REGION 10
SEATTLE, WA 98101

Clean Air Act Partial Compliance Evaluation Inspection Report

Alyeska Pipeline Service Company
Valdez Marine Terminal

300 Dayville Rd,
Valdez, AK 99686

Inspection Date(s): August 13th-14th, 2024

BRENDAN WHYTE Digitally signed by BRENDAN WHYTE
Date: 2024.10.18 13:38:57 -07'00'

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Attachments

I. Basic Facility and Inspection Information

Facility:	Alyeska Pipeline Service Company Valdez Marine Terminal
Mailing Address:	300 Dayville Rd, Valdez, AK 99686
AFS Number:	AK0000000226100019
SIC:	4612 (Crude Petroleum Pipelines)
NAICS:	486110 (Pipeline Transportation of Crude Oil)
Permit Number:	AQ0082TVP02
Facility Contacts:	Klint VanWingerden Operations Director Alyeska Pipeline Service Company Valdez Marine Terminal klinton.vanwingerden@alyeska-pipeline.com Janine Boyette Senior Compliance Manager Alyeska Pipeline Service Company janine.boyette@alyeska-pipeline.com
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Dates of Inspection:	August 13-14, 2024
Inspection Start/End Times:	08:20 August 13, 2024, to 16:50 August 14, 2024
Inspection Notice:	This was an unannounced inspection.

II. Purpose of Inspection

This was a Clean Air Act (CAA) compliance inspection by the Environmental Protection Agency (EPA). Inspector Whyte, EPA Region 10, led the inspection. The Alaska Department of Environmental Conservation (ADEC) was made aware of the inspection beforehand and Brian Hirsch and Caitlin Hawthorne of ADEC participated in the inspection.

This was a partial compliance evaluation by the U.S. Environmental Protection Agency Region 10. The purpose was to identify potential compliance concerns with CAA regulations, including the National Emissions Standards for Hazardous Air Pollutants (NESHAP) Subpart EEEE (4E; Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)), and Subpart SS (Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process), and Standards of Performance for New Stationary Sources (NSPS) Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, as well as the facility's CAA permits. The facility operates under a Title V (major source) Air Quality Operating Permit (AQ0082TVP02) which was issued on February 2, 2012, and expired on February 2, 2017, (Attachment 1). The facility applied to renew this permit on July 14, 2016.

Disclaimer

This report is a summary of observations made at the facility at the time of the inspection. This report does not include a full review of documents provided by the facility. The information provided does not constitute a final decision on compliance with CAA regulations or applicable permits, nor is it meant to be a comprehensive summary of all activities and processes conducted at the facility.

III. Compliance History

According to ECHO[1], the Alyeska Valdez Marine Terminal (Alyeska VMT) was the subject of the following informal enforcement actions in the past five years:

Action Type	Date	Agency	Summary of Action
Notice of Violation	05/03/2022	ADEC	Violations of permit conditions 18 (12 counts), 60 (12 counts), and 93 (1 count).
Warning Letter	09/28/2021	ADEC	Intermittent compliance with Permit conditions 18, 17.1, 82.1.c(i), and 93.
Warning Letter	04/01/2020	ADEC	Intermittent compliance with Permit conditions 18, 20, and 85.

IV. Pre-Inspection Observations

We went directly to the facility. No observations were made prior to the scheduled inspection.

V. Facility and Process Overview

The following facility description is based on information provided by facility representatives during the inspection, the facility's website, and documents provided by the facility in response to the inspection records request.

The Alyeska Valdez Marine Terminal (VMT) operates as the southern terminus of the Trans Alaska Pipeline System (TAPS) and began operations in 1977. The TAPS transports crude oil 800 miles, from Alaska's Prudhoe Bay to the VMT located near the town of Valdez on the eastern side of Prince William Sound. The VMT primarily consists of 18 storage tanks, four of which have been decommissioned on-site. Crude oil arriving at the VMT flows from the TAPS into one of 14 operating crude oil storage tanks, each of which has a capacity of 510,000 barrels. Crude oil is then loaded into oil tankers at the two operational marine loading berths and transported to markets outside of Alaska. The facility has a maximum throughput of 1.14 million barrels per day, however, current throughput is approximately 500,000 barrels per day.

