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April 28, 2014

SUBMITTED BY EMAIL TO: 700PM@deq.state.or.us

Jim Billings and Beth Moore
Oregon Department of Environmental Quality
811 SW Sixth Ave
Portland, OR 97204-1390

Re: Comments on Oregon's Proposed 700PM Water Quality General Permit Renewal

Dear Mr. Billings and Ms. Moore:

The Northwest Environmental Defense Center, Rogue Riverkeeper, Oregon Coast Alliance, Cascadia Wildlands, Oregon Wild, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, Hells Canyon Preservation Council, Oregon Council Trout Unlimited, Center for Biological Diversity, Rogue Flyfishers and Klamath Riverkeeper (collectively, Commenters) submit the following comments regarding the renewal of the Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES) general water quality discharge permit for small suction dredge operations and in-water, non-motorized mining (700PM permit) as proposed by the Oregon Department of Environmental Quality (DEQ). Commenters have been actively engaged in the renewal process of this permit, and hereby incorporate prior comments submitted to DEQ. *See* July 18, 2013 Comments on Oregon DEQ's Proposed New Suction Dredge Permits (attached as Exhibit 1). To the extent that the proposed 700PM permit fails to address our previous concerns, we incorporate those comments by reference.

Commenters are concerned about the numerous direct, indirect and cumulative impacts of suction dredge mining on the water quality of Oregon's rivers and streams and the wildlife that depends on them. Suction dredging damages streambeds and banks, and in turn, seriously degrades aquatic habitat and creates significant channel erosion problems. With this 700PM renewal, DEQ has the opportunity to improve the permit conditions to ensure Oregon's waters are protected from the adverse impacts of suction dredge mining.

Background

As DEQ is well aware, Commenters have for years sought meaningful restrictions on suction dredge mining in an effort to protect Oregon's water quality and aquatic life. This

included multiple rounds of litigation over the 700PM permit, a settlement requiring a more robust permit renewal process, and numerous stakeholder meetings between Commenters and DEQ to discuss approaches and permit terms to ensure greater protections. It also included legislation passed in 2013 to address suction dredge mining in Oregon.

In Senate Bill 838, the legislature determined that "[m]ining that uses motorized equipment in the beds and banks of the rivers of Oregon can pose significant risks to Oregon's natural resources, including fish and other wildlife, riparian areas, water quality," etc. *See* SB 838, Section 1(4). To address those risks, however, the legislature largely deferred to state agencies. Section 8 of the bill requires the state agencies and Governor Kitzhaber, in collaboration with various stakeholders including some of the Commenters, to develop and submit to the legislature a new regulatory framework for suction dredging by November 14, 2014. Failing this effort, a moratorium on dredging in endangered fish habitat will take effect in January of 2016.

The bill also includes several express measures[1] to better protect Oregon's rivers from the damage that results from suction dredge mining. The bill institutes a permit fee increase, effective this year, directed to a DEQ administered fund that must be used for data collection and reporting on the impacts of suction dredge mining in Oregon. *See* SB 838, Section 12. It also creates new conditions for mining in the full length of any river or tributary thereof that is designated Essential Salmonid Habitat (ESH), including: (1) suction dredges must be kept 500 feet apart; (2) dredges may only be operated between 8 am and 5 pm; and (3) dredges may not be left in a river unattended. *See* SB 838, Section 5.

These actions all represent major advances towards greater protection of Oregon's waters. At bottom, however, we have yet to see the practical reality of much of this policy work. Suction dredge activities continue on Oregon's waters with limited restrictions. Thus it is essential that DEQ's proposed 700PM permit include conditions sufficient to ensure the protection of Oregon's water quality, consistent with state and federal requirements.

Comments

Commenters are pleased to see that certain aspects of the proposed permit are improved from previous iterations and begin to address some of the concerns we identified in previous comments. Other aspects, however, are still lacking. Thus the permit as a whole fails to ensure the beneficial uses that DEQ is tasked with protecting under the CWA.

I. DEQ must retain the improved permit conditions that are critical to protecting Oregon's water quality and aquatic life in the final 700PM permit.

Commenters strongly support the following new permit provisions. These provisions are essential to protecting Oregon's water quality and ensuring compliance under the CWA, and therefore DEQ must retain them in the final permit.

[1] Pursuant to Section 5 of SB 838, the Department of State Lands (DSL) has imposed a cap of 850 general and individual suction dredge mining permits on Oregon rivers. Because in many circumstances both a removal-fill and a NPDES permit are required to legally suction dredge, DEQ should adopt the same limit.

