

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"),

Table Mountain Rancheria  
P.O. Box 445  
Friant, CA 93626

is authorized to discharge treated municipal wastewater from the Table Mountain Rancheria  
Wastewater Treatment Plant located at 8206 Table Mountain Road, Friant, California to an unnamed  
tributary of Little Dry Creek as described below:

Outfall Serial No.	Description of discharge	Latitude	Longitude
005	Wastewater Treatment Plant Effluent at storage tank	N. 36 <sup>0</sup> 59' 15"	W. 119 <sup>0</sup> 38' 10"

in accordance with effluent limitations, monitoring requirements and other conditions set forth  
herein, and in the attached EPA Region 9 "Standard Federal NPDES Permit Conditions," dated June  
3, 2002.

This permit shall become effective on:

This permit and the authorization to discharge shall expire at midnight,

Signed this \_\_\_\_\_ day of \_\_\_\_\_.

For the Regional Administrator

\_\_\_\_\_  
Alexis Strauss, Director  
Water Division

**Part I EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

A. Table Mountain Rancheria (“permittee”) is authorized to discharge treated wastewater from Outfall 005 as specified in Table 1 below:

**Table 1: Effluent Limitations and Monitoring Requirements**

Parameter	Maximum Allowable Discharge Limitations						Monitoring Requirements	
	Mass Limits			Concentration Limits				
	Average Monthly	Average Weekly	Daily Maximum	Average Monthly	Average Weekly	Daily Maximum		
Flow	----	----	---	(1)	----	(1)	Once/day	Continuous
Ammonia	----	----	----	(2)	----	(2)	Once/month	Composite
Biochemical Oxygen Demand (5-Day) (3)	250 lbs/day	375 lbs/day	----	30 mg/l	45 mg/l	---	Once/month	Composite
Electrical Conductivity	----	-----	-----	(1)	----	(1)	Once/month	Discrete
Total Coliform Bacteria	----	----	----	----	(4)	23 MPN/ 100 ml	Once/week	Discrete
Nitrate (measured as N)	----	----	----	10 mg/L	----	----	Once/month	Composite
Settleable Solids	----	----	----	1 ml/l	----	2 ml/l	Once/month	Discrete
Total Suspended Solids (3)	250 lbs/day	375 lbs/day	----	30 mg/l	45 mg/l	---	Once/month	Composite
Total Dissolved Solids	-----	-----	----	(1)	-----	(1)	Once/month	Composite
Total Residual Chlorine	----	----	----	----	0.01 mg/L	0.02 mg/L	Once/month	Discrete
Turbidity (5)	----	----	----	2 NTU	----	5 NTU	Once/week	Discrete
pH	The pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5						Once/day	Discrete

Footnotes to Table 1: (see Next Page)

Footnotes to Table 1:

- (1) Monitoring and reporting required. No limit set at this time.
- (2) Ammonia effluent limitations are pH and temperature dependent and are contained in Appendix C and Appendix D.
- (3) Both the influent and the effluent shall be monitored for Biochemical Oxygen Demand (5-day) and Suspended Solids by concentration. The arithmetic mean of effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected over the same time period. (I.e., Must demonstrate 85% removal of BOD and TSS).
- (4) Total Coliform Bacteria shall not exceed 2.2 MPN/ 100 ml as a weekly median.
- (5) The daily average turbidity shall not exceed 2 NTU. Turbidity shall not exceed 5 NTU more than 5 percent of the time within a 24-hour period. At no time shall the turbidity exceed 10 NTU.

B. Additional Monitoring Requirements

The permittee shall conduct effluent monitoring for the following parameters once during the first 90 days of discharge from the new wastewater treatment plant and once per year thereafter:

1. *Priority Toxic Pollutants*. 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)
2. *Hardness (CaCO<sub>3</sub>)*. The permittee shall monitor for hardness in addition to priority pollutants.
3. *Acute and Chronic Toxicity*. The requirements for monitoring acute and chronic toxicity are specified in Part IV of this permit.

C. The discharge shall not cause the following in downstream waters:

1. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mg/L or cause more than 10 percent of total samples taken during any 30-day period to exceed 400 MPN/100 mg/L.
2. Biostimulatory substances that promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. Esthetically undesirable discoloration.
4. Concentrations of dissolved oxygen to fall below 7.0 mg/L. The monthly median of the mean daily dissolved oxygen concentration shall not fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not fall below 75 percent of saturation.
5. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
6. Oils, greases, waxes, or other materials to accumulate in concentrations that cause nuisance, result in a visible film or coating on the water surface or on objects in the water, or that otherwise adversely affect beneficial uses.
7. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units. A one-month averaging period may be applied when calculating the pH change of 0.5 units.
8. Radionuclides to be present in concentrations that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. Taste- or odor-producing substances to impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
11. The ambient temperature to increase more than 5°F.
12. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic

life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

13. The turbidity to increase as follows:

- i. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
- ii. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
- iii. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
- iv. More than 10 percent where natural turbidity is greater than 100 NTUs.

14. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

**Part II. SPECIAL CONDITIONS**

A. Erosion Protection.

The permittee shall install erosion protection measures at the discharge point to prevent erosion of the stream banks. This may include rip rap, a drop structure, energy dissipaters, or other means to maintain stability of the stream bank.

B. Total Residual Chlorine.

The permittee shall maintain a log of chlorine residual in storage tanks and shall ensure that chlorine residual is less than 0.01 mg/L in the storage tank at time of discharge.

C. Reporting of Capacity Attainment and Planning

The permittee shall file a written report with EPA within ninety (90) days after the average dry-weather waste flow for any month either equals or exceeds 90 percent of the annual dry weather design capacity of the waste treatment and/or disposal facilities. The permittee's senior administrative officer shall sign a letter which transmits that report and certifies that the policy-making body is adequately informed about it. The report shall include:

1. Average daily flow for the month, the date on which the instantaneous peak flow occurred, the rate of that peak flow, and the total flow for the day.
2. The permittee's best estimate of when the average daily dry weather flow rate will equal or exceed the design capacity of the facilities.
3. The permittee's intended schedule for the studies, design, and other steps needed to provide additional capacity for the waste treatment and/or disposal facilities before the waste flow rate equals the capacity of present facilities.

D. Reopener - This permit may be modified in accordance with the requirements set forth at 40 CFR Parts 122 and 124, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any EPA-approved new State water quality standards applicable to effluent toxicity.

Upon request from the discharger, monitoring requirements may be reduced from once per month to quarterly analysis after 24 months of sampling demonstrating no reasonable potential to cause or contribute to water quality standards. This may be applicable to the following parameters: ammonia, nitrate, EC, total dissolved solids, and total residual chlorine.

The effluent limits for Nitrate may be revised pending an assessment of anti-degradation requirements or to establish a more stringent technology based effluent limit based on demonstrated performance data.

**Part III. MONITORING AND REPORTING**

- A. Sample locations - Samples taken in compliance with the monitoring requirements specified in Part I, Section A, above, shall be taken at that following location(s):
1. Influent samples shall be taken after the last addition to the collection system prior to treatment.
  2. Effluent samples shall be taken downstream from the last treatment process and after the storage tanks, prior to mixing with the receiving waters.
- B. Reporting of Monitoring Results
1. Monitoring results obtained during the month shall be submitted on forms to be supplied by the Regional Administrator, to the extent that the information reported may be entered on the forms. The results of all monitoring required by this permit shall be submitted in such a format as to allow direct comparison with the limitations and requirements of the permit. Unless otherwise specified, discharge flows shall be reported in terms of the average flow over each monthly period and the maximum daily flow over that monthly period. If there is no discharge during the month, the reporting form shall be marked "No Discharge" and submitted in accordance with this section. Each monthly report is due by the 28th of the following month, i.e. January report is due by February 28. Duplicate signed copies of these, and all other reports required herein, shall be submitted to EPA at the following address:  
  
U.S. EPA Region IX  
NPDES/DMR, WTR-7  
75 Hawthorne Street  
San Francisco, California 94105-3901
  2. Where quarterly monitoring is required for a continuous discharge, samples shall be taken during the months of January, April, July and October.
  3. For effluent analyses, the permittee shall utilize an analytical method with the published Method Detection Limit (MDL, as defined in Appendix A. of this permit) that is lower than the effluent limitations (or lower than the water quality criteria). If all published MDLs are higher than effluent limitations or water quality criteria concentrations, the permittee shall utilize the EPA approved analytical method with the lowest published MDL. In accordance with 40 CFR 122.45(c), effluent analyses for metals shall measure "total recoverable metals".
  4. For the purposes of reporting, the permittee shall use the reporting threshold equivalent to the laboratory's MDL<sup>1</sup>. As such the permittee or its laboratory must utilize a standard calibration

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<sup>1</sup> Because MLs and MDLs specified in or approved under 40 CFR 136 are generally determined by the EPA using reagent water, matrix interferences in some wastewaters may result in a permittee being unable to achieve a required ML. In other cases, inappropriate laboratory techniques and poor quality assurance/quality control (QA/QC) procedures will result in a permittee failing to achieve a required ML. To distinguish between cases where a ML (or MDL) is not achieved due to poor laboratory technique and when matrix interferences do, in fact, occur, and to document that a discharge-specific MDL and ML are warranted, a permittee attempting to overcome matrix interference problems shall follow guidelines provided in *Guidance on Evaluation, Resolution, and Documentation of Analytical Problems Associated with Compliance Monitoring* (EPA 821-B-93-001, June 1993). In such a case, the permittee shall submit a report to EPA documenting that a discharge-specific MDL is warranted. Upon approval of this report by EPA, the permittee shall follow procedures set forth in 40 CFR 136, Appendix B, to determine the

where the lowest standard point is equal to or less than, the minimum level (ML), as defined in Appendix A of this permit.

For analytical results between the laboratory's MDL and the PQL/ML, the permittee shall report No Discharge/No Data (Not Quantifiable) ["NODI(Q)"] on the DMR form. Analytical results below the laboratory's MDL shall be reported as No Discharge/No Data (Below Detection Level) ["NODI(B)"].

