

2024 Air Compliance Annual Report

On Cruise Ships & State Ferries

AIR QUALITY COMPLIANCE PROGRAM



Norwegian Cruise Lines Norwegian Jewel docked in Juneau, AK September 2024



Alaska Department of Environmental Conservation

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ABBREVIATIONS AND ACRONYMS

AAC:	Alaska Administrative Code
ADEC:	Alaska Department of Environmental Conservation
AS:	Alaska Statute
CFR:	Code of Federal Regulations
COBC:	Compliance Order by Consent
DG:	Diesel Generator
ECA:	Emissions Control Area
EGCS:	Exhaust Gas Cleaning System
EPA:	United States Environmental Protection Agency
EU:	Emission Unit
GT:	Gas Turbine
HFO:	Heavy Fuel Oil
IMO:	International Maritime Organization
LSFO:	Low sulfur fuel oil (Sulfur content of 1.14%)
MGO:	Marine gas oil, a distillate fuel
MOU:	Memorandum of Understanding
NOV:	Notice of Violation
OFB:	Oil fired boiler
PM:	Particulate Matter
SO _x :	Sulfur oxides
SA:	Settlement Agreement
USFS:	United States Forest Service
UW:	Underway

INTRODUCTION

This report is prepared annually by the Alaska Department of Environmental Conservation's (ADEC) Division of Air Quality, Compliance Program (AQ Program). The intent of this report is to provide information on the air quality monitoring, compliance, and enforcement efforts with cruise ship and state ferry air pollution.



Royal Caribbean International's *Radiance of the Seas*, moored in Ketchikan, May 5, 2024

COMPLIANCE MONITORING & ENFORCEMENT SUMMARY

Objective. To protect the Alaskan environment by ensuring that air emissions from marine vessels in the state do not create unhealthy air. This is accomplished through the direct monitoring of the opacity of air emissions from cruise ships and state ferries.

The goal in monitoring opacity is to conduct consistent opacity readings primarily within Alaska's three busiest cruise ship ports: Juneau, Ketchikan, and Skagway. Additionally, both ADEC staff and the contractor will travel to other ports during the season to conduct readings. While the primary focus is to monitor large cruise ships, reasonable efforts are made by ADEC staff and the contractor to conduct opacity readings on small cruise ships and state ferries.

Authority. AS 46.03.488 & 18 AAC 50.070 establishes marine vessel visible emission standards.

Implementation. The regulation applies to visible emissions, excluding water vapor, of marine vessels within three miles of the Alaska coastline. The Air Quality (AQ) compliance program uses the US Environmental Protection Agency (EPA) Reference Method 9 (Method 9 or M9) readings to provide the source of data for determining compliance with marine vessel visible emission standards. This method has been approved by the EPA as part of the Federally Enforceable Air Quality Control State Implementation Plan under 40 CFR §52.70(28)(i). The AQ Program monitors environmental compliance, as well as the direct and indirect environmental effects of cruise ships and state ferries.

Compliance Monitoring. Compliance with opacity requirements is determined through use of Method 9 observations. Observations are made by trained ADEC staff and contracted opacity readers. The current contractor for opacity readings is FLAT LAKE Engineering LLC, based in Ketchikan, AK with additional staff in Juneau, AK.

The US Forest Service (USFS) signed on to a Memorandum of Understanding (MOU) with ADEC Division of Air to monitor air emissions and from marine vessels operating in Holkham Bay, Tracy Arm, Endicott Arm, and/or Stephens Passage. The latest MOU was executed May 22, 2023 and is effective through May 1, 2028. In 2023, ADEC provided the necessary funding for three USFS personnel to become certified in Method 9. The USFS and ADEC coordinated to perform Method 9 observations while vessels were underway in Tracy Arm and Endicott Arm in September of 2024. The USFS provided the watercraft and operator while ADEC provided the certified opacity reader. Due to unannounced schedule changes, no cruise ships arrived in the area to monitor.

2024 Results. Summaries of opacity results are available in Tables 1 to 4. Summaries of formal enforcement actions are available in Tables 5 to 9.

Compliance: 421 Method 9 readings performed

Enforcement: 4 Readings of Interest are still under investigation, though no formal determination has been made.

