noted direct benefits. For example, J Integral Engineering, the vendor involved in a Sep 2001 case study about using solid propellant stimulation technologies, has noted that they have performed about 20 additional well treatments. Additionally, a wireline company in West Texas contacted them about fielding their technology, so marketing costs to enter a new area were avoided. Case studies of proven successful technologies continue to draw high interest both in web access and published hard copies

Figure 2—Anecdotes of PTTC's Impact on Industry Activity



"PTTC's Appalachian Region has taken the lead in being a source of information for rapidly evolving Trenton-Black River activity and drilling permits increased following workshops. For example, following the May 2001 workshop, there were more than 30 permits issued in West Virginia--the most active month."



"Staff from a Rocky Mountain independent attended two PTTC workshops on Wyoming coalbed methane. PTTC is not solely responsible for their activity, but it did play a role. PTTC co-sponsored the conferences, organized by the Rocky Mountain Association of Geologists, that have been attended by nearly 1000 people."

B. Conducting National-Level Technology Transfer Activities

Although most of PTTC's technology transfer activities occur in the regions, the HQ staff has increasing opportunities and responsibilities in this area. There are several mechanisms that HQ uses for this function: (1) through technology alerts and field results articles in *PTTC Network News*, (2) by responding to inquiries received through the national level, (3) by coordinating PTTC activities with DOE's oil and gas R&D programs and those of other organizations, and (4) by developing technology/case study products.

1. Newsletter – *PTTC Network News*

Technology information for *PTTC Network News* is received from multiple sources. PTTC regularly solicits input from a group of technology providers, including DOE groups. Increasingly, smaller technology providers are contacting PTTC seeking coverage of their new technologies. For these instances, PTTC exercises due diligence before publishing alerts. This due diligence consists of assessing whether the technologies would be of interest to independents and the degree to which vendor claims are supported by data. Unsolicited articles are occasionally received. Current structure incorporates environmental, tech transfer track (industry), DOE, State-Of-The-Art Summary, and PTTC sections. The newsletter is also posted online in both html and pdf format. Individual newsletter articles become part of the archive that can be searched within the "Tech Info" section of the website.

For the last couple years, PTTC has been publishing mini-state-of-the-art summaries developed by Karl Lang with Hart/IRI Fuels Information Services. Topics that have been covered to date include:

- Options for Coalbed Methane Water Management (1st Qtr 2002)
- Reducing Risks and Costs Through Technology (4th Qtr 2001)
  (featured results from selected DOE projects in Traveling Workshop series)
- Surviving the Oil and Gas Professional Shortage (3rd Qtr 2001)
- Advances in Seismic Stimulation Technologies (2nd Qtr 2001)
- Improvements in Fracture Stimulation Technology (1st Qtr 2001)
- Managing Produced Water (4th Qtr 2000)
- Locating Bypassed Oil in Existing Fields (3rd Qtr 2000)
- Coalbed Methane Trends (2nd Qtr 2000)
- e-Commerce: What It Can Do For The Independent O&G Operator (1st Qtr 2000)

Since late in 1999, bottom-line summaries from the workshop summaries that have been posted to the website during the quarter have been published in *PTTC Network News*. Seven summaries were posted during this reporting period. PTTC's intent is to entice readers to regularly visit the website to access the full summaries. Not counting pre-1998 summaries that were somewhat limited in scope, PTTC has now built an online archive of 77 workshop summaries. For those individuals not able to attend workshops, these summaries provide a crisp analysis of insights presented, plus contact information for the speakers.

2. Answering National Inquiries

On average, the HQ office receives a few technical inquiries per week on various subjects. HQ responds directly to most of the inquiries, in some cases, asking other organizations or information specialists within the regions to assist them. Requests have increased as a result of networking efforts in the Houston area. Requests are forwarded to the appropriate RLO staff when (1) the inquiry is specific to a given region or (2) specialized expertise is known to exist there. Many inquiries received through the website are from individuals located internationally. For these, PTTC supplies only electronic information or links to information located on the Internet. Some of the contacts about new products ultimately result in case studies for the *Petroleum Technology Digest*.

3. Coordinating with DOE and Others

In late summer 2001, PTTC and DOE NETL agreed to develop and deliver a workshop titled "Field-Oriented R&D Projects for Independents." Material was developed within about eight weeks and the first workshop held on October 30 in Jackson, Mississippi. From then through mid-February 2002, seven additional workshops were held. Agendas, tailored to each location's interests, featured results from DOE's Stripper Gas Well (SCNG) and Technology Development with Independents (NPTO) programs. Information was also provided about DOE's overall R&D program and future funding opportunities. 146 individuals from industry participated, averaging 21 per workshop, which is lower than PTTC's historical experience despite a more extensive than normal promotional effort. Both DOE and PTTC recognize that more lead time would have been beneficial. PTTC also learned lessons about how to effectively reach a targeted audience in a short time. A plausible explanation for low attendance is that the focus on "DOE projects," admittedly across a broad spectrum, did not stimulate interest as much as typical PTTC workshops that maintain a narrow topical focus, topics driven by regional producers needs and communicated through the regional Producer Advisory Group. Attendance at some of the early workshops may have been affected by the compressed time schedule.

The Traveling Workshop environment did create good discussion and interaction, and participating DOE staff did develop insights and connections valuable for future program planning. Information and interaction has stimulated industry interest in future funding opportunities. Gary Covatch has noted increased interest in the Stripper Well Consortium. The workshops did also increase industry's awareness of SCNG, which feedback indicates is needed. The workshop series did prompt another DOE project performer to contact PTTC about their technology (subsurface cuttings injection), which led directly to a West Coast Region workshop in California. PTTC leveraged impact of the workshop series by having Karl Lang with Hart's/IRI Fuels Information Services develop a state-of-the-art summary for *PTTC Network News* (7,300 circ.). The notebook (on all projects where results were available) also serves as a valuable resource for future tech transfer efforts. PTTC's Texas Region has fielded interest from other groups in Texas about having material be part of events planned later in 2002.

In early 2002, HQ staff and a couple regions interacted with Brad Tomer and Jim Ammer from DOE NETL regarding cooperative technology transfer from gas storage and fractured reservoir R&D projects funded through SCNG. As needs were refined through discussion, it became apparent that specific workshops through PTTC were not the appropriate avenue at this time.

PTTC actively promotes DOE solicitations oriented towards independents in both the oil and gas R&D programs. Open solicitations by NPTO and SCNG relevant to the upstream O&G community are noted in *PTTC Network News* and notices provided on the website, as are project awards. Since many independents are unfamiliar with DOE's proposal process, RLO staff help explain it to interested parties. This regional encouragement is known to be responsible for several proposals that have been submitted to DOE in recent years. Where relevant to the topic, the regions attempt to incorporate R&D and case study results within regional activities.

DOE's Stripper Well Consortium (SWC), managed by Pennsylvania State University, funded its first projects in late spring 2001. To increase industry awareness, presentations about SWC were incorporated in the DOE/PTTC traveling workshop series conducted during this reporting period. Project manager Lance Cole attended SWC's first annual meeting, held in December 2001 in Pennsylvania. Having only started in late spring 2001, most projects did not have sufficient results for tech transfer to occur. SWC recognizes this and has scheduled industry tech transfer meetings in late 2002. North Midcontinent Director Rodney Reynolds, acting on HQ's behalf, attended the SWC's March 2002 spring meeting in Ohio where new proposals were presented. Once the SWC announces 2002 awards, PTTC will ensure

they receive appropriate coverage in the newsletter and on the website. PTTC will also offer promotional support for the workshops planned later in the year.

Three DOE solicitations of interest to PTTC's audience (PUMP III, Independents, Air and Water Environmental) were issued during early 2002. Several organizations or groups developing proposals contacted PTTC about (a) cooperating with them to deliver workshops and/or (b) becoming part of the proposals. PTTC's position has been to not be an official part of any individual proposal. Instead, it provides a letter of support indicating its willingness to assist with tech transfer should their project win. PTTC has requested that proposed budgets make some provision for direct costs associated with PTTC's effort in cooperative workshops since these activities would be above and beyond planned activities. The principle investigator would be responsible for the budgeting of appropriate technology transfer solutions.

During 2001 several companies were working together to form an Artificial Lift Research and Development Consortium (ALRDC). ALRDC was envisioned as a global non-profit organization focused on transferring artificial lift technology. It would also provide a venue for stimulating needed R&D. Late in 2001, it became evident that ALRDC would not be able to obtain sufficient industry funding to exist on its own. PTTC worked with those forming ALRDC to determine a business structure where partial PTTC involvement (with reimbursement from ALRDC) might help the Consortium get started. Ultimately, no action was taken.

In a similar vein, those involved in the Drilling Engineering Association (DEA) recognize that it needs revitalizing. DEA and others have organized a "Wells" and "Drilling Rigs" of the future workshop in Houston scheduled during late May 2002. Purpose is to regain momentum and secure additional funding. Executive Director Don Duttlinger is actively involved in organizational efforts and will moderate a session during the workshop. PTTC will also exhibit during this two day conference.

Executive Director Don Duttlinger coordinated with Marcus Evans conferences on their "Global Offshore Drilling Conference" held on Jan. 28-29, 2002 in Houston, Texas. As a session chair, he influenced the conference to invite Betty Felber, NETL NPTO, to give a presentation about DOE's study of "Maximizing Marginal Fields in the Gulf of Mexico." Participation in the conference also enabled PTTC to become better networked with companies operating offshore. Several presentations at the conference focused on future technology needs.

