



Stepping Up

New head of Downstream says team has momentum for an accelerated game.

▶ [Meet Mike Wirth](#)



Loads of Challenge

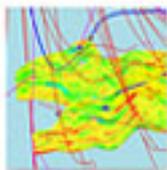
One team's unusual task was not just to get oil out of the ground, but to bring the supersized production equipment in.



Our Legacy to PNG

Community and environmental programs continue to thrive in Papua New Guinea, long after Chevron's operations have ceased.

Issue 8, June 2006



Navigating Spaghetti Junction

Dogleg wells – designed to avoid collision.

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LETTERS TO THE EDITOR



Stepping Up

New head of Downstream says team has momentum for an accelerated game.

by Nancy Boas

As a young man, Mike Wirth narrowed his sights on three career choices: journalism, medicine and engineering.

"I wrote for my school newspaper and loved it," he says. "At another point, I took the MCAT [Medical College Admissions Test] and seriously investigated medical school." But Chevron's ultimate gain was medicine's and journalism's loss when Mike took a summer engineering job at Conoco's Denver refinery. "I loved it," says Downstream's new executive vice president. "And I never looked back."

Mike takes the Downstream baton at a pivotal point: Behind him lies the momentum the organization has built; ahead lies the moment to accelerate.

Among Downstream's achievements: The organization converted from a geographic to a global, functional model, improving costs and efficiencies that yielded more than \$500 million in before-tax earnings benefits. In return on capital employed over the past two years, Downstream achieved the No. 2 position among U.S. competitors and double digits in its international operations. And last year, Downstream achieved its safest year in history, with fewer employee recordable incidents than any of its competitors.

While Chevron improved its game, so did competitors. Meanwhile, the world's appetite for fuel grew, challenging the industry's capacity. Spare refining capacity has dipped to just 3 percent, due largely to spiking demand from Asia and steady growth in the United States. Just to keep pace with projected demand between 2008 and 2015, the world would need to build the equivalent of four more Pascagoula refineries each year.

Reliability: Ask three questions

The outlook puts Chevron in a prime position. While the United States and Asia will generate two-thirds of the projected demand in transportation fuel growth, they also are the location for three-quarters of Chevron's refining capacity.

Just being there isn't enough. In a world where every barrel fed into a refinery is a barrel sold, reliability is king.



This Chevron gas station is sporting the company's new image. In January, Global Marketing began a five-year campaign to refresh the image of its Chevron retail locations across the United States.

"Safety and reliability are core Chevron values – and when a refinery is running reliably, it is running more safely. This is very important because we want every worker to go home safe every day," says Mike.

Reliability is also critical to meeting product demand. Last year, our reliability lagged competitors, with utilization falling due to hurricanes and more planned and unplanned downtime. Our goal is to eliminate all unplanned downtime.

Downstream is tackling the problem by funding significant equipment upgrades and design improvements. At our Richmond Refinery, we installed equipment that improves reliability and utilization of the refinery's main gasoline-making machine – the fluid catalytic cracking (FCC) unit.

Along with equipment, Refining is focusing on people and processes – three key components of safe and reliable operations – and aims to raise its utilization rate 6 percentage points by year-end 2008.

"It's easy to say, 'well, a valve failed,' or to blame a mistake on human error," says Mike. "In fact, the three dimensions of people, processes and equipment are closely linked."

In the case of an event leading to unplanned downtime, Mike wants Downstream employees to ask three specific questions: What will it take to fix it safely? How can we fix it to ensure no unplanned downtime before our next turnaround? And only after questions No. 1 and 2 are answered should the third be tackled: How soon can we do it?

"People should be rewarded for answering all three questions – and in that order – not for simply getting back online quickly," he says.

"The goal," he reemphasizes, "is no unplanned downtime between turnarounds."

Getting flexible with feedstocks

We face another challenge, which we're turning into an opportunity. The world's available crude mix is changing – more heavy crudes are available to refiners at attractive prices. The challenge: Heavy crudes are more difficult to refine. The opportunity: Because heavy oils are discounted on the market and because crude costs are a major factor in refinery profitability, heavy oils yield more profit once they're "refined up" into high-quality products.

Case in point: In the United States, where we run a heavier, higher-sulfur crude slate than competitors, we lowered our crude acquisition costs at our three largest refineries by \$5 a barrel, relative to the West Texas Intermediate benchmark. And that means higher margins.

