University of Nevada, Reno

Nevada Bureau of Mines and Geology Open-File Report 11-10

Descriptive Logs, Skeletonized Samples, and Photographs of Core from Presco Energy's Thermal Gradient Wells P 3-1, P 10-1, and P 32-2 in the Rye Patch Area, Pershing County, Nevada

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2011

This report, which is available as an online document at www.nbmg.unr.edu, describes the selective sampling (skeletonizing) of diamond drill core from three geothermal wells drilled in the Rye Patch area. The skeletonized samples can be viewed at the Great Basin Science Sample and Records Library, and the lithologic descriptions of the core, photographs of the entire core, and photographs of the individual samples are posted online.

The Nevada Bureau of Mines and Geology (NBMG) is a research and public service unit of the University of Nevada, Reno and is the State geological survey. Established by the Nevada Legislature as a department within the public service division of the Nevada System of Higher Education, NBMG is part of the Mackay School of Earth Sciences and Engineering within the College of Science and one of the Statewide Programs at the University of Nevada, Reno. NBMG's mission, to provide the State's needs for geological and mineral-resource information and research, is defined in its enabling legislation. NBMG scientists conduct research and publish reports that focus on the economic development, public safety, and quality of life in urban and rural areas of Nevada.

In the Rye Patch area, which is located on the alluvial fan on the west side of the Humboldt Range in Pershing County, Presco Energy, LLC, drilled and cored three geothermal gradient holes. The holes are:

Permit 511: Thermal Gradient Well P 3-1; API No. 27-027-90061; permitted January 22, 2003; spudded June 4, 2003; completed July 15, 2003; total depth 1003'; cored 651'-1003'; legal location NE/4, SW/4, section 3, T31N, R33E; UTM location 4493020N, 393940E, NAD27, Zone 11

Permit 513: Thermal Gradient Well P 10-1; API No. 27-027-90063; permitted January 22, 2003; spudded May 21, 2003; completed June 10, 2003; total depth 1500'; cored 510'-1500'; legal location SW/4, NE/4, section 10, T32N, R33E; UTM location 4491540N, 394030E, NAD27, Zone 11

Permit 515: Thermal Gradient Well P 32-2; API No. 27-027-90065; permitted January 22, 2003; spudded May 21, 2003; completed May 25, 2003; total depth 500'; cored 0'-500'; legal location NE/4, SW/4, section 32, T32N, R33E; UTM location 4494290N, 390990E, NAD27, Zone 11

The diamond drill core was originally logged and described, and samples underwent X-ray diffraction; petrographic analyses; and SEM, ICP-MS, oxygen isotope, and cathodoluminescence analyses. The results were written up by Jennifer Lyn Johnson in her University of Nevada, Reno, Master of Science thesis, "Characterization of Past Hydrothermal Fluids in the Humboldt House Geothermal Area, Pershing County, NV: Geochemical and Paragenetic Studies of Core Samples," dated August 2003.

The core was sent to the Great Basin Science Sample and Records Library, which houses the information and publication sales office and sample repository of the Nevada Bureau of Mines and Geology, 2175 Raggio Parkway, Reno, Nevada 89512. Between March and July 2011, David A. Davis relogged, described, and sampled the core and photographed the entire core sets and the samples with a digital camera. Samples were selected to provide representative suites of rock types, alteration types, and vein material encountered in the three wells. The sample descriptions and photographs can be accessed at: http://web2.nbmg.unr.edu/geot/r/CORELogs.htm, and the actual skeletonized core can be viewed by contacting the Nevada Bureau of Mines and Geology at the Great Basin Science Sample and Records Library, 775-682-8766, e-mail: nbmg@unr.edu.

Disclaimer

The information in this report should be considered preliminary. It has not been thoroughly edited or peer reviewed.