In earlier years, PTTC had co-sponsored technology sessions with the Independent Petroleum Association of America's (IPAA's) Crude Oil Policy Committee during IPAA's annual meeting. IPAA changed the format of their annual meeting during 2001, switching to a single large session rather than simultaneous sessions. With this format, there is not time for a technology event. Should IPAA change its meeting format where a technology session fits, PTTC will openly cooperate.

Several regions hosted Part A and B "Optimized Horizontal Drilling" workshops presented by Maurer Technology Inc. (Bob Knoll) during 2001 into 2002. Feedback from industry attendees has been extremely positive and PTTC is aware of some actions being taken by attendees. In one instance, a Rocky Mountain independent, after attending the Part B workshop in Denver in 2002, retained Bob Knoll to perform a "post mortem" on a prior unsuccessful horizontal well in Oklahoma. This post mortem was done in anticipation of trying another horizontal project in a Rocky Mountain location. The success anecdotes referenced in **Table 2** cite another instance where action was taken.

Because of the positive response to the Maurer horizontal drilling workshops, PTTC is actively looking for other "expert series" that might be presented. These workshops, which are more in depth than typical PTTC workshops, fill an industry need. One topic area of interest is naturally fractured reservoirs. Other topics are also being considered. PTTC approached the American Association of Petroleum

Geologists (AAPG) about working with their short course instructors to develop one-day versions. Ultimately, AAPG's decision was that PTTC should approach instructors individually and gain agreement on a case by case basis to develop a shortened version that would target many more producers and consultants where time constraints have historically been a barrier to these services. The result will be in line with the PTTC goals of lessening time and cost to participate.

In earlier reports, PTTC described a potential cooperative effort with *Hart's E&P* to provide a "Technology Connections" service. PTTC has solid working relationships with Gulf Publishing and *American Oil and Gas Reporter* and wants to develop something with Hart's. The following describes what is envisioned. Through this service, producers with vexing problems where solutions are not broadly known would be able to post (anonymously) those problems on PTTC's website. PTTC would forward any vendor/technology developer responses to the producer. Vendors/technology providers that have a new product/service/technology that needs further field testing would be able to post what they are looking for on Hart's website. The goal is to stimulate more rapid commercialization of new technologies. With Hart's reorganization during 2000-2001, initial momentum was lost. Conceptually, both parties are still interested, but PTTC will probably not pursue this initiative until its long-term resources are better known.

PTTC has executed a Memorandum of Understanding (MOU) with the Petroleum Technology Alliance of Canada (PTAC) (http://www.ptac.org). PTAC facilitates collaborative R&D and transfers technology to the Canadian E&P community. Discussions have been held about a workshop, or maybe workshops in both the U.S. and Canada, where each organization would orchestrate presentations about technologies where there country is more advanced. For example, PTTC could organize presentations about unconventional gas resources (coalbed methane, shale gas, etc.). PTAC could orchestrate presentations about operating marginal gas wells, or about horizontal drilling. Anticipated timing for the initial cooperative effort is late 2002.

4. Technical Products

PTTC's first venture, at least at the national level, with product development began in 1998 with development of the "Petroleum E&P Software Sampler" on CD-ROM. Although of some value at the time, PTTC encountered difficulty with sales. Feedback indicated that significantly more technical information/analysis would be required to increase value, and to be truly useful, the product would need to be updated at least annually. There are no current plans to update this product.

Working with Gulf Publishing, PTTC initiated the *Petroleum Technology Digest* in 1999. The *Digest* is a case study-oriented publication with case studies authored by both producer and technology provider. Initially, case studies were distributed as a semiannual supplement to *World Oil* to North American producers on their subscription list, which represented more than 10,000 readers. Gulf Publishing experienced difficulties selling advertising to support a separate supplement, so, beginning with 2001, effort switched to publishing four case studies on an approximate quarterly basis. Being printed directly in *World Oil*, distribution is to a worldwide audience of more than 36,000 readers. PTTC has the opportunity to order reprints at cost, or at reduced rates if reprint sponsors are recruited. Reprints are being distributed through PTTC's network. Through March 2002, 27 case studies have been published in the *Digest*. Feedback, especially from participating technology providers, indicates the *Digest* has been particularly effective in stimulating technology application.

During this reporting period, three case studies were recruited and published in the March 2002 issue of *World Oil*. Titles for the published case studies were:

- Hand-Held Computer System Reduces Costs and Increases Data Value
- Unique Chemical Removes Paraffin Damage, Stimulates Production
- Innovative Steam Flood Application Successful in Reviving Shut-in Midway Sunset (California) Heavy Oil Production

PTTC continues to encounter problems with industry authors delivering case studies in a timely fashion. When no case studies materialized, PTTC had to skip a planned December 2001 issue. To address this problem, PTTC has enlisted the services of Steve Melzer and Bob Kiker, both in the Permian Basin, to assist Lance Cole in nurturing case studies. During April 2002, three case studies were submitted for the June 2002 issue. With additional professional resources, PTTC hopes to achieve the planned four case studies per quarter.

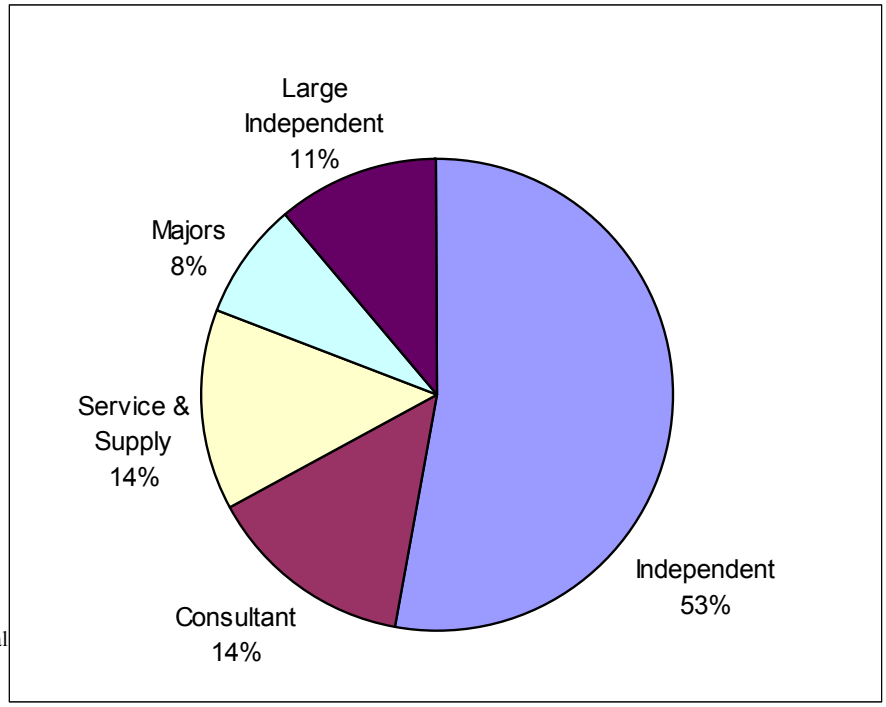
5. Emerging Technologies Energy Conference (ETEC)

ETEC, a cooperative effort of PTTC and IPAA, was held during 1997 in Houston and 1998 in New Orleans in conjunction with IPAA's annual meeting. The major focus was on case study presentations involving both producers and technology developers/providers. Indirectly, it became the model for the *Petroleum Technology Digest* with Gulf Publishing. Although well received, industry conditions during late 1998 and other factors led to ETEC being indefinitely suspended. Although ETEC could feasibly be reactivated, there are no ongoing discussions with IPAA to that end.

C. Communications Program

PTTC's 16-page newsletter, *PTTC Network News*, has been published quarterly since 1994. Two issues were published during the quarter—in December 2001 and late March 2002. PTTC currently prints 8,500 copies, distributing about 7,300 through its mailing list. Of those in the mailing list, 66% are from the E&P category (majors, independents, consultants, service and supply). Late in 2001, staff spent considerable time cleaning up the mailing list, which temporarily dropped the count below 7,000. With recent additions and anticipated gains from exchanging mailing lists with the regions, count is expected to increase significantly by mid-year 2002. As shown in **Figure 3**, of those in the E&P category, 64% are independent oil and gas producers, 14% are from the service and supply sector, 14% are consultants, and 8% are from major producers.

Figure 3—Breakdown of Newsletter "Industry Distribution"



PTTC exhibited at three major events during this time period: (1) Society of Petroleum Engineer's (SPE's) annual technical conference in New Orleans, Louisiana, from September 30-October 3, 2001, (2) the North American Prospect Expo (NAPE) in Houston, Texas, from January 30-January 31, 2002, and (3) AAPG's annual meeting from March 10-13, 2002 in Houston, Texas. PTTC has consciously increased its exhibit schedule (see remaining 2002 schedule below) as part of its awareness campaign. The exhibit and supporting materials have also been redesigned. Many of the regions exhibit at producer association meetings within their regions.

