

Singh, Angela K (DOA)

From: Colombie, Jody J (DOA)
Sent: Friday, January 10, 2014 2:47 PM
To: Singh, Angela K (DOA)
Subject: Fwd: Comments from TWS et al on AOGCC's Nov. 1, 2013 proposed regulations
Attachments: CWA_AOGCC_cmts_Jan_2014_Final.pdf; ATT00001.htm

Sent from my iPhone

Begin forwarded message:

From: H Shepherd CWA <waterlaw@uci.net>
Date: January 10, 2014 at 2:27:57 PM AKST
To: <jody.colombie@alaska.gov>
Cc: <ristroph@tws.org>, <nikospastos@hotmail.com>, <carlwassilie.acyn@gmail.com>, Delice Calcote <aitc.dcalcote@gmail.com>
Subject: **Re: Comments from TWS et al on AOGCC's Nov. 1, 2013 proposed regulations**
Reply-To: <waterlaw@uci.net>

Ms. Colombie:

I have attached comments from the Center for Water Advocacy and other organizations concerning the Commissions Nov. 1, 2013 proposal. Please confirm receipt and contact me if you have any questions regarding these comments. Thank you.

Hal Shepherd, Director

Center for Water Advocacy

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January 10, 2014

Alaska Oil and Gas Conservation Commission
333 West 7th Avenue, Anchorage, Alaska 99501
Submitted via e-mail at: jody.colombie@alaska.gov

Re: Proposed regulations on hydraulic fracturing and workover operations: 20 AAC §§ 25.280, 25.283, and 25.990 (Revised November 1, 2013)

To Whom This Concerns:

Thank you for the opportunity to comment on the Alaska Oil and Gas Conservation Commission's November 1, 2013 revisions to its proposed regulations concerning workover operations and hydraulic fracturing. We are disappointed to see that the proposed rules continue to fail to address the substantial amounts of water used in the hydro-fracturing process and the subsequent impacts to the environment and existing water rights.

Still, we appreciate the Commission's ongoing efforts to revise the draft regulations in accordance with public input. We ask you to consider the comments below in preparing final regulations that would more rigorously protect human health, safety, and the environment. We incorporate by reference our comments dated April 1, 2013, and August 5, 2013,¹ and reiterate our concerns and recommendations made in those comments.

Our specific comments include the following:

I. How Much Water Is Used In Hydraulic Fracturing Operations, And The Sources Of This Water.

Source water for hydraulic fracturing operations can come from a variety of sources, including ground water, surface water, and recycled flowback.² Water acquisition has not been well characterized, so AOGCC should gain a better

¹ See Appendix A, Comments submitted by TWS, et al (Aug. 5, 2013) (incorporated the comments submitted by TWS, et al (Apr. 1, 2013)).

² *Id.* at 24.

understanding of the amounts and sources of water being used for hydraulic fracturing operations.

The Rules should, therefore, require hydrofracking operators to provide information on hydraulic fracturing fluid source water resources including information on the total volume, source, and quality of the base fluid needed for hydraulic fracturing at 350 hydraulically fractured oil and gas production wells. This analysis should produce: 1) A list of volume and water quality parameters important for hydraulic fracturing operations; 2) Information on source, volume, and quality of water used for hydraulic fracturing operations; 3) Location-specific data on water use for hydraulic fracturing; and 4) Location-specific examples of water acquisition, including data on the source, volume, and quality of the water.

The Rules should also require operators to monitor the volumes, sources, and quality of water needed for hydraulic fracturing operations. The data received from operators will inform AOGCC's understanding of the general water quantity and quality requirements for hydraulic fracturing

II. How Water Withdrawals Affect Short- And Long-Term Water Availability In the Local Area

As the intensity of hydraulic fracturing activity increases within individual watersheds and geologic basins, it is important to understand the net impacts on water resources and identify opportunities to optimize water management strategies. The Rules should, therefore, require operators to compile data on water use and the hydrology of River Basins where fracking is expected to take place in Alaska. These data should include ground water levels, surface water flows, and water quality as well as data on hydraulic fracturing operations, such as the location of wells and the volume of water used during fracking.

