

Appendix A
Summary of All Sampling Data Received during for the 2004 cruise season.

Note: Only the data for the ships that received approval for discharge are required to submit data per the MOU; and some of the data below is data gathered prior to approval for continuous discharge in Alaska.

SHIP: NORWEGIAN SPIRIT AK cert: 7/23/04 Start date of discharges in WA :8/14/2004							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10ug/l	20/40	
WA State Water Quality Standards²		6.5-9.0	NA	NA	NA	14/43	
Sample Date	Location/ Lab						
6/8/04	JUN/SGS	7.08	13.0	17.0	ND	ND	
6/15/04	JUN/Analytica	7.26	10.4	5.2	ND	ND	
6/16/04	SKAG/Analytica	6.98	ND	ND	ND	ND	
6/21/04	KETCH/Analytica	7.24	2.06	ND	ND	ND	
6/22/04	JUN/Analytica	7.30	2.57	ND	ND	ND	
6/22/04	JUN/SGS	6.60	4.0	1.2	ND	ND	
6/30/04	SKAG/Analytica	6.48	ND	6.7	ND	ND	
7/6/04	JUN/Analytica	7.24	ND	4.7	ND	ND	
7/17/04	SEA/Laucks	6.30	6.0	2.0	ND	ND	
8/3/04	JUN/SGS	7.00	5.4	3.4	ND	ND	
8/10/04	JUN/Analytica TWW	7.75	14.0	ND	ND	2	
8/10/04	JUN/Analytica WW	7.70	14.0	ND	ND	ND	
8/14/04	SEA/NCA (DOE)	6.84	6.1	ND	0.2	ND	pH and chlorine field results
8/14/04	SEA/Laucks	6.30	9.0	10.0	ND	ND	
8/24/04	JUN/SGS	7.00	16.0	3.4	ND	ND	
9/7/04	JUN/SGS	6.50	ND	8.4	ND	ND	
9/18/04	SEA/Laucks	6.00	ND	2.0	ND	ND	
9/20/04	JUN/SGS	6.00	2.2	5.8	ND	ND	
	MINIMUM	6.00	ND	ND	ND	ND	
	AVERAGE		5.8	3.9	0.01		
	MAXIMUM	7.75	16.0	17.0	0.2	2	
	GEOMETRIC MEAN					1	

SHIP: NORWEGIAN STAR AK cert: 5/27/04 Start date of discharges in WA :8/15/2004							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10ug/l	20/40	
WA State Water Quality Standards²		6.5-9.0	NA	NA	NA	14/43	
Sample Date	Location/ Lab						
6/8/04	JUN/SGS	6.84	2.9	2.6	ND	ND	
6/20/04	SEA/Laucks	6.40	8.0	6.0	ND	ND	
6/29/04	JUN/Analytica TWW	7.36	3.33	ND	ND	ND	
6/29/04	JUN/Analytica WW	7.40	3.78	ND	ND	ND	
7/6/04	JUN/SGS	6.80	3.6	2.7	ND	ND	
7/18/04	SEA/Laucks	6.40	15.0	20.0	ND	30	
8/3/04	JUN/SGS	7.00	5.4	3.4	ND	ND	
8/10/04	JUN/Analytica	7.49	3.0	ND	ND	ND	
8/29/04	SEA/Laucks	6.30	ND	9.0	ND	20	fecal = <20

Appendix A

Summary of All Sampling Data Received during for the 2004 cruise season.

9/7/04	JUN/SGS	7.00	ND	2.5	ND	ND	
9/21/04	SEA/Laucks	6.10	6.0	1.0	ND	ND	
	MINIMUM	6.10	ND	ND	ND	ND	
	AVERAGE		4.6	4.3	ND		
	MAXIMUM	7.49	15.0	20.0	ND	30	
	GEOMETRIC MEAN					2	

