

US EPA ARCHIVE DOCUMENT



This document contains Appendix A from the 2004 Holland America Veendam Data Report. Appendix A contains data on pathogens, sample numbers excepting pathogens, analytical results, and field measurements collected onboard the Veendam June 20 through June 25, 2004. The report and all the appendices for this sampling event can be downloaded from http://www.epa.gov/owow/oceans/cruise_ships/veendam.html

Holland America Veendam
2004 Analytical Results
Appendix A

March 2006

Appendix A

ANALYTICAL RESULTS

Appendix A-1

**Pathogen Indicator Sample Numbers and Sample Collection Times
Holland America Veendam**

Sampling Point (SP)	Approximate Sample Collection Time	Sample Numbers				
		6/20/04 - 6/21/04	6/21/04 - 6/22/04	6/22/04 - 6/23/04	6/23/04 - 6/24/04	6/24/04 - 6/25/04
		Day 1	Day 2	Day 3	Day 4	Day 5
Laundry Wastewater (SP-1)	2300				65205	
Accommodations Wastewater (SP-3)	1330				65207	
Food Pulper Wastewater (SP-4)	0745 1447			65211 65212		
Galley Wastewater (SP-5)	1200		65215			
Influent to Wastewater Treatment System (SP-6)	0650 1515 2200 0315	65219 65220 65221 65222	65223 65224 65225	65227 65228	65231 65232 65234	65235 65236 65237
Influent to Wastewater Treatment System Duplicate (SP-7)	1515		65310			
Influent to UV Disinfection (SP-8)	0700 1500 2200 0315	65241 65242 65243 65244	65245 65246 65247	65249 62450	65253 65254 65256	65257 65258 65259

Appendix A-1
(continued)
Pathogen Indicator Sample Numbers and Sample Collection Times
Holland America Veendam

Sampling Point (SP)	Approximate Sample Collection Time	Sample Numbers				
		6/20/04 - 6/21/04	6/21/04 - 6/22/04	6/22/04 - 6/23/04	6/23/04 - 6/24/04	6/24/04 - 6/25/04
		Day 1	Day 2	Day 3	Day 4	Day 5
Influent to UV Disinfection Duplicate (SP-8)	2200					65304
Effluent from Wastewater Treatment System (SP-9)	0630	65261	65265	65269	65273	65277
	1500	65262	65266	65270	65274	65278
	2200	65263	65267			65279
	0330	65264			65276	
Effluent from Wastewater Treatment System Duplicate (SP-10)	0630	65281	65283		65287	65289
	1500				65288	
	2200		65303		65311	65305
	0330	65302				
Screening Solids (SP-11)	1500	65291				
Source Water (SP-15)	0600	65295	65296	65297	65298	65299

**Appendix A-1
(continued)
Pathogen Indicators Analytical Results
Holland America Veendam**

SP-1, Laundry Wastewater Characterization Day 4	Grab 1 65205				Unit
Pathogen Indicators					
E. coli	ND(10.0)				MPN/100 mL
Enterococci	ND(10.0)				MPN/100 mL
Fecal Coliform	ND(1,000)				CFU/100 mL
SP-3, Accommodations Wastewater Characterization Day 4	Grab 1 65207				Unit
Pathogen Indicators					
E. coli	520				MPN/100 mL
Enterococci	510				MPN/100 mL
Fecal Coliform	7,730,000				CFU/100 mL
SP-4, Food Pulper Wastewater Characterization Day 3	Grab 1 65211	Grab 2 65212	Unit		
Pathogen Indicators					
E. coli	2,420,000	17,300			MPN/100 mL
Enterococci	28,800	10,400			MPN/100 mL
Fecal Coliform	130,000	29,000			CFU/100 mL
SP-5, Galley Wastewater Characterization Day 2	Grab 1 65215				Unit
Pathogen Indicators					
E. coli	77,600				MPN/100 mL
Enterococci	750				MPN/100 mL
Fecal Coliform	1,300,000				CFU/100 mL
SP-6, Influent to Wastewater Treatment System Day 1	Grab 1 65219	Grab 2 65220	Grab 3 65221	Grab 4 65222	Unit
Pathogen Indicators					
E. coli	> 242,000	> 2,420,000	> 2,420,000	411,000	MPN/100 mL
Enterococci	> 242,000	276,000	> 2,420,000	63,100	MPN/100 mL
Fecal Coliform	20,700,000	3,200,000	8,700,000	940,000	CFU/100 mL
SP-6, Influent to Wastewater Treatment System Day 2	Grab 1 65223	Grab 2 65224	Grab 3 65225	Unit	
Pathogen Indicators					
E. coli	488,000	> 2,420,000	> 24,200,000		MPN/100 mL
Enterococci	2,690	> 2,420,000	2,010,000		MPN/100 mL
Fecal Coliform	3,700,000	14,500,000	20,000,000		CFU/100 mL

Excluded - Data excluded from the data set (see data review narratives in Appendix E for details).

NC - Not collected.

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**Appendix A-1
(continued)
Pathogen Indicators Analytical Results
Holland America Veendam**

SP-6, Influent to Wastewater Treatment System Day 3	Grab 1 65227	Grab 2 65228			Unit
Pathogen Indicators					
E. coli	2,010,000	14,000,000			MPN/100 mL
Enterococci	2,010,000	7,890,000			MPN/100 mL
Fecal Coliform	23,000,000	119,000,000			CFU/100 mL
SP-6, Influent to Wastewater Treatment System Day 4	Grab 1 65231	Grab 2 65232	Grab 3 65234	Unit	
Pathogen Indicators					
E. coli	10,100,000	613,000	8,160,000	MPN/100 mL	
Enterococci	2,280,000	83,000	1,660,000	MPN/100 mL	
Fecal Coliform	194,000,000	490,000	10,400,000	CFU/100 mL	
SP-6, Influent to Wastewater Treatment System Day 5	Grab 1 65235	Grab 2 65236	Grab 3 65237	Unit	
Pathogen Indicators					
E. coli	5,790,000	2,010,000	9,800,000	MPN/100 mL	
Enterococci	866,000	983,000	6,870,000	MPN/100 mL	
Fecal Coliform	2,600,000	3,400,000	14,900,000	CFU/100 mL	
SP-7, Duplicate of Influent to Wastewater Treatment System Day 2	Grab 2 65310				Unit
Pathogen Indicators					
E. coli	75,900				MPN/100 mL
Enterococci	201,000				MPN/100 mL
Fecal Coliform	3,600,000				CFU/100 mL
SP-8, Influent to UV Disinfection Day 1	Grab 1 65241	Grab 2 65242	Grab 3 65243	Grab 4 65244	Unit
Pathogen Indicators					
E. coli	67.0	10.7	291	22.8	MPN/100 mL
Enterococci	80.1	18.1	41.7	8.10	MPN/100 mL
Fecal Coliform	49.0	9.00	330	12.0	CFU/100 mL
SP-8, Influent to UV Disinfection Day 2	Grab 1 65245	Grab 2 65246	Grab 3 65247	Unit	
Pathogen Indicators					
E. coli	15.8	3.10	3.10	MPN/100 mL	
Enterococci	6.30	NC	12.2	MPN/100 mL	
Fecal Coliform	13.0	4.00	19.0	CFU/100 mL	

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**Appendix A-1
(continued)
Pathogen Indicators Analytical Results
Holland America Veendam**

SP-8, Influent to UV Disinfection Day 3	Grab 1 65249	Grab 2 65250			Unit
Pathogen Indicators					
E. coli	ND(1.00)	2.00			MPN/100 mL
Enterococci	2.00	3.00			MPN/100 mL
Fecal Coliform	5.00	7.00			CFU/100 mL
SP-8, Influent to UV Disinfection Day 4	Grab 1 65253	Grab 2 65254	Grab 3 65256		
Pathogen Indicators					
E. coli	ND(1.05)	ND(1.00)	1.00		MPN/100 mL
Enterococci	70.0	13.1	79.4		MPN/100 mL
Fecal Coliform	6.40	ND(1.00)	4.00		CFU/100 mL
SP-8, Influent to UV Disinfection Day 5	Grab 1 65257	Grab 2 65258	Grab 3 65259		
Pathogen Indicators					
E. coli	3.00	50.4	75.4		MPN/100 mL
Enterococci	47.5	66.9	60.8		MPN/100 mL
Fecal Coliform	ND(1.00)	25.0	18.2		CFU/100 mL
SP-8, Duplicate of Influent to UV Disinfection Day 5			Grab 3 65304		
Pathogen Indicators					
E. coli			77.1		MPN/100 mL
Enterococci			35.4		MPN/100 mL
Fecal Coliform			8.18		CFU/100 mL
SP-9, Effluent from Wastewater Treatment Day 1	Grab 1 65261	Grab 2 65262	Grab 3 65263	Grab 4 65264	Unit
Pathogen Indicators					
E. coli	ND(1.00)	ND(1.00)	ND(1.00)	ND(1.00)	MPN/100 mL
Enterococci	ND(1.00)	Excluded	ND(1.00)	ND(1.00)	MPN/100 mL
Fecal Coliform	ND(1.00)	ND(1.00)	ND(1.00)	ND(1.00)	CFU/100 mL
SP-9, Effluent from Wastewater Treatment Day 2	Grab 1 65265	Grab 2 65266	Grab 3 65267		
Pathogen Indicators					
E. coli	ND(1.00)	ND(1.00)	ND(1.00)		MPN/100 mL
Enterococci	ND(1.00)	ND(1.00)	ND(1.00)		MPN/100 mL
Fecal Coliform	ND(1.00)	ND(1.00)	ND(1.00)		CFU/100 mL

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**Appendix A-1
(continued)
Pathogen Indicators Analytical Results
Holland America Veendam**

SP-9, Effluent from Wastewater Treatment Day 3	Grab 1 65269	Grab 2 65270		Unit
Pathogen Indicators				
E. coli	ND(1.00)	ND(1.00)		MPN/100 mL
Enterococci	ND(1.00)	ND(1.00)		MPN/100 mL
Fecal Coliform	ND(1.00)	ND(1.00)		CFU/100 mL
SP-9, Effluent from Wastewater Treatment Day 4	Grab 1 65273	Grab 2 65274	Grab 3 65276	Unit
Pathogen Indicators				
E. coli	ND(1.00)	ND(1.00)	ND(1.00)	MPN/100 mL
Enterococci	ND(1.00)	5.10	1.00	MPN/100 mL
Fecal Coliform	ND(1.00)	ND(1.00)	ND(1.00)	CFU/100 mL
SP-9, Effluent from Wastewater Treatment Day 5	Grab 1 65277	Grab 2 65278	Grab 3 65279	Unit
Pathogen Indicators				
E. coli	ND(1.00)	ND(1.00)	ND(1.00)	MPN/100 mL
Enterococci	ND(1.00)	ND(1.00)	ND(1.00)	MPN/100 mL
Fecal Coliform	ND(1.00)	ND(1.00)	ND(1.00)	CFU/100 mL
SP-10, Duplicate of Effluent from Wastewater Treatment System Day 1	Grab 1 65281			Unit
Pathogen Indicators				
E. coli	ND(1.00)			MPN/100 mL
Enterococci	ND(1.00)			MPN/100 mL
Fecal Coliform	ND(1.00)			CFU/100 mL
SP-10, Duplicate of Effluent from Wastewater Treatment System Day 1		Grab 4 65302		Unit
Pathogen Indicators				
E. coli		ND(1.00)		MPN/100 mL
Enterococci		ND(1.00)		MPN/100 mL
Fecal Coliform		ND(1.00)		CFU/100 mL
SP-10, Duplicate of Effluent from Wastewater Treatment System Day 2	Grab 1 65283			Unit
Pathogen Indicators				
E. coli	ND(1.00)			MPN/100 mL
Enterococci	ND(1.00)			MPN/100 mL
Fecal Coliform	ND(1.00)			CFU/100 mL

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**Appendix A-1
(continued)
Pathogen Indicators Analytical Results
Holland America Veendam**

SP-10, Duplicate of Effluent from Wastewater Treatment System			Grab 3	Unit	
Day 2			65303		
Pathogen Indicators					
E. coli			ND(1.00)	MPN/100 mL	
Enterococci			ND(1.00)	MPN/100 mL	
Fecal Coliform			ND(1.00)	CFU/100 mL	
SP-10, Duplicate of Effluent from Wastewater Treatment System			Grab 1	Grab 2	Unit
Day 4			65287	65288	
Pathogen Indicators					
E. coli			ND(1.00)	ND(1.00)	MPN/100 mL
Enterococci			ND(1.00)	ND(1.00)	MPN/100 mL
Fecal Coliform			ND(1.00)	ND(1.00)	CFU/100 mL
SP-10, Duplicate of Effluent from Wastewater Treatment System			Grab 3	Unit	
Day 4			65311		
Pathogen Indicators					
E. coli			ND(1.00)	MPN/100 mL	
Enterococci			1.00	MPN/100 mL	
Fecal Coliform			ND(1.00)	CFU/100 mL	
SP-10, Duplicate of Effluent from Wastewater Treatment System			Grab 1	Unit	
Day 5			65289		
Pathogen Indicators					
E. coli			ND(1.00)	MPN/100 mL	
Enterococci			ND(1.00)	MPN/100 mL	
Fecal Coliform			ND(1.00)	CFU/100 mL	
SP-10, Duplicate of Effluent from Wastewater Treatment System			Grab 3	Unit	
Day 5			65305		
Pathogen Indicators					
E. coli			ND(1.00)	MPN/100 mL	
Enterococci			ND(1.00)	MPN/100 mL	
Fecal Coliform			ND(1.00)	CFU/100 mL	
SP-15, Source Water			Grab 1	Unit	
Day 1			65295		
Pathogen Indicators					
E. coli			ND(1.00)	MPN/100 mL	
Enterococci			ND(1.00)	MPN/100 mL	
Fecal Coliform			ND(1.00)	CFU/100 mL	

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**Appendix A-1
(continued)
Pathogen Indicators Analytical Results
Holland America Veendam**

SP-15, Source Water Day 2	Grab 1 65296	Unit
Pathogen Indicators		
E. coli	ND(1.00)	MPN/100 mL
Enterococci	ND(1.00)	MPN/100 mL
Fecal Coliform	ND(1.00)	CFU/100 mL
SP-15, Source Water Day 3	Grab 1 65297	Unit
Pathogen Indicators		
E. coli	ND(1.00)	MPN/100 mL
Enterococci	ND(1.00)	MPN/100 mL
Fecal Coliform	ND(1.00)	CFU/100 mL
SP-15, Source Water Day 4	Grab 1 65298	Unit
Pathogen Indicators		
E. coli	ND(1.00)	MPN/100 mL
Enterococci	ND(1.00)	MPN/100 mL
Fecal Coliform	ND(1.00)	CFU/100 mL
SP-15, Source Water Day 5	Grab 1 65299	Unit
Pathogen Indicators		
E. coli	ND(1.00)	MPN/100 mL
Enterococci	ND(1.00)	MPN/100 mL
Fecal Coliform	ND(1.00)	CFU/100 mL

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Appendix A-2

**Sample Numbers, Except for Pathogen Indicators
Holland America Veendam**

Sampling Point (SP)	Sample Numbers				
	6/20/04 - 6/21/04	6/21/04 - 6/22/04	6/22/04 - 6/23/04	6/23/04 - 6/24/04	6/24/04 - 6/25/04
	Day 1	Day 2	Day 3	Day 4	Day 5
Laundry Wastewater (SP-1)				65202	
Laundry Graywater (SP-2)				65206	
Accommodations Wastewater (SP-3)				65207	
Food Pulper Wastewater (SP-4)			65211		
Galley Wastewater (SP-5)		65215			
Influent to Wastewater Treatment System (SP-6)	65219	65223	65227	65231	65235
Influent to Wastewater Treatment System Duplicate (SP-7)		65239	65240 65228	65232	
Effluent from Wastewater Treatment System (SP-9)	65261	65265	65269	65273	65277
Effluent from Wastewater Treatment System Duplicate (SP-10)	65281	65283	65285 65270	65287 65274	65289 65278
Screening Solids (SP-11)	65291				

Appendix A-2
(continued)
Sample Numbers, Except for Pathogen Indicators
Holland America Veendam

Sampling Point (SP)	Sample Numbers				
	6/20/04 - 6/21/04	6/21/04 - 6/22/04	6/22/04 - 6/23/04	6/23/04 - 6/24/04	6/24/04 - 6/25/04
	Day 1	Day 2	Day 3	Day 4	Day 5
Waste Biosludge (SP-12)		65292			
Incinerator Ash (SP-13)	65293				
Incinerator Ash Duplicate (SP-14)	65294				
Source Water (SP-15)	65295				
Trip Blank (SP-16)				65300	
Equipment Blank (SP-17)				65301	

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

		Day 4 65202	Unit
SP-1, Laundry Wastewater Characterization			
Classical Pollutants			
	Alkalinity	130	mg/L
	Ammonia As Nitrogen (NH ₃ -N)	0.360	mg/L
	Available Cyanide	ND(2.00)	ug/L
	Biochemical Oxygen Demand (BOD)	63.6	mg/L
	Chemical Oxygen Demand (COD)	170	mg/L
	Chloride	10.0	mg/L
	Hardness	8.45	mg/L
	Hexane Extractable Material (HEM)	20.0	mg/L
	Nitrate/Nitrite (NO ₂ + NO ₃ -N)	0.100	mg/L
	Settleable residue	ND(0.110)	mL/L
	Silica Gel Treated HEM (SGT-HEM)	ND(6.00)	mg/L
	Sulfate	13.0	mg/L
P121	Total Cyanide	ND(0.00500)	mg/L
	Total Dissolved Solids (TDS)	222	mg/L
	Total Kjeldahl Nitrogen (TKN)	3.00	mg/L
	Total Organic Carbon (TOC)	49.0	mg/L
	Total Phosphorus	1.00	mg/L
	Total Suspended Solids (TSS)	32.0	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-1, Laundry Wastewater Characterization		Day 4 65202	Unit
Total and Dissolved Metals			
	Aluminum	118	ug/L
P114	Antimony	ND(5.97)	ug/L
P115	Arsenic	ND(2.32)	ug/L
	Barium	14.7	ug/L
P117	Beryllium	ND(0.0540)	ug/L
	Boron	ND(3.37)	ug/L
P118	Cadmium	ND(0.446)	ug/L
	Calcium	2,520	ug/L
P119	Chromium	ND(1.68)	ug/L
	Cobalt	ND(0.914)	ug/L
P120	Copper	258	ug/L
	Iron	229	ug/L
P122	Lead	8.90	ug/L
	Magnesium	525	ug/L
	Manganese	6.50	ug/L
P123	Mercury	ND(0.0170)	ug/L
	Molybdenum	ND(1.50)	ug/L
P124	Nickel	10.7	ug/L
P125	Selenium	0.960	ug/L
P126	Silver	ND(1.28)	ug/L
	Sodium	63,700	ug/L
P127	Thallium	ND(0.00900)	ug/L
	Tin	ND(3.45)	ug/L
	Titanium	1.20	ug/L
	Vanadium	ND(0.679)	ug/L
	Yttrium	ND(0.222)	ug/L
P128	Zinc	303	ug/L
	Aluminum, Dissolved	63.3	ug/L
P114	Antimony, Dissolved	ND(5.97)	ug/L
P115	Arsenic, Dissolved	ND(2.32)	ug/L
	Barium, Dissolved	3.00	ug/L
P117	Beryllium, Dissolved	ND(0.0540)	ug/L

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-1, Laundry Wastewater Characterization		Day 4 65202	Unit
Total and Dissolved Metals			
	Boron, Dissolved	ND(3.37)	ug/L
P118	Cadmium, Dissolved	ND(0.446)	ug/L
	Calcium, Dissolved	1,970	ug/L
P119	Chromium, Dissolved	ND(1.68)	ug/L
	Cobalt, Dissolved	1.50	ug/L
P120	Copper, Dissolved	182	ug/L
	Iron, Dissolved	72.8	ug/L
P122	Lead, Dissolved	5.90	ug/L
	Magnesium, Dissolved	437	ug/L
	Manganese, Dissolved	5.80	ug/L
P123	Mercury, Dissolved	0.180	ug/L
	Molybdenum, Dissolved	ND(1.50)	ug/L
P124	Nickel, Dissolved	7.30	ug/L
P125	Selenium, Dissolved	ND(0.572)	ug/L
P126	Silver, Dissolved	ND(1.28)	ug/L
	Sodium, Dissolved	59,900	ug/L
P127	Thallium, Dissolved	0.0200	ug/L
	Tin, Dissolved	ND(3.45)	ug/L
	Titanium, Dissolved	1.70	ug/L
	Vanadium, Dissolved	1.20	ug/L
	Yttrium, Dissolved	ND(0.222)	ug/L
P128	Zinc, Dissolved	178	ug/L

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-1, Laundry Wastewater Characterization		Day 4 65202	Unit
Volatile and Semivolatile Organics			
P011	1,1,1-Trichloroethane	ND(10.0)	ug/L
P015	1,1,2,2-Tetrachloroethane	ND(10.0)	ug/L
P014	1,1,2-Trichloroethane	ND(10.0)	ug/L
P013	1,1-Dichloroethane	ND(10.0)	ug/L
P029	1,1-Dichloroethene	ND(10.0)	ug/L
P008	1,2,4-Trichlorobenzene	ND(10.0)	ug/L
P025	1,2-Dichlorobenzene	ND(10.0)	ug/L
P010	1,2-Dichloroethane	ND(10.0)	ug/L
P032	1,2-Dichloropropane	ND(10.0)	ug/L
P026	1,3-Dichlorobenzene	ND(10.0)	ug/L
P027	1,4-Dichlorobenzene	ND(10.0)	ug/L
P021	2,4,6-Trichlorophenol	ND(10.0)	ug/L
P031	2,4-Dichlorophenol	ND(10.0)	ug/L
P034	2,4-Dimethylphenol	ND(10.0)	ug/L
P059	2,4-Dinitrophenol	ND(50.0)	ug/L
P035	2,4-Dinitrotoluene	ND(10.0)	ug/L
P036	2,6-Dinitrotoluene	ND(10.0)	ug/L
P019	2-Chloroethylvinyl Ether	ND(50.0)	ug/L
P020	2-Chloronaphthalene	ND(10.0)	ug/L
P024	2-Chlorophenol	ND(10.0)	ug/L
P057	2-Nitrophenol	ND(20.0)	ug/L
P028	3,3'-Dichlorobenzidine	ND(50.0)	ug/L
	4,6-Dinitro-2-methylphenol	ND(20.0)	ug/L
	4-Bromophenyl-phenylether	ND(10.0)	ug/L
P022	4-Chloro-3-methylphenol	ND(10.0)	ug/L
	4-Chlorophenyl-phenylether	ND(10.0)	ug/L
P058	4-Nitrophenol	ND(50.0)	ug/L
P001	Acenaphthene	ND(10.0)	ug/L
P077	Acenaphthylene	ND(10.0)	ug/L
P078	Anthracene	ND(10.0)	ug/L
P004	Benzene	ND(10.0)	ug/L
P005	Benzidine	ND(50.0)	ug/L

