



Alliance formed to offer virtual data-room service

Online data-room services to play greater role in property divestitures

Ryder Scott and OilExchange Inc. formed an alliance in April to offer petroleum property management services, including data-management and virtual data-room products, on a worldwide basis. OilExchange provides digital data-presentation services and technologies in online and CD-ROM media.

This includes secure, interactive data rooms accessible over the Internet. OilExchange also offers data management of the Ryder Scott work product and its derivatives. Ryder Scott will provide reservoir evaluation, management and advisory services to OilExchange clients.

“Ryder Scott is a recognized leader in reservoir management and property engineering,” said **Edward Gendelman**, CEO at OilExchange. “Combined with our unique ASP-driven data management technology and services, this alliance establishes a new, powerful base for helping oil and gas producers to better manage and optimize the value and profitability of upstream assets.”

In May, OilExchange was the only provider of completely ASP-driven (Application Service Provider)

services for the management of worldwide oil and gas assets. An ASP-driven service allows manipulation and analysis of massive amounts of data through an Internet connection to a remote host site and its resident software.

The user sees screen images from small files quickly received over the Internet while data and software reside on a remote server. The user can operate any software on the server, regardless of local hardware and software configurations, making the programs platform independent.

“The programs run quickly, even through a dialup connection. Security is never breached because the data never leaves the server.

Please see Alliance on Page 7



New RyVOL volumetric tool available on Web site

RyVOL, Ryder Scott's latest *Reservoir Solutions* freeware program, was posted on the Web site at www.ryderscott.com for downloading in June. Seventh in a series, the Microsoft Excel-based program, designed for use by engineers and geoscientists, offers a simplified, easy-to-use platform for preparing volumetric reserves estimates for oil and gas wells and reservoirs.

The menu-driven program provides templates for either oil or gas reservoirs and allows the user to quickly and reliably determine fluid and reservoir properties, such as gas deviation factors, pseudocritical temperatures and pressures, oil and gas formation volume factors and calculated solution gas-oil ratios (GORs). Volumetric in-place and recoverable reserves are based on user input for reservoir volumes and recovery factors.

Secondary product recovery is calculated either as a percentage of product in-place or as a ratio relative to primary product. “The program uses Ryder Scott's enhanced *Reservoir Solutions*

Please see RyVOL on Page 8

Inside Reservoir Solutions newsletter

- Ryder Scott compiles pricing data..... Pg. 2**
- Price chart with new benchmarks.....Pg. 2**
- PHDwin 2.4 tested, rolled out by RS..... Pg. 3**
- SEC says report post year events.....Pg. 6**
- SPE simulation seminars hit mark.....Pg. 6**
- Two engineers join RS..... Pg. 6**

New price chart shows recognized benchmarks

Ryder Scott assists clients with pricing information tracked and compiled by Ziehe



The new oil and gas price chart below shows more commonly used U.S. benchmarks than previously published in *Reservoir Solutions* newsletter. The chart now shows the monthly average cash market prices of West Texas Intermediate Crude at Cushing from the New York Mercantile Exchange rather than the WTI postings of Exxon Co. USA. Monthly average, cash-market prices are also shown for

Brent crude and for gas deliveries to Henry Hub, LA.

Fred Ziehe, senior vice president at Ryder Scott, sources and compiles pricing information for the chart. "These three market commodities are more familiar marker points for our clients," he said.

Ziehe has developed several charts for internal use. "Our clients provide differentials (price between wellhead and benchmark price) and we use this pricing information to back-calculate a wellhead price," he said. Ryder Scott also uses daily year-end prices for the three benchmarks in preparing year-end SEC-case reserves reports.

Ziehe has put together a monthly Henry Hub price chart that shows cash prices a seller would receive for gas delivered to Henry Hub, assuming a daily contract basis as an average for the month. He said, "This average price is not likely to be the price a seller would actually receive for a 30-day contract, because it is likely to be negotiated during bid week,

the last week of the month preceding sales. However, this plot is still a good indicator of monthly changes."

