

**301(h)-Modified
NPDES Permit Reissuance
Questionnaire for Small Dischargers**

Attachment C: Supporting Technical Analysis Receiving Water Data
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**UTULEI WASTEWATER
TREATMENT PLANT**

NPDES Permit No. AS0020001

Submitted By

AMERICAN SAMOA POWER AUTHORITY

May 1, 2006

American Samoa Water Quality Standard = 35/100 ml (geometric mean) or 104/100 ml (single sample maximum)

Comments: Stations where no enterococci were found (a value of 0), a value of 1 was used in order to calculate geometric mean.

Table 2 Receiving Water, Pago Pago Harbor 2002-2005 Results for Water Temperature (°C)

Location	Station	Depth (ft)	Aug-02	Mar-03	Aug-03	Feb-04	Sep-04	Feb-05	Aug-05	Min	Avg	Max
Diffuser	U	3	27.3	30.6	27.7	30.1	28.0	29.4	N/A	27.3	28.9	30.6
		60	27.3	29.9	27.7	29.5	27.9	29.2	N/A	27.3	28.6	29.9
		90-120	27.2	29.7	27.7	29.5	27.9	29.1	N/A	27.2	28.5	29.7
	Min		27.2	29.7	27.7	29.5	27.9	29.1	N/A	27.2	28.6	30.6
	Avg		27.3	30.1	27.7	29.7	27.9	29.2	N/A			
	Max		27.3	30.6	27.7	30.1	28.0	29.4	N/A			
ZOM	A1	3	27.3	30.4	28.2	29.9	28.3	29.7	N/A	27.3	29.0	30.4
		60	27.3	30.0	27.7	29.5	27.9	29.2	N/A	27.3	28.6	30.0
		90-120	27.2	29.7	27.8	29.3	27.8	29.0	N/A	27.2	28.5	29.7
	B1	3	27.2	30.5	28.4	30.0	28.4	29.7	N/A	27.2	29.0	30.5
		60	27.4	29.8	27.8	29.5	27.9	29.4	N/A	27.4	28.6	29.8
		120	27.2	29.4	27.7	29.4	27.8	29.1	N/A	27.2	28.4	29.4
	Min		27.2	29.4	27.7	29.3	27.8	29.0	N/A	27.2	28.7	30.5
	Avg		27.3	30.0	27.9	29.6	28.0	29.4	N/A			
Max		27.4	30.5	28.4	30.0	28.4	29.7	N/A				
Farfield	C	3	27.2	29.6	28.1	30.2	28.6	29.5	N/A	27.2	28.9	30.2
		35	27.6	29.7	27.7	29.6	27.9	29.3	N/A	27.6	28.6	29.7
		70-110	27.5	29.6	27.7	29.6	27.8	29.2	N/A	27.5	28.6	29.6
	16	3	28.0	30.2	28.9	30.0	28.2	30.0	N/A	28.0	29.2	30.2
		60	28.2	29.9	27.7	29.5	27.9	29.5	N/A	27.7	28.8	29.9
		120	28.1	29.8	27.6	29.4	27.8	29.4	N/A	27.6	28.7	29.8
	18	3	28.4	30.1	27.8	29.8	28.1	30.0	N/A	27.8	29.0	30.1
		60	28.0	29.9	27.7	29.5	27.9	29.4	N/A	27.7	28.7	29.9
		120	27.6	29.8	27.6	29.4	27.8	29.4	N/A	27.6	28.6	29.8
	Min		27.2	29.6	27.6	29.4	27.8	29.2	N/A	27.2	28.8	30.2
Avg		27.8	29.8	27.9	29.7	28.0	29.5	N/A				
Max		28.4	30.2	28.9	30.2	28.6	30.0	N/A				
Reference	5	3	27.6	30.3	28.1	29.9	27.9	29.4	N/A	27.6	28.9	30.3
		60	27.4	29.9	28.0	29.5	27.9	29.4	N/A	27.4	28.7	29.9
		120	27.2	29.8	28.1	29.6	27.8	29.3	N/A	27.2	28.6	29.8
	Min		27.2	29.8	28.0	29.5	27.8	29.3	N/A	27.2	28.7	30.3
	Avg		27.4	30.0	28.1	29.7	27.9	29.4	N/A			
	Max		27.6	30.3	28.1	29.9	27.9	29.4	N/A			
All Stations		Depth (ft)	Min	Avg	Max	Comments:						
		Surface	27.2	29.0	30.6							
		Mid-depth	27.3	28.7	30.0							
		Bottom	27.2	28.6	29.8							
		All	27.2	28.7	30.6							

