

# Making Things

After high levels of PCBs in Lewistown hatchery, FWP agencies to tell it what to the local community's trust.

A few months ago, Don Skaar and I were driving through the scenic pastures and mountain foothills outside Lewistown. Beside us ran the twisting bends and sparkling riffles of Big Spring Creek, one of the finest trout streams in central Montana. At a new fishing access site, we passed an angler in waders picking through his fly box to match an emerging hatch.

In that moment, I noticed a slight smile cross Skaar's face. Skaar is chief of the Special Projects Bureau for the Montana Fish, Wildlife & Parks Fisheries Division. He asked me if anything appeared odd in the scene before us.

At first I didn't know what he meant. But by day's end I would grow to understand that Big Spring Creek has become a paradox of sorts, a stream as wonderful as ever, yet in some surprising ways a creek that has been markedly transformed.

## LOCAL PRIDE

A few miles southeast of Lewistown, Big Spring rises as a wondrous fountain-head. It erupts from the Madison lime-

stone formation in the foothills of the Big Snowy Mountains as one of the largest natural springs in the state, flowing at 50,000 gallons per minute. The pure water, a source of pride for the community, is piped straight into Lewistown homes.

By Todd Wilkinson

The artesian spring is also the headwaters of Big Spring Creek, which flows north through Lewistown to the Judith River, a tributary to the Missouri. The stream is home to a popular wild trout fishery.

Also at the creek's source, which produces reliable water flows and a near-constant water temperature of around 52 degrees, sits a historic, 93-year-old fish-rearing facility operated by FWP. Big Springs Trout Hatchery (the agency uses the plural) is Montana's largest coldwater fish production center. Up to two million fingerlings and young trout are raised here and planted in over 50 different waters across the state, including Canyon Ferry Reservoir, Fort Peck Reservoir, and community fishing ponds.

A century ago Big Spring Creek was treated like many waterways were—as a working river, with industrial activity lining its banks. During Lewistown's steady growth in the late 19th and early 20th centuries,

a railroad roundhouse, coal mine, oil refinery, and brewing plant were established at various times on a floodplain along the creek known as Brewery Flats. To make room for the development as well as a railroad line and highway, several miles of the stream were straightened and armored on both banks with riprap.

## CONTAMINATED FLOODPLAIN

In the late 1990s, FWP restored the original stream meanders along Brewery Flats, 2 miles upstream from Lewistown, and planted willows and sedges to naturally anchor the banks. Part of the restoration involved excavating and testing the mucky streambed soils, some of which revealed traces of known carcinogens called PCBs. An acronym for "polychlorinated biphenyls," PCBs were widely used throughout much of the 20th century in coolants for power transformers, in electrical component fire retardants, and for other uses. When PCBs were determined to be a toxic threat to human health in the 1970s, they were banned.

"After PCBs were detected in the vicinity of Brewery Flats, nobody was really surprised, given all the industrial activity that had gone on there before," Skaar said as we stood on the site.

# Right Again

FISHING SPRING CREEK NEAR BREWERY FLATS. PHOTO BY WILL JORDAN

**WHAT HAPPENED?** Clean enough to drink at its source, Big Spring Creek near Lewistown is central Montana's premier trout stream. When potentially harmful contaminants came from an unlikely source upstream, the community turned to FWP for answers.





**FOUNTAINHEAD** Built in 1922, FWP's Big Springs Trout Hatchery is set in a green oasis (left) surrounding the massive spring (above). Big Spring provides drinking water for Lewistown and water for the hatchery, which raises trout for stocking in lakes and reservoirs throughout Montana (though not in Big Spring Creek or other streams and rivers).



**CLEANUP CREWS** Once the Lewistown hatchery was determined as the PCB source, FWP contracted to have it and the creek downstream cleaned. Left: A notice warning anglers to release all fish on Big Spring Creek. Above: Crews removed all old paint and repainted contaminated raceways. Right: Vacuuming bottom sediment just downstream from the hatchery.



People were soon startled, however, by an unexpected discovery of PCBs nearby.

That find was made by a Lewistown fifth-grader named Isaac Opper. As part of a science project in 1997, the ten-year-old boy collected more than a dozen sediment samples along Big Spring Creek and sent them to labs for testing. When some of his samples from the creek upstream from Brewery Flats showed spikes in PCB levels, the boy's findings aroused attention. Contaminant levels should have been lower upstream from the abandoned industrial site, not higher. Isaac shared his news with the Montana Department of Environmental Quality (DEQ).

DEQ investigators visited the site over the next several years and corroborated the boy's discovery. In fact, as they moved upstream from Brewery Flats toward Big Spring itself, levels of PCB contamination in sediment samples grew increasingly higher.

Skaar will never forget the day in 2003 when a DEQ colleague phoned him at his office in Helena: "He said there's good news and some real bad news. The good news is that we believe we know where the PCBs are coming from. The bad news is that the contamination appears to be emanating from FWP's Big Springs Hatchery."

