

Enhanced Oil Recovery Commission



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3rd Quarter Business Meeting Minutes

Cambria Inn and Suites Denver International Airport

Denver, Colorado

January 19, 2011

Commission Members Present:

Peter Wold, Chairman

Wally Ulrich

Bern Hinckley

Tom Fitzsimmons

Bruce Williams

Commission Members Absent:

Betty Fear

Eric Easton, EOR Commission Legal Counsel

Commission Staff:

Julie Hamilton, EOR Commission Staff Assistant

Enhanced Oil Recovery Institute Staff:

David Mohrbacher

Lon Whitman

Allen Tanner

Glen Murrell

Barb Jesse

Visitors

Geoff Thyne – Sr. Research Scientist, EORI

Scott Cooper- Consultant, EORI

I. Call to Order

Chairman Wold called the meeting to order at 8:00 am. Chairman Wold acknowledged the good work being done at the Institute that was presented at the joint TAB/EORC meeting on the January 18th.

II. Approval of Minutes

Business Meeting, September 15, 2010

Commissioner Williams moved the September 15, 2010 Business Meeting minutes be approved. Commissioner Hinckley seconded the motion. Discussion followed.

Commissioner Williams and Commissioner Hinckley pointed out corrections to the minutes as presented. The corrections were noted and will be made.

The September 15, 2010 Business Meeting minutes were approved with corrections.

Executive Session, September 15, 2010

Commissioner Williams moved the Executive Session minutes be approved. Commissioner Ulrich seconded. Discussion followed.

Commissioner Hinckley reminded Commission members of the discussion held at the September meeting about what would appropriately go into Executive Session minutes. He noted that much of what was in the September Executive Session minutes did not require an Executive session and was the kind of information that would be valuable to have in public minutes.

Upon discussion, it was determined the September Executive Session minutes could be moved into the Business Meeting public minutes.

Commissioner Ulrich moved the original Business Meeting minutes be amended to include the Executive Session minutes. Commissioner Williams seconded. Approved.

III. Commission Open Discussion

Review of action items from September Meeting

- Meeting to discuss synergy between EORI and SER: Director Mohrbacher reported potential dates had been discussed for this meeting, but the meeting didn't ever come together. Director Mohrbacher will work to schedule a meeting with Attorney General Eric Easton, Commissioner Williams, Commissioner Ulrich and Director Northam for the first part of February.

Commissioner Fitzsimmons emphasized the importance of clarity on this issue was very important.

Commissioner Hinckley recommended Commissioner Ulrich also be included as a representative from the Survey with his knowledge of who is doing what in regards to the energy business in the State. In addition, Commissioner Hinckley felt it was important to sort out how the EORC mandate fits with the University.

Commissioner Ulrich has been studying the historical nature of the EOR Commission and the very significant involvement Ambassador Tom Stroock and Jim Barlow had in the origination of the EOR Commission. Commissioner Ulrich felt it was very clear that Ambassador Stroock and Jim Barlow's ideas in the creation of the Commission and the funding to the Institute was to get

more oil out of the ground, not educating. These founders felt strongly that the money and the work of the Commission not get lost in the midst of the University system. The intent was to operate independently of the University, yet interact. Commissioner Ulrich felt strongly that clarity with the University was needed for continued success. He did not believe the original intent of the founders of the Commission was to have the director of the Institute report to the director of SER, as seems to be the current scenario. Commissioner Ulrich also felt that reporting structure was not the intent of the current Commission.

Chairman Wold recognized all the benefits of being part of the University, such as staffing and the expertise of working with the faculty, but noted he didn't see anything in the statutory language that states the Institute was created to be part of the School of Energy Resources, as currently stated in the EORI Strategic Plan - *'EORI is now one of the nine centers of excellence within the School of Energy Resources. We are now updating our branding to reflect our branding with SER initiatives.'*

Director Mohrbacher reiterated that he believes the relationship he has with SER and the University is working, but further clarification on how Director Northam sees the collaboration would give clarity. To get clarification on the legislation, it needed to be taken back to the legislature to get it clarity as to the original intent when the mandate was written and originally funded and possibly revised according to how the work and the relationship with the University has evolved.

Commissioner Hinckley pointed out one possible model for the relationship between the Commission and the University would have the Commission fund the Institute, which is a piece of the University and now a center within SER. Based on that model, the director of SER would be Director Mohrbacher's boss, with Director Mohrbacher being a University employee. In that model, the Commission is an agency granting money to the Institute, a University entity, to do specific things.

