



richmond refinery newsletter july 2019

richmond today

human energy®



richmond: the home of innovation



By Walt Szopiak

Chevron has been fueling energy innovations for more than 100 years. A whole lot of that energy work has stemmed and continues to stem from the Richmond Technology Center (RTC).

RTC is a crucial part of Chevron's operations and home to more than 170 PhD scientists and a total workforce of nearly 1,200. The facility is stacked with top tier laboratories and countless research facilities. This is where the magic happens.

RTC is the birthplace of a significant portion of Chevron's more than 1,600 active US patents. But that's not the half of it. The RTC also has a rich history of innovation that dates back a century.

Some of the country's greatest fuel-related innovations were developed right here in Richmond. This includes the gasoline to test the first Model T Ford automobiles and the first fuels designed specifically for airplanes, which were used by Charles Lindbergh and Amelia Earhart during their historic flights.

And of course, one of RTC's greatest achievements was the development of Techron, our instrumental fuel additive, which is used in our branded gasolines around the globe.

Learn more about our work in this month's newsletter.

Walt Szopiak is the Director of the Richmond Technology Center.

richmond: el hogar de la innovación

Por Walt Szopiak

Chevron ha contribuido con innovaciones de energía durante más de 100 años. Gran parte de ese trabajo de energía surge y continúa surgiendo del Centro de Tecnología de Richmond (RTC).

RTC es una parte crítica de las operaciones de Chevron y hogar de más de 170 científicos con doctorado y una fuerza de trabajo total de casi 1,200, la planta cuenta con laboratorios del más alto nivel e incontables instalaciones de investigación. Aquí es donde ocurre la magia.

RTC es el lugar de nacimiento de una gran porción de las 1,600 patentes activas de EE.UU. de Chevron. Pero ni siquiera es la mitad. El RTC tiene además una vasta historia de innovación que data de un siglo.

Algunas de las más grandes innovaciones relacionadas con el combustible del país se desarrollaron justo aquí en Richmond. Esto incluye la gasolina para probar los primeros automóviles Ford Modelo T y el primer combustible diseñado específicamente para los aviones que usaron Charles Lindbergh y Amelia Earhart en sus históricos vuelos.

Y por supuesto, uno de los logros más grandes de RTC fue el desarrollo de Techron, nuestro aditivo de combustible fundamental, el cual se usa en nuestras gasolinas de marca en todo el mundo.

Obtenga más información de nuestro trabajo en el boletín de este mes.

Walt Szopiak es el director del Centro de Tecnología de Richmond.



richmond technology center fast facts



170+
PhD
Scientists



1,000+
Total
Workforce



1919
First On-site
Facility

the power of problem solvers

Chevron's greatest asset – our people – are focused on making energy...



more
affordable



more
reliable



ever
cleaner

We believe life depends on energy and we've taken steps to improve lives through innovation since our founding.

a history of innovation

1917 Standard Oil, Chevron's predecessor, develops Red Crown aviation gasoline, the first gasoline in the U.S. specifically designed for aviation use. Red Crown powers the aircraft that Charles Lindbergh flies across the Atlantic.



1941

Richmond powers the World War II effort and expands its 100-octane gas production to meet a need for efficient aviation fuel. New compounds enable U.S. Navy submarines to triple their cruising range.

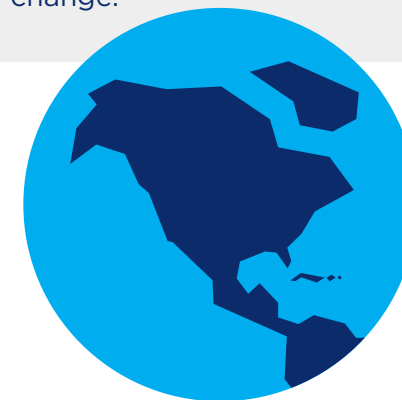
1959

Scientists at RTC develop ISOCRACKING technology, a process that uses chemical catalysts to rearrange the crude oil molecules and convert them into high-value products such as gasoline and jet fuel.

1993

ISODEWAXING technology, in combination with Chevron's Hydrotreating catalysis, is a revolutionary process to remove essentially all undesirable sulfur and nitrogen molecules and transform the remaining hydrocarbons into high-quality base oil, is developed at RTC.

2007 Two Chevron employees, including one from RTC, are part of the Intergovernmental Panel on Climate Change (IPCC) team that shares the Nobel Peace Prize for work related to combating climate change.



2018 In cooperation with Chevron, a Boeing 787 powered by low-carbon biofuel flies from San Francisco to Zurich. Chevron is the first U.S. oil energy major to tie greenhouse gas emissions to executive compensation.

2019

Chevron scientists continue developing products to maximize fuel efficiency and help develop alternative energies to power the earth such as alternative and renewable fuels, including biofuels and solar, wind and geothermal power.

encouraging the next generation

American Chemistry Society (ACS) Project SEED provides opportunities for students, who wouldn't typically be exposed to scientific careers, to spend a summer conducting hands-on research in academic, industry, and government research laboratories. The program helped more than 10,000 high school students from economically disadvantaged communities gain hands on experience in scientific settings. Students are given a rare chance to work alongside scientist-mentors, at facilities such as the Richmond Technology Center, on research projects while discovering new career paths as they approach turning points in their lives.