Table 3
Receiving Water, Pago Pago Harbor
2002-2005 Results for Salinity (PSU)

Location	Station	Depth (ft)	Aug-02	Mar-03	Aug-03	Feb-04	Sep-04	Feb-05	Aug-05	Min	Avg	Max
Diffuser	U	3	34.4	34.6	34.2	34.3	35.3	35.7	34.1	34.1	34.7	35.7
		60	35.5	35.1	34.2	34.8	35.4	35.7	34.2	34.2	35.0	35.7
		90-120	35.5	35.0	34.3	34.5	35.4	35.7	34.2	34.2	34.9	35.7
	Min		34.4	34.6	34.2	34.3	35.3	35.7	34.1	34.1	34.9	35.7
	Avg		35.1	34.9	34.2	34.5	35.3	35.7	34.2			
Max		35.5	35.1	34.3	34.8	35.4	35.7	34.2				
ZOM	A1	3	34.7	34.9	34.1	34.3	35.3	35.1	33.0	33.0	34.5	35.3
		60	35.4	35.1	34.2	34.9	35.4	35.5	33.2	33.2	34.8	35.5
		90-120	35.5	35.2	34.3	34.9	35.4	35.6	33.4	33.4	34.9	35.6
	B1	3	34.4	34.9	34.8	34.5	35.3	35.3	34.6	34.4	34.8	35.3
		60	35.4	35.1	34.2	34.9	35.4	35.3	34.7	34.2	35.0	35.4
		120	35.5	35.1	34.3	34.9	35.4	35.3	34.8	34.3	35.0	35.5
	Min		34.4	34.9	34.1	34.3	35.3	35.1	33.0	33.0	34.8	35.6
	Avg		35.2	35.1	34.3	34.7	35.4	35.4	34.0			
Max		35.5	35.2	34.8	34.9	35.4	35.6	34.8				
Farfield	C	3	33.2	35.2	33.8	34.4	35.3	35.1	35.3	33.2	34.6	35.3
		35	35.2	35.2	34.2	34.8	35.4	35.3	35.2	34.2	35.0	35.4
		70-110	35.4	35.3	34.2	34.9	35.4	35.4	35.0	34.2	35.1	35.4
	16	3	35.1	34.3	33.9	34.4	35.3	35.6	35.2	33.9	34.8	35.6
		60	35.3	35.0	34.2	34.8	35.4	35.7	35.4	34.2	35.1	35.7
		120	35.3	35.2	34.2	34.9	35.4	35.8	35.6	34.2	35.2	35.8
	18	3	35.0	34.7	33.9	34.2	35.3	35.5	36.0	33.9	34.9	36.0
		60	35.4	35.0	34.2	34.8	35.4	35.6	35.0	34.2	35.1	35.6
		120	35.5	35.1	34.3	34.9	35.4	35.5	34.8	34.3	35.1	35.5
	Min		33.2	34.3	33.8	34.2	35.3	35.1	34.8	33.2	35.0	36.0
	Avg		35.0	35.0	34.1	34.7	35.4	35.5	35.3			
Max		35.5	35.3	34.3	34.9	35.4	35.8	36.0				
Reference	5	3	34.6	34.3	33.9	34.8	35.4	35.6	36.3	33.9	35.0	36.3
		60	35.6	35.1	34.3	34.9	35.4	35.0	36.4	34.3	35.2	36.4
		120	35.5	35.1	34.2	34.9	35.4	34.2	36.4	34.2	35.1	36.4
	Min		34.6	34.3	33.9	34.8	35.4	34.2	36.3	33.9	35.1	36.4
	Avg		35.2	34.8	34.1	34.9	35.4	34.9	36.4			
Max		35.6	35.1	34.3	34.9	35.4	35.6	36.4				
All Stations		Depth (ft)	Min	Avg	Max	Comments:						
		Surface	33.0	34.8	36.3							
		Mid-depth	33.2	35.0	36.4							
		Bottom	33.4	35.0	36.4							
		All	33.0	34.9	36.4							

American Samoa Water Quality Standard = Not less than 70% saturation or less than 5.0 mg/l

Comments:

American Samoa Water Quality Standard = range shall be 6.5 to 8.6 and be within 0.2 pH units of that which occurs naturally

American Samoa Water Quality Standard = Average not to exceed 0.75 NTU

Table 7
Receiving Water, Pago Pago Harbor
2002-2005 Results for Total Nitrogen (TN) (mg/l)
 American Samoa Water Quality Standard = 0.2 mg/l (200 µg/l)