- April 9-10 SPE/ICoTA Coiled Tubing Conference, Houston, TX
- April 15-17 SPE/DOE Improved Oil Recovery Symposium, Tulsa, OK
- May 21-22 Wells of the Future and Drilling Rigs of the Future, Houston, TX
- Aug. 27-29 AAPG Prospect and Property Expo (APPEX), Houston, TX
- Sep. 30-Oct. 2 SPE Annual Meeting, Houston, TX
- Oct. 6-9 SEG Annual Meeting, Salt Lake City, UT
- Oct. 24-25 IPAA Annual Meeting, Dallas, TX

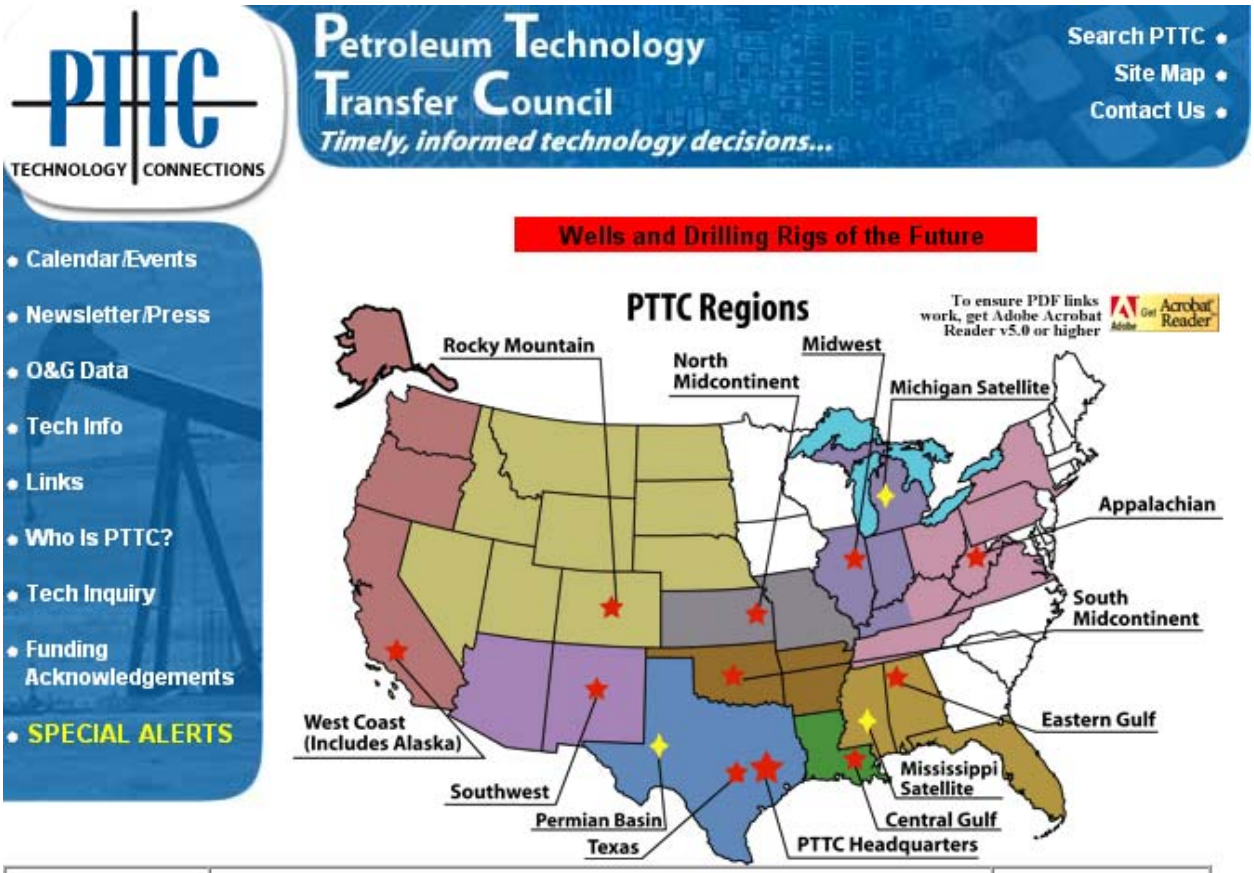
When invited, PTTC develops columns or articles for trade journals. PTTC writes a monthly column, Technology Connections, for the *American Oil and Gas Reporter*. Column titles for this reporting period follow. At the *Reporter's* invitation, Lance Cole also developed an article about advances in hydraulic fracturing. Chair Clark Southmayd contributed a "Presidential Paper" for the January 2002 issue.

- March 2002 Proven Technologies "Find" More Oil In Old Fields In The Illinois Basin
- February 2002 PTTC Web Site Provides Companies Way To Share Data
- January 2002 Successful CO_2 Floods Require Project Management, Experience, Teamwork
- January 2002 Presidential Paper by Clark Southmayd
- December 2001 PTTC Delivers Gas-Related Information To U.S. Operators
- December 2001 Advances Improve Hydraulic Fracturing
- November 2001 Polylined Tubing Is Cost Effective Option To Reduce Downhole Failures
- October 2001 Research Focuses on Economical Means To Purify Brines

PTTC has also had a long-standing relationship with Gulf Publishing and their *World Oil* magazine. PTTC provides "Technology at Work" contributions authored by Lance Cole a couple times per year. The February 2002 contribution focused on "Recent Advances in Cased-Hole Logging, Sidetracking Mills and CO_2 Pumping."

PTTC's national website, **Figure 4**, serves as a gateway to the regions and a communications path for technology-related information emerging from the national program. During 2001, PTTC implemented a system-wide redesign to enhance consistency and user-friendliness. During this reporting period, effort focused on: (1) enhancing content, (2) improving inter-connectedness, (3) adding the satellite websites (Mississippi, Michigan, and Permian Basin), and (4) improving PTTC-related information (slide presentation, more visual look in "Who Is PTTC" section). Webmaster Kristi Lovendahl spends a couple days per week, with support from HQ, keeping everything current.

Figure 4—National Homepage—Gateway To The Regions



Petroleum Technology Digest Case Studies	PTTC is an industry-directed 501-C-3 organization created to transfer exploration and production technology to U.S. producers. By accelerating the application of profitable technologies, PTTC enhances domestic oil and natural gas production.	***Solutions From The Field*** Workshop Summaries

No specific application of products or services is endorsed or recommended by PTTC. Reasonable steps are taken to ensure the reliability of sources for information that PTTC disseminates, but individuals and institutions are solely responsible for the consequences of its use.

III. RESULTS AT THE REGIONAL LEVEL

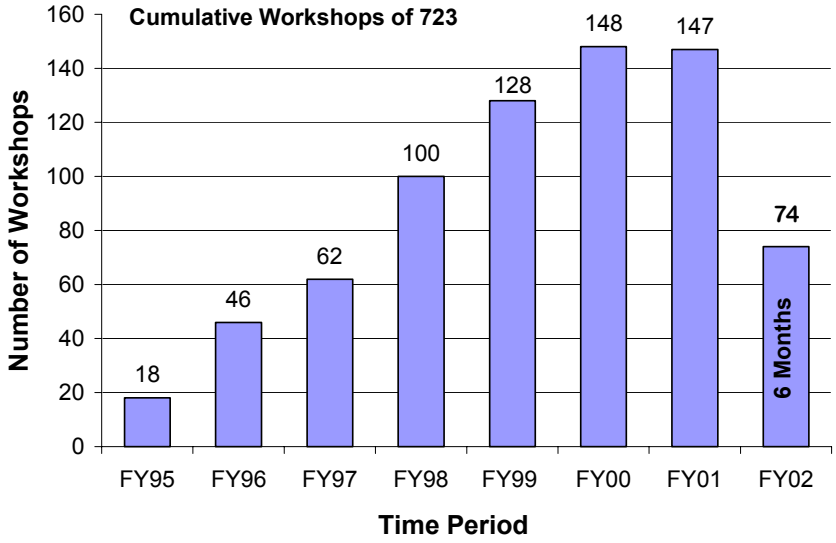
Although nationally organized, PTTC's ten regions are the primary delivery mechanism for technology transfer programs to industry. It is in the regions where PTTC reaches independent producers through workshops, resource centers, information resources, websites, newsletters, and personal contacts. Primary statistics illustrating the volume, and inferred impact, of PTTC activity are summarized in **Table 3** and **Figure 5** following.

