

Understanding and Developing Data Analytics and Analysis Plan (DAAP) for the Enhanced Oil Recovery Institute

The Enhanced Oil Recovery Institute (EORI) was created pursuant to Wyoming Statute § 30-8-101 to facilitate research programs intended to increase recoverable reserves and the production of oil and natural gas in Wyoming. The Institute achieves its statutory purpose by facilitating the transfer of relevant technology, information and knowledge to operators producing Wyoming reserves, and by promoting research and technology transfers in conventional and unconventional oil and gas reservoirs.

Description of EORI Data Analyst Development

Building off of EORI's pivot to more data analytics from academic research projects, completing the relocation to Casper, and in light of industry trends (JPT, 2016; The National, 2016); EORI requests assistance and consulting to better understand both what the Institute's needs are and to determine those needs based on the Institute's available data sets, software, and human resources. To that end, EORI has developed this solicitation to define the scope of work to understand what the Institute's Data Analytics potential is, and to develop internal human resources to implement and advance data analysis and analytics (e.g. workflow).

Purpose of this Effort

The purpose of this effort is to assist EORI in better meeting its mission statement and to fulfill the legislative mandate to incrementally enhance the production of Wyoming oil and gas assets. In order to meet this challenge, EORI has to be better prepared to do more with the existing data and software currently under its direction. As the oil and gas industry has moved toward more and more data analytics, EORI must adapt and develop these skills. EORI request the assistance and expertise to better understand and develop these skills and assets.

Background

Wyoming is blessed with a tremendous hydrocarbon endowment, ranking in the top 10 in oil production and in the top 5 in natural gas production, domestically. In 2011, State oil production reversed a downward trend, resulting in continued upward growth through a peak in 2014. This ramp up in oil production was a direct result of oil prices exceeding \$80 per barrel, which lasted until 2015. Because of high sales prices, economics were greatly improved, which drove re-development and therefore oil production.

In the current low hydrocarbon price environment, oil and gas operators have worked hard to reduce costs and maximize efficiency in order to keep the wells flowing. One manner in which they are doing so, is through "big data technology." Since 2012, Devon Energy has seen their horizontal well production rates climb by 250%, while their costs to drill, complete and operate fell by 40% (JPT, 2016). By any measure, this is a recipe for success and these lessons learned

from shale reservoirs should be directly transferrable to Wyoming hydrocarbon reservoirs. The key is developing the algorithms that will deliver the desired results to EORI and Wyoming oil and gas operators and stakeholders. EORI already possess big data, the key is leveraging it towards big data technology.

Scope of Work

EORI envisions two separate tasks to complete this institutional development. The tasks include: 1) Data Analytics Scope Evaluation and Development, and 2) EORI Data Analytics Work Flow Deliverable.

Task 1: Data Analytics Scope Evaluation and Development

This task requires consultant's face-to-face meetings with EORI to better understand EORI's current status relative to data, analytics, hardware and software capabilities, and human resources. Consultant personnel will work collaboratively on-site with EORI personnel to understand the current state of EORI's data sets, software/hardware capabilities, and human resources relative to data analysis and analytics.

This effort will be used to develop and present a work flow that is specific to EORI's mission, current capabilities, and planned execution. A list of current EORI software and data sets is available upon request.

Task 2: EORI Data Analytics Work Flow

- Consultant to develop a plan to implement data analysis and analytical work flow, based on the data gathered during Task 1.
- Consultant to present Data Analysis and Analytics Plan (DAAP) to EORI face to face
- Consultant to assist EORI on-site in the collaborate initiation, implementation, and debugging of EORI DAAP
- Consultant to work collaboratively with EORI staff on-site to understand how to navigate and develop the potential for EORI DAAP in Wyoming
- Assist EORI in building in remote access and analysis to the DAAP to allow for future development and expansion of the DAAP

Required Response

This section defines the required content of the submittal/response and the method for evaluation of responses for award. The consultant's response to this inquiry shall meet the following requirements:

- 1) Summary of understanding of scope of work and action plan to implement and achieve the scope of work, not to exceed three pages. *This portion of the response will be weighted at 10%.*

- 2) Resumes of no more than three (3) expert consultants that will be assigned to the project, highlighting expertise in big data, data analytics, and Wyoming geology/production. *This portion of the response will be weighted at 30%.*
- 3) Outline and summary of the Data Analysis and Analytics Plan (DAAP). *This portion of the response will be weighted at 30%.*
- 4) Price shall be provided as defined below. *This portion of the response will be weighted at 30%.*
 - a. *Task 1: all labor, direct costs, and materials to create scope of work and initiate work flow:*

days on-site _____
 USD\$ _____ Lump Sum

- b. *Task 2: all labor, direct costs, and materials to provide 4 hard copies and 1 soft copy of DAAP to EORI:*

days on-site _____
 USD\$ _____ Lump Sum

- c. *Travel: estimate of travel, incidentals, and accommodations required for all on-site interactions (Tasks 1 & 2) with EORI and delivery/implementation of DAAP:*

USD\$ _____ Not-to-exceed

EORI will rank each of the consultant’s responses in order of highest quality to lowest quality. The top three responses in each of the above four (4) categories will be given the score of 5 for best, 3 for next best, and 1 for third best. Any ranked responses below three will not be awarded any score. Subsequently, the weighting of the section, 10%, 30%, 30%, and 30% respectively will be applied to the scores of the top three awardees in each section. The summary of all four sections for all consultants will be summarized and the top scoring consultant will be contacted to negotiate the award.

All contracting will follow the State of Wyoming and University of Wyoming rules and requirements for insurance and liability protection.

In order to be considered, all responses must be provided by email in the form required to Steven Carpenter, Director, EORI, at steven.carpenter@uwyo.edu by 12:00PM, MDT, Thursday, May 4, 2017.

References

Journal of Petroleum Technology (JPT). 2016. "Devon Energy Rises to the Top as a Data-Driven Producer". Trent Jacobs, JPT Senior Technology Writer. September, 03, 2016.

National. 2016. "Adipec 2016: IT improvements in the oil industry could save billions". LeAnne Graves. November 6, 2016.