Location	Station	Depth (ft)	Aug-02	Mar-03	Aug-03	Feb-04	Sep-04	Feb-05	Aug-05	Min	Avg	Max
Diffuser	U	3	0.06	0.32	0.15	0.21	0.11	0.12	0.11	0.06	0.15	0.32
		60	0.19	0.23	0.15	0.23	0.11	0.15	0.11	0.11	0.17	0.23
		90-120	0.18	0.36	0.15	0.30	0.11	0.11	0.11	0.11	0.19	0.36
	Min		0.06	0.23	0.15	0.21	0.11	0.11	0.11	0.06	0.17	0.36
	Avg		0.14	0.30	0.15	0.25	0.11	0.13	0.11			
	Max		0.19	0.36	0.15	0.30	0.11	0.15	0.11			
ZOM	A1	3	0.06	0.25	0.12	0.23	0.12	0.12		0.06	0.15	0.25
		60	0.06	0.31	0.10	0.28	0.11	0.12	0.13	0.06	0.16	0.31
		90-120	0.18	0.26	0.14	0.18	0.12	0.11	0.19	0.11	0.17	0.26
	B1	3	0.08	0.28	0.05	0.16	0.12	0.12	0.15	0.05	0.14	0.28
		60	0.07	0.21	0.08	0.19	0.11	0.11	0.14	0.07	0.13	0.21
		120	0.06	0.28	0.09	0.31	0.12	0.11	0.16	0.06	0.16	0.31
	Min		0.06	0.21	0.05	0.16	0.11	0.11	0.13	0.05	0.15	0.31
	Avg		0.08	0.27	0.10	0.23	0.12	0.12	0.16			
	Max		0.18	0.31	0.14	0.31	0.12	0.12	0.19			
Farfield	C	3	0.07	0.24	0.05	0.32	0.12	0.12	0.18	0.05	0.16	0.32
		35	0.06	0.23	0.09	0.27	0.11	0.14	0.12	0.06	0.15	0.27
		70-110	0.07	0.31	0.12	0.37	0.11	0.11	0.11	0.07	0.17	0.37
	16	3	0.16	0.06	0.15	0.19	0.12	0.12	0.11	0.06	0.13	0.19
		60	0.21	0.06	0.06	0.17	0.12	0.18	0.11	0.06	0.13	0.21
		120	0.26	0.05	0.20	0.17	0.11	0.31	0.11	0.05	0.17	0.31
	18	3	0.17	0.04	0.09	0.15	0.12	0.11	0.11	0.04	0.11	0.17
		60	0.18	0.06	0.09	0.16	0.11	0.21	0.11	0.06	0.13	0.21
		120	0.27	0.29	0.05	0.16	0.11	0.10	0.11	0.05	0.15	0.29
Min		0.06	0.04	0.05	0.15	0.11	0.10	0.11	0.04	0.14	0.37	
Avg		0.16	0.15	0.10	0.22	0.11	0.16	0.12				
Max		0.27	0.31	0.20	0.37	0.12	0.31	0.18				
Reference	5	3	0.40	0.13	0.14	0.18	0.22	1.20	0.11	0.11	0.34	1.20
		60	0.13	0.06	0.13	0.16	0.11	0.15	0.11	0.06	0.12	0.16
		120	0.15	0.05	0.17	0.14	0.11	0.11	0.11	0.05	0.12	0.17
	Min		0.13	0.05	0.13	0.14	0.11	0.11	0.11	0.05	0.19	1.20
	Avg		0.23	0.08	0.15	0.16	0.15	0.49	0.11			
Max		0.40	0.13	0.17	0.18	0.22	1.20	0.11				
All Stations		Depth (ft)	Min	Avg	Max	Comments:						
		Surface	0.04	0.17	1.20							
		Mid-depth	0.06	0.14	0.31							
		Bottom	0.05	0.16	0.37							
		All	0.04	0.16	1.20							

