

July 5, 2019

To: Wyoming Department of Environmental Quality (DEQ)

Re: Comments regarding the draft discharge permit for Aethon Energy in the Moneta Field.

To whom it may concern:

As a lifelong resident of Wyoming I have hunted and fished all across the public lands to be affected by the large additional discharge of drilling fluids into the drainages of Badwater and Alkali creeks and then into Boysen Reservoir and the Wind River or Bighorn River below the "wedding of the waters", ultimately making its way to the confluence of the Yellowstone River in Montana. While hunting and hiking in the Moneta and Lysite areas we often would smell and then see steaming little drainages coming down from the drilling rigs and the oil settling ponds nearby. When we became aware of this attempt by Aethon Energy to increase its discharged oilfield wastewater to approximately 8.27 million gallons per day it was evident to us that some significant damage of many varieties would occur to habitat supporting the fish and the other wildlife that occupy the tributaries, rivers and reservoirs affected thereby.

Among the considerations the DEQ should include before permitting such a substantial increase in Aethon's wastewater discharge are the following:

1) Economic factors: What damage will be done to the outdoor recreation economy if the discharges result in degraded aquatic and terrestrial habitats with an accompanying loss of revenue to lost fishing, hunting, boating and camping business opportunities? If recreational tourists begin to select more desirable destinations then businesses in Shoshoni, at Boysen Reservoir, Thermopolis, Worland, Basin and Greybull will likely suffer significant tourism losses as well, resulting layoffs of employees. On the other hand, a large number of construction and maintenance jobs as well as full time inspection and operator jobs would be created to build additional wastewater treatment facilities, settling ponds and lay the pipelines that would be required to carry the wastewater down to Boysen Reservoir or even to be used in "fracking" operations elsewhere. What costs will be incurred by various communities whose water treatment systems may well be over-whelmed by wastewater pollutant chemicals?

2) Environmental issues: What will be the long term damage to the creeks, rivers and reservoirs in the affected system of increased wastewater discharges that will most likely cause long term permanent damage to the systems components, i.e., aquatic and terrestrial habitat, with a corresponding loss or elimination of indigenous plant and animal species? What impact in terms of fish and wildlife displacement due to degraded water resources will occur as it is established that indigenous species will abandon both their habitat and usual water sources and seek refuge elsewhere thus exposing themselves to greater herd mortality and diminished fawn or calf recruitment due to predation or starvation? The relocation of animals will often result in higher mortality due to lack of familiarity with the area, increased predation and or exposure to more hunting pressure increasing harvest and further reducing populations. What will the mitigation expenses be to restore these tributaries and reservoirs to a prior condition? Could these increased discharges harm a native endangered fish species like the Sauger or help trigger algal blooms in certain reservoirs where toxic contaminants harm native aquatic plants?

3) Legal considerations: If these discharges prove to be as problematic as they likely will be then Aethon and various state agencies had better be prepared for a series of prolonged legal battles regarding the impacts of approving a more liberal wastewater discharge permit. It is likely that in addition to traditional conservation groups, a variety of municipalities and others

to include tribal authorities from the Wind River Indian Reservation and the State of Montana will likely be compelled to litigate their interests as well. It was not that long ago that some of Wyoming's farmers and ranchers had to deal with the toxic effects of Coal Bed Methane Gas (CBMG) drilling where their lands lost production due to salinity issues caused by large drilling wastewater discharges that degraded regional creeks and aquifers. The Clean Water Act also requires that any project that could degrade water or the Wind River's Blue Ribbon fishery must be evaluated for both its short term and long term adverse impacts. If an undetected discharge monitoring event should result in a particularly deadly discharge that event could create "dead zones" in rivers and in reservoirs that might extend all the way to Montana and trigger a real firestorm of punitive legal activity on both sides of the border.

4) Permit analysis: An independent review of the draft process indicates that the DEQ's conclusions regarding the potential harm of wastewater introduction into the tributaries and reservoirs along the Wind River and ultimately the Big Horn River is flawed and fails to properly evaluate the potentially harmful effects of said wastewater if deposited in these surface waters. Moreover, the DEQ analysis fails to properly evaluate the costs of mitigation both to the state and other entities, i.e., municipalities and the Wind River Indian Reservation. Further, the DEQ analysis fails to take into account other legal standards like the Clean Water Act or meet other standards like the Wyoming anti-degradation policies, nor does the DEQ seem to recognize that allowing companies to dump 186 degree water into these small tributaries is likely deadly for small organisms and plant species that occupy these waters.

Given these observations and warnings it would seem both prudent and practical that the DEQ consider the following suggestions to improve and justify its current permit review:

1) Due to toxicity concerns Aethon Energy needs to clean up its existing wastewater by doing such things as reducing its dissolved chloride from an estimated 2,000 mg/L to no more than 230 mg/L in its discharges to restore survivable conditions in these desert tributaries.

2) Restore water quality conditions in the Wind River to comply with standards set in 1979 when it was included for recognition as a Class 1 Blue Ribbon Fishery.

3) Insure that fish and other aquatic creatures can "thrive and survive" in the waters of the Wind and Big Horn Rivers and associated reservoirs by limiting dangerous chemicals.

4) Compel Aethon Energy to establish "cooling facilities" to chill wastewater discharges down to 50 degrees Fahrenheit prior to their release whether in local tributaries or reservoirs.

5) Require full toxicity testing by increasing monitoring intervals and testing of effluent and discharge into reservoirs from an annual to a quarterly basis to account for seasonal issues.

6) Reliance on a dilution model requires adequate flow and periodic testing to insure that water quality standards are being met and disclose all chemicals used in drilling operations.

7) "Grandfathering" high levels of various toxic chemical levels in discharges violates both the intent and spirit of the Clean Water Act and the DEQ should hold the line on violations.

8) The DEQ must be willing to subject its review process to some sort of independent oversight and analysis and commission a third party review to insure analytic competence.

Thank you for this opportunity to submit comments regarding Aethon Energy's draft permit for a wastewater discharge permit in the Moneta Divide. I remain, sincerely yours,

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