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-1, Laundry Wastewater Characterization		Day 4 65202	Unit
Volatile and Semivolatile Organics			
P072	Benzo(a)anthracene	ND(10.0)	ug/L
P073	Benzo(a)pyrene	ND(10.0)	ug/L
P074	Benzo(b)fluoranthene	ND(10.0)	ug/L
	Benzo(g,h,i)perylene	ND(20.0)	ug/L
P075	Benzo(k)fluoranthene	ND(10.0)	ug/L
P043	Bis(2-chloroethoxy)methane	ND(10.0)	ug/L
	bis(-2-Chloroethyl)ether	ND(10.0)	ug/L
P042	Bis(2-chloroisopropyl) Ether	ND(10.0)	ug/L
P066	Bis(2-ethylhexyl) Phthalate	29.1	ug/L
P048	Bromodichloromethane	ND(10.0)	ug/L
	Bromoform	ND(10.0)	ug/L
P046	Bromomethane	ND(10.0)	ug/L
P067	Butyl Benzyl Phthalate	ND(10.0)	ug/L
	Carbon tetrachloride	ND(10.0)	ug/L
P007	Chlorobenzene	ND(10.0)	ug/L
P016	Chloroethane	ND(10.0)	ug/L
P023	Chloroform	ND(10.0)	ug/L
P045	Chloromethane	ND(10.0)	ug/L
P076	Chrysene	ND(10.0)	ug/L
	cis-1,3-Dichloropropene	ND(10.0)	ug/L
	Dibenz(a,h)anthracene	ND(20.0)	ug/L
P051	Dibromochloromethane	ND(10.0)	ug/L
P070	Diethyl Phthalate	ND(10.0)	ug/L
P071	Dimethyl Phthalate	ND(10.0)	ug/L
P068	Di-n-butyl Phthalate	ND(10.0)	ug/L
P069	Di-n-octyl Phthalate	ND(10.0)	ug/L
P038	Ethylbenzene	ND(10.0)	ug/L
P039	Fluoranthene	ND(10.0)	ug/L
P080	Fluorene	ND(10.0)	ug/L
P009	Hexachlorobenzene	ND(10.0)	ug/L
P052	Hexachlorobutadiene	ND(10.0)	ug/L
P053	Hexachlorocyclopentadiene	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-1, Laundry Wastewater Characterization	Day 4 65202	Unit
Volatile and Semivolatile Organics		
P012 Hexachloroethane	ND(10.0)	ug/L
P083 Indeno(1,2,3-cd)pyrene	ND(20.0)	ug/L
P054 Isophorone	ND(10.0)	ug/L
P044 Methylene Chloride	ND(10.0)	ug/L
P055 Naphthalene	ND(10.0)	ug/L
P056 Nitrobenzene	ND(10.0)	ug/L
P061 N-Nitrosodimethylamine	ND(50.0)	ug/L
N-Nitroso-di-n-propylamine	ND(20.0)	ug/L
P062 N-Nitrosodiphenylamine	ND(20.0)	ug/L
P064 Pentachlorophenol	ND(50.0)	ug/L
P081 Phenanthrene	ND(10.0)	ug/L
P065 Phenol	ND(10.0)	ug/L
P084 Pyrene	ND(10.0)	ug/L
P085 Tetrachloroethene	ND(10.0)	ug/L
P086 Toluene	ND(10.0)	ug/L
P030 trans-1,2-Dichloroethene	ND(10.0)	ug/L
P033 trans-1,3-Dichloropropene	ND(10.0)	ug/L
P087 Trichloroethene	ND(10.0)	ug/L
Trichlorofluoromethane	ND(10.0)	ug/L
P088 Vinyl Chloride	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-1, Laundry Wastewater Characterization	Day 4 65202	Unit
Dioxins and Furans		
1,2,3,4,6,7,8-HpCDD	ND(53.7)	pg/L
1,2,3,4,6,7,8-HpCDF	ND(53.7)	pg/L
1,2,3,4,7,8,9-HpCDF	ND(53.7)	pg/L
1,2,3,4,7,8-HxCDD	ND(53.7)	pg/L
1,2,3,4,7,8-HxCDF	ND(53.7)	pg/L
1,2,3,6,7,8-HxCDD	ND(53.7)	pg/L
1,2,3,6,7,8-HxCDF	ND(53.7)	pg/L
1,2,3,7,8,9-HxCDD	ND(53.7)	pg/L
1,2,3,7,8,9-HxCDF	ND(53.7)	pg/L
1,2,3,7,8-PeCDD	ND(53.7)	pg/L
1,2,3,7,8-PeCDF	ND(53.7)	pg/L
2,3,4,6,7,8-HxCDF	ND(53.7)	pg/L
2,3,4,7,8-PeCDF	ND(53.7)	pg/L
2,3,7,8-TCDD	ND(10.7)	pg/L
2,3,7,8-TCDF	ND(10.7)	pg/L
Octachlorodibenzo-p-dioxin	ND(107)	pg/L
Octachlorodibenzofuran	ND(107)	pg/L

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-2, Duplicate of Laundry Wastewater Characterization	Day 4 65206	Unit
Dioxins and Furans		
1,2,3,4,6,7,8-HpCDD	ND(55.3)	pg/L
1,2,3,4,6,7,8-HpCDF	ND(55.3)	pg/L
1,2,3,4,7,8,9-HpCDF	ND(55.3)	pg/L
1,2,3,4,7,8-HxCDD	ND(55.3)	pg/L
1,2,3,4,7,8-HxCDF	ND(55.3)	pg/L
1,2,3,6,7,8-HxCDD	ND(55.3)	pg/L
1,2,3,6,7,8-HxCDF	ND(55.3)	pg/L
1,2,3,7,8,9-HxCDD	ND(55.3)	pg/L
1,2,3,7,8,9-HxCDF	ND(55.3)	pg/L
1,2,3,7,8-PeCDD	ND(55.3)	pg/L
1,2,3,7,8-PeCDF	ND(55.3)	pg/L
2,3,4,6,7,8-HxCDF	ND(55.3)	pg/L
2,3,4,7,8-PeCDF	ND(55.3)	pg/L
2,3,7,8-TCDD	ND(11.1)	pg/L
2,3,7,8-TCDF	ND(11.1)	pg/L
Octachlorodibenzo-p-dioxin	ND(111)	pg/L
Octachlorodibenzofuran	ND(111)	pg/L

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-3, Accommodations Wastewater Characterization		Day 4 65207	Unit
Classical Pollutants			
Alkalinity		48.0	mg/L
Ammonia As Nitrogen (NH ₃ -N)		1.00	mg/L
Available Cyanide		15.7	ug/L
Biochemical Oxygen Demand (BOD)		391	mg/L
Chemical Oxygen Demand (COD)		541	mg/L
Chloride		38.0	mg/L
Hardness		54.3	mg/L
Hexane Extractable Material (HEM)		52.0	mg/L
Nitrate/Nitrite (NO ₂ + NO ₃ -N)		ND(0.0500)	mg/L
Settleable residue		2.10	mL/L
Silica Gel Treated HEM (SGT-HEM)		ND(7.00)	mg/L
Sulfate		17.0	mg/L
P121 Total Cyanide		ND(0.00500)	mg/L
Total Dissolved Solids (TDS)		242	mg/L
Total Kjeldahl Nitrogen (TKN)		12.0	mg/L
Total Organic Carbon (TOC)		144	mg/L
Total Phosphorus		3.00	mg/L
Total Suspended Solids (TSS)		254	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-3, Accommodations Wastewater Characterization		Day 4 65207	Unit
Total and Dissolved Metals			
	Aluminum	745	ug/L
P114	Antimony	ND(5.97)	ug/L
P115	Arsenic	ND(2.32)	ug/L
	Barium	89.3	ug/L
P117	Beryllium	ND(0.0540)	ug/L
	Boron	55.5	ug/L
P118	Cadmium	ND(0.446)	ug/L
	Calcium	18,200	ug/L
P119	Chromium	6.50	ug/L
	Cobalt	ND(0.914)	ug/L
P120	Copper	975	ug/L
	Iron	5,730	ug/L
P122	Lead	50.2	ug/L
	Magnesium	2,160	ug/L
	Manganese	75.0	ug/L
P123	Mercury	0.330	ug/L
	Molybdenum	ND(1.50)	ug/L
P124	Nickel	29.4	ug/L
P125	Selenium	0.820	ug/L
P126	Silver	ND(1.28)	ug/L
	Sodium	30,100	ug/L
P127	Thallium	ND(0.00900)	ug/L
	Tin	4.50	ug/L
	Titanium	6.00	ug/L
	Vanadium	6.20	ug/L
	Yttrium	ND(0.222)	ug/L
P128	Zinc	1,500	ug/L
	Aluminum, Dissolved	268	ug/L
P114	Antimony, Dissolved	ND(5.97)	ug/L
P115	Arsenic, Dissolved	ND(2.32)	ug/L
	Barium, Dissolved	51.4	ug/L
P117	Beryllium, Dissolved	ND(0.0540)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-3, Accommodations Wastewater Characterization		Day 4 65207	Unit
Total and Dissolved Metals			
	Boron, Dissolved	61.4	ug/L
P118	Cadmium, Dissolved	ND(0.446)	ug/L
	Calcium, Dissolved	16,300	ug/L
P119	Chromium, Dissolved	ND(1.68)	ug/L
	Cobalt, Dissolved	ND(0.914)	ug/L
P120	Copper, Dissolved	90.3	ug/L
	Iron, Dissolved	3,270	ug/L
P122	Lead, Dissolved	3.70	ug/L
	Magnesium, Dissolved	1,960	ug/L
	Manganese, Dissolved	41.6	ug/L
P123	Mercury, Dissolved	0.390	ug/L
	Molybdenum, Dissolved	ND(1.50)	ug/L
P124	Nickel, Dissolved	19.6	ug/L
P125	Selenium, Dissolved	0.670	ug/L
P126	Silver, Dissolved	ND(1.28)	ug/L
	Sodium, Dissolved	29,300	ug/L
P127	Thallium, Dissolved	ND(0.00900)	ug/L
	Tin, Dissolved	ND(3.45)	ug/L
	Titanium, Dissolved	0.330	ug/L
	Vanadium, Dissolved	ND(0.679)	ug/L
	Yttrium, Dissolved	ND(0.222)	ug/L
P128	Zinc, Dissolved	635	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
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 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-3, Accommodations Wastewater Characterization		Day 4 65207	Unit
Volatile and Semivolatile Organics			
P011	1,1,1-Trichloroethane	ND(10.0)	ug/L
P015	1,1,2,2-Tetrachloroethane	ND(10.0)	ug/L
P014	1,1,2-Trichloroethane	ND(10.0)	ug/L
P013	1,1-Dichloroethane	ND(10.0)	ug/L
P029	1,1-Dichloroethene	ND(10.0)	ug/L
P008	1,2,4-Trichlorobenzene	ND(10.0)	ug/L
P025	1,2-Dichlorobenzene	ND(10.0)	ug/L
P010	1,2-Dichloroethane	ND(10.0)	ug/L
P032	1,2-Dichloropropane	ND(10.0)	ug/L
P026	1,3-Dichlorobenzene	ND(10.0)	ug/L
P027	1,4-Dichlorobenzene	ND(10.0)	ug/L
P021	2,4,6-Trichlorophenol	ND(10.0)	ug/L
P031	2,4-Dichlorophenol	ND(10.0)	ug/L
P034	2,4-Dimethylphenol	ND(10.0)	ug/L
P059	2,4-Dinitrophenol	ND(50.0)	ug/L
P035	2,4-Dinitrotoluene	ND(10.0)	ug/L
P036	2,6-Dinitrotoluene	ND(10.0)	ug/L
P019	2-Chloroethylvinyl Ether	ND(50.0)	ug/L
P020	2-Chloronaphthalene	ND(10.0)	ug/L
P024	2-Chlorophenol	ND(10.0)	ug/L
P057	2-Nitrophenol	ND(20.0)	ug/L
P028	3,3'-Dichlorobenzidine	ND(50.0)	ug/L
	4,6-Dinitro-2-methylphenol	ND(20.0)	ug/L
	4-Bromophenyl-phenylether	ND(10.0)	ug/L
P022	4-Chloro-3-methylphenol	ND(10.0)	ug/L
	4-Chlorophenyl-phenylether	ND(10.0)	ug/L
P058	4-Nitrophenol	ND(50.0)	ug/L
P001	Acenaphthene	ND(10.0)	ug/L
P077	Acenaphthylene	ND(10.0)	ug/L
P078	Anthracene	ND(10.0)	ug/L
P004	Benzene	ND(10.0)	ug/L
P005	Benzidine	ND(50.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-3, Accommodations Wastewater Characterization		Day 4 65207	Unit
Volatile and Semivolatile Organics			
P072	Benzo(a)anthracene	ND(10.0)	ug/L
P073	Benzo(a)pyrene	ND(10.0)	ug/L
P074	Benzo(b)fluoranthene	ND(10.0)	ug/L
	Benzo(g,h,i)perylene	ND(20.0)	ug/L
P075	Benzo(k)fluoranthene	ND(10.0)	ug/L
P043	Bis(2-chloroethoxy)methane	ND(10.0)	ug/L
	bis(-2-Chloroethyl)ether	ND(10.0)	ug/L
P042	Bis(2-chloroisopropyl) Ether	ND(10.0)	ug/L
P066	Bis(2-ethylhexyl) Phthalate	32.6	ug/L
P048	Bromodichloromethane	ND(10.0)	ug/L
	Bromoform	ND(10.0)	ug/L
P046	Bromomethane	ND(10.0)	ug/L
P067	Butyl Benzyl Phthalate	ND(10.0)	ug/L
	Carbon tetrachloride	ND(10.0)	ug/L
P007	Chlorobenzene	ND(10.0)	ug/L
P016	Chloroethane	ND(10.0)	ug/L
P023	Chloroform	ND(10.0)	ug/L
P045	Chloromethane	ND(10.0)	ug/L
P076	Chrysene	ND(10.0)	ug/L
	cis-1,3-Dichloropropene	ND(10.0)	ug/L
	Dibenz(a,h)anthracene	ND(20.0)	ug/L
P051	Dibromochloromethane	ND(10.0)	ug/L
P070	Diethyl Phthalate	ND(10.0)	ug/L
P071	Dimethyl Phthalate	ND(10.0)	ug/L
P068	Di-n-butyl Phthalate	ND(10.0)	ug/L
P069	Di-n-octyl Phthalate	ND(10.0)	ug/L
P038	Ethylbenzene	ND(10.0)	ug/L
P039	Fluoranthene	ND(10.0)	ug/L
P080	Fluorene	ND(10.0)	ug/L
P009	Hexachlorobenzene	ND(10.0)	ug/L
P052	Hexachlorobutadiene	ND(10.0)	ug/L
P053	Hexachlorocyclopentadiene	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-3, Accommodations Wastewater Characterization		Day 4 65207	Unit
Volatile and Semivolatile Organics			
P012	Hexachloroethane	ND(10.0)	ug/L
P083	Indeno(1,2,3-cd)pyrene	ND(20.0)	ug/L
P054	Isophorone	ND(10.0)	ug/L
P044	Methylene Chloride	ND(10.0)	ug/L
P055	Naphthalene	ND(10.0)	ug/L
P056	Nitrobenzene	ND(10.0)	ug/L
P061	N-Nitrosodimethylamine	ND(50.0)	ug/L
	N-Nitroso-di-n-propylamine	ND(20.0)	ug/L
P062	N-Nitrosodiphenylamine	ND(20.0)	ug/L
P064	Pentachlorophenol	ND(50.0)	ug/L
P081	Phenanthrene	ND(10.0)	ug/L
P065	Phenol	12.4	ug/L
P084	Pyrene	ND(10.0)	ug/L
P085	Tetrachloroethene	52.3	ug/L
P086	Toluene	ND(10.0)	ug/L
P030	trans-1,2-Dichloroethene	ND(10.0)	ug/L
P033	trans-1,3-Dichloropropene	ND(10.0)	ug/L
P087	Trichloroethene	20.9	ug/L
	Trichlorofluoromethane	ND(10.0)	ug/L
P088	Vinyl Chloride	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