Operators should also be required to provide simple water balance and geographic information system (GIS) analysis using existing data and information on hydrological trends over the same period of time. Operators should compare control areas with similar baseline water demands and no oil and gas development to areas with intense hydraulic fracturing activity, isolating and identifying any impacts of hydraulic fracturing on water availability. Further, the Rules should require that critical analysis of trends in water flows and water usage patterns be conducted in areas where hydraulic fracturing activities are occurring to determine whether water withdrawals alter ground and surface water flows. Such data collection would support the assessment of the potential impacts of hydraulic fracturing on water availability at various spatial scales (e.g., site, watershed, basin, and play) and temporal scales (e.g., days, months, and years).³ Site specific impacts research should, therefore, include: 1) Maps of recent hydraulic fracturing activity and water usage; 2) Information on whether water withdrawals for hydraulic fracturing activities alter ground or surface water flows; and 3) Assessment of impacts of hydraulic fracturing on water availability at various spatial and temporal scales.

³ *Id.* at 26.

Finally, the Rules should require operators to conduct scenario evaluations to assess potential long-term quantity impacts as a result of cumulative water withdrawals. The evaluations should focus on hydraulic fracturing operations at various spatial and temporal scales and should include at least two futures: (1) average annual conditions in 10 years based on the full exploitation of oil and natural gas resources; and (2) average annual conditions in 10 years based on sustainable water use in hydraulic fracturing operations. Both scenarios should build on predictions for land use and climate (e.g., drought, average, and wet). The spatial scales of analysis should reflect both environmental boundaries (e.g., site, watershed, river basin, and geologic play) and political boundaries (e.g., city/municipality, county, state, and AOGCC Region).

III. What Are The Possible Impacts Of Water Withdrawals For Hydraulic Fracturing Operations On Local Water Quality?

Withdrawals of large volumes of ground water can lower the water levels in aquifers or ground water in general.⁴ This can affect groundwater quality by exposing naturally occurring minerals to an oxygen-rich environment, potentially causing chemical changes that affect mineral solubility and mobility, leading to salination of the water and other chemical contaminations. Additionally, lowered water tables may stimulate bacterial growth, causing taste and odor problems and an upwelling of lower quality water and other substances (e.g., methane from shallow deposits) from deeper within an aquifer and could lead to subsidence and/or destabilization of the geology.⁵

Withdrawals of large quantities of water from surface water resources (e.g., streams, lakes, and ponds) can significantly affect the hydrology and hydrodynamics of these resources. Such withdrawals from streams can alter the flow regime by changing their flow depth, velocity, and temperature.⁶ Additionally, removal of significant volumes of water can reduce the dilution effect and increase the concentration of contaminants in surface water resources.⁷ Furthermore, it is important to recognize that ground and surface water are hydraulically connected⁸ any changes in the quantity and quality of the surface water can affect ground water and vice versa.⁹

Finally, the Rules should require collection of data on the quality of ground and surface waters that may be used for hydraulic fracturing before and after water is removed for hydraulic fracturing purposes. Such data could be used to analyze changes in water quality in watersheds where hydrofracking will take place to determine if any changes are due to surface or ground water withdrawals for hydraulic fracturing and if there are any changes in local water quality and if these changes are a result of water withdrawals associated with hydraulic fracturing.

⁴ *Id.* at 27.

⁵ *Id.*

⁶ Zorn et al., 2008

⁷ Pennsylvania State University, 2010

⁸ Winter et al., 1998

⁹ EPA Hydraulic Fracturing Study Plan at 27.

