UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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STATEMENT OF BASIS

CLASS V INJECTION WELL PERMIT

DRAFT PERMIT RENEWAL
U.S. FISH AND WILDLIFE SERVICE
BOZEMAN FISH TECHNOLOGY CENTER
4050 BRIDGER CANYON ROAD
BOZEMAN, MONTANA

EPA PERMIT MT50754-00000

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This STATEMENT OF BASIS gives the derivation of site-specific UIC Permit conditions and reasons for them. Referenced sections and conditions correspond to sections and conditions in the Permit.

UIC Permits specify the conditions and requirements for construction, operation, monitoring and reporting and plugging of injection wells to prevent the movement of fluids into underground sources of drinking water (USDW). Under 40 CFR 144 Subpart D, certain conditions apply to all UIC Permits and may be incorporated either expressly or by reference. General Permit conditions for which content is mandatory and not subject to site-specific differences (40 CFR Parts 144, 146 and 147) are not discussed in this document.

Upon the Effective Date, the Permit Renewal authorizes the operation of an injection well project governed by the conditions specified in the Permit. The Permit is issued for a period of ten (10) years unless terminated for reasonable cause under 40 CFR 144.39, 144.40 and 144.41. The Permit is subject to EPA review at least once every five (5) years to determine if action is required under 40 CFR 144.36(a).

DESCRIPTION OF FACILITY AND BACKGROUND INFORMATION

The Bozeman Fish Technology Center is a Department of Interior, United States Fish and Wildlife Service (USFWS) facility involved in conducting research and providing technical assistance in all phases of fish propagation to private, state and federal agencies. Six different water supplies provide necessary flow and temperature for holding many fish species of special concern such as Arctic grayling, pallid sturgeon, cutthroat trout and bull trout. Projects deal with fish health, nutrition, husbandry, water quality, drug registration, reproduction, quality and water management technologies. In performance of these activities, small amounts of waste chemicals are produced and some of these are discharged into septic systems.

On March 23, 1995, the Environmental Protection Agency (EPA) issued a permit to the Fish Technology Center for the injection of sanitary and laboratory wastes to a septic system that serviced the Hatchery and Containment Building (Hatchery Building). The injection of both sanitary and laboratory wastes from another septic system servicing the Feed Building was rule authorized on April 18, 2002. At the time the rule authorization letter was issued, the EPA was informed by the Fish Technology Center of their impending request for a new permit that would include three septic systems.

On May 20, 2002, the Fish Technology Center in Bozeman, Montana made application to the EPA for an Underground Injection Control (UIC) Permit for injection of laboratory waste fluids into an additional septic system that also included sanitary waste. The permit application requested continued authorization for two existing septic systems that service the Hatchery and Feed Buildings and a proposed system to service the Lab Administration Building (also called the Piper Building) with construction to begin in April 2003. These septic system sites are located at the Bozeman Fish Technology Center, 4050 Bridger Canyon Road, Bozeman, Montana. Laboratory waste fluid (mainly tap water with chemical and biological waste) in each of the three systems is not expected to exceed a yearly average of ten (10) gallons per day.

The USFWS, Fish Technology Center submitted all the required information and data necessary for permit issuance in accordance with title 40 Code of Federal Regulations (40 CFR), Parts 144, 146, and 147, and a Final Area Permit was issued July 23, 2003. This area permit was initially for the Lab Administration Building septic system with the intention to modify the area permit to include all three systems before the Hatchery Building permit expired. All three septic systems had been approved by the Gallatin County Sanitarian.

The permit was modified May 5, 2004 to include all three systems in the area permit and to reduce the number of analyses of inorganics and metals from 22 to four metals (As, Cr, Pb, Hg) for sampling the similar waste streams in the Hatchery and Feed Building septic systems. The expanded list of 22 inorganics and metals had been analyzed for Hatchery and Feed Building sampling in the fourth quarter of 2003 and the first quarter of 2004 without exceeding their allowable limits, thus justifying reduction to the four metals required under the existing (1995) Hatchery Building septic system permit. Sampling and analysis requirements for volatile organic compounds were not changed.

