NPDES PERMIT NO. NM0030163 FACT SHEET

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT

State of New Mexico Department of Game & Fish (NMDGF)
Glenwood State Fish Hatchery
1 Wildlife Way
Santa Fe, NM 87507

ISSUING OFFICE

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Region 6
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DATE PREPARED

August 14, 2023

PERMIT ACTION

Proposed reissuance of the current NPDES permit issued July 3, 2018, with an effective date of September 1, 2018, and an expiration date of August 31, 2023.

RECEIVING WATER – BASIN

Glenwood Pond thence to White Water Creek thence to San Francisco River Basin

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

4Q3	Lowest four-day average flow rate expected to occur once every three-years
BAT	Best available technology economically achievable
BCT	Best conventional pollutant control technology
BPT	Best practicable control technology currently available
BMP	Best management plan
BOD	Biochemical oxygen demand (five-day unless noted otherwise)
BPJ	Best professional judgment
CBOD	Carbonaceous biochemical oxygen demand (five-day unless noted otherwise)
CD	Critical dilution
CFR	Code of Federal Regulations
cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
FWPCA	Federal Water Pollution Control Act
FWS	United States Fish and Wildlife Service
mg/L	Milligrams per liter
ug/L	Micrograms per liter
MDL	Method Detection Limit
MGD	Million gallons per day
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMIP	New Mexico NPDES Permit Implementation Procedures
NMWQS	New Mexico State Standards for Interstate and Intrastate Surface Waters
NPDES	National Pollutant Discharge Elimination System
MQL	Minimum quantification level
O&G	Oil and grease
POTW	Publicly owned treatment works
PQL	Practical Quantitative Limit
RP	Reasonable potential
SS	Settle-able solids
SIC	Standard industrial classification
SU	Standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TDS	Total dissolved solids
TMDL	Total maximum daily load
TRC	Total residual chlorine
TSS	Total suspended solids
UAA	Use attainability analysis
USGS	United States Geological Service
WLA	Waste-load allocation
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater Treatment Plant
WOTUS	Waters of the United States

In this document, references to State WQS and/or rules shall collectively mean the state of New Mexico.

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the previous permit issued on July 3, 2018, with an effective date of September 1, 2018, and an expiration date of August 31, 2023, are:

1. Added discharge limitations for total aluminum based on RP analysis by using the data provided by NMED and NMDGF.

2. The highest 30-day average flow of 9.16 MGD from the most recent two-year (1/2021-12/2022) flow data in DMRs has been used per NMIP to calculate the permit limitations.

3. Removed reporting requirements for Aldrin based on RP analysis and data submitted through DMRs provided by the applicant

4. Added monitoring for newly approved NMWQS to the draft permit. They must be collected and analyzed within the first year of the permit effective date. Submit the results to both EPA and NMED.

II. APPLICANT LOCATION and ACTIVITY

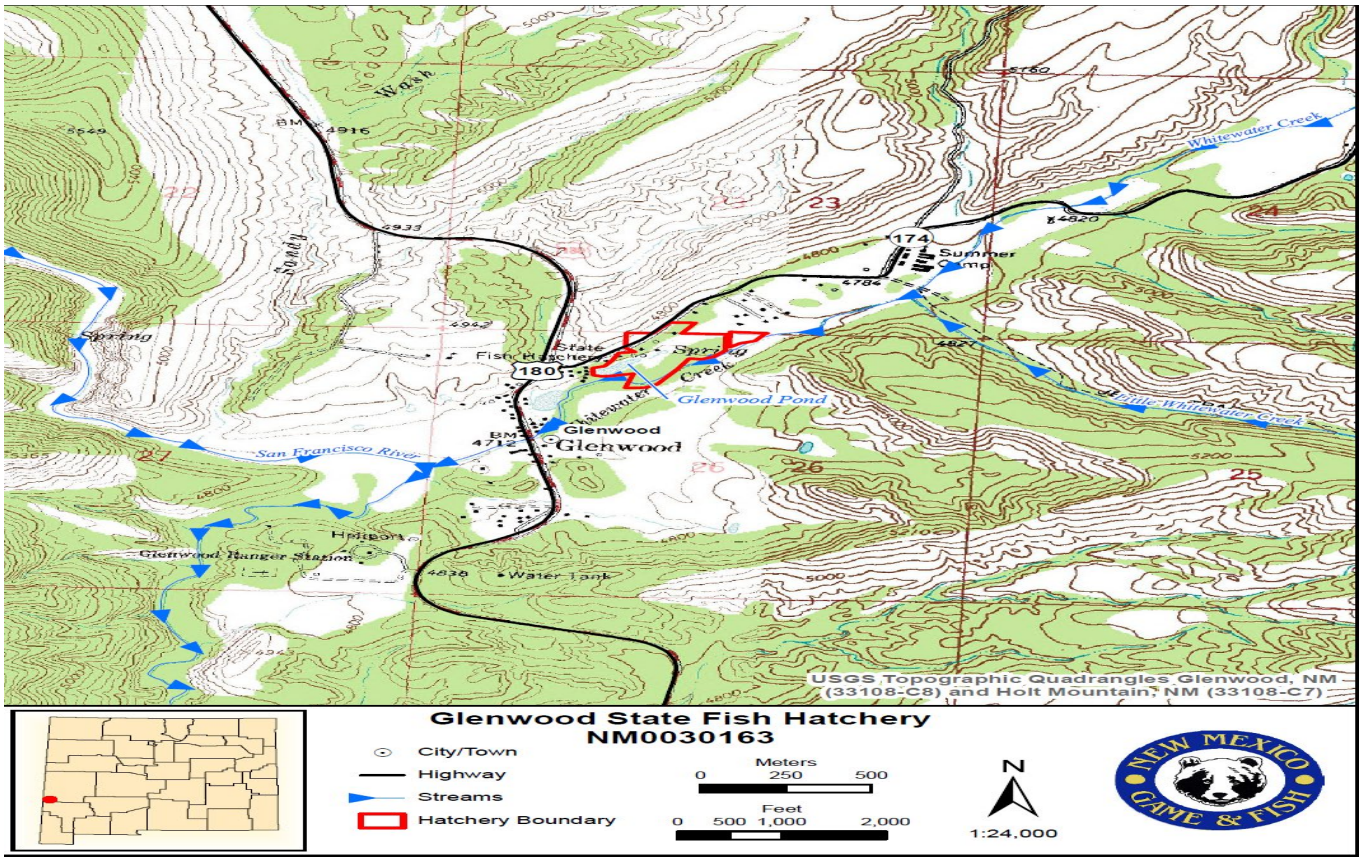
The facility is located approximately half a mile north of Highway 180 on Catwalk Road in Glenwood, Catron County, New Mexico. There are two outfalls on the premises. Outfall 001 will be utilized to assess the effects of water from the hatchery on the receiving water. Outfall 002 is an emergency bypass that will only be utilized in case of the need to bypass Glenwood Pond. The previous location of the discharge to the White-Water Creek from the facility is as follows:

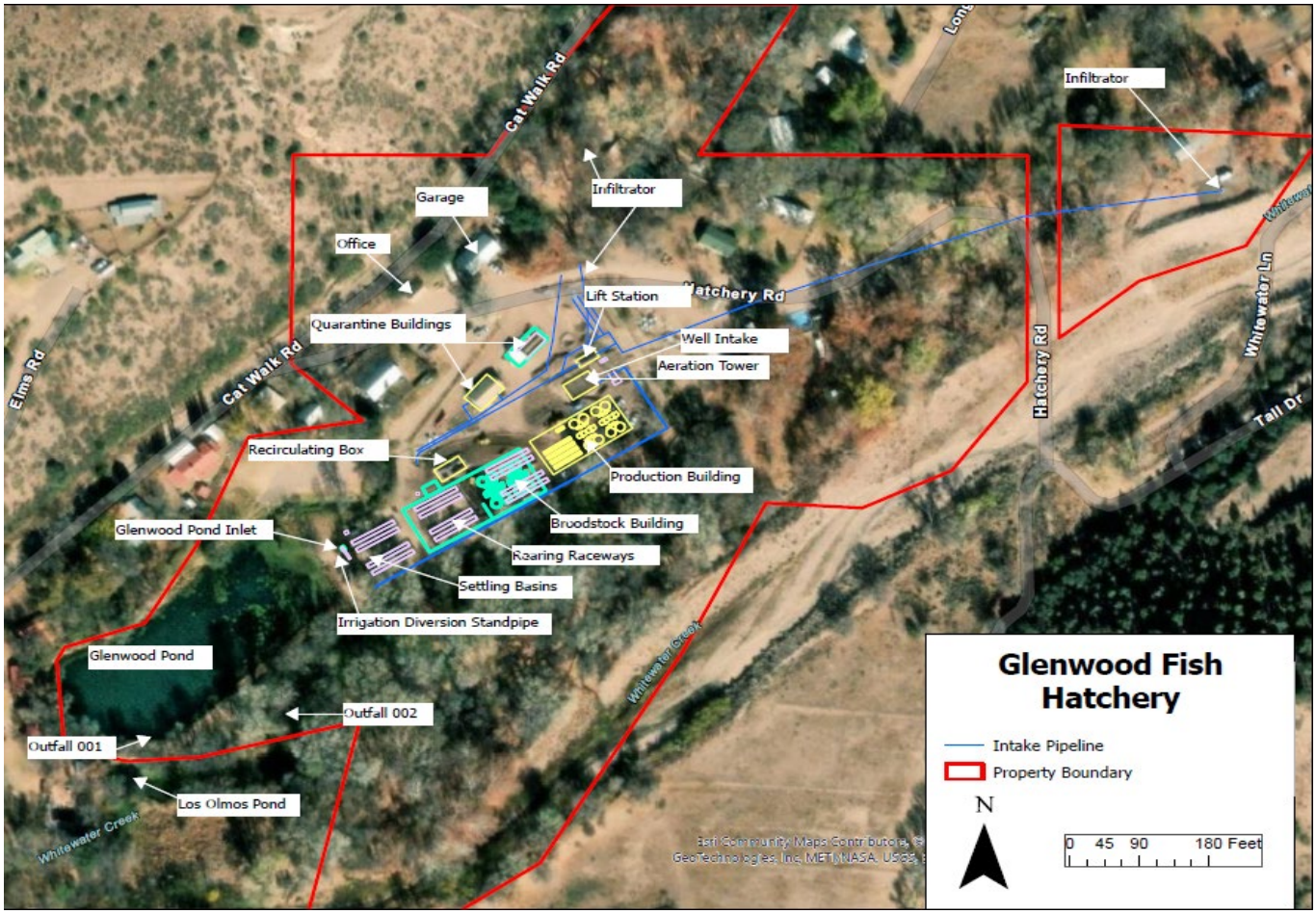
Outfall 001 - Latitude 33° 19' 14.00" North: Longitude 108° 52' 50.00" West
Outfall 002 - Latitude 33° 19' 15.00" North: Longitude 108° 52' 48.00" West

On April 5, 2023, the NMDGF emailed proposing changes to the monitoring locations listed in the previous NPDES permit for Glenwood State Fish Hatchery. To improve the accuracy of the reported data, the Department is working on relocating the monitoring locations and installing flow meters. The hatchery plans to install the meters in the coming months and finish the project by December 2023. The receiving waters will remain the same. The following are the new Monitoring Locations:

Outfall 001 - Latitude 33º 19’ 15.57” North: Longitude 108º 52’ 48.47” West
Outfall 002 - Latitude 33º 19’ 16.44” North: Longitude 108º 52’ 48.26” West

The applicant operates a fish hatchery under SIC Code 0921, producing 60,000 pounds of Gila Trout per year to support angling in public waters in New Mexico. The application states that the maximum feeding in January will be around 4,500 pounds.


