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CROSSING THE LINE: A DIVIDED WATERSHED

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Crossing the Line: A Divided Watershed

Chairperson: Ray Ekness

Abstract Content:

Montana's Lake Koocanusa sits at the end of a river system that drains Canada's most productive coal country. Today, the waters of the massive lake contain a mineral called selenium, a poorly understood byproduct of mine waste. This summer, the U.S. federal government will be in a position to declare that the selenium in the lake puts Canada in violation of its international treaty with the U.S. The Montana government, however, is preparing to argue otherwise through its own water analysis. The disagreement has U.S. ecologists frustrated with the state's position, saying they won't practice science that is slave to a preordained policy outcome. A recent report from the British Columbia Auditor General called out provincial mine regulators for failing to comply with environmental regulations over the past decade, supporting scientists' assertion that the watershed north of Koocanusa is severely in peril. The issue highlights the ways in which scientists and governments succeed or fail to find common ground in creating science-based policy, and raises the question of how to protect the health of a watershed that flows through two countries.

Crossing the Line: A watershed divided

By Celia Talbot Tobin



Montana's Lake Koochanusa sits at the end of a river system that drains Canada's most productive coal country. Today, the waters of the massive lake contain a mineral called selenium, a poorly understood byproduct of mine waste. This summer, the U.S. federal government will be in a position to declare that the selenium in the lake puts Canada in violation of its international treaty with the U.S. The Montana government, however, is preparing to argue otherwise through its own analysis of the lake.

A group of top U.S. ecologists are frustrated with the state's position and say they won't practice science that is slave to a preordained policy outcome. At a meeting in early May, the group affirmed they would break from the state's goals of focusing sharply on selenium sensitivity in the U.S. end of the lake and move forward on a separate track, pursuing science at an ecosystem level, irrespective of national borders.

Opening the meeting, Ric Hauer, an ecologist and limnologist with the University of Montana, welcomed gathered scientists, regulators and stakeholders to the meeting on Flathead Lake. He laid out the day's primary goal: to open up dialogue on an ecosystem under threat.

"The purpose is not to directly control policy. But it becomes a problem whenever policy is driving the science," said Hauer. "Science has to operate in an effort in seeking the truth. Period."

While the state pursues an analysis of Koocanusa's water quality, Hauer plans to extend the scope of any parallel research upstream into the Kootenai and Elk Rivers in British Columbia, where five massive coal mines supply a third of the world's steel-making coal. The list of unknowns is far greater when the rivers are taking into consideration. It's a project he joked they might call "Ecosystems Without Borders."

"What they're doing is highly prescriptive. It is very controlled, and it's very tidy. This --" Hauer said, pointing to a white board overflowing with scribbled unknowns and research questions, "This is going to get very, very messy."

Selenium is a naturally occurring mineral that animals, including humans, need in tiny amounts to support healthy metabolism. But mining and other industrial practices can cause selenium to accumulate to dangerously high levels in the environment. The widespread effect of selenium concentration in an ecosystem is poorly understood. But it's grotesque and deadly, capable of derailing reproduction in fish, aquatic birds, amphibians and insects.

Fish are considered the most sensitive and are a point of concern in Koocanusa. As the mineral accumulates in their bodies, fish become so malformed they cannot survive; their eggs so contaminated their offspring die. Waterfowl that eat the fish are similarly affected. Some plants also take up selenium, and herbivores that eat such plants may be poisoned. Scientists argue the ecosystem-wide reverberations of selenium contamination are so poorly understood that tight, preemptive regulation and continued thorough research are vitally important.

Clint Muhlfeld, an aquatic ecologist with the U.S. Geological Survey who often works with Hauer, said among the many unknowns is how selenium might affect human health through consumption.

"These kind of complex questions, there is no data on this stuff," Muhlfeld said. "And that's what we need, we need a more comprehensive evaluation of this problem."

If all goes as expected, the U.S. Environmental Protection Agency will greatly reduce the allowable limit for selenium in American waterways sometime this summer. But states are not required to strictly meet that standard, and Montana has indicated it will not until a further evaluation is done to determine what Lake Koocanusa specifically can absorb.

The fight over selenium levels in Lake Koocanusa is more than just another power struggle between state and federal regulators. The lake spans the U.S.-Canadian border, which brings treaty obligations into the mix. The lake also connects the state of Montana to the province of British Columbia, both of which are traditional seats of influence for the currently beleaguered coal industry.

