2022-1 WATER TRANSFER WORKING GROUP PROJECT DESCRIPTION

APPLICATION NO./COURT CLAIM NO. G4-33272		
APPLICANT NAME	CONTACT NAME	TELEPHONE NO.
Price Cold Storage & Packing	Tyson Carlson	509-895-5923
	Aspect Consulting	
WATER RIGHT HOLDER'S NAME (if diffe	EMAIL	
Same	tcarlson@aspectconsulting.com	

DATE OF APPLICATION(S)	PRIORITY DATE
May 13, 2021	Mitigated by a pre-1905 water right
	No. CS4-0206sb22@2

WATER SOURCE:	CROP:
Groundwater (Alluvium and Upper	none
Ellensburg)	
INSTANTANEOUS QUANTITY:	ANNUAL QUANTITY:
200 gpm	47.6 acre-feet (20.0 acre-feet [CU])
PERIOD OF USE:	·
Continuous	
PLACE OF USE:	PURPOSE OF USE:
NE ¹ / ₄ SW ¹ / ₄ , SE ¹ / ₄ SW ¹ / ₄ , and SW ¹ / ₄ SE ¹ / ₄ of	Domestic and Industrial
Section 30 in Township 14 North Range 18	
East	
IRRIGATION METHOD:	
NA	

CONSUMPTIVE USE CALCULATION:

The new water budget water right would authorize Price to withdraw groundwater not to exceed 20 acre-feet (consumptive use) from wells completed in alluvium or the Upper Undifferentiated Ellensburg formation for domestic and industrial water supply. The new mitigated permit will support a new facility located adjacent to Price's existing facilities.

A site-specific water use study was completed in support of the subject application using the existing Price facility as a surrogate (Aspect, 2021). Aspect subcontracted installation of telemetry enabled sonic water meters at the Price facility to estimate consumptive use rates. Water meters were installed on the main transmission line from the source well and three locations on the water distribution manifold. Discharge measurements were provided by Price. Additionally, water use for the office was estimated using the Washington State Department of Health Design Manual to differentiate from industrial uses.

The consumptive water uses due to packing fruit and running two engine rooms was quantified by comparing total water use for the packing line and engine rooms to discharge measurements, which resulted in a 22 percent consumptive use rate.

Next consumptive use rates of 10 percent for the packing line, 10 percent for domestic use, and 95 percent for engine room operations (100 percent for cooling tower evaporation) were assigned to the observed water demand for each operation to evaluate if the assigned consumptive use rates provided a reasonable estimate of consumptive use rate. Using the assigned consumptive use rates in an overall

consumptive use rate of 40 percent, as shown in Table 1. This indicates using assigned consumptive use rates provided a conservative estimate of consumptive water use. In addition, several conservative operational assumptions are included in the design, such as doubling the designed engine room cooling load from quarter to half time, which accounts for more that 85 percent of the total consumptive use of the project. As part of the proposed project, all withdrawal and discharge will be metered to quantify project-specific percent consumptive use during the permit development schedule.

Site-Specific Consumptive Use Rate Estimate						
Operation	Total %CU		CU	Units		
Packing line spray bars						
Packing main tank	15,337	10%	1,534	gpd		
Packing secondary tank						
Packing Sanitation						
Employee black/gray water	1,250		125			
Defrost tank cleanout						
Cooling tower evaporation	9,206	95%	8,746			
Misc refrig. maintenance						
Discharge	20,040			gpd		
Total	25,793		10,404	gpd		
%CU	22%		40%	%		

Table 1: Consumptive Use Rate Estimates

Based on equipment water demand and assigned consumptive use rates, Table 2 provides a summary of the anticipated total and consumptive use water demand for each phase of the project. Details on determining the annual water use and consumptive water use are provided in Aspect (2021).

Table 2. Annual Water Use Estimate								
	Phase 1 & 2		Phase 3		Phase 4 (Option A)		Phase 4 (Option B)	
	Total	CU	Total	CU	Total	CU	Total	CU
	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
Total (gallons)	2,212,320	2,113,392	6,645,600	664,560	6,645,600	664,560	3,757,104	3,745,310
Total (acre feet)	6.8	6.5	20.4	2.0	20.4	2.0	11.5	11.5
Cumulative (acre-feet)	6.8	6.5	27.2	8.5	47.6	10.6	38.7	20.0
CU (%)	95%	96%		10%		10%	100%	100%
Cumulative %CU			22	%	5	2%		

Table 2: Annual Water Use Estimate

Based on the results of this analysis, the maximum total water right authority necessary to support the new facility is estimated 47.6 acre-feet. However, due to the higher consumptive use rate of operating an engine room for cold storage the consumptive use rate is potentially 20.0 acre-feet. The higher total water demand and consumptive use rate were selected to account for any potential uncertainty in future water demand. Both total and consumptive use will be evaluated during the proof examination prior to certification. Based on the preliminary design of the water system, including the specified

NARRATIVE DESCRIPTION OF PROJECT:

Price's project is in Yakima County, Washington, located within a portion of Section 30 Township 14 North, Range 18 East Willamette Meridian (W.M.). The project is situated within the Selah structural basin of the Yakima River Basin aquifer system west of Gleed, Washington, as shown on Figure 1.