Glenwood State Fish Hatchery
NM0030163
City/Town
Highway
Streams
Hatchery Boundary
Meters
0 250 500
Feet
0 500 1,000 2,000
N
1:24,000
USGS Topographic Quadrangles Glenwood, NM (33108-C8) and Holt Mountain, NM (33108-C7)
Glenwood
Glenwood Pond
San Francisco River
Whitewater Creek
Summer Camp
Glenwood Ranger Station
Heliport
Water Tank


Cat Walk Rd
Elms Rd
Hatchery Rd
Whitewater Ln
Tall Dr
Infiltrator
Garage
Office
Lift Station
Quarantine Buildings
Well Intake
Aeration Tower
Recirculating Box
Production Building
Broodstock Building
Rearing Raceways
Settling Basins
Irrigation Diversion Standpipe
Glenwood Pond Inlet
Glenwood Pond
Outfall 002
Outfall 001
Los Olmos Pond
Whitewater Creek
Glenwood Fish Hatchery
Intake Pipeline
Property Boundary
N
0 45 90 180 Feet

The hatchery has two sets of outdoor raceways and a hatchery building. The prime source of water for hatchery operations is from the groundwater infiltration lines. These are buried lines upstream of the hatchery and, during high flow periods, provide approximately 2,500 gallons per minute (GPM). The second water source is three water wells about one mile west of the hatchery in the Allred Farms pastures. The three wells provide approximately 1,400 GPM.

All the water at the hatchery is pumped or lifted first to the main mixing box or pumped into the two "A" series raceways and the hatchery building. This process removes the nitrogen gas produced by the pumped water. The water from the main mixing box delivers the water to the individual series of major raceways: A, B, C, and D. Each raceway has a bottom drain piping system and an overflow plumbing system located at its lower or downstream end. The two approaches are not cross connected: each system discharges to Glenwood Pond/Lake through its separate system.

The flow of water from the main mixing box is almost nearly continuous. During normal hatchery operations, with the bottom drain standpipe in place, the water and a small amount of suspended solids, consisting mainly of floating fish wastes and uneaten food, goes through the overflow system into Glenwood Pond/Lake. During cleaning operations, generally done once a week for each raceway, the standpipe in the bottom drain system is pulled out, and the water flows down the bottom drain piping system to the upper end of Glenwood Pond/Lake.

The hatchery staff cleans the raceway walls and bottom with squeegees during the cleaning operation. As the flow from the mixing box continues to enter the raceway, all the water in the raceway, along with the wiped-down sediments, drains into Glenwood Pond/Lake through the separate bottom drain system. Raceway cleaning is generally done on one or two raceways at a time, so there is always a discharge from the overflow water system into Glenwood Pond/Lake from those raceways needing to be cleaned.

The NMDGF has the water rights to 6.0 cfs of water from the infiltrator under Whitewater Creek and can supplement these rights with use of the wells. Allred Farms has the rights to all water after it passes through the hatchery. When Allred Farms wants the water for irrigation, Allred Farms enters hatchery grounds, pulls a standpipe in the overflow pipe system between the hatchery building and Glenwood Pond/Lake, and this diverts the overflow water to a separate piping system that takes the water directly to Allred's Farms. After leaving Outfalls 001 and 002, the hatchery staff has no control over the disposition of the discharged water.

Glenwood Pond is a popular fishing spot located on hatchery property. To ensure the safety of the water, the water from the hatchery will be evaluated using Outfall 001. Monitoring samples will be taken at Outfall 001 at the weir to meet permit conditions. Outfall 002 is an emergency bypass that will only be used if water needs to bypass Glenwood Pond/Lake for some reason. Outfall 002 will only monitor the flow as pollutants are the same as Outfall 001, as per the previous permit.

III. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in "NMWQS" (20.6.4 NMAC, effective April 23, 2022). The effluent from the facility through two outfalls is discharged to the Glenwood Pond/Lake, thence to White Water Creek in segment number 20.6.4.603 NMAC of the San Francisco River Basin. The designated uses of the receiving waters are domestic water supply, fish culture, high-quality cold-water aquatic life, irrigation, livestock watering, wildlife habitat, and primary contact.

IV. EFFLUENT CHARACTERISTICS

The facility provided the laboratory test results for priority pollutants (including metals, cyanide/chlorine, volatile, acid compounds, base/neutral compounds, and pesticides) listed in Appendix D of NMIP. The results indicate that most analytes are undetected at their respective method detection limits (MDLs). However, the following pollutants were present above their MDLs with concentration values suitable for screening:

POLLUTANT	**Result** (mg/L)
Aluminum	0.42
Barium	0.0048
Copper	0.0013
Mercury	0.0142

In addition to the above, a review of effluent data for the past 12 months and total discharge flow data for the past 24 months in DMRs from Outfall 001 is shown below:

Effluent Data from DMRs

Pollutant	**Daily Average**
Highest Monthly Average	9.16 MGD
Settleable Solids	0.00 mg/L
Total Suspended Solids	4.33 mg/L
pH, maximum	8.2 s.u.
TRC	N/A
Aldrin	Not Detected

According to a review of DMR data spanning from September 2018 to August 2023, certain pH and total suspended solids values must adhere to permit limitations. Furthermore, the hatchery was inspected by the State on May 23, 2017, and any findings can be accessed on the NMED website at https://www.env.nm.gov/surface-water-quality/wp-content/uploads/sites/25/2017/07/NM0030136-20170523.pdf.

V. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the FWPCA establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water,” more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for the industry and establishing the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit was obtained under its provisions. Regulations governing the EPA-administered NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards), and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required. The facility submitted a complete permit application on February 22, 2023. The permit is proposed to be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a).

VI. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW OF TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations contained in 40 CFR §122.44 require that NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, or the previous permit. Technology-based effluent limitations are established in the proposed draft permit for TSS and SS. Water quality-based effluent limitations are established in the proposed draft permit for pH and total aluminum.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. General Comments

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

2. Effluent Limitation Guidelines

Technology-based effluent limitations found at 40 CFR §451 have been promulgated for this type of activity. Regulations for best practicable control technology currently available (BPT) apply to discharge pollutants from a concentrated aquatic animal production facility that produces 100,000 pounds or more per year of marine animals in a flow-through system. The facility proposes producing approximately 60,000 pounds of cold-water species total annually. The production is under the minimum requiring BMPs relating to solids control, materials storage, structural maintenance, recordkeeping, and training.

The previous permit, however, predated 40 CFR §451 and established technology-based limitations for total suspended solids (TSS) and settleable solids (SS) in accordance with 40 CFR §122.44(l)(2)(ii). Limitations for TSS were established at ten (10) mg/L daily average., 15 mg/L daily maximum. Limitations for SS were established at 0.1 milliliter/Liter (ml/L) daily average., 0.5 ml/L daily maximum These limitations will be retained in the draft permit for both outfalls.