The 14 operational crude oil storage tanks are 250 feet in diameter and 62 feet tall, and each reinforced to withstand snow and seismic events with a large annular ring and 61 internal support columns. The tanks have fixed roofs and no internal floating roofs, however, emissions

[1] See https://echo.epa.gov/

are controlled by a closed vent system which transports vapors to the Power Vapor unit, which uses the vapors to generate at least 50% of the power and heating requirements of the facility and burns diesel to generate the balance. Two wastewater storage tanks in the facility's wastewater treatment unit are also controlled by the closed vent system.

VI. Entry and Opening Conference

Inspectors Gregory, Buenning (EPA), and I met Brian Hirsch and Caitlin Hawthorne of ADEC at our hotel at 08:00 August 13, 2024, and convoyed to the facility in separate vehicles. We arrived at the facility gate at 08:20. We presented our credentials to the gate guard, were issued guest passes, and asked if we knew where we were going. When we responded in the negative, the gate guards directed us to the main office building on a hill just above the entrance. We then drove to this main office building at 08:35. Walking into the office building, we found a security office and explained the reason for our visit, and they called Weston Branshaw who they stated was "in charge of the facility." After about 10 minutes, at 08:45, we were met by Austin Johnson, Environmental Coordinator, who escorted us to a conference room on the third floor. Klint VanWingerden, Operations Director, soon joined us in the conference room and we presented our credentials again, and explained the purpose and scope of our inspection, stating that we planned to be on-site for two days, and were going to be primarily focused on the crude oil tanks and their associated closed vent system. I gave the facility staff a copy of the "General Notice Regarding Proprietary/Confidential Business Information (CBI) Submitted to or Collected by EPA in Connection with Inspectors and Other Compliance Monitoring" document, and we discussed CBI. The Facility staff did not have any immediate CBI concerns at the time. I also explained that we would be taking photos and videos during our visit, Mr. VanWingerden asked if they could get a copy of the photos before we the left the site to send to Alyeska's legal team to review for CBI. I stated that I would not be handing over any inspection materials before leaving the site, but that I would notify an Alyeska personnel if I was taking a photo so the facility could take a photo alongside. I also asked the facility staff to let me know if there is any CBI in the area so that I could avoid taking any unnecessary photos of it. I asked about PPE and were told that we did not need any additional, non-standard PPE, besides the fire-resistant clothing we brought with us.

We then received a general facility and process overview from Mr. VanWingerden and Mr. Johnson, covering the following topics:

1) I asked if any ship loading would be taking place during the period of the inspection and was told that the next loading would begin in the evening of the following day (August 14, 2024).
2) Tanks 1 and 3 are used as surge control tanks for the TAPS.
3) Marine Berths 4 and 5 are the only two that are usually operational, and both have vapor control units. Berth five is currently undergoing maintenance.

4) The Ballast Water Treatment System (which serves as the entire facility's oily water treatment system) has two Regenerative Thermal Oxidizers (RTOs).
5) The power plant has three RTOs which will run any time there are excess vapors not being burned by the power boilers, with two operating and one regenerating at all times.
6) The three set of power plant boilers and steam turbines can generate up to 36 MW (12 MW each).
7) The crude oil tanks are not heated, however, the crude oil coming from the pipeline is warm.
    a) When Prudhoe Bay crude production was higher, the crude would reach the VMT at about 100°F, however, now that production is lower and transit time exceeds 18 days, the crude reaching the VMT is significantly cooler.
    b) The cooler crude no longer serves to keep the crude oil tanks ice and snow free in the winter.
8) The VMT finished construction in 1977.
9) Current throughput of the TAPS and VMT is under 500,000 barrels per day (~400,000 on October 13, 2024).
10) Mr. VanWingerden said that marine loading Berths 1 and 3 had not been used in "decades," and that Berth 2 was never constructed. The facility now uses only berths 4 and 5, which have VCUs.
11) Ships transporting crude from the VMT can hold up to 1.2 million barrels.

