

ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility consists of two fish hatcheries and has a combined maximum flow rate of 22,800,000 gallons per day (22.8 mgd). Due to the nature of the operations, it is considered to be a minor facility under the NPDES program. The discharge process water limitations contained in this permit will maintain the Water Quality Standards listed in Arizona Administrative Code (A.A.C.) R18-11-101 et. seq. This permit is proposed to be issued for a period of 5 years.

I. PERMITTEE INFORMATION	
Permittee's Name:	Arizona Game and Fish Department
Permittee's Mailing Address:	5000 W. Carefree Highway Phoenix, AZ 85086
Facility Name:	Page Springs Fish Hatchery (PSFH)
Facility Address or Location:	1600 N. Page Springs Road Cornville, AZ 86325
County:	Yavapai
Contact Person(s) Phone/e-mail address:	Marc Dahlberg - Water Quality Program Manager (623) 236-7260, mdahlberg@azgfd.gov
AZPDES Permit Number:	AZ0021245
Inventory Number:	101811
LTF Number:	78165

II. STATUS OF PERMIT(S)	
AZPDES permit applied for:	Renewal
Date application received:	August 19, 2019
Date application was determined administratively complete:	August 21, 2019
Previous permit expiration date:	May 5, 2020

208 Consistency:

In accordance with A.A.C. R18-9-A903(6), a permit cannot be issued for any discharge inconsistent with a plan or plan amendment approved under section 208(b) of the Clean Water Act.

Based on review of the application, there are no changes to the facility that require a new determination of consistency with the Regional Water Quality Management Plan.

III. GENERAL FACILITY INFORMATION	
Type of Facility:	Fish Hatchery
Facility Location Description:	Approximately 7 miles northeast of Cottonwood, near Cornville, and in the Coconino National Forest.
Combined maximum daily flow rate from Outfall 001 and Outfall 002:	22.8 million gallons per day (MGD)
Hatchery Processes :	PSFH consists of two flow-through fish hatcheries (Bubbling Ponds and PSFH). Water for the two production operations (cold water species and warm water species) is obtained from two natural springs in the area and is not comingled as it is routed through the hatchery processes. All of the water from the two springs is used in rearing operations and then discharged separately to two different locations on Oak Creek. Biosolids requirements are not applicable because fish wastes are not considered biosolids under the 40 CFR 503 provisions.
Nature of facility discharge:	The discharge from the two production operations is primarily hatchery process water. If the hatchery were not in existence, the flow from both springs would naturally flow into Oak Creek.
Average flow per discharge:	The combined long-term average flow through the facilities is 19,350,000 gallons per day, with a maximum daily rate of 22,800,000 gallons per day.
Continuous or intermittent discharge:	Continuous

IV. RECEIVING WATER	
The State of Arizona has adopted water quality standards to protect the designated uses of its surface waters. Streams have been divided into segments and designated uses assigned to these segments. The water quality standards vary by designated use depending on the level of protection required to maintain that use.	
Receiving Water :	Oak Creek, which is an Outstanding Arizona Water (OAW) The segment is listed as below the confluence with an unnamed tributary at latitude 34° 57' 08.5" and longitude 111° 45' 13" to the Verde River.
River Basin:	Verde River Basin
Outfall Location(s):	Outfall 001: Township 16 N, Range 4 E, Section 23 Latitude 34° 45' 43", Longitude 111° 53' 24" Outfall 002: Township 16 N, Range 4 E, Section 23 Latitude 34° 45' 58", Longitude 111° 53' 26"
The outfall discharges to, or the discharge may reach, a surface water listed in Appendix B of A.A.C. Title 18, Chapter 11, Article 1.	