SHIP: NORWEGIAN SUN		AK cert: not received			Start date of discharges in WA: NA		
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10ug/l	20/40	
WA State Water Quality Standards²		6.5-9.0	NA	NA	NA	14/43	
Sample Date	Location/ Lab						
6/27/04	JUN/SGS	6.80	18.0	6.0	ND	33	
7/7/04	JUN/SGS	6.00	2.1	3.4	ND	ND	
7/21/04	JUN/SGS	7.00	6.7	3.6	ND	ND	
8/4/04	JUN/SGS	7.00	8.9	7.5	ND	9	
8/18/04	JUN/SGS	7.00	7.2	3.1	ND	ND	
8/18/04	AK/Analytica	7.44	6.03	4.4	ND	ND	
9/18/04	JUN/SGS	7.00	7.3	3.8	ND	ND	
9/22/04	JUN/SGS	6.00	ND	3.0	ND	ND	
	MINIMUM	6.00	ND	3.0	ND	ND	
	AVERAGE		7.0	4.4	ND		
	MAXIMUM	7.44	18.0	7.5	ND	33	
	GEOMETRIC MEAN					2	

SHIP: HOLLAND OOSTERDAM		AK cert: 6/2/04			Start date of discharges in WA: NA		
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10ug/l	20/40	
WA State Water Quality Standards²		6.5-9.0	NA	NA	NA	14/43	
Sample Date	Location/ Lab						
1/4/04	FL-STL	5.87	8.6	ND	ND	ND	Gray after UV
1/4/04	FL-STL	7.36	9.7	ND	ND	70	Black after UV
1/11/04	FL-STL	5.37	7.6	ND	ND	ND	Gray after UV
1/11/04	FL-STL	7.04	42.8	9.0	ND	12	Black after UV
1/18/04	FL-STL	5.83	ND	ND	ND	ND	Gray after UV
1/18/04	FL-STL	7.40	ND	ND	ND	ND	Black after UV
1/25/04	FL-STL	5.79	ND	ND	ND	ND	Gray after UV
1/25/04	FL-STL	6.81	ND	ND	ND	210	Black after UV
2/1/04	FL-STL	5.63	16.0	ND	ND	ND	Gray after UV
2/8/04	FL-STL	6.14	8.5	ND	ND	ND	Gray after UV
2/8/04	FL-STL	6.87	ND	ND	ND	80	Black after UV
2/15/04	FL-STL	6.39	ND	ND	ND	ND	Gray after UV
2/15/04	FL-STL	6.87	ND	ND	ND	ND	Black after UV
2/22/04	FL-STL	5.60	ND	ND	ND	ND	Gray after UV
2/22/04	FL-STL	6.50	16.7	5.0	ND	4	Black after UV
3/7/04	FL-STL	6.20	12.5	ND	ND	ND	Gray after UV
3/7/04	FL-STL	7.04	ND	ND	ND	44	Black after UV

Appendix A

Summary of All Sampling Data Received during for the 2004 cruise season.