Skaar and his FWP colleagues, especially Jack Boyce, the hatchery's manager at the time, were stunned. "We had no idea where the PCBs were coming from," says Boyce,

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who retired in 2006. "We checked the fish food and it was clean. Then one of our guys Googled 'PCBs' and 'paint' on the Internet. That's when we saw reports on PCBs in paint used on ships' hulls and causing pollution in ocean harbors."

FWP had found the contaminants' source: the coatings used by workers years earlier to protect the hatchery's 30 raceways, inside tanks, floors, and walls. Scientists later learned that when the paint cracked and chipped with wear, in some cases turning into fine dust, some of it was flushed into Big Spring Creek whenever raceways were emptied for cleaning.

When FWP officials searched department records, they found that the paint came from Washington-based Columbia Paint & Coatings. The paint had been made more resilient and pliable with PCB ingredients manufactured by Monsanto.

Boyce says FWP crews had no idea they were applying a potentially hazardous substance to the hatchery raceways. Similar paints were used nationwide until the early 1970s to line municipal swimming pools and even community water tanks.

**SHOCK THEN RELIEF**

The news shocked Lewistown residents. Their biggest immediate concern: the municipal water supply. Was it even safe to turn on their faucets? People living along the creek also feared that

the stigma of PCB contamination might destroy property values. Area anglers wondered about the trout. "It's strange, but you take all of these things—the biggest being water quality—for granted until something like this happens," says Kevin Myhre, Lewistown city manager. "It was a shock and a wake-up call."

A collective sigh of relief came when public health officials revealed that the well collecting Big Spring water for municipal use was, by design, covered, secure, and PCB free.

The creek downstream from the hatchery, however, was another matter.

Scientists quickly deduced that PCB-contaminated paint particles and dust released from the hatchery had settled onto the creek floor and were being carried downstream for miles. The particles were ingested by aquatic insects that wild trout ate, which then accumulated in the fish.

Local citizens who either ate fish from

**BAD CANS** After PCBs were discovered emanating from its hatchery, FWP found that it had coated raceways with tainted paint from Columbia Paint & Coatings. Before PCBs were banned in the 1970s, paints were often made more resilient and pliable by adding the chemical compounds, manufactured by Monsanto.



TOP: LEFT TO RIGHT: JOSEPH JENKINS; MONTANA FWP; CRAIG & LIZ LARSON; MONTANA FWP; MUNGUS CONSTRUCTION

the creek, lived along it, or worked in the hatchery submitted blood tests to labs at the Centers for Disease Control. None showed elevated PCB levels.

Further examination found that fish raised in the hatchery and placed into Montana reservoirs and mountain lakes—no fish are stocked in Big Spring Creek or other streams or rivers—contained some PCBs. But the fish posed no health risk because they were too small when stocked to be caught and eaten

and, as they grew to catchable size, PCB levels became highly diluted. Still, as a precaution, FWP destroyed more than 700,000 fish that were in raceways lined with PCB-tainted paint. And public fishing in Big Spring Creek was made catch-and-release only.

Though the contamination was less than initially feared, FWP was still in the hot seat. "The evidence was clear," Skaar says. "We were responsible. People were understandably mad and upset, and you can't blame

them. They demanded to know how something like this could happen.

"We had lost public trust," Skaar adds. "We knew the only way to win it back was by admitting the mistake and fixing it."

Skaar says he and others in FWP's Fisheries Division agreed at once "that we could not sit back and wait for someone else—DEQ or EPA—to tell us what we needed to do. We took action."

So that remediation process was transparent, FWP formed a citizen advisory committee to review cleanup reports and provide public input. It was chaired by Lyle Gorman, a respected member of the community who represented creekside landowners. David Stuver, a longtime member of Trout Unlimited's Snowy Mountain Chapter, joined to represent sportsmen's interests.

In the wake of the water contamination revelations, legal actions followed. More than 200 streamside landowners filed a class action lawsuit. As part of a damage settlement, Monsanto agreed to pay the plaintiffs \$5 million, the state paid them \$650,000, and Columbia Paint & Coatings paid \$300,000. A second phase of litigation resulted in Monsanto paying \$5 million to the State of Montana, most of which has been used to cover the cost of the \$8 million cleanup and to purchase lands from willing sellers to provide more fishing and recreational access along Big Spring Creek.

**VACUUM, BUT SLOWLY**

Many potential fixes to the contaminated stream were considered. One of the options,

**BIG SPRING CREEK PCB CLEANUP** To no one's surprise, PCBs were discovered in the 1990s during the restoration of a stretch of Big Spring Creek along an old industrial site 2 miles upstream from Lewistown called Brewery Flats. But when a schoolboy later discovered higher concentrations of PCBs upstream from Brewery Flats, state and federal health officials became concerned and started investigating. It turned out the source was old PCB-contaminated paint lining the raceways of FWP's Big Springs Hatchery.

The sludge was drained in settling ponds and then trucked to a landfill near Great Falls.