- **Water Quality Limited Streams 303(d) List**. The current language for "Areas Not Authorized By This Permit" regarding water quality limited areas excludes coverage in waters impaired for toxics, turbidity and sediment unless mining of this type is specifically authorized under a TMDL. This is an effective method to ensure that Oregon's permit meets anti-degradation criteria and that water quality is protected, but as detailed below DEQ cannot not solely rely on the 2010 303(d) to ensure protection of water quality standards.

- **At no time may permit coverage apply to the simultaneous operation of more than one suction dredge.** The current language under Coverage and Eligibility effectively clarifies that only one dredge may operate at once per permit.

- **The assigned permit number must be displayed.** The current language under Coverage and Eligibility ensures that permit holders are more accountable to both the public and agency staff, making evaluations of compliance and identifying responsible parties clear.

- **Monitoring logs.** The new monitoring log requirements outlined in Schedule B are necessary to meet the federal minimum requirements for CWA NPDES permits. In addition, the permit must also require visual monitoring and recording of any oily sheen created in the water. *See* 40 C.F.R. § 122.44(i)(1) (requiring monitoring "[t]o assure compliance with permit limitations"). *See also* 40 C.F.R. § 122.48. The results of this monitoring must be included in the annual report. 40 C.F.R. § 122.41(l)(7). As currently written, the monitoring log is focused on monitoring compliance with only the 300 foot turbidity limit and checking for invasive species. This provision should include express reference to visual monitoring and report of any oily sheen on the surface of the water.

- **Invasive species.** While there is certainly room for additional rules – such as inspections for transfer of equipment especially from out of state – the language in Schedule C.14 is a positive first step towards addressing the spread of invasive species in this permit.

- **Fuel storage and refueling.** The language in Schedule C.10 requiring oil absorbent pads to be used while refueling and secondary containment around fuel storage provides better protections than previous permit iterations. There is, however, room for additional improvement. For example, requiring best management practices aimed at preventing fuel spills, such as prohibiting any refueling activity while on the water and requiring dredgers to carry spill kits, are both simple measures that would significantly improve the protection of Oregon's water quality.

II. The proposed 700PM permit fails to ensure suction dredge activities will not cause or contribute to a violation of Oregon's water quality standards.

DEQ has the authority and responsibility to protect the beneficial uses of the state's surface waters. Under the Clean Water Act (CWA), all DEQ-issued NPDES permits must ensure compliance with water quality standards, including protection of uses. 33 U.S.C. §§ 1342(b)(1), 1311(b)(1)(C); 40 C.F.R. §§ 122.4(d), (i). Further, it is the public policy of the state

of Oregon to protect, maintain and improve the quality of the waters of the state for public water supplies, for the propagation of wildlife, fish and aquatic life and for domestic, agricultural, industrial, municipal, recreational and other legitimate beneficial uses. ORS 468B.015(2).

Water quality standards are defined as the designated beneficial uses of a water body, in combination with the numeric and narrative criteria to protect those uses. 40 C.F.R. §§ 131.3(i), 131.11(a)(1). *See also* OAR 340-041-0004; OAR 340-041-0101-0350. For waters that have multiple use designations, the criteria must "support the most sensitive use." 40 C.F.R. § 131.11(a)(1). For example, the beneficial uses for estuaries and main waters located in the South Coast Basin, set forth under OAR 340-041-0300 (Table 300A; Figures 300A & 300B), include aquatic life, salmon and steelhead spawning, salmon and trout rearing and migration, water contact recreation, wildlife, hunting and fishing, and aesthetic quality. Aquatic species are the most sensitive beneficial uses in a stream, with early life stages being particularly sensitive to changes in water quality. Therefore, the impacts to the beneficial uses of aquatic life and fish spawning should determine DEQ's decision as to whether to permit suction dredging in the proposed 700PM permit, and if so, the conditions necessary to ensure these activities do not cause or contribute to a violation of water quality standards.

a. DEQ improperly relies on its 2010 303(d) list to identify impaired waters.

DEQ's permit prohibits dredging in waters impaired for toxics, turbidity and sediment unless mining of this type is specifically authorized under a TMDL. It also blankly states that "no activities may be conducted that will violate Water Quality Standards." DEQ's evaluation report states that "[t]o the extent data is available, DEQ regularly assesses whether water bodies are meeting the water quality standards applicable to each water body" and lists those waters not meeting applicable standards on the 303(d) list. DEQ's reliance on its 2010 303(d) list to justify compliance with water quality standards is misplaced.