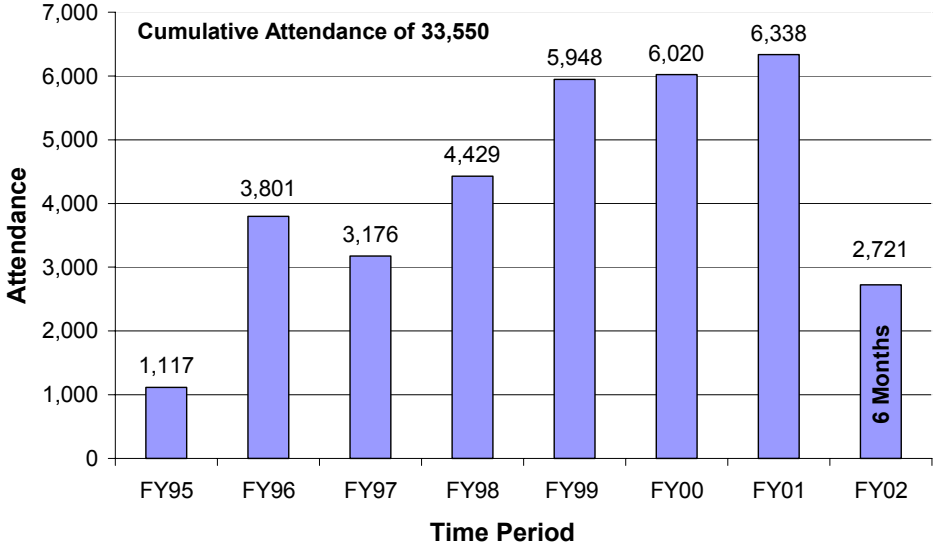
Table 3—Summary of PTTC Regional Activity (2nd Quarter FY02)

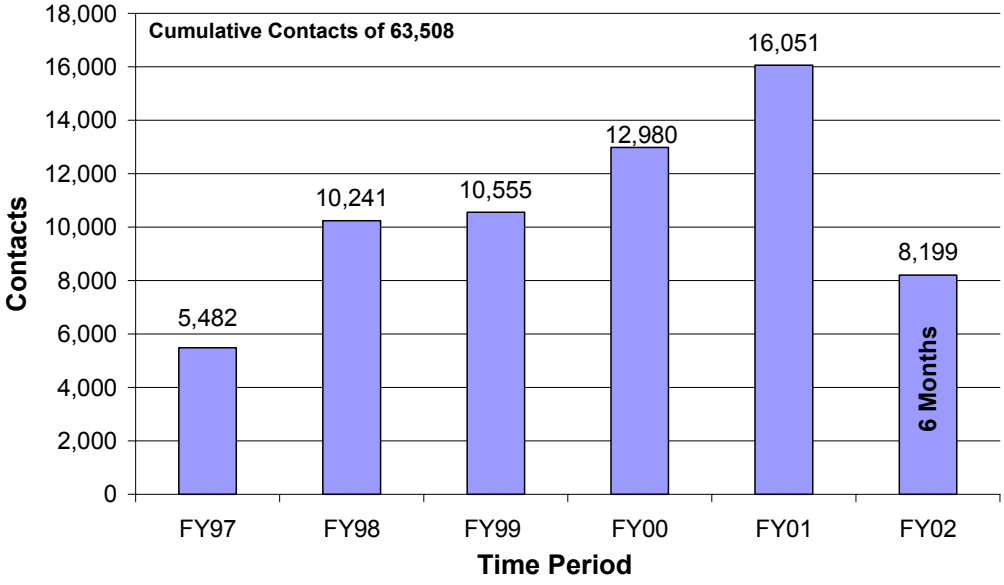
Region	Workshops			Industry Contacts	Website (mo. avg.)		Newsletter Function
	No.	Attend.	From E&P Industry (%)		User Session	Page Views	
Appalachian	0	0	NA	471	2,759	5,535	Online newsletter—Feb 2002
Central Gulf	2	47	36 (77%)	197	3,044	7,313	LIOGA newsletter—Jan & Mar 2002, circ. 923
Eastern Gulf	1	10	8 (80%)	199	1,812	10,372	Quarterly Newsletter –March, circ. 650
Midwest	1	49	38 (77%)	831	3,465	8,196	Semi-annual newsletter—Not published this quarter
N. Midcontinent	1	95	71 (75%)	698	31,036	114,615	Semiannual Newsletter – Mar 2002; circ. 4,842
Rocky Mountain	6	104	81 (78%)	588	4,470	21,233	Quarterly Newsletter – (12/02) circ. 2098 (95% industry; 5% elect. Subs)
S. Midcontinent	13	517	466 (90%)	517	2,642	27,694	Qtrly Newsletter – Feb 2002, circ. 5,875 w PUMP questionnaire
Southwest	1	33	29 (87%)	141	5,413	54,985	Semi-annual PRRC, Jan 2002, circ. 3400, monthly on-line
Texas	1	24	21 (88%)	544 (1,487 TIPRO)	6,468 (113,254 outreach)	11,818 (395,645 outreach)	Newsletter-not this quarter; PBPA, TIPRO, ETGS, Midland paper
West Coast	3	205	172 (84%)	52	2,361	6,827	Announcements in CIPA weekly
All Regions 2nd Qtr FY02	**29**	**1,084**	**922 (85%)**	**4,238**	**63,470**	**268,588**	
All Regions 1st Qtr FY02	**45**	**1,637**	**1,284 (78%)**	**3,961**	**1st Half FY02 versus 1st Half FY01 -- 5 % decrease in # of workshops -- 6 % decrease in attendance**		
1st Half FY02	**74**	**2,721**	**2,206(81%)**	**8,199**	**-- 18 % increase in contacts**		
1st Half FY01	**78**	**2,906**	**2,420 (86%)**	**6,971**	**44 workshops planned during 3rd Qtr FY02**		

Repeat Attendance at Workshops: *Of 74 workshops during 1st Half FY02 where repeat attendance was reported, the calculated average was 64%. (Measured as % of industry attendees that had previously attended a workshop in that region).*

Figure 5—PTTC Workshops, Attendance and Contacts







PTTC Appalachian Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (8 events)			**490**	**435(89%)**	
Case Study of An Upper Devonian Sandstone Oil Reservoir	Morgantown, WV	10/23/01	18	11 (61%)	27%
Optimized Horizontal Well Technology, Part A (Maurer Technology Inc.)	Delaware, OH	11/01/01	18	16 (89%)	88%
Field-Oriented Research Projects for Independents (DOE)	Washington, PA	11/08/01	15	8 (53%)	63%
Optimized Horizontal Well Technology, Part B (Maurer Technology Inc.)	Washington, PA	12/14/01	15	14 (93%)	86%
Operational Aspects of the Trenton-Black River Play (Ohio Geological Survey)	Canton, OH	4/25/02			
Integrating GPS and GIS for the Petroleum Industry (Kentucky Geological Survey)	Lexington, KY	5/16/02			
Gas Storage: Case Studies and New Potential	Morgantown, WV	5/29/02			
Outcrop Analogs for Trenton-Black River Fractured Dolomite Reservoirs: A Field and Core workshop	Lexington, KY	6/4/02			

Industry Contacts: 471 (59 PTTC-initiated)
Website (monthly average): 2,759 user sessions, 5,535 page views, 12 min. User sessions increased modestly. Page views unexpectedly dropped in Jan/Feb, but were back to normal levels in March. The most frequently requested pages are the AAPG Eastern Section, the newsletters, summaries of research by independents, compilation of papers presented at Eastern Section AAPG meetings, and summary of fracture stimulation techniques. Development of the interactive website that allows users to post well locations basin-wide for the Trenton and coalbed methane plays, as well as horizontal wells, has been completed. The geological surveys in Kentucky, New York, Ohio, Pennsylvania, and West Virginia have provided well locations and data for tables that can be accessed by users. Surveys in Tennessee and Virginia will supply data in the near future.
Workshops: No official PTTC workshops were held this quarter, but staff were deeply involved in the problem identification and preferred practices workshop held by WVU on Jan 22nd as part of its DOE PUMP project. During that workshop, three concurrent breakout sessions were held to identify problems and best practices concerning data collection, reservoir characterization and drilling, and stimulation and production. During the morning session, speakers (including Lance Cole from PTTC) presented case studies. Findings from the breakout sessions are summarized under problem identification (below).
Newsletter: Online newsletter in February 2002. Newsletter is one of the frequently requested pages.
Outreach: Staff participated in professional society or other meetings in Pennsylvania, Tennessee, Texas and West Virginia, giving promotional talks in several. Interest in the Trenton-Black River was responsible for several of the invitations, including a talk by Lee Avary at the AAPG annual meeting in Houston. Regional contacts increased, with much of the PTTC-initiated outreach being related to the PUMP workshop and recruiting speakers for future workshops. Contacts were also made to recruit candidates for the PAG and to serve on committees for the 2003 Eastern Section AAPG meeting in Pittsburgh. Staff also recruited three speakers on coalbed methane for an IOGA-PA meeting to be held in May. Staff will exhibit at the IOGA-TN meeting in Knoxville in May, where Doug Patchen will present a case study on reservoir characterization of a West Virginia oil field. Mark Hoffman will speak about the PTTC and PUMP program before IOGA-VA in Virginia Beach during June. Staff encouraged other members of AONGRC to join DOE's Stripper Well Consortium, of which two did with one receiving an award. Calls about and plans for meetings during 2003 are already occurring. Regional staff is actively networking with industry associations and professional societies throughout the region.
Follow-up: Feedback from those attending regional events is highly positive, but producers remain reluctant to share case study information, particularly in the hot Trenton-Black River play. As part of the effort to identify success stories for DOE, staff developed a plot of Trenton-Black River permitting activity in West Virginia versus time, showing the timing of different PTTC workshops. There was definite evidence that PTTC events stimulated additional permitting. A Tennessee operator has also shared how insights and confidence gained through PTTC events led them to embark upon a 10-well deepening program in Tennessee. Interest in Trenton-Black River information remains high, and two Trenton-related workshops are planned during the coming quarter.

Case Studies: Some case studies were presented in the WVU PUMP workshop. Additional case studies will be solicited during one-on-one interviews during the PUMP project.

Problem Identification (findings from PUMP workshop):

The breakout session on data considered data collection, use, needs, automation and management. The group concluded that digital data in a standard format for all Appalachian states are highly desirable. Important elements include accurate x, y and z location and elevation data, and production and reservoir data that can be used to identify under-performing wells and in-fill and up-hole completion potential more cost effectively. Better methods for the direct collection of automated data while in the field should be complemented with better training and education of oil field personnel.