40 years of clean(ing) engines

Techron, which was developed at the Richmond Technology Center in 1979, was the first patented additive developed for engines running on unleaded gasoline. Techron has been reformulated over the years to keep vital engine parts clean and clean up harmful deposits left by low-quality gasolines. This helps protect engine performance, minimize emissions and maximize mileage. Today, the cleaning power of Techron can be found in Chevron with Techron and Texaco with Techron gasolines in the U.S., as well as in Techron Concentrate Plus in the bottle to help keep car, truck and boat engines running their best. Techron was recently named *Best Fuel Additive* in Autoweek's 2019 Readers' Choice Awards. You can find Techron products online and at retail locations in many places around the world.

As we create the future of energy, our commitment to take on challenges, operate responsibly and engage in conversations about where we're headed will not change. Finding the answers to the world's most complex energy challenges won't be easy – but you can count on us to be there.

Q & A

a conversation with

**Mike Lubcyik, Unit Manager
Materials and Equipment Engineering Unit,
Richmond Technology Center**



Q What's your role at Chevron?

I manage a group of subject matter experts in the area of materials, corrosion and equipment engineering. We provide technical advice to help enhance the reliability of equipment and materials at Chevron facilities across the globe, including the Richmond Refinery.

Q What are some of your team's focus areas now?

We are continuously looking for better ways to have materials last longer and operate more reliably. This includes new ways to detect metal loss in equipment sooner, which enables us to address issues before they become a problem. We also are developing coatings that will prevent corrosion from happening in the first place. We're working on upgrades to higher-grade materials and corrosion-resistant materials, and using advanced materials to reduce fouling (the accumulation of unwanted material) which reduces the potential for equipment shutdowns.

Q What else happens at RTC?

RTC is home to scientists from our Energy Technology Company; our wholly owned additives company Oronite; and Chevron Lubricants. The 1.2 million square foot facility features an expansive research lab to help engines run more efficiently. Teams at RTC developed our proprietary fuel additive Techron, a competitive advantage when it comes to reducing emissions and keeping engine parts clean. We also developed the first diesel engine oil that could be run in any diesel engine. From the advanced technology development to analytical lab support, decision analysis, process development and R&D, RTC teams keep Chevron on the cutting edge in providing affordable, reliable, ever-cleaner energy.

Q Tell us about your family's connection to Chevron?

I've worked at Chevron for 37 years at two refineries, the Corporate Office and at RTC for about 18 years. My son works as a Design Engineer at the Richmond Refinery. My father-in-law worked at Chevron for about 45 years. And his wife's father worked at Chevron for a good period of time. So you could say that my family has a lot of history with Chevron. All told, there are about 4 generations of us who've worked for the company.

Q How are you involved in the community?

I am the Chair of the Board of Directors for the Bay Area Rescue Mission (BARM). I spend a good amount of time volunteering and helping the organization develop strategies to improve its programs and operations. I also help organize a food drive here at RTC that generates thousands of pounds of food for BARM and other local food banks. I also encourage my team to get involved. It's a positive thing for the individual and the right thing to do for the community. I'm really proud to work for a company that encourages this kind of involvement.

Q Are there any highlights of working at Chevron that stick out?

I love seeing people who've worked for me advance through the company. My job is not just to develop the best materials engineer, it's also to develop the best Chevron employee. It is very gratifying to see people grow and become leaders within the company. I feel like I'm helping people become successful in their own careers and helping ensure the future success of Chevron.



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para más información

Email a richmondrefineryinfo@chevron.com
o llamando al número 510-242-2000. Para
quejas relacionadas con ruidos y olores, por
favor llame al número 510-242-2127.

community corner

building community bonds

National Night Out (NNO) is held in cities across the US, including here in Richmond, on the first Tuesday in August, as a way to build bonds between neighbors, police officers and firefighters. This year's event will be held August 6. The evening starts at 5 pm with a "Kick Off" featuring free food and kids activities at the Target Parking Lot (4500 Macdonald Ave.).

A caravan of public safety and crime prevention representatives will travel to other block parties in the city before reconvening at Pullman Point (2801 Pullman Ave) for an end party. NNO also helps encourage neighbors to get to know one another and take back their neighborhoods. It is estimated that more than 35 million people in 15,000 communities will take part in events across the US.

desarrollo de enlaces con la comunidad

National Night Out (NNO) (noche de salida nacional) se lleva a cabo en ciudades de todo Estados Unidos, incluyendo Richmond, el primer martes de agosto, como una manera de desarrollar enlaces entre vecinos, policías y bomberos. El evento de este año será el 6 de agosto. El "arranque" inicia a las 5 p.m. con comida gratis y actividades infantiles en el estacionamiento de Target (4500 Macdonald Ave.). Una caravana de representantes de seguridad pública y prevención de delitos se trasladará a otras fiestas de vecinos en la ciudad y finalmente se reunirán en Pullman Point (2801 Pullman Ave) para la fiesta final. NNO también tiene la finalidad de animar a los vecinos a conocerse y proteger a sus barrios. Se calcula que más de 35 millones de personas de 15,000 comunidades participarán en eventos en todo Estados Unidos.



national night out 2019

Tuesday, August 6
Kick-Off Gathering 5:00 pm

Target Parking Lot
(4500 Macdonald Ave)
Free Food and Kids Activities

Martes 6 de agosto
Arranque 05:00 p.m.

Estacionamiento de Target
(4500 Macdonald Ave)
Comida gratis y actividades
infantiles