As the U.S. federal government takes steps toward tighter pollution controls, British Columbia has granted permits to expand four out of the five coal mines in the Elk Valley, setting the stage for more waste rock and more selenium.

In May, the British Columbia Auditor General called out provincial mine regulators for failing to comply with environmental regulations over the past decade, supporting scientists' assertion that the watershed

north of Koochanusa is severely in peril. The two-year report states that neither British Columbia's Ministry of Energy and Mines, nor the Ministry of Environment, have effectively evaluated or enforced their own mine regulations.

Usually, when rivers and lakes cross the 49th parallel north, a joint U.S.-Canadian group – the International Joint Commission -- is invited by both countries to help negotiate how the waterways will be used and regulated. One goal of the negotiations is to prevent pollution from the upstream country from contaminating the water in the downstream country, a requirement of a 1909 boundary treaty between the countries.

But in the case of Lake Koochanusa, the Canadian government has deferred to British Columbia and refused to join a request to involve the International Joint Commission. Instead, British Columbia and Montana have set up their own working group, one that gives Canada's largest coal producer -- Teck Resources Ltd -- a seat at the table. They've also agreed to focus solely on regulating selenium in Lake Koochanusa, not the river that feeds into it, nor the mine waste that all agree is the source of much of the mineral.

Scientists say this gives coal too much say in setting the standard for a pollutant they have long struggled to control.

Erin Sexton, a senior scientist and research colleague of Hauer's, said allowing Teck to have a voice in setting levels is a distortion of the regulatory process, something that is also occurring in BC's own water management discussions north of the border.

"We're having two separate meetings to talk about the same water," she said. "And the only people who are dually represented at those tables is Teck Coal and the province of BC. Which is completely suspicious."

It is a plan that Muhlfeld said will doom Canada's watersheds and the lake it feeds.

"The Elk and Kootenay might be a sacrificial lamb," he said, acknowledging the messy political road ahead and the powerful grip of the coal industry.

Eric Urban, chief of the Water Quality Planning Bureau at Montana's Department of Environmental Quality, said the state is one of the national leaders on reducing nutrient pollution.

"So there's little to no chance that we would ignore the subject," he said. It is unfortunate, he said, that scientists have criticized the state for taking too narrow an approach, "Because really, nothing's off the table."

Early research by Hauer revealed tremendously elevated nitrogen and sulfate levels in the waters below the mines as well.

Urban said that through monitoring and treating for selenium as necessary, any other pollutants would likely also be covered by the process.

“So the question is, is it of value to invest in nutrient research if you’re going to inform the end product without it?” he said.

Scientists believe it is, and insist that limiting studies to Koochanusa and not looking at the entire ecosystem upstream is unsound science.

“You read anything about evaluating watershed health, and that’s just what you do,” Muhlfeld said. “It’s a system of systems. It’s like the human body, everything is interconnected.”

Earlier, Urban explained that the state was at the table because there are obvious concerns for water quality. “But we’re not at the table because there *is* an issue,” he said. “We don’t know if there is or isn’t at this point.”

The newly released audit report makes clear, however, that river waters just 40 miles north of the boundary are indeed considered an issue. The audit sharply criticizes the Ministry of Environment for failing to publicly disclose the risks associated with coal mines in the Elk River valley.

“Lack of sufficient and effective regulatory oversight and action by MoE to address known environmental issues has allowed degradation of water quality in the Elk Valley,” the report states. “... MoE has been monitoring selenium levels in the Elk Valley and over that time has noted dramatic annual increases of selenium in the watershed’s tributaries. MoE tracked this worsening trend, but took no substantive action to change it.”

The political messiness of the regulator-scientist relationship on both sides of the border can make the situation seem purely bureaucratic and removed from reality. But the audit report makes clear the transboundary issue is concrete and urgent.

Like selenium itself, this sense of urgency is accumulating in the hearts and minds of the people north of the border who make a living directly from the rivers.

Paul Samycia looked anything but conflicted in March as he expertly wielded the oars and coached the boat’s other occupant, a college-aged angler who had never fished on moving water before. Samycia owns Elk River Guiding Company and is one of a handful of fly fishing outfitters in the small town of Fernie, British Columbia. Nearby, anglers in another drift boat also plied the water. Between the two groups, casting and catching assumed a rhythmic repetition: the line tightened and struggling westslope cutthroat trout were reeled in and unhooked. They looked healthy enough.