The project location historically consisted of three rural residential properties. Price purchased the properties and is redeveloping the area for a new fruit packing and storage facility. The new facility is planned to operate similar to the Price facilities next door concerning number of employees and hours of operation. The project is phased; however, phases 1 to 3 will occur immediately with phase 4 occurring under a 5- to 10-year timeframe. A description of the phases includes the following:

- Phase 1 consists of construction of 38,037 square feet cold storage building, 2,600 square feet engine room, and loading dock that will include a breakroom and restroom facility.
- Phase 2 consists of 32,669 square feet of additional cold storage.
- Phase 3 consists of a new 66,270 square feet packing line and an additional breakroom and restroom facility.
- Phase 4 may consist of an additional packing line or cold storage in the 71,280 square feet space.

The project's water demand is for continuous non-contact cooling water, fruit packing, and public water supply. Price proposes to mitigate consumptive water use via offset with a senior (pre-1905) Yakima River Basin water right, as shown on Figure 2. The necessary instantaneous quantity (Qi) and annual quantity (Qa), to meet the expanded water system demand for their facilities is 200 gpm and 47.6 afy, not to exceed 20 afy (CU), respectively. Price currently has 20 acre-feet (CU) in the State's Trust Water Right Program (TWRP) to mitigate the consumptive quantity.

The source for the project's water supply is a groundwater well.

IMPAIRMENT ANALYSIS:

To facilitate the transfer, Aspect completed a hydrogeologic investigation (available upon request) using a multiple line of evidence approach that used the best available data describing the hydrogeology of the project area. RCW 90.03.290 and RCW 90.44.060 require a determination that a water right change will not impair existing rights. Using the reported aquifer parameters by Aspect (2021) and the governing Theis equation (Theis, 1935), Aspect estimated the interference drawdown from pumping the proposed points of withdrawal on neighboring wells completed in the Ellensburg aquifer.

Groundwater generally occurs at an elevation of approximately 1,300 feet above mean sea level (amsl) from near the project location to 1,150 feet amsl near the Painted Rocks Gap (Vaccaro et. al., 2009). This is consistent with the observed static water level (1,270 feet amsl) in area wells completed in the Ellensburg. The groundwater flow direction, as shown in Vaccaro et. al., (2009), is generally southeast toward the Naches River.

Area wells completed in the alluvial formation are in direct hydraulic continuity with the Naches River. The underlying Ellensburg formation is likely in a semi-confined condition

with a more hydraulically dispersed continuity with the overlying alluvial formation and the Naches River. The interaction of groundwater with the Naches River is well documented by Ecology, USGS, and the US Bureau of Reclamation (Kinnison and Sceva, 1963; Snyder and Stanford, 2001; Carey, 2007; Vaccaro, 2011). The apparent groundwater gain of 7.7 cubic feet per second per mile (cfs/mile) to the Naches River along a 12.3-mile stretch downstream of the town of Naches to the confluence with the Yakima River (Carey, 2007). There are no mapped or otherwise known barriers to groundwater flow between the proposed project point of withdrawal in the Ellensburg formation and the Naches River.

To conduct the interference drawdown analysis, Aspect reviewed Ecology's Well Report Viewer to locate the nearest non-Price-owned wells completed the Ellensburg formation. There are two wells (14N/18E-30P7) completed in the Ellensburg formation located at least 300 feet from the proposed point of withdrawal.

The interference drawdown analysis uses the above distances, the proposed pumping scenario, which assumes pumping occurs at a constant average flow rate fully equal to the authorized quantity of 47.6 acre-feet, to quantify the potential for impairment.

Pumping the proposed points of withdrawal at an average continuous withdrawal rate (36.0 gpm) is estimated to result in less than 16 feet interference drawdown at a 300-foot-radius at the end of one year of pumping as shown in Table 3 below.

Pumping Rate (gpm)	36				
Transmissivity (feet ² /day)	216				
Radius (feet)	300				
Storativity (-)	2x10 ⁻³	7x10 ⁻⁴			
Drawdown (feet) at Distance Pumping Well Continuously for 1 Year					
Well No.2					
Well No.3	13.2	15.2			

Table 3: Pumping Interference Drawdown

The estimate conservatively assumes no leakage from the Naches River, and a confined to semi-confined aquifer condition, and is less than 35 percent of the total available drawdown in neighboring wells located at a 300-foot. A smaller percentage, less than 14 percent, of the Ellensburg aquifer thickness (approximately 113 feet). We therefore conclude that, although pumping interference effects are likely, no impairment of existing groundwater rights—either permit or permit-exempt—will occur in the Ellensburg aquifer with full use of the requested quantity. Site-specific aquifer parameters will be determined during the source approval process, as required by the Washington State Department of Health.

We therefore conclude that, although pumping interference effects are likely, no impairment of existing groundwater rights—either permit or permit-exempt—will occur in the Ellensburg aquifer with full use of the requested quantity.

The proposed water right transfer will be water budget neutral with respect to TWSA as measured at the Parker gage. The closest surface water body listed by Washington State Department of Fish and Wildlife (WDFW) database to have Endangered Species Act (ESA)listed species is the Naches River, located about 0.5 miles southwest of the proposed project area. Based on this information and pending consultation with the basin stakeholders and the Water Transfer Working Group (WTWG), no impairment of ESA-listed species will occur. No System Operation Advisory Committee (SOAC) target flows were identified along this reach of the Naches River. However, if at any point in the future surface water impairment (or availability) issues arise, Naches River surface water impacts can be directly mitigated through use of Water Storage and Exchange Contract No. 09XX101700 between Ecology and Reclamation. Therefore, no impairment of local surface water or ESA-listed species will occur.

WTWG Project form



