

NPDES Permit No. AZ0024619

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq; the "Act"),

Moenkopi Utility Authority
P.O. Box 1229
Tuba City, Arizona 86045

is authorized to discharge treated wastewater from the Moenkopi Utility Authority Wastewater Treatment facility located in the Upper Village of Moenkopi, from Discharge Outfall Number 001,

Latitude: 36° 06' 30" N
Longitude: 111° 14' 01" W

to receiving waters named Moenkopi Wash, tributary to the Little Colorado River, in accordance with effluent limitations, monitoring requirements and in the attached USEPA *Region 9 Standard Federal NPDES Permit Conditions*, dated July 27, 2011.

This permit shall become effective on October 1, 2011.

This permit and the authorization to discharge shall expire at midnight, September 30, 2016.

Signed this 21st day of September, 2011.

For the Regional Administrator

/s/

Alexis Strauss, Director
Water Division
EPA, Region 9

SECTION A. EFFLUENT LIMITATION AND MONITORING REQUIREMENTS

Based upon the current average capacity of 0.185 MGD, the permittee is authorized to discharge from Outfall Serial Number 001 treated domestic wastewater.

1. The influent shall be sampled after the last addition to the collection system and prior to any in-plant return flows and the first treatment process. The effluent shall be sampled after final treatment prior to mixing with the receiving waters in the Moenkopi Wash, tributary to the Little Colorado River.
2. Such discharge shall be limited and monitored by the permittee as specified below:

| Effluent Parameter | Units | Monthly Average | Weekly Average | Daily Maximum | Monitoring Frequency ¹ | Sample Type |
|--|------------------|--------------------|----------------|------------------|--|-------------------|
| Flow ¹ | MGD | -- | -- | -- | Monthly | Instantaneous |
| BOD ₅ ² | mg/l | 30 | 45 | -- | Monthly | 24-hour Composite |
| | kg/day | 21 | 31 | -- | | |
| TSS ² | mg/l | 30 | 45 | -- | Monthly | 24-hour Composite |
| | kg/day | 21 | 31 | -- | | |
| <i>Escherichia coli</i> (E. coli) | #/100 ml | 130 ³ | -- | 580 ⁴ | Weekly | Discrete |
| Dissolved Oxygen ⁵ | mg/l | -- | -- | ≥ 5.0 | Monthly | 24-hour Composite |
| Ammonia(as N) ⁶ | mg/l | -- | -- | -- ⁶ | Monthly | Discrete |
| pH ⁷ | std. units | between 6.5 to 9.0 | | | Monthly | Discrete |
| Temp ⁷ | deg °C | -- | -- | ≤32.2 | Monthly | Discrete |
| Turbidity ⁸ | NTU ⁸ | -- | -- | 25 | Monthly | Discrete |
| Whole Effluent Toxicity (chronic) ⁹ | TUc | -- ¹ | -- | -- ¹ | Semiannual January/July | 24-hour Composite |
| Priority Pollutant Scan ¹⁰ | µg/l | -- | -- | -- | Once/1 st Quarter during Year 5 | 24-hour Composite |

FOOTNOTES:

1. Both the influent and effluent shall be monitored and reported. The effluent shall be sampled at the pipe coming out of Outfall Number 001. All samples shall be discrete unless otherwise noted.
2. For BOD₅ and TSS, the arithmetic means of values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of values, by weight, for influent samples collected at approximately the same times during the same period.
3. Geometric mean of a minimum of not less than five samples collected over a period of not more than 30 days.

4. Single sample maximum.
5. Minimum dissolved oxygen limit of 5 mg/l, based on the 2010 Hopi Water Quality Standards for aquatic and wildlife (warm water habitat) for support and propagation of animals, plants, or other organisms.
6. For total ammonia (in mg N/liter), the 2010 Hopi Water Quality Standards specify ammonia limitations for aquatic and wildlife (warm water habitat) for support and propagation of animals, plants, or other organisms. See Attachment A for the total ammonia table. The criteria for ammonia are pH and temperature dependent; therefore, pH and temperature field measurements must be taken concurrently at the same location as the water samples destined for the laboratory analysis of ammonia.
7. Temperature and pH measurements shall be taken concurrently with measurements for ammonia.
8. Turbidity limit of 25 NTUs (Nephelometric Turbidity Units) based the 2010 Hopi Water Quality Standards for protection of full body contact and groundwater recharge uses.
9. See Section F. of the permit for details of the chronic WET test requirement of the permit cycle.
10. Priority pollutants scan: The permittee shall monitor for the full list of priority pollutants as listed in the Code of Federal Regulations (CFR) at 40 CFR Part 423, Appendix A. No limit is set at this time.

SECTION B. GENERAL DISCHARGE SPECIFICATIONS

The following general standards apply to all surface waters of the Hopi Tribe, including intermittent and ephemeral streams, as provided in the Hopi Tribe Water Quality Standards.