All NPDES permits must "ensure" and "achieve" water quality standards. 40 C.F.R. §§ 122.4, 122.44(d). It follows that a permitting agency must know the impairment or pollution status of the receiving water to meet this requirement. DEQ's 303(d) list, approved by EPA in 2010, is outdated. It was based on a "call for data" that ended on June 11, 2009, almost five years ago. Plus, DEQ has not updated its proposed 2012 list with all data and information available to it, in direct contradiction to the statement in the evaluation report that "[t]o the extent data is available, DEQ regularly assesses whether water bodies are meeting the water quality standards applicable to each water body." *See* Feb. 24, 2011 Letter from Nina Bell, NWEA, to Karla Urbanowicz, Oregon DEQ, *Re: Oregon's Draft 2012 Integrated Report and Section 303(d)(1) List of Impaired Waters* (attached as Exhibit 5). Therefore, DEQ's 2010 303(d) list is a mere starting point for addressing whether suction dredge discharges contribute to violations of water quality standards.

DEQ must do more to evaluate the status of the receiving waters than simply rely on its 2010 303(d) to meet the requirement to "ensure" water quality standards are met. The CWA and its implementing regulations prohibit the issuance of a NPDES permit without this assurance.

b. Mobilization of mercury through suction dredge mining threatens a violation

of water quality standards that is not addressed by the proposed permit.

Mercury that is mobilized as a result of suction dredge activities may violate water quality standards protective of aquatic life. Mercury is extremely toxic to human health. More than ten years ago, the U.S. Environmental Protection Agency concluded that "[m]ercury is highly toxic, persistent, and bioaccumulates in food chains." 65 Fed. Reg. 79,825, 79,827 (Dec. 20, 2000) ("2000 Finding"). EPA further found that methylmercury is a "highly toxic" substance coming from mercury that "biomagnifies in the aquatic food chain," becoming concentrated in the bodies of predatory fish which absorb the methylmercury that their food sources contained. *Id.* Humans are exposed when they eat contaminated fish. The methylmercury from fish is absorbed by the human bloodstream and "distributed to all tissues including the brain." *Id.* at 79,829. Risks are greatest for women of childbearing age because methylmercury "readily passes . . . to the fetus and fetal brain" and "the developing fetus is most sensitive to the effects of methylmercury." *Id.* at 79,827. Children born to women exposed to methylmercury during pregnancy have exhibited neurological abnormalities and developmental delays. *Id.* at 79,829. The adverse impacts mercury has on aquatic life and human health are particularly concerning in the context of suction dredge mining because dredging disturbs the streambed, mobilizing otherwise latent sediments that sometimes contain mercury.

Suction dredge miners often claim that dredging activities improve water quality by removing mercury from Oregon's waters. *See* Mark Freeman, *Dredgers protest proposed permit revisions* (April 22, 2014) (attached as Exhibit 2). These assertions raise concerns for at least two reasons.

First, without the dredging disturbance to the streambed in the first instance, this mercury would not be reintroduced into the water column. EPA has recognized that mercury is a pollutant of concern due to its historical use in mining operations, and that a release of mercury could violate the water quality standards that are protective of aquatic life. *See* EPA Region 10, *Response to Comments: Idaho Small Suction Dredge General Permit* (April 2013), page 13 (attached as Exhibit 4). Suction dredge activities may contribute to the "flouring" of liquid mercury, whereby liquid mercury breaks up into many very small particles that float to the surface of the water instead of sinking. Flouring increases the surface area and enhances the oxidation of the mercury, which is the first step in creating methylmercury.

Second, DEQ's proposed 700PM permit is completely silent regarding mercury that is encountered during dredging activities. The miners have demonstrated to DEQ that they remove mercury as part of their suction dredge activities. *See* Exhibit 2. The dredgers themselves have asked DEQ not to ignore these actions. *Id.* When drafting the small scale suction dredge general permit for Idaho, EPA noted that because "[t]he primary goal of suction dredging is to recover gold, not specifically to encounter mercury although this does occur . . . the question becomes what to do if mercury is encountered." *See* Exhibit 4 at 14. Likewise, DEQ must address how to handle mercury in the proposed 700PM permit.

The permit should require dredgers to stop dredging immediately upon discovering mercury during their dredging activities, collect any mercury that has been mobilized, and properly dispose of the mercury. *See, e.g.*, EPA Region 10, NPDES Permit for Small Scale

Suction Dredge Placer Miners in Idaho: General Permit No. IDG370000 (March 2014), page 13 (attached as Exhibit 3). Given DEQ's knowledge that miners encounter mercury, and the scientific understanding that mercury is highly toxic, suction dredging creates a risk that a release of mercury could violate the water quality standards that are protective of aquatic life. The 700PM must include provisions addressing mercury to ensure compliance with water quality standards. DEQ's reference in the permit evaluation report to guidance for proper disposal of mercury is insufficient to meet the requirements under the CWA. *See* 40 C.F.R. § 122.4(d) (prohibiting the issuance of a NPDES permit "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States"). By failing to address mercury in any way in the proposed 700PM permit, DEQ cannot ensure compliance with Oregon's water quality standards.