Ziehe has developed a daily chart for Henry Hub that is used to compare bid-week prices to those actually received to determine differentials between wellhead prices and Henry Hub, month by month. "These differentials will likely change each month and could be significantly different depending on the well location and volatility of the Hub prices," said Ziehe.

Ryder Scott personnel use Ziehe's compilations to assist clients. "Some clients, especially those not directly involved in commodity marketing, simply give accounting statements to us," said Ziehe. Ryder Scott personnel then calculate differentials and future wellhead prices based on forecasts of the benchmark prices.

For further information on historical pricing used to fulfill reporting requirements, contact Ziehe at 713-651-9191, ext. 276 or at fred_ziehe@ryderscott.com.

Publisher's Statement

Reservoir Solutions newsletter is published quarterly by Ryder Scott Company LP Petroleum Consultants. Established in 1937, the reservoir evaluation consulting firm performs more than 1,000 studies a year. Ryder Scott has issued reports on more than 200,000 wells or producing entities in North America. The firm has also evaluated hundreds of international oil and gas properties involving thousands of wells. Ryder Scott multidisciplinary studies incorporate geophysics, petrophysics, geology, petroleum engineering, reservoir simulation and economics. With 117 employees, including 66 engineers and geoscientists, Ryder Scott has the capability to complete the largest, most complex reservoir-evaluation projects in a timely manner.

Board of Directors

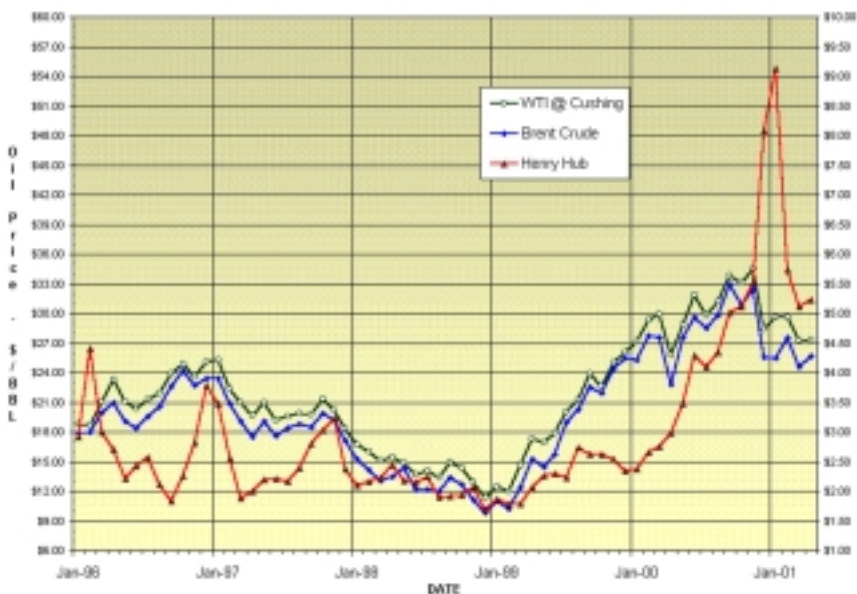
Ronald Harrell Chairman and CEO	John R. Warner Exec. V.P.—Intl.
Don P. Roesle President and COO	Fred P. Richoux Sr. Vice President
John E. Hodgin Exec. V. President	Larry T. Nelms Sr. Vice President

Reservoir Solutions

Editor: Mike Wysatta
Business Development Manager

Ryder Scott Company LP
1100 Louisiana, Suite 3800
Houston, Texas 77002-5218
Phone: 713-651-9191; Fax: 713-651-0849
Denver, Colorado; Phone: 303-623-9147
Calgary, AB, Canada; Phone: 403-262-2799
E-mail: info@ryderscott.com
Web site: www.ryderscott.com

Price history of benchmark oil and Henry Hub gas



The historical price chart shows the monthly average cash market prices for the following: WTI crude at Cushing (NYMEX), Brent crude and Henry Hub gas.

Ryder Scott-tested PHDWin software designed by evaluators for evaluators

Integration of mapping-economics package in the works

After two years of testing and tweaking, Ryder Scott and software developer TRC Consultants L.C. rolled out a new, commercially available decline curve/material balance/economics program, PHDWin 2.4, at RSC offices in May. The internal implementation is the culmination of efforts among Ryder Scott and TRC to develop a more robust economics package meeting rigorous consulting standards.