Commissioner Hinckley believes the Commission was established as a separate agency set up for funding purposes. Their purpose was to keep the special funding from being co-mingled within the University system. If the Commission money is being used to invest staff time in building buildings, or promote the hot new play in the Niobrara, that starts to sound like a 'co-mingling of funds' with the University. Commissioner Hinckley also pointed out that the legislation talks about the Commission being independently staffed and that has not happened, based on the convenience and cost effectiveness of having staff co-equal with the Institute staff.

Commissioner Ulrich pointed out the legislation states the Commission '*shall direct*'. He believes the Commission needs to clarify within itself what it really wants to do.

Chairman Wold stated he believed, as stated by Commissioner Hinckley, the Institute should not be a completely stand alone agency. The Commission is a standalone agency, but the Institute is

not. Clarity is needed on this issue. Chairman Wold wanted credence taken from Director Mohrbacher. If Director Mohrbacher is able to work within the system as it currently stands, and still do as the Commission asks, then that needs to be taken into account.

Commissioner Fitzsimmons again stated that without clarity on this issue, the legislature could ask why they are funding the University (SER) and the EORI. Is there duplication of efforts when it could all be funded through SER?

Chairman Wold explained that in the past there had been funding to the University for work with industry that got lost in academic research, and eventually that funding ended. This was the main reason why Ambassador Stroock said it was so important that funding to work with Wyoming operators be kept separate from the University block funding.

Commissioner Ulrich suggested Commission Attorney, Eric Easton be present at the meeting with Mark Northam to give clarity to the EORC legislation

- Clarity within the legislation: this action item from the September meeting was not on the compiled action items list. It will be added.
- Specific budget concerns: this item will be part of the meeting with Mark Northam

Commissioner Williams suggested that the Director's salary and half of the Project Coordinator's salary and any other pertinent changes to the current EORI funding, become part of the EOR Commission budget in the next budget cycle. These changes could be amended into the MOU's. Commissioner Williams again expressed his concern and desire for clarity for the Commission as well as the legislature on these issues. If clarity doesn't happen, he believes the EOR Commission funding is at risk.

Chairman Wold would like to see a more detailed breakdown of the budget to better evaluate if the Commission monies could handle Director Mohrbacher's salary and half of the Project Coordinator's salary.

Director Mohrbacher indicated the budget could handle these two salaries, but it would affect future strategic hires. He stated it is possible request an increase to the Commission's budget to help cover these additional expenses. Director Mohrbacher also noted that he views the outside SER funding as a means to diversify the Institute's funding and leverage off success.

Commissioner Williams stressed the importance of not losing focus on what is really important. If outside funding will fund what the Commission wants done, then outside funding is fine.

Chairman Wold and Commissioner Ulrich agreed there is a limited talent pool and limited budget. This is an important reason to limit going in so many different directions.

Commissioner Hinckley recapped the discussion as follows: let's move the Institute towards greater autonomy. That may constitute the Commission picking up more of the Institute's salaries in order to keep them focused.

Commissioner Ulrich again reminded the Commission of the successful work being done at the Institute and the importance of making sure industry and the legislature hear about it. It's also important that the focus to get more oil out of the ground is not lost.

Commissioner Ulrich noted the importance of Director Northam understanding that the intention of the meeting request is to make sure the work of the Institute stays focused.

- Patents: Director Mohrbacher will pursue the discussion of ownership of patents with University personnel. Commissioner Ulrich will report back to the Commission any knowledge he acquires as he works through patent issues with the Survey and the University.
- Other action items: The EORC calendar has been provided, a list of operators who attended the fall conference was provided, and a testimonial from an operator was included in the packet. More testimonials will be compiled.

Commissioner Hinckley noted that an action item not on the list was continued discussion of the wording in the legislation. Julie Hamilton will make the correction.

IV. Director's Overview

Director Mohrbacher presented an overview of the current work at the Institute. (Presentation available on the website)

In summary, Director Mohrbacher noted the importance of continuing to look for opportunities to learn from others.

Commissioner Wold noted that he would like to see more of a collaborative effort with the Wyoming Pipeline Authority. Chairman Wold would like to invite Brian Jeffries to attend an EOR Commission meeting. More discussion on this will take place during the Outreach presentation.

Commissioner Fitzsimmons requested the EOR Commission legislation and the SER legislation be sent to Commission members.

V. Old Business

There was no old business at this time.

VI. New Business

- Summary of Q2 FY 11 Spending
 - Allocation of EORI Resources

Director Mohrbacher directed the Commission to the budget report in their packets. Director Mohrbacher reported expenses had been updated from the July meeting, and budget categories are either on or over budget to date.

