# $CO_2$ Flooding School

Course Schedule and Curriculum
August 16-18 (+19), 2011
Casper Petroleum Club

## Day One – Tuesday, Aug 16, 2011: Overview of the Elements of $CO_2$ Flooding

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| 8:00 | Welcome, Course Overview | Lon Whitman, Steve Melzer |
| 8:30 | Overview of EOR Techniques and the History and Current Status of $CO_2$ Flooding | Melzer |
| 9:15 | $CO_2$ Demand, $CO_2$ Sources, Natural and Anthropogenic (Man-Made), and the Properties of $CO_2$ | Melzer |
| 10:30 | The Convergence of Carbon Management and $CO_2$ EOR | Melzer |
| 12:00 | Break for Lunch | |
| 1:00 | $CO_2$ Transportation and Injection - Pipelines, Trucking, Metering | Melzer |
| 1:45 | Reservoir Response - Miscible, Immiscible, Gravity Stable, Processing Rates, Examples | Whitman, Melzer |
| 2:00 | $CO_2$ Recycling, Plants & Processing - Dehydration, Sulfur/NGL Separation, Compression | Melzer |
| 2:15 | Downhole and Wellsite Equipment Practices | Robert Kiker |
| 3:00 | Key Elements of Reservoir Geology | Melzer |
| 4:30 | Overview: The Business of $CO_2$ | Melzer |
| | Wrap-up - Q&A | |

## Day Two – Wednesday, Aug 17, 2011: Evaluating a Candidate Flood, Reservoir Response and Flood Operations

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|---|---|---|
| 8:15 | Flood Prospects: The Initial Evaluation and the Concept of Screening | Melzer |
| 9:30 | Flow Units and Reservoir Compartmentalization | Melzer |
| 10:00 | Geophysical Techniques | Melzer |
| 10:45 | Modeling the Reservoir and Waterflood Response – Sweep Efficiency Concepts and Rules of Thumb | Melzer |
| 11:15 | Normalizing Flood Response – Actual Examples | Melzer |
| 12:00 | Break for Lunch | |
| 1:00 | Reservoir Surveillance and Pattern Balancing | Melzer |
| 1:45 | $CO_2$ Flood Simulation and Response Modeling Techniques | Melzer |
| 2:30 | $CO_2$ Key Operation Features & Process Flows - Different Operators | Kiker |
| 3:15 | $CO_2$ Gas Lift and Chemical Treatment | Ed Payne |
| 4:15 | Continuation of 2:30 topic: to include Dehydration, Compression, Sulfur Removal, Nat'l Gas Liquids Capture, and Water Injection | Kiker |

## Day Three – Thursday, Aug 18, 2011: The Business of $CO_2$ Flooding

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|---|---|---|
| 8:15 | Continuation of Day 2 (As necessary from Previous Day) | Kiker/Payne |
| 10:00 | $CO_2$ Flood Simulation and Response Modeling Techniques | Melzer |
| 10:30 | Land/Mineral Considerations | Melzer |
| 11:00 | Fundamental of $CO_2$ Supply Contracts | Melzer |
| 12:00 | Lunch w/ Presentation on Wyoming Geology | Jim Steidtmann |
| 1:30 | Longevity of Example Floods | Melzer |
| 2:00 | Parametric Sensitivities and Rates of Return | Melzer |
| 2:30 | Major Elements of Costs/Revenue, LOEs | Melzer |
| 3:15 | A View to the Future – ROZs and EOR Target Expansion | Melzer/Whitman |
| 4:45 | Day-by-Day Eval Forms<br>Wrap-up - Q&A, Certificates | |

## Day Four (Attendance Optional) – Friday, Aug 19, 2011:

8:30 – 1:30 Field Trip led by Mark Milliken – "From Tensleep to Chugwater: 200 Million Years of Geology by Boat" - Alcova Reservoir (Followed by a Bar-B-Q at Alcova sponsored by the NCG Consulting Group – www.theNCG.com)

Course limited to first 20 persons to sign up

Total Cost of Course: $2000 for the three days (which includes the optional field trip)