1. Stream Bottom Deposits: Surface waters shall be free of water contaminants from other natural causes that will settle and have a deleterious effect on the aquatic biota or that will significantly alter the physical or chemical properties of the water of the bottom sediments.
2. Floating Solids, Oil and Grease: Surface waters shall be free from objectionable oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from other than natural causes (including visible films of oil, globules of oil, grease, or solids in or on the water, or coatings on stream bands.) As a guideline, oil and grease discharged into surface waters shall not exceed 10 mg/l average or 15 mg/l maximum.
3. Color: Surface waters shall be free from the true color-producing materials (other than those resulting from natural causes) that create an aesthetically undesirable condition. Color shall not impair the designated and other attainable uses of a water body. Color-producing substances from other than natural sources are limited to concentrations equivalent to 70 color units (CU).
4. Odor and Taste: Contaminants from other than natural causes shall be limited to concentrations that do not impart unpalatable flavor to fish, that do not result in offensive

- odor or taste arising from the water, and that do not otherwise interfere with the designated and other attainable uses of a water body. Taste and odor-producing substances from other than natural origins shall not interfere with the production of a potable water supply by modern treatment methods.
5. Nuisance Conditions: Plant nutrients or other substances stimulating algal growth form other than natural causes shall not be present in concentrations that produce objectionable algal densities or nuisance aquatic vegetation, or that result in a dominance of nuisance species in-stream, or that cause nuisance conditions in any other fashion. .
 6. Pathogens: Waters shall be free from pathogens. Waters used for irrigation of table crops (e.g., lettuce) shall be free of *Salmonella* and *Shigella* species.
 7. Turbidity: Turbidity attributable to other than natural causes shall not reduce light transmission to the point at which aquatic biota are inhibited or to a point that causes an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 nephelometric turbidity units (NTU, a measure of turbidity in water) over background when background turbidity is 50 NTU or less, with no more than a 10-percent increase when background turbidity is more than 50 NTU.
 8. Mixing Zones: Where effluent is discharged in surface waters, a continuous zone shall be maintained in which the water is of adequate quality to allow the migration of aquatic life with no significant effluent on their population. The cross-sectional area of wastewater mixing zones shall generally be less than one quarter of the cross-sectional area or flow volume of the receiving stream. Mixing zones are prohibited in ephemeral waters or where there is no water for dilution.
 9. Radioactive Materials: Concentrations of radioactive constituents shall not exceed the concentration caused by naturally occurring materials.
 10. Temperature: The introduction of heat by other than natural causes shall not increase the temperature in a stream, outside a mixing zone, by more than 2.7°C (5°F), based upon the monthly average of the maximum daily temperatures measured at mid-depth or 3 feet (whichever is less) outside the mixing zone. The normal daily and seasonal variations that were present before the addition of heat from other than natural sources shall be maintained. In no case shall man-introduced heat be permitted when the maximum temperature specified for the reach (20°C/68°F for cold water fisheries and 32.2°C/90°F for warm water fisheries) would thereby be exceeded. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards.
 11. Salinity/Mineral Quality (total dissolved solids, chlorides, and sulfates): Existing mineral quality shall not be altered by municipal, industrial, and in-stream activities, or other waste discharges, so as to interfere with the designated or attainable uses for a water body. An increase of more than one-third over naturally occurring levels shall not be permitted.
 12. Toxic Substances: Toxic substances shall not be present in receiving waters in quantities

that are toxic to human, animal, plant, or aquatic life, or in quantities that interfere with the normal propagation, growth, and survival of the sensitive indigenous aquatic biota.

SECTION C. PERMIT REOPENER

At this time, there is no reasonable potential to establish any other water quality-based limits. Should any monitoring indicate that the discharge causes, has the reasonable potential to cause, or contributes to excursions above water quality criteria, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. Also, this permit may be modified, in accordance with the requirements set forth at 40 CFR Parts 122.44 and 124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any EPA-approved new Tribal water quality standards.

SECTION D. BIOSOLIDS REQUIREMENT

“Biosolids” means non-hazardous sewage sludge, as defined in 40 DVR 503.9. Sewage sludge that is hazardous, as defined in 40 CFR 261, must be disposed of in accordance with the Resources Conservation and Recovery Act.

1. General Requirements

- a. All biosolids generated by the permittee shall be used or disposed of in compliance with the applicable portions of:
 - (1) 40 CFR 503 - for biosolids that are land applied, placed in a surface disposal site (dedicated land disposal site, monofill, or sludge-only parcel at a municipal landfill), or incinerated;
 - (2) 40 CFR 258 - for biosolids disposed of in a municipal solid waste landfill (with other material);
 - (3) 40 CFR 257 - for all biosolids use and disposal practices not covered under 40 CFR 258 or 503.

40 CFR 503, Subpart B (land application) sets requirements for biosolids that are applied for the purpose of enhancing plant growth or for land reclamation. 40 CFR 503, Subpart C (surface disposal) sets requirements for biosolids that are placed on the land for the purpose of disposal.

The permittee is responsible for assuring that all biosolids produced at its facility are used or disposed of in accordance with these rules, whether the permittee uses or disposes of the biosolids, itself, or transfers the biosolids to another party for further treatment, use, or disposal. The permittee is responsible for informing subsequent preparers, applicators, and disposers of the requirements that they must meet under these rules.