As an attachment to the first DMR form submitted following the effective date of this permit, and at any time thereafter that the following information should change, the permittee shall report for trace substances: the analytical result; the analytical method number or title, preparation and analytical procedure, and published MDL; the laboratory MDL, standard deviation (S) from the laboratory's MDL study (see 40 CFR Part 136, Appendix B), and the number of replicate analyses used to compute the laboratory's MDL (n); and PQL/ML.

When requested by EPA, the permittee or its laboratory shall participate in the NPDES DMR-QA performance study and shall submit their study results to EPA. The permittee must have a success rate of at least 80 percent. (%).

5. Quality Assurance (QA) Manual

Sample collection will be performed as stated in the Quality Assurance (QA) Manual/QA Plan.

The permittee shall develop a QA Manual/QA Plan for collection and analysis of samples. If the water samples are analyzed by an independent laboratory, the permittee shall ensure that the laboratory has a Quality Assurance (QA) Manual.

The purpose of the QA Manual is to assist in planning for the collection and analysis of samples and explaining data anomalies if they occur. As appropriate and applicable, the QA Manual shall include the details enumerated below. The QA Manual shall be retained on the permittee's premises and be available for review by EPA upon request. The permittee or the independent laboratory as the case may be shall review its QA Manual annually and revise it when appropriate.

Throughout all field sampling and laboratory analyses, the permittee or the laboratory shall use quality assurance/quality control (QA/QC) procedures as documented in their QA Manual.

- (i) Project Management including roles and responsibilities of the participants; purpose of sample collection; matrix to be sampled; the analytes or compounds being measured; applicable technical, regulatory, or program-specific action criteria; personnel qualification requirements for collecting samples.

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discharge-specific MDL and ML, which are also subject to EPA evaluation and approval. Additional guidance on development and review of discharge-specific MDLs is available in EPA's draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-Based Effluent Limitations Set Below Analytical Detection/Quantitative Levels, March 22, 1994, Appendix B.

- (ii) Sample collection procedures; equipment used; the type and number of samples to be collected including QA/QC samples (i.e., background samples, duplicates, and equipment or field blanks); preservatives and holding times for the samples (see 40 CFR Part 136.3); and chain of custody procedures.
- (iii) Identification of the laboratory to be used to analyse the samples; provisions for any proficiency demonstration that will be required by the laboratory before or after contract award such as passing a performance evaluation sample; analytical method to be used; method detection limit (MDL) and minimum level (ML) to be reported; required QC results to be reported (e.g., matrix spike recoveries, duplicate relative percent differences, blank contamination, laboratory control sample recoveries, surrogate spike recoveries, etc.) and acceptance criteria; and corrective actions to be taken by the permittee or the laboratory as a result of problems identified during QC checks.
- (iv) Discussion of how the permittee will perform data review and requirements for reporting of results to EPA to include resolving of data quality issues and identifying limitations on the use of the data.

C. Monitoring and Records

Records of monitoring information shall include:

1. Date, exact location, and time of sampling or measurements performed, and preservatives used;
2. Individual(s) who performed the sampling or measurements;
3. Date(s) analyses performed;
4. Laboratory(s) which performed the analyses;
5. Analytical techniques or methods used;
6. Any comments, case narrative or summary of results produced by the laboratory. These should identify and discuss QA/QC analyses performed concurrently during sample analyses and should specify whether they met project and 40 CFR Part 136 requirements. 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;
7. Summary of data interpretation and any corrective action taken by the permittee; and
8. Effluent limitations for analytes/compound being analyzed.

D. Twenty-Four Hour Reporting of Noncompliance

The permittee shall report any noncompliance which may endanger human health or the environment. This 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:

CWA Compliance Office Chief  
USEPA

(415) 972-3505

If the permittee is unsuccessful in contacting the persons 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 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 time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

E. Intermittent Discharge Monitoring

If the discharge is intermittent rather than continuous, then on the first day of intermittent discharge, the permittee shall monitor and record data for all the characteristics listed in the monitoring requirements of Table 1 in Part I. A of this permit, after which the frequencies of analysis listed in the monitoring requirements shall apply for the duration of each such intermittent discharge. The permittee shall not be required to monitor more than the frequency required by the permit.

F. Monitoring Modification

Monitoring, analytical, and reporting requirements may be modified by the Regional Administrator upon due notice.

G. Operation

The facilities and/or systems shall be operated by an operator with training and/or certification equivalent to the requirements of the State of California, at the level appropriate to the facility and/or system.

## **Part IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS**

### **A. General Conditions**

1. The permittee shall conduct both toxicity tests on 24-hour composite samples of the final effluent. Samples shall be taken at Outfall 005 annually. Three composite samples are required to complete one chronic WET test.
2. Definitions related to toxicity are found in Appendix B.

### **B. Acute Toxicity**

1. The permittee shall conduct 96-hour acute toxicity tests on two species; *Daphnia magna* (acute toxicity only) and the fathead minnow, *Pimephales promelas* using 100% effluent and a control.
2. The permittee must follow the USEPA 5<sup>th</sup> edition manual, "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012) for all acute compliance toxicity testing.
3. The acute toxicity trigger is any "failing" test result. The test "fails" if survival in 100% effluent is less than 90%, and is significantly different from control survival (which must be 90% or greater), as determined by hypothesis testing. Any result of "Fail" requires follow-up testing per Part IV, Section F.