Location	Station	Depth (ft)	Aug-02	Mar-03	Aug-03	Feb-04	Sep-04	Feb-05	Aug-05	Min	Avg	Max
Diffuser	U	3	0.012	0.005	0.042	0.03	0.03	0.01	0.03	0.01	0.02	0.04
		60	0.009	0.006	0.032	0.02	0.01	0.02	0.01	0.01	0.02	0.03
		90-120	0.018	0.024	0.030	0.02	0.01	0.02	0.02	0.01	0.02	0.03
	Min		0.009	0.005	0.030	0.02	0.01	0.01	0.01	0.01	0.02	0.04
	Avg		0.013	0.012	0.035	0.02	0.02	0.02	0.02			
	Max		0.018	0.024	0.042	0.03	0.03	0.02	0.03			
ZOM	A1	3	0.017	0.005	0.025	0.14	0.02	0.02		0.01	0.04	0.14
		60	0.014	0.005	0.037	0.03	0.02	0.01	0.05	0.01	0.02	0.05
		90-120	0.005	0.005	0.043	0.02	0.02	0.01	0.04	0.01	0.02	0.04
	B1	3	0.015	0.005	0.043	0.03	0.01	0.02	0.02	0.01	0.02	0.04
		60	0.005	0.005	0.017	0.02	0.01	0.01	0.03	0.01	0.01	0.03
		120	0.005	0.016	0.031	0.03	0.02	0.01	0.02	0.01	0.02	0.03
	Min		0.005	0.005	0.017	0.02	0.01	0.01	0.02	0.01	0.02	0.14
	Avg		0.010	0.007	0.033	0.05	0.02	0.01	0.03			
	Max		0.017	0.016	0.043	0.14	0.02	0.02	0.05			
	Farfield	C	3	0.005	0.005	0.032	0.03	0.18	0.02	0.01	0.01	0.04
35			0.005	0.028	0.025	0.03	0.03	0.01	0.03	0.01	0.02	0.03
70-110			0.005	0.005	0.030	0.02	0.03	0.01	0.03	0.01	0.02	0.03
16		3	0.005	0.005	0.005	0.02	0.02	0.01	0.02	0.01	0.01	0.02
		60	0.005	0.005	0.005	0.02	0.01	0.01	0.03	0.01	0.01	0.03
		120	0.005	0.005	0.005	0.03	0.01	0.02	0.01	0.01	0.01	0.03
18		3	0.230	0.073	0.005	0.01	0.03	0.01	0.01	0.01	0.05	0.23
		60	0.180	0.005	0.005	0.03	0.01	0.01	0.01	0.01	0.04	0.18
		120	0.056	0.005	0.005	0.02	0.01	0.01	0.01	0.01	0.02	0.06
Min		0.005	0.005	0.005	0.01	0.01	0.01	0.01	0.01	0.02	0.23	
Avg		0.055	0.015	0.013	0.02	0.04	0.01	0.02				
Max		0.230	0.073	0.032	0.03	0.18	0.02	0.03				
Reference	5	3	0.005	0.005	0.032	0.03	0.01	0.02	0.01	0.01	0.02	0.03
		60	0.071	0.005	0.022	0.03	0.02	0.02	0.02	0.01	0.03	0.07
		120	0.021	0.005	0.020	0.02	0.02	0.02	0.01	0.01	0.02	0.02
	Min		0.005	0.005	0.020	0.02	0.01	0.02	0.01	0.01	0.02	0.07
	Avg		0.032	0.005	0.025	0.03	0.02	0.02	0.01			
	Max		0.071	0.005	0.032	0.03	0.02	0.02	0.02			
All Stations	Depth (ft)	Min	Avg	Max	Comments:							
	Surface	0.005	0.029	0.230								
	Mid-depth	0.005	0.021	0.180								
	Bottom	0.005	0.018	0.056								
	All	0.005	0.022	0.230								

Table 9
Receiving Water, Pago Pago Harbor
2002-2005 Results for Chlorophyll-a (mg/m3)
American Samoa Water Quality Standard = 1.0 mg/m3

