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Mr. Chairmen and Members of the Subcommittees, thank you for the opportunity to testify today. My name is Roger Muggli. I am here today representing the Tongue and Yellowstone River Irrigation District, located in and around Miles City, Montana. This district consists of 9,400 acres of land that is irrigated with water diverted from the Tongue River, twelve miles south of Miles City.

I am also representing my family farm, Muggli Brothers Inc. I have been chairman of this operation for the past 12 years. The farm has 1,700 acres irrigated from the T&Y canal. We have also built a livestock feed plant that processes 14,000 tons of pellet type feed from alfalfa, barley, wheat, field peas, and corn for horse and cattle winter feed.

I am also representing Northern Plains Resource Council, a conservation and family agriculture group that organizes Montana citizens to protect water quality, family farms and ranches, and the unique quality of life we love in Montana.

I have lived in the Yellowstone River Valley near Miles City all my life.

My grandfather, Joseph Muggli, came here in 1925 and bought a 120-acre farm. In 1930, he bought another farm that consists of 400 acres. In 1932, he became active in the T&Y Irrigation District and was elected to the secretary/manager position. He was also one of the authors of the 1950 Yellowstone River Compact, which defines the percentage of water from the Yellowstone's tributaries that will go to North Dakota, Wyoming, and Montana. This document was hard fought. In 15 years, two commissions failed to reach the goal that was finally achieved when the compact was signed in 1950.

My father, Don Muggli, was elected secretary/manager in 1957 and served for many years as in this position. My father and grandfather had great engineering minds and built and rebuilt many structures on the canal system, such as flumes, siphons, and canal checks (water stops).

Many discussions I listened to as a kid between my father and grandfather centered around water quality and the effects of salts on crops and soil.

They worried me so much that I wondered if the farm could survive until I was old enough to have a shot at managing it and the Irrigation District. I am much older now and have a better understanding of soils and water related salts and some of the terminology that goes with all of this. I have come to realize that my father and grandfather were right about the threat of salts and

the impacts they have on the soils. Everyone who's lived in the Powder River Basin for long knows not to water their lawn with groundwater, much less use it on their crops.

At the age of five I was lucky enough to go with my grandfather some eighteen miles south of our farm to the diversion dam up on the Tongue River and check on all the related structures along the way. From then on, whether I was with my dad or grandpa, it was a learning experience. I had the privilege of going to the many fields on our farm that were flood irrigated from the big canal. I could run around and gather up the fish that entered the canal at the diversion dam and make a dash on my bicycle for the Yellowstone River to release them, sparing them from death in the field. As I got older, I tried to come up with several plans to somehow save the fish. The only plan I came with was to screen them from the canal in the first place.

As time passed, I came to have a burning need to do something positive for the fish that ended up in our fields. Actually doing something was difficult, as my father did not think saving the fish was worth the cost.

In fact, nobody in the irrigation district really supported this idea.

Everyone was afraid of the additional expense.

In 1987, I was elected manager of the T&Y. By then I had concept plans in hand and talked to every agency and organization I could find. From time to time, I would take a bucket with a few catfish or smallmouth bass, sauger or whatever the catch of the day was to the Fish and Game office and show them. Finally, they agreed there was a problem.

More time went by, months turned into years, and in 1999 we had completed a new inlet structure complete with a 90-foot fish louver, a fish bypass flume that will let the fish back into the river below the dam. The final stage of the project will be completed this year.

After all of this blood, sweat, and tears, after all the efforts we have made to make irrigation and the fish conservation compatible, we could lose both to decreased water quality from the discharge of wastewater from coal bed methane development in the Powder River Basin.

All for a short-term industry that is projected to be around for 20-30 years.

Coal bed methane is a gas trapped under water in coal seams. In order to extract this resource, developers must release the pressure from the coal seam by pumping massive quantities of water to the surface. In the Powder River Basin, the water from this process is safe for consumption by livestock and as drinking water, but creates a disaster for plants and aquatic life. The three problems associated with pumping this volume of water are the loss of the groundwater, the damage to the aquatic life and the damage to irrigated soils and crops.

Mr. Chairmen, in each of these areas, scientists independent of the CBM industry and the BLM have predicted that damages from produced water will be more widespread and more extreme than either the industry or the BLM will acknowledge. And, in each of these areas, the predictions of these independent scientists are being borne out.