We're also expanding our ability to handle different crudes – our feedstock flexibility – around the globe. Last year, we ran 37 crudes that were new to individual refineries, including 23 that were new to our system, such as high-mercury crude from our own production in Southeast Asia. We're modifying our Pembroke Refinery in the United Kingdom to handle the sour crude from our joint-venture Caspian field. That's on top of the acidic Doba crude from Chad that Pembroke was modified to refine.

An upgrade at our joint-venture refinery in Yeosu, South Korea, will enable us to refine heavy oil there. And we're pursuing heavy and high-sulfur crude projects at El Segundo and Richmond. These projects would reduce feedstock costs by up to \$1 a barrel.

We're also expanding capacity: An El Segundo debottleneck and Pascagoula FCC expansion will increase gasoline production by 27,000 barrels a day and increase refining margins.

"Making it all work is a three-way collaboration," says Mike. "Our refineries have to be able to handle the crudes and successfully manage the changes. Our supply optimization group has to identify the most economic crudes for our system. Our crude trading group has to find these crudes and get them to our refineries. And we have to do all three better than the competition."

Opportunities on the horizon

Our recently announced 5 percent stake in a new export refinery that Reliance Petroleum Ltd. is building in Jamnagar, India, will further boost our refining capacity and our ability to process a wide variety of difficult-to-refine crudes. Another plus: The investment offers integration opportunities with our Upstream, Global Gas and Downstream operations in the region, including supplying crude to the large Jamnagar refinery and marketing the products it produces.



Chevron announced the purchase in April of 5 percent of Reliance Petroleum Ltd., a company formed by Reliance Industries Ltd. to own and operate a new export refinery being constructed in Jamnagar, India. Reliance currently operates the 650,000-barrel-per-day refinery in Jamnagar, pictured here. The two refineries together would constitute the largest refinery complex in the world, based on current capacities.

The value of integration isn't just a concept for the business. It also extends to individuals, Mike says, pointing to managers who've added value by crossing the upstream/downstream divide. "I'm a big believer in moving people across boundaries to get broad experience, especially early in their careers."

Marketing is another significant area of the Downstream in which change brings opportunities. Mike points to shifting customer demographics and data showing that in some market segments, if you give people their first credit card, you'll win their loyalty forever.

"Put a piece of plastic in people's pockets," he says, "and it tends to impact their behavior. Even in this competitive marketplace, where the mix of customers and competition and technology are all changing, brand loyalty still exists. Brands that evolve and recognize that changing mix create

value."

That changing mix of Downstream offerings may someday include becoming the world's biggest refiner of challenging crudes; forming ventures with satellite companies to guide automobile drivers to their nearest Chevron, Texaco or Caltex station; and operating next-generation ethanol plants that produce additional supplies of transportation fuels for tomorrow's consumers.

Deciding which strategy to follow or decision to make calls for a broad perspective. "We need to look at the Downstream in terms of how it adds value to the corporation," says Mike. "In a world in which supply and demand are this tight, if we can create real value for the company somewhere, anywhere, we ought to do it."

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This posting contains forward-looking statements regarding Chevron's management's current expectations, estimates and projections. These statements are not guarantees of future performance and are subject to certain risks, uncertainties and other factors, some of which are beyond our control and are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in these forward-looking statements. You should not place undue reliance on these forward-looking statements, which speak only as of the date of this posting. Unless legally required, Chevron undertakes no obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.



Loads of Challenge

Supersized vessels needed specially adapted rail track and cars to get to their Kazakhstan destination.

by Rachel Elson

One train load at a time, the mammoth equipment arrived, traveling by specially designed 64-wheeled railcars across the steppes of Kazakhstan.

The huge challenge facing the Sour Gas Injection/Second Generation Project (SGI/SGP) team in Kazakhstan included not just how to get oil out of the ground but how to get the supersized production equipment safely to Tengiz.

The massive pieces of equipment required for the Tengizchevroil (TCO) project came from fabrication facilities in a dozen different countries.

But you can't just pop a 27-foot-diameter (8-m) column into an envelope for overnight delivery: In shipping terms, the SGI/SGP cargo was "OOG" – out of gauge – too heavy or too large (or both) to travel on a conventional railway track.

"The Tengiz supergiant oil field is about as remote as you can get, and the supply chain is about as long as you can get," notes Bharat Gael, the TCO projects general manager.

"And these pieces of equipment are the biggest of their kind in the world." To get the supplies safely on site, he explains, the team essentially had to re-engineer both the shipping process and the rail line itself.

Regardless of point of origin, all the OOG equipment had to travel across the Black Sea by cargo ship then by river barge or ship through the Volga-Don Canal in Russia to the Caspian Sea. The cargo was then offloaded at the port of Aktau – the deepest and best-equipped port in Kazakhstan – and placed on special railcars for transit to the SGI/SGP site in Tengiz. Each train carried one to three of the giant vessels.



