

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET
January 27, 2015

Permittee Name: Cyclone Day Lodge Wastewater Treatment Plant

Mailing Address: P.O. Box 117
Greer, AZ 85927

Facility Location: Cyclone Day Lodge Wastewater Treatment Plant
Sunrise Park Resort
Greer, AZ 85927

Contact Person(s): Bill London, Mountain Manager
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NPDES Permit No.: AZ0024571

I. STATUS OF PERMIT

The White Mountain Apache Tribe (the “permittee”) has applied for the renewal of its National Pollutant Discharge Elimination System (“NPDES”) permit to authorize the discharge of treated effluent from the Cyclone Day Lodge Wastewater Treatment Plant (the “facility”) to Becker Creek, located near Greer, Arizona. A completed application was submitted on March 15, 2013. The U.S. Environmental Protection Agency (“EPA”) Region IX is reissuing this facility’s permit pursuant to the Clean Water Act (“CWA”) section 402. CWA section 402, and EPA’s implementing regulations, contain provisions that govern EPA’s authorization to require NPDES permit conditions. (40 CFR 122).

EPA issued the previous permit on July 1, 2008.

This permittee is classified as a minor discharger.

II. GENERAL DESCRIPTION OF FACILITY

The Cyclone Day Lodge Wastewater Treatment Plant is located in Apache County, on the Fort Apache Indian Reservation, 12 miles west of Greer, Arizona. The permittee operates a publicly owned treatment works (“POTW”) or wastewater treatment plant (“WWTP”) serving the ski resort, which has an approximate population of less than 1,040.

The Sunrise Park Resort population, and therefore its wastewater production, fluctuates from day to day and season to season, but all discharges under this permit are due to the Lodge operations and not industrial uses. The facility discharges seasonally as the lodge is operated only during ski season. The facility has a design flow of 26,000 gallons per day (98.4 m³ per day).

The Cyclone Day Lodge Wastewater Treatment Plant provides secondary treatment of wastewater using an activated sludge package treatment system. The system consists of a 10,000 gallon holding tank that equalizes flow, followed by three 7,000 gallon aeration tanks, and a fourth tank that serves as a clarifier. Wastewater is disinfected via calcium hypochlorite tablets in the clarifier overflow channel and dechlorinated via sodium sulfite tablets in the dechlorination basin. The treated effluent is discharged to Becker Creek via underground pipes through Outfall No. 001.

Since the facility is not equipped with sludge processing equipment, biosolids are periodically pumped out of the aeration basins by the Tribal Utility Authority (“TUA”). The TUA uses a pumping truck one to two times a year to transport the biosolids offsite to the Hon-Dah Wastewater Treatment Facility where the biosolids are stored, treated, and disposed.

III. DESCRIPTION OF RECEIVING WATER

The Cyclone Day Lodge Wastewater Treatment Plant discharges to Becker Creek, which is a tributary to the North Fork White River. The North Fork lies within Tribal lands and merges with the East Fork to form the White River. Treated wastewater is discharged to Becker Creek from the facility located at latitude 33° 58’ 03” N and longitude 109° 34’ 11” W. A pipe runs underground from the facility to Becker Creek.

In order to protect the designated uses of surface waters, the White Mountain Apache Tribe (“WMAT”) of the Fort Apache Indian Reservation adopted water quality standards for different stream segments, depending on the level of protection required. The WMAT Water Quality Protection Ordinance lists Becker Creek as a perennial stream. Designated uses for Becker Creek include:

- Coldwater habitat,
- Irrigation,
- Livestock and wildlife,
- Secondary contact,
- Gathering of medicinally or otherwise culturally significant plants, and
- Cultural significance.

There are no known impairments for Becker Creek or for the North Fork of the White River. In the Nemo-Watershed-Based Plan Salt Watershed, the North Fork of the White River is classified as moderate risk of impairment from metals, sediment, organics, and selenium based on the lack of monitoring data. (See [NEMO Watershed-Based Plan Salt Watershed, August 2008](#)).

IV. DESCRIPTION OF DISCHARGE

The facility provides secondary treatment of wastewater using an activated sludge package treatment system. Treatment consists of flow equalization, aeration, clarification, disinfection via calcium hypochlorite tablets in the clarifier overflow channel, and dechlorination via sodium sulfite tablets in the dechlorination basin. The treated effluent is discharged to Becker Creek through Outfall No. 001. The facility is not equipped with sludge processing equipment.

Inspections in 2008 and 2013 found the treatment units in poor condition and functioning improperly. The major findings identified in 2008 were identified as major findings in the 2013 inspection, indicating that the issues from the 2008 inspections have not been adequately addressed. Specifically, on March 13, 2013, the inspector reported turbulence and foaming throughout the treatment system. The color of water in clarifier basin was dark, had visible scum/solids accumulation, and had visible accumulation of sludge along the clarifier overflow channel. The inspection found turbulence in the aeration basin, which was likely a result of manual operation of the air blowers. The turbulence appeared to be causing the foam in the clarifier and causing sludge to adhere to the clarifier, grates, and dechlorination basin.

In preparation for the March 13, 2013 inspection, the inspectors reviewed approximately 5 years of data (i.e. 58 months). The inspectors reported that the facility consistently was not meeting its permit limits. The previous permit contained effluent limits for biochemical oxygen demand (“BOD₅”), *Escherichia coli* (“*E. coli*”), pH, temperature, total suspended solids (“TSS”), turbidity, total ammonia, total residual chlorine, total recoverable oil and grease, and total phosphorous. The facility also was required to monitor and report flow rate.

All parameters, except temperature and pH, were exceeded frequently. These exceedances are discussed further in Part VI.B.4, History of Compliance Problems. In addition to the effluent limit exceedances, the inspectors identified the need for experienced operators and adequate funding for maintenance and plant operation.

A. Application Discharge Data

Historically, data management has been a problem at the facility. During the last permit term, data discrepancies exist for all parameters. A new operator was hired and had to rely on existing data to complete the application form for permit renewal. The existing data came from discharge monitoring report (“DMR”) forms, which were completed incorrectly and did not contain all required information. For example, no discharge (“NODI”) was incorrectly reported on the DMR form when laboratory results were not available, or the form entries for parameters were left blank to account for missing data as well as when monitoring reports had not been received by the contract laboratory due to lack of payment. Since the permit application relies, in part, on existing data, data discrepancies were carried over in the facility’s reapplication for permit coverage.

B. Recent Discharge Monitoring Report Data (2008-2013)

EPA reviewed DMR data for the period between October 2008 and July 2013 (i.e. 58 months). Table 2 provides a summary of effluent limitations and monitoring data based on this timeframe. The data shows elevated concentrations of ammonia, BOD₅ (mg/L and percent removal), total coliform bacteria¹, TSS (mg/L and percent removal), and total residual chlorine. The permittee did not report turbidity and whole effluent toxicity results. All exceedances are discussed further in Part VI.B.4, History of Compliance Problems.