- b. Duty to mitigate: The permittee shall take all reasonable steps to prevent or minimize any biosolids use or disposal which has a likelihood of adversely affecting human health or the environment.
- c. No biosolids shall be allowed to enter wetlands or other waters of the United States.
- d. Biosolids treatment, storage, use, or disposal shall not contaminate groundwater.
- e. Biosolids treatment, storage, use, or disposal shall not create a nuisance such as objectionable odors or flies.
- f. The permittee shall assure that haulers transporting biosolids off site for treatment, storage, use, or disposal take all necessary measures to keep the biosolids contained. All haulers must have spill clean-up procedures. Trucks hauling biosolids that are not classified as Class A, as defined at 40 CFR 503.32(a), shall be cleaned as necessary after loading and after unloading so as to have no biosolids on the exterior of the truck body or wheels. Trucks hauling biosolids that are not Class A shall be tarped. Trucks hauling biosolids that are not Class A may not be used for hauling food or feed crops after unloading the biosolids, unless the permittee submits, for EPA approval, a hauling description of how trucks will be thoroughly cleaned prior to adding food or feed.
- g. If biosolids are stored over two years from the time they are generated, then the permittee must ensure compliance with all surface disposal requirements under 40 CFR 503, Subpart C, or must submit a written notification to EPA with the information under 40 CFR 503.20(b) demonstrating the need for longer temporary storage. During temporary storage (of any length of time) for biosolids that are not Class A, whether on the facility site or off-site, adequate procedures must be taken to restrict public access and access by domestic animals.
- h. Any biosolids treatment, disposal, or storage site shall have facilities adequate to: divert surface runoff from adjacent areas, protect the site boundaries from erosion, and prevent any conditions that would cause drainage from the materials at the site to escape from the site. Adequate protection is defined as protection from at least a 100-year storm event and from the highest tidal stage that may occur.
- i. There shall be adequate screening at the treatment plant headworks and/or at the biosolids treatment units to ensure that all pieces of metal, plastic, glass, and other inert objects with a diameter greater than 3/8" are removed.

2. Inspection and Entry

The EPA or an authorized representative thereof, upon presentation of credentials, shall be allowed by the permittee, directly or through contractual arrangements with their biosolids management contractors, to:

- a. Enter upon all premises where biosolids produced by the permittee are treated, stored, used, or disposed of, either by the permittee or another party to whom the permittee transfers the biosolids for treatment, storage, use, or disposal;
- b. Have access to and copy any records that must be kept under the conditions of this permit or 40 CFR 503, by the permittee or another party to whom the permittee transfers the biosolids for further treatment, storage, use, or disposal; and
- c. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations used in biosolids treatment, storage, use, or disposal by the permittee or another party to whom the permittee transfers the biosolids for treatment, use, or disposal.

3. Monitoring

- a. Biosolids shall be monitored for the following constituents, at the frequency specified in paragraph 3.b: arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, organic nitrogen, ammonia-nitrogen, and total solids. This monitoring shall be conducted using the methods in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA publication SW-846), as required in 40 CFR 503.8(b)(4). All results must be reported on a 100% dry weight basis. Records of all analyses must state on each page of the laboratory report whether the results are expressed in “100% dry weight” or “as is”.
- b. The constituents in paragraph 3.a shall be monitored at the following frequency, based on the volume of sewage solids generated per year:

| Volume Generated (dry metric tons per year) | Monitoring Frequency * |
|---|------------------------|
| >0 - <290 | Once per year |
| 290 - <1,500 | Four times per year |
| 1,500 - <15,000 | Six times per year |
| >15,000 | 12 times per year |

* If biosolids are removed for use or disposal on a routine basis, then monitoring should be scheduled at regular intervals throughout the year. If biosolids are stored for an extended period of time prior to use or disposal, then monitoring may occur either at regular intervals, or prior to use or disposal corresponding to tonnage accumulated during the period of storage.

- c. Class 1 facilities (facilities with pretreatment programs or other facilities designated as Class 1 by the Regional Administrator) and Federal facilities with >5 mgd influent flow shall sample biosolids twice per year for pollutants listed under CWA section 307(a), using best practicable detection limits.

4. Pathogen and Vector Control

- a. Prior to land application, the permittee shall demonstrate that biosolids meet Class A or Class B pathogen reduction levels using one of the alternatives listed under 40 CFR 503.32.
- b. Prior to disposal in a surface disposal site, the permittee shall demonstrate that the biosolids meet Class B pathogen reduction levels or shall ensure that the site is covered at the end of each operating day. If pathogen reduction is demonstrated using a Process to Significantly/Further Reduce Pathogens, then the permittee shall maintain daily records of the operating parameters used to achieve this reduction.

If pathogen reduction is demonstrated by testing for fecal coliform and/or other pathogens, then samples must be drawn at the frequency described in paragraph 3.b, above. If Class B pathogen reduction levels are demonstrated using fecal coliform, then at least seven grab samples must be drawn during each sampling event and a geometric mean calculated from these seven samples.

