

US EPA ARCHIVE DOCUMENT

U. S. Environmental Protection Agency  
Region 9  
75 Hawthorne Street  
San Francisco, CA 94105-3901

January 14, 1999

## **FACT SHEET**

### *DRAFT*

Authorization to Discharge under the  
National Pollutant Discharge Elimination System  
and  
Zone of Mixing  
for the  
American Samoa Power Authority  
Tafuna Sewage Treatment Plant

NPDES Permit No. AS 0020010

These pages contain information concerning the draft National Pollutant Discharge Elimination System (NPDES) permit, including the Zone of Mixing (ZOM) granted by the American Samoa Environmental Quality Commission (ASEQC), for the Tafuna Sewage Treatment Plant (STP) discharge.

### **I. SUMMARY**

The U. S. Environmental Protection Agency, Region 9 (hereinafter USEPA Region 9) has tentatively decided to grant a variance from secondary treatment requirements, under Section 301(h) of the Clean Water Act (CWA), to the American Samoa Power Authority (hereinafter permittee) for the Tafuna STP discharge of treated wastewater through the Tafuna ocean outfall to Pago Pago Harbor, South Pacific Ocean. In accordance with this decision, and the authorities vested in Section 402 of the CWA, USEPA Region 9 is proposing issuance of a NPDES permit that incorporates this tentative decision.

The Tafuna ocean outfall discharges within territorial waters of the Territory of American Samoa. However, because the ASEQC has not been delegated primary regulatory responsibility for administering the NPDES permitting program, USEPA Region 9 has primary regulatory responsibility for the discharge. The USEPA Region 9 is proposing to reissue a NPDES permit incorporating both federal 301(h) requirements and Territory water quality requirements, as outlined in *draft* revisions to the American Samoa Water Quality Standards (ASWQS). These draft revisions are dated 1997.

### **II. ADMINISTRATIVE PROCESS**

The administrative processing of a Section 301(h) variance application consists of the following actions:

- A. Filing of a timely and complete application;
- B. Comparison of the application with criteria set forth in the statute and regulations, preparation of a Tentative Decision Document (TDD), and recommendation for the Regional Administrator by USEPA Region 9 staff; and initial screening of the application by the Territory;
- C. Announcement of the tentative decision by the Regional Administrator;
- D. Public notice of a draft NPDES permit incorporating the tentative decision;
- E. Public hearings (if needed) to address public interest;
- F. Territory concurrence in the granting of a 301(h) variance (by letter); or denial by the Territory and/or the Regional Administrator.
- G. Processing of appeals, in accordance with 40 CFR 124, Subpart E.

### **III. TENTATIVE DECISION**

On March 26, 1992, the permittee submitted a renewal application for a variance from secondary treatment requirements pursuant to Section 301(h) of the CWA. This application was based on an improved discharge, as defined at 40 CFR 125.58(i). On August 6, 1994, the permittee submitted a revised application under 40 CFR 125.59(d)(3) proposing further upgrades to the STP and a new outfall and diffuser.

The permittee is requesting the following discharge limitations, as proposed in its 301(h) application:

Discharge Limitations				
Discharge Parameter	Average Monthly	Average Weekly	Maximum Daily	Units
Biochemical Oxygen Demand (5-day)	100 1,669	--	--	mg/l lbs/day
	The arithmetic mean of the BOD <sub>5</sub> values, by concentration, for effluent samples collected over 30 consecutive calendar days shall not exceed 70% of the arithmetic mean, by concentration, for influent samples collected at approximately the same times during the same period.			
Total Suspended Solids	75 1,252	--	--	mg/l lbs/day
	The arithmetic mean of the TSS values, by concentration, for effluent samples collected over 30 consecutive calendar days shall not exceed 70% of the arithmetic mean, by concentration, for influent samples collected at approximately the same times during the same period.			

USEPA Region 9 notes that the discharge limitations for biochemical oxygen demand and total suspended solids (in mg/l) proposed above are based on the permittee's previous 301(h)-modified permit issued June 30, 1985. Discharge limitations (in lbs/day) are calculated using a projected end-of-permit (i.e., 2003) annual average flow of 2.0 MGD.

USEPA Region 9 used the following federal 301(h) decision criteria to evaluate the permittee's variance request. These nine criteria require that:

1. The discharge maintains a balanced indigenous population of fish, shellfish and wildlife, and allows recreational activities;
2. A practicable program to monitor potential impacts of the ocean discharge be implemented;
3. The discharge does not result in additional requirements on any other pollution source;
4. The discharge meets Territory water quality standards;
5. All applicable pretreatment requirements be enforced;

6. An urban area pretreatment program be implemented or secondary equivalency of toxics removal be demonstrated;
7. A program to reduce toxics from non-industrial sources be implemented;
8. The total pollutants discharged will not exceed NPDES permit limitations; and
9. The discharge will at minimum meet primary treatment standards and meet water quality criteria after initial mixing.