¹ The permittee did not report any values for *E. coli*. The permittee reported values for fecal or total coliform for January to March 2013.

Sampling frequencies varied by pollutant. The previous permit required weekly samples, taken at the outfall, for flow rate, pH, temperature, turbidity, and total residual chlorine. The previous permit required chlorine sampling at two locations in the receiving stream (i.e. as close as possible to 20 and 50-feet downstream from the effluent sampling location).²

Monthly sampling, at the outfall, was required, in the previous permit, for BOD₅, *E. coli*, TSS, total ammonia, total recoverable oil and grease, and total phosphorous. The previous permit also required monthly influent samples for BOD₅ and TSS.

The previous permit required whole effluent toxicity (“WET”) testing once during the permit term (i.e. 2008 to 2013), with the sample being collected at the outfall within 30 days of discharging. However, the permittee did not conduct this testing. The permittee should have split the sample and analyzed for toxicity as well as the other required parameters (i.e. BOD₅, *E. coli*, TSS, total ammonia, total recoverable oil and grease, and total phosphorous). If the test results indicated the presence of chronic toxicity, the permittee would have increased monitoring, pursuant to the facility’s Toxics Reduction Evaluation (“TRE”) plan.³

Table 2 on the next page provides a summary of the data reported for the previous permit term.

² The previous permit required instream monitoring for total residual chlorine. However, the permittee did not conduct this monitoring during the permit term. EPA is removing these in-stream monitoring requirements in the re-issued permit. Instream monitoring is not necessary because the effluent limits for total residual chlorine, pH, and temperature are from the Tribe’s Water Quality Protection Ordinance, and these end-of-pipe limits ensure discharges will not degrade water quality. However, EPA is retaining the effluent limits and the monitoring requirements for pH, total residue chlorine, and temperature.

³ The previous permit defined the presence of chronic toxicity as: 1) greater than 1.0 TUc base on any monthly median of test results, and 2) any one test result greater than 2.0 TUc. However, the permittee did not conduct WET testing. EPA is retaining this requirement and has updated the required statistical test used to analyze WET data in the permit.

Table 2. Discharge Monitoring Report Data for Previous Permit Term (October 2008 to July 2013).

Parameter	Units	Previous (2008 – 2013) Permit Effluent Limitations			Discharge Monitoring Data			Previous (2008 – 2013) Monitoring Req.	
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly	Highest Average Weekly	Highest Maximum Daily	Monitoring Frequency	Sample Type
Flow Rate	MGD	(2)	--	(2)	16.2 ⁽²⁾	--	16.8 ⁽²⁾	Weekly	Continuous
Biochemical Oxygen Demand (5-day)	mg/L	30	45	--	10,339	Not reported.	--	Once/Month	Discrete
	kg/day	3.0	4.4	--	16.95	Not reported.	--		
	Percent Removal	Influent and effluent shall be monitored. The arithmetic mean of the BOD ₅ values, by concentration, for effluent samples collected over a calendar month shall not exceed 15 percent of the arithmetic mean, by concentration, for influent samples collected at approximately the same times during the same period (i.e. 85% BOD ₅ removal).			0 % (minimum)				
Total Suspended Solids	mg/L	30	45	--	8,236	Not reported.	--	Once/Month	Discrete
	kg/day	3.0	4.4	--	52.99	Not reported.	--		
	Percent Removal	Influent and effluent shall be monitored. The arithmetic mean of the TSS values, by concentration, for effluent samples collected over a calendar month shall not exceed 15 percent of the arithmetic mean, by concentration, for influent samples collected at approximately the same times during the same period (i.e. 85% TSS removal).			0.27 % (minimum)				

Parameter	Units	Previous (2008 – 2013) Permit Effluent Limitations			Discharge Monitoring Data			Previous (2008 – 2013) Monitoring Req.	
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly	Highest Average Weekly	Highest Maximum Daily	Monitoring Frequency	Sample Type
<i>E. coli</i>	CFU/100mL	The geometric mean shall not exceed 47.00.	--	88.00	(3)	--	(3)	Once/Month	Discrete
Ammonia (as N)	mg/L	(1)	--	(1)	172	--	118	Once/Month	Composite
Total Residual Chlorine	mg/L	--	--	0.1	--	--	0.39	Weekly	Discrete
Turbidity	NTU	--	--	50.00	--	--	Not reported.	Weekly	Discrete
pH	Standard Units	Not < 6.5, Not > 9.0			7 – 9 (min-max)			Weekly	Discrete
Total Recoverable Oil and Grease	mg/L	10	--	15	34	--	Not reported.	Once/Month	Discrete
Temperature	°C	--	--	23	--	--	14	Weekly	Discrete

- (1) The permittee had to calculate the QBEL for total ammonia (in mg N/L) based on the Tribal Water Quality Protection Ordinance Appendix A using the temperature and pH at the time of the sampling.
- (2) The previous permit only required flow monitoring. The reported highest value for flow occurred in January 2011 and is incorrect because these values are higher than the capacity of the system. Data from January to March 2013 report values of 0.028 mgd for monthly flow and 0.05 mgd for daily flow.
- (3) The permittee monitored and reported for fecal or total coliform rather than *E. coli*. The reported values (January 2013 to March 2013) were 2,419.6 most probable number/100 mL.

V. SIGNIFICANT CHANGES FROM PREVIOUS PERMIT TERM (2008 – 2013)

Below is a summary table of the changes from the previous permit.

Table 3. Summary of the changes from the previous permit term

Permit Condition	Previous Permit (2008 – 2013)	Re-issued permit (2015 – 2020)	Reason for change
Ammonia effluent limit	The permittee had to calculate the WQBEL for total ammonia (in mg N/L) based on the Tribal Water Quality Protection Ordinance Appendix A using the temperature and pH at the time of the sampling (i.e. a “floating limit”).	Compliance with the ammonia effluent limit will be determined using a ratio, called the ammonia impact ratio (“AIR”). The permit limit is set to a value of 1.0. The permittee also must continue to monitor and report ammonia effluent values in addition to the AIR value.	AIR provides more flexibility than a specific, fixed effluent concentration and is easier than a floating limit to determine and report compliance.
Mass effluent limit units	kg/day	lbs/day	Unit change is consistent with EPA national guidance.
Total phosphorus effluent limit	Monitoring and reporting for average monthly values. ⁴	Average monthly limit established.	Reasonable potential existed. Reported average monthly values always exceeded the water quality standard.
Dissolved oxygen effluent limit	Narrative requirement that the discharge shall not cause the concentration of dissolved oxygen in the receiving waters to be less than 6.0 mg/L.	The permit contains a daily maximum effluent limit that dissolved oxygen shall not be less than 6.0 mg/L and weekly monitoring requirements.	Since the facility frequently exceeded the BOD ₅ limit, EPA established an effluent limit for DO. Facilities with problems achieving compliance generally are required to perform more frequent monitoring to characterize the source, or cause of the problems, or to detect noncompliance.
Chlorine effluent limit	Monitoring and reporting for average monthly values. ⁴	Average monthly limit established.	40 CFR 122.45(d)(2) requires that effluent limitations be expressed, unless impracticable, as average monthly and average weekly limitations.