The following sample holding times between sample collection and sample analysis shall not be exceeded: fecal coliform - 24 hours when cooled to 4°C; Salmonella sp. - 24 hours when cooled to 4°C; enteric viruses - 2 weeks when frozen; helminth ova - one month when cooled to 4 °C.

- c. For biosolids that are land applied or placed in a surface disposal site, the permittee shall track and keep records of the operational parameters used to achieve the Vector Attraction Reduction requirements in 40 CFR 503.33(b).

5. Surface Disposal

If biosolids are placed in a surface disposal site (dedicated land disposal site or monofill), then a qualified groundwater scientist shall develop a groundwater monitoring program for the site, or shall certify that the placement of biosolids on the site will not contaminate an aquifer.

6. Landfill Disposal

Biosolids placed in a municipal landfill shall be tested by the Paint Filter Liquids Test (Method Number 9095 in SW-846) at the frequency indicated in paragraph 3.b, above, or more often if necessary, to demonstrate that there are no free liquids.

7. Notification and Reporting

- a. The permittee, either directly or through contractual arrangements with their biosolids management contractors, shall comply with the following notification requirements:

- (1) Notification of noncompliance: The permittee shall notify EPA of any noncompliance within 24 hours, if the noncompliance may seriously endanger health or the environment. For other instances of noncompliance, the permittee shall notify EPA, in writing, within five working days of becoming aware of the circumstances. The permittee shall require their biosolids management contractors to notify EPA of any noncompliance within these same timeframes.
- (2) Interstate notification: If biosolids are shipped to another State, Tribal Lands, or Territory, then the permittee shall send a 60-day prior notice of the shipment to permitting authorities in the receiving State, Tribal Lands, or Territory, and EPA Regional Office.
- (3) Land Application: Prior to using any biosolids from this facility (other than composted biosolids) at a new or previously unreported site, the permittee shall notify EPA. The notification shall include: a description and topographic map of the proposed site(s), names and addresses of the applier and site owner, and a list of any state or local permits which must be obtained. The plan shall include a description of the crops or vegetation to be grown, proposed loading rates, and determination of agronomic rates.

If any biosolids within a given monitoring period do not meet the pollutant limits for metals under 40 CFR 503.13, then the permittee (or its contractor) must pre-notify EPA and determine the cumulative metals loading to date at that site, as required in 40 CFR 503.12.

The permittee shall notify the applier of 40 CFR 503-requirements that are applicable to the applier, including applier certification that management practices, site restrictions, and vector attraction reduction requirements have been met. The permittee shall require the applier to certify at the end of 38 months following the application of Class B biosolids, that the harvesting restrictions in effect for up to 38 months have been met.

- (4) Surface Disposal

Prior to disposal at a new or previously unreported site, the permittee shall notify EPA. The notice shall include: a description and topographic map of the proposed site, depth to groundwater, whether the site is lined or unlined, site operator, site owner, and any State or local permits. The notice shall describe procedures for ensuring restricted public access and grazing restrictions for three years following site closure. The notice shall include a groundwater monitoring plan, or a description of why groundwater monitoring is not required.

- b. The permittee shall submit an annual biosolids report to the EPA Region 9 Biosolids Coordinator of each year for the period covering the previous calendar year. This report shall include:
- (1) The amount of biosolids generated that year and the amount of biosolids accumulated from previous years, in dry metric tons.
 - (2) Results of all pollutant monitoring required in the Monitoring section, above, reported on a 100% dry weight basis.
 - (3) Demonstrations and certifications of pathogen reduction methods and vector attraction reduction methods, as required in 40 CFR 503.17 and 503.27.
 - (4) Names, mailing addresses, and street addresses of persons who received biosolids for storage, further treatment, or disposal in a municipal waste landfill, or for other use or disposal methods not covered above, and the volumes delivered to each.
 - (5) For land application sites, the following information must be submitted by the permittee, unless the permittee requires its biosolids management contractors to report this information directly to the EPA Region 9's Biosolids Coordinator.

The locations of land application sites used that calendar year (with field names and numbers), size of each field applied to, applier, and site owner; the volumes applied to each field (in wet tons and dry metric tons), nitrogen applied, and calculated plant available nitrogen; the crop planted, date of planting, and date of harvesting; for biosolids exceeding 40 CFR 503.13 Table 3 pollutant concentrations, the locations of sites where applied and cumulative metals loading at that site to date; certifications of management practices in 40 CFR 503.14 and certifications of site restrictions in 40 CFR 503.17(b)(6).