At every step of the journey, the scale of the effort matched the size of the equipment. At Aktau's port, for instance, it took 1,200-ton cranes to safely hoist the cargo off the barges and onto multiwheeled, multi-axle carriers.

On the Right Track

In the biggest infrastructure effort, TCO rebuilt the existing rail line of Kazakhstan's national railroad, Kazakhstan Temir Zholy (KTZ), to allow it to carry the ultraheavy loads – a job that included upgrading the track, installing automatic signals and removing

any obstacle along the entire 453-mile (729-km) length of railroad. The last stretch of the journey was on TCO's own tracks – the "TCO short line."

"TCO invested money in KTZ so that we could hire contractors to do the work, and then we recovered it in the lower rate we were charged," explains Makset Taubaev, former deputy SGI/SGP project manager and now deputy general director for TCO.

Prior to performing the OOG technical and construction work, TCO first trained all KTZ workers and contractors in TCO's Incident- and Injury-Free (IIF) safety procedures and culture. The difficulty of the OOG technical challenges were well known, explains Ron Jones, the former TCO SGI/SGP interface manager who oversaw the OOG project, but the hardest part was the huge logistical effort to train more than 500 workers to the high standards of IIF.

"Most of the KTZ workers were in small teams in remote, rugged terrain along the 453 miles of track, so it was especially important for them to have effective safety training before they got out there. We always stuck rigidly to the rule that if it's not safe, we will not move the rail cargo. There were many days and weeks where we delayed until the work could be done safely," says Ron.

Meanwhile, the whole packing process had to be altered to account for the jumbo loads. Although the railway track is only 5-foot (1.5-m) wide, some loads were as wide as 30 feet (9 m) – creating a massive overhang. Sophisticated computer simulations helped position each carload's center of gravity in the middle of the track while workers at Aktau lashed and counter-balanced all the cargo, welding on steel strips and ballast to make each railcar a solid piece.

Also, safe speeds needed to be calculated so that as the train rounded curves, centrifugal forces did not cause overturning outward by going too fast or gravity did not cause it to fall inward on a banked section.

Carrying an Elephant on a Bicycle

"It took three days for the train to get from Aktau to Tengiz, but to lash and ballast the load in Aktau would take nearly a whole month to complete," says Ron. "It was like trying to carry an elephant on a bicycle."

The stakes were high. Ron, now working in South Korea to expand the heavy oil upgrader at the Yeosu refinery, says, "If any item had to be rebuilt as a result of an incident, it would have been devastating to our project schedule."

The region's harsh weather also added to the pressure. Wild winds on Mangistau peninsula where the Aktau port is located could make the loading cranes too dangerous to operate, bringing the transportation process to a halt for days at a time. Winter deep freezes further narrowed the transportation window, as the canal and Caspian Sea are impassable from November through April. The last piece of equipment arrived intact and on time in November 2005.

Triumph of Teamwork and Engineering

The OOG project's success has been a triumph of teamwork as well as engineering, notes David Dimond, TCO's SGI/SGP project manager. During the equipment transport, about 50 people worked together in Aktau, not only employees of TCO and its SGI/SGP facilities prime contractor, Parsons/Fluor Daniel, but also freight forwarders, KTZ railway employees and the heavy lifters in charge of Dutch contractor Mammoett's oversize cranes.

"When we first saw the size of the equipment on the rail cars, I think we were all holding our breath a little bit," David admits. "We took a lot of extra precautions along the way on that first trip. And we had quite a good celebration with all of the team when the last load was offloaded at Tengiz. Everyone had a lot to be proud of."

In addition, the project yielded improvements to the Kazakhstan infrastructure, explains Makset. "It was a real technical breakthrough for KTZ," he explains. "It ended up with first-class traffic control systems, and the project management team benefited from working with a world-class company like TCO. Also, the port of Aktau is now planning to expand its capacity, and its management learned from us what kinds of improvements and equipment they'll need."

"We worked with a lot of different partners: contractors, government agencies and more," Makset adds. "We were able to share our best practices and lessons learned and that's good for Kazakhstan."



Papua New Guinea – Our Community Legacy

Programs Chevron established to help the country's development continue to thrive without us.

by Dennis Flemming

Nearly three years ago, Chevron sold its interests in Papua New Guinea and relinquished operatorship of the oil fields. Operations from this country – which occupies half of the island of New Guinea, close to the northernmost tip of Australia – contributed only a small percentage of our worldwide production at that time.