		Day 3	Unit
SP-4, Food Pulper Wastewater Characterization		65211	
Classical Pollutants			
	Alkalinity	ND(10.0)	mg/L
	Ammonia As Nitrogen (NH ₃ -N)	29.0	mg/L
	Available Cyanide	88.4	ug/L
	Biochemical Oxygen Demand (BOD)	17,300	mg/L
	Chemical Oxygen Demand (COD)	51,400	mg/L
	Chloride	655	mg/L
	Hardness	270	mg/L
	Hexane Extractable Material (HEM)	5,010	mg/L
	Nitrate/Nitrite (NO ₂ + NO ₃ -N)	0.220	mg/L
	Settleable residue	900	mL/L
	Silica Gel Treated HEM (SGT-HEM)	2,240	mg/L
	Sulfate	35.0	mg/L
P121	Total Cyanide	0.0140	mg/L
	Total Dissolved Solids (TDS)	6,050	mg/L
	Total Kjeldahl Nitrogen (TKN)	166	mg/L
	Total Organic Carbon (TOC)	5,370	mg/L
	Total Phosphorus	46.0	mg/L
	Total Suspended Solids (TSS)	19,800	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-4, Food Pulper Wastewater Characterization		Day 3 65211	Unit
Total and Dissolved Metals			
	Aluminum	2,910	ug/L
P114	Antimony	13.6	ug/L
P115	Arsenic	ND(2.32)	ug/L
	Barium	108	ug/L
P117	Beryllium	ND(0.0540)	ug/L
	Boron	166	ug/L
P118	Cadmium	1.50	ug/L
	Calcium	71,200	ug/L
P119	Chromium	16.3	ug/L
	Cobalt	2.40	ug/L
P120	Copper	400	ug/L
	Iron	3,010	ug/L
P122	Lead	45.3	ug/L
	Magnesium	22,700	ug/L
	Manganese	434	ug/L
P123	Mercury	ND(0.0170)	ug/L
	Molybdenum	ND(1.50)	ug/L
P124	Nickel	41.6	ug/L
P125	Selenium	16.5	ug/L
P126	Silver	2.10	ug/L
	Sodium	376,000	ug/L
P127	Thallium	0.0100	ug/L
	Tin	88.6	ug/L
	Titanium	8.80	ug/L
	Vanadium	1.80	ug/L
	Yttrium	ND(0.222)	ug/L
P128	Zinc	4,210	ug/L
	Aluminum, Dissolved	614	ug/L
P114	Antimony, Dissolved	ND(5.97)	ug/L
P115	Arsenic, Dissolved	5.70	ug/L
	Barium, Dissolved	69.6	ug/L
P117	Beryllium, Dissolved	ND(0.0540)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-4, Food Pulper Wastewater Characterization		Day 3 65211	Unit
Total and Dissolved Metals			
	Boron, Dissolved	147	ug/L
P118	Cadmium, Dissolved	ND(0.446)	ug/L
	Calcium, Dissolved	67,100	ug/L
P119	Chromium, Dissolved	2.40	ug/L
	Cobalt, Dissolved	7.60	ug/L
P120	Copper, Dissolved	17.5	ug/L
	Iron, Dissolved	527	ug/L
P122	Lead, Dissolved	4.90	ug/L
	Magnesium, Dissolved	20,900	ug/L
	Manganese, Dissolved	8.10	ug/L
P123	Mercury, Dissolved	0.260	ug/L
	Molybdenum, Dissolved	ND(1.50)	ug/L
P124	Nickel, Dissolved	38.1	ug/L
P125	Selenium, Dissolved	6.80	ug/L
P126	Silver, Dissolved	ND(1.28)	ug/L
	Sodium, Dissolved	388,000	ug/L
P127	Thallium, Dissolved	0.0800	ug/L
	Tin, Dissolved	29.9	ug/L
	Titanium, Dissolved	ND(0.253)	ug/L
	Vanadium, Dissolved	0.940	ug/L
	Yttrium, Dissolved	ND(0.222)	ug/L
P128	Zinc, Dissolved	3,780	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-4, Food Pulper Wastewater Characterization		Day 3 65211	Unit
Volatile and Semivolatile Organics			
P011	1,1,1-Trichloroethane	ND(0.277)	ug/L
P015	1,1,2,2-Tetrachloroethane	ND(0.277)	ug/L
P014	1,1,2-Trichloroethane	ND(0.277)	ug/L
P013	1,1-Dichloroethane	ND(0.277)	ug/L
P029	1,1-Dichloroethene	ND(0.277)	ug/L
P008	1,2,4-Trichlorobenzene	ND(27.9)	ug/L
P025	1,2-Dichlorobenzene	ND(27.9)	ug/L
P010	1,2-Dichloroethane	ND(0.277)	ug/L
P032	1,2-Dichloropropane	ND(0.277)	ug/L
P026	1,3-Dichlorobenzene	ND(27.9)	ug/L
P027	1,4-Dichlorobenzene	ND(27.9)	ug/L
P021	2,4,6-Trichlorophenol	ND(27.9)	ug/L
P031	2,4-Dichlorophenol	ND(27.9)	ug/L
P034	2,4-Dimethylphenol	ND(27.9)	ug/L
P059	2,4-Dinitrophenol	ND(140)	ug/L
P035	2,4-Dinitrotoluene	ND(27.9)	ug/L
P036	2,6-Dinitrotoluene	ND(27.9)	ug/L
P019	2-Chloroethylvinyl Ether	ND(1.38)	ug/L
P020	2-Chloronaphthalene	ND(27.9)	ug/L
P024	2-Chlorophenol	ND(27.9)	ug/L
P057	2-Nitrophenol	ND(55.8)	ug/L
P028	3,3'-Dichlorobenzidine	ND(140)	ug/L
	4,6-Dinitro-2-methylphenol	ND(55.8)	ug/L
	4-Bromophenyl-phenylether	ND(27.9)	ug/L
P022	4-Chloro-3-methylphenol	ND(27.9)	ug/L
	4-Chlorophenyl-phenylether	ND(27.9)	ug/L
P058	4-Nitrophenol	ND(140)	ug/L
P001	Acenaphthene	ND(27.9)	ug/L
P077	Acenaphthylene	ND(27.9)	ug/L
P078	Anthracene	ND(27.9)	ug/L
P004	Benzene	ND(0.277)	ug/L
P005	Benzidine	ND(140)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-4, Food Pulper Wastewater Characterization		Day 3 65211	Unit
Volatile and Semivolatile Organics			
P072	Benzo(a)anthracene	ND(27.9)	ug/L
P073	Benzo(a)pyrene	ND(27.9)	ug/L
P074	Benzo(b)fluoranthene	ND(27.9)	ug/L
	Benzo(g,h,i)perylene	ND(55.8)	ug/L
P075	Benzo(k)fluoranthene	ND(27.9)	ug/L
P043	Bis(2-chloroethoxy)methane	ND(27.9)	ug/L
	bis(-2-Chloroethyl)ether	ND(27.9)	ug/L
P042	Bis(2-chloroisopropyl) Ether	ND(27.9)	ug/L
P066	Bis(2-ethylhexyl) Phthalate	261	ug/L
P048	Bromodichloromethane	ND(0.277)	ug/L
	Bromoform	ND(0.277)	ug/L
P046	Bromomethane	ND(0.277)	ug/L
P067	Butyl Benzyl Phthalate	ND(27.9)	ug/L
	Carbon tetrachloride	ND(0.277)	ug/L
P007	Chlorobenzene	ND(0.277)	ug/L
P016	Chloroethane	ND(0.277)	ug/L
P023	Chloroform	ND(0.277)	ug/L
P045	Chloromethane	ND(0.277)	ug/L
P076	Chrysene	ND(27.9)	ug/L
	cis-1,3-Dichloropropene	ND(0.277)	ug/L
	Dibenz(a,h)anthracene	ND(55.8)	ug/L
P051	Dibromochloromethane	ND(0.277)	ug/L
P070	Diethyl Phthalate	ND(27.9)	ug/L
P071	Dimethyl Phthalate	ND(27.9)	ug/L
P068	Di-n-butyl Phthalate	ND(27.9)	ug/L
P069	Di-n-octyl Phthalate	ND(27.9)	ug/L
P038	Ethylbenzene	ND(0.277)	ug/L
P039	Fluoranthene	ND(27.9)	ug/L
P080	Fluorene	ND(27.9)	ug/L
P009	Hexachlorobenzene	ND(27.9)	ug/L
P052	Hexachlorobutadiene	ND(27.9)	ug/L
P053	Hexachlorocyclopentadiene	ND(27.9)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-4, Food Pulper Wastewater Characterization		Day 3 65211	Unit
Volatile and Semivolatile Organics			
P012	Hexachloroethane	ND(27.9)	ug/L
P083	Indeno(1,2,3-cd)pyrene	ND(55.8)	ug/L
P054	Isophorone	ND(27.9)	ug/L
P044	Methylene Chloride	ND(0.277)	ug/L
P055	Naphthalene	ND(27.9)	ug/L
P056	Nitrobenzene	ND(27.9)	ug/L
P061	N-Nitrosodimethylamine	ND(140)	ug/L
	N-Nitroso-di-n-propylamine	ND(55.8)	ug/L
P062	N-Nitrosodiphenylamine	ND(55.8)	ug/L
P064	Pentachlorophenol	ND(140)	ug/L
P081	Phenanthrene	ND(27.9)	ug/L
P065	Phenol	32.4	ug/L
P084	Pyrene	ND(27.9)	ug/L
P085	Tetrachloroethene	ND(0.277)	ug/L
P086	Toluene	ND(0.277)	ug/L
P030	trans-1,2-Dichloroethene	ND(0.277)	ug/L
P033	trans-1,3-Dichloropropene	ND(0.277)	ug/L
P087	Trichloroethene	ND(0.277)	ug/L
	Trichlorofluoromethane	ND(0.277)	ug/L
P088	Vinyl Chloride	ND(0.277)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization		Day 2 65215	Unit
Classical Pollutants			
	Alkalinity	ND(10.0)	mg/L
	Ammonia As Nitrogen (NH ₃ -N)	0.460	mg/L
	Available Cyanide	ND(2.00)	ug/L
	Biochemical Oxygen Demand (BOD)	1,050	mg/L
	Chemical Oxygen Demand (COD)	1,490	mg/L
	Chloride	42.0	mg/L
	Hardness	56.9	mg/L
	Hexane Extractable Material (HEM)	142	mg/L
	Nitrate/Nitrite (NO ₂ + NO ₃ -N)	ND(0.0500)	mg/L
	Settleable residue	1.70	mL/L
	Silica Gel Treated HEM (SGT-HEM)	7.00	mg/L
	Sulfate	24.0	mg/L
P121	Total Cyanide	ND(0.00500)	mg/L
	Total Dissolved Solids (TDS)	527	mg/L
	Total Kjeldahl Nitrogen (TKN)	24.0	mg/L
	Total Organic Carbon (TOC)	250	mg/L
	Total Phosphorus	4.00	mg/L
	Total Suspended Solids (TSS)	413	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization		Day 2 65215	Unit
Total and Dissolved Metals			
	Aluminum	201	ug/L
P114	Antimony	ND(5.97)	ug/L
P115	Arsenic	ND(2.32)	ug/L
	Barium	83.4	ug/L
P117	Beryllium	ND(0.0540)	ug/L
	Boron	56.7	ug/L
P118	Cadmium	ND(0.446)	ug/L
	Calcium	18,200	ug/L
P119	Chromium	ND(1.68)	ug/L
	Cobalt	ND(0.914)	ug/L
P120	Copper	88.3	ug/L
	Iron	2,530	ug/L
P122	Lead	10.7	ug/L
	Magnesium	2,790	ug/L
	Manganese	36.3	ug/L
P123	Mercury	ND(0.0170)	ug/L
	Molybdenum	ND(1.50)	ug/L
P124	Nickel	25.8	ug/L
P125	Selenium	0.770	ug/L
P126	Silver	ND(1.28)	ug/L
	Sodium	31,800	ug/L
P127	Thallium	ND(0.00900)	ug/L
	Tin	4.00	ug/L
	Titanium	2.20	ug/L
	Vanadium	ND(0.679)	ug/L
	Yttrium	ND(0.222)	ug/L
P128	Zinc	1,010	ug/L
	Aluminum, Dissolved	114	ug/L
P114	Antimony, Dissolved	ND(5.97)	ug/L
P115	Arsenic, Dissolved	ND(2.32)	ug/L
	Barium, Dissolved	57.3	ug/L
P117	Beryllium, Dissolved	ND(0.0540)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization		Day 2 65215	Unit
Total and Dissolved Metals			
	Boron, Dissolved	56.3	ug/L
P118	Cadmium, Dissolved	ND(0.446)	ug/L
	Calcium, Dissolved	15,800	ug/L
P119	Chromium, Dissolved	ND(1.68)	ug/L
	Cobalt, Dissolved	1.20	ug/L
P120	Copper, Dissolved	50.9	ug/L
	Iron, Dissolved	1,510	ug/L
P122	Lead, Dissolved	4.00	ug/L
	Magnesium, Dissolved	2,510	ug/L
	Manganese, Dissolved	26.5	ug/L
P123	Mercury, Dissolved	0.270	ug/L
	Molybdenum, Dissolved	ND(1.50)	ug/L
P124	Nickel, Dissolved	22.2	ug/L
P125	Selenium, Dissolved	0.840	ug/L
P126	Silver, Dissolved	ND(1.28)	ug/L
	Sodium, Dissolved	29,800	ug/L
P127	Thallium, Dissolved	0.0100	ug/L
	Tin, Dissolved	6.40	ug/L
	Titanium, Dissolved	0.340	ug/L
	Vanadium, Dissolved	ND(0.679)	ug/L
	Yttrium, Dissolved	ND(0.222)	ug/L
P128	Zinc, Dissolved	599	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-5, Galley Wastewater Characterization		Day 2 65215	Unit
Volatile and Semivolatile Organics			
P011	1,1,1-Trichloroethane	ND(10.0)	ug/L
P015	1,1,2,2-Tetrachloroethane	ND(10.0)	ug/L
P014	1,1,2-Trichloroethane	ND(10.0)	ug/L
P013	1,1-Dichloroethane	ND(10.0)	ug/L
P029	1,1-Dichloroethene	ND(10.0)	ug/L
P008	1,2,4-Trichlorobenzene	ND(10.0)	ug/L
P025	1,2-Dichlorobenzene	ND(10.0)	ug/L
P010	1,2-Dichloroethane	ND(10.0)	ug/L
P032	1,2-Dichloropropane	ND(10.0)	ug/L
P026	1,3-Dichlorobenzene	ND(10.0)	ug/L
P027	1,4-Dichlorobenzene	ND(10.0)	ug/L
P021	2,4,6-Trichlorophenol	ND(10.0)	ug/L
P031	2,4-Dichlorophenol	ND(10.0)	ug/L
P034	2,4-Dimethylphenol	ND(10.0)	ug/L
P059	2,4-Dinitrophenol	ND(50.0)	ug/L
P035	2,4-Dinitrotoluene	ND(10.0)	ug/L
P036	2,6-Dinitrotoluene	ND(10.0)	ug/L
P019	2-Chloroethylvinyl Ether	ND(50.0)	ug/L
P020	2-Chloronaphthalene	ND(10.0)	ug/L
P024	2-Chlorophenol	ND(10.0)	ug/L
P057	2-Nitrophenol	ND(20.0)	ug/L
P028	3,3'-Dichlorobenzidine	ND(50.0)	ug/L
	4,6-Dinitro-2-methylphenol	ND(20.0)	ug/L
	4-Bromophenyl-phenylether	ND(10.0)	ug/L
P022	4-Chloro-3-methylphenol	ND(10.0)	ug/L
	4-Chlorophenyl-phenylether	ND(10.0)	ug/L
P058	4-Nitrophenol	ND(50.0)	ug/L
P001	Acenaphthene	ND(10.0)	ug/L
P077	Acenaphthylene	ND(10.0)	ug/L
P078	Anthracene	ND(10.0)	ug/L
P004	Benzene	ND(10.0)	ug/L
P005	Benzidine	ND(50.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization		Day 2 65215	Unit
Volatile and Semivolatile Organics			
P072	Benzo(a)anthracene	ND(10.0)	ug/L
P073	Benzo(a)pyrene	ND(10.0)	ug/L
P074	Benzo(b)fluoranthene	ND(10.0)	ug/L
	Benzo(g,h,i)perylene	ND(20.0)	ug/L
P075	Benzo(k)fluoranthene	ND(10.0)	ug/L
P043	Bis(2-chloroethoxy)methane	ND(10.0)	ug/L
	bis(-2-Chloroethyl)ether	ND(10.0)	ug/L
P042	Bis(2-chloroisopropyl) Ether	ND(10.0)	ug/L
P066	Bis(2-ethylhexyl) Phthalate	33.2	ug/L
P048	Bromodichloromethane	ND(10.0)	ug/L
	Bromoform	ND(10.0)	ug/L
P046	Bromomethane	ND(10.0)	ug/L
P067	Butyl Benzyl Phthalate	ND(10.0)	ug/L
	Carbon tetrachloride	ND(10.0)	ug/L
P007	Chlorobenzene	ND(10.0)	ug/L
P016	Chloroethane	ND(10.0)	ug/L
P023	Chloroform	ND(10.0)	ug/L
P045	Chloromethane	ND(10.0)	ug/L
P076	Chrysene	ND(10.0)	ug/L
	cis-1,3-Dichloropropene	ND(10.0)	ug/L
	Dibenz(a,h)anthracene	ND(20.0)	ug/L
P051	Dibromochloromethane	ND(10.0)	ug/L
P070	Diethyl Phthalate	ND(10.0)	ug/L
P071	Dimethyl Phthalate	ND(10.0)	ug/L
P068	Di-n-butyl Phthalate	ND(10.0)	ug/L
P069	Di-n-octyl Phthalate	ND(10.0)	ug/L
P038	Ethylbenzene	ND(10.0)	ug/L
P039	Fluoranthene	ND(10.0)	ug/L
P080	Fluorene	ND(10.0)	ug/L
P009	Hexachlorobenzene	ND(10.0)	ug/L
P052	Hexachlorobutadiene	ND(10.0)	ug/L
P053	Hexachlorocyclopentadiene	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization		Day 2 65215	Unit
Volatile and Semivolatile Organics			
P012	Hexachloroethane	ND(10.0)	ug/L
P083	Indeno(1,2,3-cd)pyrene	ND(20.0)	ug/L
P054	Isophorone	ND(10.0)	ug/L
P044	Methylene Chloride	ND(10.0)	ug/L
P055	Naphthalene	ND(10.0)	ug/L
P056	Nitrobenzene	ND(10.0)	ug/L
P061	N-Nitrosodimethylamine	ND(50.0)	ug/L
	N-Nitroso-di-n-propylamine	ND(20.0)	ug/L
P062	N-Nitrosodiphenylamine	ND(20.0)	ug/L
P064	Pentachlorophenol	ND(50.0)	ug/L
P081	Phenanthrene	ND(10.0)	ug/L
P065	Phenol	22.2	ug/L
P084	Pyrene	ND(10.0)	ug/L
P085	Tetrachloroethene	ND(10.0)	ug/L
P086	Toluene	ND(10.0)	ug/L
P030	trans-1,2-Dichloroethene	ND(10.0)	ug/L
P033	trans-1,3-Dichloropropene	ND(10.0)	ug/L
P087	Trichloroethene	ND(10.0)	ug/L
	Trichlorofluoromethane	ND(10.0)	ug/L
P088	Vinyl Chloride	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization	Day 2 65215	Unit
Pesticides		
1,2-Dibromo-3-chloropropane	ND(0.200)	ug/L
4,4'-DDD	ND(0.200)	ug/L
4,4'-DDE	ND(0.100)	ug/L
4,4'-DDT	ND(0.100)	ug/L
Acephate	ND(20.0)	ug/L
Alachlor	ND(0.200)	ug/L
Aldrin	ND(0.200)	ug/L
alpha-BHC	ND(0.0500)	ug/L
alpha-Chlordane	ND(0.100)	ug/L
Atrazine	ND(10.0)	ug/L
Azinphos Ethyl	ND(2.00)	ug/L
Azinphos Methyl	ND(1.00)	ug/L
Benfluralin	ND(0.200)	ug/L
beta-BHC	ND(0.100)	ug/L
Bromacil	ND(1.00)	ug/L
Bromoxynil Octanoate	ND(0.500)	ug/L
Butachlor	ND(0.500)	ug/L
Captafol	ND(2.00)	ug/L
Captan	ND(1.00)	ug/L
Carbophenothion	ND(1.00)	ug/L
Chlorfenvinphos	ND(2.00)	ug/L
Chlorobenzilate	ND(1.00)	ug/L
Chloroneb	ND(1.00)	ug/L
Chloropropylate	ND(1.00)	ug/L
Chlorothalonil	ND(0.200)	ug/L
Chlorpyrifos	ND(2.00)	ug/L
cis-Permethrin	ND(2.00)	ug/L
Coumaphos	ND(5.00)	ug/L
Crotoxyphos	ND(5.00)	ug/L
Dacthal (DCPS)	ND(0.0500)	ug/L
DEF	ND(2.00)	ug/L
delta-BHC	ND(0.0500)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization		Day 2 65215	Unit
Pesticides			
Demeton A		ND(4.00)	ug/L
Demeton B		ND(4.00)	ug/L
Diallate A		ND(2.00)	ug/L
Diallate B		ND(2.00)	ug/L
Diazinon		ND(2.00)	ug/L
Dichlofenthion		ND(2.00)	ug/L
Dichlone		ND(0.200)	ug/L
Dichlorvos		ND(5.00)	ug/L
Dicofol		ND(1.00)	ug/L
Dicrotophos		ND(2.00)	ug/L
Dieldrin		ND(0.0400)	ug/L
Dimethoate		ND(2.00)	ug/L
Dioxathion		ND(5.00)	ug/L
Disulfoton		ND(2.00)	ug/L
Endosulfan I		ND(0.100)	ug/L
Endosulfan II		ND(1.00)	ug/L
Endosulfan Sulfate		ND(0.100)	ug/L
Endrin		ND(0.200)	ug/L
Endrin Aldehyde		ND(0.100)	ug/L
Endrin Ketone		ND(0.100)	ug/L
EPN		ND(2.00)	ug/L
Ethalfuralin		ND(0.100)	ug/L
Ethion		ND(2.00)	ug/L
Ethoprop		ND(2.00)	ug/L
Etridiazole		ND(0.200)	ug/L
Famphur		ND(5.00)	ug/L
Fenarimol		ND(0.200)	ug/L
Fensulfothion		ND(5.00)	ug/L
Fenthion		ND(2.00)	ug/L
gamma-BHC		ND(0.0500)	ug/L
gamma-Chlordane		ND(0.0500)	ug/L
Heptachlor		ND(0.100)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization	Day 2 65215	Unit
Pesticides		
Heptachlor Epoxide	ND(0.0500)	ug/L
Hexamethylphosphoramide	ND(2.00)	ug/L
Isodrin	ND(0.100)	ug/L
Isopropalin	ND(0.200)	ug/L
Kepone	ND(1.00)	ug/L
Leptophos	ND(2.00)	ug/L
Malathion	ND(2.00)	ug/L
Merphos A	ND(2.00)	ug/L
Merphos B	ND(2.00)	ug/L
Methamidophos	ND(20.0)	ug/L
Methoxychlor	ND(0.200)	ug/L
Methyl Parathion	ND(2.00)	ug/L
Methyl Trithion	ND(5.00)	ug/L
Metribuzin	ND(0.100)	ug/L
Mevinphos	ND(5.00)	ug/L
Mirex	ND(0.200)	ug/L
Monocrotophos	ND(20.0)	ug/L
Naled	ND(2.00)	ug/L
Nitrofen	ND(0.200)	ug/L
Norflurazon	EXCLUDE	ug/L
Parathion (ethyl)	ND(2.00)	ug/L
PCB 1016	ND(1.00)	ug/L
PCB 1221	ND(1.00)	ug/L
PCB 1232	ND(1.00)	ug/L
PCB 1242	ND(1.00)	ug/L
PCB 1248	ND(1.00)	ug/L
PCB 1254	ND(1.00)	ug/L
PCB 1260	ND(1.00)	ug/L
Pendamethalin	ND(0.500)	ug/L
Pentachloronitrobenzene (PCNB)	ND(0.0500)	ug/L
Perthane	ND(10.0)	ug/L
Phorate	ND(2.00)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-5, Galley Wastewater Characterization		Day 2 65215	Unit
Pesticides			
Phosmet		ND(5.00)	ug/L
Phosphamidon E		ND(1.00)	ug/L
Phosphamidon Z		ND(1.00)	ug/L
Propachlor		ND(0.100)	ug/L
Propanil		ND(1.00)	ug/L
Propazine		ND(1.00)	ug/L
Ronnel		ND(2.00)	ug/L
Simazine		ND(8.00)	ug/L
Strobane		ND(5.00)	ug/L
Sulfotep		ND(2.00)	ug/L
Sulprofos		ND(2.00)	ug/L
Tepp		ND(2.00)	ug/L
Terbacil		ND(2.00)	ug/L
Terbufos		ND(2.00)	ug/L
Terbutylazine		ND(5.00)	ug/L
Tetrachlorvinphos		ND(2.00)	ug/L
Tokuthion		ND(2.00)	ug/L
Toxaphene		ND(5.00)	ug/L
trans-Permethrin		ND(2.00)	ug/L
Triadimefon		ND(1.00)	ug/L
Trichlorfon		ND(5.00)	ug/L
Trichloronate		ND(2.00)	ug/L
Tricresylphosphate		ND(20.0)	ug/L
Trifluralin		ND(0.100)	ug/L
Trimethylphosphate		ND(2.00)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Classical Pollutants						
Alkalinity	311	435	323	376	368	mg/L
Ammonia As Nitrogen (NH ₃ -N)	60.0	84.0	63.0	80.0	68.0	mg/L
Available Cyanide	10.4	ND(2.00)	7.54	35.4	16.0	ug/L
Biochemical Oxygen Demand (BOD)	504	786	576	481	537	mg/L
Chemical Oxygen Demand (COD)	799	1,960	1,300	2,040	1,280	mg/L
Chloride	72.0	88.0	75.0	84.0	76.0	mg/L
Hardness	47.6	78.3	68.5	74.6	71.0	mg/L
Hexane Extractable Material (HEM)	41.0	79.0	127	154	88.0	mg/L
Nitrate/Nitrite (NO ₂ + NO ₃ -N)	0.0600	0.0700	ND(0.0500)	ND(0.0500)	ND(0.0500)	mg/L
Settleable residue	40.0	82.0	22.0	66.0	69.0	mL/L
Silica Gel Treated HEM (SGT-HEM)	6.10	7.00	48.0	12.0	10.0	mg/L
Sulfate	26.0	33.0	30.0	32.0	28.0	mg/L
P121 Total Cyanide	ND(0.00500)	ND(0.00500)	ND(0.00500)	ND(0.00500)	ND(0.00500)	mg/L
Total Dissolved Solids (TDS)	453	492	510	435	432	mg/L
Total Kjeldahl Nitrogen (TKN)	91.0	141	103	86.0	103	mg/L
Total Organic Carbon (TOC)	182	187	192	235	195	mg/L
Total Phosphorus	10.0	13.0	13.0	19.0	20.0	mg/L
Total Suspended Solids (TSS)	473	805	630	655	710	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Total and Dissolved Metals						
Aluminum	419	597	508	597	532	ug/L
P114 Antimony	ND(5.97)	ND(5.97)	ND(5.97)	ND(5.97)	ND(5.97)	ug/L
P115 Arsenic	ND(2.32)	2.60	ND(2.32)	ND(2.32)	2.50	ug/L
Barium	59.1	71.0	64.6	65.2	60.6	ug/L
P117 Beryllium	ND(0.0540)	ND(0.0540)	ND(0.0540)	ND(0.0540)	ND(0.0540)	ug/L
Boron	62.1	69.3	77.9	72.1	59.0	ug/L
P118 Cadmium	ND(0.446)	0.460	ND(0.446)	ND(0.446)	ND(0.446)	ug/L
Calcium	13,300	23,200	20,900	22,600	20,800	ug/L
P119 Chromium	ND(1.68)	3.70	2.00	3.70	4.00	ug/L
Cobalt	ND(0.914)	ND(0.914)	ND(0.914)	ND(0.914)	ND(0.914)	ug/L
P120 Copper	185	314	285	263	184	ug/L
Iron	1,590	1,590	1,740	1,700	1,430	ug/L
P122 Lead	14.8	9.20	4.90	3.90	ND(3.08)	ug/L
Magnesium	3,500	4,940	3,970	4,420	4,630	ug/L
Manganese	48.3	67.7	56.5	61.8	61.1	ug/L
P123 Mercury	0.360	0.500	0.520	ND(0.0170)	0.720	ug/L
Molybdenum	ND(1.50)	ND(1.50)	ND(1.50)	ND(1.50)	ND(1.50)	ug/L
P124 Nickel	35.7	33.0	24.2	21.6	21.9	ug/L
P125 Selenium	1.10	1.50	1.00	1.30	1.40	ug/L
P126 Silver	ND(1.28)	1.70	ND(1.28)	1.30	3.90	ug/L
Sodium	76,000	91,900	80,200	74,400	68,200	ug/L
P127 Thallium	ND(0.00900)	ND(0.00900)	ND(0.00900)	ND(0.00900)	ND(0.00900)	ug/L
Tin	ND(3.45)	ND(3.45)	ND(3.45)	6.80	4.40	ug/L
Titanium	1.90	2.80	2.10	2.40	3.40	ug/L
Vanadium	ND(0.679)	ND(0.679)	ND(0.679)	ND(0.679)	ND(0.679)	ug/L
Yttrium	ND(0.222)	ND(0.222)	ND(0.222)	ND(0.222)	ND(0.222)	ug/L
P128 Zinc	1,300	1,080	841	797	719	ug/L
Aluminum, Dissolved	107	31.0	51.4	238	65.3	ug/L
P114 Antimony, Dissolved	ND(5.97)	ND(5.97)	ND(5.97)	ND(5.97)	ND(5.97)	ug/L
P115 Arsenic, Dissolved	ND(2.32)	ND(2.32)	ND(2.32)	ND(2.32)	ND(2.32)	ug/L
Barium, Dissolved	19.8	14.5	18.1	34.1	15.7	ug/L
P117 Beryllium, Dissolved	ND(0.0540)	ND(0.0540)	ND(0.0540)	ND(0.0540)	ND(0.0540)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