The USEPA Region 9 drafted a TDD evaluating the proposed discharge and the Regional Administrator's tentative decision was issued on January 30, 1995, granting the permittee a variance for the following constituents: biochemical oxygen demand and total suspended solids.

The TDD is incorporated, herein, by reference, as part of this fact sheet. This fact sheet and the TDD set forth the principal facts and significant legal, methodological, and policy questions considered in the development of the draft permit. The draft permit is based on the Administrative Record.

#### IV. FACILITY DESCRIPTION

The permittee presently operates the Tafuna STP, located off Fogagogo, American Samoa, on the island of Tutuila. Tafuna STP receives mainly domestic wastewaters from the service area which includes an airport, business park, and government and residential housing. In 1985, Tafuna STP was permitted to discharge an effluent flow of 0.7 MGD. To accommodate growth in the service area, the treatment capacity was expanded to 2.16 MGD in 1996.

Tafuna STP is currently designed to treat 2.16 MGD of primary treated wastewater, using the physical processes listed below:

Tafuna STP	
Primary Treatment	Solids Handling
Influent bar screens Comminutor Clarigestor	Influent bar screenings (to landfill) Clarigestor sludge (to drying beds) Air-dried sludge to municipal solid waste landfill, or land applied onsite as a soil conditioner

Based on data provided by the permittee, the treated wastewater discharge has the following characteristics for biochemical oxygen demand and total suspended solids:

Discharge Parameter	Units	Annual Average (1997)
Flow	MGD	1.22
Biochemical Oxygen Demand	mg/l	37
	% removal	49
Total Suspended Solids	mg/l	48
	% removal	38

Treated wastewater is discharged into Vai Cove, approximately 1,450 feet offshore of Fogagogo through a multi-port diffuser, at a depth of about 90 feet. The discharge point is described as follows:

Discharge Serial Number	South Latitude	West Longitude	Description
001	14° 20' 54"	170° 43' 30"	Primary discharge point to Vai Cove, South Pacific Ocean, terminating in a multi-port diffuser, approximately 1,450 ft offshore of Fogagogo on Tutuila Island, at a depth of about 90 ft.

Digested sludge is hauled to covered drying beds at the Tafuna STP where it is dried and disposed of in a municipal solid waste landfill, or land applied onsite as a soil conditioner.

The discharge is regulated under NPDES Permit No. AS 0020010, issued June 30, 1985. This permit expired June 29, 1990.

## V. BASES FOR REQUIREMENTS

Section 301(h) of the CWA gives the USEPA the authority to grant a variance from federal secondary treatment effluent standards contained in Section 301(b)(1)(B) of the CWA. Implementing regulations for section 301(h) and section 301(b)(1)(B) are found at 40 CFR 125, Subpart G and 40 CFR 133.102(c), respectively.

The *American Samoa Water Quality Standards* (ASWQS), dated April 11, 1990, contain water quality standards (use classifications and criteria) for waters of the Territory. The ASWQS are currently undergoing revisions in accordance with CWA requirements. The draft permit proposes enterococci density and chronic whole effluent toxicity conditions based on draft revisions to ASWQS, dated 1997. The requirements contained in the draft permit are necessary to assure no violation of applicable water quality standards.

On February 19, 1993, the USEPA issued a final rule for the use and disposal of sewage sludge (40 CFR 503). This rule requires that producers of sewage sludge meet certain reporting, handling, and disposal requirements. The Territory has not been delegated the authority to implement this program, therefore, USEPA Region 9 is the implementing agency. The draft NPDES permit contains biosolids/sludge management requirements consistent with 40 CFR 257, 258, and 503.

## VI. DISCHARGE LIMITATIONS

### *301(h) Discharge Limitations*

The draft permit contains the following 301(h) discharge limitations for biochemical oxygen demand and total suspended solids:

Discharge Limitations				
Discharge Parameter	Average Monthly	Average Weekly	Maximum Daily	Units
Biochemical Oxygen Demand (5-day)	100	150	200	mg/l
	1,669	2,504	3,338	lbs/day
The arithmetic mean of the TSS values, by concentration, for effluent samples collected over 30 consecutive calendar days shall not exceed 70% of the arithmetic mean, by concentration, for influent samples collected at approximately the same times during the same period.				
Total Suspended Solids	75	112.5	150	mg/l
	1,252	1,878	2,504	lbs/day
The arithmetic mean of the TSS values, by concentration, for effluent samples collected over 30 consecutive calendar days shall not exceed 70% of the arithmetic mean, by concentration, for influent samples collected at approximately the same times during the same period.				