First, groundwater. To put the quantity of water that we are addressing in perspective, the amount of groundwater currently discharged in the Powder River Basin from coal bed methane extraction is 38,339 acre-feet of water/year. This is enough water to sustain 345,000 people or more than 2.2 million head of cattle. This is well over a third of the population in Montana or 60% of the population of Washington, DC. And there are 2.6 million head of cattle in the entire state of Montana.

Pumping this quantity of water will drain aquifers used for drinking and stock water by 240 to 600 feet, with recharge taking over 100 years and possibly as long as1000 years. We really don't know how long it will take, but we do know that it will dry up valuable springs and wells. This water could be reinjected, but instead most of it is being dumped on the land or sent down the river never to be used again.

The second major problem with CBM produced water is the impact it can have on aquatic ecosystems. The main constituents of the wastewater that are harmful to aquatic life are sodium, magnesium and calcium. Studies have shown that an increase of these constituents our rivers will reduce reproductive rates of fish by as much as 94 to 96%. A recently released US Fish and Wildlife Service study found that excessive levels of these contaminants in water and tissue samples taken from fish and birds in the Powder River – levels associated with increases in deformities and reproductive damage. The fish cannot sustain this level of contamination.

Entire species could be wiped out by this change in water chemistry.

The third major problem associated with CBM produced water is its impacts on soil and crops. The majority of the soils on my farm and in the T & Y Irrigation District are largely made up of clay. Last June, a study sponsored by the EPA and conducted by the USDA's Salinity Lab of soil samples from our farm concluded that increased sodium, magnesium, and calcium imbalance would drastically lower the infiltration rate of water and air to the soil, limiting soil productivity and plant growth. In other words, discharges of CBM water into the Tongue River will ruin much of the soil located in my irrigation district, making our farms less productive.

Once again, we are seeing on the ground what independent scientists have predicted would occur. Last August, I irrigated 320 acres of my farm with water from the Tongue River. In September, there were several rain events which created an imbalance of sodium, calcium and magnesium in the soil and caused a dispersion of the clay particles. The rain was the trigger for a chemical reaction that caused the alfalfa on my field to turn yellow in some areas and killed the crop in others – the exact situation predicted in the Salinity Lab Report. In last year's growing season, production from our farm was off by one-third. Increased discharges of CBM water is the only factor that could have caused this loss. You can see why farmers in our region feel that agriculture is threatened by this industry.

There is hope, however, especially in Montana, where development is still just beginning. How big these problems become will depend on how rapidly coal bed methane production occurs and how the produced water is managed.

There's hope if they will slow down and do it right.

What we're asking for is relatively straightforward – stop wasting water and every single one of the problems I've talked about will be minimized.

Treat it and reinject it. If that truly cannot be done, put it to a true beneficial use. The industry is doing this in New Mexico and we've shown that this approach is technically and financially feasible in the Powder River Basin.

Mr. Chairmen, your subcommittees can help protect the livelihoods of those who farm, ranch, and irrigate in Southeastern Montana by ensuring that necessary safeguards are put into place before more development occurs. You can help by passing Representative Udall's HR 1180. Require oil and gas operators to replace damaged wells. Require them to submit plans stating how they will protect water quality and quantity, and other resources.

I urge you to go further. Require the industry to treat and reinject produced water and, if they can't, require them to put the water to a true beneficial use – not try to irrigate with it and not discharge it onto our land or into our rivers.

Finally, it's time to replace the self-recording and self-reporting with more government monitoring and enforcement. Last summer, samples from the Tongue River concluded that the discharges from coal bed methane increased the salinity of the river and exceeded Montana's new water quality standards for three months. This was brought to the attention of the Montana Department of Environmental Quality, but little was done to enforce the violation that had taken place. As a taxpayer and Montanan, I demand more from my government agencies to protect my interests. This industry self monitoring and reporting is blatantly irresponsible and is an indication of a broken system.

Mr. Chairmen, the Northern Plains Resource Council has been in existence for over 30 years, and has every intention of being here long after the CBM industry is gone. I'd like my family to be here too, farming and managing the T&Y Irrigation District. And, I'd like the fish I've spent all of my life trying to restore to the Tongue River to be here too. We have never been opposed to coal bed methane development, but they must do it right.

Thank you again for the opportunity to testify.