

DEQ DIVISION 33 APPLICATION REVIEW SHEET

Recommendations for Water Right Applications that may affect the
Habitat of Sensitive, Threatened or Endangered Fish Species, OAR 690-33-310 through 340.

Application #: S 88463 Applicant's Name: John Russell

1) Is there a connection to a 303(d) listed water quality limited water body? ☐ NO ☒ YES

Explain: Ennis Creek is a tributary to the McKenzie River, which is impaired (303d listed) for dissolved oxygen, and has a TMDL for temperature (Table 1).

Table 1: 303(d) listings

Water Body (Stream/Lake)	River Miles	Parameter	Season	Criteria	Beneficial Uses	Status
McKenzie River	0 to 7.5	Dissolved Oxygen	September 1 - May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation	Salmon and steelhead spawning	Cat 5: Water quality limited, 303(d) list, TMDL needed
McKenzie River	7.5 to 34.1	Dissolved Oxygen	September 1 - June 15	Spawning: Not less than 11.0 mg/L or 95% of saturation	Salmon and steelhead spawning	Cat 5: Water quality limited, 303(d) list, TMDL needed
McKenzie River	0 to 84.5	Lead	Year Round	Table 20 Toxic Substances	Aquatic life	Cat 5: Water quality limited, 303(d) list, TMDL needed
McKenzie River	0 to 84.8	Mercury	Year Round	Table 40 Human Health Criteria for Toxic Pollutants	Human health	Cat 5: Water quality limited, 303(d) list, TMDL needed
McKenzie River	0 to 54.6	Temperature	Year Round (Non-spawning)	Core cold water habitat: 16.0 degrees Celsius 7-day-average maximum	Core cold water habitat	Cat 4A: Water quality limited, TMDL approved
McKenzie River	7.5 to 34.1	Temperature	September 1 - June 15	Salmon and steelhead spawning: 13.0 degrees Celsius 7-day-average maximum	Salmon and steelhead spawning	Cat 4A: Water quality limited, TMDL approved
McKenzie River	36 to 54.6	Temperature	September 1 - June 15	Salmon and steelhead spawning: 13.0 degrees Celsius 7-day-average maximum	Salmon and steelhead spawning	Cat 4A: Water quality limited, TMDL approved

2) What is the potential for this use to impact a water quality limited water body: ☐ HIGH ☒ MEDIUM ☐ LOW

Explain: Streamflow depletion could impact quantity and quality during the critical summer months when temperatures are already too warm, and DO levels are too low (April- Oct). Based on water availability (Table 2), the cumulative withdrawal could cause ecological harm from February through May (Scientific literature has identified harm occurring when 6-35 percent of daily flow is withdrawn¹), however an instream water right helps to provide protections.

Table 2. Percent of natural flow (all values in cfs)

Watershed ID	Exceedance Level	Month	Natural Stream Flow	Consumptive Use	Expected Stream Flow	Instream Requirement	Net Water Available	Percent of Flow
529	50	JAN	5140	227	4910	1400	3510	4.42

¹ Richter BD, Davis MM, Apse C, Konrad C. 2011. *Short Communication, A Presumptive Standard For Environmental Flow Protection*. River Research and Applications. Published online in Wiley Online Library (wileyonlinelibrary.com), DOI: 10.002/rra.1551

529	50	FEB	5140	922	4220	1400	2820	17.94
529	50	MAR	4790	926	3860	1400	2460	19.33
529	50	APR	4960	978	3980	1400	2580	19.72
529	50	MAY	4440	470	3970	1400	2570	10.59
529	50	JUN	3240	42.5	3200	1400	1800	1.31
529	50	JUL	2200	5.09	2190	1400	795	0.23
529	50	AUG	1850	2.87	1850	1400	447	0.16
529	50	SEP	1850	1.79	1850	1400	448	0.10
529	50	OCT	2010	1.02	2010	1400	609	0.05
529	50	NOV	3420	1.04	3420	1400	2020	0.03
529	50	DEC	4700	1.06	4700	1400	3300	0.02
529	50	ANN	2630000	213000	2420000	1010000	1410000	8.10

3) If the answer to question (2) is HIGH or MEDIUM, will the proposed use still result in diminution of water quality for the habitat of sensitive, threatened, or endangered fish species? ☐ NO ☒ YES: **Please refer to ODFW review to confirm presence of sensitive, threatened, or endangered fish species**

If YES, how?