MAP BY LUKE DURAN/MONTANA OUTDOORS  
PHOTO: MUNGUS CONSTRUCTION





**SILVER LINING** One bright spot in the PCB contamination saga was that FWP's Big Springs Trout Hatchery was revamped with new raceways, tanks, and other features that allow it to produce fish more efficiently and cost-effectively.

expensive and roundly rejected by stream-side residents and local anglers, was to divert Big Spring Creek into a temporary artificial channel, conduct intensive paint chip removal in the dry riverbed, then put the stream back in place.

The alternative that FWP advocated—one that Stuver says he initially opposed—was to slowly and methodically vacuum, or dredge, underwater contaminants from the streambed for 3 miles downstream from the hatchery where PCB levels were highest. Stuver says he initially feared that the process would remove all aquatic invertebrates and render the stream lifeless. But after FWP officials explained that only a small area of the stream would be dredged at one time, and that bugs would quickly recolonize vacuumed areas, he and others on the citizen's committee eventually agreed to the plan.

Over a period of three summers, an eight-person crew removed more than 1,500 tons of sediment downstream from the hatchery. The sludge was drained in settling ponds and trucked to a landfill near Great Falls, Skaar says. Approximately 95 percent of the PCBs have been removed from the most heavily contaminated stretch. The minor amounts that remain are below health advisory levels and will be encased by natural silt and remain deep within the streambed, Skaar adds.

In the hatchery, FWP removed all paint, replaced old raceways, and installed new tanks and other equipment. Jim Drissell, current hatchery manager, says that in addition to being PCB free, the hatchery "is now a far more efficient fish-rearing facility."

Trevor Selch, FWP's fisheries pollution biologist, was brought in to oversee stream health monitoring. For three years before the dredging began, Selch and his team collected samples of aquatic invertebrates downstream from the hatchery. Insect numbers and diversity served as a baseline for comparison after dredging was completed.

**“When this started, they looked us in the eye and said, ‘We’ll make it right again,’ and they did.”**

Results were promising. “In the post-dredging samples, aquatic organism diversity and total abundance were greater than before the cleanup,” Selch says.

Initially dubious of FWP's cleanup proposals, Stuver says today that the department did an admirable job. “I admit that I was skeptical and worried that any heavy-handed option like dredging would only make the problem worse,” he says. “But the department hung in there to see the cleanup through.”

**WORTH CELEBRATING**

Big Spring Creek has again become a natural emblem of Lewistown's high quality of life. Settlement money has contributed to creating a 20-mile-long recreation trail and six fishing access sites. The old Brewery Flats roundhouse is being converted into a nature center. Anglers scared off by the contaminant reports have returned. So have walkers, cyclists, and bird watchers.

Richard Opper, head of Montana Public Health and Human Services (and father of

the boy whose science project launched the PCB investigation), counts Big Spring as one of his favorite trout streams. To put the creek in perspective, he recounts a recent vacation in France, where he and his wife visited a village holding a festival honoring the river flowing through it. “Along the bank there were musicians playing, artists selling their wares, and restaurants serving up great food. It was a big deal,” Opper says. “But that river had nowhere near the water quality you find in Big Spring, out there in central Montana, the source of what could be the finest drinking water in the world. It's Lewistown's pride and joy. And today there's a self-sustaining wild trout population thriving in it. To me, that's something truly worth celebrating.”

City manager Myhre has his own take. “FWP has been a great partner to Lewistown for a long time, and, you know what, nobody is perfect,” he says. “When this started, they looked us in the eye and said, ‘We’ll make it right again,’ and they did. Not only that, there's more public appreciation for what Big Spring Creek represents to our town in ways that didn't exist before.”

All of which brings us back to the question that Skaar initially posed to me: “Is there anything that appears out of the ordinary along the banks of Big Spring Creek today?”

The answer is both “No” and “Yes.” Thanks to FWP's remediation and local residents' dedication, the stream is as scenic and as popular with anglers as ever. At the same time, though not visible to passersby, something extraordinary did occur at Big Spring Creek. After a scare in which they thought they'd lost it for good, a community that cherished its remarkably clean and pure trout stream learned to value it even more. 🐾

*Since 2014 and continuing for five years, FWP is sending sediment samples from various reaches of Big Spring Creek to labs for testing. If PCB levels in the samples are consistently below a federal safety maximum level, the EPA will determine whether to give the stream a clean bill of health. FWP officials say that the first tests, conducted last year, showed levels well below the EPA maximum.*



**BETTER THAN EVER** Twelve years after PCBs were first discovered coming from Big Springs Hatchery, nothing at the facility or along the stream appears out of the ordinary. Anglers continue to fish the crystal-clear water, lush with aquatic vegetation, and catch fat brown and rainbow trout. Cyclists and hikers are using new trails built with remediation money. Hatchery workers continue to produce trout for Canyon Ferry and other large reservoirs as well as ponds throughout the state. And Lewistown still boasts of having the purest spring water in the world. In many ways the town, the stream, the fishery, and the hatchery have never been better.



CLOCKWISE FROM TOP: LEFT, CRAIG & LIZ LARSON; STEVEN WAGLE; CRAIG & LIZ LARSON; WIKIPEDIA; MONTANA RURAL HEALTH INITIATIVE