At 10:00 we were joined remotely by Hilary Garney, Air Quality Subject Matter Expert for the facility, and continued our overview of the facility.

12) Tank 8 was currently out of service for an API 653 inspection.
13) Tanks 11 and 12 were currently loading from the TAPS.
14) Current average throughput capacity of the VMT is about 1.2 million barrels per day.
15) The "pressure-vacuum vents" (PVVs) on the crude oil tanks are periodically re-built and maintained on-site, but were originally purchased from an off-site manufacturer.
16) I asked why there were so many vents on each tank, and was told that the design was based on initial air modeling done when the facility was built and daily throughput was about 2 million barrels. The facility staff noted that the design originally allowed for throughput around four times higher than what was currently passing through the facility.
17) I asked why the PVV openings were directing down the side of the crude tanks, and the facility staff said they did not know.
18) I asked how the facility identified if a PVV was open or not, and Ms. Garney stated that it was always determined based on the internal pressure of the crude tanks. The facility staff told me that the pressure monitoring system was calibrated annually.

19) I asked if the effects of wind on the opening of PVVs had been looked into, and the facility staff stated that they did not know.

20) Annual Method 21 leak detection and repair (LDAR) of the VMT's closed vent system is performed by outside contractors, however, maintenance staff will perform LDAR on PVVs if a suspected leak is identified by sight, sound, or smell.

21) Each crude tank has its own high-pressure header (introducing pressure) and a low-pressure header (venting gases and pressure to the power/vapor unit). Each of these headers is always at least partially open to maintain flow through the system.

22) Flue gas from power boilers is reintroduced to through the high-pressure headers as "inert" gas to maintain pressure in the closed vent system. This flue gas is treated to reduce moisture.

At 10:40 we received a safety briefing, and then concluded the opening conference, departing for the Power Vapor Control Room.

VII. Facility Walk-Through

The inspection included a walkthrough of the facility and taking photographs/videos.

During the inspection we made observations and recorded video using Teledyne FLIR Gx320 and Gx620 Optical Gas Imaging (OGI) cameras. The Gx320 was operated by Inspector Buenning (videos "FLIR0099" through "FLIR0110") and I operated the Gx620 (videos "FLIR0137" through "FLIR0161"). A digital photo log is Attachment 2 to this report.

A. Power Vapor Control Room

We arrived at the Power Vapor unit at 11:00, escorted by Mr. VanWingerden and Mr. Johnson. Walking up to the Power Vapor Control Room, we were greeted by Andrew Roche, Power Vapor Technician, and several other staff. Mr. Roche then gave us an overview of the power vapor system and closed vent system.

1) The high-pressure headers are pressurized to 15 psi.
2) Tanks are generally operated at 0.3 inches water column (iwc).
3) Each tank has two pressure sensors.
4) Viewing the control room screens, I observed that all tanks were currently operating between -0.03 and 0.33 iwc.
5) Each tank in the system is isolated from the others (i.e., they do not share pressure, and tanks can be individually pressurized or de-pressurized).
6) Flue gas from the boilers is cooled, run through particulate matter and SO_2 scrubbers, and then passed through canister filters.

7) There is always some tank vapor being routed to the power plant RTOs in order to keep them warmed up. There are always two operating while one regenerates.
8) The two "ballast water storage tanks" (oily water sewer storage tanks) are connected to the closed vent and power vapor systems in the same way as the crude tanks.
9) The pressure alarms in the control room will sound if tank pressures fall outside -1.5 and 1.2 iwc.
10) I asked where the split in the closed vent system where vapors were routed to either the RTOs or the power boilers was located. I was told it was inside the Power Vapor building.
11) I asked what situations could lead to pressure alarm events and was told that it was generally valve actuator failures and pipeline pressure relief events.

We left the Power Vapor Control Room at 11:45 and drove up to an overlook above the East Tank Farm located at 61.079401, -146.391339. We observed the tank farm through our FLIR OGI cameras and did not observe any large plumes of volatile organic compounds (VOCs). We then drove down and stood on the road on the west side of the tank farm (61.080709, -146.386674) to briefly observe Tanks 13 and 14. Dust from vehicles driving on the road was obscuring observation with our FLIR OGI cameras, but we did not observe any large plumes of VOCs.

