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January 30, 2013

Washington Department of Ecology
c/o Stacy Nichols
3100 Port of Benton Blvd.
Richland, WA 99354

Via Email to: hanford@ecy.wa.gov

RE: Hanford Miscellaneous Streams Waste Discharge Permit – Categorical State Waste Discharge Permit ST0004511.

Washington Department of Ecology:

Columbia Riverkeeper (Riverkeeper) submits these comments regarding the Washington Department of Ecology's (Ecology) proposal to renew Categorical State Waste Discharge Permit ST0004511, hereinafter referred to as the "Miscellaneous Streams Permit" or "the permit." Riverkeeper's mission is to protect and restore the Columbia River and all life associated with it, from its headwaters to the Pacific Ocean. Riverkeeper represents over 7,000 members and supporters in Oregon and Washington and regularly comments on decisions impacting Hanford and the Columbia River. Riverkeeper's staff and members kayak and swim in the Hanford Reach of the Columbia each summer, where contaminated groundwater from Hanford reaches the river. We request that Ecology refine its approach to permitting industrial wastewater discharges at Hanford, or thoroughly explain why the existing permit adequately protects Hanford's groundwater, the Columbia River, and the people who use the river.

Proposed Pollution Discharge Permit

The existing Miscellaneous Streams Permit allows the U.S. Department of Energy and its contractors (Department of Energy) to dump industrial wastewater into the ground almost anywhere at Hanford. Before renewing the permit for the next five years, Ecology should take this opportunity to make the permit more protective of Hanford's groundwater. The industrial wastewater covered by the permit comes from a variety of sources including:

- Stormwater
- Condensation
- Cooling water
- Hydrostatic testing water
- Waterline flushing
- Equipment wash-down
- Pressure washing

The existing permit allows the Department of Energy to dump 2.1 million gallons of such industrial wastewater per day into the ground, plus an unlimited amount of stormwater. Before allowing this to continue for another five years, Ecology should examine whether the terms of the existing permit protect Hanford's groundwater and take this opportunity to make any necessary changes.

Polluted Groundwater at Hanford

Radioactive and toxic contaminants are spreading through Hanford's soil and groundwater, and reaching the Columbia River. Historically, the Department of Energy dumped hundreds of millions of gallons of radioactive waste into injection wells, trenches, buried drums, and large underground tanks. As these various devices began to leak, the downward flow of water through the soil carried radioactive and toxic contaminants like Strontium-90, Chromium, Tritium, Carbon Tetrachloride, Uranium, and Iodine-129 into the groundwater and the Columbia. Now, Hanford is widely recognized as the most contaminated site in the Western Hemisphere, and the Department of Energy estimates that about 70 square miles of groundwater under Hanford contains radioactive and chemical contaminants at or above federal drinking water standards. Pouring more water into Hanford's contaminated soil could accelerate the movement of contaminants from the soil into the groundwater, and from the groundwater into the Columbia.

Specific Comments

Ecology acknowledges that water percolating through the soil can spread contaminants into the groundwater. Ecology, *Cleaning Hanford's Groundwater*, 3 (online at: <https://fortress.wa.gov/ecy/publications/publications/0805001.pdf>). Yet Ecology fails to explain

why the permit's limits on *how much* water the Department of Energy can discharge, and *where* those discharges can occur, protect Hanford's groundwater and the Columbia.

I. Impact of Discharging Over 2.1 Million Gallons of Water Per Day

The existing permit allows the Department of Energy to discharge a total of 2.1 million gallons of industrial wastewater per day, plus an unlimited amount of industrial stormwater. *Permit at S2.B.3 & 4.* However, Ecology's permit and fact sheet never explain how Ecology came up with this limit, or how discharging this much water on a daily basis would affect the movement of, and contamination levels in, Hanford's groundwater.

Question: What is the 2.1 million gallon per day limit based on, and what are the environmental consequences of discharging that much water on a daily basis for the five-year life of the permit?

Besides the total amount of discharge allowed, the permit authorizes each individual discharge event to dump water at a rate of 10 gallons per minute averaged annually and 150 gallons per minute at any given time. *Permit at S1.A.2 & 3.* The 10 gallon per minute limit apparently comes from a statewide regulation governing wastewater discharges, which states that discharges of domestic wastewater smaller than 10 gallons per minute are too minor to be regulated under Washington's Waste Discharge Permit program. *Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams, DOE/RL-93-94 at 11 (1994); Wash. Admin. Code 173-216-050(1)(g).* It is not clear why this limit—developed for domestic wastewater all over Washington—is appropriate for industrial wastewater at Hanford. In fact, the Department of Energy acknowledged that the 10 gallon per minute threshold “may be too high” for Hanford. DOE/RL-93-94 at 11.