Commissioner Ulrich suggested the Economics group could do some research, in conjunction with the Pipeline Authority, on the history of pipelines in the state and the work Governor Sullivan and Jim Barlow did, with some of their remaining monies. If an economic study was done at that time, perhaps some lessons could come out of that for a CO2 pipeline.

Commissioner Fitzsimmons encouraged having Ben Cook and his group reach out to industry to fine tune the metrics in the sensitivity model so when it is shown to industry, opportunities to synergize efforts can be shown. Commissioner Fitzsimmons also noted that some of the TAB industry representatives offered to assist with the accuracy of the numbers.

Director Mohrbacher pointed out it is stated in the Institute's Strategic Plan there will be peer review of all the Institute's work products. He will take this as an action item from the joint meeting as well as the Commission and talk with the economics group.

Commissioner Fitzsimmons asked for clarification on the funding to Norman Morrow.

Director Mohrbacher explained that Dr. Morrow needed some additional monies to complete some of his work. The Commission approved the monies with the understanding that it was a one-time funding amount. Director Mohrbacher noted that Dr. Morrow continues to publish many papers nationally and internationally. His low salinity mechanism is well known.

Commissioner Fitzsimmons requested an itemization of shared costs with SER, primarily Director Mohrbacher's salary and half of the Julie Hamilton's salary.

- Status of New Center for Energy Research

The groundbreaking ceremony was held in November on the new Center for Energy Research and construction will begin in April 2011. The plan is to complete construction in 18 months. Four of the EORI team members have committed about 10% of their time to assisting with the design of the new building.

- EORI Staffing

Director Mohrbacher reported the Institute is looking at two strategic hires – a modeler and a log analyst. The process to replace Dr. Tomasso has been started. He drew attention to the EORI organizational chart noting that two of the Institute's part time geologists have been moved to full time positions. Director Mohrbacher feels bringing these two part time people to full time status are an efficient way to use the staff and that a full staff of PH.D's may not be necessary. Director Mohrbacher requested Julie Hamilton circulate the revised organizational chart.

- Cooperative DOE Program with China

This initiative studies reducing green house gases from coal. There are 3 parts to the initiative and Director Mohrbacher is involved with Task 7 and has a \$200,000 budget. He has provided a work plan for screening of CO2 reservoirs to prioritize them for CO2. Dr. Guan Yin, Chemical & Petroleum Engineering faculty member, will coordinate the work, based on the Commission's request that this project not take too much of Director Mohrbacher's time.

Commissioners Williams and Ulrich asked how this fit with the Commission's mandate to increase oil production in Wyoming. They felt it was a distraction to the focus of the Institute.

Director Mohrbacher said it was a good will decision to work with SER. He does not feel it will take a large amount of his time. He will keep the Commission updated.

Commissioner Williams made a motion this initiative is not the type of work appropriate for what the Commission is trying to accomplish. Commissioner Ulrich seconded. Motion approved.

- Wrap-Up of Joint TAB/EORC Meeting

Chairman Wold solicited comments from Commission members as a follow-up to the TAB/EORC evaluation session. Chairman Wold noted he did not hear any recommendations from TAB members to dramatically change anything, other than the comment by Charlie Carlisle to include chemical flooding data in the economic analysis.

Commissioner Hinckley presented items from the previous day's meeting that he thought needed some clarity and resolution:

1. Economics: Commissioner Hinckley was under the impression that the approved work with the Economics team was a field by field analysis – what can the state do for small operators who don't have the ability to do their own economic studies? Commissioner Hinckley's concern is that the objective was retroactively being defined as policy rather than a tool that operators could use to determine if the field was feasible. Commissioner Hinckley would like to bring that focus back to the economics, if it has been lost.

Director Mohrbacher responded that first and foremost it will be important to validate the input numbers used by the economics team with industry numbers. He agreed generally with the statements that it was probabilistic modeling and noted that industry uses probabilistic modeling to do economic evaluations by field. Field by field evaluations can be done using the current economic team's model, but it will be important to validate it, followed by a screening, making it field specific. Director Mohrbacher sees the tool as a very valuable tool that requires regular updating. Also Director Mohrbacher stated a plan and schedule needed to be developed.

Commissioner Fitzsimmons acknowledged operators could use the tool as an implementer of CO2, and fine tuned with real world data, it could be an excellent tool. Commissioner Fitzsimmons encouraged the Institute to get it fine tuned and then promote it. He also

encouraged the use of it to develop a relationship with the Pipeline Authority, noting there could be a lot of value in unified training on it before it is promoted to a larger audience.

Glen Murrell stated that the tool was designed as a project by project assessment tool based on the Kinder Morgan model. Moving forward the economics team is going to put it into excel with the intention of releasing it publicly. At that point, the use of it can be tracked allowing a better understanding of how it can best be utilized.

