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Cave survey protesting pipe route through karst

By John Bruce • Staff Writer



Members of a cave expedition explore a large passageway reaching the surface as a karst feature in Huber Pit, a 3,589.5-foot long cave 116.7 feet deep, about 600 feet from Dominion's route variation right of way. (Photo courtesy HCCS)

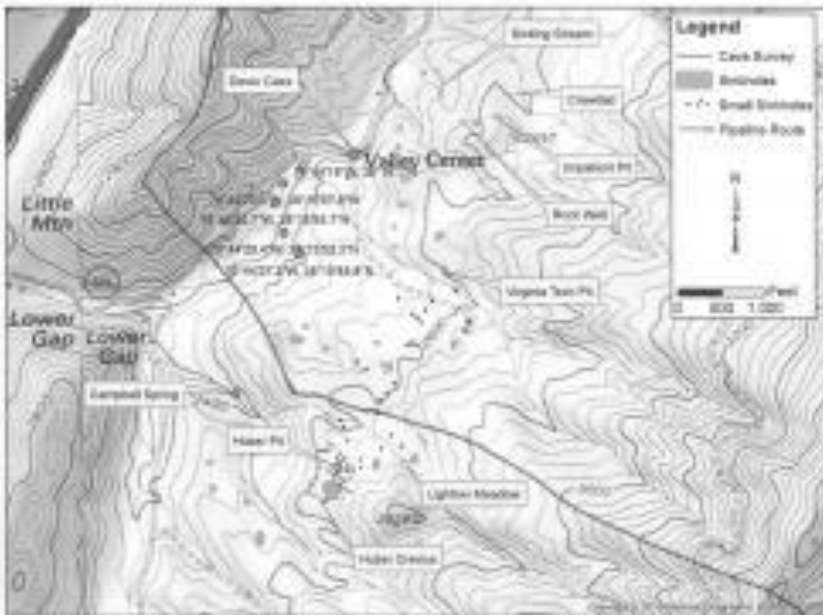
MONTEREY — The Highland County Cave Survey has filed a protest over Dominion's April 11 Valley Center route variation with the Federal Energy Regulatory Commission.

Dominion spokesman Aaron Ruby told The Recorder earlier the company has not adopted the variation.

According HCCS data manager Rick Lambert, the variation threatens a karst system recharging Campbell Spring. The roughly 1.47-square-mile recharge area "was formed by the Hightown Anticline, forcing karst water to the south and west, producing a large perennial spring," he said.

"The Campbell Spring Recharge Area contains over 44 documented sinkholes, three known caves and two known sinking streams. The Highland County Cave Survey has walked the area

and attached a map showing these karst features. Dominion's proposal has the Valley Center Route Variation going through a band of closely spaced sinkholes."



This map depicts Dominion's route variation. (Courtesy HCCS)

Adoption of the route variation would be "a violation of Dominion's proposed Best Management Practices submitted in the January 20, 2017 Karst Terrain Assessment Construction, Monitoring and Mitigation Plan prepared by GeoConcepts Engineering, Inc. ... which states: 'No activity of any kind shall be allowed within the parapet of a sinkhole or within a 25-foot buffer around the parapet, which should remain in an undisturbed, natural state. The sinkhole and the 25-foot parapet buffer should be delineated using temporary fencing.' The proximity of the sinkholes and their buffers to each other will not allow enough room for the workspace to be narrowed to squeeze the pipeline between the sinkholes.

"The 25-foot parapet buffers are needed to ensure the sinkholes remain in an undisturbed, natural state to protect the karst aquifer which supplies Campbell Spring. This route cannot be evaluated from a desk. It requires boots on the ground. While on our map it looks like a reduced workspace could zig-zag between the sinkhole buffers, the space is not there," Lambert explained. "This exaggerated open space is due to the inaccuracies in the topo map, the inaccuracies of our GPS's, the varying size of the sinkholes, and their 25-foot parapet buffers.

"In reality the open space is constricted to less than 75 feet. Three caves have been found in the Campbell Spring Recharge Area. Two of these caves were discovered when a local resident walked members of the HCCS north-to-south over the recharge area showing us atmospheric karst features, where the moisture from cave air had frozen around very small holes on a very cold morning," he continued.

"By the time we reached the southern end of the recharge area the sun was melting the frost. We stopped and enlarged the last two atmospheric karst features, which led to Huber Crevice and Huber Pit. The remaining atmospheric karst features were never touched. Huber Crevice is a 520-foot long cave, which is 96 feet deep. Huber Pit is a 3,589.5-foot long cave, which is 116.7

feet deep. Its passageways are wide and high. These passageways reach the surface as atmospheric karst features. One of these passageways is in the (provided) photograph.

“Lightner Meadow Cave is a sinking stream. The proposed Valley Center Route Variation is on the ridge adjacent to its stream. It has been surveyed for 40 feet, but the cave continues as a 12” high stream passageway as far as we could see. Dye was injected in Lightner Meadow Cave by a Virginia Department of Conservation and Recreation hydrologist but was never recovered. It is suspected that the dye was absorbed by the organics in the stream passageway and/or was delayed due to low flow. The trace was not repeated and the project was curtailed due to higher priority projects. Lightner Meadow Cave is suspected to resurge at Campbell Spring, over 2,000 feet away. A second sinking is located 1,000 feet downstream from Lightner Meadow Cave in a sinkhole big enough to show up on a sinkhole map. The proposed Valley Center Route Variation is on the ridge adjacent to its stream. This sinkhole has a head wall on one side with an atmospheric karst feature. The movement of air in and out of this karst feature indicates it is connected to a second, higher karst feature with an opening or open throat. This indicates cave development very close to the proposed Valley Center Route Variation. While these known caves are south of the Valley Center Route Variation the number and location of sinkholes and atmospheric karst features indicate similar cave passageways exist both south, under, and north of the route. None of the caves or springs in the Campbell Spring Recharge Area have been sampled for invertebrate fauna. This is a very significant karst area and the choices for a proposed route should not be either the GWNF-6 through the Dever Spring Recharge Area or the Valley Center Route Variation through the Campbell Spring Recharge Area,” the filing explained.

“Please note that the ridge south of Campbell Spring contains four sinkholes large enough to show up on a sinkhole map and smaller sinkholes which do not show up on the map. This indicates another karst recharge area south of the Campbell Spring Recharge Area. Moving this proposed route south one more ridge will not be sufficient. GeoConcepts prepared the Karst Terrain Assessment Construction, Monitoring and Mitigation Plan to protect the karst systems this project crosses.

“The Federal Energy Regulatory Commission must not allow Dominion to violate these important, needed procedures. It is time for Dominion to make the right move and relocate the proposed ACP ROW south of all the karst forming limestones, south of the Dolly Ridge Formation in Valley Center to protect these karst systems from this proposed construction,” Lambert said.