The breakout group on reservoir engineering concluded that it is important to be able to isolate zones to determine productive units, to carry out geologic modeling and to integrate data of different types from disparate sources. They also stated that it is vital to have access to existing oil field information on specific fields, including company and government reports. They suspected that a lot of good data is "lost" in company or government files. These data must be found, made available to everyone and integrated in some way. The suggestion was made that regional experts should be interviewed by RLO staff members to identify sources of data. It is quite common for a company to hold an acreage position in only a small portion of a field, forcing them to make decisions with only a limited amount of field data. Published case studies are nearly as important as more data. It was suggested that a basin-wide repository of reservoir data and a database of reservoir characterization efforts would make good topics for future workshops.

The breakout group on drilling, stimulation and production problems came up with two separate lists of problems to be overcome. Drilling problems include drill rig safety and knowledge of safe drilling practices; region-wide lack of drilling personnel, trained or otherwise; existing equipment is aging and possibly poorly maintained and new equipment is unavailable; the permitting and regulatory process is becoming increasingly more complex; and there is a regional problem with drillers who are unprepared for high pressure or high volume flows in deeper wells.

Completion problems identified by the group include difficulties with accurate, multi-stage completions; cementing problems, particularly in deep wells with long drill strings; unsafe or poorly maintained service rigs; stimulation difficulties; and reservoir-specific problems such as the accurate identification of lithologies and selection of best completion techniques for fractured reservoirs.

Other Info: None reported.

PTTC Central Gulf Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (7 events , plus 1 w Eastern Gulf)			**213**	**189 (89%)**	
Field-Oriented Research Projects for Independents (DOE, Eastern Gulf Region)	Jackson, MS	10/30/01	Reported by Eastern Gulf Region		
Louisiana Energy and the Environment	Baton Rouge, LA	11/14/01	34	32 (94%)	0%
Essentials of Subsurface Mapping	Lafayette, LA	1/23/02	35	24 (69%)	51%
Field-Oriented Research Projects for Independents (DOE, Texas Region)	Tyler, TX	2/06/02	Reported by Texas Region		
Optimized Horizontal Well Technology, Parts A&B (Maurer Technology Inc., Eastern Gulf Region)	New Orleans, LA	3/19-20/02	12	12 (100%)	50%
Reservoir Characterization Technology	Shreveport, LA	4/30/02			
Using Technology to Reduce Severance Taxes	New Orleans	TBD			
Application of SonRis, Louisiana DNR's Oil & Gas Database	Lafayette, Shreveport, & Houston	TBD			

Industry Contacts: 197 (46 PTTC-initiated)
Website (monthly average): 3,044 user sessions, 7,313 page views, 8 min. Reformatting of web pages to reduce frames reduced page views, a quirk of the WebTrends software. Some graphics were also eliminated.
Workshops: With the Texas Region, the region co-sponsored the DOE Traveling workshop in Tyler, TX in early February. With the Eastern Gulf Region, they hosted the Maurer Horizontal Drilling workshop, Parts A and B, in New Orleans. Although lightly attended, those who did attend the horizontal drilling workshop were quite serious about horizontal drilling. Success is not always measured in numbers. The subsurface mapping workshop in Lafayette drew a good crowd. Staff finalized planning of the reservoir characterization workshop to be held during April in Shreveport, plus began coordinating with the Louisiana Department of Natural Resources (DNR) about a series of workshops on DNR's SONRIS online oil and gas database.
Newsletter: Announcements in *LIOGA News* in Jan and March, circulation 923.
Outreach: Don Goddard supported HQ in staffing its booth at NAPE in Houston in January. He also supported the booth during the AAPG annual meeting in Houston in March. 32 of the reported contacts are associated with booth activity. Staff exhibited at LIOGA's annual meeting in Point Clear, AL in March. During the LIOGA meeting, the PAG met. Discussion topics included: (1) success stories for DOE, (2) distributing the *2001 Louisiana Desktop Well Reference*, (3) an upcoming workshop series on the SONRIS oil and gas database system, (4) acceptance of a new PAG member (Bob Meredith), (5) a potential workshop on accounting, (6) liability concerns associated with the region's participating in COMET 2002 at USC, (7) the recent Board meeting, and upcoming term end for PAG Chair Don Solonas.
Follow-up: As follow-up to the Board meeting, staff developed success stories demonstrating producers taking action with information from past workshops about power cost savings, horizontal drilling, and produced water management. Through the Downhole Water Sink (DWS) Consortium, Andrew Wojtanowicz provided information to ICF Consulting (under contract to DOE) about emerging technologies for managing produced water. Advising sessions were held with William Helis Company (West Bay Field, LA) and PDVSA, plus screening tests were performed for AWP Operating Company out of San Antonio, TX. An advisory board meeting was also held in Baton Rouge. Invitations for DWS presentations have been received from Oman's Oil and Gas Ministry and from Pemex.
Case Studies: The study of TMR Exploration's Livingston Field Wilcox production is complete. By-passed oil, accessible via horizontal wells, was identified. TMR plans to drill the scenario involving two lateral wells. Potential approaches 2 million bbls. Additional potential from CO_2 flooding is also being evaluated. Future results will be shared within PTTC workshops.
Problem Identification: Ongoing efforts.
Other Info: Product sales—*Louisiana Desktop Well Reference* ($1,600); Quick Look Handbook ($20)

PTTC Eastern Gulf Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (9 events, plus 1 w Central Gulf)			**415**	**265 (64 %)**	
Field-Oriented Research Projects for Independents (DOE, Central Gulf Region)—Note 50% of Louisiana attendees were repeat attendees	Jackson, MS	10/30/01	28	19 (67%)	14%
Open-Hole Log Interpretation (Mississippi State Board of Registered Professional Geologists)	Jackson, MS	11/28/01	51	33 (65%)	61%
Software Demonstration on Cross-Section Generation Using MJ Systems Raster Log Images and Digirule's CrossLog Suite	Raymond, MS	2/25/02	10	8 (80%)	75%
Optimized Horizontal Well Technology, Part A&B (Maurer Technology Inc., Central Gulf Region)	New Orleans, LA	3/19-20/02	Reported by Central Gulf		
Seismic Micro Technology's Kingdom Suite 2D/3D Pak Interpretation	Raymond, MS	4/15/02			
Recent Activity and Trends in the Mississippi-Alabama Oil Patch (Mississippi Geol. Society)	Jackson, MS	5/16/02			
Geohydrology Applications to Petroleum and Environmental Geology and Engineering (Mississippi State Board of Registered Professional Geologists)	Jackson, MS	5/22/02			

Industry Contacts: 199 (no PTTC-initiated contacts)
Website (monthly average): 1,812 user sessions, 10,372 page views, 13 min. Reports on Jurassic carbonate reservoirs were added and changes/enhancements to the website suggested by Headquarters were made. Average monthly usage of the website developed by the Mississippi Office of Geology was: 2,452 well folders, 4,268 searches, and 2,141 images.
Workshops: With the Central Gulf Region, the region co-hosted the two-day horizontal drilling workshop in New Orleans. However, all attendees were from Louisiana. Two cooperative events are planned for the coming quarter—supporting the Mississippi Geological Society in its major spring meeting and a geohydrology workshop with the Mississippi State Board of Registered Petroleum Geologists. A third software training workshop featuring SMT's Kingdom Suite is planned.
Newsletter: March 2002. Circ. 650, 95% industry. Newsletter posted online.
Outreach: Ongoing efforts.
Follow-up: Through the years, the region has presented several geological- or exploration-oriented workshops, including the Smackover Reef Play, Tuscaloosa Marine Shale Play, Norphlet Eolian Play and Lower Cretaceous Carbonate play. These workshops provided new exploration strategies for drilling in the Eastern Gulf. Speakers from the Reef Workshop met with companies in Texas and Mississippi after the workshop to review specific company projects. Norphlet data presented at the workshop from the offshore was used for onshore exploration. Exploration objectives were targeted in Lower Cretaceous carbonates (James Limestone) based on information presented at that workshop. Tuscaloosa Marine Shale objectives were planned in Mississippi from this workshop. The Tuscaloosa was one of the best attended workshops and it was initiated by an independent. Wells were drilled and production resulted from these workshops. Although impossible to quantify, these workshops definitely influenced the actions taken.
Case Studies: Working with an independent on the Womack Hill Field.
Problem Identification: Ongoing discussion of future topics at workshops held in Jackson, MS.
Other Info: None reported this quarter.