The Fish Technology Center completed construction of the new Lab Administration Building in fall 2004. The septic system servicing the Lab Administration Building is composed of one 1,500

gallon septic tank receiving sanitary wastes only and two 1,000 gallon septic tanks receiving laboratory wastes only after passing through an acid dilution basin; the two waste streams are combined in a dosing pump chamber before entering the leach field. The waste water in the laboratory septic tanks has the capability of being analyzed first to determine if the wastes can be injected into the subsurface. These two smaller septic tanks have the ability to serve as holding tanks to be pumped if the laboratory waste water does not meet regulatory requirements.

The permit was modified April 20, 2005 to allow more flexibility in sampling laboratory waste water from the Lab Administration Building. Because laboratory waste from this new facility can be separately held until sampling and analysis occur, discharge is dependent on the time for laboratory waste to fill the tank(s) as well as the waste meeting standards. This modification allowed this waste to be sampled when one of the 1,000 gallon tanks is filled, discharged if the analyses meet standards and reported to the EPA, along with the regular Hatchery and Feed Building reports, in the quarter that the Lab Administration Building sample analyses are received. This modification did not change any actions, notification, and reporting should waste analyses exceed standards. This modification also included a change in address for the submission of reports and notifications.

On August 29, 2008, EPA received a letter from Yvette Converse, Assistant Director of the USFWS in Bozeman, MT, to request a permit modification to remove the Hatchery and Feed Building septic systems from the permit. Laboratory functions in the building have been removed and the portions of the Hatchery building that once served this purpose have been renovated into office space. The majority of the waste fluids that are generated from the fish culture activities are discharged to the surface through a Montana Pollution Discharge Elimination System permit. However, in the Containment Building, the backwash from cleaning the drum filter that segregate the solids prior to surface discharge, enters the septic. This backwash and the sanitary wastes generated in the Hatchery Building are the only wastewater that enters the septic system.

The laboratory functions of the Feed Building were moved to the Lab Administration Building in 2005 and 2006. Since then, only domestic waste and wash water that enter floor drains in the feed manufacturing room enter the septic system. The manufacturing room is where feeds are produced and the materials used in the product are all food or feed grade. The floor drains periodically received wash water from washing the floors after the solid materials are swept and collected for disposal.

On April 21, 2009, a written request was received by EPA via email from Matt Toner to also modify the conditions of the permit for the Lab Administration Building. They had determined that it was more economical to pump the tanks than to continue sampling to meet the permit requirements. They have requested the flexibility to pump the tanks as needed and not be required to sample or in the event that they do discharge into the septic drain field, they will continue to follow the sampling requirements of the permit. Initially, there was discussion to close the Lab Administration Building well by cementing the outlet pipe leading to the drain field. However, based on conversations USFWS had with their local county sanitarian, closing the well by turning these tanks into permanent holding tanks was not encouraged.

On June 17, 2013, the USFWS, Fish Technology Center submitted all the required information and data necessary for permit renewal in accordance with title 40 Code of Federal Regulations (40 CFR), Parts 144, 146, and 147.

This Statement of Basis gives the derivation of the site-specific permit conditions and reasons for them. The general permit conditions, for which the content is mandatory and not subject to site-specific differences (based on 40 CFR, parts 144, 146 and 147), are not included in the discussion.

I. REASON FOR THE PERMIT RENEWAL

On July 23, 2013, the USFWS Fish Technology Center's Final Area Permit expired. Their area permit request for renewal submitted on June 17, 2013 is for the Hatchery Building Septic System, the Feed Building Septic System, the Piper Building Septic System (Lab Administration Building), and the Quarantine Building French Drain. Appendix A of the permit shows the location and configuration of all four UIC Class V wells.

The permit was initially issued to monitor the laboratory activities that were conducted in the three buildings; Feed Building, Hatchery Building, and the Piper Building. The Feed and Hatchery Buildings have ceased laboratory activities and have moved that function to the Piper Building. Presently, the septic system in the Feed Building receives only waste fluids from washing the floors in the feed manufacturing room and sanitary waste. The Hatchery septic system receives only waste fluids from backwashing the filters in the Containment Building and sanitary waste.

