|MC:SUBJECT|

Enhanced Oil Recovery Institute

E-News
Winter 2013

Director's Comments

~David Mohrbacher~

The Enhanced Oil Recovery Institute (EORI) is expanding capabilities and resources during 2013. We moved our staff into the new Energy Innovation Center (EIC) during December. The EIC includes approximately 30,000 square feet of new space divided evenly between office, laboratory, and meeting facilities. EORI will execute plans to add staff, grow laboratory capability, and expand outreach efforts during the coming months.

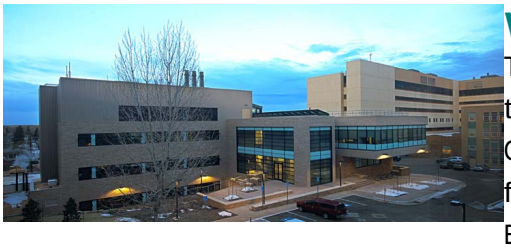
We now have sufficient office space to add five additional staff, bringing the total number of dedicated EORI staff to 21. Plans for expanding staff were completed more than two years ago when planning of the new facility was first initiated. We will immediately hire to two additional laboratory staff. Later this year we plan to hire two staff with operations, facility design, and reservoir experience; and one additional administrative support person.

EORI's laboratory program will be expanded based on use of the new laboratory space and acquisition of new state-of-the-art equipment. We will move into our new laboratory space during March 2013, when construction is completed. EORI has acquired additional equipment that will allow us to operate our two existing core displacement lines. A third line will be added to complete core displacements at reservoir elevated reservoir temperatures and pressures.

The EIC also includes an audio visual (AV) laboratory that will allow university researchers to view problems in three dimensions. EORI will use these facilities in concert with our high performance computer cluster and advanced software to evaluate Wyoming oil reservoirs. These tools will allow us to describe enhanced oil recovery floods using detailed geological descriptions and high resolution models.

EORI continues to expand our outreach program to reach more Wyoming operators. The meeting facilities in the EIC provide latest technologies for conducting live and virtual face-to-face meetings. EORI will initiate a series of forums that will address use of

cutting edge technologies for improving recovery of Wyoming's stranded oil. Operators from around Wyoming, and technical experts and researchers from around the world will be able to participate in discussions in person or via electronic connections.
Future quarterly newsletters will provide more details regarding use of these new facilities. In the meantime, please plan to visit us the next time you are in Laramie.



We've Moved

The Enhanced Oil Recovery Institute is fortunate to be housed in the new Energy Innovation Center (EIC). This world-class energy research facility is now home to EORI and the School of Energy Resources.

The $25.4 million state-of-the-art facility will allow the Enhanced Oil Recovery Institute to continue to meet the demands of the oil industry. The EORI Lab will allow researchers to take core samples from active reservoirs in the State of Wyoming to determine which methods of enhanced oil recovery will be most effective in extracting additional oil from fields in the state.

In addition to the new lab, EORI will have access to a 3-D Visualization Lab. This lab will be connected to the NCAR-Wyoming Supercomputing Center in Cheyenne and will allow researchers to create models of the subsurface to help oil and gas companies locate the best spots from which to extract minerals.

EORI's outreach efforts will be enhanced thanks to the Distance Collaboration Lab. Real-time research and knowledge can be transferred to any and all via this impressive video conferencing center. "We are excited about expanding EORI's outreach efforts with this advanced technology," states Glen Murrell, Associate Director. "We now have an additional resource to share on-going research findings with producers, members of our technical advisory board and consortium members." Murrell adds, "E-Learning is on the horizon."

The EIC will also house a teaching auditorium, drilling simulator, reservoir characterization lab and advanced coal technologies research lab.
Ribbon cutting and building dedication ceremonies are tentatively planned for mid-spring.

You can find us at 1020 East Lewis Street. Stop by...the coffee is always on!