⁴ The previous permit contained a daily maximum effluent limit. EPA is establishing an average monthly limit in addition to the daily maximum effluent limit.

Permit Condition	Previous Permit (2008 – 2013)	Re-issued permit (2015 – 2020)	Reason for change
Statistical approach for analysis of chronic WET test data.	Used a multi-concentration and control hypothesis testing statistical approach (NOEC/LOEC) and EPA’s 1991 TSD permitting guidance for assessing chronic WET.	Uses a single concentration and control hypothesis testing statistical approach (Test of Significant Toxicity t-test, “TST”) in EPA’s 2010 permitting guidance for assessing chronic WET.	Increases confidence in data assessment and allows for a simpler test design.
Frequency of WET testing	Not applicable.	EPA clarifies that the WET testing requirements apply once during the permit term, unless the test results exceed the WET permit trigger.	Not applicable.
Priority pollutant scan monitoring	No existing permit requirement.	Sample and submit a priority pollutant scan once during the permit term, within 30 days of next discharge.	The permittee has not completed a priority pollutant scan in the last 10 years. A priority pollutant scan is needed to characterize the effluent and determine if additional permit conditions are needed to protect water quality.
Chlorine monitoring schedule	Chlorine monitoring shall be taken within 45 minutes after the addition of fresh chlorine tablets to the treatment system.	Removed requirement.	The permittee is required to maintain an operator’s manual, which should include monitoring sampling protocols. EPA removed the monitoring schedule to provide increase flexibility to the permittee.
Receiving water monitoring requirements	Quarterly temperature and pH monitoring when effluent is mixed with receiving water flows. Monthly chlorine monitoring at 20- and 50-ft downstream of well as immediately following the outfall.	Removed receiving water monitoring requirements.	Instream monitoring is not necessary because the effluent limits for total residual chlorine, pH, and temperature are from the Tribe’s Water Quality Protection Ordinance, and these end-of-pipe limits ensure discharges will not degrade water quality.

EPA is retaining the remaining conditions of the previous permit. However, certain permit conditions from the last permit term were not met, and therefore, the permittee must submit the following:

- Results of the WET testing (using the TST statistical approach described in the permit);

- Laboratory documents submitted with the permittee’s DMR, as required by permit section E.2⁵;
- One or two-page Toxics Reduction Evaluation (“TRE”) Workplan for chronic toxicity;
- Operator’s manual (i.e. Operation and Maintenance Plan)⁶.

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA developed effluent limitations and monitoring requirements in this permit based on an evaluation of the technology used to treat the pollutant (e.g., “technology-based effluent limits”) and the water quality standards applicable to the receiving water (e.g., “water quality-based effluent limits”). EPA has established the most stringent of the applicable technology-based or water quality-based standards in the permit, as described below.

A. Applicable Technology-Based Effluent Limitations

EPA developed technology-based treatment standards for municipal wastewater treatment plants in accordance with Section 301(b)(1)(B) of the Clean Water Act. The facility does not meet the criteria to qualify for discharge limitations based on equivalent to secondary standards. Therefore, the minimum levels of effluent quality attainable by secondary treatment for BOD₅, TSS, and pH, as defined in 40 CFR 133.102, are listed below. Mass limits, as required by 40 CFR 122.45(f), are included for BOD₅ and TSS in the permit.

BOD₅

Concentration-based Limits

- 30-day average – 30 mg/L
- 7-day average – 45 mg/L
- Removal Efficiency – minimum of 85%

Mass-based Limits

- 30-day average – (30 mg/L)(0.026 MGD)(8.345 conversion factor) = 6.5 lbs/day
- 7-day average – (45 mg/L)(0.026 MGD)(8.345 conversion factor) = 9.8 lbs/day

TSS

Concentration-based Limits

- 30-day average – 30 mg/L
- 7-day average – 45 mg/L
- Removal efficiency – Minimum of 85%

Mass-based Limits

- 30-day average – (30 mg/L)(0.026 MGD)(8.345 conversion factor) = 6.5 lbs/day
- 7-day average – (45 mg/L)(0.026 MGD)(8.345 conversion factor) = 9.8 lbs/day

⁵ The permittee also is required to maintain records of monitoring information that includes but not limited to a summary of the results produced by the laboratory and any comments. However, these records do not need to be submitted to EPA in the permittee’s DMR forms.

⁶ The permittee also must develop a Quality Assurance Manual as required by the permit. This manual does not need to be submitted to EPA. A copy of the permittee’s QA Manual shall be retained on the permittee’s premises and available for review by regulatory authorities upon request.

pH

Instantaneous Measurement: 6.0 – 9.0 standard units (S.U.)

The effluent limits for BOD₅ and TSS, as stated above, are retained in the permit. EPA is retaining a more protective water quality-based effluent limit for pH, in the permit, due to the Tribe's water quality standards. See section VI. C, Rationale for Numeric Effluent Limits and Monitoring.

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations are required in NPDES permits when the permitting authority determines a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures that account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR 122.44(d)(1)(ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the TSD (EPA 1991) and the *NPDES Permit Writers Manual* (EPA 2010). These factors are listed below and subsequently discussed:

1. Applicable standards, designated uses and impairments of receiving water
2. Dilution in the receiving water
3. Type of industry
4. History of compliance problems
5. Reasonable Potential Analysis (using data from previous permit term 2008 to 2013)

1. Applicable Standards, Designated Uses, and Impairments of Receiving Water

In order to protect the designated uses of surface waters, the WMAT of the Fort Apache Indian Reservation has adopted water quality standards for different stream segments, depending on the level of protection required. The WMAT Water Quality Protection Ordinance lists Becker Creek as a perennial stream. Designated uses for Becker Creek include:

- Coldwater habitat,
- Irrigation,
- Livestock and wildlife,
- Secondary contact,
- Gathering of medicinally or otherwise culturally significant plants, and
- Cultural significance.

Note the standards for the secondary contact recreation use are applied to protect waterbodies designated for gathering of medicinal or otherwise culturally significant plants. There are no known impairments for Becker Creek or for the White River. In the Nemo-Watershed-Based Plan Salt Watershed, the North Fork of the White River is classified as moderate risk of impairment from metals, sediment, organics, and selenium based on the lack of monitoring data. ([NEMO Watershed-Based Plan Salt Watershed, August 2008](#)).

The applicable narrative water quality standards are described in section 3.5 of the Ordinance, and the applicable numeric water quality standards are listed in section 3.6 and Appendix A of the Ordinance. The standards for all applicable designated uses are compared, and the limits are developed to protect for all applicable designated uses. Table 4 lists the applicable water quality standards to protect water quality.