### **C. Chronic Toxicity**

1. Chronic toxicity testing evaluates reduced growth/reproduction at 100 percent effluent. Chronic toxicity is to be reported based on the No Observed Effect Concentration (NOEC).
2. The permittee shall report results in Chronic Toxicity Units (TU<sub>c</sub>). A TU<sub>c</sub> = 100/NOEC
3. The chronic toxicity trigger is any one test result greater than 1.6 TU<sub>c</sub> or any calculated monthly median value greater than 1.0 TU<sub>c</sub>. If chronic toxicity is detected above these values, follow-up testing is required per Part IV, Section E.
4. The chronic WET test shall be conducted using a series of five dilutions and a control. A dilution factor  $\geq 0.5$  must be used and include 100% effluent (i.e., 12.5, 25, 50, 75, 100% effluent and a control).

#### **Test Species & Test Methods for chronic Toxicity**

5. The permittee shall conduct short-term tests with the water flea, *Ceriodaphnia dubia* (survival and reproduction test), the fathead minnow, *Pimephales promelas* (larval survival and growth test) and the green alga, *Raphidocelis subcapitata* (growth test).
6. The presence of chronic toxicity shall be estimated as specified by the methods in the 40 CFR Part 136.3 as amended on November 19, 2002.
7. Effluent grab samples are to be put on ice immediately after being pulled and kept chilled (but not frozen) to  $4 \pm 2$  degrees Celsius throughout collection, shipping, and storage until they are delivered to the testing laboratory.

**E. Quality Assurance:**

1. If organisms are not cultured in-house, the permittee shall conduct concurrent testing with reference toxicants. Where organisms are cultured in-house, monthly reference toxicity testing is sufficient. The permittee shall also conduct reference toxicant testing using the same test conditions as the effluent toxicity tests (i.e., same test duration, etc.).
2. If either the reference toxicant test or the effluent test do not meet all test acceptability criteria as specified in the 40 CFR Part 136.3 approved method, then the permittee must re-sample and re-test within two weeks of receipt of the sample results that exceeded the trigger. The re-sampling and re-testing requirements include laboratory induced error in performing the test method. The permittee shall conduct reference toxicant tests using the same test conditions as the effluent toxicity test (i.e., same test duration, etc.)
3. For chronic Wet testing, the reference toxicant and effluent tests must meet the upper and lower bounds on test sensitivity as determined by calculating the percent minimum significant difference (PMSD) for each test result. The test sensitivity bound is specified for each test method (see variability document EPA/833-R-00-003, Table 3-6). There are five possible outcomes based on the PMSD result.
  - a. *Unqualified Pass*- The test's PMSD is within bounds and there is no significant difference between the means for the control and the effluent. The regulatory authority would conclude that there is no toxicity.
  - b. *Unqualified Fail*- The test's PMSD is larger than the lower bound (but not greater than the upper bound) in Table 3-6 and there is a significant difference between the means for the control and the effluent. The regulatory authority would conclude that there is toxicity.
  - c. *Lacks Test Sensitivity*- The test's PMSD exceeds the upper bound in Table 3-6 and there is no significant difference between the means for the control and the effluent. The test is considered invalid. An effluent sample must be collected and another toxicity test must be conducted within 14 days.
  - d. *Lacks Test Sensitivity*- The test's PMSD exceeds the upper bound in Table 3-6 and there is a significant difference between the means for the control and the effluent. The test is considered valid. The regulatory authority will conclude that there is toxicity.
  - e. *Very Small but Significant Difference*- The relative difference between the means for the control and effluent is smaller than the lower bound in Table 3-6 and this difference is statistically significant. The test is acceptable and the NOEC should be determined.
4. Control and dilution water should be receiving water or lab water as appropriate, as described in the 40 CFR Part 136.3 approved method. If the dilution water used is different from the culture water, a second control, using culture water shall also be used.

**F. Toxicity Identification Evaluation (TIE)/Toxicity Reduction Evaluation (TRE) Processes**

1. If acute or chronic toxicity is detected above the trigger level specified in Sections B.3 or C.3 above and if the source of toxicity is known (for instance, a temporary plant upset), then the permittee shall conduct one follow-up test within two weeks of receipt of the sample results that exceeded the trigger. The permittee shall use the same test and species as the failed toxicity test. If toxicity is

detected in the follow-up, then EPA may modify this permit according to the requirements set forth at 40 CFR Parts 122 and 124, to include appropriate conditions or limits to address demonstrated effluent toxicity.