	Day 1	Day 2	Day 3	Day 4	Day 5	Unit
SP-6, Influent to Wastewater Treatment System	65219	65223	65227	65231	65235	
Total and Dissolved Metals						
Boron, Dissolved	63.2	68.8	71.2	72.8	62.3	ug/L
P118 Cadmium, Dissolved	ND(0.446)	ND(0.446)	ND(0.446)	ND(0.446)	ND(0.446)	ug/L
Calcium, Dissolved	9,600	12,700	13,900	17,500	13,200	ug/L
P119 Chromium, Dissolved	ND(1.68)	ND(1.68)	ND(1.68)	ND(1.68)	ND(1.68)	ug/L
Cobalt, Dissolved	4.00	4.10	3.00	2.10	4.20	ug/L
P120 Copper, Dissolved	44.5	37.1	42.8	136	34.4	ug/L
Iron, Dissolved	624	395	512	921	419	ug/L
P122 Lead, Dissolved	3.10	ND(3.08)	ND(3.08)	ND(3.08)	ND(3.08)	ug/L
Magnesium, Dissolved	2,780	3,680	3,020	3,900	3,480	ug/L
Manganese, Dissolved	18.1	20.8	17.2	37.6	20.7	ug/L
P123 Mercury, Dissolved	0.350	0.320	0.330	0.420	0.380	ug/L
Molybdenum, Dissolved	ND(1.50)	ND(1.50)	ND(1.50)	ND(1.50)	ND(1.50)	ug/L
P124 Nickel, Dissolved	33.3	26.3	20.7	17.2	16.0	ug/L
P125 Selenium, Dissolved	0.870	1.20	0.840	1.00	1.00	ug/L
P126 Silver, Dissolved	ND(1.28)	ND(1.28)	ND(1.28)	ND(1.28)	ND(1.28)	ug/L
Sodium, Dissolved	73,900	86,000	72,900	75,200	65,400	ug/L
P127 Thallium, Dissolved	ND(0.00900)	ND(0.00900)	ND(0.00900)	ND(0.00900)	ND(0.00900)	ug/L
Tin, Dissolved	ND(3.45)	ND(3.45)	ND(3.45)	ND(3.45)	ND(3.45)	ug/L
Titanium, Dissolved	ND(0.253)	ND(0.253)	ND(0.253)	0.560	ND(0.253)	ug/L
Vanadium, Dissolved	ND(0.679)	ND(0.679)	ND(0.679)	ND(0.679)	ND(0.679)	ug/L
Yttrium, Dissolved	ND(0.222)	ND(0.222)	ND(0.222)	ND(0.222)	ND(0.222)	ug/L
P128 Zinc, Dissolved	634	288	199	357	111	ug/L

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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Volatile and Semivolatile Organics						
P011 1,1,1-Trichloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P015 1,1,2,2-Tetrachloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P014 1,1,2-Trichloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P013 1,1-Dichloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P029 1,1-Dichloroethene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P008 1,2,4-Trichlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P025 1,2-Dichlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P010 1,2-Dichloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P032 1,2-Dichloropropane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P026 1,3-Dichlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P027 1,4-Dichlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P021 2,4,6-Trichlorophenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P031 2,4-Dichlorophenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P034 2,4-Dimethylphenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P059 2,4-Dinitrophenol	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
P035 2,4-Dinitrotoluene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P036 2,6-Dinitrotoluene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P019 2-Chloroethylvinyl Ether	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
P020 2-Chloronaphthalene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P024 2-Chlorophenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P057 2-Nitrophenol	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P028 3,3'-Dichlorobenzidine	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
4,6-Dinitro-2-methylphenol	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
4-Bromophenyl-phenylether	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P022 4-Chloro-3-methylphenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
4-Chlorophenyl-phenylether	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P058 4-Nitrophenol	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
P001 Acenaphthene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P077 Acenaphthylene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P078 Anthracene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P004 Benzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P005 Benzidine	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Volatile and Semivolatile Organics						
P072 Benzo(a)anthracene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P073 Benzo(a)pyrene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P074 Benzo(b)fluoranthene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Benzo(g,h,i)perylene	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P075 Benzo(k)fluoranthene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P043 Bis(2-chloroethoxy)methane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
bis(-2-Chloroethyl)ether	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P042 Bis(2-chloroisopropyl) Ether	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P066 Bis(2-ethylhexyl) Phthalate	10.1	15.3	20.3	24.0	ND(10.0)	ug/L
P048 Bromodichloromethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Bromoform	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P046 Bromomethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P067 Butyl Benzyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Carbon tetrachloride	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P007 Chlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P016 Chloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P023 Chloroform	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P045 Chloromethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P076 Chrysene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
cis-1,3-Dichloropropene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Dibenz(a,h)anthracene	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P051 Dibromochloromethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P070 Diethyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P071 Dimethyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P068 Di-n-butyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P069 Di-n-octyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P038 Ethylbenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P039 Fluoranthene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P080 Fluorene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P009 Hexachlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P052 Hexachlorobutadiene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P053 Hexachlorocyclopentadiene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L

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NC – Not collected.

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Volatile and Semivolatile Organics						
P012 Hexachloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P083 Indeno(1,2,3-cd)pyrene	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P054 Isophorone	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P044 Methylene Chloride	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P055 Naphthalene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P056 Nitrobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P061 N-Nitrosodimethylamine	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
N-Nitroso-di-n-propylamine	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P062 N-Nitrosodiphenylamine	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P064 Pentachlorophenol	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
P081 Phenanthrene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P065 Phenol	13.9	15.0	13.4	ND(10.0)	25.1	ug/L
P084 Pyrene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P085 Tetrachloroethene	443	274	147	1,360	2,740	ug/L
P086 Toluene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P030 trans-1,2-Dichloroethene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P033 trans-1,3-Dichloropropene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P087 Trichloroethene	32.2	20.1	24.4	66.9	58.0	ug/L
Trichlorofluoromethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P088 Vinyl Chloride	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L

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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Pesticides						
1,2-Dibromo-3-chloropropane	NC	NC	ND(0.200)	NC	NC	ug/L
4,4'-DDD	NC	NC	ND(0.200)	NC	NC	ug/L
4,4'-DDE	NC	NC	ND(0.100)	NC	NC	ug/L
4,4'-DDT	NC	NC	ND(0.100)	NC	NC	ug/L
Acephate	NC	NC	EXCLUDE	NC	NC	ug/L
Alachlor	NC	NC	ND(0.200)	NC	NC	ug/L
Aldrin	NC	NC	ND(0.200)	NC	NC	ug/L
alpha-BHC	NC	NC	ND(0.0500)	NC	NC	ug/L
alpha-Chlordane	NC	NC	ND(0.100)	NC	NC	ug/L
Atrazine	NC	NC	ND(10.0)	NC	NC	ug/L
Azinphos Ethyl	NC	ND(2.00)	NC	NC	NC	ug/L
Azinphos Methyl	NC	ND(1.00)	NC	NC	NC	ug/L
Benfluralin	NC	NC	ND(0.200)	NC	NC	ug/L
beta-BHC	NC	NC	ND(0.100)	NC	NC	ug/L
Bromacil	NC	NC	ND(1.00)	NC	NC	ug/L
Bromoxynil Octanoate	NC	NC	ND(0.500)	NC	NC	ug/L
Butachlor	NC	NC	ND(0.500)	NC	NC	ug/L
Captafol	NC	NC	ND(2.00)	NC	NC	ug/L
Captan	NC	NC	ND(1.00)	NC	NC	ug/L
Carbophenothion	NC	NC	ND(1.00)	NC	NC	ug/L
Chlorfenvinphos	NC	ND(2.00)	NC	NC	NC	ug/L
Chlorobenzilate	NC	NC	ND(1.00)	NC	NC	ug/L
Chloroneb	NC	NC	ND(1.00)	NC	NC	ug/L
Chloropropylate	NC	NC	ND(1.00)	NC	NC	ug/L
Chlorothalonil	NC	NC	ND(0.200)	NC	NC	ug/L
Chlorpyrifos	NC	ND(2.00)	NC	NC	NC	ug/L
cis-Permethrin	NC	NC	ND(2.00)	NC	NC	ug/L
Coumaphos	NC	ND(5.00)	NC	NC	NC	ug/L
Crotoxyphos	NC	ND(5.00)	NC	NC	NC	ug/L
Dacthal (DCPS)	NC	NC	ND(0.0500)	NC	NC	ug/L
DEF	NC	ND(2.00)	NC	NC	NC	ug/L
delta-BHC	NC	NC	ND(0.0500)	NC	NC	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Pesticides						
Demeton A	NC	ND(4.00)	NC	NC	NC	ug/L
Demeton B	NC	ND(4.00)	NC	NC	NC	ug/L
Diallate A	NC	NC	ND(2.00)	NC	NC	ug/L
Diallate B	NC	NC	ND(2.00)	NC	NC	ug/L
Diazinon	NC	ND(2.00)	NC	NC	NC	ug/L
Dichlofenthion	NC	ND(2.00)	NC	NC	NC	ug/L
Dichlone	NC	NC	ND(0.200)	NC	NC	ug/L
Dichlorvos	NC	ND(5.00)	NC	NC	NC	ug/L
Dicofol	NC	NC	ND(1.00)	NC	NC	ug/L
Dicrotophos	NC	ND(2.00)	NC	NC	NC	ug/L
Dieldrin	NC	NC	ND(0.0400)	NC	NC	ug/L
Dimethoate	NC	ND(2.00)	NC	NC	NC	ug/L
Dioxathion	NC	ND(5.00)	NC	NC	NC	ug/L
Disulfoton	NC	ND(2.00)	NC	NC	NC	ug/L
Endosulfan I	NC	NC	ND(0.100)	NC	NC	ug/L
Endosulfan II	NC	NC	ND(1.00)	NC	NC	ug/L
Endosulfan Sulfate	NC	NC	ND(0.100)	NC	NC	ug/L
Endrin	NC	NC	ND(0.200)	NC	NC	ug/L
Endrin Aldehyde	NC	NC	ND(0.100)	NC	NC	ug/L
Endrin Ketone	NC	NC	ND(0.100)	NC	NC	ug/L
EPN	NC	ND(2.00)	NC	NC	NC	ug/L
Ethalfuralin	NC	NC	ND(0.100)	NC	NC	ug/L
Ethion	NC	ND(2.00)	NC	NC	NC	ug/L
Ethoprop	NC	ND(2.00)	NC	NC	NC	ug/L
Etridiazole	NC	NC	ND(0.200)	NC	NC	ug/L
Famphur	NC	ND(5.00)	NC	NC	NC	ug/L
Fenarimol	NC	NC	ND(0.200)	NC	NC	ug/L
Fensulfothion	NC	ND(5.00)	NC	NC	NC	ug/L
Fenthion	NC	ND(2.00)	NC	NC	NC	ug/L
gamma-BHC	NC	NC	ND(0.0500)	NC	NC	ug/L
gamma-Chlordane	NC	NC	ND(0.0500)	NC	NC	ug/L
Heptachlor	NC	NC	ND(0.100)	NC	NC	ug/L

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NC – Not collected.

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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Pesticides						
Heptachlor Epoxide	NC	NC	ND(0.0500)	NC	NC	ug/L
Hexamethylphosphoramide	NC	ND(2.00)	NC	NC	NC	ug/L
Isodrin	NC	NC	ND(0.100)	NC	NC	ug/L
Isopropalin	NC	NC	ND(0.200)	NC	NC	ug/L
Kepone	NC	NC	ND(1.00)	NC	NC	ug/L
Leptophos	NC	ND(2.00)	NC	NC	NC	ug/L
Malathion	NC	ND(2.00)	NC	NC	NC	ug/L
Merphos A	NC	ND(2.00)	NC	NC	NC	ug/L
Merphos B	NC	ND(2.00)	NC	NC	NC	ug/L
Methamidophos	NC	ND(20.0)	NC	NC	NC	ug/L
Methoxychlor	NC	NC	ND(0.200)	NC	NC	ug/L
Methyl Parathion	NC	ND(2.00)	NC	NC	NC	ug/L
Methyl Trithion	NC	ND(5.00)	NC	NC	NC	ug/L
Metribuzin	NC	NC	ND(0.100)	NC	NC	ug/L
Mevinphos	NC	ND(5.00)	NC	NC	NC	ug/L
Mirex	NC	NC	ND(0.200)	NC	NC	ug/L
Monocrotophos	NC	ND(20.0)	NC	NC	NC	ug/L
Naled	NC	ND(2.00)	NC	NC	NC	ug/L
Nitrofen	NC	NC	ND(0.200)	NC	NC	ug/L
Norflurazon	NC	NC	EXCLUDE	NC	NC	ug/L
Parathion (ethyl)	NC	ND(2.00)	NC	NC	NC	ug/L
PCB 1016	NC	NC	ND(1.00)	NC	NC	ug/L
PCB 1221	NC	NC	ND(1.00)	NC	NC	ug/L
PCB 1232	NC	NC	ND(1.00)	NC	NC	ug/L
PCB 1242	NC	NC	ND(1.00)	NC	NC	ug/L
PCB 1248	NC	NC	ND(1.00)	NC	NC	ug/L
PCB 1254	NC	NC	ND(1.00)	NC	NC	ug/L
PCB 1260	NC	NC	ND(1.00)	NC	NC	ug/L
Pendamethalin	NC	NC	ND(0.500)	NC	NC	ug/L
Pentachloronitrobenzene (PCNB)	NC	NC	ND(0.0500)	NC	NC	ug/L
Perthane	NC	NC	ND(10.0)	NC	NC	ug/L
Phorate	NC	ND(2.00)	NC	NC	NC	ug/L

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NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Pesticides						
Phosmet	NC	ND(5.00)	NC	NC	NC	ug/L
Phosphamidon E	NC	ND(1.00)	NC	NC	NC	ug/L
Phosphamidon Z	NC	ND(1.00)	NC	NC	NC	ug/L
Propachlor	NC	NC	ND(0.100)	NC	NC	ug/L
Propanil	NC	NC	ND(1.00)	NC	NC	ug/L
Propazine	NC	NC	ND(1.00)	NC	NC	ug/L
Ronnel	NC	ND(2.00)	NC	NC	NC	ug/L
Simazine	NC	NC	ND(0.100)	NC	NC	ug/L
Strobane	NC	NC	ND(5.00)	NC	NC	ug/L
Sulfotep	NC	ND(2.00)	NC	NC	NC	ug/L
Sulprofos	NC	ND(2.00)	NC	NC	NC	ug/L
Tepp	NC	ND(2.00)	NC	NC	NC	ug/L
Terbacil	NC	NC	ND(2.00)	NC	NC	ug/L
Terbufos	NC	ND(2.00)	NC	NC	NC	ug/L
Terbuthylazine	NC	NC	ND(5.00)	NC	NC	ug/L
Tetrachlorvinphos	NC	ND(2.00)	NC	NC	NC	ug/L
Tokuthion	NC	ND(2.00)	NC	NC	NC	ug/L
Toxaphene	NC	NC	ND(5.00)	NC	NC	ug/L
trans-Permethrin	NC	NC	ND(2.00)	NC	NC	ug/L
Triadimefon	NC	NC	ND(1.00)	NC	NC	ug/L
Trichlorfon	NC	ND(5.00)	NC	NC	NC	ug/L
Trichloronate	NC	ND(2.00)	NC	NC	NC	ug/L
Tricresylphosphate	NC	ND(20.0)	NC	NC	NC	ug/L
Trifluralin	NC	NC	ND(0.100)	NC	NC	ug/L
Trimethylphosphate	NC	ND(2.00)	NC	NC	NC	ug/L

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NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Polychlorinated Biphenyls						
Decachloro biphenyl	ND(549)	NC	NC	NC	NC	pg/L
PCB-1	ND(220)	NC	NC	NC	NC	pg/L
PCB-2	ND(11.0)	NC	NC	NC	NC	pg/L
PCB-3	ND(220)	NC	NC	NC	NC	pg/L
PCB-4	ND(549)	NC	NC	NC	NC	pg/L
PCB-5	ND(54.9)	NC	NC	NC	NC	pg/L
PCB-6	60.0	NC	NC	NC	NC	pg/L
PCB-7	ND(54.9)	NC	NC	NC	NC	pg/L
PCB-8	ND(549)	NC	NC	NC	NC	pg/L
PCB-9	ND(54.9)	NC	NC	NC	NC	pg/L
PCB-10	ND(54.9)	NC	NC	NC	NC	pg/L
PCB-11	496	NC	NC	NC	NC	pg/L
PCB-12+PCB-13	ND(110)	NC	NC	NC	NC	pg/L
PCB-14	ND(110)	NC	NC	NC	NC	pg/L
PCB-15	ND(549)	NC	NC	NC	NC	pg/L
PCB-16	124	NC	NC	NC	NC	pg/L
PCB-17	ND(220)	NC	NC	NC	NC	pg/L
PCB-18+PCB-30	ND(549)	NC	NC	NC	NC	pg/L
PCB-19	ND(110)	NC	NC	NC	NC	pg/L
PCB-20+PCB-28	ND(549)	NC	NC	NC	NC	pg/L
PCB-21+PCB-33	230	NC	NC	NC	NC	pg/L
PCB-22	ND(220)	NC	NC	NC	NC	pg/L
PCB-23	ND(220)	NC	NC	NC	NC	pg/L
PCB-24	ND(220)	NC	NC	NC	NC	pg/L
PCB-25	ND(220)	NC	NC	NC	NC	pg/L
PCB-26+PCB-29	ND(220)	NC	NC	NC	NC	pg/L
PCB-27	ND(220)	NC	NC	NC	NC	pg/L
PCB-31	ND(549)	NC	NC	NC	NC	pg/L
PCB-32	ND(220)	NC	NC	NC	NC	pg/L
PCB-34	ND(220)	NC	NC	NC	NC	pg/L
PCB-35	ND(220)	NC	NC	NC	NC	pg/L
PCB-36	ND(220)	NC	NC	NC	NC	pg/L

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NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Polychlorinated Biphenyls						
PCB-37	ND(549)	NC	NC	NC	NC	pg/L
PCB-38	ND(220)	NC	NC	NC	NC	pg/L
PCB-39	ND(220)	NC	NC	NC	NC	pg/L
PCB-40+PCB-41+PCB-71	ND(549)	NC	NC	NC	NC	pg/L
PCB-42	ND(220)	NC	NC	NC	NC	pg/L
PCB-43	ND(220)	NC	NC	NC	NC	pg/L
PCB-44+PCB-47+PCB-65	ND(549)	NC	NC	NC	NC	pg/L
PCB-45+PCB-51	ND(220)	NC	NC	NC	NC	pg/L
PCB-46	ND(220)	NC	NC	NC	NC	pg/L
PCB-48	ND(220)	NC	NC	NC	NC	pg/L
PCB-49+PCB-69	ND(549)	NC	NC	NC	NC	pg/L
PCB-50+PCB-53	ND(220)	NC	NC	NC	NC	pg/L
PCB-52	ND(549)	NC	NC	NC	NC	pg/L
PCB-54	ND(549)	NC	NC	NC	NC	pg/L
PCB-55	ND(549)	NC	NC	NC	NC	pg/L
PCB-56	ND(220)	NC	NC	NC	NC	pg/L
PCB-57	ND(549)	NC	NC	NC	NC	pg/L
PCB-58	ND(549)	NC	NC	NC	NC	pg/L
PCB-59+PCB-62+PCB-75	ND(220)	NC	NC	NC	NC	pg/L
PCB-60	ND(549)	NC	NC	NC	NC	pg/L
PCB-61+PCB-70+PCB-74+PCB-76	ND(549)	NC	NC	NC	NC	pg/L
PCB-63	ND(549)	NC	NC	NC	NC	pg/L
PCB-64	ND(220)	NC	NC	NC	NC	pg/L
PCB-66	ND(549)	NC	NC	NC	NC	pg/L
PCB-67	ND(549)	NC	NC	NC	NC	pg/L
PCB-68	ND(549)	NC	NC	NC	NC	pg/L
PCB-72	ND(549)	NC	NC	NC	NC	pg/L
PCB-73	ND(549)	NC	NC	NC	NC	pg/L
PCB-77	ND(549)	NC	NC	NC	NC	pg/L
PCB-78	ND(549)	NC	NC	NC	NC	pg/L
PCB-79	ND(549)	NC	NC	NC	NC	pg/L
PCB-80	ND(549)	NC	NC	NC	NC	pg/L