Table 4. Water Quality Standards to Protect Water Quality

Parameter	30-day Average	Daily Maximum	Water Quality Protection Ordinance Reference
Total Residual Chlorine		0.1 mg/L	Section 3.5 for narrative water quality standards
<i>E. Coli</i> ⁽¹⁾	47 colony forming units (CFU) per 100 ml	88 CFU per 100 ml	Ambient Water Quality for Bacteria – 1986 (EPA 440/5-84-002)
Dissolved Oxygen		Minimum of 6.0 mg/L	Section 3.6, coldwater habitat standards
Temperature		Maximum of 23° Celsius	Section 3.6, coldwater habitat standards
Total Phosphorous		0.1 mg/L	Section 3.6, coldwater habitat standards
Turbidity		50.00 Nephelometric Turbidity Units (NTU)	Section 3.6, secondary contact and gathering of medicinal or otherwise culturally significant plants standards
Total Ammonia	Determine from Appendix A (chronic)	Determine from Appendix A (acute)	Section 3.6, referencing to coldwater habitat chronic tables in Appendix A ⁽²⁾

(1) The Water Quality Protection Ordinance relies on fecal coliform bacteria. In 1986, EPA published criteria guidance recommending the use of *E. coli* and enterococci as indicator bacteria. The epidemiological data, upon which the criteria guidance are based, indicate the *E.coli* and enterococci are better correlated to health effects related to water-contact recreation. See section C. Rationale for Numeric Effluent Limits and Monitoring.

(2) The tables in the Tribe’s Water Quality Protection Ordinance, Appendix A do not specify the timeframes or averaging periods for the water quality criteria.

2. Dilution in the Receiving Water

Discharge from Outfall 001 is to Becker Creek, and the permittee did not request a mixing zone. Dilution is not allowed and therefore, not considered by EPA in the development of water quality-based effluent limits applicable to the discharge. All effluent limits will apply at the outfall.

3. Type of Industry

Typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrate, oxygen demand, pathogens, temperature, pH, oil and grease, and solids. Chlorine and turbidity may be of concern due to treatment plant operations.

4. History of Compliance Problems

EPA reviewed DMR data between October 2008 and July 2013 (i.e. 58 months) for the purpose of reissuing this permit. The DMR data showed reporting deficiencies in all parameters, including incomplete data sets, incorrect calculations and units recorded, and lack of testing for turbidity and WET testing. The following summarizes the DMR data during this time period:

Flow: The permittee reported flow values for 6 months. The first three reported flow values are likely incorrect because the permittee reported values greater than 12.1 million gallons per day (“MGP”), exceeding the design capacity of 26,000 gallons per day (“GPD”). The daily maximum flow for the other 3 months was reported at 5,000 gpd, with an average monthly flow of 2,800 gpd.

The permittee also reported 43 months with an explicit “no discharge”, and for the remaining 9 months, “the system was closed” and/or no information was submitted.

BOD₅: For the 7 months (Feb. 2010; Jan. to March 2011; Jan. to March 2013) in which data was submitted for effluent sampling, the average monthly concentration values ranged from 91 to 10,339 mg/L, all exceeding the average monthly permit limitation of 30 mg/L. The average weekly values were not submitted. Monthly average mass flow values were reported for 3 months (Jan. to March 2013). These values ranged from 9.6 to 16.95 kg/day, also exceeding the average monthly limit of 3 kg/day. No average weekly values were submitted. The permittee reported 42 months of no discharge and did not submit data for at least 9 months.

The permittee reported BOD removal efficiencies for 10 months. However, for two of these months, there is no corresponding effluent BOD₅ and for another month, the permittee reported a removal efficiency of 520%, associated with an influent BOD₅ of 520 mg/L and effluent BOD₅ of 6,941 mg/L. Of the remaining 7 months, the facility achieved the 85% removal efficiency twice. The reported values ranged from 0 to 90.7%. The permittee reported no discharge for 41 months and did not submit data for 7 months.

Total Suspended Solids: The permittee did not report weekly averages for TSS. For average monthly concentration, values were reported for 7 months, ranging between 130 and 8,236 mg/L, exceeding the permit limitation of 30 mg/L. The permittee did not submit data for 13

months. The permittee reported 42 months of no discharge. Average mass values were reported for 3 monitoring periods (Jan. to March 2013) and were 13.77, 40.2, and 52.99 kg/day, respectively. These values exceeded the effluent limit, which was 3 kg/day. The permittee reported 42 months of no discharge and did not report data for 9 months.

Suspended solids removal ranged between 0.27 % and 98.2%, exceeding the limit 6 out of the 7 reported values. However, removal efficiencies for 2 months (Feb. and March 2009) did not have reported effluent monitoring values, and removal efficiencies for 4 months appear to be calculated incorrectly as the reported values for the effluent are over 4,000 mg/L when the corresponding influent values are under 500 mg/L. The permittee did not submit data for 7 months and reported no discharge for 41 months.

E. Coli: The permittee did not report values in the appropriate permit limit unit. The reported values, for Jan. to March 2013, were 2,419.6 MPN per 100 mL. These high values suggest that disinfection was not always effective. The permittee reported 42 months of no discharge and did not submit data for 12 months.

pH: All reported pH values were below the permit limit. Values ranged between 7 and 9 standard units in the 8 values reported (Jan. and Feb. 2010; Jan. to March 2011; and Jan. to March 2013). The permittee also reported a minimum value for Feb. 2009 but not a maximum value. The permittee did not submit data for at least 8 months and reported no discharge for 41 months.

Temperature: All reported temperatures were below the permit limit of 23 degrees Celsius (Feb. 2009; Jan. and Feb. 2010; Jan. to March 2011; and Jan. to March 2013). The data for Feb. 2009 included only a monthly average (as opposed to both a monthly average and a daily maximum). The permittee reported no discharge for 41 months.

Turbidity: The previous permit contained weekly monitoring requirements, but the permittee did not report any data.

Total Ammonia: The permittee reported one daily maximum value (Jan. 2010), which exceeded the effluent limit. The permittee also incorrectly reported a no discharge for the average monthly value in Jan. 2010.

The permittee reported 9 values for the average monthly ammonia concentration. The reported values for the average monthly concentration ranged from 1.8 to 172 mg/L. The Tribal ammonia standards depend on temperature and pH. Where the permittee reported an average monthly value for ammonia, temperature, and pH, the effluent limit always was exceeded. The permittee reported no discharge for at least 41 months and did not submit data for at least 7 months.

Total Residual Chlorine: The permittee reported both daily maximum and monthly average values for 7 months (Jan. and Feb. 2010; Feb. and March 2011; and Jan. to March 2013). The permittee also reported an average monthly limit in Feb. 2009, which exceeded the effluent limit. During the other 7 months, the daily maximum ranged from 0.08 to 1.03 mg/L, exceeding the limit the 4 times. However, the most recent reported values (0.08 mg/L) are below the 0.1 mg/L limit. The permittee did not report values for total residual

chlorine 20 and 50-feet downstream. The permittee reported no discharge for 41 months and did not submit data for at least 9 months.