IV. The Use of Water Related to Temporary Water Use Permits

The Rules should address the, potential, impacts of the Division of Land, Water and Mining's (Division's) issuance of Temporary Water Use Permits (TWUPs), for hydrofracking purposes, on water resources and human health and welfare. Under the Alaska Water Use Code:

Anyone who diverts, impounds, or withdraws a significant amount of water for use, without a permit, certificate, or authorization is guilty of a misdemeanor (AS 46.15.180). A significant amount of water is defined... as:

- the consumptive use of more than 5,000 gallons of water from a single source in a single day;
- the regular daily or recurring consumptive use of more than 500 gpd from a single source for more than 10 days per calendar year;
- the non-consumptive use of more than 30,000 gpd (0.05 cubic feet per second) from a single source; or
- any water use that may adversely affect the water rights of other appropriators or the public interest.¹⁰

The Division's issuance of a Temporary Water Use Authorizations (TWUPs) however, are often contrary to 11 AAC 93.035 because, as part of the TWUPs, it, often, authorizes the withdrawal of an amount of consumptive use that is over the prescribed 5,000 gpd. In addition, regardless of the fact that the "Commissioner will issue a permit only if he/she "finds that... the proposed appropriation is in the public interest,"¹¹ TWUPs, often, negatively impact the water rights of other appropriators and/or the public interests. Based on the fact that, in the case of hydrofracking, TWUPs are used to develop oil and gas resources, the primary impact of granting the Application would be to the local residents who live in the vicinity of the drilling operations and fish and wildlife habitat in the vicinity of the water withdrawals.

In determining the public interest in relation to TWUPs, therefore, the Division must comply with the following provisions of the Alaska Water Use Code:

a) *Detriments to Fish and Game Resources*

"In determining the public interest, the commissioner shall consider...the effect on fish and game resources and on public recreational opportunities...¹² Hydrofracking operations, for example, typically result in the destruction of an

¹⁰ <http://dnr.alaska.gov/mlw/water/wrfact.cfm>. See, 11 AAC 93.035(a) and (b)

¹¹ AS 45.015.080(34).

¹² AS 45.015.080(b)(3).

average of nine acres of habitat. This does not include acreage lost to pipelines. On average, each well pad requires 1.65 miles of gathering pipelines, which carry the gas to a network of larger transportation pipelines.¹³ The combination of the well pad, pipeline and other drilling related facilities, therefore, significantly threatens wildlife habitat in the area of the oil and gas drilling.

b) *Detriments to Public Health*

“In determining the public interest, the commissioner shall consider...the effect on public health...”¹⁴ During all stages of hydrofracking drilling, there is significant potential for fluids and/or naturally occurring substances to be introduced into drinking water resources resulting in toxicity and potential human health effects associated with these possible drinking water contaminants.¹⁵ This exposure results from chemicals used in the fluids, naturally occurring substances that may be released from subsurface formations during the drilling process, and chemicals that are present in hydrofracking operation wastewaters.¹⁶ Worse, based on the number of chemicals, currently, known to be used in oil and gas drilling operations, there could be several hundred chemicals of potential concern for drinking water resources.¹⁷

d) *Harm to other Persons*

“In determining the public interest, the commissioner shall consider...harm to other persons resulting from the proposed appropriation.”¹⁸ As in the case of hydrofracking:

the impact from the removal of large volumes of water from hydrological systems could stress drinking water supplies and existing water rights and water uses. This could lead to lowering of water tables or dewatering of drinking water aquifers, decreased stream flows, and reduced volumes of water in surface water reservoirs and impact the availability of water for drinking. The lowering of water levels in aquifers can necessitate the lowering of pumps or the deepening or replacement of wells...¹⁹

In fact, there may be individual water right permittees who retain water rights or applicants who have applied for water rights in the same general location

¹³ The Fracking of Racheal Carson, Silent Spring's lost legacy, told in fifty parts. <http://www.orionmagazine.org/index.php/articles/article/7005>.

¹⁴ AS 45.015.080(b)(4).

¹⁵ Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources, Office of Research and Development, US Environmental Protection Agency, Washington, D.C., p. 71, November 2011 (AOGCC Plan).

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ AS. 45.015.080(b)(6).