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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Polychlorinated Biphenyls						
PCB-81	ND(549)	NC	NC	NC	NC	pg/L
PCB-82	ND(549)	NC	NC	NC	NC	pg/L
PCB-83+PCB-99	ND(549)	NC	NC	NC	NC	pg/L
PCB-84	ND(549)	NC	NC	NC	NC	pg/L
PCB-85+PCB-116+PCB-117	ND(220)	NC	NC	NC	NC	pg/L
PCB-86+PCB-87+PCB-97+PCB-108+PCB-	ND(549)	NC	NC	NC	NC	pg/L
PCB-88+PCB-91	ND(549)	NC	NC	NC	NC	pg/L
PCB-89	ND(549)	NC	NC	NC	NC	pg/L
PCB-90+PCB-101+PCB-113	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-92	ND(549)	NC	NC	NC	NC	pg/L
PCB-93+PCB-95+PCB-98+PCB-100+PCB-	ND(549)	NC	NC	NC	NC	pg/L
PCB-94	ND(549)	NC	NC	NC	NC	pg/L
PCB-96	ND(549)	NC	NC	NC	NC	pg/L
PCB-103	ND(549)	NC	NC	NC	NC	pg/L
PCB-104	ND(549)	NC	NC	NC	NC	pg/L
PCB-105	ND(220)	NC	NC	NC	NC	pg/L
PCB-106	ND(549)	NC	NC	NC	NC	pg/L
PCB-107+PCB-124	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-109	ND(220)	NC	NC	NC	NC	pg/L
PCB-110+PCB-115	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-111	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-112	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-114	ND(549)	NC	NC	NC	NC	pg/L
PCB-118	ND(549)	NC	NC	NC	NC	pg/L
PCB-120	ND(549)	NC	NC	NC	NC	pg/L
PCB-121	ND(549)	NC	NC	NC	NC	pg/L
PCB-122	ND(549)	NC	NC	NC	NC	pg/L
PCB-123	ND(549)	NC	NC	NC	NC	pg/L
PCB-126	ND(549)	NC	NC	NC	NC	pg/L
PCB-127	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-128+PCB-166	ND(549)	NC	NC	NC	NC	pg/L
PCB-129+PCB-138+PCB-160+PCB-163	ND(549)	NC	NC	NC	NC	pg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Polychlorinated Biphenyls						
PCB-130	ND(549)	NC	NC	NC	NC	pg/L
PCB-131	ND(549)	NC	NC	NC	NC	pg/L
PCB-132	ND(549)	NC	NC	NC	NC	pg/L
PCB-133	ND(549)	NC	NC	NC	NC	pg/L
PCB-134+PCB-143	ND(549)	NC	NC	NC	NC	pg/L
PCB-135+PCB-151+PCB-154	ND(549)	NC	NC	NC	NC	pg/L
PCB-136	ND(220)	NC	NC	NC	NC	pg/L
PCB-137	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-139+PCB-140	ND(549)	NC	NC	NC	NC	pg/L
PCB-141	ND(220)	NC	NC	NC	NC	pg/L
PCB-142	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-144	ND(549)	NC	NC	NC	NC	pg/L
PCB-145	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-146	ND(549)	NC	NC	NC	NC	pg/L
PCB-147+PCB-149	ND(549)	NC	NC	NC	NC	pg/L
PCB-148	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-150	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-152	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-153+PCB-168	610	NC	NC	NC	NC	pg/L
PCB-155	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-156+PCB-157	ND(549)	NC	NC	NC	NC	pg/L
PCB-158	ND(220)	NC	NC	NC	NC	pg/L
PCB-159	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-161	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-162	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-164	ND(549)	NC	NC	NC	NC	pg/L
PCB-165	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-167	ND(549)	NC	NC	NC	NC	pg/L
PCB-169	ND(549)	NC	NC	NC	NC	pg/L
PCB-170	ND(549)	NC	NC	NC	NC	pg/L
PCB-171+PCB-173	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-172	ND(1,100)	NC	NC	NC	NC	pg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Polychlorinated Biphenyls						
PCB-174	ND(549)	NC	NC	NC	NC	pg/L
PCB-175	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-176	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-177	ND(549)	NC	NC	NC	NC	pg/L
PCB-178	ND(549)	NC	NC	NC	NC	pg/L
PCB-179	ND(549)	NC	NC	NC	NC	pg/L
PCB-180+PCB-193	ND(549)	NC	NC	NC	NC	pg/L
PCB-181	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-182	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-183+PCB-185	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-184	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-186	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-187	ND(549)	NC	NC	NC	NC	pg/L
PCB-188	ND(549)	NC	NC	NC	NC	pg/L
PCB-189	ND(549)	NC	NC	NC	NC	pg/L
PCB-190	ND(549)	NC	NC	NC	NC	pg/L
PCB-191	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-192	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-194	ND(549)	NC	NC	NC	NC	pg/L
PCB-195	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-196	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-197+PCB-200	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-198+PCB-199	ND(549)	NC	NC	NC	NC	pg/L
PCB-201	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-202	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-203	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-204	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-205	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-206	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-207	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-208	ND(1,100)	NC	NC	NC	NC	pg/L
PCB-209	ND(549)	NC	NC	NC	NC	pg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Microbiologicals
Holland America Veendam**

SP-6, Influent to Wastewater Treatment System	Day 1 65219	Day 2 65223	Day 3 65227	Day 4 65231	Day 5 65235	Unit
Polychlorinated Biphenyls						
Total Dichloro Biphenyls	556	NC	NC	NC	NC	pg/L
Total Heptachloro Biphenyls	ND(1,100)	NC	NC	NC	NC	pg/L
Toal Hexachloro Biphenyls	610	NC	NC	NC	NC	pg/L
Total Monochloro Biphenyls	ND(220)	NC	NC	NC	NC	pg/L
Total Nonachloro Biphenyls	ND(1,100)	NC	NC	NC	NC	pg/L
Total Octachloro Biphenyls	ND(1,100)	NC	NC	NC	NC	pg/L
Total PCBs	1,520	NC	NC	NC	NC	pg/L
Total Pentachloro Biphenyls	ND(1,100)	NC	NC	NC	NC	pg/L
Total Tetrachloro Biphenyls	ND(549)	NC	NC	NC	NC	pg/L
Total Trichloro Biphenyls	354	NC	NC	NC	NC	pg/L

EXCLUDE - Data excluded from the data set (see data review narratives in Appendix D for details).

NC - Not collected.

ND - Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 3	Day 4	Unit
SP-7, Duplicate of Influent to Wastewater Treatment System	65228	65232	
Classical Pollutants			
Hexane Extractable Material (HEM)	131	174	mg/L
Silica Gel Treated HEM (SGT-HEM)	21.0	17.0	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-7, Duplicate of Influent to Wastewater Treatment System	Day 2 65239	Day 3 65240	Unit
Pesticides			
1,2-Dibromo-3-chloropropane	NC	ND(0.200)	ug/L
4,4'-DDD	NC	ND(0.200)	ug/L
4,4'-DDE	NC	ND(0.100)	ug/L
4,4'-DDT	NC	ND(0.100)	ug/L
Acephate	NC	ND(20.0)	ug/L
Alachlor	NC	ND(0.200)	ug/L
Aldrin	NC	ND(0.200)	ug/L
alpha-BHC	NC	ND(0.0500)	ug/L
alpha-Chlordane	NC	ND(0.100)	ug/L
Atrazine	NC	ND(10.0)	ug/L
Azinphos Ethyl	ND(2.00)	NC	ug/L
Azinphos Methyl	ND(1.00)	NC	ug/L
Benfluralin	NC	ND(0.200)	ug/L
beta-BHC	NC	ND(0.100)	ug/L
Bromacil	NC	ND(1.00)	ug/L
Bromoxynil Octanoate	NC	ND(0.500)	ug/L
Butachlor	NC	ND(0.500)	ug/L
Captafol	NC	ND(2.00)	ug/L
Captan	NC	ND(1.00)	ug/L
Carbophenothion	NC	ND(1.00)	ug/L
Chlorfenvinphos	ND(2.00)	NC	ug/L
Chlorobenzilate	NC	ND(1.00)	ug/L
Chloroneb	NC	ND(1.00)	ug/L
Chloropropylate	NC	ND(1.00)	ug/L
Chlorothalonil	NC	ND(0.200)	ug/L
Chlorpyrifos	ND(2.00)	NC	ug/L
cis-Permethrin	NC	ND(2.00)	ug/L
Coumaphos	ND(5.00)	NC	ug/L
Crotoxyphos	ND(5.00)	NC	ug/L
Dacthal (DCPS)	NC	ND(0.0500)	ug/L
DEF	ND(2.00)	NC	ug/L
delta-BHC	NC	ND(0.0500)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-7, Duplicate of Influent to Wastewater Treatment System	Day 2 65239	Day 3 65240	Unit
Pesticides			
Demeton A	ND(4.00)	NC	ug/L
Demeton B	ND(4.00)	NC	ug/L
Diallate A	NC	ND(2.00)	ug/L
Diallate B	NC	ND(2.00)	ug/L
Diazinon	ND(2.00)	NC	ug/L
Dichlofenthion	ND(2.00)	NC	ug/L
Dichlone	NC	ND(0.200)	ug/L
Dichlorvos	ND(5.00)	NC	ug/L
Dicofol	NC	ND(1.00)	ug/L
Dicrotophos	ND(2.00)	NC	ug/L
Dieldrin	NC	ND(0.0400)	ug/L
Dimethoate	ND(2.00)	NC	ug/L
Dioxathion	ND(5.00)	NC	ug/L
Disulfoton	ND(2.00)	NC	ug/L
Endosulfan I	NC	ND(0.100)	ug/L
Endosulfan II	NC	ND(1.00)	ug/L
Endosulfan Sulfate	NC	ND(0.100)	ug/L
Endrin	NC	ND(0.200)	ug/L
Endrin Aldehyde	NC	ND(0.100)	ug/L
Endrin Ketone	NC	ND(0.100)	ug/L
EPN	ND(2.00)	NC	ug/L
Ethalfuralin	NC	ND(0.100)	ug/L
Ethion	ND(2.00)	NC	ug/L
Ethoprop	ND(2.00)	NC	ug/L
Etridiazole	NC	ND(0.200)	ug/L
Famphur	ND(5.00)	NC	ug/L
Fenarimol	NC	ND(0.200)	ug/L
Fensulfothion	ND(5.00)	NC	ug/L
Fenthion	ND(2.00)	NC	ug/L
gamma-BHC	NC	ND(0.0500)	ug/L
gamma-Chlordane	NC	ND(0.0500)	ug/L
Heptachlor	NC	ND(0.100)	ug/L

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-7, Duplicate of Influent to Wastewater Treatment System	Day 2 65239	Day 3 65240	Unit
Pesticides			
Heptachlor Epoxide	NC	ND(0.0500)	ug/L
Hexamethylphosphoramide	ND(2.00)	NC	ug/L
Isodrin	NC	ND(0.100)	ug/L
Isopropalin	NC	ND(0.200)	ug/L
Kepone	NC	EXCLUDE	ug/L
Leptophos	ND(2.00)	NC	ug/L
Malathion	ND(2.00)	NC	ug/L
Merphos A	ND(2.00)	NC	ug/L
Merphos B	ND(2.00)	NC	ug/L
Methamidophos	ND(20.0)	NC	ug/L
Methoxychlor	NC	ND(0.200)	ug/L
Methyl Parathion	ND(2.00)	NC	ug/L
Methyl Trithion	ND(5.00)	NC	ug/L
Metribuzin	NC	ND(0.100)	ug/L
Mevinphos	ND(5.00)	NC	ug/L
Mirex	NC	ND(0.200)	ug/L
Monocrotophos	ND(20.0)	NC	ug/L
Naled	ND(2.00)	NC	ug/L
Nitrofen	NC	ND(0.200)	ug/L
Norflurazon	NC	EXCLUDE	ug/L
Parathion (ethyl)	ND(2.00)	NC	ug/L
PCB 1016	NC	ND(1.00)	ug/L
PCB 1221	NC	ND(1.00)	ug/L
PCB 1232	NC	ND(1.00)	ug/L
PCB 1242	NC	ND(1.00)	ug/L
PCB 1248	NC	ND(1.00)	ug/L
PCB 1254	NC	ND(1.00)	ug/L
PCB 1260	NC	ND(1.00)	ug/L
Pendamethalin	NC	ND(0.500)	ug/L
Pentachloronitrobenzene (PCNB)	NC	ND(0.0500)	ug/L
Perthane	NC	ND(10.0)	ug/L
Phorate	ND(2.00)	NC	ug/L

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-7, Duplicate of Influent to Wastewater Treatment System	Day 2 65239	Day 3 65240	Unit
Pesticides			
Phosmet	ND(5.00)	NC	ug/L
Phosphamidon E	ND(1.00)	NC	ug/L
Phosphamidon Z	ND(1.00)	NC	ug/L
Propachlor	NC	ND(0.100)	ug/L
Propanil	NC	ND(1.00)	ug/L
Propazine	NC	ND(1.00)	ug/L
Ronnel	ND(2.00)	NC	ug/L
Simazine	NC	ND(8.00)	ug/L
Strobane	NC	ND(5.00)	ug/L
Sulfotep	ND(2.00)	NC	ug/L
Sulprofos	ND(2.00)	NC	ug/L
Tepp	ND(2.00)	NC	ug/L
Terbacil	NC	ND(2.00)	ug/L
Terbufos	ND(2.00)	NC	ug/L
Terbutylazine	NC	ND(5.00)	ug/L
Tetrachlorvinphos	ND(2.00)	NC	ug/L
Tokuthion	ND(2.00)	NC	ug/L
Toxaphene	NC	ND(5.00)	ug/L
trans-Permethrin	NC	ND(2.00)	ug/L
Triadimefon	NC	ND(1.00)	ug/L
Trichlorfon	ND(5.00)	NC	ug/L
Trichloronate	ND(2.00)	NC	ug/L
Tricresylphosphate	ND(20.0)	NC	ug/L
Trifluralin	NC	ND(0.100)	ug/L
Trimethylphosphate	ND(2.00)	NC	ug/L

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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-9, Effluent from Wastewater Treatment	Day 1 65261	Day 2 65265	Day 3 65269	Day 4 65273	Day 5 65277	Unit
Classical Pollutants						
Alkalinity	222	261	252	244	242	mg/L
Ammonia As Nitrogen (NH ₃ -N)	11.0	12.0	12.0	28.0	29.0	mg/L
Available Cyanide	ND(2.00)	5.86	ND(2.00)	ND(2.00)	2.01	ug/L
Biochemical Oxygen Demand (BOD)	3.64	5.95	ND(2.00)	2.05	2.24	mg/L
Chemical Oxygen Demand (COD)	34.0	37.0	34.0	38.0	39.0	mg/L
Chloride	60.0	68.0	70.0	68.0	64.0	mg/L
Hardness	24.4	36.0	40.4	45.1	45.3	mg/L
Hexane Extractable Material (HEM)	ND(5.00)	ND(6.00)	ND(5.00)	ND(5.00)	ND(6.00)	mg/L
Nitrate/Nitrite (NO ₂ + NO ₃ -N)	ND(0.0500)	0.120	0.110	ND(0.0500)	ND(0.0500)	mg/L
Settleable residue	ND(0.100)	ND(0.130)	ND(0.110)	ND(0.110)	1.00	mL/L
Silica Gel Treated HEM (SGT-HEM)	ND(5.00)	ND(6.00)	ND(5.00)	ND(5.00)	ND(6.00)	mg/L
Sulfate	ND(3.00)	4.00	9.00	18.0	15.0	mg/L
P121 Total Cyanide	ND(0.00500)	ND(0.00500)	ND(0.00500)	ND(0.00500)	ND(0.00500)	mg/L
Total Dissolved Solids (TDS)	323	385	354	318	309	mg/L
Total Kjeldahl Nitrogen (TKN)	12.0	13.0	22.0	29.0	29.0	mg/L
Total Organic Carbon (TOC)	13.0	16.0	14.0	15.0	14.0	mg/L
Total Phosphorus	0.210	0.120	0.130	9.00	7.00	mg/L
Total Suspended Solids (TSS)	ND(5.00)	ND(5.00)	ND(5.00)	ND(5.00)	ND(5.00)	mg/L

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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-9, Effluent from Wastewater Treatment	Day 1 65261	Day 2 65265	Day 3 65269	Day 4 65273	Day 5 65277	Unit
Total and Dissolved Metals						
Aluminum	36.8	43.6	28.4	40.3	40.0	ug/L
P114 Antimony	ND(5.97)	ND(5.97)	ND(5.97)	ND(5.97)	ND(5.97)	ug/L
P115 Arsenic	ND(2.32)	ND(2.32)	ND(2.32)	ND(2.32)	ND(2.32)	ug/L
Barium	16.2	24.7	25.7	18.6	14.6	ug/L
P117 Beryllium	ND(0.0540)	ND(0.0540)	ND(0.0540)	ND(0.0540)	ND(0.0540)	ug/L
Boron	ND(3.37)	ND(3.37)	ND(3.37)	ND(3.37)	ND(3.37)	ug/L
P118 Cadmium	ND(0.446)	ND(0.446)	ND(0.446)	ND(0.446)	ND(0.446)	ug/L
Calcium	7,290	11,300	12,900	14,200	14,100	ug/L
P119 Chromium	ND(1.68)	ND(1.68)	ND(1.68)	ND(1.68)	ND(1.68)	ug/L
Cobalt	ND(0.914)	ND(0.914)	ND(0.914)	ND(0.914)	ND(0.914)	ug/L
P120 Copper	10.1	11.8	9.00	6.90	6.90	ug/L
Iron	376	296	364	283	171	ug/L
P122 Lead	ND(3.08)	ND(3.08)	ND(3.08)	ND(3.08)	ND(3.08)	ug/L
Magnesium	1,500	1,900	1,990	2,350	2,460	ug/L
Manganese	12.3	16.2	18.0	18.4	15.8	ug/L
P123 Mercury	ND(0.0170)	ND(0.0170)	ND(0.0170)	0.320	0.320	ug/L
Molybdenum	ND(1.50)	ND(1.50)	ND(1.50)	ND(1.50)	ND(1.50)	ug/L
P124 Nickel	23.9	18.3	14.2	11.8	8.00	ug/L
P125 Selenium	ND(0.572)	0.840	0.720	0.830	0.970	ug/L
P126 Silver	ND(1.28)	ND(1.28)	ND(1.28)	ND(1.28)	ND(1.28)	ug/L
Sodium	94,800	107,000	88,700	74,600	69,600	ug/L
P127 Thallium	ND(0.00900)	0.0100	ND(0.00900)	ND(0.00900)	ND(0.00900)	ug/L
Tin	ND(3.45)	ND(3.45)	ND(3.45)	ND(3.45)	ND(3.45)	ug/L
Titanium	ND(0.253)	ND(0.253)	ND(0.253)	ND(0.253)	ND(0.253)	ug/L
Vanadium	ND(0.679)	ND(0.679)	ND(0.679)	ND(0.679)	ND(0.679)	ug/L
Yttrium	ND(0.222)	ND(0.222)	ND(0.222)	ND(0.222)	ND(0.222)	ug/L
P128 Zinc	553	562	320	196	162	ug/L
Aluminum, Dissolved	33.1	41.9	34.3	38.6	34.6	ug/L
P114 Antimony, Dissolved	ND(5.97)	ND(5.97)	ND(5.97)	ND(5.97)	ND(5.97)	ug/L
P115 Arsenic, Dissolved	ND(2.32)	ND(2.32)	ND(2.32)	ND(2.32)	ND(2.32)	ug/L
Barium, Dissolved	15.4	24.5	26.3	18.2	14.5	ug/L
P117 Beryllium, Dissolved	ND(0.0540)	ND(0.0540)	ND(0.0540)	ND(0.0540)	ND(0.0540)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-9, Effluent from Wastewater Treatment	Day 1 65261	Day 2 65265	Day 3 65269	Day 4 65273	Day 5 65277	Unit
Total and Dissolved Metals						
Boron, Dissolved	ND(3.37)	ND(3.37)	ND(3.37)	ND(3.37)	20.7	ug/L
P118 Cadmium, Dissolved	ND(0.446)	ND(0.446)	ND(0.446)	ND(0.446)	ND(0.446)	ug/L
Calcium, Dissolved	7,100	11,200	13,200	14,000	14,000	ug/L
P119 Chromium, Dissolved	ND(1.68)	ND(1.68)	ND(1.68)	ND(1.68)	ND(1.68)	ug/L
Cobalt, Dissolved	1.00	ND(0.914)	ND(0.914)	ND(0.914)	1.50	ug/L
P120 Copper, Dissolved	8.70	11.0	7.20	5.60	7.50	ug/L
Iron, Dissolved	354	296	363	266	152	ug/L
P122 Lead, Dissolved	ND(3.08)	ND(3.08)	ND(3.08)	ND(3.08)	ND(3.08)	ug/L
Magnesium, Dissolved	1,460	1,880	2,050	2,320	2,440	ug/L
Manganese, Dissolved	14.2	16.1	19.1	19.4	18.3	ug/L
P123 Mercury, Dissolved	0.250	0.270	0.270	0.360	0.390	ug/L
Molybdenum, Dissolved	ND(1.50)	ND(1.50)	ND(1.50)	ND(1.50)	ND(1.50)	ug/L
P124 Nickel, Dissolved	23.6	18.8	14.8	11.7	8.40	ug/L
P125 Selenium, Dissolved	ND(0.572)	0.720	0.810	0.700	0.900	ug/L
P126 Silver, Dissolved	ND(1.28)	ND(1.28)	ND(1.28)	ND(1.28)	ND(1.28)	ug/L
Sodium, Dissolved	91,400	105,000	90,600	73,500	69,700	ug/L
P127 Thallium, Dissolved	ND(0.00900)	ND(0.00900)	ND(0.00900)	ND(0.00900)	ND(0.00900)	ug/L
Tin, Dissolved	ND(3.45)	ND(3.45)	ND(3.45)	ND(3.45)	ND(3.45)	ug/L
Titanium, Dissolved	ND(0.253)	ND(0.253)	0.340	ND(0.253)	ND(0.253)	ug/L
Vanadium, Dissolved	ND(0.679)	0.760	ND(0.679)	ND(0.679)	ND(0.679)	ug/L
Yttrium, Dissolved	ND(0.222)	ND(0.222)	ND(0.222)	ND(0.222)	ND(0.222)	ug/L
P128 Zinc, Dissolved	536	553	329	191	164	ug/L