Total Recoverable Oil and Grease: The permittee did not report daily maximums. The permittee reported 3 reported values (Jan. to March 2103) for an average monthly concentration. The values ranged from 7.6 to 34 mg/L, exceeding the effluent limit twice. The permittee reported no discharge for 42 months.

Total Phosphorous: Monthly averages for total phosphorus were reported for Feb. 2009, Feb. 2010, Jan. to March 2011, and Jan. to March 2013. All reported values exceeded the water quality standard, with values ranging 0.63 mg/L to 8.3 mg/L. The permittee reported only one daily maximum value at 6.3 mg/L, which exceeded the 0.1 mg/L limit.

Whole Effluent Toxicity Testing: Testing was required once during the term of the existing permit, but the permittee did not report any data.

5. Reasonable Potential Analysis using Existing Data from Previous Permit Term (2008 to 2013)

For pollutants with effluent data available, EPA conducted a reasonable potential analysis based on statistical procedures outlined in EPA’s TSD. (EPA 1991). These statistical procedures calculate the projected maximum effluent concentration based on available monitoring data to account for effluent variability and a limited data set. EPA estimated the projected maximum effluent concentrations assuming a coefficient of variation of 0.6 and the 95 % confidence interval (EPA 1991). EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

$$\text{Projected maximum concentration} = C_e \times \text{reasonable potential multiplier factor.}$$

Where, “C_e” is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD. (EPA 1991).

Table 5. Reasonable Potential Statistical Analysis using Data from Previous Permit Term (2008 to 2013)

Parameter ⁽¹⁾	Maximum Observed Concentration	n	RP Multiplier ⁽²⁾	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion	Statistical Reasonable Potential?
<i>E. Coli</i>	2420 MPN/100 mL	3	3.0	7,259 MPN/100 mL	47 CFU/100 mL	Yes.
Ammonia	118 mg/L	1	6.2	731.6 mg/L	9.3 mg/L ⁽³⁾	Yes.
Total Phosphorous	12 mg/L	8	1.9	22.8 mg/L	0.1 mg/L	Yes.

Parameter ⁽¹⁾	Maximum Observed Concentration	<i>n</i>	RP Multiplier ⁽²⁾	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion	Statistical Reasonable Potential?
Total Residual Chlorine	1.0 mg/L	15	1.5	1.5 mg/L	0.1 mg/L	Yes.
Total Recoverable Oil and Grease	16 mg/L	3	3.0	48 mg/L	10 mg/L	Yes.

- (1) For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only parameters with Maximum Observed Concentration >0 were included in this analysis. Parameters considered for RP analysis were parameters found in the previous permit. The permit requires a priority pollutant scan, and the permit may be reopened to incorporate additional effluent limits, as necessary.
- (2) RP multiplier is based on 95 % probability using the number of available data points (*n*) and the coefficient of variation (CV). When (*n*) is less than 10, the CV is assumed to be 0.6. Because of data variability, EPA used a CV of 0.6 for all parameters. The multiplier of 1.4 was used when *n* > 20.
- (3) The ammonia water quality criterion was determined by using Appendix A, acute and chronic standards, from the WMAT Water Quality Protection Ordinance. The pH and temperature reported for the same time period as the 118 mg/L total ammonia were 7.4 to 7.8 S.U. and 5 to 5.9 °C. These temperatures and pH are not the highest reported values. Therefore, the projected maximum value is underestimated and still exceeds the water quality standard. See rationale for ammonia below.

In addition to using the TSD approach, the exceedances of the previous permit limits, as explained above, indicate the facility may cause or contribute to an excursion above the WMAT's water quality standards.⁷ With reliable data over the course of the next permit term, the permittee may demonstrate that there is not reasonable potential for some of these parameters.

C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated, and the permit may be re-opened to incorporate effluent limitations as necessary. EPA's rationale for each effluent limit in the permit is below.

- **Flow:** The permit retains the weekly monitoring requirement.
- **BOD₅ and TSS:** The BOD₅ and TSS technology-based limits are described above, and the permit retains these limits. Under 40 CFR Section 122.45(f), mass limits are required

⁷The discharge has reasonable potential to exceed the receiving water quality standard for Becker Creek because it cannot be demonstrated with a high confidence level that the upper bound of the lognormal distribution of effluent concentration is below the receiving water criteria.

for BOD₅ and TSS. Based on the design flow, the mass-based limits are included in the permit.

- **Dissolved Oxygen:** The Water Quality Protection Ordinance requires surface waterbodies capable of supporting aquatic life to maintain dissolved oxygen at a minimum of 6.0 mg/L. Since the facility frequently exceeded the BOD₅ limit, EPA is establishing an effluent limit for DO (i.e. a minimum of 6.0 mg/L). EPA is establishing a dissolved oxygen water quality-based effluent limit in order to implement the narrative requirement, in the Tribe's Water Quality Protection Ordinance, that dissolved oxygen in the receiving stream shall not be lower than 6.0 mg/L. The previous permit included a narrative requirement but did not require instream monitoring. Since EPA is establishing an effluent limit for dissolved oxygen, a narrative requirement is not necessary and is removed in the permit.

EPA is establishing a weekly monitoring requirement because of facility compliance history. Facilities with problems achieving compliance generally are required to perform more frequent monitoring to characterize the source or cause of the problems or to detect noncompliance.

- ***E. coli*:** There is statistical reasonable potential to impact the waterbody, and the effluent limits are retained in the permit. EPA notes that the permittee must report *E. coli* values in units of CFU/100 mL. The *E. coli* limits are based on EPA's Ambient Water Quality for Bacteria – 1986 as opposed to the Tribe's Water Quality standard. As expressed in the standards approval letter, EPA directed the Tribe's to revise its bacteria standard in order to ensure consistency with the EPA published criteria and stated EPA will promulgate such standards for any state that does not do so by 2003. While EPA has not promulgated such standards for the Tribe, it is appropriate to retain the *E. coli* limits that are consistent with Ambient Water Quality Criteria for Bacteria – 1986 (EPA 440/5 – 84 – 002, January 1986).
- **pH:** The Water Quality Protection Ordinance requires a pH of 6.5-9 S.U. be met at all times and not fluctuate in excess of 1.0 pH S.U. over a period of 24 hours. This is more stringent than the technology-based requirements for pH, and therefore, this limit is retained in the permit. EPA is retaining weekly pH monitoring.
- **Temperature:** To support the Tribe's ammonia standards and their dependence on temperature, EPA is retaining the temperature limit. The facility has reasonable potential to exceed the temperature water quality standard based on the existing controls at the facility and past compliance issues. The previous permit contained a temperature limit, and maintaining this limit will minimize the difference between the ambient receiving water temperature and the representative effluent temperature. Adhering to the maximum temperature established for the designated use of coldwater habitat also will minimize the potential impacts to listed threatened or endangered species. An average monthly limit is not needed because the limit implements the standard that waters with a cold water habitat use shall not exceed 23 degrees Celsius.