But our presence contributed much more to the country and toward the company's understanding of how to successfully manage the social and environmental challenges of operating in remote, developing communities within a pristine rainforest.

Our achievement in this regard earned the company international recognition.

Our partnership with the World Wildlife Fund (WWF) pioneered the concept that an oil company and an environmental organization could develop synergies that would effectively protect the sensitive biodiversity of the country's rainforests.

In partnership and close consultation with the government, we established the Community Development Initiatives (CDI) Foundation Trust Fund to support social development and natural resource management within those communities in a sustainable manner.

CDI had made significant contributions to the development of Papua New Guinea by the time we sold our interests in the country in 2003. Our exit strategy was to ensure that we left a legacy of sustainable benefits to the country.

This strategy was enshrined in the objectives and plans of the CDI Foundation, developed in 2000 and managed by seconded Chevron personnel until our exit in 2003.



Environmentalist Jared Diamond 'Astonished' to Find Abundant Species

The foundation set up three training centers within communities near the company's oil fields and pipelines. From these centers, both CDI and WWF, working in partnership, implemented a broad range of community programs and training activities aimed at improving public health, education, food security, and the management and conservation of natural resources.

By 2004, management of the foundation was localized, and CDI, now successfully run completely by Papua New Guineans, is considered one of the biggest and best-managed local nongovernmental organizations (NGOs) in the country.



Our development strategy for the CDI Foundation involved the transition from company management to local management of the community programs. The original Chevron program staff became employees of CDI, and additional staff with strong NGO backgrounds were recruited, purposely generating a hybrid organizational culture with both private- and public-sector influences.

As CDI built its capacity and gained credibility within the development community, it gained increasing independence from Chevron oversight and control. As we relinquished operatorship of the leases at the end of 2003, we negotiated with the successor operator, Oil Search Ltd, to sign grant agreements ensuring continuing funding commitments to CDI and WWF's social and environmental programs. Out of sale proceeds, we created the PNG Legacy Fund and made a donation of \$1.3 million to CDI to further build its sustainability as an independent NGO.

Much of this funding was earmarked to establish a training center in Port Moresby, the country's capital, enabling it to offer training and support to donors and NGOs implementing social programs throughout the country. This would allow CDI to generate revenues from training, research and consultancy services outside of its original programs near the oil-field facilities, thus positioning the organization as a nationwide NGO with a broad range of opportunities to support social development for years to come.

The new Port Moresby Training Center was opened in December 2005 and provides CDI with a strong asset base and facilities of its own that can be used to promote the growth and development of the foundation and its objectives to be a catalyst for the social development of Papua New Guinea.



The concept of sustainability means many things to many people. It is more often expressed as a hope than a certainty. The sustainability of CDI and the objectives it seeks to achieve can never be considered a certainty, with so many unknowns facing the country's future. But Chevron's support has given CDI new opportunities and, ultimately, the hope that it can use its resources to build a sustainable future for the organization and the country.

Our presence in Papua New Guinea may have ended, but the company legacy carries on.

About the Author

Dennis Flemming was assigned to CDI as its original executive director from 2001 to 2003. In 2004, he transferred to Angola, where he still works today, to become project director of the Angola Partnership Initiative. See sidebar "A Model for Communities in Angola and Beyond."

A Model for Communities in Angola and Beyond

"Papua New Guinea taught us a lot about how we engage with the communities," says Steve Burns.

Steve manages the corporate Community Engagement group – running one of the most visible and important parts of our corporate responsibility efforts. Experiences like that in Papua New Guinea, he says, have led to a redefined approach to community engagement and investment.

"Increasingly, we are focusing our efforts on helping create sustained economic growth by building human and institutional capacity. This means targeting our resources toward providing for basic human needs, supporting education and training, and aiding small-and medium-sized business development.

"And having an exit strategy as well as concentrating on building the capacity of our partners, not just the communities themselves, is world-class programming."

The CDI model has already been applied with some success in a partnership with the United States Agency for International Development (USAID) as a part of Chevron's Angola Partnership Initiative (API). API was created in 2002 with \$25 million from Chevron over five years to build a sustainable program of development.

Andrew Natsios, administrator of USAID, described the partnership as "an excellent example of how USAID and a private partner can work together."



Environmentalist Jared Diamond 'Astonished' to Find Abundant Species.

Renowned author and environmentalist Jared Diamond witnessed Chevron's partnerships in Papua New Guinea firsthand. Diamond visited our operations between 1998 to 2003 as a consultant to the World Wildlife Fund. In his most recent book, *Collapse: How Societies Choose to Fail or Succeed*, he writes:

"New Guinea has many bird and mammal species whose presence and abundance are sensitive indicators of human disturbance... I anticipated that my main goal would be to determine how much less numerous these species were inside the area of Chevron's oil fields, facilities, and pipeline than outside it."