<p>Designated uses for the receiving water listed above:</p>	<p>Domestic Water Source (DWS) Aquatic and Wildlife warm water (A&Ww) Full Body Contact (FBC) Fish Consumption (FC) Agricultural Irrigation (Agl) Agricultural Livestock watering (Agl)</p>
<p>Is the receiving water on the 303(d) list?</p>	<p>Yes, the receiving water is listed as impaired for <i>E. coli</i>. ADEQ completed an <i>E. coli</i> TMDL for Oak Creek and Spring Creek in August of 2010. The TMDL addressed the <i>E. coli</i> loadings from hatcheries with the following statement, "Regardless of whether a hatchery has a permit to discharge to Oak Creek the operation, maintenance and the fish themselves are not expected to contribute any <i>E. coli</i> to the creek. Therefore the hatcheries will not be considered in TMDLs calculations resulting in a waste load allocation (WLA) equal to zero for these facilities." ADEQ did not assign an <i>E. coli</i> discharge limit in the permit because the discharge is not considered a source of <i>E. coli</i> and therefore is not contributing to the impairment. This is consistent with the TMDL language above and with 40 CFR 122.44(d)(1)(vii)(B) regarding a waste load allocation prepared by the State.</p> <p>This reach of Oak Creek was also included in a TMDL for nitrogen and phosphorus completed in June, 1999. This reach is no longer impaired for nitrogen and phosphorus; however waste load allocations for both parameters have been assigned to the Page Springs Hatchery and have been incorporated into the permit.</p>
<p>Given the uses stated above, the applicable narrative water quality standards are described in A.A.C. R18-11-108, and the applicable numeric water quality standards are listed in A.A.C. R18-11-109 and in Appendix A thereof. There are two standards for the Aquatic and Wildlife uses, acute and chronic. In developing AZPDES permits, the standards for all applicable designated uses are compared and limits that will protect for all applicable designated uses are developed based on the standards.</p>	

V. DESCRIPTION OF DISCHARGE			
<p>Because the facility is in operation and discharges have occurred, discharge monitoring data are available. The following is the measured discharge quality reported in the application.</p>			
Parameters	Units	Discharge Average	Discharge Maximum
Biochemical Oxygen Demand (BOD)	mg/L	1.8	8
Total Suspended Solids (TSS)	mg/L	3.44	45
Nitrogen (N)	mg/L	0.48	1.07
Phosphorous (P)	mg/L	0.05	0.54

VI. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT	
Date of most recent inspection:	2/7/2017; no potential violations were noted as a result of this inspection.
DMR files reviewed:	05/2015 through 08/2019
Lab reports reviewed:	05/2015 through 06/2019
DMR Exceedances:	Phosphorus (April 2018), Total Suspended Solids (April 2019) No other exceedances were noted.
NOVs issued:	None
NOVs closed:	N/A
Compliance orders:	None

VII. PROPOSED PERMIT CHANGES			
The following table lists the major changes from the previous permit in this draft permit.			
Parameter	Existing Permit	Proposed permit	Reason for change
Reporting Location	Mail in hard copies of DMRs and other attachments	DMRs and other reports to be submitted electronically through myDEQ portal	Language added to support the NPDES electronic DMR reporting rule that became effective on December 21, 2015.
Special Conditions for Ambient Monitoring – BOD and suspended sediment	Special conditions required ambient monitoring of BOD and suspended sediment	BOD and suspended sediment removed from the list of ambient monitoring parameters	Data indicates BOD and suspended sediment are not parameters of concern for ambient monitoring.
Special Conditions for Ambient Monitoring – Nitrogen and Phosphorus	Special conditions did not require ambient monitoring of nitrogen and phosphorus	Nitrogen and phosphorus parameters were added to the ambient water quality monitoring special condition requirements	Additional data on nutrient concentrations in Oak Creek upstream and downstream of the hatchery will be necessary to compare against future nutrient criteria.
<p>Anti-backsliding considerations – “Anti-backsliding” refers to statutory (Section 402(o) of the Clean Water Act) and regulatory (40 CFR 122.44(l)) requirements that prohibit the renewal, reissuance, or modification of an existing NPDES permit that contains discharge limits, permit conditions, or standards that are less stringent than those established in the previous permit. The rules and statutes do identify exceptions to these circumstances where backsliding is acceptable. This permit has been reviewed and drafted with consideration of anti-backsliding concerns.</p> <p>No limits have been removed from the permit. Limits are retained in the draft permit for parameters where reasonable potential (RP) for an exceedance of a standard continues to exist or is indeterminate. In these cases, limits will be recalculated using the most current Arizona Water Quality Standards (WQS). If less stringent limits result due to a change in the WQS then backsliding is allowed in accordance with 303(d)(4) if the new limits are consistent with</p>			

antidegradation requirements and the receiving water is in attainment of the new standard; see Section XII for information regarding antidegradation requirements.

