

# 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 #: G-18462      Applicant's Name: K BAR J RANCH LLC

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

Explain:

The applicant proposes to withdraw .535 cfs from 2 wells in the Deschutes River Basin for irrigation use from March 1<sup>st</sup> to October 31<sup>st</sup>. OWRD has determined that the proposed use would have the potential for substantial interference with the Little Deschutes River. The Little Deschutes River is water quality limited for temperature (year round) and dissolved oxygen (year round). The Little Deschutes River is also a potential concern for phosphate phosphorus (summer) and alkalinity (year round).

Water Body (Stream/Lake)	River Miles	Parameter	Season	Criteria	Beneficial Uses	Status
Little Deschutes River	0 to 68.8	Temperature	Year Round	Salmon and trout rearing and migration: 18.0 degrees Celsius 7-day-average maximum	Salmon and trout rearing and migration	Cat 5: Water quality limited, 303(d) list, TMDL needed
Little Deschutes River	0 to 68.8	Dissolved Oxygen	January 1- May 15	Spawning: Not less than 11.0 mg/L or 95% of saturation	Resident trout spawning	Cat 5: Water quality limited, 303(d) list, TMDL needed
Little Deschutes River	0 to 68.8	Dissolved Oxygen	Year Round	Cold water: Not less than 8.0 mg/l or 90% of saturation	Resident trout	Cat 5: Water quality limited, 303(d) list, TMDL needed

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

Explain:

OWRD has determined that this use has the potential for substantial interference with the Little Deschutes River.

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

If YES, how?

### Temperature

Oregon's stream temperature standards are based on the life cycle needs of salmonids. Stream temperatures that exceed the standards can disrupt the life cycle of a sensitive, threatened, or endangered fish species and may even cause death. Temperatures are already known to exceed standards in the Little Deschutes River in the warmer months. Summertime withdrawals from the stream will reduce the stream's heat capacity and cause greater fluctuation in daytime and nighttime stream temperatures. Non-summer withdrawals will reduce floodplain recharge from high flow events, thus reducing the volume of cool water released from floodplain storage into the stream throughout the year. This will result in the diminution of habitat of sensitive, threatened, or endangered fish species.

### Dissolved Oxygen

Fish and other aquatic organisms require different concentrations of dissolved oxygen based on their species and life history stage. Oregon's dissolved oxygen standards are based on the most sensitive species and life history stage at the location and season of concern. Dissolved oxygen levels are affected by temperature, flow, nutrient loading, algae growth, and other factors. If dissolved oxygen drops too low enough levels, it can result in fish kills. In waterbodies where dissolved oxygen concentrations are known to be insufficient for the habitat of sensitive, threatened, and endangered fish, any additional reduction in dissolved oxygen concentrations would result in the diminution of habitat.

**Flow**

Water quality standards are established to protect aquatic life. In scientific literature, researchers have identified ecological harm occurring when flows are reduced by 6-35% of daily flow<sup>1</sup>. The flows in the Little Deschutes River basin are already reduced by a large percent of natural flow October through January. Any additional withdrawals in October will further diminish water quality for the habitat of sensitive, threatened, or endangered fish species. Withdrawals in the remaining irrigation season months will likely also exacerbate existing water quality impairments and further diminish water quality for the habitat of sensitive, threatened, or endangered fish species.

**DESCHUTES R > COLUMBIA R - AB BUCKHORN CAN at 50% exceedance (average natural flow)**

Month	Natural Stream Flow (cfs)	Consumptive Uses and Storages (cfs)	Requested Use (cfs)	Expected Stream Flow (cfs)	% of Flow Withdrawn
JAN	204	50.8	0	153.2	25%
FEB	244	44.8	0	199.2	18%
MAR	236	33.4	0.535	202.065	14%
APR	331	33.2	0.535	297.265	10%
MAY	388	50.7	0.535	336.765	13%
JUN	311	18.8	0.535	291.665	6%
JUL	126	12.4	0.535	113.065	10%
AUG	74.5	7.89	0.535	66.075	11%
SEP	92.2	7.44	0.535	84.225	9%
OCT	116	42.7	0.535	72.765	37%
NOV	164	64.8	0	99.2	40%
DEC	196	70.8	0	125.2	36%

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

- NO       YES; recommend from Menu of Conditions and skip to question 7.


**OWRD has determined that the proposed use would require an annual mitigation obligation of 76.5 AF in the Little Deschutes Zone of Impact. DEQ concurs with OWRD's stated mitigation obligation.**

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?

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

DEQ Representative signature:       Date: 10/24/2017

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

<sup>1</sup> 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 \_\_\_\_\_ through \_\_\_\_\_.
- 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.
- 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.