PTTC Midwest Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (7 events)			**254**	**207 (81%)**	
Video Seminar on Deltaic Environments	Mt. Vernon, IL	10/22/01	11	9 (82%)	100%
Video Seminar on Deltaic Environments	Grayville, IL	10/23/01	20	17 (85%)	94%
Field-Oriented R&D Projects By Independents (DOE)	Evansville, IN	11/01/01	20	8 (40%)	50%
Benoist Sandstone Play-Based Workshop	Mt. Vernon, IL	11/16/01	39	31 (79%)	90%
Keys to Optimized Horizontal Drilling, Part B (Maurer Technology Inc.	Lansing, MI	12/10/01	66	48 (73%)	43%
Keys to Optimized Horizontal Drilling, Part B (Maurer Technology Inc.)	Grayville, IL	12/12/01	19	16 (84%)	94%
Field-Oriented R&D Projects by Independents (DOE)	Lansing, MI	2/19/02	49	38 (77%)	59%
Applied Digital Subsurface Mapping	Mt. Carmel, IL	4/18-19/02			

Industry Contacts: 831 (20 PTTC-initiated)
Website (monthly average, IL): 3,465 user sessions; 8,196 page views; 8 min (Illinois site)
User sessions for the main regional site declined 27% this quarter, but were up 39% in the Michigan satellite. Increased activity is seen especially at the data and statistic sites. New field play data, added last quarter, receives a lot of traffic and interest has been very high in the Antrim database. Overall, Michigan usage is twice the level a year ago. Major improvements in the Illinois site will be made during the next two years as ISGS implements its PUMP II contract.
Workshops: Michigan hosted the DOE traveling workshop, drawing 49 paid attendees to hear results from six Independents projects and learn about DOE's R&D programs for independents. High attendance can be attributed to an extensive promotional campaign using flyers, press releases, email alerts and personal calls. Next quarter, Tim Carr from the Kansas Geological Survey will present a software course on GeoPlus's PETRA package. GeoGraphix has also contacted the region about a software training workshop.
Newsletter: Semiannual newsletter – not issued this quarter.
Outreach: Contacts increased 29% in Illinois and remained steady in Michigan. The region exhibited at the Illinois Oil & Gas Association meeting, where Steve Gustison gave a talk about new web-based resources. Staff routinely attends monthly meetings of professional societies. Bill Harrison gave talks before three professional societies (Middle Devonian Dundee formation, Michigan oil and gas production, and drilling under the Great Lakes) and gave a radio interview about drilling under the Great Lakes and fluctuating gas prices. Dave Morse and Bill & Linda Harrison attended the AAPG annual meeting in Houston. In the Illinois Resource Center, staff continues to improve the well information database and complete the Oil and Gas Development Map Series. ArcView techniques are being developed to make mapping more automated. The custom basemap service remains very popular. Progress continues in the core analysis database.
Follow-up: As follow-up to the Board meeting, staff discovered information showing how Barger Engineering was routinely using log analysis techniques learned about through PTTC to make more informed recompletion decisions, and saving/making more money in their recompletion efforts.
Case Studies: The Headington Oil/Basnett case study on Aux Vases development is still being pursued. Another recent giant discovery in Illinois employed 3D seismic and horizontal/underbalanced drilling. The involved geologist/geophysicist attended PTTC workshops on these topics, so staff is following up with him to see how PTTC information may have influenced the technologies used in the project.
Problem Identification: Michigan operators have expressed interest in many topics. A partial list includes: pump technology, drilling technology, AVO and shear wave mapping, environmental problems with forested wetlands, production problems and solutions in coalbed methane or Antrim shale projects, paraffin removal, microbial EOR, compartmentalized reservoirs, completions, newer H_2S sweetening processes.
Other Info: Product sales, maps of different types ($1,150).

PTTC North Midcontinent Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (8 events)			**403**	**328 (81 %)**	
Optimized Horizontal Well Technology, Part B (Maurer Technology Inc.)	Wichita, KS	10/30/01	28	20 (71%)	82%
Field-Oriented Research Projects By Independents (DOE)	Wichita, KS	11/29/01	52	36 (69%)	58%
Petroleum Technology Fair	Wichita, KS	3/27/02	95	71 (75%)	56%
Independents' Day at the SPE/DOE IOR Symposium (DOE, SPE, South Midcontinent	Tulsa, OK	4/16/02			
Improving Oil Recovery Using Integrated Evaluation Techniques	Wichita, KS	4/23/02			
Log Analysis in Kansas Using Excel Spreadsheets	Lawrence, KS	5/23/02			

Industry Contacts: 698 (120 PTTC-initiated)
Website (monthly avg.): 31,036 user sessions, 114,615 page views; 18 min.
Usage continues to increase, consistently showing quarter-to-quarter and year-to-year increases. Staff maintains the calendar and continuously improves and expands site capabilities. Databases are continuously expanded and access improved.
Workshops: Attendance exceeded expectations at the Technology Fair in Wichita. Speakers from Baker-Petrolite (foamers for unloading gas wells), J Integral Engineering Inc. (solid propellant stimulation), Kansas State University (oil-brine cleanup), TIORCO Inc. (Arbuckle gel polymer), Kansas Geological Survey (3D seismic attribute analysis), Plugging Systems LLC (low cost plugging) and Schlumberger Field Services (cased hole resistivity logging) provided insights about their technologies. Ten service companies attended with their exhibit booths. In the coming quarter, the North and South Micontinent Regions are cooperating to deliver an Independent's Day session at the SPE/DOE Improved Oil Recovery Symposium in Tulsa. Workshops are also planned on log analysis and integrated evaluation techniques.
Newsletter: Semiannual newsletter – March 2002, circ. 4842 (80% industry). Articles provided information about DOE's Stripper Well Consortium, cased hole formation resistivity log applications in Kansas, a DOE Independents grant to a Kansas operator, and the top 30 oil and gas producers in Kansas.
Outreach: Staff interacted with producers about stimulating Arbuckle wells, Cementing Solutions Inc.'s low cost plugging procedure, some DOE project results, and how to access data in selected fields. Staff also spoke with 3Esteam about a new type of steam generator. They also contacted several vendors about participating in the upcoming Technology Fair.
Follow-up: As follow-up to the Board meeting, staff identified how PTTC has influenced participation in DOE R&D programs. Independents have learned of and successfully competed for awards, including a Class Revisit, PUMP I, and four Technology Development with Independents awards. In conversations with Richard Schmidt in mid-April, he indicated that orders were received for several solid propellant stimulation treatments almost immediately after the Technology Fair.
Case Studies: Citation Oil and Gas and TIORCO are sharing field experience with large volume MARCIT^{sm} (gel polymer) treatments in Kansas Arbuckle producers in the *Petroleum Technology Digest*, to be published in the June issue of *World Oil*.
Problem Identification: Ongoing efforts.
Other Info: The long-awaited TORP coalbed methane manual is now being printed and will be available for distribution in the very near future. Staff is also involved in the TORP/KGS/MV Energy DOE-funded CO_2 miscible flooding field demonstration project in the Lansing/Kansas City reservoir in central Kansas.

PTTC Rocky Mountain Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (27 events)			**1,081**	**938 (87 %)**	
Structural Traps and Fractured Reservoirs of the Rocky Mountain Region (RMAG)	Denver, CO	10/01/01	300	250 (83%)	90%
GeoPlus PETRA Basic Training (AAPG)	Golden, CO	10/4-5/01	17	16 (94%)	88%
Introduction to Monte Carlo Simulation	Golden, CO	11/02/01	20	16 (80%)	50%
Field-Oriented R&D Projects By Independents (DOE)	Denver, CO	11/27/01	9	8 (89%)	78%
Inexpensive, Rapid Cross-Section Generation MJ Systems' Raster Log Images-DigiRule's CrossLog	Golden, CO	11/30/01	15	15 (100%)	94%
Desktop Applications for Petroleum Prof., Day 1	Golden, CO	1/18/02	19	16 (84%)	79%
Desktop Applications for Petroleum Prof., Day 2	Golden, CO	1/25/02	19	16 (84%)	79%
Kingdom 2D/3Dpak (Data Loading)	Golden, CO	2/6/02	19	13 (68%)	63%
Kingdom 2D/3Dpak (Interpretation)	Golden, CO	2/7/02	18	13 (72%)	72%
Kingdom 2D/3Dpak (EarthPak)	Golden, CO	2/8/02	10	7 (70%)	50%
GeoPlus PETRA Basic Training	Golden, CO	2/12&15/02	19	16 (84%)	84%
Subsurface Fluid Pressures and Their Relation to O&G Generation, Migration, & Accumulation	Durango, CO	4/12/02			
Optimized Horizontal Drilling, Part B (Maurer Tech)	Denver, CO	4/23/02			
Rocky Mountain Energy Technology Conf. (IPAMS)	Denver, CO	4/24-25/02			
RockWorks 2002 Software Training	Golden, CO	5/21/02			
RockWorks Visual Seismic Software Training	Golden, CO	5/22/02			
GeoGraphix GESX Basic Training	Golden, CO	6/12/02			
Seismic Stratigraphic Modeling (DigiRule Synthetic)	Golden, CO	6/14/02			
Coalbed Methane Symposium (RMAG)	Denver, CO	6/19/02			
GeoPlus PETRA Basic Training	Golden, CO	6/20-21/02			
Desktop Applications—Spreadsheet & Database	Laramie, WY (AAPG RMS Meeting, RMAG, AAPG DPA)	9/7/02			
Desktop Applications—PowerPoint & Graphics		9/8/02			
Interpreting Sedimentary Environments Using Borehole Images, Cores and Outcrop Studies for Prospect Generation & Field Development		9/8/02			
Low Permeability Gas Sands		9/11/02			

Industry Contacts: 588 (176 PTTC-initiated contacts)
Website (monthly average): 4,470 user sessions; 21,233 page views; 25 min. There are now about 50 registered users for the Data Exchange. Access problems initially experienced have been resolved. Through macro writing, the mudlog data received from the Wyoming Geological Association (WGA) has been processed and is now posted online. The ordering process through the Data Exchange has now been automated. The website for the WGA (www.wyogeo.com), developed in exchange for free advertising, became operational in January.
Workshops: Six software-oriented workshops were held this quarter. Being a narrowly focused topic, the RMAG Symposium on Structural Traps and Fractured Reservoirs still drew 300 attendees. Next quarter, major cooperative events include IPAMS's Energy Technology Conference and RMAG's Coalbed Methane Symposium.
Newsletter: November 2001 (circulation 2,104 with 95% from industry; 83 subscriptions are electronic).
Outreach: The region staffed a booth at the AIPG legislative reception in Denver on February 5. Good conversations were held with about 10 state congressmen. Sandra Mark attended AAPG's annual meeting in Houston, where she assisted with staffing PTTC's booth. Networking in the exhibit hall allowed her to maintain relations with software companies.
Follow-up: As follow-up to the Board meeting, staff learned how an environmental consultant was using visualization software learned about through PTTC for producers, saving them significant money in court cases they won. Brook Phifer also developed a chart illustrating how coalbed methane production by one independent, who had attended a PTTC coalbed methane workshop, has grown over the recent past.
Case Studies: Ongoing efforts.
Problem Identification: Ongoing efforts.
Other Info: None.

