



**Forest  
Practices  
Board**

## **Forest Management and Domestic Water Use near Princess Creek**

---

**FPB/IRC/157**

October 2009

# Table of Contents

---

<b>The Complaint</b> .....	<b>1</b>
Background.....	1
<b>Discussion</b> .....	<b>2</b>
<b>Board Commentary</b> .....	<b>5</b>

# The Complaint

---

On March 19, 2009, the Ainsworth Community Water Users (the complainants) submitted a complaint about Meadow Creek Cedar Ltd. (the licensee) and its site plans for cutting permit 281 in the Princess Creek watershed. The complainants were concerned with the licensee's interpretation of, and approach to, managing impacts to domestic watersheds as stipulated by the Kootenay Boundary Higher Level Plan Order. The complainants do not own or use water intakes on Princess Creek.

Specifically, the complainants disagreed with the licensee's decision to not carry out a hydrological assessment of the whole Princess Creek watershed. In the complainants' view, a complete hydrological assessment of the watershed was required, due to the presence of karst geology and impacts to water quality caused by previous development. They maintain that the licensee committed to an assessment in its forest stewardship plan (FSP). The complainants request that a detailed hydrological assessment of the watershed be completed by a qualified professional before any further development takes place.

## Background

The licensee's FSP was approved on November 15, 2007. In February 2009, the licensee submitted cutting permit 281 (CP 281) for approval. Three cutblocks contained in CP 281 are located within the drainage area of Princess Creek, which has two unlicensed domestic water intakes on it. Block 1 is 40.5 hectares, block 3A is 16.7 hectares and block 3B is 1.8 hectares. According to the FSP, the three cutblocks were to be harvested using an irregular shelterwood silviculture system. Harvesting would remove approximately 40 percent of the existing trees.<sup>1</sup> Road construction was limited, as the licensee was using old mining and logging roads.

The complainants assert that the licensee never assessed the existing condition of the watershed or the potential impact from the proposed harvesting. One of the complainants' key concerns was potential changes to 'peak flows'.

The amount of clearcut area in a watershed is linked to peak flow in streams. Snowpack in clearcuts accumulates to greater depths than in forested areas because of the loss of tree canopy interception. In the spring, the snowpack melts more rapidly in clearcuts because of the lack of shade. Depending on the amount of clearing, the net effect can be higher peak flows occurring earlier in the season, compared to a mature forest. With partial cutting systems, however, the remaining forest cover can moderate hydrological impacts.

---

<sup>1</sup> Prescribed using basal area.

## Discussion

---

The complainants assert that a “complete hydrological assessment” was not carried out as stipulated in the FSP. The Board examined whether the licensee’s site plans were required to meet the FSP strategies for consumptive use streams consistent with the Kootenay Boundary Higher Level Plan Order.

### *What did the Kootenay Boundary Higher Level Plan Order require for consumptive use streams?*

The FSP is subject to the October 6, 2002, Kootenay Boundary Higher Level Plan Order (the Order). The Order established resource management zones and objectives as a higher level plan under the *Forest Practices Code of British Columbia Act* (Code Act).

In this case, the Princess Creek watershed is located within the Kootenay Boundary Land Use Plan area that is subject to additional requirements for forest harvesting in and around consumptive use streams (domestic water intakes).

The Order states that, for consumptive use streams, several management provisions apply to S5 and S6 streams.<sup>2</sup> Section 6 of the Order addresses consumptive use streams and requires that there be streamside management zones. Within those management zones, there are specific measures to safeguard water licensed for human consumption. The requirement is a 30-metre management zone along streams with licensed intakes.

The Order requires specific measures to safeguard domestic water only in the streamside management zones and only for streams that have licensed water intakes. In the Board’s opinion, the Order does not directly require any specific type of hydrological assessment.

### *What did the licensee include in its forest stewardship plan to address consumptive use streams?*

The licensee’s FSP contains four strategies to address the Order’s objectives for consumptive use streams.

First, the licensee said it would engage qualified professionals to assess and establish specific measures to safeguard water quality and quantity. The licensee also said it would field locate points of diversion prior to conducting forest activities.

---

<sup>2</sup> The *Forest Planning and Practices Regulation* classifies streams and defines riparian management areas. Riparian management areas consist of a management zone, and, for fish streams of 1.5 metres in width or greater, a riparian reserve zone. Outside of community watersheds a stream that is greater than three metres is an S5 stream and a stream that is less than three metres is an S6. Constraints to forest practices are applied within these zones.

The second strategy was that a qualified professional would ensure that all primary forest activities were conducted in a manner consistent with the specific measures outlined in the assessment.

Third, the licensee said it would provide licensed water users with the opportunity to comment on proposed operations and that it would consider those comments in the operational plans.

Last, the licensee said it would link ground practices back to the riparian management strategy.

*Do the site plans address the requirements for consumptive use streams?*

With regard to the first strategy, the complainants have interpreted the word 'assess' to mean a formal, standardized process of assessment done by a qualified professional; in this case a hydrologist. Because this did not occur, the complainants maintain that the licensee did not live up to its commitment to formally assess the whole Princess Creek watershed.

The licensee does not have a separate document as an assessment. While an assessment of the field conditions may have been completed, the licensee cannot point to a stand-alone document that details the work. The licensee told the Board that it assessed the site through its field work and that its site plans contained this assessment, as well as specific measures resulting from both its field and office work. The field work included digging soil pits; examining streams in the block; identifying catchment areas, underground water flow, and wetlands; and examining stream crossing sites.