2013 Conference & Technology Transfer Update

This year we are looking at the biggest and busiest EORI conference season ever. As with years past, the Annual Wyoming CO2 Conference will be the figurehead of the program. This year, the 7th edition of the meeting will take place on July 10th and 11th at the

Casper Event Center in Casper, WY. The agenda is already under development and this year's themes will include 'Small CO2 EOR Operators' and 'Hydrocarbon Conversion and CO2 EOR'. As with last year there are plenty of sponsorship and vendor opportunities available and all interested should contact Glen Murrell. Last year TriHydro and Holland & Hart held a workshop in Casper in conjunction with the meeting. It was a great success and we wish to build on that initiative. This year the EORI will hold a Tensleep ROZ/CO2 workshop on the two days preceding the main event (July 8th and 9th). This workshop will build on two preceding Tensleep workshops we held in Cody in 2012 and will focus on CO2 EOR and the ROZ in Tensleep reservoirs. Attendance will be limited and access provided on a first come-first served basis. In addition to this we are planning other workshops with external partners (still in development) and we will add an opening reception on the evening of the 10th.

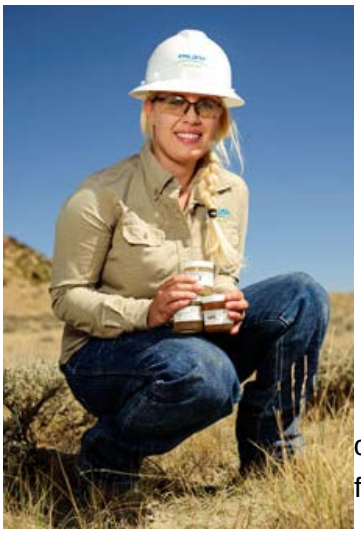
Those of you who attended the IOR/EOR conference last year in Jackson, WY will be aware that we have been considering changing the format of the meeting in order to mitigate some of the high cost associated with holding it in Jackson. After much consideration and consultation we have decided to keep the format constant (2 day event with broad agenda) but move it to Sheridan, WY and also charge a small registration fee. Details will be forthcoming but the date is set for September 9th & 10th at the Best Western – Sheridan Center.

Also scheduled are a series of Minnelusa workshops. These follow the format of the Tensleep workshops held in 2012 and the first one (Minnelusa I) will take place in Gillette, WY on May 6th & 7th. Later in the year we hope to start some eLearning forums. This initiative involves making use of the state of the art conferencing facilities in our new home (The Energy Innovation Center at the University of Wyoming).Each forum will be a short (2-3 hour) instruction on a specific IOR/EOR method and approaches like Low-Sal, MEOR as conformance and be taught by a team consisting of one academic expert and an industry expert. Those of you who have seen Norm Morrow and Charlie Carlisle present such a presentation on Low-Sal at our last IOR/EOR conference will recognize the benefit of this approach. Participation in the forum can be done in person by visiting our facility or remotely via the web. Look for more details later in the year.

EORI Students in the Field

~Sabrina Forbis~

The spring 2013 semester will mark the beginning of my eleventh semester of college. I am currently working on a second Bachelor's degree in Petroleum Engineering, my first being completed with the School of Energy Resources (SER) Energy Resource Management and Development program. I remember quite well the time when I first entered academia, having no idea as to what I wanted to for the rest of my life. Luckily, I have had the chance to entertain many



opportunities and experiences that have helped to mold my future plans.

This summer I was afforded the opportunity to work for Encana Corporation, a large natural gas and oil producer, having offices in Texas, Wyoming, Colorado, and Canada. The summer of 2012 was my third summer working for them, my first (2010) performing a reservoir engineering project in West Texas' Eagle Ford Shale, and my second summer (2011) working on plunger lift system optimization and air emission projects in the Jonah field south of Pinedale.

My most recent project took place in the Wind River Basin, located between Casper and Riverton. I spent most of my time in the Frenchie Draw field near the Moneta Divide, collecting and analyzing water samples in the field lab. Water samples were analyzed for oil and grease counts and turbidity, and it was my job to provide the best solution to reduce both. Part of the water management team, I performed a summer-long chemical optimization project, while communicating with various chemical suppliers throughout the three months. The chemicals of choice included scale inhibitors, emulsion breakers, and corrosion inhibitors, and were analyzed on the local produced water. After being tested, their performances and pricings were considered, and those that produced promising results were considered for field-wide usage. At the end of the summer, I gave a presentation to Encana's higher management team in Denver about my procedures and results. I learned the importance of saving money, managing resources responsibly, and learning from, as well as enjoying, the people around me.