At 12:20 we broke for lunch.

B. East Tank Farm (Day 1)

Returning to the facility at 13:40, we were joined by Weston Branshaw, Operations Manager, and then drove to the operations office to get a hot work permit for the East Tank Farm. We were also informed that we would not be able to enter Cell 1 (Tanks 1 and 2) because they were the pipeline surge control tanks, or Cell 2 (Tanks 3 and 4) where blasting and repainting was currently underway. Likewise, we would not be able to access the catwalk between these two cells due to the blasting operations. At 14:09 we arrived at the East Tank farm and conducted the following activities:

1) Walked the catwalk between Cells 3 (Tanks 5 and 6) and 4 (Tanks 7 and 8).
    a) I observed VOC emissions from PVV C on Tank 7 (video FLIR0137).
    b) I climbed Tank 7 and observed the two, co-located, pressure sensors in a box on the tank roof (photos P8130235 and P8130235).
    c) I photographed Tank 7 PVVs A, B, C, and D (photo P8130237).
    d) We spoke with facility staff about the observed VOC emissions and what could be causing it. I asked, again, about the effects of wind on the PVVs and Mr. Branshaw said that high wind events can cause the PVVs to start "waggling."
    e) I used the Windy app on my phone to look at the current wind speeds, which were calm, and noted that they were currently 3 knots at the facility.

2) Leaving the catwalk, we went to a shed on the north side of the tank cells and observed the atmospheric pressure reference monitor used to calculate the relative pressure of the tanks (photo P8130238).
3) Walked the catwalk between Cells 5 (Tanks 9 and 10) and 6 (Tanks 11 and 12).
    a) I observed intermittent VOC emissions from PVV K on Tank 11 (video FLIR0138).
    b) I observed VOC emissions from PVV I on Tank 11 (videos FLIR0139 and FLIR0140; 15:09).
    c) Inspector Buenning continued to observe VOC's from PVV I on Tank 11 (videos FLIR0099 and FLIR0100).
    d) Mr. Branshaw called the control room to have them bring down the pressure on T11.
    e) I observed VOC emissions from PVV K on Tank 12 (video FLIR0141).
    f) The facility staff told me that personnel do daily rounds to check for odors indicating a leak, and that any odors will trigger an investigation, which will involve an OGI camera if needed.
    g) I observed PVV I on Tank 11 still emitting VOCs, despite the pressure currently being lowered (video FLIR0142; 15:15).
    h) Inspector Buenning also continued to observe VOC's from PVV I on Tank 11 (video FLIR0101).
    i) I climbed Tank 9 and observed the pressure gauges on the tank roof (photo P8130239).
    j) At 15:43 Mr. Branshaw told me that T11 pressure was still at 0.18 iwc, down from 0.3 iwc.
4) Walked the catwalk between Cells 6 (Tanks 11 and 12) and 7 (Tanks 13 and 14).
    a) I observed what I initially thought were VOC emissions from behind PVV C on Tank 13, but determined it was dust from vehicles on the road behind the tank (video FLIR0143).
    b) I observed intermittent VOC emissions from PVV A on Tank 11, however, was unable to catch them well in a recorded video (video FLIR144; VOCs visible in first 4 seconds of recording).
    c) At 16:30 Mr. Branshaw told us that maintenance is topping the filling of Tank 11 and 12 in order to conduct LDAR on the PVVs observed emitting VOCs. Tanks will be brought up to pressure, LDAR performed, and then tanks brought under vacuum to perform repairs.
5) We departed the East Tank Farm 16:35, and, in the truck, I asked how many staff the facility had. Mr. Branshaw told me it varies a lot, based on season and projects, but there were generally 150 to 230 employees onsite per day.
6) We departed the facility for the day at 16:45 and handed in our visitor badges at the gate.

C. <u>Maintenance Shop</u>

We arrived back at the facility at 08:25 on August 14, 2024, and received new visitor badges from the front gate. Upon driving up to the main office, were met in the parking lot by the following Alyeska staff:

- Klint VanWingerden,
- Weston Branshaw,
- Austin Johnson,
- Hilary Garney,
- Janine Boyette (Regional Compliance Manager),
- and Steve Marlin (Assistant General Counsel).