- ***Turbidity***: The permittee did not submit any data for turbidity; therefore, the reasonable potential analysis is indeterminate. EPA is retaining the turbidity limit with the weekly monitoring requirement, in order to implement the Tribal standard for protecting the secondary contact recreational use in the receiving water.
- ***Total Ammonia***: There is reasonable potential to impact the waterbody due to the high concentrations of ammonia reported in the facility's DMRs. EPA is establishing an ammonia effluent limit using the ammonia impact ratio ("AIR") and monthly monitoring and reporting requirements for ammonia concentrations in the effluent. The permittee may sample more frequently for ammonia in order to ensure compliance. The permittee should report any additional sampling results on the DMR.

The AIR is calculated as the ratio of the ammonia value in the effluent and the applicable ammonia standard as determined by using the chronic tables in the Tribe's Water Quality Protection Ordinance Appendix A. Appendix A is dependent on pH and temperature at the time of sampling. Therefore, pH, temperature, and ammonia sampling must be concurrent. EPA is using the water quality criterion from the chronic tables in Appendix A because these criteria are more protective. See Attachment F for a sample log to help calculate and record the AIR values.

The permit contains an AIR value of one (1.0) as the enforceable effluent limit. The permittee also must monitor and report ammonia effluent values in addition to the AIR value. AIR provides more flexibility than a specific, fixed effluent concentration and is protective of water quality standards since the value (1.0) is set at the water quality standard. If the reported value exceeds 1.0, then the effluent ammonia concentration exceeded the ammonia water quality criterion. With an AIR value exceeding 1.0, the permittee would be in violation of the permit.

- ***Total Residual Chlorine***: There is statistical reasonable potential to impact the waterbody, and the effluent limits are retained in the permit. The effluent limits are derived from the Tribe's Water Quality Ordinance narrative standard. The daily maximum limit is EPA's interpretation of the Tribe's narrative standard and will ensure that the water quality standard is not exceeded. EPA is establishing an average monthly limit in addition to the daily maximum limit using the approach discussed in the TSD.

EPA is removing the requirement to monitor chlorine concentrations downstream of the discharge on a weekly basis (i.e. 20 and 50-feet downstream). EPA is eliminating this requirement because the permittee must meet the effluent limit of 0.1 mg/L at end of pipe, and subsequent downstream monitoring is not necessary. However, the permittee must continue to monitor weekly for total residual chlorine in the effluent, and the sample must be taken at the outfall.

- ***Total Recoverable Oil and Grease***: There is statistical reasonable potential to impact the waterbody, and the effluent limits are retained in the permit. The effluent limits are EPA's interpretation of the Tribe's narrative standard that all waters be free from visible oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes.

Similar domestic wastewater treatment facilities have shown that a maximum daily limit of 15 mg/L and an average monthly limit of 10 mg/L can be easily achieved. Therefore, EPA is retaining effluent limits for oil and grease based on best professional judgment (“BPJ”) since there are no applicable guidelines and performance standards for oil and grease, no numeric values in the Tribe’s standards, and the existing permit limit is consistent with other POTW limits. In addition to these effluent limits, the narrative water quality based limits for oil and grease, such as prohibiting visible sheen, are retained in the permit.

- **Total Phosphorous:** There is statistical reasonable potential to impact the waterbody, and the effluent limits are retained in the permit. To protect the designated use of coldwater habitat, a phosphorous limit is retained in the permit, with monthly monitoring requirements. EPA is establishing an average monthly limit in addition to the daily maximum limit using the approach discussed in the TSD.
- **Whole-Effluent Toxicity:** WET testing is intended to demonstrate that the discharge is not toxic and prompt a response if toxicity is present. WET testing generally is required of all first-time permittees, and as needed thereafter. In the continued absence of the data requested under each previous issuance of this permit, and in recognition of the unpredictability of resort operations, the permit retains the WET testing requirement. EPA is requiring the permittee to sample for WET once during the permit term and within the first thirty (30) days after the next discharge.

The WET testing is required in the permit to implement the narrative toxic standard in section 3.5 of the Water Quality Protection Ordinance. The permit includes new WET requirements based on EPA’s 2010 Test of Significant Toxicity. The new method is based on comparing the mean response of the test organism in the control and at the instream waste concentration (“IWC”). The permit trigger in the permit is a “Fail” at 100 percent effluent since no dilution is allowed. Depending on the WET test results, the permit also requires certain follow-up actions, such as additional WET tests and a toxicity reduction evaluation to identify and correct the cause of any observed toxicity, as indicated by a “Fail” result. The previous permit required WET testing with the traditional hypothesis testing approach outlined in EPA’s TSD. (EPA 1991).

D. Anti-Backsliding

Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits less stringent than those required in the previous permit, except as provided in the statute. The permit does not contain any effluent limits less stringent than those in the previous permit and does not allow backsliding. Specifically, the permit contains a daily maximum effluent limit for total residual chlorine and total phosphorus that is slightly higher than the previous permit (0.16 mg/L as opposed to 0.1 mg/L). The permit limit is consistent with the approach used in the TSD and does not constitute backsliding. EPA is also requiring an average monthly limit ammonia limit in the permit, which will ensure that discharge meets water quality criteria.

E. Antidegradation Policy

EPA's antidegradation policy at 40 CFR 131.12 and the WMAT Water Quality Protection Ordinance specifies existing water uses and the level of water quality necessary to protect these existing uses.

As described in this document, the permit contains effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit does not include a mixing zone, and therefore, all effluent limits will apply at the end of pipe without consideration of dilution in the receiving water. Furthermore, the waterbody is not listed as an impaired waterbody for BOD₅, *E. coli*, temperature, total ammonia, TSS, turbidity, or oil and grease under section 303(d) of the CWA.

Since the permittee is expected to comply with all limits in the permit, the effluent should not have a negative, degrading effect, on the receiving waterbody. EPA is requiring a priority pollutant scan and re-opener provisions. EPA is requiring the facility to sample and submit a priority pollutant scan within 30 days of the next discharge. While no limits are set at this time, the permittee is required to monitor for the full list of priority pollutants as listed at 40 CFR Part 423 Appendix A. The permittee only needs to sample the discharge once during the permit term.

In addition to these permit conditions, EPA is entering into an Administrative Order on Consent ("AOC") with the permittee. The AOC will include milestone deadlines for specific actions which both parties believe will help bring the facility into compliance with the Clean Water Act. The AOC also will include a final deadline for full compliance. Due to these factors, EPA expects the quality of the effluent will match or exceed the current water quality and will have no negative, or *de minimis* negative effect, on the receiving waterbody.

VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

Section 3.5 of the White Mountain Apache Tribe Water Quality Protection Ordinance contains narrative water quality standards applicable to the receiving water. EPA is retaining the narrative effluent limits in order to implement these water quality standards.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters with effluent limits, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data are insufficient to determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established by EPA. This data may be re-evaluated, and the permit re-opened to incorporate effluent limitations, if necessary.

A. Monitoring and Reporting for Effluent Limits

The permittee is required to conduct effluent monitoring to evaluate compliance with the permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the permit. All monitoring data shall be reported on monthly DMR forms

and submitted quarterly as specified in the permit. The permittee may sample more frequently than the required frequency in order to ensure compliance with monthly average limits.

The permit retains the sample collection methods for each parameter. Composite samples are required for total ammonia in the permit. Discrete, or grab, samples are required for BOD₅, *E. coli*, pH, temperature, TSS, turbidity, total residual chlorine, and phosphorous in the permit. (40 CFR 136). Continuous samples are required for monitoring flow rate in the permit. EPA is requiring a discrete sample for dissolved oxygen monitoring. Discrete samples are appropriate when a sample is needed to monitor a noncontinuous discharge and allow collection of a variable sample volume.

B. Whole Effluent Toxicity Testing

EPA is retaining the WET test requirement, and a trigger for increased monitoring if the test does not reject the null hypothesis. Chronic toxicity testing evaluates reduced growth/reproduction at 100 percent effluent concentration, since no dilution is allowed. The presence of chronic toxicity shall be determined as specified by the methods in the 40 CFR Part 136 as amended on November 19, 2002.

C. Priority Pollutant Scan

A priority toxic pollutants scan shall be conducted within 30 days of discharging. The information may be used to assess the need and specifications for possible effluent limits or monitoring in the future.

The permittee shall perform all effluent sampling and analyses for the priority pollutants scan in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the permit or by EPA. 40 CFR 131.36 provides a complete list of Priority Toxic Pollutants.

IX. SPECIAL CONDITIONS

A. Biosolids

Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids, in accordance with 40 CFR Part 503, are contained in the permit. If the permittee changes the management of its biosolids, the permittee must notify EPA of any changes.

B. Development and Implementation of Best Management Practices

Pursuant to 40 CFR 122.44(k)(4), EPA may impose Best Management Practices (“BMPs”) which are “reasonably necessary...to carry out the purposes of the Act.” The BMPs retained in the permit operate as technology-based limitations on effluent discharges that reflect the application of Best Available Technology and Best Control Technology. Therefore, the permit requires the permittee to develop (or update) and implement BMPs designed to prevent pollutants from entering Becker Creek and other surface waters while performing normal processing operations at the facility.

Specifically, the permittee shall develop and implement BMPs necessary to control or abate the discharge of pollutants, including installing a system to measure effluent flow rate, preparing and then adhering to an operators' manual, and providing training and certification for appropriate staff, including contractors, who are responsible for plant operation and maintenance.

C. Development of an Initial Investigation Toxics Reduction Evaluation Workplan for Whole Effluent Toxicity

The permit requires the permittee to develop and implement a TRE Workplan. The Workplan would be followed if the effluent sample "fails" the toxicity test. Within 90 days of the permit effective date, the permittee shall prepare and submit a copy of its Initial Investigation TRE Workplan (1-2 pages) for chronic toxicity to EPA for review.

D. Additional Special Conditions

Additional special conditions contained in the permit are conditions required by the tribal 401 certification process. (CWA §401; 33 U.S.C. § 1341). The conditions include, among others, provisions related to spill containment and notification as well as obtaining any and all other necessary permits.

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species or result in the destruction or adverse modification of its habitat. Since the issuance of NPDES permits by the EPA is a federal action, EPA needs to consider the effect of the permitted discharge on any listed or candidate species or their critical habitat.

To determine whether the discharge would affect any endangered or threatened species, EPA reviewed a list of 27 species associated with habitats in Apache County and consulted the Tribe's Wildlife and Outdoor Recreation Division. (US FWS 2013a). Based on this review, 7 species may occur within the vicinity of the discharge although there is no specific data or information indicating these species are present in the immediate vicinity of the outfall; nor has critical habitat for these species been identified in the vicinity of the facility. These species include the following:

1. Southwestern willow flycatcher (*Empidonax traillii extimus*),
2. Mexican spotted owl (*Strix occidentalis lucida*),
3. Apache trout (*Oncorhynchus apache*),
4. Loach Minnow (*Tiaroga cobitis*),
5. Chiricahua leopard frog (*Rana chiricahuensis*),
6. Mexican wolf (*Canis lupus baileyi*), and
7. Jaguar (*Panthera onca*).

The first 5 species were identified in the previous factsheet along with the bald eagle (*Haliaeetus leucocephalus*). EPA is not considering the bald eagle in this action because the species was delisted in 2007. (US FWS 2007).

The final permit authorizes the discharge of effluent from the Cyclone Day Lodge Wastewater Treatment Plant into a receiving water that could be a habitat for the aforementioned threatened and endangered species. The new permit is very similar to the existing permit and contains no significant changes that would result in discernable changes in effluent quality. No new construction, land/habitat (physical environment) alterations, water quality changes, or hydrology alterations are associated with the permit reissuance. Like the previous permit, the new permit will result in attainment of applicable tribal water quality standards. EPA previously consulted with FWS concerning the approval of these water quality standards (on 4/5/2000), and it was determined that implementation of these standards would be protective of ESA-listed species. Therefore, EPA has determined that the discharge will have “no effect” on the above listed species. The basis for this determination for each of these species is discussed below.

1. Southwestern willow flycatcher

The Southwestern willow flycatcher is listed as endangered. This migratory bird breeds in riparian habitats along the Colorado River, primarily from May to September, and spends the winter in southern Mexico, Central America, and South America. (US FWS 2013b.). The Southwestern willow flycatcher eats a wide range of invertebrate prey including flying, as well as ground- and vegetation-dwelling, insect species of terrestrial and aquatic origins.

The permittee is discharging during the winter months when the Southwestern willow flycatcher is not breeding and is known to be in other countries. The permitted discharge does not involve physical habitat alteration, change in flow, or change in water quality, and should not impact insect prey. Consequently, EPA is making a “no effect” determination for the Southwestern willow flycatcher.

2. Mexican spotted owl

The Mexican spotted owl is listed as threatened, largely due to habitat destruction or modification. The Fort Apache Indian Reservation is not included in the owl’s critical habitat because the U.S. Fish and Wildlife Service (“Service”) found that the land was not essential to the conservation of the species. (US FWS 2004). The owl’s prey species are woodrats, mice, and voles. Since the permit does not involve physical habitat alteration, change in flow, changes in water quality or impacts to the owl’s prey, EPA is making a “no effect” determination for the Mexican spotted owl.

3. Apache trout

The Apache trout is listed as threatened. While no critical habitat has been designated, the species has been documented on the Fort Apache Indian Reservation. The threats to Apache trout habitat include sedimentation and increased temperatures. (US FWS 2009).