My recent summer experiences, as well as my research at the Enhanced Oil Recovery Institute here at the University of Wyoming, have greatly expanded my problem-solving skills. I have been given the chance to fine-tune communication skills, as well as think outside of the box regarding specific project. Ultimately, I desire to end up here in Wyoming, a state I love and enjoy.

Eleven semesters ago, I would never have dreamed that I would strive to attain two Bachelor's degrees, four summer internships in chemical performance, production, and reservoir engineering, as well as a regulatory background working on existing regulation and legislative frameworks concerning Class VI wells and CO2 EOR projects. It's truly an exciting time and I cannot wait to see where the future will take me.

New Faces of EORI

EORI is growing in leaps and bounds. We welcome our new staff and feel fortunate to have such a highly qualified and experienced team.

Haifeng Jiang (pronounced: Hi-Fong) to the University of Wyoming in September 2008 from Daqing, China as a Post-Doc in Chemical & Petroleum Engineering. Haifeng's area of expertise includes: Enhanced oil recovery by CO2 continuous gas injection (CGI), CO2 alternating gas (WAG) injection, and CO2 foam (CO2/surfactant) injection technologies; chemical flooding technologies, i.e. polymer flooding, high concentration polymer flooding, surfactant flooding, alkali flooding; compound flooding technologies, i.e. Alkali/Surfactant/Polymer (ASP) flooding, Polymer/Surfactant flooding; Alkali/Surfactant flooding and low salinity water flooding. Upon his completion of his Post-Doc, Haifeng began working for EORI in the autumn of 2010. He works closely with Sheena Xie and Curtis Chopping in the EORI lab.
Haifeng's wife, Lily is also a chemical and petroleum engineer working for Halliburton. They are expecting their first child, a daughter in April. Haifeng is quite the pool shark, enjoys snowboarding and playing basketball… and diaper changing!

Curtis Chopping joined the EORI team in March 2012 as a research scientist specializing in chemical, water and CO_2 flooding. He works closely with Sheena Xie and Haifeng Jiang in the lab testing cores.
2012 was a busy year for Curtis. Not only did he join the EORI team, but he successfully defended his master's thesis in geochemistry, graduated from the University of Wyoming, got married to his wife Mara and welcomed his daughter Allegra.
Curtis is a Thermopolis, Wyoming native who has always had an interest in geology – spending many youthful summers participating in field camps. In addition, Curtis enjoys restoring cars – his most recent being a 1968 Chevelle. Curtis has been pretty busy the past few years but hopes to get back to some hobbies. He is an avid concert goer, enjoys live sporting events, throwing darts and of course playing with his daughter.

Aboozar Hesami (Abe) (pronounced Ah-boo-zar) to the University of Wyoming via Dallas, TX and Iran. Abe immigrated to the United States in 2010 to be closer to his mother and sisters and a brother who live in the Dallas area. Abe joined EORI in December 2012 as a Research Scientist - Reservoir Engineer, specializing in Reservoir Simulation, Modeling and Computer Programming. He spent six plus years working as a Reservoir Engineer for Namvaran Simtech Consulting in Tehran, Iran. Abe works closely with Shaochang Wo modeling reservoirs in the Minnelusa Formation.
Abe is never too far from his computer. He enjoys playing on-line chess and computer

games but ventures out once in a while to the soccer field, or ping pong table. He would like to re-engage in rock climbing at some point once he gets settled in.

Pepper McClenahan

Pepper joined the EORI staff on Halloween as the Business Manager. She moved to Laramie from Casper bringing with her 29 years of management experience in the public and private sectors including community development, land use and environmental planning for water and air resources, and public policy and regulatory development and implementation. She has also served as CEO/CFO for several Not-for-Profit organizations. As Business Manager, she is responsible for the day-to-day fiscal and personnel operations of the Institute. She is a Wyoming native and a graduate of the University of Wyoming. She enjoys fishing, camping, hiking, photography, glass etching, music/ballet/theater, cooking and motorsports.