"Instead, I discovered to my astonishment that these species are much more numerous inside the Chevron area than anywhere else that I have visited on the island of New Guinea except for a few remote uninhabited areas."

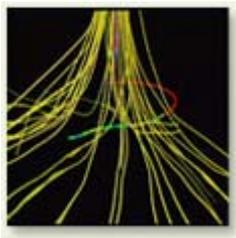


Navigating Spaghetti Junction

Latest directional-drilling technology enables wells to dodge and weave.

by Muriel Roberts and Stacey Simon

When the Captain Field was discovered in 1977, it was estimated to contain more than 200 million barrels of heavy crude. But despite its rich reserves, this U.K. North Sea field, offshore Scotland, was deemed uneconomical to develop.



Wide and shallow, with oil-bearing sands varying in thickness from 200 feet to only 30 feet (61 m to 9 m), it would have taken hundreds of conventional wells to extract the oil below.

Fast-forward 20 years to 1997. With advancements in technology that made drilling long-reach horizontal wells an option, the first of three development phases was launched, with the initial production phase beginning that year.

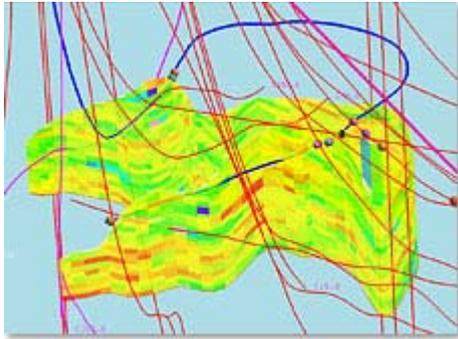
From the start, the field's challenging characteristics – extensive but shallow, unconsolidated (loose sand) reservoirs and heavy, viscous oil (18–21 API) – have required ingenious application of a number of technologies: horizontal drilling, sand screens, gravel packing, and specially commissioned electric and hydraulic submersible pumps.

Now in its third phase, Captain's reservoirs have seen some notable "firsts" along the way. Among these was a previously untested well design – a high dogleg directional well that turns and twists through a spaghetti junction of horizontal wells to reach its target: the previously inaccessible crude directly below the drilling platform.

With these wells, Chevron and technology partner Baker Hughes Inteq have set new standards for directional drilling, adopting a steerable rotary commercial drilling system called AutoTrak® and adapting the operational techniques specifically for these wells (see video "AutoTrak").

AutoTrak was used to drill and complete the first semihelical well, UP 16, in the summer of 2004. It proved the viability of precisely steering a complex profile in a difficult drilling environment with very little margin for error, steering in and around 15 producer and injector wells and their associated sidetracks.

The second and latest well, UP 17, which was drilled last November and December, has an even more complex profile, that of a flat loop. Inspired by the success of the earlier well, UP 17 has become known among the Chevron/Inteq drilling team as the “Van Dijk Hook” after Inteq directional-drilling coordinator Peter Van Dijk, who conceived this highly ambitious well profile. Typically, directional drilling uses depth to build angle; in contrast, Van Dijk went against conventional wisdom by steering a flat, horizontal path as he drilled UP 17.



Traversing the spaghetti junction of wells below with the Van Dijk Hook profile, UP 17 – the well now known as 13/22a–C37 – has a total measured depth of 9,728 feet (2,965 m).

Specifically, the plan called for a continuous turn through 200 degrees, while horizontal, at a constant dogleg (the bend in a well bore) of 8.5 degrees per 100 feet (30.5 m), forming a loop that cut flat out of the reservoir and into the overlying chalk then back into the reservoir to its target. Once again, the trajectory avoided the many horizontal wells radiating in all directions from the platform.

“These wells have pushed directional-drilling technology and technique right to the wire, but each success increases our confidence that even more-complex wells are possible,” says Gert de Jonge, Captain’s Long-Term Development team leader. “With so many wells already in existence, future drilling will have to be continually more creative to avoid the potentially severe consequences of a subsurface collision.”

AutoTrak

AutoTrak forms part of the drill string, comprising a section of the bottom-hole assembly during drilling. Above ground, the operator steers AutoTrak via computer, sending commands to the tool down hole to operate pads that hydraulically push out, depending on the direction it’s being sent in. As the operator is steering and drilling, he can receive real-time log data about the rocks below, including gamma ray, resistivity and other data.