We introduced ourselves to the new members of the group, and I re-explained the purpose and scope of the inspection. The group then loaded into vehicles and drove to the Maintenance Shop, arriving at 08:40. We were met at the Maintenance shop by Mike Drew (Maintenance Supervisor), Tom Johnson (Lead Technician), and several other members of the maintenance team. The maintenance team had laid out a partially deconstructed PVV for us to examine.

1) I observed the PVV vacuum pallet (photo P8140240) and was informed that the central magnet controlled the pressure required to pen the vent (photo P8140241), which was adjustable using the screw on the back of the magnet.
    a) The vacuum pallet had a mylar seal material.
    b) The pressure pallet had a flat and circular seal interface.
2) I observed the flange used to attach the PVV to the crude oil tank (photo P8140242), and the overall PVV (photo P8140243) and detached trunk (photo P8140248). I observed that all of the seams were sealed with a fiber reinforced gasket (photos P8140244 and P8140250).
3) I looked into the top and bottom of the PVV and observed the pressure pallet, when allows gases to vent (photo P8140245, P8140246, and P8140247).
    a) The pressure pallet was only held in a seated (closed) by its own weight.
    b) The pressure pallet had a flat and circular seal interface. I wiggled the top of the guide rod, and noted that even slight misalignment of the large, flat, and circular seal interface was enough to open a gap in the seal.
    c) The pressure pallet had a mylar sealing material.
    d) The lower part of the pressure pallet guide rod was made of PTFE tubing, to reduce friction, however, this material had some play and could bend from side to side.
4) I noted the original manufacturer of the PVV was a company called Shand and Jurs (photo P8140249).
5) Mr. Tom Johnson told me that, as far as he is aware, these are the original vents that were installed when the facility finished construction in 1977.

6) I asked how the facility defined a "leak" when conducting LDAR on the PVVs and was told that the facility's leak definition was >9% of the lower explosive limit (LEL), and that a reading of 9% or below would not trigger a repair or corrective action.
7) I asked for a more thorough explanation of how the pressure monitoring system worked, and the following was explained by one of the maintenance staff who worked on the pressure monitoring system:
    a) Each tank has two pressure gauges:
        i) Gauge "A" reads pounds per square inch gauge (PSIG), directly reading the relative pressure difference between the inside and outside of the tank.
        ii) Gauge "B" reads pounds per square inch absolute (PSIA). This PSIA value is compared to the atmospheric reference gauge observed outside of the containment dike cells the previous day (see Section VII.B.2 of this report).
    b) The control room always uses "B" pressure, unless they suspect calibration drift.
    c) According to the facility staff, windy days can cause errors of 0.25 to 0.5 iwc in the "A" pressure reading. Using the PSIA reading from gauge "B" and the reference gauge provides a more accurate reading under windy conditions.
    d) Both gauges on each crude tank read the pressure inside the tank directly below where the box holding the gauges sits on the tank roof.
8) I observed the support collars installed to strengthen the bottom flange and tank connection of each PVV (photo P8140250). These were installed in October of 2022, following an incident when snow buildup sheared off and damaged multiple PVVs on the crude oil storage tanks.
9) I observed the LEL meters used to conduct LDAR inspections (photo P8140251) and their calibration gases.
    a) The four gas meters ("LDAR meters") were calibrated with 25ppm H_2S, 100ppm CO, 3,500ppm pentane (25% LEL), 18% O_2, and N_2 balance.
    b) "VOC meters" were calibrated with 100ppm isobutylene.
10) I asked about PVV maintenance and inspections and was told that PVVs received both annual and triennial inspections.
    a) Annual inspections involved a check of the LEL inside of the trunk and PVV casing.
    b) If the LEL reading is over 9%, then the pallet seals and actuation forces will be checked.
        i) Pressure pallet actuation force should be 10 lb 6 oz.
        ii) Vacuum pallet actuation force should be 2.7-3.1 lb.
    c) The triennial inspection involves an internal inspection and a re-build of the PVV, if necessary.

d) Any time a tank is taken out of service then the PVVs are all removed and re-built.

i) This is generally done every 10 to 20 years for API 653 inspections.