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 NC – Not collected.
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Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-9, Effluent from Wastewater Treatment	Day 1 65261	Day 2 65265	Day 3 65269	Day 4 65273	Day 5 65277	Unit
Volatile and Semivolatile Organics						
P011 1,1,1-Trichloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P015 1,1,2,2-Tetrachloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P014 1,1,2-Trichloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P013 1,1-Dichloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P029 1,1-Dichloroethene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P008 1,2,4-Trichlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P025 1,2-Dichlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P010 1,2-Dichloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P032 1,2-Dichloropropane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P026 1,3-Dichlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P027 1,4-Dichlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P021 2,4,6-Trichlorophenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P031 2,4-Dichlorophenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P034 2,4-Dimethylphenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P059 2,4-Dinitrophenol	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
P035 2,4-Dinitrotoluene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P036 2,6-Dinitrotoluene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P019 2-Chloroethylvinyl Ether	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
P020 2-Chloronaphthalene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P024 2-Chlorophenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P057 2-Nitrophenol	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P028 3,3'-Dichlorobenzidine	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
4,6-Dinitro-2-methylphenol	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
4-Bromophenyl-phenylether	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P022 4-Chloro-3-methylphenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
4-Chlorophenyl-phenylether	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P058 4-Nitrophenol	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
P001 Acenaphthene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P077 Acenaphthylene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P078 Anthracene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P004 Benzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P005 Benzidine	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L

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**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-9, Effluent from Wastewater Treatment	Day 1 65261	Day 2 65265	Day 3 65269	Day 4 65273	Day 5 65277	Unit
Volatile and Semivolatile Organics						
P072 Benzo(a)anthracene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P073 Benzo(a)pyrene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P074 Benzo(b)fluoranthene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Benzo(g,h,i)perylene	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P075 Benzo(k)fluoranthene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P043 Bis(2-chloroethoxy)methane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
bis(-2-Chloroethyl)ether	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P042 Bis(2-chloroisopropyl) Ether	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P066 Bis(2-ethylhexyl) Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P048 Bromodichloromethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Bromoform	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P046 Bromomethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P067 Butyl Benzyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Carbon tetrachloride	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P007 Chlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P016 Chloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P023 Chloroform	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P045 Chloromethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P076 Chrysene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
cis-1,3-Dichloropropene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Dibenz(a,h)anthracene	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P051 Dibromochloromethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P070 Diethyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P071 Dimethyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P068 Di-n-butyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P069 Di-n-octyl Phthalate	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P038 Ethylbenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P039 Fluoranthene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P080 Fluorene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P009 Hexachlorobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P052 Hexachlorobutadiene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P053 Hexachlorocyclopentadiene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-9, Effluent from Wastewater Treatment	Day 1 65261	Day 2 65265	Day 3 65269	Day 4 65273	Day 5 65277	Unit
Volatile and Semivolatile Organics						
P012 Hexachloroethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P083 Indeno(1,2,3-cd)pyrene	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P054 Isophorone	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P044 Methylene Chloride	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P055 Naphthalene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P056 Nitrobenzene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P061 N-Nitrosodimethylamine	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
N-Nitroso-di-n-propylamine	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P062 N-Nitrosodiphenylamine	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ND(20.0)	ug/L
P064 Pentachlorophenol	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ND(50.0)	ug/L
P081 Phenanthrene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P065 Phenol	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P084 Pyrene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P085 Tetrachloroethene	10.4	21.7	39.4	26.5	45.1	ug/L
P086 Toluene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P030 trans-1,2-Dichloroethene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P033 trans-1,3-Dichloropropene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P087 Trichloroethene	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
Trichlorofluoromethane	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L
P088 Vinyl Chloride	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 3	Day 4	Day 5	Unit
SP-10, Duplicate of Effluent from Wastewater Treatment System	65270	65274	65278	
Classical Pollutants				
Hexane Extractable Material (HEM)	ND(5.00)	ND(6.00)	ND(6.00)	mg/L
Silica Gel Treated HEM (SGT-HEM)	ND(5.00)	ND(6.00)	ND(6.00)	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
NC – Not collected.
ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

		Day 1	Day 2	Day 3	Day 4	Day 5	Unit
SP-10, Duplicate of Effluent from Wastewater Treatment System		65281	65283	65285	65287	65289	
Classical Pollutants							
	Alkalinity	222	269	NC	NC	NC	mg/L
	Ammonia As Nitrogen (NH ₃ -N)	11.0	NC	NC	NC	29.0	mg/L
	Available Cyanide	8.96	ND(2.00)	NC	NC	NC	ug/L
	Biochemical Oxygen Demand (BOD)	NC	NC	ND(2.00)	NC	2.49	mg/L
	Chemical Oxygen Demand (COD)	33.0	NC	NC	NC	46.0	mg/L
	Chloride	62.0	66.0	NC	NC	NC	mg/L
	Hardness	24.0	NC	40.7	NC	NC	mg/L
	Nitrate/Nitrite (NO ₂ + NO ₃ -N)	ND(0.0500)	NC	NC	NC	ND(0.0500)	mg/L
	Settleable residue	NC	NC	NC	ND(0.110)	ND(0.110)	mL/L
	Sulfate	ND(3.00)	4.00	NC	NC	NC	mg/L
P121	Total Cyanide	ND(0.00500)	ND(0.00500)	NC	NC	NC	mg/L
	Total Dissolved Solids (TDS)	324	386	NC	NC	NC	mg/L
	Total Kjeldahl Nitrogen (TKN)	56.0	NC	NC	NC	28.0	mg/L
	Total Organic Carbon (TOC)	12.0	NC	NC	NC	12.0	mg/L
	Total Phosphorus	0.170	NC	NC	NC	8.00	mg/L
	Total Suspended Solids (TSS)	ND(5.00)	ND(5.00)	NC	NC	NC	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-10, Duplicate of Effluent from Wastewater Treatment System	Day 1 65281	Day 2 65283	Day 3 65285	Day 4 65287	Day 5 65289	Unit
Total and Dissolved Metals						
Aluminum	29.4	NC	63.9	NC	NC	ug/L
P114 Antimony	ND(5.97)	NC	ND(5.97)	NC	NC	ug/L
P115 Arsenic	ND(2.32)	NC	ND(2.32)	NC	NC	ug/L
Barium	15.8	NC	25.8	NC	NC	ug/L
P117 Beryllium	ND(0.0540)	NC	ND(0.0540)	NC	NC	ug/L
Boron	ND(3.37)	NC	ND(3.37)	NC	NC	ug/L
P118 Cadmium	ND(0.446)	NC	ND(0.446)	NC	NC	ug/L
Calcium	7,190	NC	13,000	NC	NC	ug/L
P119 Chromium	ND(1.68)	NC	ND(1.68)	NC	NC	ug/L
Cobalt	ND(0.914)	NC	ND(0.914)	NC	NC	ug/L
P120 Copper	11.0	NC	8.40	NC	NC	ug/L
Iron	375	NC	369	NC	NC	ug/L
P122 Lead	ND(3.08)	NC	ND(3.08)	NC	NC	ug/L
Magnesium	1,470	NC	2,010	NC	NC	ug/L
Manganese	12.1	NC	18.2	NC	NC	ug/L
P123 Mercury	ND(0.0170)	NC	0.310	NC	NC	ug/L
Molybdenum	ND(1.50)	NC	ND(1.50)	NC	NC	ug/L
P124 Nickel	23.7	NC	15.0	NC	NC	ug/L
P125 Selenium	0.600	NC	0.640	NC	NC	ug/L
P126 Silver	ND(1.28)	NC	ND(1.28)	NC	NC	ug/L
Sodium	92,300	NC	89,400	NC	NC	ug/L
P127 Thallium	ND(0.00900)	NC	ND(0.00900)	NC	NC	ug/L
Tin	ND(3.45)	NC	ND(3.45)	NC	NC	ug/L
Titanium	ND(0.253)	NC	ND(0.253)	NC	NC	ug/L
Vanadium	ND(0.679)	NC	ND(0.679)	NC	NC	ug/L
Yttrium	ND(0.222)	NC	ND(0.222)	NC	NC	ug/L
P128 Zinc	545	NC	346	NC	NC	ug/L
Aluminum, Dissolved	36.2	NC	40.0	NC	NC	ug/L
P114 Antimony, Dissolved	ND(5.97)	NC	ND(5.97)	NC	NC	ug/L
P115 Arsenic, Dissolved	ND(2.32)	NC	ND(2.32)	NC	NC	ug/L
Barium, Dissolved	15.7	NC	25.2	NC	NC	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

	Day 1	Day 2	Day 3	Day 4	Day 5	Unit
SP-10, Duplicate of Effluent from Wastewater Treatment System	65281	65283	65285	65287	65289	
Total and Dissolved Metals						
Boron, Dissolved	ND(3.37)	NC	ND(3.37)	NC	NC	ug/L
P118 Cadmium, Dissolved	ND(0.446)	NC	ND(0.446)	NC	NC	ug/L
Calcium, Dissolved	7,070	NC	12,700	NC	NC	ug/L
P119 Chromium, Dissolved	ND(1.68)	NC	ND(1.68)	NC	NC	ug/L
Cobalt, Dissolved	ND(0.914)	NC	ND(0.914)	NC	NC	ug/L
P120 Copper, Dissolved	8.70	NC	7.20	NC	NC	ug/L
Iron, Dissolved	358	NC	351	NC	NC	ug/L
P122 Lead, Dissolved	ND(3.08)	NC	ND(3.08)	NC	NC	ug/L
Magnesium, Dissolved	1,460	NC	1,980	NC	NC	ug/L
Manganese, Dissolved	12.5	NC	19.5	NC	NC	ug/L
P123 Mercury, Dissolved	0.290	NC	0.390	NC	NC	ug/L
Molybdenum, Dissolved	ND(1.50)	NC	ND(1.50)	NC	NC	ug/L
P124 Nickel, Dissolved	23.3	NC	15.0	NC	NC	ug/L
P125 Selenium, Dissolved	0.640	NC	0.800	NC	NC	ug/L
P126 Silver, Dissolved	ND(1.28)	NC	ND(1.28)	NC	NC	ug/L
Sodium, Dissolved	90,900	NC	87,300	NC	NC	ug/L
P127 Thallium, Dissolved	ND(0.00900)	NC	ND(0.00900)	NC	NC	ug/L
Tin, Dissolved	ND(3.45)	NC	ND(3.45)	NC	NC	ug/L
Titanium, Dissolved	0.380	NC	ND(0.253)	NC	NC	ug/L
Vanadium, Dissolved	ND(0.679)	NC	ND(0.679)	NC	NC	ug/L
Yttrium, Dissolved	ND(0.222)	NC	ND(0.222)	NC	NC	ug/L
P128 Zinc, Dissolved	532	NC	316	NC	NC	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

		Day 1	Day 2	Day 3	Day 4	Day 5	Unit
SP-10, Duplicate of Effluent from Wastewater Treatment System		65281	65283	65285	65287	65289	
Volatile and Semivolatile Organics							
P011	1,1,1-Trichloroethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P015	1,1,1,2,2-Tetrachloroethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P014	1,1,2-Trichloroethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P013	1,1-Dichloroethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P029	1,1-Dichloroethene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P008	1,2,4-Trichlorobenzene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P025	1,2-Dichlorobenzene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P010	1,2-Dichloroethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P032	1,2-Dichloropropane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P026	1,3-Dichlorobenzene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P027	1,4-Dichlorobenzene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P021	2,4,6-Trichlorophenol	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P031	2,4-Dichlorophenol	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P034	2,4-Dimethylphenol	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P059	2,4-Dinitrophenol	NC	ND(50.0)	NC	NC	ND(50.0)	ug/L
P035	2,4-Dinitrotoluene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P036	2,6-Dinitrotoluene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P019	2-Chloroethylvinyl Ether	NC	ND(50.0)	ND(50.0)	NC	NC	ug/L
P020	2-Chloronaphthalene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P024	2-Chlorophenol	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P057	2-Nitrophenol	NC	ND(20.0)	NC	NC	ND(20.0)	ug/L
P028	3,3'-Dichlorobenzidine	NC	ND(50.0)	NC	NC	ND(50.0)	ug/L
	4,6-Dinitro-2-methylphenol	NC	ND(20.0)	NC	NC	ND(20.0)	ug/L
	4-Bromophenyl-phenylether	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P022	4-Chloro-3-methylphenol	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
	4-Chlorophenyl-phenylether	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P058	4-Nitrophenol	NC	ND(50.0)	NC	NC	ND(50.0)	ug/L
P001	Acenaphthene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P077	Acenaphthylene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P078	Anthracene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P004	Benzene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P005	Benzidine	NC	ND(50.0)	NC	NC	ND(50.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-10, Duplicate of Effluent from Wastewater Treatment System	Day 1 65281	Day 2 65283	Day 3 65285	Day 4 65287	Day 5 65289	Unit
Volatile and Semivolatile Organics						
P072 Benzo(a)anthracene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P073 Benzo(a)pyrene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P074 Benzo(b)fluoranthene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
Benzo(g,h,i)perylene	NC	ND(20.0)	NC	NC	ND(20.0)	ug/L
P075 Benzo(k)fluoranthene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P043 Bis(2-chloroethoxy)methane	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
bis(-2-Chloroethyl)ether	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P042 Bis(2-chloroisopropyl) Ether	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P066 Bis(2-ethylhexyl) Phthalate	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P048 Bromodichloromethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
Bromoform	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P046 Bromomethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P067 Butyl Benzyl Phthalate	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
Carbon tetrachloride	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P007 Chlorobenzene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P016 Chloroethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P023 Chloroform	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P045 Chloromethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P076 Chrysene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
cis-1,3-Dichloropropene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
Dibenz(a,h)anthracene	NC	ND(20.0)	NC	NC	ND(20.0)	ug/L
P051 Dibromochloromethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P070 Diethyl Phthalate	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P071 Dimethyl Phthalate	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P068 Di-n-butyl Phthalate	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P069 Di-n-octyl Phthalate	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P038 Ethylbenzene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P039 Fluoranthene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P080 Fluorene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P009 Hexachlorobenzene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P052 Hexachlorobutadiene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P053 Hexachlorocyclopentadiene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam

SP-10, Duplicate of Effluent from Wastewater Treatment System	Day 1 65281	Day 2 65283	Day 3 65285	Day 4 65287	Day 5 65289	Unit
Volatile and Semivolatile Organics						
P012 Hexachloroethane	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P083 Indeno(1,2,3-cd)pyrene	NC	ND(20.0)	NC	NC	ND(20.0)	ug/L
P054 Isophorone	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P044 Methylene Chloride	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P055 Naphthalene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P056 Nitrobenzene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P061 N-Nitrosodimethylamine	NC	ND(50.0)	NC	NC	ND(50.0)	ug/L
N-Nitroso-di-n-propylamine	NC	ND(20.0)	NC	NC	ND(20.0)	ug/L
P062 N-Nitrosodiphenylamine	NC	ND(20.0)	NC	NC	ND(20.0)	ug/L
P064 Pentachlorophenol	NC	ND(50.0)	NC	NC	ND(50.0)	ug/L
P081 Phenanthrene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P065 Phenol	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P084 Pyrene	NC	ND(10.0)	NC	NC	ND(10.0)	ug/L
P085 Tetrachloroethene	NC	53.0	56.0	NC	NC	ug/L
P086 Toluene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P030 trans-1,2-Dichloroethene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P033 trans-1,3-Dichloropropene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P087 Trichloroethene	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
Trichlorofluoromethane	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L
P088 Vinyl Chloride	NC	ND(10.0)	ND(10.0)	NC	NC	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-11, Screening Solids		Day 1 65291	Unit
Classical Pollutants			
Alkalinity		223	mg/L
Ammonia As Nitrogen (NH ₃ -N)		21.6	mg/L
Available Cyanide		ND(2.00)	ug/L
Biochemical Oxygen Demand (BOD)		6,610	mg/L
Chemical Oxygen Demand (COD)		12,300	mg/L
Chloride		137	mg/L
Hardness		55.3	mg/L
Nitrate/Nitrite (NO ₂ + NO ₃ -N)		ND(0.972)	mg/L
Settleable residue		1,000	mL/L
Sulfate		90.2	mg/L
P121 Total Cyanide		ND(0.00500)	mg/L
Total Kjeldahl Nitrogen (TKN)		470	mg/L
Total Organic Carbon (TOC)		348	mg/L
Total Phosphorus		75.9	mg/L
Total Solids		2.70	%

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 1 65291	Unit
SP-11, Screening Solids		
Total and Dissolved Metals		
Aluminum	19,200	ug/L
P114 Antimony	25.8	ug/L
P115 Arsenic	ND(2.32)	ug/L
Barium	1,950	ug/L
P117 Beryllium	ND(0.0540)	ug/L
Boron	286	ug/L
P118 Cadmium	3.50	ug/L
Calcium	166,000	ug/L
P119 Chromium	72.4	ug/L
Cobalt	9.30	ug/L
P120 Copper	2,180	ug/L
Iron	59,600	ug/L
P122 Lead	40.6	ug/L
Magnesium	33,600	ug/L
Manganese	1,150	ug/L
P123 Mercury	ND(0.108)	ug/L
Molybdenum	26.5	ug/L
P124 Nickel	160	ug/L
P125 Selenium	16.7	ug/L
P126 Silver	17.5	ug/L
Sodium	157,000	ug/L
P127 Thallium	0.0800	ug/L
Tin	76.9	ug/L
Titanium	23.6	ug/L
Vanadium	77.6	ug/L
Yttrium	ND(0.222)	ug/L
P128 Zinc	6,390	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-11, Screening Solids		Day 1 65291	Unit
Volatile and Semivolatile Organics			
P011	1,1,1-Trichloroethane	ND(0.283)	ug/L
P015	1,1,2,2-Tetrachloroethane	ND(0.283)	ug/L
P014	1,1,2-Trichloroethane	ND(0.283)	ug/L
P013	1,1-Dichloroethane	ND(0.283)	ug/L
P029	1,1-Dichloroethene	ND(0.283)	ug/L
P008	1,2,4-Trichlorobenzene	ND(28.8)	ug/L
P025	1,2-Dichlorobenzene	ND(28.8)	ug/L
P010	1,2-Dichloroethane	ND(0.283)	ug/L
P032	1,2-Dichloropropane	ND(0.283)	ug/L
P026	1,3-Dichlorobenzene	ND(28.8)	ug/L
P027	1,4-Dichlorobenzene	ND(28.8)	ug/L
P021	2,4,6-Trichlorophenol	ND(28.8)	ug/L
P031	2,4-Dichlorophenol	ND(28.8)	ug/L
P034	2,4-Dimethylphenol	ND(28.8)	ug/L
P059	2,4-Dinitrophenol	ND(144)	ug/L
P035	2,4-Dinitrotoluene	ND(28.8)	ug/L
P036	2,6-Dinitrotoluene	ND(28.8)	ug/L
P019	2-Chloroethylvinyl Ether	ND(1.41)	ug/L
P020	2-Chloronaphthalene	ND(28.8)	ug/L
P024	2-Chlorophenol	ND(28.8)	ug/L
P057	2-Nitrophenol	ND(57.6)	ug/L
P028	3,3'-Dichlorobenzidine	ND(144)	ug/L
	4,6-Dinitro-2-methylphenol	ND(57.6)	ug/L
	4-Bromophenyl-phenylether	ND(28.8)	ug/L
P022	4-Chloro-3-methylphenol	ND(28.8)	ug/L
	4-Chlorophenyl-phenylether	ND(28.8)	ug/L
P058	4-Nitrophenol	ND(144)	ug/L
P001	Acenaphthene	ND(28.8)	ug/L
P077	Acenaphthylene	ND(28.8)	ug/L
P078	Anthracene	ND(28.8)	ug/L
P004	Benzene	ND(0.283)	ug/L
P005	Benzidine	ND(144)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 1 65291	Unit
SP-11, Screening Solids		
Volatile and Semivolatile Organics		
P072 Benzo(a)anthracene	ND(28.8)	ug/L
P073 Benzo(a)pyrene	ND(28.8)	ug/L
P074 Benzo(b)fluoranthene	ND(28.8)	ug/L
Benzo(g,h,i)perylene	ND(57.6)	ug/L
P075 Benzo(k)fluoranthene	ND(28.8)	ug/L
P043 Bis(2-chloroethoxy)methane	ND(28.8)	ug/L
bis(-2-Chloroethyl)ether	ND(28.8)	ug/L
P042 Bis(2-chloroisopropyl) Ether	ND(28.8)	ug/L
P066 Bis(2-ethylhexyl) Phthalate	91.6	ug/L
P048 Bromodichloromethane	ND(0.283)	ug/L
Bromoform	ND(0.283)	ug/L
P046 Bromomethane	ND(0.283)	ug/L
P067 Butyl Benzyl Phthalate	ND(28.8)	ug/L
Carbon tetrachloride	ND(0.283)	ug/L
P007 Chlorobenzene	ND(0.283)	ug/L
P016 Chloroethane	ND(0.283)	ug/L
P023 Chloroform	ND(0.283)	ug/L
P045 Chloromethane	ND(0.283)	ug/L
P076 Chrysene	ND(28.8)	ug/L
cis-1,3-Dichloropropene	ND(0.283)	ug/L
Dibenz(a,h)anthracene	ND(57.6)	ug/L
P051 Dibromochloromethane	ND(0.283)	ug/L
P070 Diethyl Phthalate	ND(28.8)	ug/L
P071 Dimethyl Phthalate	ND(28.8)	ug/L
P068 Di-n-butyl Phthalate	ND(28.8)	ug/L
P069 Di-n-octyl Phthalate	ND(28.8)	ug/L
P038 Ethylbenzene	ND(0.283)	ug/L
P039 Fluoranthene	ND(28.8)	ug/L
P080 Fluorene	ND(28.8)	ug/L
P009 Hexachlorobenzene	ND(28.8)	ug/L
P052 Hexachlorobutadiene	ND(28.8)	ug/L
P053 Hexachlorocyclopentadiene	ND(28.8)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-11, Screening Solids		Day 1 65291	Unit
Volatile and Semivolatile Organics			
P012	Hexachloroethane	ND(28.8)	ug/L
P083	Indeno(1,2,3-cd)pyrene	ND(57.6)	ug/L
P054	Isophorone	ND(28.8)	ug/L
P044	Methylene Chloride	ND(0.283)	ug/L
P055	Naphthalene	ND(28.8)	ug/L
P056	Nitrobenzene	ND(28.8)	ug/L
P061	N-Nitrosodimethylamine	ND(144)	ug/L
	N-Nitroso-di-n-propylamine	ND(57.6)	ug/L
P062	N-Nitrosodiphenylamine	ND(57.6)	ug/L
P064	Pentachlorophenol	ND(144)	ug/L
P081	Phenanthrene	ND(28.8)	ug/L
P065	Phenol	700	ug/L
P084	Pyrene	ND(28.8)	ug/L
P085	Tetrachloroethene	1.66	ug/L
P086	Toluene	ND(0.283)	ug/L
P030	trans-1,2-Dichloroethene	ND(0.283)	ug/L
P033	trans-1,3-Dichloropropene	ND(0.283)	ug/L
P087	Trichloroethene	ND(0.283)	ug/L
	Trichlorofluoromethane	ND(0.283)	ug/L
P088	Vinyl Chloride	ND(0.283)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-12, Waste Biosludge (Desludge) Discharge		Day 2 65292	Unit
Classical Pollutants			
	Alkalinity	499	mg/L
	Ammonia As Nitrogen (NH ₃ -N)	76.3	mg/L
	Available Cyanide	ND(2.00)	ug/L
	Biochemical Oxygen Demand (BOD)	3,870	mg/L
	Chemical Oxygen Demand (COD)	14,800	mg/L
	Chloride	62.4	mg/L
	Hardness	49.2	mg/L
	Nitrate/Nitrite (NO ₂ + NO ₃ -N)	ND(1.95)	mg/L
	Settleable residue	560	mL/L
	Sulfate	398	mg/L
P121	Total Cyanide	ND(0.00500)	mg/L
	Total Kjeldahl Nitrogen (TKN)	1,280	mg/L
	Total Organic Carbon (TOC)	75.5	mg/L
	Total Phosphorus	153	mg/L
	Total Solids	1.30	%