Question: What evidence does Ecology have that the 10 gallon per minute rate adequately protects groundwater from the uniquely dangerous contaminants found at Hanford?

II. Ecology Should Require the Department of Energy to Test for Soil Contamination Before Discharging Large Volumes of Water.

The existing Permit does not require the Department of Energy to test for soil contamination before dumping water. In some cases, where the discharge is very small or the soil at a specific location has been adequately studied, this may be acceptable. However, toxic and radioactive contamination is moving through the soil and groundwater continuously—often in ways we can't anticipate—and many areas of contamination may simply remain undiscovered.

Question: For large discharges like hydrostatic testing discharges, waterline flushing, and “significant discharges” as defined in section S6.A of the Permit, why isn't Ecology requiring the Department of Energy to test for soil contamination before dumping thousands of gallons of water?

By comparison, to get a permit to discharge less than 10 gallons per minute of domestic wastewater into the ground in Washington, a prospective permittee must conduct a full soil characterization analysis on the area of the proposed discharge. *See* Wash. Admin. Code 246-272B. The requirements at Hanford should be at least as strict.

III. Ecology Should Restrict *Where* the Department of Energy Discharges Wastewater.

The existing Permit allows the Department of Energy to discharge industrial wastewater almost anywhere at Hanford. In fact, the Permit only prohibits Department of Energy from dumping water 1) “within a surface contaminated area (areas with dangerous or hazardous waste and radioactive contaminants)” and 2) within 300 feet of a “crib, ditch, or trench used for disposal of dangerous and hazardous waste and radioactive contaminants.” *Permit at* S4.A.1 & 2. These ‘limits’ raise several questions.

Question: What is a “surface contaminated area”? For example, is a single-walled tank a “surface contaminated area”? Alternatively, is a “surface contaminated area” the entire central plateau?

If “surface contaminated area” has a specific meaning, the permit should explain it. If there is no better definition than “areas with dangerous or hazardous waste and radioactive

contaminants,” this permit condition is too vague and should be revised to provide more certainty for the public and the Department of Energy.

Question: Why is there no 300 foot buffer around ‘surface contaminated areas’?

As the permit is written, the Department of Energy could dump thousands of gallons of water into the ground directly outside a contaminated area. Without a buffer around surface contaminated areas, wastewater disposal could mobilize contaminants in the soil, propelling them towards the groundwater.

Question: Why is the 300 foot buffer limited to cribs, ditches, and trenches?

For example, why not expand the protection to all areas where contamination exists, such around as leaking tanks, inactive reactors like the Fast Flux Test Facility, contaminated debris or equipment, and contaminated groundwater plumes?

Question: Will a 300 foot buffer prevent wastewater from mixing with contaminated soil?

The 300 foot buffer is apparently based on observations that water discharged to the ground will not spread more than 300 feet laterally. *See* DOE/RL-93-94 at 12. Even if this is true in all circumstances, it does not account for the fact that contamination from a leaking tank or crib can spread laterally in the soil for much farther than 300 feet. If a crib or tank leaked, and that leak traveled laterally underground for several hundred feet, permit condition S4.A.2 would essentially allow the Department of Energy to dump water directly above contaminated soil. Ecology should either increase the 300 foot buffer significantly, or require soil tests prior to large discharges, or both.

Question: Why should the Department of Energy dump water into the ground in the River Corridor or around the leaking underground storage tanks?

Ecology should not allow the Department of Energy to discharge any water into the ground in areas of Hanford where soil contamination is extreme or where the groundwater is known to be contaminated. For instance, the 200 Area around the leaking underground storage tanks contains severely contaminated soils and overlies contaminated groundwater plumes. Nevertheless, the exiting permit would apparently allow the Department of Energy to dump large amounts of water—used to hydrostatically test the Waste Treatment Plant—into the ground here. Similarly, the existing permit would allow the Department of Energy to dump water in the River Corridor, even though groundwater is close to the surface there and most of the River Corridor overlies contaminated groundwater plumes.

Conclusion

Riverkeeper is deeply concerned about the impact of contaminated groundwater on the Columbia River. The proposed permit and supporting permit factsheet fail to address how the permit conditions protect people, salmon, and other aquatic life from groundwater pollution. We look forward to Ecology's responses and hope that the renewed Miscellaneous Streams Permit will help prevent the spread of contamination through Hanford's soil and groundwater.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Miles Johnson', with a long horizontal flourish extending to the right.

Miles Johnson
Clean Water Attorney
Columbia Riverkeeper