PTTC South Midcontinent Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (51 events + MWC Trade Fair)			**1,762**	**1,549 (88 %)**	
Field Operations-Pumpers Cost Controls (MWC)	Tulsa, OK	10/04/01	14	12 (86%)	50%
Coalbed Methane Field Trip (OGS)	Poteau, OK	10/09/01	18	11 (61%)	94%
Coalbed Methane Workshop (OGS)	Poteau, OK	10/10/01	85	69 (81%)	74%
Coalbed Methane Field Trip (OGS)	Poteau, OK	10/11/01	38	27 (71%)	95%
NRIS Web/Mapping Workshop (GIS)	Tulsa, OK	10/11/01	11	11 (100%)	0%
NRIS Web/Mapping Workshop (GIS)	Tulsa, OK	10/12/01	11	11 (100%)	0%
Plugging: The Last Resort (MWC)	Pawhuska, OK	10/19/01	10	4 (40%)	90%
Cleveland & Peru Play Workshop (OGS)	Tulsa, OK	10/24/01	13	9 (69%)	85%
Plugging: The Last Resort (MWC)	Oklahoma City, OK	10/26/01	14	10 (71%)	50%
Plugging: The Last Resort (MWC)	Tulsa, OK	11/02/01	3	3 (100%)	66%
Springer Field Trip	Ardmore, OK	11/08/01	23	16 (70%)	91%
Advanced Arc View Mapping Software (GIS)	Tulsa, OK	11/09/01	9	9 (100%)	0%
Soil Remediation (MWC)	Pawhuska, OK	11/14/01	15	13 (87%)	71%
Soil Remediation (MWC)	Oklahoma City, OK	11/16/01	24	22 (92%)	46%
Garber Ground Water Aquifer Field Trip (OGS)	Norman, OK	11/17/01	72	28 (39%)	13%
Soil Remediation (MWC)	Tulsa, OK	11/30/01	12	11 (92%)	58%
Soil Remediation (MWC)	Ardmore, OK	12/14/01	9	8 (89%	30%
Joint Operating Agreements (MWC)	Oklahoma City, OK	01/17/02	52	52 (100%)	30%
Joint Operating Agreements (MWC)	Tulsa, OK	01/23/02	53	52 (98%)	30%
Reducing Power Costs In Old Fields (MWC)	Duncan, OK	02/26/02	13	12 (92%)	15%
Reducing Power Costs In Old Fields (MWC)	Oklahoma City, OK	02/27/02	24	24 (100%)	54%
Reducing Power Costs In Old Fields (MWC)	Tulsa, OK	02/28/02	19	17 (89%)	16%
Oil & Gas Management From Beginning (MWC)	Bartlesville, OK	3/05/02	60	60 (100%)	12%
Production Equipment Operations (MWC)	Duncan, OK	03/07/02	17	17 (100%)	42%
Production Equipment Operations (MWC)	Oklahoma City, OK	03/14/02	46	46 (100%)	50%
Production Equipment Operations (MWC)	Tulsa, OK	03/21/02	21	20 (95%)	43%
Remediation of Salt-Impacted Soils (MWC)	Drumright, OK	3/21/02	43	30 (70%)	42%
Coalbed Methane 2002 Update Workshop (OGS)	Oklahoma City, OK	03/27/02	117	110 (94%)	64%
Production Equipment Operations (MWC)	Woodward, OK	03/28/02	14	14 (100%)	34%
Garber Ground Water Aquifer Field Trip (OGS)	Norman, OK	03/30/02	38	12 (32%)	0%
Asphaltenes & Paraffin Problems (MWC)	Duncan, OK	4/09/02			
Asphaltenes & Paraffin Problems (MWC)	Oklahoma City, OK	4/10/02			
Asphaltenes & Paraffin Problems (MWC)	Tulsa, OK	4/11/02			
Independents Day SPE/DOE IOR Symposium	Tulsa, OK	4/16/02			
Bartlesville Play (Oklahoma City Geol. Society)	Oklahoma City, OK	4/23/02			
Bartlesville Play (Tulsa Geological Society)	Tulsa, OK	4/25/02			
Legal & Regulatory Issues (MWC)	Duncan, OK	5/02/02			
Legal & Regulatory Issues (MWC)	Oklahoma City, OK	5/09/02			
Finding & Producing Cherokee Reservoirs (OGS)	Norman, OK	5/14-15/02			
Legal & Regulatory Issues (MWC)	Woodward, OK	5/16/02			
Legal & Regulatory Issues (MWC)	Tulsa, OK	5/21/02			
Naturally Fractured Reservoirs (OU PE & GE)	Oklahoma City, OK	6/3-4/02			
Introduction to O&G Data w ArcView (OU GIS)	Oklahoma City, OK	6/7/02			
Trade Fair (MWC)	Tulsa, OK	6/14/02			
Red Fork Play (Oklahoma City Geol. Society)	Oklahoma City, OK	6/19/02			
Red Fork Play (Tulsa Geological Society)	Tulsa, OK	6/20/02			
Practical Rsvr Characterization for Indep. (OGS)	Norman, OK	6/24-25/02			
Plunger Lift Operations (MWC)	Duncan, OK	8/05/02			
Plunger Lift Operations (MWC)	Oklahoma City, OK	8/06/02			
Plunger Lift Operations (MWC)	Tulsa, OK	8/07/02			
Plunger Lift Operations (MWC)	Woodward, OK	8/08/02			
OCC/OTC Forms (MWC)	Duncan, OK	9/05/02			

OCC/OTC Forms (MWC)	Oklahoma City, OK	9/12/02			
Identification-Correlation of Coalbeds (TGS,OGS)	Tulsa, OK	9/18-19/02			
OCC/OTC Forms (MWC)	Tulsa, OK	9/19/02			
Identification-Correlation of Coalbeds (OGS, OCGS)	Oklahoma City, OK	9/24/02			

Industry Contacts: 517 (58 PTTC-initiated contacts)
Website (monthly average): 2,642 user sessions (WebTrends software can not be used on OU server).
Workshops: The combined cooperative efforts of the Oklahoma Geological Survey (OGS) and the Marginal Well Commission (MWC) presented 13 workshops, drawing 517 attendees. OGS efforts covered coalbed methane (one workshop) and a Garber Ground Water Aquifer field trip. Topics for MWC workshops included joint operating agreements, reducing power costs in old fields, oil and gas management from the beginning, production equipment operations, and remediation of oil-and salt-impacted soils. Major OGS workshops for the coming quarter include Independent's Day at the SPE/DOE Improved Oil Recovery Symposium, Finding and Producing Cherokee reservoirs (two-day OGS workshop), an OU seminar on Naturally Fractured Reservoirs, and two half-day workshops on the Red Fork play. The MWC continues its topically-oriented workshops, plus hosts the Trade Fair in Tulsa on June 14. OU GIS has scheduled an ArcView workshop. OGS has negotiated with Deborah Sacrey, Auburn Energy in Houston, to provide a 3-D seismic workshop in spring 2003.
Newsletter: February 2002, circ. 5,875 (est. 98% industry)
Outreach: Staff plans to work more closely with SPE chapters to increase awareness of PTTC-sponsored workshops.
Follow-up: Numerous calls and contacts from operators who have attended the play-based workshops indicate that they are pursuing opportunities using the information presented during the workshops.
Case Studies: Ongoing efforts.
Problem Identification: Ongoing efforts.
Other Info: Revenue from Computer User Laboratory = $349.