We then departed the Maintenance Shop at 09:50.

D. <u>Ballast Water Treatment Unit</u>

We arrived at the Ballast Water Treatment unit at 09:55 and were met by Chris Derifield, Lead Operator, who provided a safety briefing. We then walked towards the ballast water storage tanks and made the following observations.

1) Despite its name, the Ballast Water Treatment unit serves as the oily water sewer treatment unit for all operations at the VMT.
2) The first tank we walked by was the skimmed oil tank (Tank 80), which Mr. Derifield told me "breathes to atmosphere."
   a) The vents on Tank 80 look superficially similar to the PVVs on the crude oil and ballast water tanks but are smaller.
   b) I was told these vents were set at even lower pressures and allowed the tanks to breathe.
   c) I asked how much slop oil was generally in the tank, and Mr. Derifield told me it was usually a "foot or two."
   d) I observed VOC's emitting from the vents on Tank 80 (videos FLIR0145, FLIR0146).
   e) Inspector Buenning observed VOC's venting from Tank 80 (video FLIR0102).
3) We then walked around the two ballast water storage tanks, Tank 94 and Tank 93, and observed the PVVs.
   a) Tank 94
      i) I observed the PVV on the south side of Tank 94 emitting VOCs (video FLIR0147).
      ii) I observed the PVV on the east side of Tank 94 emitting VOCs (videos FLIR0148 and FLIR0149).
      iii) I observed the PVV on the north side of Tank 94 emitting VOCs (video FLIR0150).
   b) Tank 93
      i) Inspector Buenning observed the PVV on the north-northwest side of Tank 93 emitting VOCs (videos FLIR0103 and FLIR0104).
4) We returned to Tank 80 and continued to observe it for several minutes.
   a) I observed VOCs being emitted by the vent on the northeast side of Tank 80 (video FLIR0151).

b) Inspector Buenning observed VOCs being emitted by the vent on the east side of Tank 80 (video FLIR0105).

We then left the Ballast Water Treatment unit.

E. East Tank Farm (Day 2)

We arrived back at the East Tank Farm at 11:17, and conducted the following activities:

1) We were told that Tank 7 was loading.
2) Walked the catwalk between Cells 3 (Tanks 5 and 6) and 4 (Tanks 7 and 8).
   a) I observed VOC emissions from PVVs B and C on Tank 7 (videos FLIR0152 and FLIR0154).
   b) I observed VOC emissions from PVV D on Tank 7 (video FLIR0153).
   c) Inspector Buenning observed VOC emissions from PVV C on Tank 6 (video FLIR0106).
   d) Inspector Buenning observed VOC emissions from both PVV B and C on Tank 6 (video FLIR0107).
   e) I observed VOC emissions from PVV B on Tank 6 (video FLIR0155).
   f) I observed VOC emissions from both PVV B and C on Tank 6 (video FLIR0156).

We left the East Tank Farm at 12:00 and departed the facility for lunch at 12:10. We returned to the facility at 14:00. We then returned to the East Tank Farm 14:15 and conducted the following activities:

3) Entered Cell 3 (Tanks 5 and 6) at ground level.
   a) I observed intermittent VOC emissions from PVV G on Tank 5 (video FLIR0157; VOCs seen in first seconds of video).
   b) Inspector Buenning observed intermittent VOC emissions from PVV H on Tank 5 (video FLIR0108).
4) Entered Cell 5 (Tanks 9 and 10) at ground level.
   a) I observed VOC emissions from PVV G on Tank 9 (video FLIR0158).
   b) I observed VOC emissions from PVV E on Tank 9 (video FLIR0159).
   c) I observed VOC emissions from PVV B on Tank 9 (video FLIR0160).
   d) I observed VOC emissions from PVV F on Tank 9 (video FLIR0161).
   e) Inspector Buenning observed intermittent VOC emissions from PVV C on Tank 10 (video FLIR0109).
   f) Inspector Buenning observed intermittent VOC emissions from PVV D on Tank 10 (video FLIR0110; VOCs seen in first seconds of video).