¹⁹ AOGCC Plan p. 25.

of the drilling operations related to TWUPs issued for fracking operations. If such individual applications retain an earlier priority date than the TWUPs in question and the point of diversion is from the same or a hydrologically connected source, this would be clearly contrary to the public interest standard of AS 45.015.080 and therefore, a violation of the significant use provisions of 11 AAC 93.035.

V. Impacts to Basic Human Rights

CWA is encouraged by the notification of landowners, surface owners, and operators within one-quarter mile of the wellbore trajectory; disclosure of the chemical makeup of hydraulic fracturing fluids; containment of hydraulic fracturing fluids; 6. casing and cementing; and disclosure of the intent to use a well for hydraulic fracturing on an application for a permit to drill contained in the proposed rules. We encourage the AOGCC to expand these amendments to contemplate the fact that hydrofracking permits, could result in negative impacts to human health, environmental impacts and the public interest. Issuance of hydrofracking permits, therefore, potentially, impacts basic human rights as recognized in Alaska state law including the general reservation of surface and subsurface waters for fish and game and the protection of due process under the Alaska Constitution, the Public Trust Doctrine and water rights.

a) *Alaska Constitution*

The hydrofracking permits are potentially contrary to the general reservation for fish and wildlife found in Alaska's Constitution's because they would deprive the public of the right to ground and surface water necessary to maintain economic, subsistence, commercial and sport resources²⁰ and, potentially interfere with the interests of existing water right permittees and applicants in retention of the original priority date over any potential conflicting water uses.²¹

b) *The Public Trust Doctrine*

Hydrofracking operations, implicate Alaska's Public Trust Doctrine which calls for protection of instream flows and subsistence uses for state citizens. The U.S. Supreme Court, for example, concludes that "the ownership and dominion and sovereignty over lands...with...states, belong to the respective states...to use or dispose of any portion, thereof, when that can be done without substantial impairment of the interest of the public..."²² That the Doctrine applies to TWUPs, therefore, is illustrated by the fact that "there can be no irrevocable contract in conveyance of property by a grantor in disregard of a public trust, under which he was bound to hold and manage it."²³

20. *Id.* at 14.

21. *Id.* at 14–15. "Under the principle of 'prior appropriation,' when more than one application for water use competes for the same flow of water, whichever application was received by the administering agency earliest will be senior to the later application, and the junior user cannot use any water that would adversely affect the senior user." See Robert E. Beck & Owen L. Anderson, *Elements of Prior Appropriation*, in WATERS AND WATER RIGHTS § 12.01.

²² *Illinois Cent Co v. State of Illinois City of Chicago v. Illinois Cent Co State of Illinois v. Illinois Cent*, 146 U.S. 387, 465 (1892). (emphasis added).

²³ *Id.*

Similarly, the public trust doctrine is implicitly supported by the Alaska Constitution which provides “[w]herever occurring in their natural state, fish, wildlife and waters are reserved to people for common use.”²⁴ In addition, since statehood, decisions by the Alaska Supreme Court has recognized the force of the Public Trust Doctrine, has expanded its scope removing any question that the Doctrine and its role in the preservation of Alaska’s natural resources is implicit in the Constitution. These implications are illustrated by the fact that the Alaska Supreme Court concludes that the “common use” clause was unique in relation to other state constitutions and was established to avoid exclusive control over resources by the State by imposing a public trust duty to prevent such control.²⁵

Conclusion

We are encouraged by the AOGCC’s efforts to amend the State’s hydrofracking rules and to address water quality, disclosure and containment requirements for the protection of human health and the environment. We are concerned, however, that the Rules do not address the substantial impacts that fracking can have on water flow and availability for fish and wildlife habitat and subsistence uses. Similarly, we believe the rules should address the issuance of water right permits that may violate the Alaska State Water Use Code. Please contact Hal Shepherd with CWA (waterlaw@uci.net) if you have any questions regarding this letter or these requests.

s/Harold Shepherd

Harold Shepherd, Director
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s/Delice Calcote

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²⁴ Article VIII, Section 3.

²⁵ *Owsichek v. State, Guide Licensing and Control Bd.*, 763 P.2d 488, 491 (Alaska,1988).