"We believe that this program offers more functionality than competitive products," said **Larry Connor**, vice president at Ryder Scott in charge of information and software development. User licenses for the TRC PHDWin 2.4 are priced to compete favorably against similar commercial software, said **Gary Gonzenbach**, president at TRC.



Ongoing efforts also involve the integration of a mapping application developed by International Datashare Corp. On May 31, IDC unveiled its new 32-bit GeoDesk mapping system — a fully integrated package that searches, collates and manipulates industry data using a mapping interface. With this feature, a user can store any document, electronic file or scanned image to a well spot on an interactive map display.

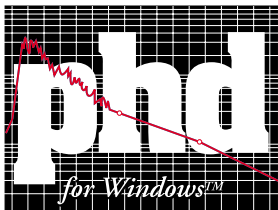
Ryder Scott is working with TRC and IDC and testing the integrated mapping-economics package. "The intent is to seamlessly integrate the two programs and pass information and functionality between the systems," said Connor.

Much work has been done. "The two programs already interface effectively and integration will be improved with the introduction of the latest version of GeoDesk," said **Norm Stein**, president of IDC.

Designed by evaluators for evaluators

"Ryder Scott had direct input into the economic algorithms. So now the calculations as well as the interface meet Ryder Scott standards as well as our own," said Gonzenbach. "We worked from the viewpoint of a petroleum engineer, instead of a programmer. Our philosophies on calculating the actual numbers were identical." Ryder Scott input resulted in the following enhancements:

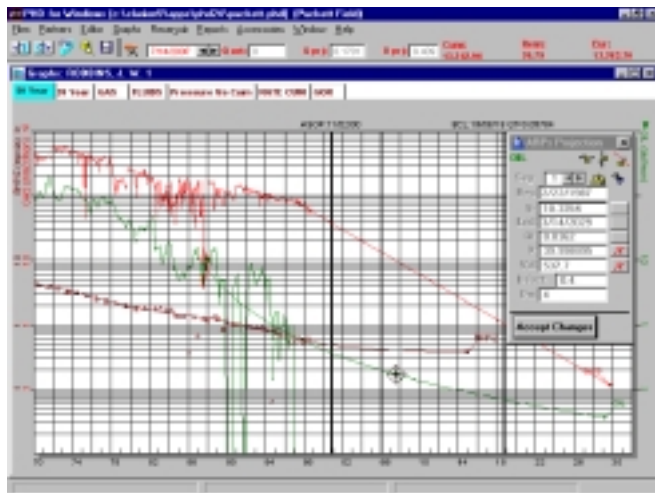
- Splitting reserves classifications and production categories
- Interaction between material balance and rate-time modules



Gary Gonzenbach, president at TRC, demonstrates some features of PHDWin 2.4 to Larry Connor (middle) and Jeffrey Wilson, both Ryder Scott engineers involved in the testing.

- Simplified data culling for curve fit
- Capability to forecast product ratios using the methods available to the base products
- Redesign of the Arps equation parameter window
- Incorporation of a "walk" mode with maximum flexibility

Please see Next Page.



On this screen, the user of PHDWin "walks" along the production decline and traces the actual and projected flow rates and decline rates to the day. Cumulative production, remaining reserves and estimated ultimate recovery are traced to the day as well. Ryder Scott recommended the walk mode enhancement during testing.

In the process, developers totally redesigned the graphical user interface to enhance the functionality and intuitiveness of the package.

Ryder Scott also shared the source code of its own proprietary CashFlow program with TRC so the developer could incorporate those calculations and functionality into PHDWin. "As an example, the curve-fit routine now used by TRC was provided by Ryder Scott. Other CashFlow calculations factor in complex tax regimes, operating costs and platform allocations," said Connor.