Among its other attributes, AutoTrak also allows for drilling even longer horizontal wells, a benefit at Captain where average reservoir sections are approximately 4,000 feet (1,200 m) in length and can run up to 8,000 feet (2,440 m) in some sections.



“It’s very much a high-tech, heavy-duty bit of kit that has to survive in very tough conditions and has done a fantastic job for Captain,” says Chris Bell, staff geologist for the Chevron Europe Upstream business unit.



What's your favorite saying?

Diane Duran

*Category Manager for Procurement,
San Joaquin Valley Business Unit,
Bakersfield, California, United States*



“When people ask me how I’m doing,

it’s fun to say, ‘It doesn’t get any better than this.’ People generally look totally surprised, as they are expecting me to say ‘I’m fine.’ We should make the best of each day, and it is up to us to have either a good or bad day.”



Elena Gale

*Manager of Business Development,
Chevron Global Gas,
Moscow, Russia*

“There is one British expression I

learned a long time ago while studying with my English teacher: ‘Better late than never, but better never late.’ Punctuality and responsiveness are extremely important in my professional and personal life. I think being late for an appointment would show disrespect toward the other person, and I always try to be on time.”

Andrew Powell

*Building Services Coordinator,
Australasia Strategic Business Unit,
Perth, Australia*



“ ‘Life’s too short’ would have to be it.

When you’re a kid it seems like you will live forever. However, you soon start to realize forever is not a very long time. Make the most of life – don’t waste it – every day!”



David Breddy

*BZ25–1 Development Project Controls
Specialist,
Asia South Strategic Business Unit,
Tanggu, People’s Republic of China*

“I like a saying from Confucius: ‘Find a job you

love, and you’ll never work a day in your life.’ I always tell people to pick work they enjoy – the likelihood being that they will be quite good at it. Imagine a workplace where all people enjoy their jobs.”

Laura Garcia Zamora

*Administrative Assistant,
Global Gas, Regas Ventures,
ChevronTexaco de México,
Tijuana, Baja California, México*



“One of my favorite phrases is: ‘Happiness is a

way of life.’ I’m a happy person in all aspects of my life: personal, family and work. During the two years I’ve been with Chevron, I’ve seen that the company is committed to our well-being. I’m glad to work here, and I support the company’s goals and objectives.”



The *Key Gibraltar* Rig



Mirambek Ataushiev

Drill Site Manager

Chevron Offshore (Thailand) Ltd

Far from home, Kazakh national Mirambek is tasting a new culture and work environment on a rig that can rise to many a drilling challenge.

Dear Colleagues,

Before coming to Thailand, I worked for five years on land rigs at the Tengiz Field in Kazakhstan. I had never been to an offshore rig, so Chevron sent me to Thailand for offshore experience.

It was early January and winter in Kazakhstan, but there is no real winter in tropical Thailand. It seemed strange to leave behind our cold winter, with temperatures of minus 30 degrees Celsius (-22° F) and jump straight into “summer” at around 30 degrees Celsius (86° F).

I am a drill-site manager on loan from Tengizchevroil to Chevron Offshore (Thailand) Ltd. This is my first overseas assignment. I work 28 days on, 28 off. My job is to supervise operations on the rig and give work direction to various service personnel to accomplish the objectives of the drilling program.

When I arrived at the Chevron office in Bangkok, I learned what my assignment would entail. I would be working on Block B8/32 in the Gulf of Thailand, which Chevron operates with a 51.7 percent interest. The block produces oil and natural gas from four fields: Tantawan, Maliwan, Benchamas and North Jarmjuree. Net daily production from these fields in 2005 was 105 million cubic feet of natural gas and 25,000 barrels of crude oil.

The rig that I work on is the *Key Gibraltar*, which belongs to drilling contractor GlobalSantaFe. This is a jack-up rig – a mobile, self-elevating platform equipped with three legs that can be lowered to the ocean until a foundation is established to support the hull. It contains the drilling equipment, jacking system, crew quarters, loading and unloading facilities, storage areas for bulk and liquid materials, helicopter landing deck, and other related equipment.



The rig legs can operate independently to provide a more stable foundation on soft seabed areas. The rig is of cantilever design – a feature that permits the drilling package to be extended out from the hull, allowing it to perform drilling operations over adjacent, fixed platforms. Water depth is approximately 70 meters (230 feet) here. Moving a rig from one drill site to another involves lowering the hull down into the water until it is afloat and then jacking up its legs with the hull floating on the surface of the water. The hull is then towed to the new drilling site.

A maximum of 120 people can live and work on the rig at the same time. This is a multinational team comprising 80 percent Thai nationals. We all work together to meet operational

objectives and safety goals.