The eight-mile stretch of bright teal water had offered up roughly six dozen fish by the end of the last spring day of open fishing on the Elk River before it closed down for two and half months for spawning

season. Its waters meander through the mountainous southeast corner of British Columbia. In the fullness of summer, the surrounding valley flaunts a cloak of deep emeralds and cloudy sapphire blues, a cool chromatic spectrum that offsets the heat. For decades, the area has been lauded as one of the continent's most fruitful ecosystems for fly fishing.

Rounding a bend in the river, a train wailed, chugging sluggishly along the river's edge. Samycia steered through a strong current with the effortlessness of someone who's been doing this for decades. He counted the train as the fourth seen or heard that day on the river. This one was filled with grain, giant wheat illustrations on the paint-chipped cars. But more often than not, they're teeming with coal.

The train recalled Samycia's musing earlier: "I'm just waiting for the day that there's the disaster along the rail line where something gets dumped in the river and it's a catastrophic instant event."

Like the vocal scientists south of the border, Samycia is disheartened by the lack of comprehensive action to address what he sees as a potentially huge problem. He rarely speaks in absolutes, preferring instead to convey his philosophies in the form of analogies. He's sympathetic toward the economic importance of the mining companies in the valley. He feels about mining the way many Canadians tend to: that the companies will "do the right thing."

The legacy industry Teck represents is single-handedly the reason the valley was settled more than a century ago. Each town along the river depends on mining. But many jobs, including Samycia's, are threatened by it.

"I have a young family, and I'm looking at ways to exit my business and not give it to my children," Samycia said. "Fishing can be their passion or pastime. But it's not an industry that I would recommend them to get into, especially here. We don't know what it's going to do."

Ten miles upstream from where Samycia had put-in is a massive crater. Sixty years ago it was a mountaintop. In 2015, more than seven million tons of coal were mined from its exposed seams. It's one of Teck's five open pit mines perched above the Elk River. Fifty miles to the south, the same water crosses the border into the U.S.

Several years ago, Hauer and Sexton conducted a study that confirmed the Elk River is more polluted than had been previously assumed, due to the chemical runoff from waste rock that's removed to access the coal below it.

After Hauer's report was published in 2013, Teck began speaking openly about the state of the river, saying the company had known the condition of the water quality for a while. Some believe the paper's publication essentially forced the company to show their hand.

It can seem incongruous that below the valley's tranquil wilderness, veins of sedimentary rock stretch for miles, powering a billion-dollar industry. The Elk Valley is the largest producing coalfield in the largest coal province in Canada. In 2012, British Columbia generated 43 percent of the coal in a nation that currently ranks sixth in the world in coal production. Most of that is found here in the Elk Valley, where

metallurgical coal is mined for the production of steel. As the world's second-largest exporter of steel-making coal, Teck brought in \$3.05 billion in revenue in 2015 from their mines in British Columbia, (which includes one site not in the Elk Valley.) Almost all of that coking coal – which is an ingredient as well as an energy source goes directly to China, where it's made into steel.

Fording River mine is the largest and furthest upstream of the five. Its processing plant hovers on the bank of a river of the same name, one of the Elk's bigger tributaries. The Fording is closed to fishing, now, but many fishing guides recall with reverence and a quiet grief the days when it was an angler's heaven.

On the eve of the longest day of the year, Samycia flipped burgers on a grill behind his fly shop. Musty pink skies didn't fade until well past 10 pm. Guides, employees and family members cracked beers by a pit fire in the parking lot. They examined sunburns, swapped trophy stories and waxed nostalgic for the years "before it got bad," when it was impossible to leave the upper Fording River empty-handed.

Samycia's first experience fishing in the Elk Valley was on the Fording. He described a drinking game he and his friends used to play on the tributary when they would casually hike up the river, wives and girlfriends tagging along.

"You got a cast, and if you caught a fish, the other guys had to drink. If you missed a fish you had to drink," Samycia said. "That was my epiphany of 'The fly fishing here is just insane.' It was *that* good."

He delivered the punch line wistfully and without missing a beat: "The girls had to drive us home."

The upper Fording River closed to anglers in 2010, due to a dramatic decline in fish and selenium levels that have reached up to 30 times the allowable number in U.S. waters. With zero irony, locals sometimes casually refer to it as "the sacrifice zone."

In 2012, Environment Canada -- Canada's version of the EPA -- collected Fording River samples and hired a selenium expert to evaluate the findings. That report has since become integral both in science's understanding of selenium and an ongoing lawsuit Environment Canada has pursued against Teck Coal.