Temperature and dissolved oxygen are flow-related parameters. When streamflow is reduced, assimilative capacity is reduced. As a waterbody heats up, dissolved oxygen concentrations decline. By reducing streamflow, this use is likely to exacerbate the temperature and dissolved oxygen impairments. The assimilative capacity of a waterway is flow dependent. Reduced flows can increase the concentrations of other pollutants as well, e.g. heavy metals.

Increases in temperature or a reduction in dissolved oxygen adversely impacts sensitive, threatened, and endangered fish. Fish require different temperature and concentrations of dissolved oxygen based on species and life history stage. Oregon's temperature and dissolved oxygen limits are based on the most sensitive species and the life history stage of those species at the location and season of concern. The temperature and dissolved oxygen concentrations of hydrologically connected waterbodies are known to be insufficient for the habitat of sensitive, threatened, and endangered fish. Additional heat or reduction in dissolved oxygen concentrations will further impact these species habitat

4) Can conditions be applied to mitigate the impact of the use?

☐ NO ☒ YES; recommend from Menu of Conditions and skip to question 7. **b51a**

5) If conditions cannot be identified to offset impacts, would the proposed use affect the Habitat of Sensitive, Threatened, or Endangered Fish Species? ☐ NO ☐ YES

If YES, please explain:

6) If a permit is issued, are there any conditions you would like to see included in the permit?

Period of Use: Water withdrawal is limited to the period: October 1 – March 31.

7) Your recommendation under OAR 690-033-0330 (2): ☒ **Approval with conditions**
☐ Approval without conditions
☐ Denial

DEQ Representative signature: Priscilla Woolverton Date: 12/18/2017

WRD Contact: **Caseworker:** Water Rights Division, 503-986-0900 / Fax 503-986-0901

¹ Richter BD, Davis MM, Apse C, Konrad C. 2011. *Short Communication, A Presumptive Standard For Environmental Flow Protection*. River Research and Applications. Published online in Wiley Online Library (wileyonlinelibrary.com), DOI: 10.002/rra.1551

MENU OF CONDITIONS FOR WRD, ODFW, DEQ AND AG

The following condition will be included in any permit issued unless ODFW explicitly requests that it be omitted:

The permittee shall not construct, operate or maintain any dam or artificial obstruction to fish passage in the channel of the subject stream without providing a fishway to ensure adequate upstream and downstream passage for fish, unless the permittee has requested and been granted a fish passage waiver or exemption through the Oregon Department of Fish and Wildlife. The permittee is hereby directed to contact an Oregon Department of Fish and Wildlife Fish Passage Coordinator before beginning construction of any in-channel obstruction.