COMPLIANCE

Table 1: 2024 Contractor Opacity Readings

Location	Readings
Juneau	245
Ketchikan	37
Skagway	55
Haines	7
Hoonah (Icy Strait Point)	8
Sitka	6
Anchorage	2
Total Opacity Readings	360

Table 2: 2024 ADEC Opacity Readings

Location	Readings
Juneau	22
Ketchikan	0
Skagway	15
Haines	5
Hoonah (Icy Strait Point)	6
Sitka	10
Petersburg	3
Total Opacity Readings	61

Table 3: 2024 Opacity Reading Count by Port

Port	Readings
Juneau	267
Ketchikan	37
Skagway	70
Haines	12
Hoonah (Icy Strait Point)	14
Sitka	16
Anchorage	2
Petersburg	3

Table 4: Opacity Readings Per Year Summary

Year	Readings
2016	388
2017	552
2018	480
2019	447
2020	12
2021	533
2022	524
2023	425
2024	421

Enforcement Action Update

1. Alaska Department of Transportation and Public Facilities, Alaska Marine Highway System (AMHS):

AMHS entered into a Compliance Order by Consent (COBC) settlement effective June 6, 2022. The COBC is based on five counts of noncompliance events observed of the *M/V Kennicott* while it operated in Alaskan waters over the 2019 and 2020 operating seasons.

The COBC requires the Respondent to fully and timely perform, comply with and/or complete remedial measures, corrective actions, and other requirements (e.g., conduct two M9 observations every month the vessel operates in revenue service) as required by the Order.

Suspended payment: The suspended portion in the amount of \$187,500 shall remain suspended, and shall not become due, provided that the Kennicott complies with all conditions of this Order.

2024 Update: The *M/V Kennicott* began 2024 in revenue service and remains in this status through the date of this report. Following elevated emissions observed during routine monthly monitoring events in January and February, AMHS performed the required follow-up investigative response activities: the vessel was inspected and serviced at a facility in Bellingham, WA. The vessel is scheduled to enter layup status in December 2024 in preparation for the replacement of its primary generators.

Enforcement

1. UnCruise Adventures:
NOV issued February 16, 2024 for a May 12, 2023 noncompliance event observed of the *Wilderness SS Legacy* in Juneau, Ak.
2. Norwegian Cruise Lines:
NOV issued February 16, 2024 for two noncompliance events observed in Juneau of the *Norwegian Spirit*, one on May 13, 2023 and one on August 19, 2023.
3. Viking Cruises:
NOV issued February 16, 2024 for a May 17, 2023 noncompliance event observed of the *Viking Orion* in Sitka, AK.
4. Holland American Line:
NOV issued February 16, 2024 for a July 12, 2023 noncompliance event observed of the *Nieuw Amsterdam* in Skagway, AK.
5. Princess Cruise Lines:
NOV issued February 16, 2024 for a July 13, 2023 noncompliance event observed of the *Discovery Princess* in Skagway, AK.

Table 5: Violations Per Year Summary

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Violations	0	2	9	7	4	3	14	6	4 ¹

Table 6: Opacity Violations Issued (2020)

Vessel	Date	Port	Status
AMHS Kennicott	7/08/20	Juneau	Settled
AMHS Kennicott	8/05/20	Juneau	Settled
AMHS Kennicott	8/19/20	Juneau	Settled
AMHS Kennicott	10/07/20	Whittier	Settled

Table 7: Opacity Notice of Violations Issued (2021)

Vessel	Date	Port	Status
Ovation of the Seas	8/22/21	Juneau	Settled
Ovation of the Seas	10/4/21	Juneau	Settled
Ovation of the Seas	10/10/21	Ketchikan	Settled

Table 8: Opacity Notice of Violations Issued (2022) (2023)

Vessel	Date	Port	Status
Norwegian Sun	5/23/22	Juneau	Settled
Norwegian Jewel	8/25/22	Juneau	Settled
Wilderness SS Leg.	6/4/22	Juneau	Settled
Majestic Princess	5/10/22	Juneau	Settled
Ovation of the Seas	5/15/22	Juneau	Settled
Quantum of the Seas	7/29/22	Juneau	Settled
Silver Muse	5/21/22	Juneau	Settled
Carnival Splendor	5/6/22	Juneau	Settled
Carnival Splendor	5/6/22	Juneau	Settled
Carnival Splendor	5/28/22	Juneau	Settled
Carnival Spirit	6/12/22	Juneau	Settled
Carnival Spirit	6/12/22	Juneau	Settled
Carnival Spirit	7/24	Juneau	Settled
Celebrity Solstice	5/9/22	Juneau	Settled

Table 9: Opacity Notice of Violations Issued

Vessel	Date	Port	Status
Nieuw Amsterdam	7/12/23	Skagway	Settled
Norwegian Spirit	5/13/23	Juneau	Settled
Norwegian Spirit	8/19/23	Juneau	Settled
Discovery Princess	7/23/23	Skagway	Settled
Wilderness Legacy	5/12/23	Juneau	Settled
Viking Orion	5/17/23	Sitka	Settled

¹ These violations are still under investigation and no formal determination has been made.