As a key witness in the lawsuit, Dr. Dennis Lemley is forbidden from speaking to the media. But his report states there is increasing evidence of fish mortality and "deformities, particularly the teratogenic skeletal and craniofacial deformities that are biomarkers of selenium poisoning."

In layman terms, the most common deformities are trout with missing gill plates. Samycia and other anglers are reeling in fish, mostly westslope cutthroat trout, with gaping holes in the side of their face where the gill cover should be. Samycia says he's found more and more of them throughout the years, and he documents most of them with his camera.

Some fish, Lemley's report states, are hatching with skull and jaw deformities so severe they can't feed.

What Lemley's report doesn't articulate is that many of these populations, especially westslope cutthroat trout, move back and forth between the Elk, where they spawn, and Lake Koocanusa. Deformed fish don't know borders.

The U.S.-Canadian boundary cuts the 90-miles of Koocanusa almost in half. In July of 2015, David Naftz, a research hydrologist with the U.S. Geological Survey, steered a small aluminum skiff over the international line as if it wasn't there. There was nothing to indicate the boundary of two nations. The water ahead was the same bright teal as the water behind. Naftz slowly lowered a water quality sonde - a computerized sensor resembling an oversized relay baton to the bottom of the reservoir, more than 100 feet below. Water lapped lightly up the sides of the boat, creating echoed, tinny slurping noises.

The Elk and Kootenai waters slow down significantly when passing through Koocanusa, which was created by the construction of the Libby Dam in 1975. At the southern end, they continue downstream beyond the dam into the Kootenai River in Montana and Idaho.

Naftz was soft-spoken and wearing a loud neon orange life jacket that read "USGS." He said that Koocanusa, with its stiller waters, could be the most sensitive part of the ecosystem and its assessment was coming late in the process, for his liking.

Though Teck Resources and BC knew for years the river was polluted, the lake had rarely been mentioned throughout the years, Naftz said.

"They [BC] feel like it's outside of their area of responsibility to assess the impacts to the reservoir," he said, gathering in the slack rope from the sonde.

The water quality sensor Naftz used on the lake collects data every two seconds as it descends to the bottom, a process he repeated in three different locations. It was his fourth of six collection trips that summer on the lake. The data from the sensor, as well as sediment samples, would be passed on to both Montana DEQ and the EPA to as part of DEQ's initial assessment in working toward the creation of site-specific selenium standard for the lake.

At the same time Naftz was testing the lake, the EPA had put its new guidelines for selenium sensitivity in American waters out for public comment. The standards will lower the nationally suggested threshold for the mineral. They will also, for the first time, create a different limit for rivers than for lakes. The suggested limit for rivers in the U.S. will move from 5 micrograms per liter to 3.1. For lakes, the new limit will be 1.2. Current levels in Koocanusa hover around 1.8 micrograms and everyone expects that to rise as mining in the Elk increases.

The new lake standard very little wiggle room, given that 2 micrograms has been considered the protective number on the lake, Naftz said.

"That's just high," he said. "And when you think of the water volumes that go in here, the potential for dilution. And you're still seeing this much selenium?"

Dilution has so far been the only solution considered upstream on the Elk. After Hauer and Sexton's study was published, the British Columbian government ordered Teck to openly address water quality issues in the Elk and share its plan to do so. The eventual outcome was the Elk Valley Water Quality Plan, which was approved in November 2014. The recent audit result found the goals of the plan wanting.

"We examined the Line Creek Expansion Permit, the Area-Based Management Plan and the Area-Based Management Permit (Valley Permit) to understand how they support MoE's responsibility to minimize risks to the environment. We found that these documents do not address several risks..." the audit states.

Under the plan, Teck pledged to build six water treatment facilities, which they've since adjusted to five and built just one. The first went online in 2014. Its process is essentially one of dilution.

Naftz wasn't entirely convinced it would be an effective process in the long run. He said that while water treatment plants are built all the time, he had never heard of it being done at the scale of what Teck proposed.

Additionally, because the source of selenium is waste rock that never goes away, the plants must work in perpetuity, something the audit points out as an "economic liability."

"And when coal mining does go away in the next 50 to 100 years, where's the money going to come from to keep those plants going?" Naftz said. "We are -- the U.S., Montana -- at the receiving arm. We're going to get the shit when it comes."

Teck has also promised to meet specific short-, medium- and long-term goals to lower selenium levels in the river. The company has water monitoring stations -- in place before the plan was enacted -- that are spaced along the length of the river from the northernmost mine down to the international boundary. Each station has its own selenium goal, with the lowest number closest to the border and the highest allowance immediately downstream of the mines.