Mass loading limits shall be established for TSS in the draft permit for Outfall 001. The effluent flow of 9.16 MGD, based on the highest monthly average flow over the past two years (1/2021-12/2022), a conversion factor of 8.345 lbs./gallon, and maximum daily concentrations of 15 mg/L, monthly average concentration of 10 mg/L, yields mass loadings of:

Daily maximum: 9.16 X 8.345 X 15 = 1,147 lbs./day
Monthly average: 9.16 X 8.345 X 10 = 764 lbs./day

Mass limits are not established for SS based on the nature of the pollutant consistent with the previous permit and other hatchery permits in the state. Technology-based limitations are not established for Outfall 002 as the discharge from Outfall 002 is identical to that from Outfall 001, which is monitored for permit compliance purposes consistent with the previous permit.

BMPs are narrative conditions that can aid in achieving permit compliance in addition to chemical specific limits. Regulations at 40 CFR §122.4 state that in addition to conditions established under 40 CFR §122.43(a), each NPDES permit shall include conditions meeting the following requirements when applicable. The authority for BMPs is found at 40 CFR §122.44(k)(4) which state that BMPs "…are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA." The current permit had a provision for the facility to prepare a BMP and to implement the plan. Maintenance of the BMP is continued as part of this permit. The plan shall be updated as needed and located at the hatchery. The BMP plan shall be made available to staff from either EPA and/or NMED upon request.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality-based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State WQMPs to assure that surface WQS of the receiving waters are protected and maintained or attained.

2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. State Water Quality Standards

New water quality standards (WQS) for the state of New Mexico were adopted by the NM WQCC on July 24, 2020. USEPA approved them on October 27, 2020. On April 23, 2022, NM WQCC adopted additional WQS, which USEPA approved on January 19, 2023. The newly approved pollutants have been included in the draft permit. To comply with the permit, one sample of each pollutant must be collected and analyzed within the first year of the permit's effective date. The results must be submitted to both EPA and NMED. In addition, the newly approved pollutants should be a part of the pollutant scan with the reapplication process. The facility first discharges to Glenwood Pond/Lake thence to Whitewater Creek; thence to the San Francisco River in Segment No. 20.6.4.603 of the San Francisco River Basin. Whitewater Creek has the following designated uses: domestic water supply, fish culture, high quality cold-water aquatic life, irrigation, livestock watering, wildlife habitat and primary contact.

4. Permit Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). State WQS that are more stringent than effluent limitation guidelines are as follows:

a. pH

Criteria for pH is listed in 20.6.4.900.H.(1) for high quality cold-water aquatic life within the range of 6.6-8.8 su. This range is more restrictive than the technology-based pH limits. The permit retains the pH limitations of 6.6-8.8 su.

b. Bacteria - not applicable since there is no discharge of sanitary waste.

c. TOXICS

i. General Comments

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant.

ii. Critical Conditions - Toxics

Discharges from the hatchery are to Glenwood Pond/Lake and thence to Whitewater Creek. The critical low flow of Glenwood Pond/Whitewater Creek is zero (0) cfs. An RP analysis was conducted using hatchery effluent data from the New Mexico Department of Game and Fish. New Mexico Environment Department provided the upstream water quality data from stations 80Whitew00.8 and 80WhiteW000.5 (Whitewater Creek - San Francisco R to Whitewater Campground) for 2011 and 2019.

Excluding zero values from the raw hardness data, the geometric hardness mean for the RP analysis was 42.15 mg/L. The effluent sample results indicate total concentrations for most metals, but the applicant can resubmit dissolved values for the RP analysis. WQS evaluated for the above pollutants are included in Appendix A of the Fact Sheet. Total aluminum exhibits an RP that causes an exceedance of the NMWQS. The draft permit will establish limits for this pollutant. A standard reopener clause in the permit will allow additional conditions if a TMDL is revised and/or new water quality standards are established.

DMR reports reveal passing of one required per term test for the Ceriodaphnia dubia and one required per term test for the Pimephales promelas during the last permit term. Because there is only one data point to work with, EPA RP Analyzer was not used to determine WET RP in this permit. Determination was made based on the results of the WET analysis that showed no significant effects at the CD of 16% in the current permit. EPA concludes that the effluent does not cause or contribute to an exceedance of the State water quality standards for the test species. Therefore, the proposed permit will not establish WET limits for Ceriodaphnia dubia or Pimephales promelas. A once-permit term frequency shall be maintained per the NMIP for test species: Ceriodaphnia dubia and Pimephales promelas.

Further, the Region 6 Implementation Guidance for the state of New Mexico Standards for Interstate and Intrastate Streams allows effluent toxicity to aquatic life to be determined using biomonitoring to assess a discharge's compliance with State WQS. The draft permit has biomonitoring requirements discussed below.

iii. Per- and polyfluoroalkyl substances

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in producing other products, airports, and military installations can contribute to PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase the risk of adverse health effects. However, PFAS testing and reporting are not required for fish hatcheries as they are not identified as an industry having PFAS contaminants.

c. TMDL CONSIDERATIONS

Whitewater Creek (from the mouth of the San Francisco River to Whitewater Campground) is listed on the "2022-2024 state of New Mexico Clean Water Act Section 303(d)/305(b) Integrated Report (IR)" as category 2. The report shows that each designated use is fully supported except for the fish culture designation, which was not accessed.

The New Mexico Water Quality Control Commission (WQCC) proposed a Total Maximum Daily Load (TMDL) for turbidity on November 13, 2001. The hatchery was assigned a Waste Load Allocation (WLA) of 334.0 lbs/day. The USEPA approved the TMDL on April 12, 2002 and issued a fact sheet that defined the WLA as a monthly average. Since the 334.0 lbs/day exceeded the daily maximum (235 lbs./day) and monthly average (157 lbs./day), the previous permits continued using the more stringent technology-based limitation. The draft permit will maintain the daily maximum (235 lbs/day) and monthly average (157 lbs/day) limitations.