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-12, Waste Biosludge (Desludge) Discharge		Day 2 65292	Unit
Total and Dissolved Metals			
	Aluminum	10,500	ug/L
P114	Antimony	16.9	ug/L
P115	Arsenic	7.60	ug/L
	Barium	1,560	ug/L
P117	Beryllium	ND(0.0540)	ug/L
	Boron	775	ug/L
P118	Cadmium	5.20	ug/L
	Calcium	132,000	ug/L
P119	Chromium	64.1	ug/L
	Cobalt	7.90	ug/L
P120	Copper	4,230	ug/L
	Iron	43,800	ug/L
P122	Lead	59.8	ug/L
	Magnesium	39,400	ug/L
	Manganese	980	ug/L
P123	Mercury	ND(0.0520)	ug/L
	Molybdenum	36.5	ug/L
P124	Nickel	234	ug/L
P125	Selenium	25.7	ug/L
P126	Silver	30.1	ug/L
	Sodium	142,000	ug/L
P127	Thallium	ND(0.0450)	ug/L
	Tin	51.6	ug/L
	Titanium	7.10	ug/L
	Vanadium	21.8	ug/L
	Yttrium	ND(0.222)	ug/L
P128	Zinc	5,930	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-12, Waste Biosludge (Desludge) Discharge		Day 2 65292	Unit
Volatile and Semivolatile Organics			
P011	1,1,1-Trichloroethane	ND(0.134)	ug/L
P015	1,1,2,2-Tetrachloroethane	ND(0.134)	ug/L
P014	1,1,2-Trichloroethane	ND(0.134)	ug/L
P013	1,1-Dichloroethane	ND(0.134)	ug/L
P029	1,1-Dichloroethene	ND(0.134)	ug/L
P008	1,2,4-Trichlorobenzene	ND(13.5)	ug/L
P025	1,2-Dichlorobenzene	ND(13.5)	ug/L
P010	1,2-Dichloroethane	ND(0.134)	ug/L
P032	1,2-Dichloropropane	ND(0.134)	ug/L
P026	1,3-Dichlorobenzene	ND(13.5)	ug/L
P027	1,4-Dichlorobenzene	ND(13.5)	ug/L
P021	2,4,6-Trichlorophenol	ND(13.5)	ug/L
P031	2,4-Dichlorophenol	ND(13.5)	ug/L
P034	2,4-Dimethylphenol	ND(13.5)	ug/L
P059	2,4-Dinitrophenol	ND(67.5)	ug/L
P035	2,4-Dinitrotoluene	ND(13.5)	ug/L
P036	2,6-Dinitrotoluene	ND(13.5)	ug/L
P019	2-Chloroethylvinyl Ether	ND(0.671)	ug/L
P020	2-Chloronaphthalene	ND(13.5)	ug/L
P024	2-Chlorophenol	ND(13.5)	ug/L
P057	2-Nitrophenol	ND(27.0)	ug/L
P028	3,3'-Dichlorobenzidine	ND(67.5)	ug/L
	4,6-Dinitro-2-methylphenol	ND(27.0)	ug/L
	4-Bromophenyl-phenylether	ND(13.5)	ug/L
P022	4-Chloro-3-methylphenol	ND(13.5)	ug/L
	4-Chlorophenyl-phenylether	ND(13.5)	ug/L
P058	4-Nitrophenol	ND(67.5)	ug/L
P001	Acenaphthene	ND(13.5)	ug/L
P077	Acenaphthylene	ND(13.5)	ug/L
P078	Anthracene	ND(13.5)	ug/L
P004	Benzene	ND(0.134)	ug/L
P005	Benzidine	ND(67.5)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-12, Waste Biosludge (Desludge) Discharge		Day 2 65292	Unit
Volatile and Semivolatile Organics			
P072	Benzo(a)anthracene	ND(13.5)	ug/L
P073	Benzo(a)pyrene	ND(13.5)	ug/L
P074	Benzo(b)fluoranthene	ND(13.5)	ug/L
	Benzo(g,h,i)perylene	ND(27.0)	ug/L
P075	Benzo(k)fluoranthene	ND(13.5)	ug/L
P043	Bis(2-chloroethoxy)methane	ND(13.5)	ug/L
	bis(-2-Chloroethyl)ether	ND(13.5)	ug/L
P042	Bis(2-chloroisopropyl) Ether	ND(13.5)	ug/L
P066	Bis(2-ethylhexyl) Phthalate	21.1	ug/L
P048	Bromodichloromethane	ND(0.134)	ug/L
	Bromoform	ND(0.134)	ug/L
P046	Bromomethane	ND(0.134)	ug/L
P067	Butyl Benzyl Phthalate	ND(13.5)	ug/L
	Carbon tetrachloride	ND(0.134)	ug/L
P007	Chlorobenzene	ND(0.134)	ug/L
P016	Chloroethane	ND(0.134)	ug/L
P023	Chloroform	ND(0.134)	ug/L
P045	Chloromethane	ND(0.134)	ug/L
P076	Chrysene	ND(13.5)	ug/L
	cis-1,3-Dichloropropene	ND(0.134)	ug/L
	Dibenz(a,h)anthracene	ND(27.0)	ug/L
P051	Dibromochloromethane	ND(0.134)	ug/L
P070	Diethyl Phthalate	ND(13.5)	ug/L
P071	Dimethyl Phthalate	ND(13.5)	ug/L
P068	Di-n-butyl Phthalate	ND(13.5)	ug/L
P069	Di-n-octyl Phthalate	ND(13.5)	ug/L
P038	Ethylbenzene	ND(0.134)	ug/L
P039	Fluoranthene	ND(13.5)	ug/L
P080	Fluorene	ND(13.5)	ug/L
P009	Hexachlorobenzene	ND(13.5)	ug/L
P052	Hexachlorobutadiene	ND(13.5)	ug/L
P053	Hexachlorocyclopentadiene	ND(13.5)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-12, Waste Biosludge (Desludge) Discharge		Day 2 65292	Unit
Volatile and Semivolatile Organics			
P012	Hexachloroethane	ND(13.5)	ug/L
P083	Indeno(1,2,3-cd)pyrene	ND(27.0)	ug/L
P054	Isophorone	ND(13.5)	ug/L
P044	Methylene Chloride	ND(0.134)	ug/L
P055	Naphthalene	ND(13.5)	ug/L
P056	Nitrobenzene	ND(13.5)	ug/L
P061	N-Nitrosodimethylamine	ND(67.5)	ug/L
	N-Nitroso-di-n-propylamine	ND(27.0)	ug/L
P062	N-Nitrosodiphenylamine	ND(27.0)	ug/L
P064	Pentachlorophenol	ND(67.5)	ug/L
P081	Phenanthrene	ND(13.5)	ug/L
P065	Phenol	875	ug/L
P084	Pyrene	ND(13.5)	ug/L
P085	Tetrachloroethene	2.63	ug/L
P086	Toluene	ND(0.134)	ug/L
P030	trans-1,2-Dichloroethene	ND(0.134)	ug/L
P033	trans-1,3-Dichloropropene	ND(0.134)	ug/L
P087	Trichloroethene	1.14	ug/L
	Trichlorofluoromethane	ND(0.134)	ug/L
P088	Vinyl Chloride	ND(0.134)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 1	Unit
SP-13, Incinerator Ash	65293	
Total and Dissolved Metals		
Aluminum	44,800	mg/kg
P114 Antimony	28.3	mg/kg
P115 Arsenic	5.20	mg/kg
Barium	837	mg/kg
P117 Beryllium	0.410	mg/kg
Boron	585	mg/kg
P118 Cadmium	1.40	mg/kg
Calcium	174,000	mg/kg
P119 Chromium	286	mg/kg
Cobalt	13.7	mg/kg
P120 Copper	6,510	mg/kg
Iron	28,500	mg/kg
P122 Lead	417	mg/kg
Magnesium	13,600	mg/kg
Manganese	673	mg/kg
P123 Mercury	ND(40.0)	ug/kg
Molybdenum	42.8	mg/kg
P124 Nickel	223	mg/kg
P125 Selenium	1.39	mg/kg
P126 Silver	15.4	mg/kg
Sodium	49,600	mg/kg
P127 Thallium	ND(1.53)	mg/kg
Tin	61.6	mg/kg
Titanium	1,060	mg/kg
Vanadium	484	mg/kg
Yttrium	3.10	mg/kg
P128 Zinc	2,700	mg/kg

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 1	Unit
SP-13, Incinerator Ash	65293	
Volatile and Semivolatile Organics		
P008 1,2,4-Trichlorobenzene	ND(343)	ug/kg
P025 1,2-Dichlorobenzene	ND(343)	ug/kg
P026 1,3-Dichlorobenzene	ND(343)	ug/kg
P027 1,4-Dichlorobenzene	ND(343)	ug/kg
P021 2,4,6-Trichlorophenol	ND(343)	ug/kg
P031 2,4-Dichlorophenol	ND(343)	ug/kg
P034 2,4-Dimethylphenol	ND(343)	ug/kg
P059 2,4-Dinitrophenol	ND(1,710)	ug/kg
P035 2,4-Dinitrotoluene	ND(343)	ug/kg
P036 2,6-Dinitrotoluene	ND(343)	ug/kg
P020 2-Chloronaphthalene	ND(343)	ug/kg
P024 2-Chlorophenol	ND(343)	ug/kg
P057 2-Nitrophenol	ND(685)	ug/kg
P028 3,3'-Dichlorobenzidine	ND(1,710)	ug/kg
4,6-Dinitro-2-methylphenol	ND(685)	ug/kg
4-Bromophenyl-phenylether	ND(343)	ug/kg
P022 4-Chloro-3-methylphenol	ND(343)	ug/kg
4-Chlorophenyl-phenylether	ND(343)	ug/kg
P058 4-Nitrophenol	ND(1,710)	ug/kg
P001 Acenaphthene	ND(343)	ug/kg
P077 Acenaphthylene	ND(343)	ug/kg
P078 Anthracene	ND(343)	ug/kg
P005 Benzidine	ND(1,710)	ug/kg
P072 Benzo(a)anthracene	ND(343)	ug/kg
P073 Benzo(a)pyrene	ND(343)	ug/kg
P074 Benzo(b)fluoranthene	ND(343)	ug/kg
Benzo(g,h,i)perylene	ND(685)	ug/kg
P075 Benzo(k)fluoranthene	ND(343)	ug/kg
P043 Bis(2-chloroethoxy)methane	ND(343)	ug/kg
bis(-2-Chloroethyl)ether	ND(343)	ug/kg
P042 Bis(2-chloroisopropyl) Ether	ND(343)	ug/kg
P066 Bis(2-ethylhexyl) Phthalate	2,260	ug/kg

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
NC – Not collected.
ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 1	Unit
SP-13, Incinerator Ash	65293	
Volatile and Semivolatile Organics		
P067 Butyl Benzyl Phthalate	ND(343)	ug/kg
P076 Chrysene	ND(343)	ug/kg
Dibenz(a,h)anthracene	ND(685)	ug/kg
P070 Diethyl Phthalate	ND(343)	ug/kg
P071 Dimethyl Phthalate	ND(343)	ug/kg
P068 Di-n-butyl Phthalate	ND(343)	ug/kg
P069 Di-n-octyl Phthalate	ND(343)	ug/kg
P039 Fluoranthene	ND(343)	ug/kg
P080 Fluorene	ND(343)	ug/kg
P009 Hexachlorobenzene	ND(343)	ug/kg
P052 Hexachlorobutadiene	ND(343)	ug/kg
P053 Hexachlorocyclopentadiene	ND(343)	ug/kg
P012 Hexachloroethane	ND(343)	ug/kg
P083 Indeno(1,2,3-cd)pyrene	ND(685)	ug/kg
P054 Isophorone	ND(343)	ug/kg
P055 Naphthalene	ND(343)	ug/kg
P056 Nitrobenzene	ND(343)	ug/kg
P061 N-Nitrosodimethylamine	ND(1,710)	ug/kg
N-Nitroso-di-n-propylamine	ND(685)	ug/kg
P062 N-Nitrosodiphenylamine	ND(685)	ug/kg
P064 Pentachlorophenol	ND(1,710)	ug/kg
P081 Phenanthrene	441	ug/kg
P065 Phenol	1,140	ug/kg
P084 Pyrene	ND(343)	ug/kg

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-15, Source Water		Day 1 65295	Unit
Classical Pollutants			
Alkalinity		57.0	mg/L
Ammonia As Nitrogen (NH ₃ -N)		0.0570	mg/L
Available Cyanide		19.1	ug/L
Biochemical Oxygen Demand (BOD)		ND(2.00)	mg/L
Chemical Oxygen Demand (COD)		ND(10.0)	mg/L
Chloride		15.0	mg/L
Hardness		68.5	mg/L
Nitrate/Nitrite (NO ₂ + NO ₃ -N)		0.270	mg/L
Settleable residue		ND(0.110)	mL/L
Sulfate		21.0	mg/L
P121 Total Cyanide		ND(0.00500)	mg/L
Total Dissolved Solids (TDS)		121	mg/L
Total Kjeldahl Nitrogen (TKN)		1.00	mg/L
Total Organic Carbon (TOC)		ND(1.00)	mg/L
Total Phosphorus		ND(0.0100)	mg/L
Total Suspended Solids (TSS)		ND(5.00)	mg/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-15, Source Water		Day 1 65295	Unit
Total and Dissolved Metals			
	Aluminum	ND(9.93)	ug/L
P114	Antimony	ND(5.97)	ug/L
P115	Arsenic	ND(2.32)	ug/L
	Barium	32.0	ug/L
P117	Beryllium	ND(0.0540)	ug/L
	Boron	33.0	ug/L
P118	Cadmium	ND(0.446)	ug/L
	Calcium	24,200	ug/L
P119	Chromium	ND(1.68)	ug/L
	Cobalt	ND(0.914)	ug/L
P120	Copper	72.2	ug/L
	Iron	30.6	ug/L
P122	Lead	ND(3.08)	ug/L
	Magnesium	1,950	ug/L
	Manganese	0.720	ug/L
P123	Mercury	0.310	ug/L
	Molybdenum	ND(1.50)	ug/L
P124	Nickel	15.8	ug/L
P125	Selenium	ND(0.572)	ug/L
P126	Silver	ND(1.28)	ug/L
	Sodium	10,500	ug/L
P127	Thallium	0.0200	ug/L
	Tin	ND(3.45)	ug/L
	Titanium	ND(0.253)	ug/L
	Vanadium	ND(0.679)	ug/L
	Yttrium	ND(0.222)	ug/L
P128	Zinc	13.6	ug/L
	Aluminum, Dissolved	14.8	ug/L
P114	Antimony, Dissolved	ND(5.97)	ug/L
P115	Arsenic, Dissolved	ND(2.32)	ug/L
	Barium, Dissolved	30.9	ug/L
P117	Beryllium, Dissolved	ND(0.0540)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-15, Source Water		Day 1 65295	Unit
Total and Dissolved Metals			
	Boron, Dissolved	39.1	ug/L
P118	Cadmium, Dissolved	ND(0.446)	ug/L
	Calcium, Dissolved	24,300	ug/L
P119	Chromium, Dissolved	ND(1.68)	ug/L
	Cobalt, Dissolved	1.70	ug/L
P120	Copper, Dissolved	59.7	ug/L
	Iron, Dissolved	ND(19.8)	ug/L
P122	Lead, Dissolved	ND(3.08)	ug/L
	Magnesium, Dissolved	1,960	ug/L
P123	Mercury, Dissolved	0.420	ug/L
	Molybdenum, Dissolved	ND(1.50)	ug/L
P124	Nickel, Dissolved	14.5	ug/L
P125	Selenium, Dissolved	ND(0.572)	ug/L
P126	Silver, Dissolved	ND(1.28)	ug/L
	Sodium, Dissolved	10,500	ug/L
P127	Thallium, Dissolved	ND(0.00900)	ug/L
	Tin, Dissolved	ND(3.45)	ug/L
	Titanium, Dissolved	ND(0.253)	ug/L
	Vanadium, Dissolved	ND(0.679)	ug/L
	Yttrium, Dissolved	ND(0.222)	ug/L
P128	Zinc, Dissolved	8.40	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-15, Source Water		Day 1 65295	Unit
Volatile and Semivolatile Organics			
P011	1,1,1-Trichloroethane	ND(10.0)	ug/L
P015	1,1,2,2-Tetrachloroethane	ND(10.0)	ug/L
P014	1,1,2-Trichloroethane	ND(10.0)	ug/L
P013	1,1-Dichloroethane	ND(10.0)	ug/L
P029	1,1-Dichloroethene	ND(10.0)	ug/L
P008	1,2,4-Trichlorobenzene	ND(10.0)	ug/L
P025	1,2-Dichlorobenzene	ND(10.0)	ug/L
P010	1,2-Dichloroethane	ND(10.0)	ug/L
P032	1,2-Dichloropropane	ND(10.0)	ug/L
P026	1,3-Dichlorobenzene	ND(10.0)	ug/L
P027	1,4-Dichlorobenzene	ND(10.0)	ug/L
P021	2,4,6-Trichlorophenol	ND(10.0)	ug/L
P031	2,4-Dichlorophenol	ND(10.0)	ug/L
P034	2,4-Dimethylphenol	ND(10.0)	ug/L
P059	2,4-Dinitrophenol	ND(50.0)	ug/L
P035	2,4-Dinitrotoluene	ND(10.0)	ug/L
P036	2,6-Dinitrotoluene	ND(10.0)	ug/L
P019	2-Chloroethylvinyl Ether	ND(50.0)	ug/L
P024	2-Chlorophenol	ND(10.0)	ug/L
P057	2-Nitrophenol	ND(20.0)	ug/L
P028	3,3'-Dichlorobenzidine	ND(50.0)	ug/L
	4,6-Dinitro-2-methylphenol	ND(20.0)	ug/L
	4-Bromophenyl-phenylether	ND(10.0)	ug/L
P022	4-Chloro-3-methylphenol	ND(10.0)	ug/L
	4-Chlorophenyl-phenylether	ND(10.0)	ug/L
P058	4-Nitrophenol	ND(50.0)	ug/L
P001	Acenaphthene	ND(10.0)	ug/L
P077	Acenaphthylene	ND(10.0)	ug/L
P078	Anthracene	ND(10.0)	ug/L
P004	Benzene	ND(10.0)	ug/L
P005	Benzidine	ND(50.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-15, Source Water		Day 1 65295	Unit
Volatile and Semivolatile Organics			
P072	Benzo(a)anthracene	ND(10.0)	ug/L
P073	Benzo(a)pyrene	ND(10.0)	ug/L
P074	Benzo(b)fluoranthene	ND(10.0)	ug/L
	Benzo(g,h,i)perylene	ND(20.0)	ug/L
P075	Benzo(k)fluoranthene	ND(10.0)	ug/L
P043	Bis(2-chloroethoxy)methane	ND(10.0)	ug/L
	bis(-2-Chloroethyl)ether	ND(10.0)	ug/L
P042	Bis(2-chloroisopropyl) Ether	ND(10.0)	ug/L
P066	Bis(2-ethylhexyl) Phthalate	ND(10.0)	ug/L
P048	Bromodichloromethane	ND(10.0)	ug/L
	Bromoform	ND(10.0)	ug/L
P046	Bromomethane	ND(10.0)	ug/L
P067	Butyl Benzyl Phthalate	ND(10.0)	ug/L
	Carbon tetrachloride	ND(10.0)	ug/L
P007	Chlorobenzene	ND(10.0)	ug/L
P016	Chloroethane	ND(10.0)	ug/L
P023	Chloroform	ND(10.0)	ug/L
P045	Chloromethane	ND(10.0)	ug/L
P076	Chrysene	ND(10.0)	ug/L
	cis-1,3-Dichloropropene	ND(10.0)	ug/L
	Dibenz(a,h)anthracene	ND(20.0)	ug/L
P051	Dibromochloromethane	ND(10.0)	ug/L
P070	Diethyl Phthalate	ND(10.0)	ug/L
P071	Dimethyl Phthalate	ND(10.0)	ug/L
P068	Di-n-butyl Phthalate	ND(10.0)	ug/L
P069	Di-n-octyl Phthalate	ND(10.0)	ug/L
P038	Ethylbenzene	ND(10.0)	ug/L
P039	Fluoranthene	ND(10.0)	ug/L
P080	Fluorene	ND(10.0)	ug/L
P009	Hexachlorobenzene	ND(10.0)	ug/L
P052	Hexachlorobutadiene	ND(10.0)	ug/L
P053	Hexachlorocyclopentadiene	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-15, Source Water	Day 1 65295	Unit
Volatile and Semivolatile Organics		
P012 Hexachloroethane	ND(10.0)	ug/L
P083 Indeno(1,2,3-cd)pyrene	ND(20.0)	ug/L
P054 Isophorone	ND(10.0)	ug/L
P044 Methylene Chloride	ND(10.0)	ug/L
P055 Naphthalene	ND(10.0)	ug/L
P056 Nitrobenzene	ND(10.0)	ug/L
P061 N-Nitrosodimethylamine	ND(50.0)	ug/L
N-Nitroso-di-n-propylamine	ND(20.0)	ug/L
P062 N-Nitrosodiphenylamine	ND(20.0)	ug/L
P064 Pentachlorophenol	ND(50.0)	ug/L
P081 Phenanthrene	ND(10.0)	ug/L
P065 Phenol	ND(10.0)	ug/L
P084 Pyrene	ND(10.0)	ug/L
P085 Tetrachloroethene	ND(10.0)	ug/L
P086 Toluene	ND(10.0)	ug/L
P030 trans-1,2-Dichloroethene	ND(10.0)	ug/L
P033 trans-1,3-Dichloropropene	ND(10.0)	ug/L
P087 Trichloroethene	ND(10.0)	ug/L
Trichlorofluoromethane	ND(10.0)	ug/L
P088 Vinyl Chloride	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 4 65300	Unit
SP-16, Trip Blank		
Volatile and Semivolatile Organics		
P011 1,1,1-Trichloroethane	ND(10.0)	ug/L
P015 1,1,2,2-Tetrachloroethane	ND(10.0)	ug/L
P014 1,1,2-Trichloroethane	ND(10.0)	ug/L
P013 1,1-Dichloroethane	ND(10.0)	ug/L
P029 1,1-Dichloroethene	ND(10.0)	ug/L
P010 1,2-Dichloroethane	ND(10.0)	ug/L
P032 1,2-Dichloropropane	ND(10.0)	ug/L
P019 2-Chloroethylvinyl Ether	ND(50.0)	ug/L
P004 Benzene	ND(10.0)	ug/L
P048 Bromodichloromethane	ND(10.0)	ug/L
Bromoform	ND(10.0)	ug/L
P046 Bromomethane	ND(10.0)	ug/L
Carbon tetrachloride	ND(10.0)	ug/L
P007 Chlorobenzene	ND(10.0)	ug/L
P016 Chloroethane	ND(10.0)	ug/L
P023 Chloroform	ND(10.0)	ug/L
P045 Chloromethane	ND(10.0)	ug/L
cis-1,3-Dichloropropene	ND(10.0)	ug/L
P051 Dibromochloromethane	ND(10.0)	ug/L
P038 Ethylbenzene	ND(10.0)	ug/L
P044 Methylene Chloride	ND(10.0)	ug/L
P085 Tetrachloroethene	ND(10.0)	ug/L
P086 Toluene	ND(10.0)	ug/L
P030 trans-1,2-Dichloroethene	ND(10.0)	ug/L
P033 trans-1,3-Dichloropropene	ND(10.0)	ug/L
P087 Trichloroethene	ND(10.0)	ug/L
Trichlorofluoromethane	ND(10.0)	ug/L
P088 Vinyl Chloride	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-17, Equipment Blank	Day 4 65301	Unit
Classical Pollutants		
Hardness	0.170	mg/L