Where the U.S. and Montana governments are concerned, the most relevant part of Teck's plan is its pledge to ensure that water crossing the international border will continue to meet a target goal of 2 micrograms per liter.

Scientists like Sexton don't see how that's possible given that four out of the five mines have received permits from the British Columbia government to expand.

"They call them 'expansions,' but they're not," Sexton said. "Their footprint is equivalent to an entirely new mine."

Teck's water management plan may be a step in the right direction, Sexton said, but the 2-microgram count at the boundary doesn't go far enough, especially in light of mine expansions moving forward.

“They gave themselves permission to keep the water quality where it is, which is a kind of backwards way of doing things,” Sexton said. “I just think there should be a moratorium on the mine expansions. We’re continuing to exacerbate the impact in the watershed without fully knowing what the impacts are. The cart was before the horse decades ago.”

British Columbia’s audit supports this by not only pointing to the potential violation of the 1909 treaty in Kootenai, but by stating that Teck’s management plan fails to apply what is known in science as the precautionary principle.

“The proposed targets over the next seven years show a reduction in selenium, but are still significantly higher than current concentrations creating a high risk of further environmental impacts. The ministry has not disclosed these risks to legislators and the public,” the auditor general writes.

If the site-specific data collected by the Montana DEQ over the next few years indicates that Kootenai’s standards should be near to or the same as the EPA’s new suggestion of 1.2, Teck will likely be forced to re-adjust their plan. But, Sexton said, that’s years away. And in the meantime, the only actionable change will be the expansion of Teck’s mine operations.

The severity of the Elk Valley contamination was brought to light by a close look at an entirely different river with a very different story.

The study conducted by Hauer and Sexton that led to their selenium findings was a water quality assessment that compared the Elk to its neighbor to the east, the Flathead River. The two run roughly parallel to one another and they cross the border little more than 30 miles apart. Unlike the Elk, the Flathead’s watershed flows into the protected lands of Glacier National Park and has never in its history drained nearby mining operations.

Encouraged by Montana’s senators at the time and funded largely by the U.S. National Parks Service, Hauer and his team set up data collection sites up and downstream of a proposed Flathead mine, as well as up and downstream of the active Elk River mines. Because the two watersheds are so geologically and biologically similar, it’s possible to look at them as something like two points in time on a single river’s history; the Flathead as a pre-mining example, the Elk as the post. The study concluded that water quality in the two rivers was not only different, but that the Elk was more troubling than many people had realized.

The findings helped make a convincing argument to continue the Flathead’s protection after a moratorium on mining permits had expired. In the mid 80s, prompted by a coal mine proposal in the Flathead headwaters, the International Joint Commission had been brought in to conduct an assessment. The IJC concluded that it would be nearly impossible to mine without directly impacting the health of the watershed and fisheries downstream. Their recommendation against the permit effectively killed the proposal and left British Columbia unappeased. Part of that agreement included a pledge not to propose mining projects for the next 20 years. Hauer’s study was in part inspired by the expiration date of that moratorium.

People who favor IJC leadership on the Elk often point to the mine denial on the Flathead as reason British Columbia won't endorse the committee's involvement on the selenium issue on the Elk River and Lake Koochanusa.

The EPA made a push for IJC referral several years ago, but the Canadian federal government made it clear they would not support a reference if British Columbia was against it. Because both nations need to agree to involve the IJC, if one holds out, the other is left relatively powerless to force the matter.

"I think what makes this Koochanusa question pretty unique is that British Columbia is the only province that is really resisting references to the IJC," said Julie DalSoglio, director of Montana's EPA office. "In other transboundary watersheds across the rest of the continent, it's pretty much always involved."

DalSoglio said it's possible that with the grand scale of the British Columbian landscape, the province sees the Elk Valley as a drop in the bucket compared to the entirety of their resources.

"When you look at the history of B.C., they've basically been run by industry," she said.

DalSoglio has participated in every meeting Montana has held in working toward a site-specific water quality standard for Lake Koochanusa. She said that EPA supports Montana DEQ's creation of the Koochanusa Work Group, even if its direction hasn't gone completely as planned.

The group was originally intended to be led by two federal agencies -- the EPA and Environment Canada -- as well as the state and province. The four would collaborate together and pull in various groups -- such as independent scientists, local agencies and industry representatives -- to lay out a broad-term approach to addressing the watershed.