On December 11, 2001, WQCC also proposed a TMDL for chronic dissolved aluminum, which USEPA approved on April 12, 2002. However, the TMDL did not assign an aluminum WLA to the hatchery. Monitoring and reporting for total aluminum was included in the previous permit (USEPA Response to Comment #6 prepared March 18, 2013). However, Whitewater Creek was removed from the list of impaired rivers for dissolved aluminum as a new hardness-dependent standard for total recoverable aluminum replaced the previous aquatic life standard. The WQCC approved the final aluminum TMDL Withdrawal on March 13, 2018, and USEPA approved the withdrawal of TMDL on April 27, 2018, which was then incorporated into New Mexico's Statewide Water Quality Management Plan and Continuing Planning Process. NMED SWQB's monitoring had scheduled to survey the San Francisco Basin is 2019.

The RP WQS spreadsheet, Appendix A, considered the total effluent aluminum data provided on the renewal application. Monitoring for total aluminum has been added to the draft permit since it exhibits an RP that causes an exceedance of the NMWQS. A standard reopener clause in the permit will allow additional conditions if a TMDL is approved, revised, and/or new water quality standards are established.

5. Monitoring Frequency for Limited Parameters

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40 CFR §122.44(i)(1). Sample frequency is based on the March 15, 2012, NMIP. For both Outfalls 001 and 002, flow is proposed to be measured and reported daily consistent with the current permit. For Outfall 001, the pollutants pH, SS and TSS shall be sampled and reported twice per month grab samples. Sample frequencies for TSS, pH and SS are at the same levels of the previous permit and are appropriate for the type of discharge. Total aluminum shall be sampled and reported at a twice per month frequency.

The draft permit has a footnote added that will require, if, during the permit term, a discharge is from Outfall 002 but not Outfall 001, that monitoring, and compliance requirements shall be sampled from Outfall 002 consistent with limits and conditions of Outfall 001. These will be reported on the DMR form for Outfall 001, and the comment section will note that the discharge is from Outfall 002 and that Outfall 001 did not discharge.

6. Drugs Medications and/or Chemicals Used in Hatchery Practices

At times, the DGF hatchery staff administers drugs, medications, and/or chemicals (DMC) used for aquaculture purposes in the water system, in a manner and/or amount that will allow it to be discharged to WOTUS. The US Food and Drug Administration (FDA) has approved some of these DMC and/or amounts of use. However, sometimes either the DMC at either concentrations and/or used for purposes not explicitly approved by the FDA or the DMC is not approved at all by the FDA. However, their use is consistent with sound hatchery practices.

In this case, the DGF shall notify both EPA and NMED of its impending use. NMED shall be notified by phone within one business day of its decision to use the DMC and to EPA within three days. Written notification shall also be to both EPA and NMED, in writing, at least five business days later. Both notifications shall provide the name of the DMC, its amount, concentration of use, and reason for its use, along with the expected date and time of its use and duration.

When the DMC used is either not approved by the FDA or its use is not consistent with FDA practices, such that it would allow it to enter the receiving stream, the DGF shall conduct the following Whole Effluent Toxicity Test, per instance of use (See footnote *1 below). This testing shall be reported on DMR and reported as Outfall 01B. On the DMR, report in the comment section the date, time, duration, and name of the DMC used. Also, note the date of the letter sent to EPA and NMED.

Whole Effluent Toxicity Test

TOXICITY TESTS	**FREQUENCY**
7-day Ceriodaphnia dubia survival and reproduction test (Method 1002.0) (*1)	Once/use (*2,3)
7-day Pimephales promelas larval survival and growth test (Method 1000.0) (*1)	Once/use (*2,3)

Footnote:

*1. Chronic freshwater Whole Effluent Toxicity Testing

*2. WET testing shall be conducted on the maximum dose of each instance of intermittent use of drugs, medications and/or chemicals not approved by the FDA, or drugs, medications and/or chemicals for purposes other than those for which FDA approval was granted. For long-term use of these drugs, medications and/or chemicals, only one WET test shall be required on the maximum dose of the treatment, unless that maximum dose is later increased by 20 percent. At that point, and any later increases above 20 percent, then additional WET tests will be required.

*3. The sample shall NOT be flow weighted with other outfall flow. The sample shall occur at the outfall location consistent with the unit being treated, during the time that the expected highest dose is being administered and shall be taken at a time taking into consideration the lag-time for the slug of maximum dosage of DMC to flow from the point of application to the sample point. The grab sample for the WET test shall be taken 30-minutes after the expected arrival time of the first slug of DMC at the outfall. The expected arrival time can be determined by direct observation by use of a floatable marker such as wooden blocks.

D. WHOLE EFFLUENT TOXICITY LIMITATIONS

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP. Table 11 of Section V of the NMIP outlines the type of WET testing for different discharges. The previous permit has conducted WET testing to protect Glenwood Pond, a pond the public uses for fishing.

The critical dilution is 100% to reflect the discharge into Glenwood Pond/Whitewater Creek since the State does not allow discharges into lakes, reservoirs and/or playas to benefit from a mixing zone, and discharges must meet end-of-pipe conditions with no dilution. The effluent concentrations using a 75% dilution series are 32%, 42%, 56%, 75%, and 100%.

Regrettably, the previous permit assumed that Glenwood directly discharges into White Water Creek and then flows to San Francisco River Basin. However, the proper discharge mechanism involves first releasing treated wastewater to Glenwood Pond/Lake, then White Water Creek, and ending up in San Francisco River Basin. The Hatchery's initial discharge into Glenwood Pond/Lake results in a CD of 100%, as its 4Q3 is zero.

The test species will be the Ceriodaphnia dubia and Pimephales promelas (fathead minnow). The test frequency will be once per term, using grab samples, during periods of raceway cleaning, and the test shall be conducted during the period April 1 and June 30.

Discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT	**30-DAY AVG MINIMUM**	**7-DAY MINIMUM**
Whole Effluent Toxicity (7-Day NOEC)[1]		
Ceriodaphnia dubia	REPORT	REPORT
Pimephales promelas	REPORT	REPORT

EFFLUENT	**FREQUENCY**	**TYPE**
Whole Effluent Toxicity (7-Day NOEC)[1]		
Ceriodaphnia dubia	1/permit term	Grab
Pimephales promelas	1/permit term	Grab

Footnote:

1. Monitoring and reporting requirements begin on the effective date of this permit. See PART II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

VII. ANTIDEGRADATION

The NMAC, Section 20.6.4.8 “Anti-degradation Policy and Implementation Plan” sets forth the requirements to protect designated uses through implementation of the State water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the State water quality standards and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements and the limits are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

VIII. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet anti-backsliding provisions of the Clean Water Act, Section 402(o) and [40 CFR 122.44(l)(i)(A)], which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. Based on the highest 30-day average flow of 9.16 MGD from the most recent two-year (1/2021-12/2022) flow data in DMRs per NMIP, mass loadings (Daily maximum: 1,147 lbs/day and Monthly average: 764 lbs/day) have been increased. However, the proposed permit will maintain the concentration limits in the previous permit for SS and TSS, as stated in the TMDL CONSIDERATIONS section above. All changes are consistent with the WQS and WQMP.

IX. ENDANGERED SPECIES CONSIDERATIONS

According to the Catron County listing available on June 5, 2023, at USFWS, https://ecos.fws.gov/ecp/report/species-listings-by-current-range-county?fips=35003, thirteen species are listed as endangered (E) or threatened (T). They are:

1. **Gila chub** (Gila intermedia) (E)
According to a review of online information, the Gila chub is a type of ray-finned fish in the Cyprinidae family, found in Mexico and the United States. It is closely related to the round-tail chub and is often found alongside the Gila topminnow, Sonora sucker, longfin, and speckled dace.
It can be found in the Gila River drainage streams in Arizona and the Santa Cruz River system in Sonora, Mexico. However, it has yet to be seen in the San Pedro drainage in Sonora recently. The Gila chub has also been discovered in specific drainages in Arizona, such as the Santa Cruz, Middle Gila, San Pedro, Agua Fria, and Verde rivers. Unfortunately, they have been extirpated from the Monkey Spring of the Santa Cruz River and the Fish and Cave Creeks of the Salt River.

These fish typically occupy smaller headwater streams, springs, or marshes in the Gila River basin. Depending on the season or age of the fish, they may choose different habitats. Juveniles can be found in riffles, pools, and banks, while adults prefer more significant streams in areas with heavy vegetation for cover and foraging. Gila chubs are known to be secretive and seek deeper waters with cover and shade. Gila chubs are omnivores that eat mainly aquatic and terrestrial insects but also consume other small cyprinid fish and speckled dace. Juveniles feed throughout the day, while adults are more active during the early morning and late at night.

Breeding season for Gila chubs occurs from late spring to summer, sometimes extending to late winter if the water temperature remains constant. They become more active in their second or third year and reproduce in heavily vegetated areas where the actively breeding fish have distinct, intense coloration. The population of Gila chub in Mexico is not well-known, but the populations in Arizona and New Mexico are expected to decline due to threats like aquifer pumping, stream diversion, and habitat alterations by nonnative crayfish. Predation and competition with nonnative fish, such as the largemouth bass, have also led to the extirpation of Gila chubs. It is vital to manage and observe the introduction of exotic fish to ensure the survival of Gila chubs. Currently, they share water with green sunfish in many areas.

2. **Alamosa springsnail** (Tryonia alamosae) (E)
According to online review information, the Alamosa springsnail is a minute aquatic snail with a thin, translucent spiral shell up to 0.1 in (0.25 cm) length. Females are about 50% larger than males. The body varies from black to gray, and the tentacles are speckled with dark spots. This species breathes using gills rather than lungs. This snail feeds on algae and organic detritus. The eggs develop within the female body, and reproduction does not appear seasonal. This springsnail inhabits the slow-flowing currents of thermal springs. It is found on stones and submerged vegetation but is absent from swift-flowing water and muddy bottoms.

The Alamosa springsnail was discovered in 1979 in Ojo Caliente (Socorro County), one of the largest thermal springs in New Mexico. It is currently known only from Ojo Caliente and a nearby system of smaller thermal springs. Although no population estimates have been made, the snail is considered abundant on gravel and vegetation in the shallow, slow-moving portions of the spring outflows. The greatest threat to the Alamosa springsnail is its minimal distribution. Found in only a few thermal spring outflows, the species could face extinction through any change in its aquatic habitat. Impounding of the springs, pollution, the introduction of predatory species, or vandalism are ever-present threats to the species. However, several smaller springs have been dug and impounded in the past.

The spring water flows through a canyon and then is diverted for irrigation use and to supply water to villages downstream. Future development of the springs to increase the water supply could threaten the Alamosa springsnail.

3. **New Mexico meadow jumping mouse** (Zapus hudsonius luteus) (E)
According to online review information, New Mexico Meadow Jumping Mouse is a species endemic to New Mexico, Arizona, and a southern portion of Colorado.
The mouse nests in dry soils, but otherwise occupies riparian habitats. It utilizes two riparian community types" persistent emergent herbaceous wetlands and scrub-shrub wetlands. Each mouse occupies a territory range of 0.37-2.7 acres. Populations have declined because of the removal of beavers and overgrazing by cattle, both of which have reduced the amount of riparian habitat available for Jumping Mouse populations.

4. **Chiricahua leopard frog** (Rana chiricahuensis) (T)
According to online review information, Chiricahua leopard frog historically occurred in cienegas, lakes, ponds, and riparian zones at elevations between 3,281 to 8,890 feet in central and southeastern Arizona, west central and southwestern New Mexico, and the sky islands and Sierra Madre Occidental of northeastern Sonora and western Chihuahua, Mexico. It has been eliminated from its namesake, the Chiricahua Mountains of Arizona, and has disappeared from more than 80 percent of its former range in Arizona and New Mexico.

Myriad land uses threaten the Chiricahua leopard frog and its habitat include mining, livestock grazing, water diversion, groundwater pumping, development, and altered fire regimes. Drought, exacerbated by climate change, also affects the species. However, the most important threats to the frog are the deadly chytrid fungus and predation by non-native animals. Chytrid fungus is contributing to amphibian population declines worldwide and has caused major die-offs in the Chiricahua leopard frog.
A host of non-native predators also prey on the Chiricahua leopard frog, including bullfrogs, crayfish, fish, and salamanders. For instance, sites where the leopard frog has been eliminated are 2.6 times more likely to have introduced crayfish than control sites. Also, despite prohibitions, the Service has documented continued releases by anglers of non-native salamanders (used as bait) infected with chytrid into the leopard frog's habitat.