3/14/04	FL-STL	5.33	14.1	ND	ND	ND	Gray after UV
3/21/04	FL-STL	5.67	ND	ND	ND	ND	Gray after UV
3/21/04	FL-STL	6.83	ND	ND	ND	12	Black after UV
3/28/04	FL-STL	6.22	ND	ND	ND	ND	Gray after UV
3/28/04	FL-STL	6.77	ND	ND	ND	ND	Black after UV
4/4/04	FL-STL	6.07	20.0	ND	ND	ND	Gray after UV
4/4/04	FL-STL	6.82	7.2	ND	ND	ND	Black after UV
4/11/04	FL-STL	6.42	22.3	ND	ND	8	Gray after UV
4/11/04	FL-STL	7.22	ND	ND	ND	ND	Black after UV
4/25/04	CA-EEL	7.67	13.0	ND	ND	ND	post UV
4/25/04	CA-EEL	7.43	14.5	1.5	ND	4	clean and black
5/2/04	CA-EEL	6.32	84.1	12.0	ND	ND	Gray after UV
5/2/04	CA-EEL	7.49	9.5	2.3	ND	ND	Black after UV
5/8/04	WA-Laucks	5.80	12.0	ND	ND	ND	Gray after UV
5/8/04	WA-Laucks	7.20	7.0	ND	ND	ND	Black after UV
5/10/04	AK-Analytica TWW	7.98	11.7	ND	ND	ND	black, gray, galley
5/10/04	AK-Analytica GW	7.40	14.8	ND	ND	ND	gray, laundry
5/17/04	AK-Analytica TWW	7.70	2.6	ND	ND	ND	black, gray, galley
5/17/04	AK-Analytica GW	9.75	7.9	ND	ND	ND	gray, laundry
5/22/04	WA-Laucks	7.00	29.0	ND	ND	ND	Gray water
5/22/04	WA-Laucks	7.30	11.0	ND	ND	ND	Black water
5/24/04	AK-Analytica TWW	7.98	ND	ND	ND	ND	Black water
5/24/04	AK-Analytica GW	7.36	7.7	ND	ND	ND	Gray water
6/7/04	AK-Analytica TWW	7.83	6.3	ND	ND	ND	Black water
6/7/04	AK-Analytica TWW	7.72	8.5	ND	ND	ND	Black water unannounced
6/14/04	AK-Analytica TWW	7.56	13.7	5.5	ND	ND	Black water
6/19/04	WA-Laucks	6.70	39.0	2.0	ND	17	Gray water
6/19/04	WA-Laucks	7.60	ND	3.0	ND	ND	Black water
6/21/04	AK-Analytica TWW	7.87	4.6	4.1	ND	ND	Black water
6/28/04	AK-Analytica TWW	7.83	16.9	ND	ND	ND	Black water
7/12/04	AK-Analytica TWW	7.72	4.8	ND	ND	ND	Black water
7/12/04	AK-Analytica GW	6.85	23.6	ND	ND	30	Gray water
7/17/04	WA-Laucks	6.20	25.0	ND	ND	ND	Gray water
7/17/04	WA-Laucks	7.20	17.0	ND	ND	ND	Black water
7/19/04	AK-Analytica TWW	7.00	14.2	ND	ND	ND	Black water
8/2/04	AK-Analytica TWW	7.97	11.2	ND	ND	ND	Black water
8/2/04	AK-Analytica GW	8.55	13.8	ND	ND	ND	Gray water
8/9/04	AK-Analytica TWW	8.00	13.9	5.4	ND	ND	Black water
8/14/04	WA-Laucks	5.90	10.0	ND	ND	ND	Gray water
8/14/04	WA-Laucks	7.10	8.0	ND	ND	ND	Black water
8/23/04	AK-Analytica TWW	7.71	12.8	ND	ND	ND	Black water
9/13/04	AK-Analytica TWW	6.76	19.6	ND	ND	142	Black water
9/20/04	AK-Analytica TWW	7.30	18.4	ND	ND	ND	Black water
	MINIMUM	5.33	2.6	1.5	ND	ND	
	AVERAGE		11.5	0.8	ND		
	MAXIMUM	9.75	84.1	12.0	ND	210	
	GEOMETRIC MEAN					2	

Appendix A
Summary of All Sampling Data Received during for the 2004 cruise season.

SHIP: HOLLAND ZAANDAM AK cert: 4/22/04 Start date of discharges in WA: NA							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits ¹		6-9	30/45	30/45	10ug/l	20/40	
WA State Water Quality Standards ²		6.5-9.0	NA	NA	NA	14/43	
Sample Date	Location/ Lab						
1/10/04	FL-SRL	7.00	16.0	ND	ND	ND	
1/17/04	FL-SRL	7.00	15.9	ND	ND	ND	
2/7/04	FL-SRL	6.90	15.4	ND	ND	ND	
2/14/04	FL-SRL	7.00	15.3	ND	ND	ND	
3/6/04	FL-SRL	6.90	14.4	ND	ND	ND	
3/13/04	FL-SRL	7.00	20.0	ND	ND	ND	
3/20/04	FL-SRL	7.10	13.9	ND	ND	ND	
3/27/04	FL-SRL	6.90	15.0	ND	ND	ND	
4/3/04	FL-SRL	7.00	15.6	ND	ND	ND	
4/10/04	FL-SRL	6.90	16.6	ND	ND	ND	
5/17/04	JUN-Analytica	7.74	ND	ND	ND	ND	
5/24/04	JUN-Analytica	8.24	ND	ND	ND	ND	
5/24/04	JUN-Analytica UA	8.18	ND	ND	ND	ND	
6/7/04	JUN-Analytica	7.71	ND	ND	ND	ND	
6/14/04	JUN-Analytica	7.56	ND	ND	ND	ND	
7/12/04	JUN-Analytica	7.80	2.35	ND	ND	ND	
7/19/04	JUN-Analytica	7.64	ND	ND	ND	ND	
8/2/04	JUN-Analytica	8.03	4.12	ND	ND	ND	
8/9/04	JUN-Analytica UA	8.35	ND	ND	ND	ND	
8/9/04	JUN-Analytica	8.35	ND	ND	ND	ND	
9/13/04	JUN-Analytica	7.46	5.8	ND	0.74	ND	
9/20/04	JUN-Analytica	7.55	ND	ND	ND	ND	
10/16/04	FL-SRL	7.10	2.4	ND	ND	ND	
	MINIMUM	6.90	ND	ND	ND	ND	
	AVERAGE		7.5	ND	0.03		
	MAXIMUM	8.35	20.0	ND	0.74	ND	
	GEOMETRIC MEAN					ND	