Both the Feed and Hatchery Buildings sampling results from the septic tanks have occasionally had significant levels of toluene, which is well known to be produced by bacteria in anoxic water (septic tanks). The facility have implemented Best Management Practices (BMPs) to restrict bacterial action and the generation of toluene in the Feed Building, feed ingredients that may have been washed into the drains are being swept and collected as dry material for disposal into a landfill to the extent possible.

The Quarantine Building has been identified as a UIC Class V well. This facility is being added to the area permit to keep all the UIC regulated systems at the Fish Technology Center together. The building is physically connected to the Hatchery and Containment Buildings, but does not share the Hatchery septic system. The Quarantine Building is used exclusively for fish culture. The only effluent from the Quarantine Building would be fish rearing water and whatever water is used from the garden hose to rinse buckets, nets, etc. There are no sinks or bathrooms in the Quarantine Building. All water that leaves the building passes through a chlorine tablet dispenser, then to a sump, and gravity flows through a sodium thiosulfate (neutralizes any chlorine residual) dispenser before discharging to the French drain. The Quarantine Building is permitted under MTDEQ (#MTG770018). There are no sampling requirements associated with the Quarantine Building.

In the spring of 2007, Region 8 Drinking Water Toxicologist completed his review of chemicals used at the Fish Technology Center that had been supplied by the Center. Most of the chemicals had been sampled, analyzed and met standards. A few had not been sampled and analyzed; the

EPA requested that the Center voluntarily sample and analyze these few chemicals. Over five quarters of voluntary sampling, two of seven chemicals analyzed (acetone and iodine) from samples at the Lab Administration Building exceeded standards one time, and these chemicals were added to the permit requirements. After several years of data and no elevated results, the USFWS asked the sampling requirement be removed at time of permit renewal. Based on the results for the past seven years, the EPA has concluded that sampling is no longer necessary and sampling has been removed from the permit.

The Fish Technology Center will use best management practices when disposing of waste fluid into all four UIC wells. This would include periodical removal and proper disposal of sediments from the septic or holding tanks preceding a drain field, to ensure that only fluids are discharged into the drain field. Prior to discharge to the drain field, the fluids shall not exceed maximum contaminant levels (MCLs) for drinking water, health advisories, or Region 8 permit limits as established by the EPA, otherwise, the waste fluids will be pumped and hauled offsite. All accidental spills will be absorbed with an absorbent material so that the contaminant does not reach the ground water system. These **"best management practices"** will significantly reduce the amount of contaminants migrating into the ground water.

II. AREA HYDROLOGY

Underground Sources of Drinking Water (USDW)

A USDW is defined by UIC regulations as an aquifer, or a portion thereof, which contains less than 10,000 milligrams per liter total dissolved solids, and which is being used or could be used as a source of drinking water.

The Fish Technology Center is located along Bridger Creek. The unconfined aquifer for water supply and drainage is the Bridger Creek alluvium. This valley-fill material is composed of unconsolidated sand, gravel, silt and clay. Two near-by water wells that service the Fish Technology Center are about forty (40) and eighty (80) feet deep. The forty (40) foot well supplies water to the residence, and the eighty (80) foot well supplies water to the offices and laboratories.

Confining Zone

There are no known confining layers in the alluvium. However, there is a sandy clay below the twenty (20) foot level.

Aquifer Quality

Fluid samples from the Fish Technology Center water wells have shown surface water bacteria. Water from both wells is chlorinated prior to use. No septic system contamination has appeared in the wells which are located up gradient or across Bridger Creek from the systems.

III. SAMPLING AND REPORTING OF RESULTS

Shallow Injection Well Sampling Program

No sampling is required under this permit. However, if changes in operations or chemicals occur at the facilities, instances of sampling to ensure compliance may be needed. Based on the results of sampling, the permit may need to be modified to address any changes in risk to human health or the environment.