- (6) For surface disposal sites: The locations of sites, site operator, site owner, and size of parcel on which disposed; the results of any required groundwater monitoring; certifications of management practices in 40 CFR 503.24; and for closed sites, the date of site closure and certifications of management practices for the three years following site closure.
- (7) All reports shall be submitted to:

Regional Biosolids Coordinator
U.S. Environmental Protection Agency Region 9
CWA Compliance Office (WTR-7)
75 Hawthorne Street
San Francisco, CA 94105-3901

SECTION E. MONITORING AND REPORTING

1. Reporting of Monitoring Results

- a. All monitoring results shall be submitted in such a format as to allow direct comparison with effluent limitations, monitoring requirements, and conditions of this permit. Influent and effluent monitoring results shall be reported during the previous three (3) months on pre-printed monthly Discharge Monitoring Report (“DMR”) forms (EPA No. 3320-1) provided by the EPA Region 9 DMR Coordinator for NPDES, to the extent that the results reported may be entered on the forms. The DMR forms shall be submitted quarterly on the 28th day of the month following the previous quarterly reporting period; for example, the three (3) monthly DMR forms for the reporting period January through March shall be submitted by April 28th. In the case of no discharge, the permittee shall submit a DMR indicating no discharge as required. Signed copies of these, and all other reports required herein, shall be submitted to the US EPA at the following address:

NPDES Data Team
Environmental Protection Agency
Region IX, Attn: WTR-1
75 Hawthorne Street
San Francisco, CA 94105

- b. For effluent analyses, the permittee shall utilize an analytical method with a published Method Detection Limit (MDL; as defined in Section G of this permit) that is lower than the effluent limitations (or lower than applicable numeric water quality criteria). If all published MDLs are higher than the effluent limitations or water quality criteria, then the permittee shall utilize the analytical method with the lowest published MDL. The permittee shall ensure that the laboratory utilizes a standard calibration where the lowest standard point is equal to or less than the minimum level (ML), as defined in Section G (Definitions) of this permit.
- c. For samples collected during the monthly reporting period, report on the DMR form:
 - (1) The *maximum value*, if the maximum value is greater than the ML; or *NODI (Q)*¹, if the maximum value is greater than or equal to the laboratory’s MDL, but less than the ML; or *NODI (B)*¹, if the maximum value is less than the laboratory’s MDL; and

¹ *NODI(Q)* means “No discharge/No data” (not quantifiable); *NODI(B)* means “No discharge/No data” (not detected).

- (2) The *average value* of all analytical results where 0 (zero) is substituted for *NODI (B)* and the laboratory's MDL is substituted for *NODI (Q)*, if more than one sample is collected during the monthly reporting period.
- d. As an attachment to each DMR form submitted during this permit term, the permittee shall report for all parameters with monitoring requirements specified under Section A.3. of this permit: the test method number or title and published MDL or ML; the test method number or title and preparation procedure used by the laboratory, the laboratory's MDL for the test method computed in accordance with Appendix B of 40 CFR 135, the standard deviation (S) from the laboratory's MDL study, and the number of replicate analyses (n) used to compute the laboratory's MDL; and the laboratory's lowest calibration standard.

2. Monitoring and Records

In addition to the information requirements specified under 40 CFR 122.41(j)(3), records of monitoring information shall include: the laboratory which performed the analyses and any comments, case narrative or summary of results produced by the laboratory. These records should identify and discuss QA/QC analyses performed concurrently during sample analyses and whether project and 40 CFR Part 136 requirements were met. The summary of results must include information on initial and continuing calibration, surrogate analyses, blanks, duplicates, laboratory control samples, matrix spike and matrix spike duplicate results, sample receipt condition, holding times, and preservation.

3. Twenty Four-Hour Reporting of Noncompliance

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances to the following persons or their offices:

Manager
CWA Compliance Office (WTR-7)
U.S. EPA Region 9
(415) 972-3577

If the permittee is unsuccessful in contacting the person above, the permittee shall report by 9 a.m. on the first business day following the noncompliance. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and, if the noncompliance has not been corrected, the date and/or time it is expected to be corrected; and, steps and/or plans to reduce, eliminate, and prevent reoccurrence of the noncompliance.

SECTION F. CHRONIC WHOLE EFFLUENT TOXICITY (WET) REQUIREMENTS

1. Monitoring Frequency

The permittee shall conduct *semiannual*, in January and July, chronic toxicity tests on 24-hour composite effluent samples. Once each calendar year, at a different time of year from the previous years, the permittee shall split a 24-hour composite effluent sample and concurrently conduct three toxicity tests using a fish, an invertebrate, and an alga species; the permittee shall continue to conduct routine *semiannual* toxicity testing using the single, most sensitive species.

Chronic toxicity test samples shall be collected for each point of discharge at the designated NPDES sampling station for the effluent (i.e., downstream from the last treatment process and any in-plant return flows where a representative effluent sample can be obtained). During years *1, 2, 3, 4, and 5* of the permit, a split of each sample shall be analyzed for all other monitored parameters at the minimum frequency of analysis specified by the effluent monitoring program.

2. Freshwater Species and EPA WET Test Methods

Species and short-term EPA WET test methods for estimating the chronic toxicity of NPDES effluents are in the fourth edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136). The permittee shall conduct static renewal toxicity tests with the following:

- Fathead minnow, *Pimephales promelas* (Larval Survival and Growth Test Method 1000.0)
- Daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0);
- Green alga, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*) (Growth Test Method 1003.0).

3. Chronic WET Permit Triggers

There are no chronic toxicity effluent limits for this discharge. The chronic WET permit trigger is any one WET test (either biological endpoint of survival or sublethal) where a test result is *Fail* (during the monthly reporting period) at the chronic in-stream waste concentration (IWC). For this discharge, the IWC is **100** percent effluent. To calculate either a Pass or Fail of the multiple-effluent concentration chronic toxicity test at the IWC, follow the instructions in Appendix A in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA/833-R-

10-003). A Pass result indicates no toxicity at the IWC, and a Fail result indicates toxicity at the IWC.

