



ALBERTA WILDERNESS ASSOCIATION

"Defending Wild Alberta through Awareness and Action"

March 8, 2015

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Statement of Concern: Shell Canada Ltd. Fox Creek Area - Application No. 1822109

Dear Ms. Gulley and Mr. Sadiq:

Alberta Wilderness Association (AWA) appreciates the opportunity to provide this Statement of Concern on Shell's application for a water diversion license, pumping station, pipeline and associated infrastructure north of Fox Creek at Iosegun Lake.

Directly and Adversely Affected

AWA, founded in 1965, is an Alberta-based conservation group with 7,000 members and supporters in Alberta and around the world. We work towards the long-term protection of remaining representative large wilderness areas and other areas of special ecological significance in Alberta. We also work for better management of Alberta's watersheds to ensure future generations enjoy healthy aquatic ecosystems and the abundant, clean water they provide.

Since the 1970s, AWA has engaged with citizens, industry and government to seek sustainable management and protection of ecologically significant lands and waters in the Peace River watershed. The Peace River watershed is a nationally significant waterway that supplies water to the Peace-Athabasca Delta, one of the largest freshwater deltas in the world. The upper Peace watershed supports

important wildlife populations including the endangered Little Smoky caribou population. In the Little Smoky River watershed, where Shell's proposed water diversion will occur, AWA has corresponded with the Alberta government since at least January 1980 regarding concerns about impacts of petroleum and natural gas leasing, exploration and development.

AWA believes that the Little Smoky watershed will be further harmed by approval of Shell's water diversion application (1822109). If granted, this water diversion in combination with other energy-related historic and current impacts will exacerbate the excessive adverse cumulative effects of oil and gas extraction activities upon public waters and lands. Because this application's impacts will set back the public interest objectives for which AWA exists, we are filing this Statement of Concern.

Objections to the Application

- **Inadequate water monitoring and management in the Little Smoky watershed**

AWA is concerned that the Iosegun Lake water balance and Outlet Creek Instream Flow Needs (IFN) assessments conducted for this application are based on inadequate data. No historic data is available for inflows to Iosegun Lake or flows in Outlet Creek. A gauge to measure Outlet Creek stream flows has only just been installed. Field programs to measure pre-diversion lake elevations, dissolved oxygen and temperature conditions in Iosegun Lake were only started in the past several months. Historic lake water balance calculations were based on assumptions about low flow winter month inflows and outflows based on a few recent site visits and intermittent lake level monitoring that was discontinued in 1999. There is no data for net groundwater flows to the lake. No local evaporation or snowfall data is available, and continuous local rainfall records have only been kept since 2011. Outflow Creek's IFN modeling was based on flow records from a water station gauge on a different river, the 'Mouth of Waskahigan' over 40 kilometres away. There is no comparison available between Iosegun or Waskahigan watersheds of groundwater regimes or the array of upland and wetland land cover and anthropogenic disturbance affecting water runoff.

Shell is proposing to develop withdrawal triggers and limits for water quantity and water quality for Iosegun Lake at some future date. This is an inadequate approach for a 5 million m³/year water diversion, and inadequate to manage cumulative effects of other significant water diversions in the Iosegun watershed and the Little Smoky watershed. AWA requests that the Crown take responsibility for development of water withdrawal triggers and limits for water diversions in the Little Smoky watershed, based on adequate data, in advance of approving this application.

AWA is concerned that there is insufficient monitoring and oversight of existing actual water diversions and pumping activities related to water-intensive fracking-related energy development. Timely public water use reporting and auditing would improve accountability of these operations and would contribute to a credible water management plan for this and other watersheds affected by fracking activities. AWA requests that the Alberta government implement transparent reporting of actual water diversion by all energy operators in the Little Smoky watershed, as close to real-time as possible, as well as enhance its capacity to audit these usage reports, before granting this application.

This water use is consumptive. Energy operators in the region pump significant quantities of water that is contaminated from their operations into deep disposal wells. Significant fresh water is thereby removed from the hydrological cycle. AWA is concerned at the cumulative impacts from all energy operations in the Little Smoky watershed of these withdrawals.

Overall, AWA is concerned that cumulative development activities in the Little Smoky watershed are far outstripping the Alberta government's ability to monitor and manage cumulative development impacts on water resources and on aquatic ecosystems. This application should be denied until adequate monitoring is in place to establish a credible, precautionary water management plan for the Little Smoky watershed.

To address the apparent lack of government capacity to adequately monitor and manage important public water resources, it may be worthwhile for the government to investigate implementing a volume-based fee for wastewater disposal. Perhaps a fee could be charged for downhole abandonment related to the use of Crown land, that is, the aquifer. This fee system could be structured to motivate water conservation and to fund urgently required water monitoring, planning, and auditing. Perhaps water license approvals could be conditioned to support operation of a water management authority, similar to many Alberta air emission approvals that state that a particular airshed not-for-profit society shall be caused to operate in that region.