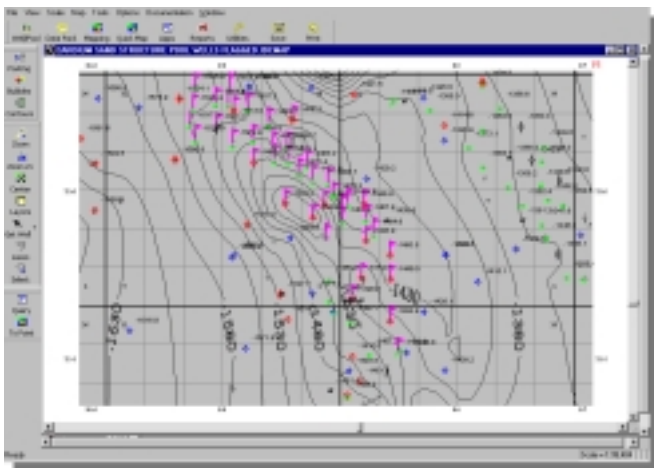
Ryder Scott's CashFlow program is written in FORTRAN. "While it is extremely fast and flexible, it did not lend itself to storage and query of historical data. We felt that a database format would resolve many of these issues while opening our work flow by integrating new applications," said Connor. "A number of useful software products are available, each one offering advantages and disadvantages vs. another. Our decision to choose PHDWin was based on our extensive testing of commercially available software packages and discussions with the programming staffs of numerous vendors."

Ryder Scott will continue to use CashFlow and major commercial programs, including Landmark Aries, Merak Portfolio/PEEP and OGRE, for decline curve/economic analyses. In addition, the firm will continue to recommend those programs where appropriate.

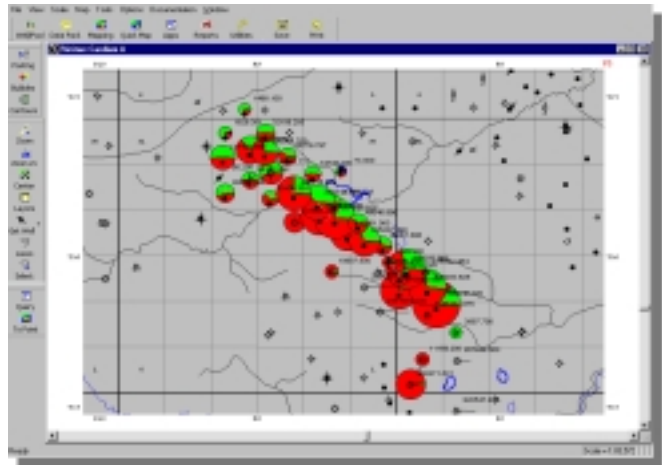
"Our clients use a variety of software packages and our challenge is to be proficient in every one," said Connor.

TRC/IDC interface

The TRC/IDC system stores a variety of information for analyses. For example, with a single click on a well spot, a producing company can pull up a complete well file as well as all engineering and geologic work notes and maps.



On this screen of a structure map, a user of Geodesk single clicks on a well spot to pull up a complete well file, including all engineering and geologic work notes and maps.



New production data analyzed in programs such as PHDWin can be exported back to GeoDesk where they are added to previous production totals and represented in a bubble map (shown here) displaying cumulative production by well.

A consulting firm might pull up information used in an evaluation. For example, a user will query the GeoDesk map to determine which wells have produced from a certain horizon and the program colors those well spots on screen. A second query will determine if any of the wells have been previously evaluated. Then double clicking or circling the selected wells will export the information to PHDWin.

"This will open a whole new method to analyze, store and present evaluation results and provide optimum data management."
— Larry Connor, vice president at Ryder Scott

For previously evaluated wells, PHDWin exports the last projection as a starting point for the current evaluation. Then the evaluator will analyze the wells in PHDWin using the fully integrated volumetric, decline, material balance and economic modules, each with real-time resolution. The results are then exported back to GeoDesk to bubble or contour the economic parameters or reserve volumes.

"When complete, this will open a whole new method to analyze, store and present evaluation results and provide optimum data management," said Connor.

Property Acquisition Applications

Property buyers may soon be able to use the TRC/IDC system to evaluate potential acquisitions. At press time, IDC was several weeks away from contracting with a public data provider for U.S. oil and gas well production data. Well header and production

Please see Next Page.