PUBLIC COMPLAINTS RESPONSE SUMMARY

The Department catalogues all public responses and responds upon complainant request or if nature of complaint warrants additional inquiry. Important details complainants can provide the Department include date, time, name of subject vessel, location, the duration of the emissions exceedance, and a description of emissions with photos depicting vessel location in relation to complainant. The Department will conduct a M9 reading of the subject vessel if timing and staff availability allows, indicated by a “√” in Table 9, below. The number of public complaints received by the Department each year over the last decade is available in Figure 1 below.

The Department received 19 public complaints during the 2024 cruise ship season.

Table 10: 2024 CPVEC Public Complaints

Vessel	Date	Location	M9?	Description
Norwegian Bliss	4/16/2024	Juneau	X	Web complaint: complainant frustrated over consistent elevated emissions; noted observable odor in neighborhood.
Norwegian Jewel	4/25/2024	Juneau	X	Web complaint: heavy smoke @ 8pm; time of vessel departure no media provided Received after vessel departure/no M9 recorded earlier
Norwegian Jewel	4/25/2024	Juneau	X	Web complaint: elevated emissions observed for period of over 20 mins shortly before/during/after departing AJ dock >50%, at times 100%heavy no media provided no M9 recorded
Norwegian Jewel	5/9/2024	Juneau	X	Email: complainant traveling southbound via private vessel, provided photo taken 11pm.
Norwegian Sun	5/13/2024	Juneau	X	CPVEC contacted via TBMP: "no reason they have to burn cheap bunker fuel. Smoke going up very high." No media provided. No M9 recorded.
Norwegian Bliss	5/21/2024	Juneau	√ standard reading	Email to CPVEC via ECU. No media attached. No description beyond the vessel "spewing smoke" while docked.
Celebrity Edge	6/3/2024	Juneau	√ standard reading	Web complaint. No media attached. Describes multiple releases of black smoke at around 21:45, shortly before the vessel left. M9 recorded below State standards.
Celebrity Solstice	6/6/2024	Juneau	X	Email: "Cruise industry continues to pollute Juneau with emissions of heavy diesel fuel." Media shows thick white smoke from vessel's aft stack. No M9 recorded.

