UNR SEG Student Chapter 2019 Field Trip Report

Introduction
In a cooperative fashion, the UNR SEG Student Chapter and Kyushu University planned a 9-day tour of the various ore deposits that occur within Nevada’s rich ore deposit history. The students and faculty of Kyushu University helped bring us to their beautiful country last year, and so we thought it fit to invite them on a trip to come see the geological wonders that Nevada has to offer. Carlin-type, intermediate sulfidation, skarn, and epithermal are just the surface of the variability easily seen across the Great Basin. On this trip we were able to tour and see rock from 7 operating mines, past producers, and active geothermal systems as well as show those from Kyushu University the many wonders that Nevada has to offer.

Participants and acknowledgements
With this cooperative trip, we were able to host over 24 participants and industry sponsors spanning from Reno, Nevada to Battle Mountain, Nevada. This trip would not have been possible without our industry sponsors who graciously help plan and fund the trip as well as the Student Chapter Stewart R. Wallace Fund which helped greatly in planning a wonderful trip. We would like to thank Ormat Technologies, Don Hudson, Barrick Mining Corporation, Newmont Goldcorp, Premier Gold Mines, and the National Mine for graciously helping us develop tours and for allowing such large parties to experience some of Nevada’s best mining cultures. This trip would also not have been possible without the donations from TerraCore Geospectral Imaging.

Geothermal, Carlin, and Epithermal – Oh my!
The group had the opportunity to see a number of Nevada’s most prolific and productive mineral systems as well as one of Nevada’s highest producing geothermal plants, Steamboat Springs. We were also able to get a tour of the Comstock Lode from Don Hudson himself (Fig. 2B) and were able to see the connection between the geothermal system north of Carson Valley and the ore deposits that gave Nevada it’s namesake. Participants also went on tours of Barrick’s Turquoise Ridge (Fig. 1; including a small group that were able to attend the underground tour), Newmont’s Twin Creeks Mine (Fig. 2C), Premier’s McCoy-Cove, Newmont’s Phoenix Mine (Fig. 2A), and National’s National Project. Because of the diversity available to us in Nevada, it offers the unique opportunity to see several different ore deposit types in a relatively small area unavailable to many young geologists. Combining this with the knowledge...
and expertise offered by our industry participants allows for the cultivation of a unique experience for everyone involved with the trip.

Culture
Much of Nevada’s rich culture has its roots in mining and specifically in the Gold Rush during the mid-1800’s. A tour of the W.M. Keck Earth Science and Mineral Engineering Museum was an obvious start for the trip where all participants were walked through the history behind Nevada’s boom-bust periods and how it shaped the landscapes and cities that we see today. Participants from UNR and Kyushu University were also given the opportunity to see the wonders of Lake Tahoe as well as a traditional Basque dinner at the famous Martin Hotel in Winnemucca, Nevada. You also can’t leave Reno without seeing the historic downtown of Virginia City which is still very reminiscent of a time where silver and gold were all that brought anybody to Nevada.

Figure 2: A: Curtis Johnson explaining the fault characteristics and geological controls on mineralization at the Fortitude Pit of the Phoenix Mine south of Battle Mountain, Nevada. B. Looking over the propylitic alteration outcrops related to the formation of the Comstock Lode belt. It was near these outcrops where the term “propylitic” was originally described. C. Overview of Newmont’s “Mega Pit” with the tour group. The Conelea Anticline, which controls much of the mineralization at Twin Creeks, is visible in this image.