"That's really where we went off the rails last fall," DalSoglio said, several months after the group's first meeting in October 2015. "Montana and B.C. made the decision kind of on their own without dialogue with EPA or Environment Canada about really only wanting to focus on selenium standard-setting."

That decision to change course without federal consultation doesn't break any rules, because no other transboundary watershed group has completely excluded the IJC, DalSoglio said.

"We're plowing new territory here on a Canadian-U.S. international water body," DalSoglio said.

To a certain extent, the state's working group is filling the shoes of the IJC. British Columbia is a part of that group, and Montana DEQ officials emphasize that their approach is in strong partnership with the province.

But the IJC, when involved in watershed assessments, looks at the entire ecosystem on both sides of the border, something the state has said it won't do. Nor does the IJC invite the industry to have a seat at the table, as has been the case with Teck in the Koochanusa Work Group, Sexton said. The one thing that is

conspicuously missing from the current work group is exactly what the IJC provides: a third party mediator with authority.

Sexton said she found the coziness of state and the province unsettling. She said she is frustrated by hearing repeatedly that the Montana DEQ will not point the finger directly at British Columbia's mining as a source of the problem, which it emphatically says is beyond the state's jurisdiction. This is also, on a technical level, true.

"Which is just fine," Sexton said. "But it is the International Joint Commission's jurisdiction, and it is the EPA's jurisdiction. Which is why the rest of us are saying, 'Fine, you don't lead the process. Turn it over to the feds. Let them lead the process, let them be the 'bad guys.'"

Even with the parallel track that Hauer and other scientists have said they will take -- in essence, filling in the remaining gaps that IJC absence has left -- Sexton feels it all amounts to re-inventing the wheel.

"I think it's good to have the important science-based conversation," Sexton said after Hauer's science-first meeting in May. "I just think it's a shame that we have to build this structure from the ground up when we have an entity that could facilitate this for us."

The scientist-led meeting in May included representatives from the University of Montana, USGS, U.S. Fish and Wildlife Service, Montana Fish Wildlife and Parks, Army Corps of Engineers, as well as tribal and First Nation representatives and state, federal, and provincial regulators. Initiating a parallel track to Montana's process throughout the day seemed, to some extent, to quell the most immediate frustrations and fears of scientists and tribal leaders. Hauer said by the end of the day he felt like most of the scientists were slightly soothed by seeing an alternative path.

Sexton remains a long way off from putting her faith in the state, however.

"I think DEQ has their own ideas about what they'd like to see. And honestly I don't care as long as it's a transparent process," she said.

Sexton said she'd be suspicious of any plan the state comes out with unless it has the broad support of federal agencies.

"I want to hear that the US Fish and Wildlife service supports it, the U.S. EPA supports it, and the Army Corps of Engineers supports it, and that Montana Fish Wildlife and Parks supports it," Sexton said. "Because if DEQ puts forth the site-specific standard, I won't trust what they propose."

At the heart of Sexton's distrust is the relationship between Montana and British Columbia, something government regulators take pride in.

"Generally, we have an excellent working relationship with British Columbia," said Urban from Montana DEQ. "I hope to continue that." He repeated that several times.

Muhlfeld feels otherwise.

“In my opinion, this is an international issue and it should require the federal government to get involved and take the lead on this,” he said. “Because clearly the state is belittling the situation.”

Urban doesn't see it that way, and is proud of what the state has accomplished so far, saying when everyone's at the table, nationalities don't exist.

“I really believe that Canada will put the right requirements on the right sources, new or existing,” Urban said. “I'm an optimist.”

The May 2015 auditor general's report is the first time the province criticized its own regulatory and enforcements efforts in the Elk Valle in clear, unmistakable language.

A month before the audit's publication, Paul Samycia sat on a red cooler on the wide, rocky shore of the Elk River. It rushed past with the faintest hint of the winter runoff that was about to descend in the next few weeks.

“All the baselines and all the targets seem to be: What is the level of selenium crossing the border? As opposed to, say, What is the level of selenium coming out of the Fording River?” Samycia said. He adjusted his sunglasses, and looked out over the water. “Why are we not concerned about that? Why aren't we concerned about the levels of selenium in the river right here, flowing by my house or by my business or through my town?”

Samycia, who plans to run his outfitter in Fernie for as long as the fish are biting, finds the audit somewhat hopeful. If nothing else, it shows it's possible that in the embittered arguments between agencies and governments, held in sterile conference rooms far from the river's banks, the rich valley he calls home might not be completely forgotten.