

1985 WGA FIELD CONFERENCE SYMPOSIUM ABSTRACTS

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Abstracts of Papers

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**Hydrocarbon Potential and Exploration Methods within the
Cretaceous of the Utah-Wyoming Overthrust Belt**

A largely untested stratigraphic play exists within the Cretaceous section of the Utah-Wyoming Overthrust Belt. Coarse Cretaceous sediments on the western Absaroka Plate merge gradationally eastward into a predominantly shale section. This sets up the potential for pinchout of Cretaceous sands within Cretaceous shale in the Overthrust Belt. Sam Gary Jr.'s 4-6X Lazeart well (21N-116W, Sec. 4), with a reported IP of 87 BOPD from the Upper Cretaceous Frontier, is a discovery in this play.

The anticipated source of hydrocarbons is Cretaceous shale which is the generally accepted source of most

hydrocarbons found to date in the Utah-Wyoming overthrust Belt. Examination of the literature indicates that Cretaceous shales have reached adequate levels of maturation under the Darby Plate, under the Absaroka Plate and on the back of the Absaroka Plate. In addition, hydrocarbons may have moved updip from the generation area to shallower reservoirs as a result of secondary migration. The geographic extent of the play is therefore large.

State-of-the-art seismic data are an essential prerequisite for systematic exploration of the Cretaceous play. After acquiring a regional seismic grid and tying in well control and surface geology, the following procedure should be implemented: (1) use framework, (2) interpret "seismic facies" to determine geographic distribution of depositional environments and (3) perform detailed interpretation and forward modeling to locate specific prospects. Examination of a reprocessed seismic line from the Overthrust Belt confirms that data quality is high enough to allow these steps to be performed.

An aggressive exploration program in this area is likely to result in significant reserve additions; a commitment to the search for the subtle trap in the Overthrust Belt is now needed.