“Our intent is to provide not only the (Ryder Scott) report, but all engineering and geologic tools and information used in the evaluation process.”
— Larry Connor, vice president at Ryder Scott

data in various formats organized by state for more than two million wells will be importable.

“Our short-term goal is to offer users of the TRC/IDC system the capability of analyzing public information on U.S. properties. Information typically used by engineers will include production and pressure data and historical volumes for P/Z work,” said Stein. GeoDesk already imports headers, scout ticket information and production data from properties in Canada. This includes map interface access to a library of digital well-log data for 150,000 wells in western Canada.

IDC planned to offer the public-data-set integration to GeoDesk users desiring an alternative to other data providers. “We believe we will have some viable options to solve that problem, but more will be known about that in the next six weeks,” said Stein in late April.

Green Book on CD-ROM

Ryder Scott is developing an electronic version of the Ryder Scott “green book” reserves report. To add value to its product line, Ryder Scott is working with TRC, IDC and other vendors to offer

timed, working versions of their software on disks loaded with client data.

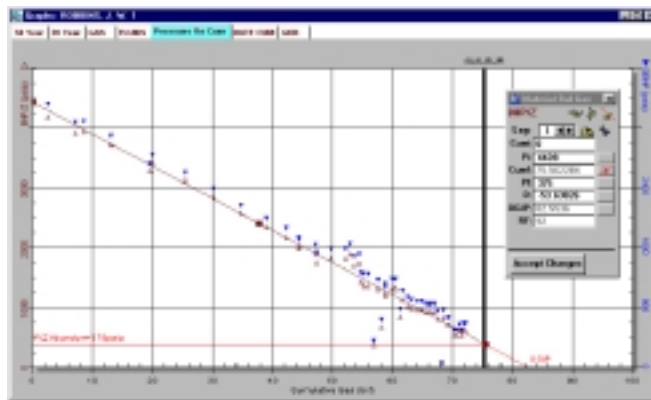
“Our intent is to provide not only the report, but all engineering and geologic tools and information used in the evaluation process,” said Connor. The client will use this package to evaluate pricing sensitivities and production scenarios. “We believe this will

save our clients both time and money while providing improved service,” said Connor.

PHDWin still evolving

The development of PHDWin for use in Ryder Scott projects is far from finished, said Connor. Immediate programming efforts include the ability to calculate complex Canadian royalties and international production and profit-sharing contracts. In May, Ryder Scott began discussions on incorporating its reserves management system.

The PHDWin BHP/Z plot below shows the steady decrease in bottom hole pressure with the production of gas. Reserves from rate-time projections, material balance projections, volumetric analysis (calculator shown to the right) and economics are all linked to the same result. Ryder Scott recommended enhanced interaction between the material balance and rate-time modules.

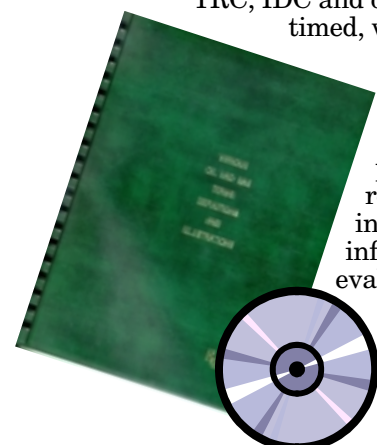


Who to Contact

For more information from Ryder Scott, please contact Larry Connor at 713-651-9191, ext. 295 or at his e-mail at larry_connor@ryderscott.com.

For questions directed to IDC, please contact Mark Kidder, vice president, at 281-829-2003 or at his e-mail mkidder@datashare.net. The IDC Web site is at www.datashare.net.

For questions directed to TRC, please contact Gary Gonzenbach at 888-248-8062 or at his e-mail at ggonzenbach@phdwin.com. The TRC Web site is www.phdwin.com. “TRC maintains a support desk unequalled in responsiveness and eagerness to resolve issues,” said Connor.



Dave Nelson, COO at OilExchange, recently demonstrated the capabilities of the company's ASP-based data-room system to effectively make the PHDWin program accessible over the Internet. See screen shot of PHDWin production plot over OilExchange system on Page 7.