The proposed monthly average discharge limitations for biochemical oxygen demand and total suspended solids (in mg/l and lbs/day) are based on the permittee's 301(h) application. The discharge limitations for biochemical oxygen demand and total suspended solids (in mg/l) proposed in the draft permit are those discharge limitations in the permittee's previous 301(h)-modified permit issued June 30, 1985. The proposed discharge limitations for biochemical oxygen demand and total suspended solids (in lbs/day) are calculated using a projected end-of-permit annual average flow of 2.0 MGD.

For biochemical oxygen demand and total suspended solids, maximum daily discharge limitations (in mg/l) are 2.0 times the average monthly discharge limitations (in mg/l), and

average weekly limitations (in mg/l) are 1.5 times the average monthly discharge limitations (in mg/l). Mass emission limitations (in lbs/day) are determined using the following equation:  $\text{lbs/day} = 8.34 \times C_e \times Q$ . “ $C_e$ ” is the discharge limitation in mg/l and “ $Q$ ” is the flow rate in MGD. For biochemical oxygen demand and total suspended solids, average monthly influent percent removal efficiency limitations are based on 40 CFR 125.57(a)(9).

Although the permittee did not request a variance from the technology based federal secondary treatment requirement for an effluent pH of not less than 6.0 nor greater than 9.0 pH units at all times [see 40 CFR 133.102(c)], because this technology based standard is less stringent than the corresponding ASWQS for pH (i.e., not less than 6.5 nor greater than 8.6), the ASWQS becomes the basis for controlling the pH of the discharge.

#### *Water Quality Based Effluent Limitations*

In accordance with 40 CFR 122.44(d), the need for discharge limitations based on water quality criteria in the ASWQS must be evaluated. As part of this evaluation, projected receiving water values--based on the reported maximum discharge value (expressed in units of concentration) and the minimum probable initial dilution ( $D_m$ ; expressed as parts seawater per part wastewater)--are compared to the appropriate water quality criterion to determine the potential for an exceedance of that criterion and the need for a discharge limitation. Projected receiving water values are calculated using the following steady state equation:  $C_r = C_e \div D_m$ , where “ $C_e$ ” is the reported maximum discharge value (generally in ug/l) and “ $C_r$ ” is the projected receiving water value at the completion of initial dilution.

In June 1990, as part of a larger one-time screening effort, USEPA Region 9 conducted a priority pollutant scan of the Tafuna STP effluent. USEPA Region 9 examined these chemical discharge data and--after considering a  $D_m$  of 211:1--concluded that projected receiving water values did not exceed applicable water quality criteria in the ASWQS. Therefore, discharge limitations for toxics criteria in 40 CFR 131.36(b) are not included in the draft permit.

Because these chemical discharge data are nearly ten years old and analytical methods have since improved, USEPA Region 9 did not evaluate “reasonable potential” using the statistical procedures outlined in the revised *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, 1991). Rather, the draft permit proposes up-to-date analytical methods, method detection limits and quantification levels for effluent priority pollutant analyses. Should the results of these analyses indicate that reasonable potential for the discharge to exceed ASWQS does in fact exist, USEPA Region 9 has the authority to reopen and modify this permit (based on new information) and to impose water quality based effluent limitations on the Tafuna STP discharge.

#### *Zones of Mixing*

In accordance with the TDD and with the concurrence of ASEQC, the draft permit incorporates



Zones of Mixing for the following water quality parameters: (1) at the boundary of the Zone of Initial Dilution for turbidity, total phosphorous, total nitrogen, chlorophyll a, light penetration depth, dissolved oxygen content, and pH; and (2) beyond the boundary of the Zone of Initial Dilution for enterococci density.

## **VII. MONITORING AND REPORTING PROGRAM**

Pursuant to 40 CFR 125.63, a satisfactory revision to the receiving water monitoring and reporting program is proposed in the draft permit. The monitoring program in the draft permit requires influent and effluent monitoring for conventional, non-conventional, and toxic pollutants, including whole effluent toxicity. The permittee's Nonindustrial Source Control Program, designed to minimize the entrance of nonindustrial toxic pollutants into Tafuna STP, is consistent with applicable 301(h) decision criteria. Sludge/biosolids monitoring, record keeping, and reporting requirements are consistent with applicable requirements

## **VIII. WRITTEN COMMENTS**

Interested persons are invited to submit written comments on the draft permit and fact sheet. Comments should be submitted by February 22, 1999, either in person or by mail to the attention of Robyn Stuber at USEPA Region 9:

U. S. Environmental Protection Agency  
Region 9, WTR-5  
75 Hawthorne Street  
San Francisco, CA 94105-3901

## **IX. INFORMATION AND COPYING**

Persons wishing further information may write to the above address or call Robyn Stuber of USEPA Region 9 at (415)744-1921. Copies of materials in the Administrative Record (other than those which USEPA Region 9 maintains as confidential) are available at the USEPA Region 9 office for inspection and copying between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday (excluding holidays).