Washington Department of Ecology (Ecology) Letter from Mike Herbert to Breean Zimmerman regarding Technical Review for Benton Co. Conservancy Board Decision BENT-24-01 dated 09/05/2024

Date: September 5th, 2024

To: Breean Zimmerman (Permitting Unit), and the file

From: Mike Herbert (Technical Unit), reviewed by John Kirk, L.HG

RE: Technical Review for Benton County Conservancy Board Decision BENT-24-01

I reviewed the Benton County Water Conservancy Board change decision BENT-24-01. This change application requests a change of point of withdrawal (POW), change of place of use (POU), change of purpose of use, and change of period of use to ground water right CG3-+22306CWRIS. CG3-+22306CWRIS authorizes a total annual quantity (Qa) of 1043 acre-feet per year (afy) and instantaneous quantity (Qi) of1,955 gallons per minute (gpm) for the irrigation of 260.7 acres for the irrigation season. The two authorized POWs are Wells 1 and 2 located in the SW ¼, SW ¼ and SE ¼, NW ¼, of Section 36, Township 7N, Range 25E W.M. The existing POU is all within Section 36, Township 07N, Range 25E W.M.

The proposed POW is a Department of Natural Resources (DNR) well located approximately six and a half miles to the north in NW ¼, NE ¼, of Section 36, Township 8N, Range 25E W.M. The change of POU expands to cover area within Township 9N, Range 26E. W.M., Township 9N, Range 27E. W.M., Township 8N, Range 25E. W.M., Township 8N, Range 26E. W.M., Township 8N, Range 27E. W.M., Township 7N, Range 26E. W.M., Township 7N, Range 27E. W.M., Township 8N, Range 28E. W.M., Township 7N, Range 28E. W.M., Township 7N, Range 29E. W.M., Township 7N, Range 30E. W.M., Township 6N, Range 30E. W.M., and Township 6N, Range 31E. W.M. The proposed change of use is to facilitate operations of the Horse Heaven Clean Energy Center which would combine wind, solar and battery storage to produce renewable energy for the State of Washington. The change is for 1,031 afy at 1805 gpm for seasonal irrigation, a three-year temporary use of 184 afy at 150 gpm for industrial, construction and dust abatement, and 12 afy at 150 gpm for year-round industrial use.

Authorized POW Well 1 was drilled in 1976 by Spokane Drilling Co for the DNR to a depth of 860 feet below ground surface (bgs). The well is open to and withdraws from a zone of water bearing strata from 814-860 feet bgs. Well 2 was drilled in 1978 by Moore drilling, Inc for the DNR to a depth of 990 feet bgs. The drillers log appears to indicate that it is withdrawing from a zone of water bearing strata at a similar depth as Well 1. Both Wells 1 and 2 are completed into the Frenchman Springs Member of the Wanapum Formation of the Columbia River Basalt Group (CRBG).

The proposed DNR POW, referrred to as the Gould well was drilled in 1980 by Larry Burd's Well Drilling to a depth of 1340 feet bgs. The Gould well is open to a productive water bearing zone located at the top of the Frenchman Springs Member of the Wanapum Formation. There is an inferred fault between the two wells that has not yet been confirmed

by any geologic mapping. There appears to be no offset of strata in cross section to suggest there is any barrier to groundwater flow between the existing authorized wells and the proposed well. All three of the wells had similar static water level elevations within them at the time of drilling. Both Wells1 and 2 as well as the proposed Gould well are drawing groundwater from the Wanapum Formation and are completed in the same body of public groundwater for appropriation.

An impairment analysis is required to determine that drawdown impacts experienced within a neighboring well will not lead to impairment due to the authorization of this application. This evaluation assumes conservative aquifer parameters and a maximum impact pumping schedule to determine the maximum amount of drawdown expected to be experienced within a closest neighboring well. After a search of the Department of Ecology Well Log Viewer and aerial photography it is determined that in this location of the Horse Heaven Hills, there are no neighboring water right users within the Wanapum Formation within two miles of the proposed well.

To withdraw the full annual quantity of 1043 acre-feet by pumping the well at the maximum instantaneous rate of 1955 gpm, the well would be pumped continuously for 120.7days. Using the most conservative hydraulic aquifer properties reported by the United States Geological Survey (USGS) for the Wanapum aquifer, the maximum drawdown interference to occur if there were a neighboring well within a distance of two miles would be less than 6 feet. Assuming moderate aquifer values and there being no identified neighboring wells within two miles, exercising this water right under this change would not result in interference that would injure the exercise of a neighboring water right.

Mike Herbert

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References:

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Fetter, C.W. 2001. Applied Hydrogeology Fourth Edition. Prentice Hall, New Jersey.

Vaccaro, J.J, Jones, M., Ely, D., Keys, M., Olsen, T., Welch, W., and Cox, S., 2009, Hydrogeologic Framework of the Yakima River Basin Aquifer System, Washington.

Washington Department of Ecology Well Database, available at: http://apps.ecy.wa.gov/welllog/