Report post-year-end events that “materially” affect year-end reserves estimates, says SEC engineer



Ryder Scott recently sought and received clarification on a reserves reporting issue from an engineer at the U.S. Securities and Exchange Administration. He said that public issuers reporting reserves at year-end should include the effects of events occurring after December 31 in the report text, if those occurrences “materially affect” reserves volumes.

These events could be sales, purchases, dry holes,

facility failures or other events. However, the effects of those occurrences should not be reflected in reserves figures for the year, because FASB 69 guidelines limit the reporting of reserves to conditions up to and on the report date.

“We discussed many circumstances that could retrospectively alter reserves after December 31,” said **Ron Harrell**, CEO at Ryder Scott. “One example, for instance would be if a company drilled a dry hole January 5 in a field in which proved undeveloped reserves had been assigned and reported on December 31.”

SPE simulation seminars hit the mark, say attendees

The Ryder Scott-hosted Society of Petroleum Engineers Gulf Coast section seminars on reservoir simulation achieved their objectives, attendees reported in April. Three of the four instructors were Ryder Scott engineers.

Majeed Yousif, a senior research engineer at Shell Exploration and Production Inc., said, “The seminar on practical decisions was a good refresher of reservoir simulation in general and was helpful in laying out a systematic approach to modeling. It was well organized and covered a lot of material in a very short time.”

Liliana Monroy, a reservoir engineer at Becip Inc., said, “We use fluid characterizations in reservoir simulation, so I found this course to be very helpful for work and to fulfill my engineering career objectives.”

Dean Rietz and **Miles Palke**, both Ryder Scott engineers, conducted the practical decision-making seminar aimed at those planning to conduct, review or oversee a reservoir simulation study and at experienced modelers wanting to review details.



Dean Rietz, vice president at Ryder Scott, instructs students in his practical, graduate-level simulation course offered at the University of Houston during the spring semester. UH offered Rietz an adjunct professorship after Christine Economides, director of the UH petroleum engineering program, attended the Society of Petroleum Engineers Gulf Coast section reservoir simulation seminars hosted by Ryder Scott in April, 2000. See article on this year's SPE Ryder Scott-hosted simulation seminars on this page.

Two engineers join firm



Kumar

Oetama

Engineers **Rajneesh Kumar** and **Teddy Oetama** recently joined the Ryder Scott Canada and Ryder Scott Houston offices, respectively. Kumar has more than eight years of experience

in reservoir and process engineering and operations. His reservoir engineering experience includes reservoir simulation, depletion studies and field optimization analyses with an emphasis in North America, including in the Western Canadian Sedimentary Basin.

Kumar has a Master of Science degree and bachelors degree in chemical engineering from the University of Calgary and Banaras Hindu University, respectively.

Oetama has 18 years of production and reservoir engineering experience including production data analyses, pressure transient analyses, reservoir modeling, economic analyses, and fracture treatment design. His main emphasis at Ryder Scott will be reservoir simulation studies as well as transient test design and analysis.

Oetama worked at S.A. Holditch & Assocs. Inc. from 1990 to 1998 where he was involved in all aspects of reservoir and production engineering, particularly, pressure transient analysis, reservoir simulation and production data analysis. He has M.S. and Ph.D. degrees in petroleum engineering from Texas A&M University.