PTTC Southwest Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (5 events, plus several w Texas)			**282**	**202 (72 %)**	
Field-Oriented R&D Projects By Independents (DOE, Texas Region)	Midland, TX	11/06/01	Attendance reported by Texas Region		
2001 CO_2 Conf. (CEED, Texas Region, others)	Midland, TX	12/5-6/01	Attendance Reported by Texas Region		
Optimized Horizontal Drilling, Part B (Maurer Technology Inc., Texas Region)	Midland, TX	12/18/01	Attendance Reported by Texas Region		
Wellbore Management (Texas Region)	Artesia, NM	2/13/02	33	29 (87%)	25%
Corrosion Management	Farmington, NM	6/25/02			
Computer Applications	Artesia, NM	TBD			

Industry Contacts: 141 (26 PTTC-initiated)
Website (monthly avg.): 5,413 user sessions, 54,985 page views; 11 min to 2 hr.
Statistics measured by WebTrends software appear anomalous this quarter. Data are being examined to see if the cause for the fluctuations can be determined. Staff has forwarded the calendar routine developed for the website to PTTC for adaptation within PTTC Net. Staff has been working with the New Mexico State Land Office (SLO) to help them put more information about state oil and gas leases and lands on the Internet. Several data screens, which should be available within the next few months, have been developed. This work has also led to a DOE PUMP III proposal from the Petroleum Recovery Research Center (PRRC) to link many oil- and gas-related databases into one GIS interface.
Workshops: Considering the location in Artesia, the wellbore management workshop (developed by Bob Kiker, Texas Permian Basin Director) was very well attended. Attendees particularly enjoyed Ken Barker's (Baker-Petrolite) presentation on paraffins and asphaltenes. As an outgrowth of the corrosion work group, a corrosion management workshop is planned in Farmington during the coming quarter. The computer applications workshop, originally planned for this quarter, is being rescheduled.
Newsletter: Semi-annual PRRC newsletter, Jan 2002, circ. 3400. Monthly online newsletter, *Southwest Regional Review*.
Outreach: Dr. Lee made a presentation on NM Tech's reverse osmosis desalinization project during a produced water management conference in Durango, CO in February. Staff visited with NM SLO staff in Santa Fe about data access/GIS needs. Dr. Lee also visited Sandia National Laboratory and a producer in Roswell. During the coming quarter, staff will attend the Four Corners Oil and Gas Show in Farmington and the Southwest Section AAPG meeting in Ruidoso.
Follow-up: As follow-up to the Board meeting, staff documented how needs input from producers attending regional efforts led to work groups being formed within New Mexico Tech. Examples include the "chlorides/brine" and "corrosion" work groups. Frequently, proposals to different DOE-funded programs result, many of which receive awards.
Case Studies: Ongoing efforts.
Problem Identification: Ongoing efforts.
Other Info: None.

PTTC Texas Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (6 events, plus several w Southwest, C Gulf)			**450**	**434 (96 %)**	
DigiRule's Cross-Section Software (Midland Coll.)	Midland, TX	10/03/01	5	5 (100%)	60%
Field-Oriented R&D Projects By Independents (DOE, Southwest Region)	Midland, TX	11/06/01	16	14 (88%)	36%
DigiRule's Cross-Section Software	Farmers Branch, TX	11/15/01	6	6 (100%)	0%
2001 CO_2 Conf. (CEED, Texas Region, others)	Midland, TX	12/5-6/01	195	176 (90%)	80%
Optimized Horizontal Drilling, Part B (Maurer Technology Inc., Southwest Region)	Midland, TX	12/18/01	33	33 (100%)	20%
DOE Field-Oriented R&D Projects (Central Gulf)	Tyler, TX	2/6/02	24	21 (88%)	29%
Wellbore Management (Southwest Region)	Artesia, NM	2/13/02	Reported by Southwest Region		
DigiRule's Seismic Stratigraphic Log Modeling	Farmers Branch, TX	4/25/02			
Wellbore Management (PPROA)	Amarillo, TX	5/7/02			
Interp. 3-D Carbonate Stratigraphy Using 1-D Data	Midland, TX	8/22-23/02			

Industry Contacts: 544 (no PTTC-initiated), plus 1,487 TIPRO contacts (Internet/software/demo)
Website (monthly average):
Basic PTTC function: 6,468 user sessions; 11,818 page views.
Expanded Outreach function: 113,254 user sessions; 395,645 page views.
Combined (basic + outreach): 119,722 user sessions; 427,562 page views
Basic website traffic is analogous to that experienced by other PTTC regions. Expanded outreach traffic reflects sections of website related to Texas Region's emphasis, conducted by TIPRO, on increasing independent producers' knowledge and use of the Internet. Bob Kiker maintains a Permian Basin website on the CEED website.
Workshops: With the Central Gulf Region, the region hosted the DOE Traveling workshop in Tyler. The East Texas Geological Society, led by Bob Hulse, helped greatly with promotion. Bob Kiker coordinated the speakers and participated in the wellbore management workshop in Artesia, NM. This workshop repeated (with some updating) material from the earlier Midland workshop. It is being repeated in Amarillo during the coming quarter. Three other workshops were planned during May, but were postponed due to low pre-registration. Workshops on CO_2 sequestering, electrical deregulation/self-generation and planning for the annual CEED CO_2 conference are underway.
Newsletter: Quarterly newsletter—not this quarter; plus online. Announcements are also made in TIPRO, PBPA and SPE Permian Basin newsletters, plus the Energy Section of the *Midland Reporter-Telegram*.
Outreach: Through TIPRO, PTTC had an exhibit presence (in addition to the national booth) at NAPE in Houston and at TIPRO's winter policy meeting in Austin in January. There will also be a presence at TIPRO's annual meeting in Dallas in June. Bob Kiker routinely makes announcements to Midland SPE about upcoming workshops. Supporting national PTTC, he participated in a kickoff meeting in Norman, OK with the Oklahoma/Arkansas PUMPers in January. He will also make a presentation on wellbore management at the SPE/DOE Improved Oil Recovery Symposium in Tulsa during April, as well as a presentation and exhibiting at the Southwestern Petroleum Short Course in Lubbock in April.
Follow-up: As follow-up to the Board meeting, Bob Kiker updated information on increased use of vapor jet recovery technology and how technology has spread from the initial PTTC mini-workshop.
Case Studies: Bob Kiker and PAG Member Steve Melzer, on a contract basis to HQ, are helping solicit and develop case studies for PTTC's *Petroleum Technology Digest* project with *World Oil*.
Problem Identification: Ongoing efforts.
Other Info: From the TIPRO website, advertising revenue=$2,100 & web hosting revenue=$540.

PTTC West Coast Region

Topic (main cosponsors in parentheses)	Location	Date	Attendance		Repeat Attend.
			Total	# (%) from Industry	
Total FY01 Attendance (19 events)			**988**	**680 (69 %)**	
Water Management – From Production to Disposal	Santa Clarita, CA	10/18/01	55	36 (65%)	78%
Economic Evaluation of Oil and Gas Producing Properties	Santa Clarita, CA	11/20/01	76	61 (80%)	89%
Reservoir Life Extension –Anniversary Forum	Los Angeles, CA	12/07/01	72	55 (76%)	85%
3-D Seismic For California Oil Fields	Valencia, CA	1/17/02	85	73 (86%)	92%
Waste Injection in Oilfield Operations – Technology and Case Studies	Valencia, CA	2/21/02	83	70 (85%)	94%
Diagnosis & Design of Sucker Rod Pump Systems	Los Angeles, CA	3/18/02	37	29 (78%)	97%
Enhanced Gas Production From California Fields	Valencia, CA	4/18/02			
Natural Gas Hydrates (short course at AAPG/SPE Pacific Regional Conference)	Anchorage, AK	5/23/02			
COMET 2002	Los Angeles, CA	6/23-28/02			
California Offshore/Monterey Database (w field trip)	Ventura, CA	7/17-18/02			
Underbalanced Drilling/New Completion Methods	Valencia, CA	8/22/02			
Troubleshooter's Forum	Valencia, CA	9/19/02			

Industry Contacts: 52 (35 PTTC-initiated)
Website (monthly average): 2,361 user sessions, 6,827 page views, 11 min. Other than routine maintenance, primary effort goes into placing material from workshop presentations online.
Workshops: Monthly workshops were held this quarter. To control costs, the region holds workshops in Valencia, a location convenient to both the Los Angeles and Bakersfield areas rather than repeating the workshop in both locations as was done early in the program. The 3D seismic workshop addressed reservoir characterization, focusing on exploration/exploitation aspects. The waste injection workshop, which is a direct result of a DOE researcher becoming aware of PTTC through the recent Traveling Workshop series with PTTC, had both drilling and operations aspects. The rod pumping design workshop focused on this common operational issue. Next quarter, for its annual activity in Alaska, the region is sponsoring a short course on gas hydrates during the AAPG/SPE Pacific Regional Conference. COMET 2002 occurs in June, and monthly workshops are planned through the remainder of the fiscal year.
Outreach: Under the PUMP contract, the PUMPERs have been making field contacts/visits with operators. The effort, which is in an early stage, has gained early insights on the primary constraints inhibiting oil production. Excess water production being just one. To address this need and leverage both federal and state funding, Dr. Ershaghi is pursuing funding through the California Energy Commission (CEC) for a project to reduce electric power demand by helping independents learn how to reduce water production. Portions of the DOE PUMP funding are considered cost share for this state funding. The project, which is expected to be approved by CEC, will start in summer 2002.
Follow-up: As a follow-up to the Board meeting, staff solicited responses from industry regarding how they had used technology learned about through PTTC. In one instance, a producer who first heard of Schlumberger's CHFR (through casing resistivity) tool in the Dec 2001 workshop, had already successfully used the tool in one of their wells.
Case Studies: Karen Carpenter, Venoco, has agreed to document their 3D case study in the *Petroleum Technology Digest* once the confirming well(s) are drilled this year.
Problem Identification: Ongoing efforts.
Other Info: 274 hours of volunteer time were contributed to PTTC activities during the quarter.

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