SHIP: HOLLAND VEENDAM AK cert: 4/22/04 Start date of discharges in WA: NA							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits ¹		6-9	30/45	30/45	10ug/l	20/40	
WA State Water Quality Standards ²		6.5-9.0	NA	NA	NA	14/43	
Sample Date	Location/ Lab						
3/13/04	FL-SRL	6.90	13.2	ND	ND	ND	
3/20/04	FL-SRL	6.50	14.8	ND	ND	ND	
3/27/04	FL-SRL	6.90	15.6	ND	ND	ND	
4/3/04	FL-SRL	7.00	16.9	ND	ND	ND	
4/10/04	FL-SRL	6.80	16.2	ND	ND	ND	
	MINIMUM	6.50	ND	ND	ND	ND	
	AVERAGE		15.3	ND	ND		
	MAXIMUM	7.00	16.9	ND	ND	ND	
	GEOMETRIC MEAN					ND	

Appendix A
Summary of All Sampling Data Received during for the 2004 cruise season.

SHIP: PRINCESS SAPPHIRE AK cert: 6/9/04 Start date of discharges in WA: 6/11/04							
		pH	BOD	TSS	Chlorine Residual	Fecal Coliform	Comments
		St. Units	mg/l	mg/l	mg/l	#/100 ml	
MOU/Alaska Limits¹		6-9	30/45	30/45	10ug/l	20/40	
WA State Water Quality Standards²		6.5-9.0	NA	NA	NA	14/43	
Sample Date	Location/ Lab						
6/23/04	not known	7.74	9.4	ND	ND	ND	
6/30/04	not known	7.36	5.5	ND	ND	ND	
6/30/04	not known	7.61	6.3	2.0	0.05	1	ADEC unannounced
7/14/04	not known	7.34	20.0	ND	ND	4	
7/28/04	not known						
8/4/04	not known	7.45	3.3	2.0	0.05	1	ADEC unannounced
8/18/04	not known	7.02	29.5	ND	ND	ND	
9/1/04	not known	7.64	20.8	ND	ND	ND	
9/8/04	not known	6.74	ND	ND	ND	2	
	MINIMUM	6.74	ND	ND	ND	ND	
	AVERAGE		11.9	0.5	0.01		
	MAXIMUM	7.74	29.5	2.0	0.05	4.00	
	GEOMETRIC MEAN					1	

ND = Non Detect

¹MOU/Alaska limits from Title XIV, Certain Alaska Cruise Ship Operations, Section 1404(c) /40CFR 133.102

BOD and TSS: 30-day average shall not exceed 30 mg/l, 7-day average shall not exceed 45 mg/l

Fecal Coliform: geometric mean of any 30-day period shall not exceed 20 fecal coliform/100 ml and not more than 10% of the samples exceed 40 fecal coliform/100 ml

²Washington State Water Quality Standards for Surface Waters of the State of Washington Chapter 173-201A WAC

Fecal Coliform: shall not exceed a geometric mean of 14 colonies/100 ml and not more than 10% of a samples shall exceed a geometric mean of 43 colonies/100 ml

pH: 7-8.5 with a human-caused variation within less than 0.5

Appendix A
Summary of All Sampling Data Received during for the 2004 cruise season.