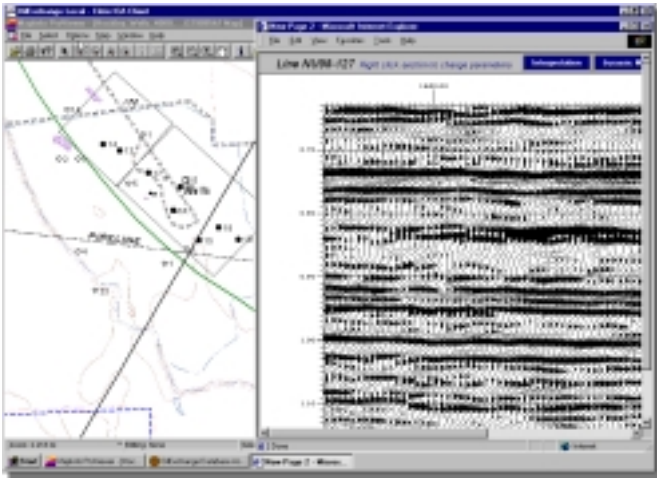


Figure 1

These screen shots display the map-based interface on the left and analysis programs on the right. Through the OilExchange ASP service, evaluators can perform analyses in disciplines from geophysics to cash-flow economics. Figure 1 shows the seismic viewer, which allows the user to alter the scale of the data along with other viewing parameters. Figure 2 shows logging data, which can be displayed as interactive data or as a PDF file. Figure 3 shows production data on the PHDWin software developed by TRC Consultants L.C. Ryder Scott tested PHDWin. See article on Page 3.

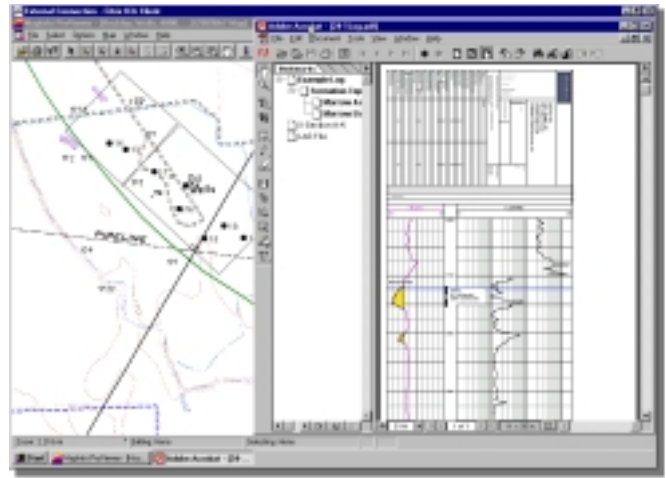


Figure 2

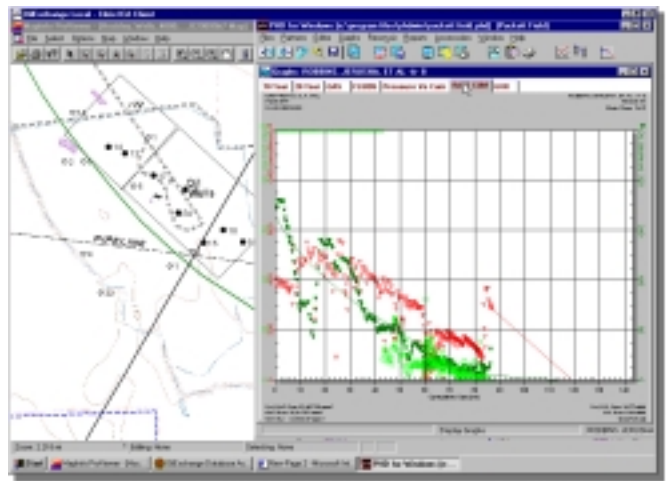


Figure 3

Alliance—Cont. from Page 1

Because the data files stay on the server, interactivity is not drastically affected by limited bandwidths or slow connections,” said **Dave Nelson**, COO at OilExchange.

The data-room service is used in acquisition and divestiture work, in review and analysis of data shared among operating companies and between consultant and client as well as in other projects. “We foresee potential for considerable benefit from the emerging information technologies in the petroleum industry,” said **Ron Harrell**, CEO at Ryder Scott. “Increasingly, our clients are providing copies of their digital databases to us, which accelerates our initial evaluations and later updates. The alliance will facilitate more effective, lower cost management of the digital information flow within and among organizations. It will also provide a one-of-a-kind opportunity for our clients to showcase their divestiture properties worldwide through the Internet with absolute security.”

OilExchange has integrated the PHDWin economics software in its ASP system for testing. (Please see article on PHDWin, Page 3.) “There are few technical issues involved in running any type of software on our system,” said Nelson. “Ryder Scott and a client on the other side of the world, together, will be able to review live data underlying pricing sensitivity runs in PHDWin or other economics programs. The cost savings in reduced travel and time are tremendous.”