- **Adverse impacts to fish populations in Iosegun Lake**

AWA is concerned that the impact assessment of fish, wildlife and habitat conducted for this application is based on inadequate data. The assessment was based on one site visit in September 2014 (which was preceded by a significant snowfall) and one site visit in October 2014, plus a desktop review of publically available information. The assessment notes that two disparate datasets were combined to estimate Iosegun Lake level changes that would be caused by this water diversion. It notes that "local effects at scales below the gridded resolution of 2 m are potentially not well-represented." There is a recreational walleye fishery in Iosegun Lake, and local effects of the water withdrawal could be significant in the case of access to the walleye spawning area in a stream at the south end of the lake. The southern end of the Lake is shallow and is likely a valuable spawning, rearing and feeding area for other fish species as well. There is also very little dissolved oxygen and temperature data for Iosegun Lake, which is a concern given known lethal and chronic effects to fish of low dissolved oxygen. This data gap is of particular concern due to a documented winterkill in early 1986 in Iosegun Lake, and the observation that Iosegun Lake is prone to summerkills due to natural phenomena based on recorded events since 1985. AWA requests that a better understanding of these aquatic ecosystem impacts to the Lake, and the establishment of better field-data-supported triggers and limits for water quantity and quality, should precede the approval of this application.

- **Adverse impacts to fish populations in the Little Smoky watershed**

AWA is concerned that the Alberta Energy Regulator has commenced the Duvernay pilot play-based regulation (PBR) approach without setting urgently required cumulative effects management triggers and limits for upland, wetland and water course disturbance in this area. Numerous oil and gas production pads, roads, pipelines, seismic lines are already located within the Little Smoky watershed, as

are cutblocks from forestry quotas. AWA is concerned that further land disturbance and watercourse sedimentation will be enabled by approving this water diversion application as part of the Duvernay PBR pilot, which will likely harm important fish species populations in the Little Smoky watershed.

The 2014 Alberta government Fish Sustainability Index (FSI) ratings combined scientific and local knowledge to assess the health and habitat protection needs of several Alberta fish species at the level of Alberta tertiary watersheds (in the Water Survey of Canada designation), which is the scale of the Little Smoky watershed. Arctic grayling have been assessed by Alberta's Endangered Species Conservation Committee (ESCC) as a Species of Special Concern, that is, without human intervention Arctic grayling may soon be threatened with extinction. According to the Alberta government FSI, whereas 12 Alberta (tertiary) watersheds had 'very high' Arctic grayling adult density historically, the Little Smoky is one of only two watersheds left in Alberta with 'very high' current adult density. It is the only upper Peace watershed left in Alberta with 'very high' current adult density. The FSI ranked the Little Smoky as needing moderate Arctic grayling overharvest protection and high habitat protection. The current approach to the Duvernay pilot PBR will not provide Arctic grayling with the needed habitat protection, and on that basis, this application should be denied.

Western Arctic populations of bull trout, which includes BC-Alberta's Peace River population and NWT and Yukon populations, were assessed in November 2012 by the Committee on the Status of Endangered Wildlife in Canada ("COSEWIC") as 'Special Concern'. COSEWIC consists of scientist advisors to the federal government under the *Species at Risk Act*. In July 2014, Alberta changed its bull trout listing from 'Species of Special Concern' to 'Threatened'. According to the Alberta government 2014 FSI, parts of the Little Smoky watershed had 'moderate' bull trout adult density historically, and now have 'very low' current adult density. The FSI ranked the Little Smoky as needing moderate bull trout overharvest protection and moderate habitat protection. The current approach to the Duvernay pilot PBR will not provide bull trout with the needed habitat protection, and on that basis, this application should be denied.

- **Unresolved longstanding footprint disturbance in caribou range in the wider Duvernay play-based region**

AWA understands that the proposed Point of Use Area for the diverted water in this application is one or more townships to the east of the Little Smoky caribou range. However, as yet there is no range plan in place to reduce industrial footprint to below 35% within that caribou range, as mandated by the 2012 federal boreal woodland caribou recovery strategy. Environment Canada reported 95% habitat disturbance in the Little Smoky range in 2011, and anthropogenic footprint in that range has continued to increase since then. This is contrary to the Alberta woodland caribou policy and the federal recovery strategy, both of which have the goal of achieving naturally sustaining caribou populations where they currently exist.

AWA is concerned that the Alberta Energy Regulator has commenced the Duvernay pilot play-based regulation (PBR) approach without setting cumulative limits on surface disturbance that are urgently required for recovery of endangered woodland caribou populations. Shell is one of the companies with multiple petroleum and natural gas tenure holdings within the Little Smoky caribou range. The current

approach to the Duvernay pilot PBR will not provide endangered woodland caribou with urgently needed habitat protection, and on that basis, this application should be denied.

Outcome of the Application

AWA respectfully requests that this application be denied until the concerns above can be resolved.

Contact Information

The contact information for this Statement of Concern is: Carolyn Campbell, Conservation Specialist, Alberta Wilderness Association. Address and telephone number is: 455 12 St. NW, Calgary, AB T2N 1Y9, 403-283-2025. E-mail address is: ccampbell@abwild.ca

Thank you for considering these comments.

Sincerely,
ALBERTA WILDERNESS ASSOCIATION

A handwritten signature in black ink that reads "Carolyn Campbell". The signature is written in a cursive style and is underlined with a single horizontal line.

Carolyn Campbell, Conservation Specialist