Laura Dalles

Laura joined EORI as the Outreach Coordinator in November. She will direct the Institute's Conferences, Workshops, events and marketing. Laura has extensive experience coordinating events, promoting programs, and educating the public about the programs she represents. Her primary focus has been managing education and outreach programs in the environmental and conservation arena in the State of Wyoming, but welcomes the opportunity to learn about the oil and gas industry and share that knowledge with others.

Laura was born and raised in Pinedale, and has lived in Laramie since attending UW where she earned degrees in sports marketing & promotions and education.

She is always up for a new adventure... and anything outdoors (fly fishing, hiking, rafting), traveling, cooking and photography... just to name a few. She has been fortunate to travel to Kenya and Spain and hopes for a few more countries in the near future.

She has a daughter who is a sophomore at the University of Wyoming.

Come work for EORI

EORI presently has two positions open. We hope to begin reviewing applications by the middle of February. These are highly sought after entry level position in the EOR field.

(Position # 4894) Research Scientist, Assistant

The Enhanced Oil Recovery Institute (EORI) at the University of Wyoming invites applications for an Assistant Research Scientist, Assistant. The successful candidate will be expected to work closely with the existing EORI lab group and support the lab research activities related to enhanced oil recovery techniques, including making measurements, keeping the lab supplies, and helping the ongoing lab tests.

Required qualifications:

• M.S. degree in chemistry, mechanical or chemical/petroleum engineering from an accredited institution
• Minimum of one year of lab experience
• Good “hands on” skills
• Strong communication skills

Beneficial Qualifications:

• Knowledge of petroleum industry
• Experience with handling lab equipment

(Position # 4902) Research Scientist, Assistant

The Enhanced Oil Recovery Institute (EORI) at the University of Wyoming invites applications for an Assistant Research Scientist. The successful candidate will be expected to work closely with the existing EORI lab group and conduct lab research on aspects of enhanced oil recovery techniques. The objective of the research is to evaluate polymer/gel applications and feasible enhanced oil recovery methods such as alkaline-surfactant-polymer (ASP) flooding and CO2 flooding for Wyoming reservoirs.

Required qualifications:

• M.S. or Ph.D degree in chemistry, chemical/petroleum engineering from an accredited institution
• Advanced knowledge in surface chemistry and interfacial phenomena
• Knowledge of phase behavior for petroleum, carbon dioxide and other fluids
• Minimum of two years of postgraduate lab experience in a wet chemistry lab
• Strong communication and written skills

Beneficial Qualifications:

• Experience with polymer/ surfactants
• Knowledge of oil field operations
• Experience with gas chromatographs, high pressure and high temperature instruments
• Core flood experience

Save-The-Dates

Minnelusa 1 Workshop

May 6th & 7th, 2013 – Gillette College Technical Education Center – Gillette WY

Tensleep 3 Workshop

July 8th & 9th, 2013 – Hilton Garden Inn - Casper WY

CO_2 Conference

July 10th & 11th, 2013 – Casper Events Center – Casper WY

IOR/EOR Conference

September 9th & 10th, 2013 – Best Western Sheridan Center – Sheridan WY

The 7th Annual Wyoming CO2 Conference will take place on **July 10th and 11th, 2013 at the Casper Event Center in Casper, WY**.
The agenda is already under development and this year's themes will include
'***Small CO2 EOR Operators' and 'Hydrocarbon Conversion and CO2 EOR'***.
As with last year there are plenty of sponsorship and vendor opportunities available and all interested should contact Glen Murrell at: **gmurrell@uwyo.edu**.

Watch for Agenda and Registration information in the near future.

See you in Casper!

Meet us in the Big Horns!
September 9th & 10th, 2013

Sheridan, WY

Best Western - Sheridan Center

Agenda, Registration Information availalbe soon!

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