2. If acute or chronic toxicity is detected above a trigger level specified in Section B.3 or C.3 and the source of toxicity is unknown, the permittee shall begin additional toxicity monitoring within two weeks of receipt of the sample results that exceeded the trigger. The permittee shall conduct four more tests, one approximately every other week, over an eight week period using the same test and species as the failed toxicity test. For intermittent discharges, testing shall be conducted on the next four discharge events using the same test and species as the failed toxicity test.
  - a. If none of the four tests indicates toxicity, then the permittee may return to the routine WET testing frequency specified in this permit.
  - b. If acute or chronic toxicity is detected in any of the additional four tests, the permittee may discontinue the follow-up WET testing and shall immediately begin developing a Toxicity Reduction Evaluation (TRE) plan. The TRE plan must be submitted to EPA for review and approval within 30 days after receipt of the toxic result. The permittee shall use the EPA guidance manual EPA/833/B-99/002A in preparing the TRE plan. The TRE plan shall include, at a minimum, the following:
    - Further actions to investigate and identify the causes of toxicity. The permittee may initiate a Toxicity Identity Evaluation (TIE) as part of the TRE process using as guidance EPA manuals, EPA/600/6-91/005F (Phase I); EPA/600/R-92/080 (Phase II), and EPA/600/R-92/081 (Phase III) to identify the causes of toxicity, or as directed by EPA.
    - Action the permittee will take to mitigate the impact of the discharge and to prevent the recurrence of toxicity; and
    - A schedule for implementing these actions.
  - c. Implement plan as approved and directed by EPA.

#### **G. WET Reporting**

The permittee shall submit the results of the toxicity tests along with the next Discharge Monitoring Report (DMR). If additional toxicity tests are conducted as part of a TRE plan, then a full report, containing (1) the results, (2) the dates of sample collection and initiation of each toxicity test, and (3) the monthly average limit or trigger and daily maximum limit or trigger as described in this permit, shall also be submitted with the DMR for the quarter in which the investigation occurred.

## Part V. BIOSOLIDS

### A. Biosolids (Sludge) Requirements

1. All biosolids generated by the permittee shall be reused or disposed of in compliance with the applicable portions of:
  - a) 40 CFR 503 for biosolids that are land applied, placed in surface disposal sites (dedicated land disposal sites or monofills), or incinerated;
  - b) 40 CFR 258 for biosolids disposed of in Municipal Solid Waste landfills;
  - c) 40 CFR 257 for all biosolids disposal practices not covered under 40 CFR 258 or 503.
  - d) 40 CFR 503 Subpart B (land application) for biosolids placed on the land for the purpose of providing nutrients or conditioning the soil for crops or vegetation.
  - e) 40 CFR 503 Subpart C (surface disposal) for biosolids placed on the land for the purpose of disposal.
- 2.. The permittee is responsible for assuring that all biosolids produced at its facility are used or disposed of in accordance with 40 CFR 257, 258, and 503, whether the permittee reuses or disposes of the biosolids itself or transfers them to another party for further treatment, reuse, or disposal. The permittee is responsible for informing subsequent preparers, applicers, or disposers of the requirements they must meet under 40 CFR 257, 258, and 503.
3. 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.
4. No biosolids shall be allowed to enter wetlands or other waters of the United States.
5. Biosolids treatment, storage, and use or disposal shall not contaminate groundwater.
6. Biosolids treatment, storage, and use or disposal shall not create a nuisance such as objectionable odors or flies.
7. The permittee shall assure that haulers who transport biosolids off site for treatment, reuse, or disposal take all necessary measures to keep the biosolids contained.
8. If biosolids are stored for over two years from the time they are generated, the permittee must ensure compliance with all the requirements for surface disposal under 40 CFR 503 Subpart C, or must submit a written request to EPA with the information in 503.20 (b), requesting permission for longer temporary storage.
9. Biosolids containing more than 50 mg/kg PCB's shall be disposed of in accordance with 40 CFR 761.
10. Any biosolids treatment, disposal, or storage site shall have facilities adequate to divert surface runoff from the adjacent area, to protect the site boundaries from erosion, and to prevent any conditions that would cause drainage from the materials in the disposal site to escape from the site. Adequate protection is defined as protected from at least a 100-year storm and from the highest tidal stage that may occur.

11. Inspection and Entry: The permittee shall allow the Regional Administrator or an authorized representative thereof, upon the presentation of credentials, to:
- a) enter upon all premises where biosolids produced/treated by the permittee are treated, stored, used, or disposed, either by the permittee or by another party to whom the permittee transfers the biosolids for treatment, use, or disposal,
  - b) have access to and copy any records that must be kept under the conditions of this permit or of 40 CFR 503, by the permittee or by another party to whom the permittee transfers the biosolids for further treatment, use, or disposal,
  - c) inspect any facilities, equipment (including monitoring and control equipment), practices, or operations used in the biosolids treatment, storage, use, or disposal by the permittee or by another party to whom the permittee transfers the biosolids for treatment, use, or disposal.

12. Monitoring shall be conducted as follows:

- a) Biosolids shall be tested for the metals required in Section 503.16 (for land application) or 503.26 (for surface disposal), using the methods in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846), as required in 503.8(4), at the following minimum frequencies:

<u>Volume (dry metric tons)</u>	<u>Frequency</u>
0 - 290	once per year
290 - 1500	once per quarter
1500 - 15000	once per 60 days
> 15000	once per month

Sampling Plan - For accumulated, previously untested biosolids, the permittee shall develop a representative sampling plan, including number and location of sampling points, and collect representative samples. Test results shall be expressed in mg pollutant per kg biosolids on a 100% dry weight basis.