Because the highly flexible system accommodates a wide range of data and software, evaluators perform analyses in disciplines from geophysics to cash-flow

economics. OilExchange Inc., a leading provider of e-solutions for the global oil and gas industry, has 15 years of international project management experience. For additional information on OilExchange services, go to www.OilExchange.com, e-mail sales@oilexchange.com or call (303)-825-0775. Additional information on the alliance may be found at www.ryderscott.com, by e-mailing info@ryderscott.com or contacting John Hodgin, executive vice president at Ryder Scott, at (713) 651-9191, ext. 247.

For more information on data rooms and OilExchange, please see *Reservoir Solutions* newsletter, Vol. 3, No. 4, December-February, Page 6. Also, the *Oil and Gas Journal* article “Online E&P asset management” (April 23, Page 18) features a commentary on e-commerce in the upstream industry and includes comments from Gendelman as well as an analysis of OilExchange and other e-businesses.

“The continued development of these ASP methods may be the key to online success of A&D methods over those offline. Oil companies will be able to use such software securely without having to spend the time or money developing them,” the article stated.

RyVOL—Cont. from Page 1



Based on input for reservoir volumes and recovery factors, with this template, a RyVOL user determines fluid and reservoir properties, such as gas deviation factors, pseudocritical temperatures and pressures, oil and gas formation volume factors and calculated solution gas-oil ratios.

Modules freeware program, which contains new calculation procedures,” said developer **James Latham**, an engineer and vice president at Ryder Scott.

Additionally, RyVOL provides the user with diagnostic “help” messages when the user’s input fails to conform to calculated limits. “For example, if a GOR is entered that exceeds the calculated solution GOR, then RyVOL warns the user of this condition and suggests a modification,” said Latham. “In short, RyVOL provides a simple, but powerful tool to the petroleum professional.”

Latham has also incorporated extensive, data-validation safeguards in the other freeware programs. All seven *Reservoir Solutions* software programs are available at the Ryder Scott Web site.

Updated installation procedures and expanded program capabilities are recent enhancements. Previous downloaders should revisit the site and download the latest versions. The posted program files are self-

extracting zip files and the installation process is automated.

As is the case with all Ryder Scott freeware programs, the user-friendly RyVOL produces presentation-quality on-screen views and hard-copy output. **Ron Harrell**, CEO of Ryder Scott, said, “These programs are not designed to be substitutes for the more sophisticated suite of evaluation tools used by Ryder Scott for complete in-depth analyses. However, the seven freeware applications posted on our site constitute a suite of software tools that will enable a competent evaluator to prepare reserves estimates for most properties.”

To help downloaders use the *Reservoir Solutions* programs more effectively, Latham plans to conduct training sessions this summer. Ryder Scott will send invitations to registered users through their e-mails and reservations will be accepted on a first-come, first-served basis.

Ryder Scott also offers a free CD-ROM with the entire suite of programs for quick installation. For further information or to make a request, please contact Latham at 713-651-9191, ext. 212, or at his e-mail james_latham@ryderscott.com.

More than 1,300 users from more than 50 countries have downloaded the Ryder Scott *Reservoir Solution* freeware programs since the firm released the first one less than three years ago. For descriptions of the other six freeware programs, please go to the download section of the Ryder Scott Web site.

Editor’s Note: Ryder Scott does not guarantee or warrant the accuracy or reliability of this software and disclaims its fitness for any particular purpose.

Erratum — The March *Reservoir Solutions* newsletter erroneously reported that the Society of Petroleum Evaluation Engineers was helping prepare the “Canadian Oil & Gas Lending Handbook.” The actual publication title is “Canadian Oil & Gas Evaluation Handbook.” We apologize for the inaccuracy.

Ryder Scott Co. LP
1100 Louisiana, Suite 3800
Houston, Texas 77002-5218
Phone: 713-651-9191; Fax: 713-651-0849
Denver, Colorado; Phone: 303-623-9147
Calgary, AB, Canada; Phone: 403-262-2799
E-mail: info@ryderscott.com
Web site: www.ryderscott.com

PRSR STD
US POSTAGE
PAID
HOUSTON TX
PERMIT NO 11296