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-17, Equipment Blank		Day 4 65301	Unit
Total and Dissolved Metals			
	Aluminum	ND(9.93)	ug/L
P114	Antimony	ND(5.97)	ug/L
P115	Arsenic	ND(2.32)	ug/L
	Barium	8.00	ug/L
P117	Beryllium	ND(0.0540)	ug/L
	Boron	ND(3.37)	ug/L
P118	Cadmium	ND(0.446)	ug/L
	Calcium	58.2	ug/L
P119	Chromium	ND(1.68)	ug/L
	Cobalt	ND(0.914)	ug/L
P120	Copper	23.5	ug/L
	Iron	191	ug/L
P122	Lead	27.8	ug/L
	Magnesium	ND(10.2)	ug/L
	Manganese	5.20	ug/L
P123	Mercury	ND(0.0170)	ug/L
	Molybdenum	ND(1.50)	ug/L
P124	Nickel	ND(2.66)	ug/L
P125	Selenium	ND(0.572)	ug/L
P126	Silver	ND(1.28)	ug/L
	Sodium	197	ug/L
P127	Thallium	ND(0.00900)	ug/L
	Tin	ND(3.45)	ug/L
	Titanium	0.440	ug/L
	Vanadium	ND(0.679)	ug/L
	Yttrium	ND(0.222)	ug/L
P128	Zinc	256	ug/L
	Aluminum, Dissolved	406	ug/L
P114	Antimony, Dissolved	ND(5.97)	ug/L
P115	Arsenic, Dissolved	ND(2.32)	ug/L
	Barium, Dissolved	21.2	ug/L
P117	Beryllium, Dissolved	ND(0.0540)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

		Day 4 65301	Unit
SP-17, Equipment Blank			
Total and Dissolved Metals			
	Boron, Dissolved	ND(3.37)	ug/L
P118	Cadmium, Dissolved	ND(0.446)	ug/L
	Calcium, Dissolved	53.2	ug/L
P119	Chromium, Dissolved	ND(1.68)	ug/L
	Cobalt, Dissolved	ND(0.914)	ug/L
P120	Copper, Dissolved	3.10	ug/L
	Iron, Dissolved	35.1	ug/L
P122	Lead, Dissolved	77.2	ug/L
	Magnesium, Dissolved	12.4	ug/L
	Manganese, Dissolved	5.80	ug/L
P123	Mercury, Dissolved	ND(0.0170)	ug/L
	Molybdenum, Dissolved	ND(1.50)	ug/L
P124	Nickel, Dissolved	ND(2.66)	ug/L
P125	Selenium, Dissolved	ND(0.572)	ug/L
P126	Silver, Dissolved	ND(1.28)	ug/L
	Sodium, Dissolved	260	ug/L
P127	Thallium, Dissolved	ND(0.00900)	ug/L
	Tin, Dissolved	ND(3.45)	ug/L
	Titanium, Dissolved	0.960	ug/L
	Vanadium, Dissolved	ND(0.679)	ug/L
	Yttrium, Dissolved	ND(0.222)	ug/L
P128	Zinc, Dissolved	46.5	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).
 NC – Not collected.
 ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

	Day 4 65301	Unit
SP-17, Equipment Blank		
Volatile and Semivolatile Organics		
P008 1,2,4-Trichlorobenzene	ND(10.0)	ug/L
P025 1,2-Dichlorobenzene	ND(10.0)	ug/L
P026 1,3-Dichlorobenzene	ND(10.0)	ug/L
P027 1,4-Dichlorobenzene	ND(10.0)	ug/L
P021 2,4,6-Trichlorophenol	ND(10.0)	ug/L
P031 2,4-Dichlorophenol	ND(10.0)	ug/L
P034 2,4-Dimethylphenol	ND(10.0)	ug/L
P059 2,4-Dinitrophenol	ND(50.0)	ug/L
P035 2,4-Dinitrotoluene	ND(10.0)	ug/L
P036 2,6-Dinitrotoluene	ND(10.0)	ug/L
P020 2-Chloronaphthalene	ND(10.0)	ug/L
P024 2-Chlorophenol	ND(10.0)	ug/L
P057 2-Nitrophenol	ND(20.0)	ug/L
P028 3,3'-Dichlorobenzidine	ND(50.0)	ug/L
4,6-Dinitro-2-methylphenol	ND(20.0)	ug/L
4-Bromophenyl-phenylether	ND(10.0)	ug/L
P022 4-Chloro-3-methylphenol	ND(10.0)	ug/L
4-Chlorophenyl-phenylether	ND(10.0)	ug/L
P058 4-Nitrophenol	ND(50.0)	ug/L
P001 Acenaphthene	ND(10.0)	ug/L
P077 Acenaphthylene	ND(10.0)	ug/L
P078 Anthracene	ND(10.0)	ug/L
P005 Benzidine	ND(50.0)	ug/L
P072 Benzo(a)anthracene	ND(10.0)	ug/L
P073 Benzo(a)pyrene	ND(10.0)	ug/L
P074 Benzo(b)fluoranthene	ND(10.0)	ug/L
Benzo(g,h,i)perylene	ND(20.0)	ug/L
P075 Benzo(k)fluoranthene	ND(10.0)	ug/L
P043 Bis(2-chloroethoxy)methane	ND(10.0)	ug/L
bis(-2-Chloroethyl)ether	ND(10.0)	ug/L
P042 Bis(2-chloroisopropyl) Ether	ND(10.0)	ug/L
P066 Bis(2-ethylhexyl) Phthalate	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

**Appendix A-2
(continued)
Analytical Results, Except Pathogen Indicators
Holland America Veendam**

SP-17, Equipment Blank	Day 4 65301	Unit
Volatile and Semivolatile Organics		
P067 Butyl Benzyl Phthalate	ND(10.0)	ug/L
P076 Chrysene	ND(10.0)	ug/L
Dibenz(a,h)anthracene	ND(20.0)	ug/L
P070 Diethyl Phthalate	ND(10.0)	ug/L
P071 Dimethyl Phthalate	ND(10.0)	ug/L
P068 Di-n-butyl Phthalate	ND(10.0)	ug/L
P069 Di-n-octyl Phthalate	ND(10.0)	ug/L
P039 Fluoranthene	ND(10.0)	ug/L
P080 Fluorene	ND(10.0)	ug/L
P009 Hexachlorobenzene	ND(10.0)	ug/L
P052 Hexachlorobutadiene	ND(10.0)	ug/L
P053 Hexachlorocyclopentadiene	ND(10.0)	ug/L
P012 Hexachloroethane	ND(10.0)	ug/L
P083 Indeno(1,2,3-cd)pyrene	ND(20.0)	ug/L
P054 Isophorone	ND(10.0)	ug/L
P055 Naphthalene	ND(10.0)	ug/L
P056 Nitrobenzene	ND(10.0)	ug/L
P061 N-Nitrosodimethylamine	ND(50.0)	ug/L
N-Nitroso-di-n-propylamine	ND(20.0)	ug/L
P062 N-Nitrosodiphenylamine	ND(20.0)	ug/L
P064 Pentachlorophenol	ND(50.0)	ug/L
P081 Phenanthrene	ND(10.0)	ug/L
P065 Phenol	ND(10.0)	ug/L
P084 Pyrene	ND(10.0)	ug/L

EXCLUDE – Data excluded from the data set (see data review narratives in Appendix D for details).

NC – Not collected.

ND – Not detected (number in parentheses is detection limit).

Appendix A-3

**Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Field measurement data and observations for each grab and grab composite sample for each sampling point. Figures 2-1 and 2-2 identify sampling point locations. Duplicate samples were not collected for field measurements; consequently, duplicate sampling points SP-2, SP-6, SP-10, and SP-14 are not shown on this table.

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Laundry Wastewater (SP-1)	2300 on 6/23/04	17	29.1	7	0.07	0.10	118.1	0.18	0.17	Turbid, greyish color
	0812 on 6/24/04	22	35.6	10	0.05	0.2	338.5	0.01	0.01	Turbid, greyish color
	1600 on 6/24/04	25	56.8	10	0.02	0.1	201.5	0.00	0.02	Turbid, greyish color
	2300 on 6/24/04	32	62.2	10	0.28	0.1	281.0	0.24	0.26	Turbid, greyish color, warm
Accommodations Wastewater (SP-3)	1330 on 6/23/04	24	104.0	6	0.18	0.1	227.3	0.00	0.00	Extremely turbid, brownish color
Food Pulper Wastewater (SP-4)	0745 on 6/22/04	28	FFF (b)	4	0.08	1.9	3540	0.24	0.00 (c)	Orange-yellow color, strong citrus smell
	1447 on 6/22/04	28	FFF (b)	4	0.00	1.5	2895	0.10	1.46	Orange-yellow color, strong citrus smell
	1940 on 6/22/04	28	FFF (b)	4	0.80 (d)	0.8	1653	2.20	2.10	Orange-yellow color, strong citrus smell

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Galley Wastewater (SP-5)	1200 on 6/21/04	26	125	6	0.00	0.1	215.5	0.50	0.34	Murky, turbid, brown
	1522 on 6/21/04	36	118	6	0.00	0.1	253.4	0.01	0.00	Murky, turbid, brown
	1928 on 6/21/04	25	346	6	0.80 (d)	0.1	304.5	0.00	0.00	Pinkish, turbid
	0906 on 6/22/04	25	236	6	0.00	0.1	213.4	0.37	0.22	Murky, turbid, brown
Influent to Wastewater Treatment System (SP-6) Day 1	0717 on 6/20/04	28.5	260	8	0.08	0.9	1840	1.44 (c)	0.09 (c)	Dark gold, settleable solids, strong odor
	1515 on 6/20/04	28.5	263	7	0.02	0.3	681	0.00 (c)	0.00 (c)	Dark gold, gritty, strong odor
	2230 on 6/20/04	30	244	7	0.80 (d)	0.8	1800	1.79	0.00 (c)	Dark, gold, strong odor
	0330 on 6/21/04	26	156	5	0.80 (d)	0.2	405.1	0.00	0.00 (c)	Color much lighter, less turbid

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Influent to Wastewater Treatment System (SP-6) Day 2	0650 on 6/21/04	27	259	6	0.16	0.3	488	0.00	0.01	Cloudy, strong odor, dark yellow, gritty
	1535 on 6/21/04	29	FFF (b)	6	0.30	0.5	1006	0.00	0.00 (c)	Cloudy, strong odor, dark yellow
	2230 on 6/21/04	26	FFF (b)	7	0.80 (d)	0.5	1083	1.86	1.86	Cloudy, strong odor, dark yellow
	0315 on 6/22/04	28	110	7	0.73	0.8	1450	0.00	0.05	Cloudy, strong odor, dark yellow
Influent to Wastewater Treatment System (SP-6) Day 3	0655 on 6/22/04	28	171	7	0.08	0.8	1496	0.00	0.27	Cloudy, strong odor, dark yellow, gritty
	1510 on 6/22/04	28	227	7	0.08	0.6	1165	0.00	0.00 (c)	Cloudy, strong odor, dark yellow
	2030 on 6/22/04	27	FFF (b)	7	0.80 (d)	0.7	1350	0.09	0.07	Cloudy, strong odor, dark yellow
	0315 on 6/23/04	25	FFF (b)	6	0.80 (d)	0.2	449	0.19	0.00	Cloudy, strong odor, dark yellow

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Influent to Wastewater Treatment System (SP-6) Day 4	0645 on 6/23/04	28	FFF (b)	7	0.06	0.8	1692	0.00 (c)	0.00 (c)	Dark yellow, settleable solids, strong odor
	1505 on 6/23/04	26	243	6	0.19	0.4	840	0.00	0.05	Dark yellow, gritty, strong odor
	2210 on 6/23/04	29	FFF (b)	6.5	0.08	0.4	891	2.2	2.2	Dark yellow, gritty, strong odor
	0315 on 6/24/04	30	385	8	0.80 (d)	1.1	2196	0.00	0.00	Dark yellow, gritty, strong odor
Influent to Wastewater Treatment System (SP-6) Day 5	0605 on 6/24/04	30	330	7	0.03	1.00	1978	0.00	0.00 (c)	Dark yellow/ brown settleable solids, strong odor
	1505 on 6/24/04	31	196	6	0.80 (d)	0.5	1072	0.00 (c)	0.00 (c)	Dark yellow/ brown gritty, strong odor
	2140 on 6/24/04	30	402	7	0.80 (d)	0.4	972	0.00	0.00	Dark yellow/ brown gritty, strong odor
	0315 on 6/25/04	28	386	7	0.80 (d)	0.3	1128	0.01	0.02	Dark yellow/ brown gritty, strong odor

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Influent to UV Disinfection (SP-8) Day 1	0740 on 6/20/04	27	0.2	7	0.01	0.3	483	0.00	0.01	Clear, light yellow color, slight odor
	1509 on 6/20/04	28	0.0	7	0.00	0.3	557	0.00	0.07	Clear, light yellow color, slight odor
	2230 on 6/20/04	28	0.0	6.5	0.02	0.3	633	0.04	NA	Clear, light yellow color, slight odor
	0330 on 6/21/04	28	0.0	7	0.03	0.3	622	0.00	0.01	Clear, light yellow color, slight odor
Influent to UV Disinfection (SP-8) Day 2	0700 on 6/21/04	28	0.0	6	0.02	0.3	566	0.00	0.02	Clear, yellow, mild odor
	1525 on 6/21/04	28	0.0	6	0.02	0.3	674	0.01	0.01	Clear, yellow, mild odor
	2230 on 6/21/04	28	0.0	6.5	0.07	0.3	678	0.00	0.09	Clear, yellow, mild odor
Influent to UV Disinfection (SP-8) Day 3	0655 on 6/22/04	28	0.1	6	0.03	0.3	603	0.02	0.04	Clear, yellow, mild odor
	1500 on 6/22/04	27	0.0	7	0.02	0.3	681	0.04	0.00	Clear, yellow, mild odor
	0315 on 6/23/04	28	0.0	7	0.04	0.4	729	0.06	0.10	Clear, yellow, mild odor

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Influent to UV Disinfection (SP-8) Day 4	0640 on 6/23/04	28	1.1	6	0.00	0.4	756	0.01	0.28	Light yellow, mild odor, clear
	1507 on 6/23/04	27	0.7	7	0.01	0.4	769	0.03	0.00	Light yellow, mild odor, clear
	2210 on 6/23/04	27	0.0	6.5	0.02	0.4	758	0.12	0.11	Light yellow, mild odor, clear
	0315 on 6/24/04	28	0.2	7	0.00	0.4	790	0.01	0.05	Light yellow, mild odor, clear
Influent to UV Disinfection (SP-8) Day 5	0611 on 6/24/04	29	55.5	7	0.01	0.4	840	0.00	0.00	Light yellow, mild odor, clear
	1500 on 6/24/04	29	35.7	6	0.00	0.4	796	0.01	0.01	Light yellow, mild odor, clear
	2140 on 6/24/04	29	40.2	7	0.00	0.3	816	0.01	0.01	Light yellow, mild odor, clear
	0315 on 6/25/04	28	31.8	7	0.02	0.4	866	0.00	0.01	Light yellow, mild odor, clear

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Effluent from Wastewater Treatment System (SP-9) Day 1	0708 on 6/20/04	27	2.3	7	0.00	0.3	489	0.01	0.02	Clear, light yellow, slight odor
	1503 on 6/20/04	28	0.9	7	0.02	0.3	511	0.00	0.04	Clear, light yellow, slight odor
	2230 on 6/20/04	28	0.0	6.5	0.01	0.3	575	0.00	0.00	Clear, yellow
	0330 on 6/21/04	27	0.0	7	0.02	0.3	623	0.00	0.03	Clear, little odor
Effluent from Wastewater Treatment System (SP-9) Day 2	0713 on 6/21/04	28	0.0	7	0.02	0.3	520	0.00	0.03	Clear, yellow, mild odor
	1515 on 6/21/04	28	0.0	6	0.00	0.3	650	0.05	0.04	Clear, yellow, mild odor
	2230 on 6/21/04	28	0.0	7	0.02	0.3	706	0.00	0.04	Clean, yellow, mild smell
	0315 on 6/22/04	27	0.0	6	0.02	0.3	669	0.02	0.16	Clean, yellow, mild smell

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Effluent from Wastewater Treatment System (SP-9) Day 3	0640 on 6/22/04	27	1.1	6	0.03	0.3	641	0.00	0.05	Clean, yellow
	1445 on 6/22/04	27	3.2	7	0.00	0.3	692	0.01	0.00	Clean, yellow
	2245 on 6/22/04	27	2.7	7	0.04	0.4	729	0.03	0.08	Clean, yellow
	0340 on 6/23/04	25	0.6	7	0.02	0.4	721	0.10	0.16	Clean, yellow
Effluent from Wastewater Treatment System (SP-9) Day 4	0647 on 6/23/04	28	0.0	7	0.00	0.4	739	0.12	0.01	Light yellow, clear, mild odor
	1505 on 6/23/04	27	0.0	6	0.01	0.4	773	0.01	0.00	Light yellow, clear, mild odor
	2210 on 6/23/04	28	0.0	6.5	0.03	0.4	788	0.10	0.07	Light yellow, clear, mild odor
	0315 on 6/24/04	29	0.5	7	0.04	0.4	798	0.10	0.12	Light yellow, clear, mild odor

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004**

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Effluent from Wastewater Treatment System (SP-9) Day 5	0610 on 6/24/04	28	0.8	7	0.01	0.4	810	0.05	0.01	Light yellow, clear, mild odor
	1510 on 6/24/04	29	0.2	6	0.01	0.4	795	0.05	0.03	Light yellow, clear, mild odor
	2140 on 6/24/04	28	0.4	6	0.80 (d)	0.4	816	0.05	0.02	Light yellow, clear, mild odor
	0315 on 6/25/04	28	0.3	7	0.6	0.3	702	0.02	0.02	Light yellow, clear, mild odor
Screening Solids (SP-11)	1500 on 6/20/04	NA	NA	NA	NA	NA	NA	NA	NA	Brown, strong smell, thick
Waste Biosludge Discharge (SP-12)	1832 on 6/21/04	25	NA	NA	NA	NA	NA	NA	NA	Chunky, brown, strong smell, thick
Incinerator Ash (SP-13)	1000 on 6/20/04	NA	NA	NA	NA	NA	NA	NA	NA	Gray, gritty, light-weight
Source Water (SP-15) Day 1	0600 on 6/20/04	NA	NA	NA	NA	NA	NA	NA	NA	Clear, slight chlorine smell
Source Water (SP-15) Day 2	0600 on 6/21/04	NA	NA	NA	NA	NA	NA	NA	NA	Clear, slight chlorine smell
Source Water (SP-15) Day 3	0600 on 6/23/04	NA	NA	NA	NA	NA	NA	NA	NA	Clear, slight chlorine smell

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.

**Appendix A-3
(continued)**
Analytical Results Collected Onboard (Field Measurements)
Holland America Veendam - 20 June through 25 June 2004

Sampling Point	Sample Collection Times	Temperature (°C)	Turbidity (NTU)	pH	Sulfide (mg/L)	Salinity (ppt)	Conductivity (uS/cm)	Free Chlorine (mg/L) (a)	Total Chlorine (mg/L) (a)	Comments
Source Water (SP-15) Day 4	0600 on 6/24/04	NA	NA	NA	NA	NA	NA	NA	NA	Clear, slight chlorine smell
Source Water (SP-15) Day 5	1930 on 6/24/04	27	4.7	6	0.0	0.0	59	1.79	2.04	Clear, slight chlorine smell

NA - Not analyzed.

(a) Equipment used to measure free and total chlorine onboard is not suitable for measuring ultra-low levels of chlorine (detection limit of 0.02 mg/L compared to a standard of 0.01 mg/L) and is subject to various interferences, such as oxidized forms of manganese. Accordingly, field measurements should not be used to assess compliance with cruise ship discharge standards.

(b) Reading exceeds calibration range of 440 NTU.

(c) Reading under detection range of instrument caused by low light penetration.

(d) Sulfide meter has a maximum quantitation limit of 0.80 mg/L.