Sampling Requirements: Biosolids to be land applied shall be tested for TKN, ammonium-N, and nitrate-N at the frequencies required above.

- b) Prior to land application, the permittee shall demonstrate that the biosolids meet Class A or Class B pathogen reduction levels by one of the methods listed in 503.32. Prior to disposal in a surface disposal site, the permittee shall demonstrate that the biosolids meet Class B levels or shall ensure that the site is covered at the end of each operating day.
- 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 Vector Attraction Reduction requirements in 503.33(b).
- d) Class 1 facilities (facilities with pretreatment programs or others designated as Class 1 by the Regional

Administrator) and Federal facilities with > 5 MGD influent flow shall sample biosolids for pollutants listed under Section 307(a) of the Act (as required in the pretreatment section of the permit for POTW's with pretreatment programs.) Class 1 facilities and Federal Facilities with > 5 MGD influent flow shall test dioxin/dibenzofurans using a detection limit of < 1 pg/g during their next sampling period if they have not done so within the past 5 years and once per 5 years thereafter.

- e) The biosolids shall be tested annually using the Toxicity Characteristic Leaching Procedure, or more frequently if necessary to determine hazardousness.
- f) If biosolids are placed in a surface disposal site (dedicated land disposal site or monofill), 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.
- g) Biosolids placed in a municipal landfill shall be tested by the Paint Filter Test (method 9095) at the frequency in 12(a) above or more often if necessary to demonstrate that there are no free liquids.

13. The permittee shall comply with the following notification requirements:

- a) At least 60 days prior to the use or disposal of any biosolids from this facility to a new or previously unreported site, the permittee shall submit a reuse/disposal plan to EPA and the [State contact]. The plan shall include results of the analyses required under the Monitoring Section above, a description and topographic map of the proposed site(s) for reuse or disposal, names and addresses of the applier(s) and site owner(s), and a listing of any state or local permits which must be obtained. For land application sites, the plan shall include a description of the crops or vegetation to be grown, proposed loading rates and nitrogen loadings to be used for the crops, and a groundwater monitoring plan if one exists. If the biosolids do not meet 503.13 Table 3 metals concentration limits, the permittee must notify EPA of any previous applications of biosolids subject to cumulative loading limits to the site, the cumulative amounts of pollutants applied to date, and background concentrations if known.
- b) For biosolids that are land applied, the permittee shall notify the applier in writing of the nitrogen content of the biosolids, and of the applier's requirements under 503, including the requirement that the applier certify that the management practices, site restrictions, and any applicable vector attraction reduction requirements required in 40 CFR 503 Subpart B have been met. The permittee shall require the applier to certify at the end of 38 months following application of Class B biosolids that those harvesting restrictions in effect for up to 38 months have been met.
- c) If biosolids are shipped to another State or to Indian Lands, the permittee must send 60 days prior notice of the shipment to the permitting authorities in the receiving State or Indian Land (the EPA Regional Office for that area and the State/Indian authorities).
- d) Notification of non-compliance: The permittee shall notify EPA Region 9 and [the State contact] of any non-compliance within 24 hours if the non-compliance may seriously endanger health or the environment. For other instances of non-compliance, the permittee shall notify EPA Region 9 and the Board of the non-compliance in writing within 5 working days of becoming aware of the non-compliance.

14. The permittee shall submit an annual biosolids report to EPA and the Board by February 19 of each year for the period covering the previous calendar year. The report shall include:

- a) the amount of biosolids generated that year, in dry metric tons, and the amount accumulated from previous years.

- b) results of all pollutant monitoring required in the Monitoring Section above.
- c) Descriptions of pathogen reduction methods, vector attraction reduction methods, site and harvesting restrictions, and management practices, and certifications of these, as required in 503.17 and 503.27.
- d) Results of any groundwater monitoring or certification by groundwater scientist that the application/disposal will not contaminate an aquifer.
- e) Names and addresses of land appliers and surface disposal site operators, location of sites (latitude and longitude and names of sites); volumes applied (dry metric tons) and loading rates (metric tons/ha), dates of applications, crops grown and dates of seeding and harvesting.
- f) Names, mailing addresses, and street addresses of persons who received biosolids for storage, further treatment, disposal in a municipal waste landfill, or for other reuse/disposal methods not covered above, and volumes delivered to each.

Reports shall be submitted to:  
U.S. EPA, WTR-7  
Regional Biosolids Coordinator  
75 Hawthorne St.  
San Francisco, CA 94105-3901

## Appendix A: STANDARD DEFINITIONS

1. A “composite sample” means, for flow rate measurements, the arithmetic mean of no fewer than eight (8) individual measurements taken at equal intervals for eight (8) hours or for the duration of discharge, whichever is shorter. For other than flow rate measurements, a composite sample means, a combination of either (8) individual portions obtained at equal time intervals for eight (8) hours 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.

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 in 40 CFR 136.3, procedures outlined in the 20th edition of *Standard Methods for the Examination of Water and Wastewater* shall be used.