The permittee shall report either a Pass or a Fail on the DMR form. If a result is reported as Fail, the permittee shall follow Section 7 (Reporting of Chronic Toxicity Monitoring Results) of this permit.

4. Quality Assurance – EPA WET Test Methods

- a. Quality assurance measures, instructions, and other recommendations and requirements are in the EPA WET test methods manual previously referenced in this permit.
- b. This permit is subject to a determination of Pass or Fail from a multiple-effluent concentration chronic toxicity test at the IWC (for statistical flowchart and procedures, see *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document*, Appendix A, Figure A-1). The chronic in-stream waste concentration (IWC) for this discharge is **100** percent effluent.
- c. Effluent dilution water and control water should be standard synthetic dilution water as described in the EPA WET test methods manual, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002). If the dilution water is different from test organism culture water, then a second control using culture water shall also be used.
- d. If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration).
- e. If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the EPA WET test methods manual, then the permittee shall resample and retest within 14 days.
- f. Following Paragraph 10.2.6.2 of the freshwater EPA WET test methods manual, all chronic toxicity test results from the multi-concentration tests required by this permit shall be reviewed and reported according to EPA guidance on the evaluation of concentration-response relationships in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)* (EPA/821/B-00-004, 2000).

- g. If the discharged effluent is chlorinated, then chlorine shall not be removed from the effluent sample before toxicity testing without written approval by the permitting authority.

5. Initial Investigation TRE Work Plan

Within 90 days of the permit effective date, the permittee shall prepare and submit to the U.S. EPA Director a copy of its Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan (1–2 pages) for review. This plan shall contain steps the permittee intends to follow if toxicity is measured above a chronic WET permit limit or trigger and should include the following, at minimum:

- a. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.
- b. A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the facility.
- c. If a Toxicity Identification Evaluation (TIE) is necessary, an indication of who would conduct the TIEs (i.e., an in-house expert or outside contractor).

6. Accelerated Toxicity Testing and TRE/TIE Process

- a. If a chronic WET permit limit or trigger is exceeded and the source of toxicity is known (e.g., a temporary plant upset), then the permittee shall conduct one additional toxicity test using the same species and EPA WET test method. This WET test shall begin within 14 days of receipt of WET test results exceeding a chronic WET permit limit or trigger. If the additional toxicity test does not exceed a chronic WET permit limit or trigger, then the permittee may return to their regular testing frequency.
- b. If a chronic WET permit limit or trigger is exceeded and the source of toxicity is not known, then the permittee shall conduct six additional toxicity tests using the same species and EPA WET test method, approximately every two weeks, over a 12 week period. This testing shall begin within 14 days of receipt of WET test results exceeding a chronic WET permit limit or trigger. If none of the additional toxicity tests exceed a chronic WET permit limit or trigger, then the permittee may return to their regular testing frequency.
- c. If one of the additional toxicity tests (in paragraphs 6.a or 6.b) exceeds a chronic WET permit limit or trigger, then, within 14 days of receipt of this WET test result, the permittee shall initiate a TRE using as guidance, according to the type of treatment facility, the EPA TRE manual, *Toxicity Reduction Evaluation*

Guidance for Municipal Wastewater Treatment Plants (EPA/ 833/B-99/002, 1999) or EPA TRE manual, *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989). In conjunction, the permittee shall develop and implement a Detailed TRE Work Plan which shall contain the following: further actions undertaken by the permittee to investigate, identify, and correct the causes of toxicity; actions the permittee will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for such actions.

- d. The permittee may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and EPA WET test method and, as guidance, EPA WET TIE/TRE method manuals: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993).

7. Reporting of Chronic Toxicity Monitoring Results

- a. The permittee shall submit a full laboratory report as an attachment to the DMR for all toxicity testing for the month in which the toxicity test was conducted; the laboratory report shall contain the following: the toxicity test results, the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TIE/TRE investigations.
- b. The permittee shall provide the actual test endpoint responses for the control (i.e., control mean) and IWC concentration (i.e., IWC mean) for each WET test conducted to make it easier for permit writers to find the necessary WET test results when determining WET RP.
- c. The permittee shall notify the U.S. EPA Director in writing within 14 days of exceedance of a chronic WET permit limit or trigger. The notification shall describe actions the permittee has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

8. Permit Reopener for Chronic Toxicity

In accordance with 40 CFR Parts 122 and 124, this permit may be modified to include effluent limitations or permit conditions to address chronic toxicity in the effluent or receiving waterbody, as a result of the discharge; or to implement new, revised, or newly interpreted water quality standards applicable to chronic toxicity.

SECTION G. INSPECTION AND ENTRY

The permittee shall allow the EPA Regional Administrator, or an authorized representative, upon the presentation of credentials and such other documents as may be required by law, to perform inspections under authority of Section 10: Inspection and Entry of the EPA Region 9 *Standard Federal NPDES Permit Conditions*, dated June 3, 2002, as attached.

