Welcome to the winter 2015-16 edition of Enhanced Oil. As we get ready to celebrate the holidays and begin a new year, KU TORP continues its research related to improved oil recovery and serving operators and service companies in Kansas and at large. As part of this mission we recently hosted our annual Advisory Board meeting in Lawrence. Industry representatives from across the State and some from around the country gathered to hear an update on our progress in the research arena, technology transfer and of course our ongoing director search. Highlights of the day and a half event included introduction of KU’s latest Petroleum Engineering faculty member Dr. Laura Li as well as presentations from Stan McCool and Mark Ballard discussing their surfactant flooding field project. The group also heard from Jeremy Viscomi regarding KU TORP Technology Transfer initiatives and Dr’s Karen Peltier, Jyun Syung Tsau and Reza Berati about their current work related to Improved Recovery in Unconventional Reservoirs, funded by a KU Strategic Initiative Grant. Details of this meeting can be found in the year in review section of this newsletter.

Also in this issue we highlight a recent visit to operators working in the eastern part of the State and how each is approaching the use of technology in different ways. Additionally, work continues to move forward on KU’s Earth, Energy and Environment Center on campus. KU TORP has been an active participant in planning this facility and will ultimately have space in this new building.

Finally, as you receive this message participants from across Kansas will be attending our KU TORP winter workshop: Rod Pumping and Failure Cause Analysis led by Russell Stevens from Schlumberger. Stevens is a leading expert in failure cause analysis and has attracted more than 60 attendees representing multiple operators and service companies to participate in the day’s events.

We hope you enjoy this issue of Enhanced Oil and are excited to continue to share our ongoing work and service to the State and the oil and gas industry at large. On behalf of the KU TORP staff I would like to wish each of you happy holidays and a prosperous new year.

Russ Ostermann
Interim Director
Recently I had the opportunity to get back into the field to visit with operators, observe technology in use, and learn how folks are working through today’s oil and gas market. Small operators can be particularly impacted by current oil prices however through a combination of years of experience and openness to technology, the operations I spent time with continue to move forward in spite of a struggling market. In fact many operators are gearing up for the other side of this, “market dip”.

My first stop took me near Wellsville Kansas where the folks at Town Oilfield Services were spending the morning fracturing several of their producing wells. I was greeted by Lance Town who was just getting set up to frac the first well of the day. Rigging up was Hurricane Services who just made the last connection and were getting ready to pump the job. When explaining the thinking behind fracturing these producing wells Town stated that a lot of these wells will see near wellbore effects which will reduce the amount of production of that well. One common way to clean up that damage is to frac past it and place a small amount of large sized proppant to improve the connectivity of the well. Town opted for using Hurricane Services largely due to their location as well as their fracturing combo unit that combines the technological capability of a larger operation with versatility and size to easily and efficiently frac multiple wells in a single day. During my short visit that morning this unit pumped six jobs easily rigging up and down between fracs. Town’s commitment to improve production by using a modern pumping unit and an innovative approach to his wells is helping his operation grow even in this unusual market.

From Wellsville I traveled southeast through Miami County to visit Bobcat Oilfield Services. While driving to the location what was most striking to me was how quickly the terrain changed from broad sweeping plains to hills and rocky bluffs. This was reinforced when I spoke to Rob Eberhart from Bobcat who said many of their wells have a total vertical depth of around 250 feet and produce mostly water. Bobcat has been working in the area for many years and like most small companies has seen its share of ups and down in the industry however their unique approach to cost savings
illustrated good old ingenuity and commitment to the business. When I arrived on the jobsite I was shown the new field office brilliantly housed in a converted freight trailer. Eberhart said that for the price they paid to purchase and get the freight container to the treatment facility where Bobcat treats its produced water and re-injects it into their injection wells to continue to support ongoing production. Housed in reused trucking freezer containers Bobcat cycles their produced water through sock filters that particles and filter the water so it can be re-injected. Housing the operation inside not only keep things running during the cold months but keeps Bobcat field guys from freezing during repairs and filter replacement. Bobcats approach to using water filtration technology combined housed in reused structures saves the operation money while keeping production moving forward.

My last day of the trip I spent the day with Verde Oil Company in Savonburg Kansas. What was initially most striking about the Savonburg site was the way in which the yard and surrounding acreage was set up. I couldn’t help but notice well organized rows of equipment and inventory of supplies all surrounded by what appeared to be a neatly organized grid of five spot water injected wells. Upon visiting the main office it became obvious that Verde had made the investment in technology aimed at making their jobsites as productive as possible. Our first stop took us to a converted freight container where each of the injector lines complete with digital gauges were housed in the same place. With this setup it makes it easier to make adjustments in a controlled environment without having to drive acre after acre making slight changes. Probably most impressive was Verdes separator tank. With a large “HWSB” painted on the side the tank looks pretty similar to most tanks in the field however what Jeff Dale from Verde will tell you is that the HWSB well lets just say stands for Hard Working Son of Gun. Built by KBK Industries Dale says this particular tank has helped them separate and recover additional oil that once was trapped in produced water and injected back into the reservoir.

Each of the three operations that I had the opportunity to visit approach technology in very different ways, however their commitment to their operations and the industry at large undeniable.
Work on the KU Earth Energy and Environment Center Continues

Construction has begun on the KU Earth, Energy and Environment Center (EEEC) building adjacent to Lindley hall on the KU campus. This visually appealing addition to the KU campus will house faculty, staff and students from multiple fields including geology, petroleum engineering and members of the KU TORP team. With a bridge from Learned Hall the EEEC will contain four offices for KU TORP professional staff and two faculty offices for the Chemical & Petroleum Engineering Department. There will be room for up to 12 graduate students as well as a petroleum engineering research lab. Additional facilities include KU TORP Research Labs as well as a technology transfer conference center.

Year in Review

2015 has been a busy year for KU TJORP. In addition to its ongoing search for a director, TJORP has made some great strides in the development of its work and research and outreach. Chiefly among these accomplishments Dr. Stan McCool and Mark Ballard have been busy with the field testing phase of the Surfactant Flooding project. In a partnership with RPSEA, Berexco, Huntsman and SNF Holding, TJORP has recently begun actively injecting surfactant into the Trembley oilfield in Reno County, Kansas. Researchers hope to show that injecting surfactant over time can positively impact surrounding wells in a waterflood operation.

In the area of Technology Transfer, KU TORP continues to work with operators on identifying and providing the industry in Kansas and elsewhere with access to the latest technology and best practices. During the last year Jeremy Viscomi has worked with regional industry to identify future KU TORP workshop offerings as well as make necessary adjustments to the Technology Transfer strategy to meet the needs of a down market. Adjustments like reducing workshop cost slightly, offering single-day courses as well as courses tied to an annual Kansas event or conference have helped to maintain the successful track record of KU TJORP’s technology transfer division.

Additional accomplishments include Dr. Jyun Syung Tsau and Dr. Karen Peltier’s work on the development of a single well tracer test that KU TORP could offer operators in Kansas. This idea was brought to KU TORP by an operator one year ago. Since then, researchers have developed a method for GC analysis as well as a flow injection analysis method to determine partition values. Tsau and Peltier hope to continue their work with a core test at residual oil saturation to verify partition value. From there they will begin work on computer modeling and eventually conduct field testing and practice.

Sneak Peek

Coming in our next issue:

- TJORP Research Capabilities