

TABLE OF CONTENTS

Table of Contents

List of Figures.....	iv
List of Tables.....	vi
<u>Volume I:</u>	
Section I – Introduction.....	I - 1
Section II – General Information	
A. Treatment System Description.....	II.A - 1
B. Receiving Water Description.....	II.B - 1
C. Biological Conditions.....	II.C - 1
D. State and Federal Laws.....	II.D - 1
Section III – Technical Evaluation	
A. Physical Characteristic of Discharge.....	III - 1
B. Compliance with Applicable Water Quality Standards and CWA §304(a)(1) water quality criteria.....	III - 9
C. Impact on Public Water Supply.....	III - 19
D. Biological Impact of Discharge.....	III - 19
E. Impacts of Discharge on Recreational Activities.....	III - 36
F. Establishment of a Monitoring Program.....	III - 43
G. Effect on Discharge on Other Point and Nonpoint Sources.....	III - 44
H. Toxics Control Program and Urban Area Pretreatment Program.....	III - 44
Section IV – References.....	IV - 1

TABLE OF CONTENTS

(CONTINUE)

Volume II:

Appendix List

Appendix A – Existing POTW process (liquid/solids).....	A - 1
Appendix B – Proposed POTW process (liquid/solids).....	B - 1
Appendix C – Mamala Bay Summary.....	C - 1
Appendix D – Chlordane/Dieldrin.....	D - 1
Appendix E – Water Quality Assessment of Bacterial Indicator Organisms...E - 1	E - 1
Appendix F – State Water Quality Standards; Title 11, Chapter 54.....	F - 1
Appendix G – Biological Conditions.....	G - 1
Appendix H - Bioaccumulation.....	H - 1
Appendix I – Fish Health.....	I - 1
Appendix J – Existing Permit.....	J - 1
Appendix K – Toxics Parameter List.....	K - 1
Appendix L - Letters of Compliance with State and Federal Laws.....	L - 1
Appendix M – Toxic Pollutant Control Program Description.....	M - 1

List of Figures

II.A.1	Sand Island WWTP Service Area.....	II.A - 2
II.A.2b	Sand Island Deep Ocean Outfall.....	II.A - 8
II.A.2.b.1	Sand Island Deep Ocean Outfall.....	II.A - 9
II.A.3.a1	Influent/Effluent BOD ₅ vs Time.....	II.A - 14
II.A.3.a2	Influent/Effluent TSS vs Time.....	II.A - 15
II.A.3.a3	BOD ₅ Removal vs Time.....	II.A - 15
II.A.3.a4	TSS Removal vs Time.....	II.A - 16
II.A.3.a5	BOD ₅ Histogram.....	II.A - 17
II.A.3.a6	TSS Histogram.....	II.A - 18
II.A.4b1	Flow Histogram.....	II.A - 22
II.B.1-1	Island of Oahu – Honolulu Harbor, Kewalo Basi, Ala Wai Canal; Water Quality Limited Segments.....	II.B - 5
II.B.3-1	Prevailing Currents in Hawaiian Waters.....	II.B - 9
II.B.3-2	Seasonal Circulation Patterns in Mamala Bay.....	II.B - 13
II.B.5-1	Progressive Vector Diagrams at Station B for Sand Island in September and November, 1970.....	II.B - 18
II.B.5-2	Progressive Vector Diagrams at Station “Diffuser” and Station B for Sand Island.....	II.B - 19
II.B.5-3	24-Hour Progressive Vector Diagram for Sand Island from March 28 to April 12, 1990.....	II.B - 21
II.B.5-4	24-Hour Progressive Vector Diagram for Sand Island from April 13 to April 28, 1990.....	II.B - 22
II.B.6.a1	Existing Monitoring Stations.....	II.B - 25
II.B.6.a2	Pre 1998 Monitoring Stations.....	II.B - 26
II.C-3-1	Fish Catchment Area.....	II.C - 23

List of Figures (continue)

II.D.2.1	Island of Oahu.....	II.D - 5
III.A.2-1	Sand Island Outfall; Zone of Initial Dilution and Zone of Mixing.....	III - 7

List of Tables

II.A.3.a1	1998 Monthly and Annual Average BOD5 and Suspended Solids Data.....	II.A - 11
II.A.3.a2	1999 Monthly and Annual Average BOD5 and Suspended Solids Data.....	II.A - 11
II.A.3.a3	2000 Monthly and Annual Average BOD5 and Suspended Solids Data.....	II.A - 12
II.A.3.a4	2001 Monthly and Annual Average BOD5 and Suspended Solids Data.....	II.A - 12
II.A.3.a5	2002 Monthly and Annual Average BOD5 and Suspended Solids Data.....	II.A - 13
II.A.3.a6	General Statistics: BOD ₅ , TSS, and pH.....	II.A - 13
II.A.4.b1	Effluent Toxic Pollutants and Pesticides.....	II.A - 23
II.A.4.b2	Influent Toxic Pollutants and Pesticides.....	II.A - 28
II.A.5.a1	Projected Effluent Volume and Mass Loading.....	II.A - 36
II.A.5.b1	Projected Annual Average Daily Flows.....	II.A - 38
II.A.6	Significant Industrial Discharger to the Sand Island WWTP.....	II.A - 38
II.A.8	Sand Island WWTP Outfall Characteristics.....	II.A - 41
II.B.1-1	Mamala Bay Principal Shoreline Features.....	II.B - 3
II.B.3-1	Estimates of the Contribution to the Total Currents Due to the Semi-Diurnal and Dirunal Tides.....	II.B - 10
II.B.3-2	Seasonal Circulation Patterns in Mamala Bay.....	II.B - 13
II.C.3 A.1	Summary Statistics of Historical Commercial Fish Landings.....	II.C - 18
II.C - 2	Fish Observed Near the Sand Island Outfall.....	II.C - 20

List of Tables

(continue)

II.D.1 Marine Water Quality Criteria "WET".....II.D - 2

III.B.2 Farfield Dissolved Oxygen Depression.....III - 14

III.B.5 General Statistics of the Water Column.....III - 17

III.B.6 General Statistics of the Water Column.....III - 18