Location	Station	Depth (ft)	Aug-02	Mar-03	Aug-03	Feb-04	Sep-04	Feb-05	Aug-05	Min	Avg	Max			
Diffuser	U	3	0.150	2.800	0.300	0.40	0.33	0.32	0.40	0.15	0.67	2.80			
		60	0.550	1.500	0.700	0.27	0.53	0.30	0.80	0.27	0.66	1.50			
		90-120	0.340	0.720	0.700	0.27	0.08	0.32	0.27	0.08	0.39	0.72			
										0.08	0.57	2.80			
	Min	0.150	0.720	0.300	0.27	0.08	0.30	0.27							
	Avg	0.347	1.673	0.567	0.31	0.31	0.31	0.49							
Max	0.550	2.800	0.700	0.40	0.53	0.32	0.80								
ZOM	A1	3	0.440	2.100	0.150	0.08	0.90	0.27	0.05	0.05	0.57	2.10			
		60	0.560	1.200	0.300	0.40	0.53	0.03	0.27	0.03	0.47	1.20			
		90-120	0.470	1.100	0.150	0.08	0.53	0.27	0.40	0.08	0.43	1.10			
										0.03	0.48	3.10			
	B1	3	0.200	3.100	0.300	0.08	0.53	0.03	0.13				0.03	0.62	3.10
		60	0.350	0.940	0.830	0.08	0.27	0.14	0.13				0.08	0.39	0.94
		120	0.430	0.860	0.150	0.08	0.90	0.18	0.13	0.08	0.39	0.90			
										0.03	0.48	3.10			
	Min	0.200	0.860	0.150	0.08	0.27	0.03	0.05							
	Avg	0.408	1.550	0.313	0.13	0.61	0.15	0.19							
Max	0.560	3.100	0.830	0.40	0.90	0.27	0.40								
Farfield	C	3	0.440	1.400	0.150	0.08	0.27	0.32	0.13	0.08	0.40	1.40			
		35	0.560	0.820	0.150	0.08	0.08	0.50	0.13	0.08	0.33	0.82			
		70-110	0.490	0.790	0.150	0.27	0.40	0.05	0.13	0.05	0.33	0.79			
										0.03	0.36	1.40			
	16	3	0.340	0.910	0.440	0.08	0.27	0.03	0.13				0.03	0.31	0.91
		60	0.370	0.640	0.150	0.08	0.67	0.55	0.13				0.08	0.37	0.67
		120	0.360	0.740	0.150	0.50	0.53	0.14	0.27	0.14	0.38	0.74			
										0.03	0.36	1.40			
	18	3	0.700	1.100	0.300	0.08	0.69	0.18	0.27				0.08	0.47	1.10
		60	0.460	0.490	0.150	0.08	0.08	0.40	0.27				0.08	0.28	0.49
		120	0.450	0.740	0.300	0.13	0.27	0.20	0.27	0.13	0.34	0.74			
										0.03	0.36	1.40			
Min	0.340	0.490	0.150	0.08	0.08	0.03	0.13								
Avg	0.463	0.848	0.216	0.15	0.36	0.26	0.19								
Max	0.700	1.400	0.440	0.50	0.69	0.55	0.27								
Reference	5	3	0.360	0.780	0.430	0.08	0.13	0.32	0.13	0.08	0.32	0.78			
		60	0.370	0.730	0.150	0.08	0.67	0.30	0.27	0.08	0.37	0.73			
		120	0.150	0.740	0.170	0.08	1.10	0.40	0.13	0.08	0.40	1.10			
										0.08	0.36	1.10			
	Min	0.150	0.730	0.150	0.08	0.13	0.30	0.13							
Avg	0.293	0.750	0.250	0.08	0.63	0.34	0.18								
Max	0.370	0.780	0.430	0.08	1.10	0.40	0.27								
All Stations		Depth (ft)	Min	Avg	Max	Comments:									
		Surface	0.025	0.481	3.100										
		Mid-depth	0.025	0.410	1.500										
		Bottom	0.045	0.378	1.100										
		All	0.025	0.423	3.100										

Table 10
Receiving Water, Pago Pago Harbor
2002-2005 Results for Total Suspended Solids (TSS) (mg/l)
(TSS is not a required monitoring parameter)

Location	Station	Depth (ft)	Feb-05	Aug-05	Min	Avg	Max
Diffuser	U	3	1	NS	1	1	1
		60	1	NS	1	1	1
		90-120	1	NS	1	1	1
	Min		1	NS	1	1	1
	Avg		1	NS			
	Max		1	NS			
ZOM	A1	3	1	NS	1	1	1
		60	1	NS	1	1	1
		90-120	1	NS	1	1	1
	B1	3	1	NS	1	1	1
		60	2	NS	2	2	2
		120	2	NS	2	2	2
	Min		1	NS	1	1	2
Avg		1	NS				
Max		2	NS				
Farfield	C	3	2	NS	2	2	2
		35	2	NS	2	2	2
		70-110	5	NS	5	5	5
	16	3	2	1	1	2	2
		60	2	2	2	2	2
		120	1	1	1	1	1
	18	3	2	2	2	2	2
		60	11	2	2	7	11
		120	1	1	1	1	1
Min		1	1	1	2	11	
Avg		3	2				
Max		11	2				
Reference	5	3	2	1	1	2	2
		60	3	2	2	3	3
		120	2	2	2	2	2
	Min		2	1	1	2	3
	Avg		2	2			
Max		3	2				
All Stations		Depth (ft)	Min	Avg	Max		
		Surface	1	2	2		
		Mid-depth	1	3	11		
		Bottom	1	2	5		
		All	1	2	11		