SECTION H. DEFINITIONS

The following definitions shall apply unless otherwise specified in this permit:

1. A “composite sample” means, for flow rate measurements, the arithmetic mean of no fewer than 4 individual measurements taken at equal intervals for one hour or for the duration of discharge, whichever is shorter. A 4-hour composite sample means, for other than flow rate measurements, a combination of four (4) individual portions obtained at equal time intervals over any 4-hour period or for the duration of the discharge, whichever is shorter. The volume of each individual portion shall be directly proportional to the discharge flow rate at the time of sampling. The sampling period shall coincide with the period of maximum discharge flow.
2. A “daily discharge” means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar for purposes of sampling. For pollutants with limitations expressed in terms of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the sampling day. “Daily discharge” determination of concentration made using a composite sample shall be the concentration of the composite sample. When the grab sample technique is used, the “daily discharge” determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that sampling day.
3. A “daily average” discharge limitation means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.
4. The “EPA” means the United States Environmental Protection Agency.
5. A “grab” sample, for monitoring requirements, is defined as a single “dip and take” sample collected at a particular time and place that represents the composition of the discharge only at that time and place. Sample collection, preservation, and handling shall be performed as described in the most recent edition of 40 CFR 136.3, Table II. Where collection, preservation, and handling procedures are not outlined 40 CFR 136.3, procedures outlined in the 18th edition of Standard Methods for the Examination of Water and Wastewater shall be used.

6. An “instantaneous” measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.
7. The “Method Detection Limit” (MDL) is the minimum concentration of an analyte that can be detected with 99% confidence that the analyte concentration is greater than zero, as defined by the specific laboratory method listed in 40 CFR Part 136. The procedure for determination of a laboratory MDL is in 40 CFR Part 136, Appendix B.
8. The “Minimum Level” (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all of the method-specified sample weights, volumes, and processing steps have been followed (as defined in EPs draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-Based Effluent Limitations Set Below Analytical Detection/Quantitative Levels, March 22, 1994). Published method-specific MLs are contained in 40 CFR Part 136, Appendix A, and must be utilized if available. If a published method-specific ML is not available, then an interim ML shall be calculated. The interim ML is equal to 3.18 times the published method-specific MDL rounded to the nearest multiple of 1, 2, 5, 10, 20, 50, etc. (When neither an ML nor an MDL are available under 40 CFR Part 136, an interim ML should be calculated by multiplying the best estimate of detection by a factor of 3.18; when a range of detection is given, the lower end value of the range of detection should be used to calculate the ML.) At this point in the calculation, a different procedure is used for metals, than for non-metals:
 - a. For metals, due to laboratory calibration practices, calculated MLs may be rounded to the nearest whole number.
 - b. For non-metals, because analytical instruments are generally calibrated using the ML as the lowest calibration standard, the calculated ML is then rounded to the nearest multiple of $(1, 2, \text{ or } 5) \times 10^n$, where n is zero or an integer. (For example, if an MDL is $2.5 \mu\text{g/l}$, then the calculated ML is: $2.5 \mu\text{g/l} \times 3.18 = 7.95 \mu\text{g/l}$. The multiple of $(1, 2, \text{ or } 5) \times 10^n$ nearest to 7.95 is $1 \times 10^1 = 10 \mu\text{g/l}$, so the calculated ML, rounded to the nearest whole number, is $10 \mu\text{g/l}$.)
9. A “monthly average” concentration for *E. coli* means the geometric mean of measurements made during a month. The geometric mean is the n th root of the product of n numbers.
10. A “monthly average” limitation means the highest allowable discharge of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measure during that month.

11. The “Regional Administrator” means EPA Region 9’s Regional Administrator.
12. A “weekly average” (or 7-day average) is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains month that contains the Saturday.

SECTION H. EPA REGION IX STANDARD CONDITIONS

See attached 15 pages of EPA Region 9 “Standard Federal NPDES Permit Conditions,” dated July 27, 2011.

ATTACHMENT A
2010 Hopi Tribe WQS for Total Ammonia (November 2010)

| Table A-3a of Hopi WQS Acute Criteria for Total Ammonia (in mg/l as N) | |
|---|------------------|
| pH | Salmonids Absent |
| 6.5 | 48.8 |
| 6.6 | 46.8 |
| 6.7 | 44.6 |
| 6.8 | 42.0 |
| 6.9 | 39.2 |
| 7.0 | 36.1 |
| 7.1 | 32.9 |
| 7.2 | 29.5 |
| 7.3 | 26.2 |
| 7.4 | 23.0 |
| 7.5 | 19.9 |
| 7.6 | 17.0 |
| 7.7 | 14.4 |
| 7.8 | 12.1 |
| 7.9 | 10.1 |
| 8.0 | 8.41 |
| 8.1 | 6.95 |
| 8.2 | 5.73 |
| 8.3 | 4.71 |
| 8.4 | 3.88 |
| 8.5 | 3.20 |
| 8.6 | 2.65 |
| 8.7 | 2.20 |
| 8.8 | 1.84 |
| 8.9 | 1.56 |
| 9.0 | 1.32 |