No limits are less stringent due to a change in the WQS in this permit.

VIII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS

When determining what parameters need monitoring and/or limits included in the draft permit, both technology-based and water quality-based criteria were compared and the more stringent criteria applied.

Technology-based Limitations:

This fish hatchery is regulated under 40 CFR 122.24 as a concentrated aquatic animal production (CAAP) facility and is not an animal or concentrated animal feeding operation (AFO or CAFO, respectively). Technology based controls in the form of best management practices for fish hatcheries became effective on September 22, 2004 and are found in 40 CFR 451. The biochemical oxygen demand and total suspended solids discharge limitations are based on best professional judgment (BPJ). The other limits in the proposed permit are based on Water Quality Standards and were determined without the use of a mixing zone.

Technology-based discharge process water limitations (TBELs) of 10 mg/L (average monthly) and 15 mg/L (daily maximum) have been established for BOD, TSS and pH based on Best Professional Judgment (BPJ). This level is also considered protective of the narrative standard at A.A.C. R18-11-108(B).

Numeric Water Quality Standards:

Nitrogen and Phosphorus TMDL

The Oak Creek Basin nitrogen and phosphorus TMDL dated June, 1999 assigned a nitrogen annual mean waste load allocation (WLA) for the PSFH at 55.20 kilograms per day (kg/day) and a phosphorus annual mean WLA at 9.35 kg/day. The respective annual mean mass limits have been implemented in the permit for both parameters.

Numeric Nutrient Criteria

The numeric nutrient criteria for Oak Creek per A.A.C. R18-11-109.F(9) have been assigned as water-quality based effluent limits in the permit.

Mixing Zone

The limits in this permit were determined without the use of a mixing zone. Arizona state water quality rules require that water quality standards be achieved without mixing zones unless the permittee applies for and is approved for a mixing zone. Since a mixing zone was not applied for or granted, all water quality criteria are applied at end-of-pipe.

Permit Limitations and Monitoring Requirements

The table that follows summarizes the parameters that are limited in the permit and the rationale for that decision. Also included are the parameters that require monitoring without any limitations or that have not been included in the permit at all and the basis for those decisions. The corresponding monitoring requirements are shown for each parameter. In general, the regulatory basis for monitoring requirements is per 40 CFR §122.44(i) *Monitoring requirements*, and 40 CFR §122.48(b), *Required monitoring*; all of which have been adopted by reference in A.A.C. R18-9-A905, *AZPDES Program Standards*.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Flow	---	---	---	---	---	Discharge process water is to be monitored on a continual basis using a flow meter.
Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS)	10 mg/L 30-day average 15 mg/L daily maximum/ Based on best professional judgment (BPJ)	BOD: 8 mg/L TSS: 45 mg/L	BOD: 98 TSS: 98	N/A	N/A	Monitoring the discharged process water for BOD and TSS to be conducted using discrete samples and TBELs are set. The sample type required was chosen to be representative of the discharge.
<i>E. coli</i>	TMDL Waste Load Allocation 0 cfu/100 mL based on discharge not being a source of <i>E. coli</i> .	No Data	N/A	N/A	No RP	See Part IV Receiving Water above. No sampling required in the permit.
pH	Minimum: 6.5 Maximum: 9.0 A&Ww and FBC A.A.C. R18-11-109(B) Minimum: 6.0 Maximum: 9.0 Based on BPJ	8.1	98	N/A	N/A	pH is to be monitored using a discrete sample of the discharged process water and a WQBEL remains. 40 CFR Part 136 specifies that grab samples must be collected for pH.
Nutrients (Total Nitrogen)	2.5 mg/L Single sample maximum 1.0 mg/L Annual average A.A.C. R18-109.F(9) TMDL WLAs Annual Avg Limit - 55.2 kg/day Daily Max Limit - 216 kg/day	1.07 mg/L	98	N/A	N/A – WQBEL N/A – WLA	Monitoring required for discharged process water and a WQBEL remains. The TMDL WLAs for Outfalls 001 and 002 remain.
Nutrients (Total Phosphorus)	0.3 mg/L Single sample maximum 0.1 mg/L Annual average A.A.C. R18-109.F(9) TMDL WLAs Annual Avg Limit - 9.35 kg/day Daily Max Limit - 26 kg/day	0.54 mg/L	98	N/A	N/A – WQBEL N/A – WLA	Monitoring required for discharged process water and a WQBEL remains. The TMDLs WLAs for Outfalls 001 and 002 remain.