5. **Mexican spotted owl** (Strix occidentalis lucida) (T)
According to online review information, Mexican spotted owl nests, forages, roosts and disperses in a wide variety of biotic communities:

- Mixed-conifer forests are commonly used throughout the range and may include Douglas fir, white fir, southwestern white pine, limber pine, and ponderosa pine. Understory may include Gambel oak, maples, box elder, and/or New Mexico locust. Highest densities of Mexican spotted owls occur in mixed-conifer forests that have experienced minimal human disturbance.

- Madrean pine-oak forests are commonly used throughout the range, and, in the southwestern U.S., are typically dominated by an overstory of Chihuahua and Apache pines, with species such as Douglas fir, ponderosa pine, and Arizona cypress. Evergreen oaks are typically prominent in the understory.

- Rocky canyons are utilized by Mexican spotted owls in the northern part of their range, including far northern Arizona and New Mexico, and southern Utah and Colorado.

Nesting habitat is typically in areas with complex forest structure or rocky canyons, and contains mature or old growth stands which are uneven-aged, multistoried, and have high canopy closure.

In the northern portion of the range (southern Utah and Colorado), most nests are in caves or on cliff ledges in steep-walled canyons. Elsewhere, most nests are in Douglas-fir trees (Pseudotsuga menziesii). The patterns of habitat use by foraging owls are not well known, but Mexican spotted owls generally forage in a broader array of habitats than they use for roosting, and most commonly in Douglas fir. Ganey and Balda (1994) found that, in northern Arizona, owls generally foraged slightly more than expected in unlogged forests, and less so in selectively logged forests. However, patterns of habitat use varied between study areas and between individual birds, generalizing difficult.

6. **Northern Mexican gartersnake** (Thamnophis eques megalops) (T)
According to online review information, Northern Mexican gartersnake is strongly associated with permanent water with vegetation, including stock tanks, ponds, lakes, cienegas, cienega streams, and riparian woods.

In the northern part of the range, the species is usually found in or near water in highland canyons with pine-oak forest and pinyon-juniper woodland, and it also enters mesquite grassland and desert areas, especially along valleys and stream courses. This highly adapted, rare animal is no match for pumping, livestock grazing, and flood control, which have all but dried up most desert rivers. And voracious exotics like bullfrogs, which eat the snakes, have added to the species' woes.

7. **Narrow-headed gartersnake** (Thamnophis rufipunctatus) (T)
According to online review information, Narrow-headed garter snake is found in Arizona and New Mexico, and in the Mexican states of Sonora, Chihuahua, and Durango. It is found near riverbanks or streams. It is one of the most aquatic of all garter snakes. The snake is piscivorous, meaning it primarily eats fish. Its diet includes dace, chubs, and both native and introduced trout. It might occasionally prey on salamanders. The snake has declined in parts of its range and is attributed to introduced species (bullfrogs Lithobates catesbeianus, fishes, crayfish), habitat loss and alteration, and sometimes, needless killing and excessive collecting.

8. **Yellow-billed Cuckoo** (Coccyzus americanus) (T)
According to online review information, Yellow-billed cuckoo uses wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. In the Midwest, look for cuckoos in shrub-lands of mixed willow and dogwood, and in dense stands of small trees such as American elm. In the central and eastern U.S., Yellow-billed Cuckoos nest in oaks, beech, hawthorn, and ash. In the West, nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites.

9. **Southwestern willow flycatcher** (Empidonax traillii extimus) (E)
According to online review information, Southwestern willow flycatcher habitat occurs in riparian areas along streams, rivers, and other wetlands where dense willow, cottonwood, buttonbush, and arrow-weed are present. The primary reason for decline is the reduction, degradation, and elimination of the riparian habitat. Other reasons include brood parasitism by the brown-headed cowbird and stochastic events like fire and floods that destroy fragmented populations. The permit does not authorize activities that may cause destruction of the flycatcher habitat, and issuance of the permit will have no effect on this species.

10. **Loach minnow** (Tiaroga cobitis) (E)
According to online review information, Loach minnow was locally common throughout much of the Verde, Salt, San Pedro, San Francisco, and Gila (upstream from Phoenix) river systems, Arizona, New Mexico, and Sonora, occupying suitable habitat in both the mainstreams and perennial tributaries, at elevations up to about 2,200 meters. It is extirpated throughout much of its former range in Arizona. Historically, it occurred in the San Pedro River, Sonora, Mexico, but habitat there has been largely destroyed by diversion of water for agriculture.

This species lives on the bottom in permanent, flowing, unpolluted creeks and small to medium rivers of low to moderate gradient, low amounts of fine sediment and substrate embeddedness, abundant aquatic insects, and a healthy, intact riparian community with moderate to high bank stability; typically, on turbulent riffles, sometimes in association with filamentous algae;
habitat resembles that of many eastern darters. It is an obligate riffle-dweller that occurs in shallow (<20 cm) water over gravel/ cobble substrate or in interstices between rocks, often in association with eddying currents.

Adults inhabit moderate to swift (15–100 cm/sec), shallow (3–40 cm) water with gravel, cobble, and rubble substrates; juvenile habitat is similar but also includes sand substrates. Loach minnows persist mainly in streams having relatively natural flow regimes and a predominance of native species.

Recurrent flooding is important in keeping substrate free of sediments and in helping this species maintain a competitive edge over invading non-native fishes. Eggs are laid in cavities under flattened cobble (or un-cemented cobble and rubble) in slow to swift (3–85 cm/sec), shallow (3–30 cm) water; eggs adhere to under surface; males guard cavities and eggs. Larvae apparently use low velocity nursery areas: 0–30 cm/sec, 3–30 cm deep, with sand, gravel, and cobble substrates and abundant instream cover.

Currently, only small, isolated populations remain, with limited to no opportunities for interchange between populations or expansion of existing areas, making the species more vulnerable to threats including reproductive isolation. Opportunities for range expansion are limited by dams, reservoirs, dewatering, and non-native species distribution. The two primary threats (non-native aquatic species competition and predation and alteration or diminishment of stream flows) are persistent, and research indicates that the combination of the two is leading to declines. The ongoing drought and climate conditions aggravate the loss of water in some areas, and future water development projects have been identified.

