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# GEOPHYSICS FIELD CAMP TACKLES GROUNDWATER IN THE UPPER ARKANSAS RIVER RIFT BASIN

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The Colorado School of Mines and Boise State University joint geophysics field camp focuses on ground water resources in the upper Arkansas River Basin, part of the Rio Grande Rift system in central Colorado. Students receive intensive exposure to a variety of geophysical methods, acquisition techniques, data reduction and interpretation procedures, presentation and report writing. Field camp results aid Chaffee County in assessing water resource utilization and long term growth planning.

A prime goal is to train students how to combine diverse sources of information into a unified interpretation. Students examine lithologies and structures on the periphery of the basin. Cross sections are constructed to predict the geophysical signature. Geophysical tools then are used to ascertain the gross structure and examine ground water flow in detail. These include surveying, regional gravity, deep and shallow seismic surveys, magnetics, DC resistivity, Ground Penetrating Radar, electromagnetics, hydrochemistry, and karaoke. By the conclusion of camp, student themselves plan the data collection, equipment requirements, staffing needs, and logistic constraints to incorporate. Restrictions, errors, assumptions, and difficulties of collecting field data become apparent.

Our field camps are only possible because of extensive donations by corporations and governmental agencies. The SEG Foundation provides financial support; Veritas vibrators deliver seismic sources; data is collected on a Sercel system; and processing assistance is provided by GX Technologies. Blackhawk, Geometrics, and Olsen corporations provide additional equipment. Chaffee County assists with housing costs and local land owners provide open access. In turn, the students provide 1) a detailed report on techniques and data with an integrated interpretation distributed to county officials and interested individuals. 2) a presentation made to department faculty and interested local citizens, 3) a shortened presentation for public consumption by citizen groups, and local high school science classes.

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