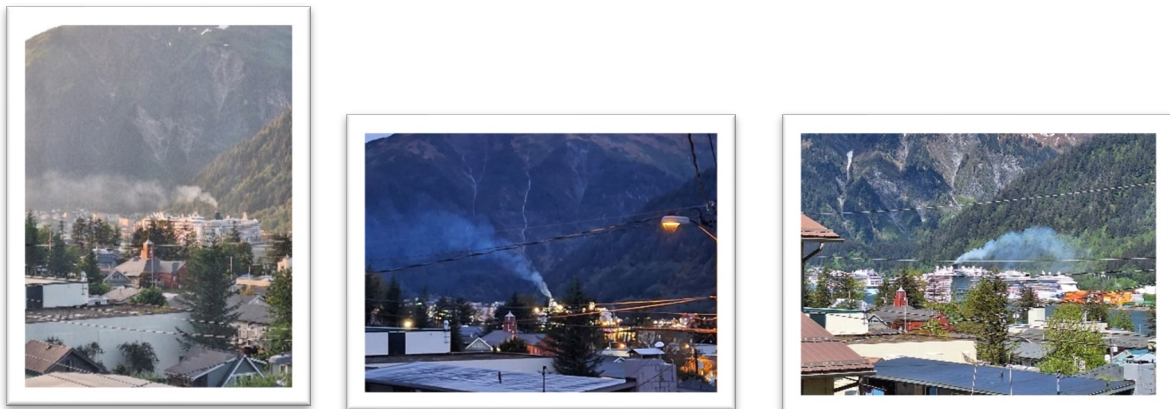
Table 10: 2024 CPVEC Public Complaints

Vessel	Date	Location	M9?	Description
Grand Princess	6/22/2024	Juneau	√ standard reading	Email: "Massive amounts of black smoke are happening too often." Photo provided and substantiated complaint. M9 recorded below State standards.
Carnival Luminosa	6/24/2024	Tracy Arm	NA - not an observable location	Web complaint: Complainant traveling outbound in Tracy Arm, unclear if subject vessel passenger or private craft, noted "emissions above 20% opacity for over 15 minutes." Media substantiated complaint. M9 unobtainable due to location.
Norwegian Jewel	6/27/2024	Juneau	X	Web complaint. No description of emissions or media provided. No M9 recorded.
Norwegian Jewel	7/18/2024	Juneau	ROI	Email: no description of emissions, but media provided substantiates complaint. Complainant provided series of questions/concerns including "When will DEC address problem of scrubbers removing dirty 'product' and discharging pollutants into water?" Responses provided to complainant. M9 conducted above State standards.
Silver Muse	7/20/2024	Juneau	√ standard reading	Email: no description of emissions, but media provided substantiates complaint. Complainant provided series of questions/concerns including "...please remind cruise ship person that 'steam' does not linger for a mile as blue smokey haze." Responses provided to complainant. M9 conducted below State standards.
Quantum of the Seas	7/26/2024	Juneau	X	Web complaint: No emissions description provided. Photos provided, possible water vapor plume. No M9 conducted.
Ovation of the Seas	7/30/2024	Juneau	√ standard reading	Web complaint: "Dense black smoke emissions from Ovation. Smoke hanging over downtown Juneau. Why does DEC continue to allow this type of pollution? Photo provided showing slightly elevated opacity. M9 conducted below State standards.
Discovery Princess	8/5/2024	Juneau	√ standard reading	Email via Travel Juneau >1 month following complainant's obsv. of "thick brown smog covering width of [Gastineau] Channel"; M9 conducted day complaint received - below State standards.

Table 10: 2024 CPVEC Public Complaints

Vessel	Date	Location	M9?	Description
 Three distinct public complaints were submitted on the <i>Norwegian Jewel</i>, pictured above on April 26, and October 7, 2024, in Juneau, AK				
Queen Elizabeth	8/5/2024	Juneau	X	Email via Travel Juneau >1 month following complainant's obsv. of "thick brown smog covering width of [Gastineau] Channel". Vessel infrequently visits port, weather did not permit M9 on following visit.
Quantum of the Seas	8/9/2024	Juneau	X	Voicemail: complainant called 3 times, no description or media provided, no M9 conducted.
Norwegian Jewel	9/26/2024	Juneau	X	Web complaint: "Glad to see Juneau's electrified dock infrastructure being put to good use." Vessel not docked at electrified moorage. Media provided substantiating complaint. No M9 conducted.

The following photos were submitted with some of the public complaints, above:





The two photos above were taken of the *Quantum of the Seas* on July 26, 2024

Celebrity Solstice in Juneau on June 6, 2024

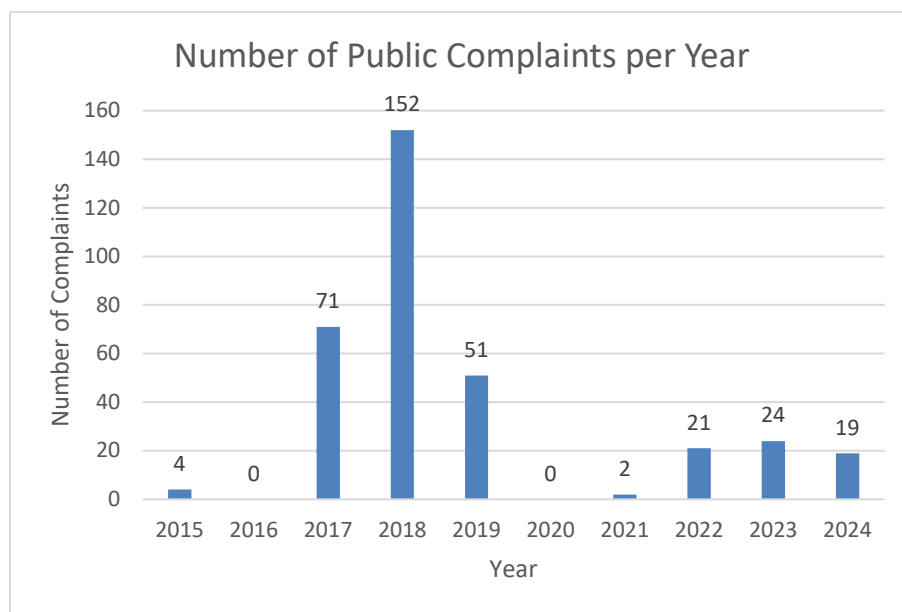


Figure 1: Complaints per season last decade