11. **Zuni fleabane** (Erigeron rhizomatus) (T)
According to online review information, Zuni fleabane is known from about 20 scattered populations in the Zuni, Datil, and Sawtooth Mountain ranges in west-central New Mexico, and in the Chuska Mountains in northeastern Arizona. It favors a specific type of habitat, usually on erodible, crustless soils on fine-textured, red clay hillsides. These habitats are found at elevations between 2225 and 2440 m (7300 and 8000 ft.), and never on slopes with a southern aspect. Zuni fleabane occurs within pinyon-juniper woodlands, but the specific habitat where Zuni fleabane grows is sparsely vegetated. These habitats receive 35-40 cm (14-16 in) of precipitation a year. Zuni fleabane is threatened mainly by uranium mining. Most Zuni fleabane populations occur on sites with historic or current mining claims for uranium. Other potential threats include off-road vehicles and erosion from grazing.

12. **Spike dace** (Meda fulgida) (E)
According to online review information, Spike dace was common and locally abundant throughout the upper Gila River basin of Arizona and New Mexico. In Arizona, this included the Agua Fria, San Pedro, and San Francisco River systems, and the Gila, Salt and Verde Rivers and major tributaries upstream of present-day Phoenix. In New Mexico, it included San Francisco River, Gila River, and the East, Middle and West Forks of the Gila. Presently, the species is found in Aravaipa Creek, a tributary of the San Pedro River, Eagle Creek, and the upper Verde River system in Arizona, and the upper Gila River system in New Mexico.

The spike dace occupies midwater habitats of runs and pools, and prefers moving in water less than 1 m deep and in a current of 0.3-0.6 m/s. The spike dace concentrates in the downstream ends of rivers, although many have been collected in the upstream portions of shear zones less than 0.33 m deep. In larger streams, the spike dace is found only at the mouth of creeks.

13. **Gila trout** (Oncorhynchus gilae) (T)
According to online review information, Gila trout is native to tributaries of the Gila River in Arizona and New Mexico. The Gila trout is found historically in the Verde and Agua Fria drainages in Arizona. Natural fish barriers prevented Gila trout from entering the upper Tonto Creek drainage (AZ). Gila trout have persisted in five streams within the Gila National Forest, New Mexico, including: Iron, McKenna, and Spruce creeks in the Gila Wilderness Area, along with Main and South Diamond creeks in the Aldo Leopold Wilderness Area.

The Gila trout has been threatened by competition and hybridization with introduced game fish such as the rainbow trout. However, the primary cause of reduced Gila trout populations is habitat loss caused by loss of water flow and shade-giving trees, caused in turn by fires, human destruction of riparian vegetation,

livestock overgrazing, agricultural irrigation and water diversion, and channelization of streams in the Gila trout's native range. By the time the Gila trout was listed by the U.S. Fish and Wildlife Service in 1967 its range had reduced from several hundred miles of stream to just 20 in the Gila Wilderness and Aldo Leopold Wilderness.

In accordance with requirements under section 7(a)(2) of the Endangered Species Act, EPA has reviewed this permit for its effect on listed threatened and endangered species and designated critical habitat. After review, EPA has determined that the reissuance of this permit will have "*no effect*" on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1. There have been no changes in operation and treatment of discharge at the hatchery since prior issuance of the permit.

2. EPA has received no additional information since the previous permit issuance which would lead to revision of its determinations.

3. The draft permit is consistent with the States WQS and does not increase pollutant loadings.

4. The NPDES program regulates the discharge of pollutants from the treatment facility and does not regulate forest and agricultural management practices.

5. EPA determines that Items 1thru 4 results in no change to the environmental baseline established by the previous permit, therefore, EPA concludes that reissuance of this permit will have "no effect" on listed species and designated critical habitat.

X. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of the permit should have no impact on historical and/or archeological sites since no construction activities are planned in the reissuance.

XI. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if State Water Quality Standards are promulgated or revised. In addition, if the State amends a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that TMDL. Modification of the permit is subject to the provisions of 40 CFR §124.5.

XII. **VARIANCE REQUESTS**: No variance requests have been received.

XIII. CERTIFICATION

The permit is in the process of certification by the State agency following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XIV. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XV. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(S): EPA Application Forms 1 and 2B received by EPA March 8, 2023.

B. 40 CFR CITATIONS: Sections 122, 124, 125, 133 and 136

C. STATE OF NEW MEXICO REFERENCES

NMQWS, 20.6.4 NMAC, effective April 23, 2022.
Implementation Guidance for the NMIP, March 15, 2012.
2022-2024 State of New Mexico Clean Water Act 303(d)/305(b) Integrative Report

D. CORRESPONDENCE

Application received for renewal of NPDES permit NM0030147 from Samantha Ferguson, New Mexico Department of Game and Fish, on March 8, 2023.

Samantha Ferguson, New Mexico Department of Game and Fish, on March 16, 2023, emailed to Jim Afghani and Brent Larsen, EPA about moving the sampling locations and installing flow meters.

The application renewal for permit NM0030163 was found administratively complete on March 20, 2023.

Samantha Ferguson, New Mexico Department of Game and Fish, on March 21, 2023, emailed to Jim Afghani and Brent Larsen, EPA a brief statement providing information (new latitude and longitude) for the sampling locations and completion date for the project.

Jim Afghani, EPA, emailed Samantha Ferguson and Patten, Kirk, New Mexico Department of Game and Fish, a Letter of Completeness for permit NM0030163 on March 31, 2023.

Jim Afghani, EPA, emailed Susan Lucas Kamat, NMED, on April 11, 2023, requesting 4Q3, harmonic mean flow, and ambient water quality estimates for the NM0030163 permit. Data received from Jason Martinez, NMED, on July 17, 2023.

Jim Afghani, EPA, emailed Silvia Zavala, EPA, on August 15, 2023, requesting a WET review for the NM0030163 permit. Received comment on August 21, 2023.

Jim Afghani, EPA, emailed Susan Lucas Kamat, NMED, on August 15, 2023, requesting a draft permit review for the NM0030163 permit. Received comment on September 11, 2023.