2. The “daily maximum concentration limit” means the measurement made on any single discrete sample or composite sample.
3. The “daily maximum mass limit” means the total discharge by mass during any calendar day.
4. A “discrete” or “grab” sample means an individual sample collected from a single location at a specific time, or over a period of time not exceeding 15 minutes. 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 in 40 CFR 136.3, procedures outlined in the 20th edition of *Standard Methods for the Examination of Water and Wastewater* shall be used.
5. The “Method Detection Limit (MDL)” is the minimum concentration of an analyte that can be detected with 99 percent 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.
6. 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 EPA’s draft *National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-Based Effluent Limitations Set Below Analytical Detection/Quantitative Levels*, March 22, 1994). Promulgated method-specific MLs are contained in 40 CFR Part 136, Appendix A and must be utilized if available. If a promulgated method-specific ML is not available, then an interim ML shall be calculated. The interim ML is equal to 3.18 times the promulgated 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 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 for metals 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 Fg/L, then the calculated ML is  $2.5 \text{ Fg/L} \times 3.18 = 7.95 \text{ Fg/L}$ . The multiple of  $(1, 2, \text{ or } 5) \times 10^n$  nearest to 7.95 is  $1 \times 10^1 = 10 \text{ Fg/L}$ , so the calculated ML

(rounded to the nearest whole number) is 10 F g/L.)

7. The “monthly or weekly average concentration limit”, other than for fecal or total coliform bacteria, means the arithmetic mean of consecutive measurements made during calendar month or weekly period, respectively. The “monthly or weekly average” concentration for fecal or total coliform bacteria means the geometric mean of measurements made during a monthly or weekly period, respectively. The geometric mean is the  $n$ th root of the product of  $n$  numbers.
8. The “monthly or weekly average mass limitation” means the total discharge by mass during a calendar monthly or weekly period, respectively, divided by the number of days in the period that the facility was discharging. Where less than daily sampling is required by this permit, the monthly or weekly average value shall be determined by the summation of all the measured discharges by mass divided by the number of days during the monthly or weekly period when the measurements were made.
9. The “Practical Quantitation Level (PQL)” is the lowest concentration of the analyte that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions (as defined in the Federal Register on July 8, 1987 (52 FR 25699)) and as adopted by the State of Arizona.
10. A “24-hour composite sample” means either: (i) a time-proportioned mixture of not less than eight (8) discrete aliquots obtained at equal time intervals. The volume of each aliquot shall be directly proportional to the discharge flow rate at the time of sampling, but not less 100 ml; or (ii) a flow-proportional combination of individual samples obtained at regular intervals over a 24-hour sampling period. The volume of each sample shall be proportional to the flow rate during the 24-hour sampling period. Sample collection, preservation and handling shall be performed as described in the most recent edition of 40 CFR Part 136.3 (Table II). Where collection, preservation and handling procedures are not outlined in 40 CFR Part 136.3, procedures outlined in the 20th edition of *Standard Methods for the Examination of Water and Wastewater* shall be used.

## Appendix B: TOXICITY DEFINITIONS

- a. ACUTE TOXICITY is a test to determine the concentration of effluent or ambient waters that produces an adverse effect on a group of test organisms during a short-term exposure (e.g., 24, 48, or 96 hours). The endpoint is lethality. Acute toxicity is measured using statistical procedures (e.g., point estimate techniques or a t-test).
- b. ACUTE-to-CHRONIC RATION (ACR) is the ratio of the acute toxicity of an effluent or a toxicant to its chronic toxicity. It is used as a factor for estimating chronic toxicity on the basis of acute toxicity data, or for estimating acute toxicity on the basis of chronic toxicity data.
- c. ADDITIVITY is the characteristic property of a mixture of toxicants that exhibits a total toxic effect equal to the arithmetic sum of the effects of the individual toxicants.
- d. AMBIENT TOXICITY is measured by a toxicity test on a sample collected from a receiving waterbody.
- e. BIOASSAY is a test used to evaluate the relative potency of a chemical or a mixture of chemicals by comparing its effect on a living organism with the effect of a standard preparation on the same type of organism. Bioassays frequently are used in the pharmaceutical industry to evaluate the potency of vitamins and drugs.
- f. CHRONIC TOXICITY is defined as a long-term test in which sublethal effects (e.g., reduced growth or reproduction) are usually measured in addition to lethality. Chronic toxicity is defined as  $TU_c = 100/NOEC$  or  $TU_c = 100/EC_p$   $IC_p$ . The  $IC_p$  and  $EC_p$  value should be the approximate equivalent of the NOEC calculated by hypothesis testing for each test method.
- g. COEFFICIENT OF VARIATION (CV) is a standard statistical measure of the relative variation of a distribution of set of data, defined as the standard deviation divided by the mean. Coefficient of variation is a measure of precision within (intralaboratory) and among (interlaboratory) laboratories.
- h. CRITERIA CONTINUOUS CONCENTRATION (CCC) is the EPA national water quality criteria recommendation for the highest instream concentration of a toxicant or an effluent to which organisms can be exposed indefinitely without causing unacceptable effect.
- I. CRITERIA MAXIMUM CONCENTRATION (CMC) is the EPA national water quality criteria recommendation for the highest instream concentration of a toxicant or an effluent to which organisms can be exposed for a brief period of time without causing an acute effect such as lethality.
- j. CRITICAL LIFE STAGE is the period of time in an organism's lifespan in which it is the most susceptible to adverse effects caused by exposure to toxicants, usually during early development (egg, embryo, larvae). Chronic toxicity tests are often run on critical life stages to replace long duration, life-cycle tests since the most toxic effect usually occurs during the critical life stage.
- l. EFFECT CONCENTRATION (EC) is a point estimate of the toxicant concentration that would cause an observable adverse effect (e.g., survival or fertilization) in a given percent of the test organisms, calculated from a continuous model (e.g., USEPA Probit Model).