Life on the rig is centered on work, but off shift we can relax in the nice atmosphere of the meeting room, or – if we have energy left after a 12-hour shift – go to the gym. Many of us like to go to the quietest place on the rig. From the main deck you can see exotic marine life of the Gulf of Thailand – fish of various colors including skate and jellyfish.

Recently, we drilled 16 development wells on the platform in the Benchamas Field. All wells are directional and each takes five or six days to drill. The rate of penetration was quite fast here, so operations go quicker than on my previous rig in Tengiz. It's a demanding job that requires constant attention to logistics, drilling equipment, casings, drilling mud and chemical supply.

When we're finished, a well-service team comes to the rig to line up wells to the production platform and starts producing from them.

Of course, throughout these operations, we fully comply with Chevron safety policies and standards. We regularly hold weekly safety meetings, and everybody participates in the FOCUS safety-observation program. Every week, people who have made the best safety observations win awards.

I'm proud to say that *Key Gibraltar* rig personnel have worked more than 6,000 days without a lost-time incident. This demonstrates the dedication of all crewmembers for their vigilance, teamwork and leadership.

While on this assignment I have met people from all over the world and had a chance to see Thai culture and society. I've enjoyed trying exotic fruits and seafood – including flavors that were new and strange to me. The cuisine is hot with lots of spices, seafood and rice.

I was glad to be here on the 60th anniversary of His Majesty King Bhumibol Adulyadej's accession to the throne. All Thai people on the rig wore yellow bracelets as a tribute their king – the world's longest-serving head of state.

Sincerely,

A handwritten signature in black ink, appearing to be 'Angay'.



Along with readers' letters responding to articles in Issue 7, we continue to receive reactions to our popular article in Issue 6, "Keeping Critical Talent on Board." Some of these are published with responses from Human Resources experts.

More Volunteers Come Forward

I very much enjoyed your article ["Voices: How do you make a difference in your community?" Issue 7] on community service and the way others in Chevron help in their communities. I am at present 52 years of age and, like my father before me, I believe supporting our community is a responsibility we should all share. From age 21 through 30, I was a member of the California Jaycees (Junior Chamber of Commerce), working through all the positions of my local chapter. Jaycees teach young men and women about achievement and leadership through community service. After that, I joined the Bay Area Red Cross and became a CPR and first-aid instructor, also accepting a volunteer position as San Pablo city liaison for Red Cross Disaster Services. It has been a joy helping others.

—Herman Berry Jr., Richmond, California, United States

Helping Communities

The comments from readers are very edifying, and show how willing employees are to make their society a better place for all to live in. Keep up the good work.

—Fini Akuna, Lekki, Nigeria

Proud

It's good to see that the company has been encouraging efforts to engage with communities in many areas, and I feel proud of this and would like to see such actions continue.

—Francisco Pascoal, Cabinda, Angola

Tar Sands in Nigeria

Your article ["Beating the Tar Out of Sand for Oil," Issue 7] was informative and stirred my curiosity. The bitumen zone of Nigeria fits this description too. Against the backdrop of readily available cheap and marketable crude oil, it probably hasn't made any economic sense for local authorities to exploit this asset. However, Chevron may wish to consider applying and adapting this [tar sands] technology here. All this helps provide more fuel for world consumption and leads to lower prices. This is especially relevant in the current global-security climate and, in particular, security in current production zones in Nigeria.

—Emmanuel Agbongiague, Warri, Nigeria

Retaining, Recruiting, Developing Downstream People

Great article ["Keeping Critical Talent on Board"]. How are we addressing these issues in Global Downstream?

—Freeman Shaheen, Houston, Texas, United States

Response from Barbara Curran, vice president of Human Resources for Global Downstream:

Attracting and retaining key talent is a critical issue for Global Downstream, and we take it seriously. Fortunately, we have the luxury of our global size and scale to help offset some of the declining demographic trends we are seeing in the United States and other locations.

I am pleased to say we have many initiatives aimed at this issue. We have developed a standard strategic-staffing approach within the downstream to plan for our future needs. Some of the jobs we are looking at are refinery engineers, operators and mechanics, linear programming planners, traders, and marketing business consultants. We are identifying the current state, future needs and actions needed to close the gaps for these groups. We're tracking retention proactively, and, fortunately, do not see any alarming trends.

We are also actively recruiting externally in many locations around the world for new graduates and experienced new hires. For example, Global Refining recruited 102 employees in 2005 and has received commitments from 116 more this year. Downstream also participates in the corporate Global Employment Talent Sourcing initiative, which is designed to improve our attractiveness to external hires.