III. The proposed 700PM permit continues to be lacking in significant respects.

DEQ must address the following areas in the final 700PM permit:

- **Aquatic habitat modification.** Commenters remain very concerned about the impacts to salmonids, lamprey, bivalves and other aquatic species due to modification of habitat. Some of the beneficial uses impacted by suction dredge activities include aquatic life, salmon and steelhead spawning, salmon and trout rearing and migration, wildlife, hunting and fishing, and aesthetic quality. In the 2010 700PM response to comments DEQ stated "Fish may choose suction dredge tailings as their spawning habitat. The tailings are less stable and are subject to scour before incubation is complete." In that document DEQ goes on to talk about how adherence to the instream water work period should avoid fish eggs, yet ignores addressing the issue that habitat damage during the instream water work period continues to impact reproductive success of salmonids in other seasons. DEQ needs to address in the permit the issue of increased scour in mined areas, as well as any impacts to lamprey ammocetes, macroinvertebrates or bivalves to ensure protection of beneficial uses and compliance with Oregon's biological criteria from OAR 340-041-0011. DEQ should consider closed stream segments or watersheds, such as excluding coverage in streams designated by DSL as Essential Salmonid Habitat (ESH) or watersheds that contain them as outlined in ORS 517.140 section 2 to prevent impacts to aquatic species, and in particular impacts to salmonids listed as threatened or endangered under the Endangered Species Act. As the permit already sets different standards for ESH and non-ESH waters this is an already established method.

- **Upstream impacts to water quality limited streams.** Excluding coverage in 303(d) listed segments as described in the proposed permit is a step in the right direction. Commenters remain concerned about adverse impacts from dredging activity upstream from segments, which is likely to affect water quality downstream. This is particularly true in watersheds for which DEQ does not have sufficient data available to determine which tributaries carry pollutants of concern that are affecting downstream waters. For example DEQ's 2012 Integrated Report proposes listing the entire mainstem of the Rogue River for mercury based on new data from resident fish tissues. It would be reasonable to suggest that if the entire mainstem is impaired for mercury, some of that mercury is likely originating in a number of tributaries, yet there is not yet data to

determine those sources. Unless DEQ can "*ensure* compliance with applicable water quality requirements," federal regulations prohibit the agency from issuing a permit. 40 C.F.R. § 122.4(d). Consistent with this precautionary approach, DEQ must exclude coverage in areas upstream of waters impaired for toxics, turbidity and sediment where the data is insufficient to eliminate those upstream tributaries as contributing problem pollutants downstream.

- **Use of tools to move boulders and logs.** Neither hand nor motorized tools should be allowed to move boulders, logs or other habitat structures. These elements of the stream channel provide important habitat for aquatic species. If the structures are moved to mine underneath and around the area, the bed will be significantly disturbed and altered. Following a disturbance from mining, it is highly unlikely that the original structures will be sufficiently anchored to provide the original or even comparable ecosystem functions. In fact, it may be impossible to return the habitat structures to their original position as envisioned in the proposed permit. DEQ should prohibit the use of motorized and hand tools to remove boulders, logs or other habitat structures.

- **Permit fees.** Commenters consider permit fees for suction dredging insufficient to fund an effective program and compliance monitoring. DEQ should raise permit fees to ensure that costs are covered by miners rather than requiring taxpayers to subsidize these activities.

- **Impacts to smaller streams.** One area that the proposed permit fails to address is the effect of suction dredging on smaller streams. The permit assumes that all streams are equally capable of receiving the same load of pollutants. Many coho and steelhead streams are less than 10' in wetted width. In streams of this size or smaller, it is very difficult or impossible to dredge without undercutting banks, creating bank to bank turbidity, and/or creating a plume of turbid water and sediment deposition longer than 300 feet downstream. While these actions are themselves prohibited in the permit, it would be more effective to prohibit suction dredging in stream sizes where there is no reasonable expectation that dredging activities would even be able to operate without violating water quality standards. In the 2010 700PM response to comments DEQ states that "California Department of Fish and Games 2009 literature review states that — suction dredging along the channel margins has the potential to undercut the streambank, resulting in bank erosion and potential bank destabilization and collapse." In small streams, all dredging happens along the channel margins. DEQ should exclude coverage on streams where there is no reasonable expectation for activities to meet water quality standards.