- m. HYPOTHESIS TESTING is a technique (e.g., Dunnetts test) that determines what concentration is statistically different from the control. Endpoints determined from hypothesis testing are NOEC and LOEC.

Null hypothesis ( $H_0$ ): The effluent is not toxic.

Alternative hypothesis ( $H_a$ ): The effluent is toxic.

- n. INHIBITION CONCENTRATION (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., USEPA Interpolation Method).
- o. INSTREAM WASTE CONCENTRATION (IWC) is the concentration of a toxicant in the receiving water after mixing. The IWC is the inverse of the dilution of factor.
- p. LC50 is the toxicant concentration that would cause death in 50 percent of the test organisms.
- q. LOWEST OBSERVED EFFECT CONCENTRATION (LOEC) is the lowest concentration of toxicant to which organisms are exposed in a test, which causes adverse effects on the test organisms (i.e., where the values for the observed endpoints are statistically significant different from the control).
- r. MINIMUM SIGNIFICANT DIFFERENCE (MSD) is the magnitude of difference from control where the null hypothesis is rejected in a statistical test comparing a treatment with a control. MSD is based on the number of replicates, control performance and power of the test.
- s. MIXING ZONE is an area where an effluent discharge undergoes initial dilution and may be extended to cover the secondary mixing in the ambient waterbody. A mixing zone is an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented.
- t. MONTHLY MEDIAN is the middle value in a monthly distribution above and below which lie an equal number of values. If the number of values are even, then the monthly median is the average of the middle two measurements.
- u. NO OBSERVED EFFECT CONCENTRATION (NOEC) is the highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) tests, that causes no observable adverse effect on the test organisms (i.e., the highest concentration of toxicant at which the values for the observed responses are not statistically significant different from the controls). NOECs calculated by hypothesis testing are dependent upon the concentrations selected.
- v. POINT ESTIMATE TECHNIQUES such as Probit, Interpolation Method, Spearman-Karber are used to determine the effluent concentration at which adverse effects (e.g., fertilization, growth or survival) occurred. For example, concentration at which a 25 percent reduction in fertilization occurred.

- w. REFERENCE TOXICANT TEST indicates the sensitivity of the organisms being used and the

suitability of the test methodology. Reference toxicant data are part of routine QA/QC program to evaluate the performance of laboratory personnel and test organisms. Reference toxicant tests must be conducted concurrently with each effluent test (e.g., the reference toxicant required for the red abalone test method is zinc sulfate).

- x. SIGNIFICANT DIFFERENCE is defined as statistically significant difference (e.g., 95% confidence level) in the means of two distributions of sampling results.
- y. TEST ACCEPTABILITY CRITERIA (TAC) For toxicity tests results to be acceptable for compliance, the effluent and the concurrent reference toxicant must meet specific criteria as defined in the test method (e.g., *Ceriodaphnia dubia* survival and reproduction test, the criteria are: the test must achieve at least 80% survival and average 15 young/female in the controls, and achieve a MSD of 20%).
- z. t-TEST is a statistical analysis comparing only two test concentrations (e.g., a control and 100% effluent). The purpose of this test is determine if the 100% effluent concentration is different from the control (i.e., the test passes or fails).
- aa. TOXICITY TESTS are laboratory experiments which employ the use of standardized test organisms to measure the adverse effect (e.g., growth, survival or reproduction) of effluent or ambient waters.
- bb. TOXIC UNIT ACUTE (TU<sub>a</sub>) is the reciprocal of the effluent concentration that causes 50 percent of the organisms to die by the end of the acute exposure period (i.e.,  $TU_a = 100/LC_{50}$ ).
- cc. TOXIC UNIT CHRONIC (TU<sub>c</sub>) is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (i.e.,  $TU_c = 100/NOEC$ ).
- dd. TOXIC UNITS (TUs) are a measure of toxicity in an effluent as determined by the acute toxicity units or chronic toxicity units. Higher the TUs indicate greater toxicity.
- ee. TOXICITY IDENTIFICATION EVALUATION (TIE) is a set of procedures to identify the specific chemical(s) responsible for effluent toxicity. TIEs are a subset of the TRE.
- ff. TOXICITY REDUCTION EVALUATION (TRE) is a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.
- gg. WHOLE EFFLUENT TOXICITY is the total toxic effect of an effluent or receiving water measured directly with a toxicity test.