The licensee stated that the harvesting would have minimal impact on hydrological processes largely because the three cutblocks would not require any new road construction, as the areas had been previously logged. The licensee would upgrade the existing roads and add water bars to trails where needed and, as a result, there would be no blading or new skid trails that might disrupt natural drainage patterns. The licensee also noted that there were no areas identified with terrain stability issues.

The site plans stated that harvesting would leave elements of the existing stand structure, namely, healthy trees, in all layers. The plans also prescribed measures to safeguard water quality and quantity within the riparian zones. The licensee stated that they recorded and mapped the location of the creek and depressions which might indicate the presence of underground streams, and all three site plans stated that use of existing roads would reduce sediment delivery to streams.

Karst features were discussed in the site plan for block 1, which is located off of Cody Caves Road<sup>3</sup> and is 40.5 hectares in size. The licensee stated that no karst surface features were

---

<sup>3</sup> Cody Caves Provincial Park is located off of the Cody Caves Road. The park's focus is the preservation of karst features, namely a cave system and an underground stream flowing through ancient limestone formations.

identified. While the site plan noted that there were no stream channels in the block; special note was made of a suspected karst-influenced underground stream at the northeast corner of the block.

Under the *Forest and Range Practices Act* (FRPA), government can make orders that protect karst features as “resource features” using the *Government Actions Regulation*. Once identified in such orders, the *Forest Planning and Practices Regulation* requires that a person carrying out harvesting, silviculture or road construction, or maintenance, ensure that those practices do not “damage or render ineffective” resource features. In this case, the government had not identified any karst as a resource feature in the cutblocks, so there was no requirement under the *Forest Planning and Practices Regulation* that applied.

The riparian management strategy for block 1 stated that, if site conditions dictated, or if suitable winter conditions did not exist, temporary skid bridges would be placed in areas suspected of having underground water sources. The skid bridges would be constructed from logs and woody debris placed above ground so as to create minimal soil disturbance. The riparian strategies also stated that, if possible, the licensee would fall and skid away from areas suspected of having underground watercourses, and that it would retain all deciduous and understory trees in areas suspected of having intermittent seasonal water or potential underground watercourses.

Further, the site plan’s management strategies for temporary access structures indicate that designated winter skid bridges would be built where required at the northeast end of block 1 in order to protect an identified underground stream channel. The site plan stated that the bridges would consist of logging debris and snow and would be removed when no longer needed. Lastly, the site plan for block 1 stated there would be no construction of bladed or excavated trails at all.

The Board finds that the Order and corresponding FSP strategies for consumptive streams do not apply to the Princess Creek cutblocks. The licensee was not obligated to apply the strategies for consumptive water streams to the intakes on Princess Creek as the intakes were not licensed points of diversion. Even though the site plans contained measures to address water quality and quantity, the licensee was not obligated under the FRPA to do so.

## Board Commentary

---

At the core of this investigation is the public expectations created by how domestic watersheds were treated under the former Forest Practices Code and the evolving land use plans versus how consumptive use streams are now addressed under the *Forest and Range Practices Act*.

In this case, the complainants expected detailed watershed assessments as part of forest development planning. The basis for that expectation can be found in the 1997 *Implementation Strategy* (I-strategy) for the Kootenay Boundary Land Use Plan (KBLUP).

The I-strategy was a policy developed for licensees to consider in their forest development planning. It provided detailed guidelines for assessing forest development impacts on domestic watersheds, as well as measures that might be appropriate in the forest development plans. These guidelines varied according to watershed class and would have included watersheds as small as Princess Creek, provided that the water intakes were licensed.

However, the Code-based I-strategy is not applicable under the *Forest and Range Practices Act* (FRPA). Instead, under FRPA, licensees must ensure that forest stewardship plans are consistent with the KBLUP Order that stipulates an objective for consumptive use streams.

The KBLUP Order requires licensees to prescribe measures for protection of the riparian management zones of consumptive use streams. Specifically the order requires that there be streamside management zones and that there are specific measures prescribed to safeguard water licensed for human consumption. The zones are limited to 30 metres along streams. The order does not require any type of hydrologic assessment to support or explain the measures that are prescribed to safeguard drinking water. Importantly in this case, under the order, if a stream does not have licensed water intakes, then the licensee is not required to prescribe the measures.

The complainants believe that the presence of karst geology and past harvesting and mining operations, require that proposed forest development be assessed for impacts to hydrology and apply to creeks with either licensed or unlicensed water intakes. In their view such assessments include examination of a watershed as a whole and not just examination of the 30-metre area along streams. The former I-strategy provided detailed guidance on how to consider forest harvesting impacts on domestic watersheds.

With an increasing number of cutting permits being proposed by the licensee in the Ainsworth area, the complainants are concerned with the potential risks to drinking water posed by harvesting.

During the investigation, both the licensee and Ministry of Forests and Range agreed that, given the complainants' concerns, the licensee's FSP needed to be written more clearly. The licensee

told the Board that it would amend its FSP to clarify the proposed measures to address consumptive use streams.

This complaint highlights how FRPA does not directly address the potential impacts of forestry operations on domestic water. FRPA objectives for drinking water apply only in “community watersheds”, not in domestic watersheds or consumptive use streams. In the Board’s view, sound forest practices require consideration of the potential impacts of forest development on drinking water, something the licensee has committed to doing.