Footnotes

(1) The monitoring frequencies are as specified in the permit.

VIII. NARRATIVE WATER QUALITY STANDARDS

All narrative limitations in A.A.C. R18-11-108 that are applicable to the receiving water are included in Part I, Sections B of the draft permit.

IX. MONITORING AND REPORTING REQUIREMENTS (Part II of Permit)

Section 308 of the Clean Water Act and 40 CFR Part 122.44(i) require that monitoring be included in permits to determine compliance with discharge limitations. Additionally, monitoring may be required to gather data for future discharge limitations or to monitor discharge impacts on receiving water quality.

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Monitoring frequencies for some parameters may be reduced in subsequent permits if all monitoring requirements have been met and the limits or ALS for those parameters have not been exceeded during the first permit term.

Discrete (i.e., grab) samples are specified in the permit for all parameters. The quality of the discharge is not expected to be highly variable.

Monitoring locations are specified in the permit (Part II.A.1) in order to ensure that representative samples of the influent and discharge are consistently obtained.

The requirements in the permit pertaining to Part II, Monitoring and Reporting, are included to ensure that the monitoring data submitted under this permit is accurate in accordance with 40 CFR 122.41(e). The permittee has the responsibility to determine that all data collected for purposes of this permit meet the requirements specified in this permit and is collected, analyzed, and properly reported to ADEQ.

The permit (Part II.A.3) requires the permittee to keep a Quality Assurance (QA) manual at the facility, describing sample collection and analysis processes; the required elements of the QA manual are outlined.

Reporting requirements for monitoring results are detailed in Part II, Sections B.1 and 2 of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs).

The permittee is responsible for conducting all required monitoring and reporting the results to ADEQ on DMRs or as otherwise specified in the permit.

Electronic reporting

The US EPA has published a final regulation that requires electronic reporting and sharing of Clean Water Act National Pollutant Discharge Elimination System (NPDES) program information instead of the current paper-based reporting (Federal Register, Vol. 80, No. 204, October 22, 2015). Beginning December 21, 2016 (one year after the effective date of the regulation), the Federal rule required permittees to make electronic submittals of any monitoring reports and forms called for in their permits. ADEQ has created an online portal called myDEQ that allows users to submit their discharge monitoring reports and other applicable reports required in the permit.

Requirements for retention of monitoring records are detailed in Part II.C. of the permit.

X. BIOSOLIDS REQUIREMENTS (Part III in Permit)

Not applicable because fish wastes are not considered biosolids under the 40 CFR 503 provisions.

XI. SPECIAL CONDITIONS (Part IV in Permit)

Ambient Surface Water Monitoring

The regulations under 40 CFR 122.43(a) state that:

"(a) In addition to conditions required in all permits (122.41 and 122.42), the Director shall establish conditions, as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of CWA and regulations."

Monitoring and reporting at specified locations upstream and downstream of the outfall is required quarterly for flow, temperature, dissolved oxygen, total Nitrogen, total Phosphorus, and total suspended solids.