- **Fine sediments.** The proposed permit fails to address the impacts of fine sediments deposited on the streambeds downstream of suction dredging activities on an annual basis. Oregon's sediment water quality standards are defined in 340-041-0007(12) as "The formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation, or industry may not be allowed." There is ample evidence that fine sediments are deleterious to fish and other aquatic life. (Waters 1995 and Chapman 1988). DEQ

stated in the 2010 700PM response to comments "Excessive fine sedimentation in spawning grounds limits available oxygen and removal of metabolic toxins near eggs and physically renders spawning sites less suitable (Umatilla Basin TMDL May 9, 2001)." DEQ needs to determine if or how the 700PM may be causing or contributing to the violation of water quality standards for sedimentation, and ensure that effluent limits are sufficient enough to protect beneficial uses and prevent the impairment of additional waterways.

- **Lack of agency coordination.** Oregon Plan for Salmon and Watersheds for the Protection of Salmon recognizes the need to coordinate state water pollution programs to make sure they are consistent with watershed restoration efforts (Oregon Department of Environmental Quality, October 2000). The DSL authorization for suction dredging in ESH identifies that no more than 25 cubic yards (CY) of material may be dredged per year, and no more than 5 CY at any one location. Outside of ESH this becomes 50 CY per year before an authorization is required. In the 2014 DEQ draft permit evaluation report several rates of material moved per hour are listed for two popular brands of suction dredges. For a single four-inch dredge these rates are listed as between 5.2 CY and 12 CY per hour. These numbers strongly suggest that allowed levels of fill and removal under DSL rules could be met in less than a single day of operation. DEQ should better coordinate with other state agencies to ensure that operating durations are specified in the 700PM to ensure sister agency expectations are met.

- **Temperature.** While the permit does set some restrictions on turbidity, there appears to be no consideration for the impacts of turbidity on temperature and dissolved oxygen. Regarding water quality monitoring for turbidity EPA explains:

  > Higher turbidity increases water temperatures because suspended particles absorb more heat. This, in turn, reduces the concentration of dissolved oxygen (DO) because warm water holds less DO than cold. Higher turbidity also reduces the amount of light penetrating the water, which reduces photosynthesis and the production of DO. Suspended materials can clog fish gills, reducing resistance to disease in fish, lowering growth rates, and affecting egg and larval development. As the particles settle, they can blanket the stream bottom, especially in slower waters, and smother fish eggs and benthic macroinvertebrates.

  See EPA, Water: Monitoring & Assessment, 5.5 Turbidity (attached as Exhibit 6). In the 2010 700PM response to comments DEQ states that it "has not found any articles that relate to the direct effects of turbid water on temperature from small scale dredge plumes." There is no need to identify articles that evaluate turbidity and temperature increase from dredging specifically when it is so widely known that turbidity does in fact raise stream temperatures, and suction dredging does in fact produce turbid water. DEQ should exclude coverage in water quality limited streams listed for temperature.

- **Clarity for permit holders.** In this case, suction dredge gold miners have little in common with industrial facilities that often have designated staff responsible for environmental compliance on site. Existing permit language, while needed for

enforceability and legal requirements, may not be the most effective method to convey the broad-brush obligations to protect beneficial uses that are expected of permit holders. DEQ should include with permit issuance maps of any closed areas at the time of issuance (such as State Scenic Waterways), as well as a simple plain English fact sheet of "Do's and Don'ts" for permit conditions.

Conclusion

As noted above, Commenters incorporate by reference our previous comments submitted to DEQ that outline major issues DEQ must address in the proposed 700PM permit. *See* Exhibit 1. This includes the numerous scientific studies submitted in support of those comments that demonstrate the negative impacts of suction dredge mining. A fact-based permit renewal process is a commendable baseline to start from. DEQ's permit process, however, should also recognize the long-accepted precautionary principle as a fundamental precept to protecting our nation's waters.

DEQ's authority and duty to protect beneficial uses stems not only from a scientific understanding of how pollutants harm water quality and aquatic life, but also from a policy decision to protect uses of Oregon's waters against potential threats of harm. Thus where the science is lacking to demonstrate a clear harm or benefit, DEQ should side on protecting Oregon's waters, consistent with its regulations that require the protection of uses. We urge DEQ to revised the proposed 700PM permit accordingly.

Sincerely,

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References

Chapman, D. W. (1988). "Critical review of variables used to defined effects of fines in redds of large salmonids." Transactions of the American Fisheries Society 117: 1-21 (attached as Exhibit 7).

Waters, T. F. 1995. Sediment in streams: sources, biological effects, and control. American Fisheries Society. Bethesda, Maryland (book review, attached as Exhibit 8).