The new permit retains the temperature and turbidity effluent limits and weekly monitoring requirements as specified in the existing permit in order to protect the coldwater designated use

for Becker Creek. The permittee reported temperature values ranging from 4.2 to 21.5⁰C. The permittee reported 21.5⁰C as the highest temperature of the discharge, which is below the permit limit of 23⁰C. The permit limit directly implements the Tribe's water quality standard for water bodies with a coldwater habitat designated use. The permit also contains toxicity testing and a full priority pollutant scan during the first 30 days of the next discharge. There are no physical alterations involved in the permit. Because EPA is retaining effluent limits based on the Tribe's water quality standards, EPA is making a "no effect" determination for the Apache trout.

4. Loach minnow

The Loach minnow faces similar threats as the Apache trout, including habitat destruction and modification. The Loach minnow has been documented to occur in the White River and East Fork White River on the Fort Apache Reservation, but these areas were excluded from critical habitat designation. Studies by Northern Arizona University assessed temperature regimes for the Loach minnow. One study concluded that since 100 percent survival of the Loach minnow was observed at 28 °C, little juvenile or adult mortality would occur due to thermal stress if peak water temperatures remain at or below that level. (US FWS 2012a).

The permit retains the temperature limit, not to exceed 23 °C, in order to protect the coldwater designated use of Becker Creek. This effluent limit is adequately protective of the loach minnow. The permit also retains the turbidity and toxicity effluent limits and monitoring requirements. EPA is requiring a full priority pollutant scan during the first 30 days of the next discharge. In addition to these sampling requirements, there are no physical alterations involved in the permit. Therefore, EPA is making a "no effect" determination for the Loach minnow.

5. Chiricahua leopard frog

The Chiricahua leopard frog is listed as threatened, largely due to predation by nonnative organisms. The Chiricahua leopard frog is known to exist on the Fort Apache Tribe Reservation, and critical habitat has been designated in parts of the reservation, namely Deer Creek. (US FWS 2012b).

The permit retains the temperature and turbidity effluent limits and weekly monitoring requirements in order to protect the coldwater designated use of Becker Creek. The permit also requires toxicity testing and a full priority pollutant scan during the first 30 days of the next discharge. In addition to these sampling requirements, there are no physical alterations involved in the permit. Therefore, EPA is making a "no effect" determination for the Chiricahua leopard frog.

6. Mexican wolf

The Service has proposed to remove the gray wolf from the list of threatened and endangered species and maintain protection and expand recovery efforts for the Mexican wolf, a subspecies of the gray wolf. (US FWS 2013c). In 2002, the WMAT became one of the lead agencies for reintroduction and allowed wolves on their lands. This effectively expanded the experimental nonessential population into Apache, Gila, and Navajo counties on WMAT lands. (US FWS 2013a). The discharge will not affect the habitat or prey of the Mexican wolf. Therefore, EPA is making a "no effect" determination for the Mexican wolf.

7. Jaguar

The Jaguar is listed as endangered. There are no known breeding pairs of jaguars within the borders of the U.S., and no female jaguars have been detected in the U.S. since 1963. Jaguars found in the U.S. are part of a population or populations that occur in Mexico. While historical records show that jaguars have or may have occurred as far north as Grand Canyon, Arizona, their numbers were few throughout the Southwest, and sightings in the United States from 1996 to the present have occurred mainly within approximately 40 miles (64.4 kilometers) of the United States–Mexico border.

The Service proposed revised critical habitat in 2013 to support individuals during dispersal movements and expansion by providing small patches of habitat (US FWS 2013d). Apache County is not included in the proposed critical habitat, and as stated above, the permit does not involve physical habitat alteration. The discharge will not affect the jaguar's prey. Therefore, EPA is making a “no effect” determination for the jaguar.

Because of the reasons stated above, EPA has determined that reissuance of this permit will have no effect on threatened or endangered species. Therefore, consultation is not required for this action. Re-opener clauses have been included in the permit should new information indicate a need for additional, or a change to, permit conditions.

B. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act (“NHPA”) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR §800.3(a)(1), EPA is making a determination that reissuing this NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit reissuance.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

XII. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a NPDES permit or other significant action with respect to an NPDES permit or application.

B. Public Comment Period (40 CFR 124.10)

Notice of the permit will be placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA 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.

C. Public Hearing (40 CFR 124.12(c))

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 EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

D. Water Quality Certification Requirements (40 CFR 124.53 and 124.54)

The White Mountain Apache Tribe (WMAT) has approved water quality standards. EPA requested certification from the WMAT to ensure that the permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law.

XIII. CONTACT INFORMATION

Comments, submittals, and additional information relating to this reissuance may be directed to:

EPA Region IX
Attn: Becky Mitschele
75 Hawthorne Street (WTR 2-3)
San Francisco, California 94105

or

Becky Mitschele
(415) 972 – 3492
mitschele.becky@epa.gov

XIV. REFERENCES

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ATTACHMENT A. WQBEL Calculations for Total Residual Chlorine and Total Phosphorus

Total Chlorine Residual using Two-value, Steady-state Model	Chronic⁽¹⁾
Tribe's Chlorine Water Quality Criterion, mg/L	0.1
No Dilution Credit Authorized	0
Background Concentration, mg/L	0
WLA, mg/L	0.1
Coefficient of Variation	0.6
WLA Multiplier (99 th %)	0.527
LTA, mg/L	0.0527
LTA _{MDL} Multiplier (99 th %)	3.11
MDL, mg/L	0.16
LTA _{AML} Multiplier (95 th %) ⁽²⁾	1.55
AML, mg/L	0.08

⁽¹⁾The Tribe expresses the chlorine water quality criteria as a single value. EPA interpreted the criterion as “chlorine concentration must not exceed 0.1 mg/L.” Where there is only one water quality criterion, and therefore, only one WLA, permit limits can be derived by considering the single WLA to be the chronic WLA. Derivation of permit limit based on Section 5.4.1 of EPA's TSD. (EPA 1991).

²LTA multiplier based on sampling frequency of four times per month per section 5.5.3 of EPA's TSD.

Total Phosphorus using Single, Steady-state Model	Chronic
Water Quality Criterion, mg/L	0.10
No Dilution Credit Authorized	0
Background Concentration, mg/L	0
WLA, mg/L	0.10
WLA Multiplier (99 th %)	0.527
LTA, mg/L	0.0527
LTA _{MDL} Multiplier (99 th %)	3.11
MDL, mg/L	0.16
LTA _{AML} Multiplier (95 th %) ⁽¹⁾	1.55
AML, mg/L	0.08

⁽¹⁾LTA multiplier based on sampling frequency of four times per month per section 5.5.3 of EPA's TSD (in situations where monitoring frequency is once per month or less, a higher value of n must be assumed for AML derivation purposes...using an assumed number of samples of at least four).