Other important elements in this equation include our efforts in performance management and development. Downstream has implemented practices, such as monthly performance dialogues, to stay connected with our employees, help them stay engaged, and provide them with continual feedback and reinforcement. This not only aids in retention but allows our employees the opportunity to prepare for their future roles.

In the development area, such programs as the international marketing fellowship, graduate development, commercial development and various Chevron-sponsored internships provide experiences to existing and potential Downstream employees that will prepare them to fill our future needs. We also have built training and development requirements into our Performance Management Process.

Attracting Crafts Skills

It's nice that Chevron wants to retain "technocrats." At the Richmond Refinery, we have an additional problem: Crafts people are hard to find. Our latest attempt to advertise for refinery crafts resulted in about 30 candidates showing up for the test, and only one passed for the Machine Shop. When I took the test 25 years ago, the auditorium was filled with people. Most of our crafts people are in their late 40s to mid-50s, and 30 percent will retire in the next few years. The San Francisco Bay Area is too expensive for our salaries, and the region is not oriented toward "wrench pulling." It's going to get very interesting here. Does this situation exist in our other refineries?

—Mike Sequeira, Richmond, California, United States

Response from Bryan McCarthy, manager of Human Resources at the Richmond Refinery:

Your personal experience is a very good reflection of some of the significant demographic trends that are affecting Chevron's business, not only in the Bay Area of California but in many areas where we operate. Our general challenge is to find qualified people to replace the post-World War II generation – the baby boomers, as we call them in the United States.

Many of the experienced employees in Richmond were born in the years following the war and were hired in the mid-1970s through the early '80s. They are now approaching retirement age and service. Management is aware of the "wave" that is moving through the system, and Chevron has started using a standard process called Strategic Staffing to forecast hiring trends and attrition for the next 10 to 15 years. Once the forecast is complete, a gap analysis is used to identify shortfalls and to brainstorm alternatives for meeting the hiring needs we will face.

On a local level in the Bay Area, you are again correct in identifying a switch in employment preferences away from jobs in the industrial sector and toward jobs in the service industries that are becoming dominant in much of the U.S. economy. Chevron's challenge is to continue to find new sources of qualified applicants to fill our open jobs. Several initiatives are under way.

We are involved in an innovative partnership between industry, local government agencies and community colleges. By providing startup funding and course-design input for community college programs aimed at providing qualified candidates for our open positions, we can communicate the opportunities for talented local residents to prepare themselves for the rewarding jobs available in companies like Chevron. To attract candidates for refinery maintenance positions, we have partnered again with industry contacts and government agencies to attract displaced mechanics from the airline industry. By so doing, we bring qualified, experienced individuals into our facility and bring the reliability experience from a different industry into our operations. A step change improvement in reliability is a key strategic objective throughout Chevron.

Give Talented Staff a Chance to Move

I agree with all of your statements in "Keeping Critical Talent Onboard" and feel encouraged by all the efforts Chevron is making to understand and address this issue. Since January 2002, I have been involved in the development and implementation of the Horizons [mentoring] program specifically focused in petroleum engineering.

One issue that your article did not address is the movement of personnel between business units both domestically and internationally.

We talk a lot about a global, mobile work force, but a critical barrier to retention and development of employees is that managers and supervisors are not allowing individuals to post for jobs outside their current business unit. There is a definite fear that these talented individuals will not be replaced so you have to hold onto employees with critical skills to meet your business goals.

I hear about cases on a regular basis where someone has left the company because they were not allowed to post for a new job after holding their current job for well over two years – sometimes after being in a location over four years. This situation affects all levels in the organization, from Horizons candidates to employees near retirement and national employees.

I feel Chevron needs to address this employee retention and development issue so we truly have a global, mobile work force.

—Kathleen Mabe, Houston, Texas, United States

Recruitment Cuts to Blame

The premise of the article [“Keeping Critical Talent on Board”] seems to be that the oil industry’s demographic problems arise out of the population bulge caused by the baby boomers. While this is clearly an issue for overall work force availability in regions such as the United States and Europe, I think the industry staff downsizing in the 20–year period to 2002 has probably had more impact. During this period, recruitment programs were severely cut back and a steady increase in the average age of the work force occurred. It would be interesting to compare the employee population size of Chevron today with that of Socal, Gulf, Tenneco, Texaco, Getty and Unocal in 1981. While adjustments would need to be made to compare “apples with apples,” I think in these statistics we will see the major reason for the challenge we face today: this was also happening industrywide.

—Andrew McGrahan, Moscow, Russia