2. ROZ Discussion – Commissioner Hinckley encouraged the Institute to move away from individual reservoir studies toward a more clear understanding of ROZ on a basin level. Based on discussions with TAB members, Commissioner Hinckley felt providing a larger scale direction to the operators was a more appropriate use of Commission funds.

Commissioner Ulrich offered that if there was anything the Survey could do to assist with the Institute work, he would welcome the opportunity.

Director Mohrbacher asked if the Natural Fracturing Initiative was something the Commission wanted to do. Director Mohrbacher felt it was a niche that could be used to connect EORI with the majors and also possibly an opportunity to work with the Survey.

Commissioner Hinckley stated he felt it was a proper use of Commission funding.

Commissioner Ulrich again reiterated the importance of a press release on the great work being done at the Institute. Chairman Wold suggested a date of January 28th be set to have a press release ready. Lon Whitman and Chairman Wold will work together to generate a small press release. Commissioner Fitzsimmons suggested each press release should end with a paragraph about the mandate, followed by a statement “here’s another example of reaching our mandate” and possibly even consider hiring a marketing person to assist with this task.

Commissioner Hinckley recommended this press release come from the Commission. There was unanimous agreement among Commissioners on this.

VII. Next Meeting

April 13, 2011 in Casper

Commissioner Ulrich moved the Commission adjourn the Business meeting and move into Executive Session. Commissioner Hinckley seconded. Approved.

Executive Session minutes are a separate document.

XII. Meeting adjourned at 12:00 pm

Filling Vacancies within the EOR Commission

Currently there are two vacancies on the Commission, a legislative representative to replace Senator Chuck Townsend and the Energy representative from the Governor's office to replace Rob Hurless.

Commissioner Fitzsimmons suggested the Commission might look for the person sitting in the legislature who would have the best voice to the Governor for the work being done by the Commission and for energy development in the State. Other Commission members agreed that it would be valuable to have someone with oil and gas background and experience.

Chairman Wold will talk with and provide Governor Mead with suggested names from the Commissioners.

IX. Update progress with Outreach

Results of EORI Outreach efforts during 2010

Lon Whitman updated the Commission on the CO2 infrastructure work with the Wyoming Pipeline Authority. The basic history goes back to the first meeting two years ago starting with public meetings on industry needs on CO2 infrastructure. From there the Pipeline Authority and EORI worked together to provide best field options where CO2 was needed and approximate volumes. From that the Pipeline Authority developed various scenarios for infrastructure. This work led to Lon's serving on the Interstate Oil and Gas Compact Commission Pipeline Task Force where he and the Pipeline Authority were involved in a national infrastructure build out that incorporated EORI's work. That work has been completed. The CO2 Infrastructure Pipeline for Wyoming is ongoing. Lon strongly recommended the Commission invite Brian Jeffries to give his perspective on the work as Brian Jeffries has worked very closely with Rob Hurless.

Lon Whitman addressed the 'balance system' question that had come up at the joint TAB/EORC meeting and explained that it means what you have available to put in the lines needs to be taken out, with flexibility to go both directions in all the lines

- Field reviews in 2010 – EORI did one field review and the company's review of the work is in the packet.

Chairman Wold suggested a list of all companies the Institute has worked with, as well as companies where contact has been, made be provided to the Commissioners. Staff will provide this to Chairman Wold.

Commissioner Fitzsimmons asked that a list of existing projects as well as any other energy related activities the Institute is aware of within the State, be provided and kept up to date so that the Commission can demonstrate to the Legislature that they are aware of what is going on in the

state. And if Commission members know of projects, it will be important to let EORI staff know. Staff will provide this list. He also commented it might be valuable for the Commission to support the proposal for the natural gas storage facility being proposed for southwest Wyoming. He will forward information to Commission members.

2011 Workshops and Conferences

Lon Whitman reported that Director Mohrbacher has emphasized the importance of reinstating workshops in select basins in an effort to coordinate with the Strategic Plan. Plans for a workshop have started.

To date, conference plans include the 5th Annual Wyoming CO₂ Conference the end of June in Casper. Lon noted the success of last year's conference is that the conference itself cost the Institute \$1500. Sponsorship monies covered the remainder of the conference expenses. Lon saw this as an indication of the value operators place on this conference each year. September will host the 3rd Annual IOR/EOR Conference.

X. Update status of key projects

This topic was covered in earlier discussions.

XI. Review of Action items

Staff Assistant, Julie Hamilton reviewed the action items. These items will be added to the compiled action items list.