ATTACHMENT A (continued)
2010 Hopi Tribe WQS for Total Ammonia

| Table A-3b. Chronic Criteria for Total Ammonia (in mg/L), Early Life Stages Present | | | | | | | | | | |
|---|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| pH | Temperature, °C | | | | | | | | | |
| | 0 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 |
| 6.5 | 6.67 | 6.67 | 6.06 | 5.33 | 4.68 | 4.12 | 3.62 | 3.18 | 2.80 | 2.46 |
| 6.6 | 6.57 | 6.57 | 5.97 | 5.25 | 4.61 | 4.05 | 3.56 | 3.13 | 2.75 | 2.42 |
| 6.7 | 6.44 | 6.44 | 5.86 | 5.15 | 4.52 | 3.98 | 3.50 | 3.07 | 2.70 | 2.37 |
| 6.8 | 6.29 | 6.29 | 5.72 | 5.03 | 4.42 | 3.89 | 3.42 | 3.00 | 2.64 | 2.32 |
| 6.9 | 6.12 | 6.12 | 5.56 | 4.89 | 4.30 | 3.78 | 3.32 | 2.92 | 2.57 | 2.25 |
| 7.0 | 5.91 | 5.91 | 5.37 | 4.72 | 4.15 | 3.65 | 3.21 | 2.82 | 2.48 | 2.18 |
| 7.1 | 5.67 | 5.67 | 5.15 | 4.53 | 3.98 | 3.50 | 3.08 | 2.70 | 2.38 | 2.09 |
| 7.2 | 5.39 | 5.39 | 4.90 | 4.31 | 3.78 | 3.33 | 2.92 | 2.57 | 2.26 | 1.99 |
| 7.3 | 5.08 | 5.08 | 4.61 | 4.06 | 3.57 | 3.13 | 2.76 | 2.42 | 2.13 | 1.87 |
| 7.4 | 4.73 | 4.73 | 4.30 | 3.78 | 3.33 | 2.92 | 2.57 | 2.26 | 1.98 | 1.74 |
| 7.5 | 4.36 | 4.36 | 3.97 | 3.49 | 3.06 | 2.69 | 2.37 | 2.08 | 1.83 | 1.61 |
| 7.6 | 3.98 | 3.98 | 3.61 | 3.18 | 2.79 | 2.45 | 2.16 | 1.90 | 1.67 | 1.47 |
| 7.7 | 3.58 | 3.58 | 3.25 | 2.86 | 2.51 | 2.21 | 1.94 | 1.71 | 1.50 | 1.32 |
| 7.8 | 3.18 | 3.18 | 2.89 | 2.54 | 2.23 | 1.96 | 1.73 | 1.52 | 1.33 | 1.17 |
| 7.9 | 2.80 | 2.80 | 2.54 | 2.24 | 1.96 | 1.73 | 1.52 | 1.33 | 1.17 | 1.03 |
| 8.0 | 2.43 | 2.43 | 2.21 | 1.94 | 1.71 | 1.50 | 1.32 | 1.16 | 1.02 | 0.897 |
| 8.1 | 2.10 | 2.10 | 1.91 | 1.68 | 1.47 | 1.29 | 1.14 | 1.00 | 0.879 | 0.773 |
| 8.2 | 1.79 | 1.79 | 1.63 | 1.43 | 1.26 | 1.11 | 0.973 | 0.855 | 0.752 | 0.661 |
| 8.3 | 1.52 | 1.52 | 1.39 | 1.22 | 1.07 | 0.941 | 0.827 | 0.727 | 0.639 | 0.562 |
| 8.4 | 1.29 | 1.29 | 1.17 | 1.03 | 0.906 | 0.796 | 0.700 | 0.615 | 0.541 | 0.475 |
| 8.5 | 1.09 | 1.09 | 0.990 | 0.870 | 0.765 | 0.672 | 0.591 | 0.520 | 0.457 | 0.401 |
| 8.6 | 0.920 | 0.920 | 0.836 | 0.735 | 0.646 | 0.568 | 0.499 | 0.439 | 0.386 | 0.339 |
| 8.7 | 0.778 | 0.778 | 0.707 | 0.622 | 0.547 | 0.480 | 0.422 | 0.371 | 0.326 | 0.287 |
| 8.8 | 0.661 | 0.661 | 0.601 | 0.528 | 0.464 | 0.408 | 0.359 | 0.315 | 0.277 | 0.244 |
| 8.9 | 0.565 | 0.565 | 0.513 | 0.451 | 0.397 | 0.349 | 0.306 | 0.269 | 0.237 | 0.208 |
| 9.0 | 0.486 | 0.486 | 0.442 | 0.389 | 0.342 | 0.300 | 0.264 | 0.232 | 0.204 | 0.179 |

Notes:

1. pH and temperature are field measurements taken at the same time and location as the water samples destined for the laboratory analysis of ammonia.
2. If field measured pH and/or temperature values fall between the A & W_w acute total ammonia tabular values, round field-measured values according to standard scientific rounding procedures to nearest tabular value to determine the ammonia standard.