Special Reporting

The permittee is required to submit annually by January 31st a list of all chemicals added to the water in the fish hatchery during the preceding year. The chemical list is to include antibiotics, fungicides, detergents and other cleaning agents and disinfectants. The submittal shall include information on frequency and duration of use, purpose and amounts.

Best Management Practices

The Arizona Game and Fish Department shall continue to update and implement their Best Management Practices Plan for the PSFH to meet the requirements of 40 CFR 451, Subpart A. Components of the Plan include developing, implementing, and documenting Best Management Practices (BMPs) to train personnel in spill prevention and clean-up, reduce the discharge of pollutants, control the discharge of solids, conduct regular structural maintenance, have a record keeping system, and ensure proper storage, reporting of usage, and disposal of drugs and chemicals.

Permit Reopener

This permit may be modified based on newly available information; to add conditions or limits to address demonstrated discharge toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if assessment levels in this permit are exceeded [A.A.C. R18-9-B906 and 40 CFR Part 122.62 (a) and (b)].

XII. ANTIDegradation

Antidegradation rules have been established under A.A.C. R18-11-107 to ensure that existing surface water quality is maintained and protected. A.A.C. R18-11-107D indicates that Outstanding Arizona Waters (OAW) fall in the Tier 3 category. The Tier 3 category states that existing water quality shall be maintained and protected in a surface water listed under A.A.C. R18-11-112. Oak Creek is listed as an OAW in section G. of that rule. Surface water data from the previous and existing permitting timeframes was reviewed. This is a flow through hatchery and the data indicated that hatchery operations have no impact on the stream integrity with the exception of nitrogen and phosphorus. If the facility meets the permit limits then the permittee is considered to be maintaining and protecting the existing uses of Oak Creek. Note that in the current regulations effective January 31, 2009, Oak Creek is a designated Outstanding Arizona Water (OAW) as per A.A.C. R18-11-112.

XIII. STANDARD CONDITIONS

Conditions applicable to all NPDES permits in accordance with 40 CFR, Part 122 are attached as an appendix to this permit.

XIV. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-A907)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft AZPDES permit or other significant action with respect to an AZPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-A908)

Rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C. R18-9-A908(B))

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

EPA Review (A.A.C. R18-9-A908(C))

A copy of this draft permit and any revisions made to this draft as a result of public comments received will be sent to EPA Region 9 for review. If EPA objects to a provision of the draft, ADEQ will not issue the permit until the objection is resolved.

XV. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

Arizona Department of Environmental Quality
Water Quality Division – Surface Water Permits Unit
Attn: Jessica Kohls
1110 West Washington Street
Phoenix, Arizona 85007

Or by contacting Jessica Kohls at (602) 771 – 0391 or by e-mail at kohls.jessica@azdeq.gov.

XVI. INFORMATION SOURCES

While developing discharge limitations, monitoring requirements, and special conditions for the draft permit, the following information sources were used:

1. AZPDES Permit Application Forms 1 and 2B, received August 19, 2019, along with supporting data, facility diagram, and maps submitted by the applicant with the application forms.
2. Supplemental information to the application received by ADEQ on August 22, 2019.
3. ADEQ files on Page Springs Fish Hatchery.

4. 208 Consistency Review Form dated 8/26/05.
5. ADEQ Geographic Information System (GIS) Web site
6. Information provided to ADEQ staff during a site visit to the future facility location on August 26, 2019.
7. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters*, adopted December 31, 2016.
8. A.A.C. Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.
9. Code of Federal Regulations (CFR) Title 40:
 - Part 122, *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.*
 - Part 124, *Procedures for Decision Making.*
 - Part 133. *Secondary Treatment Regulation.*
 - Part 503. *Standards for the Use or Disposal of Sewage Sludge.*
10. EPA Technical Support Document for Water Quality-based Toxics Control dated March 1991.
13. U.S. EPA NPDES Permit Writers' Manual, September 2010.