- fishself** The permittee shall install, maintain, and operate fish screening and by-pass devices consistent with current Oregon Department of Fish and Wildlife (ODFW) standards. Fish screening is to prevent fish from entering the proposed diversion while by-pass devices provide adequate upstream and downstream passage for fish. The required screen and by-pass devices are to be in place and functional prior to diversion of any water. Permittee shall obtain written approval from ODFW that the installation of the required screen and by-pass devices meets the state's criteria or the permittee shall submit documentation that ODFW has determined screens and/or by-pass devices are not necessary.
- fishapprove** The permittee shall install, maintain, and operate fish screening and by-pass devices consistent with current Oregon Department of Fish and Wildlife (ODFW) standards. Fish screening is to prevent fish from entering the proposed diversion while by-pass devices provide adequate upstream and downstream passage for fish. The required screen and by-pass devices are to be in place and functional, and approved in writing by ODFW prior to diversion of any water. The permittee may submit evidence in writing that ODFW has determined screens and/or by-pass devices are not necessary.
- fishdiv33** If the riparian area is disturbed in the process of developing a point of diversion, the permittee shall be responsible for restoration and enhancement of such riparian area in accordance with ODFW's Fish and Wildlife Habitat Mitigation Policy OAR 635-415. For purposes of mitigation, the ODFW Fish and Wildlife Habitat Mitigation Goals and Standards, OAR 635-415, shall be followed.
- The use may be restricted if the quality of the source stream or downstream waters decrease to the point that those waters no longer meet existing state or federal water quality standards due to reduced flows.
- The permittee shall install, maintain, and operate fish screening and by-pass devices consistent with current Oregon Department of Fish and Wildlife (ODFW) standards. Fish screening is to prevent fish from entering the proposed diversion while by-pass devices provide adequate upstream and downstream passage for fish. The required screen and by-pass devices are to be in place and functional, and approved in writing by ODFW prior to diversion of any water. The permittee may submit evidence in writing that ODFW has determined screens and/or by-pass devices are not necessary.
- fishmay** Notwithstanding that ODFW has made a determination that fish screens and/or by-pass devices are not necessary at the time of permit issuance, the permittee may be required in the future to install, maintain, and operate fish screening and by-pass devices to prevent fish from entering the proposed diversion and to provide adequate upstream and downstream passage for fish.
- b52** Water may be diverted only when Department of Environmental Quality sediment standards are being met.
- b5** The water user shall install and maintain adequate treatment facilities meeting current DEQ requirements to remove sediment before returning the water to the stream.
- b51a** The period of use has been limited to **Oct. 1 through March 31.**
- b57** Before water use may begin under this permit, a totalizing flow meter must be installed at each diversion point.
- b58** Before water use may begin under this permit, a staff gage that measures the entire range and stage between full reservoir level dead pool storage must be installed in the reservoir. The staff gage shall be United States Geological Survey style porcelain enamel iron staff gage style A, C, E or I. Additionally, before water use may begin under this permit, if the reservoir is located in channel then weirs or other suitable measuring devices must be installed upstream and downstream of the reservoir, and, a gated valve outlet must be installed. A written waiver may be obtained from the local Watermaster if in his judgment the installation of the weir(s) will provide no public benefit.
- futile call** The use of water allowed herein may be made only at times when waters from the (NAME OF SURFACE WATER) would not otherwise flow into a tributary of the _____ River or sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.
- riparian** If the riparian area is disturbed in the process of developing a point of diversion, the permittee shall be responsible for restoration and enhancement of such riparian area in accordance with ODFW's Fish and Wildlife Habitat Mitigation Policy OAR 635-415. For purposes of mitigation, the ODFW Fish and Wildlife Habitat Mitigation Goals and Standards, OAR 635-415, shall be followed.
- wq** The use may be restricted if the quality of the source stream or downstream waters decrease to the point that those waters no longer meet existing state or federal water quality standards due to reduced flows.

¹ Richter BD, Davis MM, Apse C, Konrad C. 2011. *Short Communication, A Presumptive Standard For Environmental Flow Protection*. River Research and Applications. Published online in Wiley Online Library (wileyonlinelibrary.com), DOI: 10.002/rra.1551

fence	The stream and its adjacent riparian area shall be fenced to exclude livestock.
blv	Water must be diverted to a trough or tank through an enclosed water delivery system. The delivery system must be equipped with an automatic shutoff or limiting flow control mechanism or include a means for returning water to the stream source through an enclosed delivery system. The use of water shall not exceed 0.10 cubic feet per second per 1000 head of livestock.

¹ Richter BD, Davis MM, Apse C, Konrad C. 2011. *Short Communication, A Presumptive Standard For Environmental Flow Protection*. River Research and Applications. Published online in Wiley Online Library (wileyonlinelibrary.com), DOI: 10.002/rra.1551