We departed the tank farm at 15:10, and returned to the conference room in the main office.

VIII. Closing Conference

At 15:25, our group returned to the facility conference room to have an initial discussion on the inspection and conduct the closing conference. I asked the facility staff if they had any way of verifying that the PVVs were not opening due to wind-caused pressure changes, and Mr. Branshaw responded that the facility had "no instrumentation to indicate" if PVVs were opening, besides the tank pressure readings. I also asked why the internal pressure limits for the crude tanks was so low, and Mr. Branshaw told me that the design of the tanks included a frangible roof designed to fail first and "fish mouth," rather than rupture the tanks walls, during a high-pressure event. I asked the facility staff to give us some time for me to review my notes and for the inspection team to discuss amongst themselves before the closing conference, and they left us at 15:40.

We began the closing conference at 16:22. Present for the closing conference were:

- Klint VanWingerden (Alyeska),
- Weston Branshaw (Alyeska),
- Austin Johnson (Alyeska),
- Hilary Garney (Alyeska),
- Janine Boyette (Alyeska),
- Steve Marlin (Alyeska),
- Caitlin Hawthorne (ADEC),
- Brian Hirsch (ADEC),
- Hans Buenning (EPA NEIC),
- Andrew Gregory (EPA R10),
- and Brendan Whyte (EPA R10).

I led the closing conference and summarized the parts of the facility we had visited during the inspection and our observations related to CAA. I went through my inspection notes and described potential compliance concerns from the inspection. We also compared notes with the facility on which PVV's we had observed emitting VOCs, concluding that we had observed 25. Mr. VanWingerden stated that LDAR and repair technicians had examined PVV C on Tank 7 the previous evening and found it not to meet the facility's leak definition >9% LEL, despite our inspection team observing the PVV emitting VOCs on both days of the inspection. However, they did find the neighboring PVV, 7B, to be leaking by the facility's definition.

The following were identified as potential compliance concerns during the closing conference:

1. Regarding the PVVs
    a. I noted that the PVVs appeared to be quite sensitive and temperamental, in a system that was, otherwise, highly engineered to handle an extreme environment. I also stated my concern that the PVVs were calibrated to open at

such low pressures (0.5 iwc pressure differential being only 0.018 pounds per square inch), and that that facility was in a location that regularly experienced extreme winds that were very likely to cause fluctuations in differential pressure much larger than this due to turbulence over PVV openings. I expressed concern that the facility had no way of verifying or demonstrating that the PVVs are not opening or allowing flow during non-emergency situations. For these reasons, the facility did not appear to be capable of keeping accurate records of instances when the PVVs had opened or emitted VOCs.

b. I expressed concern that we had seen VOCs emitting from approximately 25 PVVs during our inspection.

c. I also noted that given the above, and the VOC emissions we had observed during our inspection, I was unsure if the PVVs could meet the definition of a safety device under Subpart 4E.

d. I noted that, based on my pre-inspection records review, the facility may not be reporting emissions from PVVs in their excess emissions reports.

e. I expressed my concern regarding the facility's definition of a leak on a PVV being an LEL reading of greater than 9%, and based on a reading taken from an elbowed wand inserted into the PVVs trunk. I stated that this was a very high leak definition and based on a method very likely to miss potentially significant flows of VOCs from a PVV, and that this was illustrated by the facility not identifying PVV C on Tank 7 as "leaking" despite repeated observations of VOCs emitting from the PVV.

2. I noted that I had some concerns regarding the lack of controls we had observed on Tank 80, but that I would have to review the Facility's permit and additional documents that I would be adding to the inspection records request.

I also presented and explained the records request (Attachment 3) to facility representative. We asked the facility to respond to the information request by September 11, 2024. I explained that the inspection report timeline, and that inspection would not be complete until I have reviewed all of my notes and written an inspection report. I thanked the facility staff for their time and positive attitude during the inspection, and Inspectors Buenning, Gregory, and I departed the facility with the ADEC personnel at 16:50.

IX. Post Inspection Activities

After the inspection I reviewed our inspection notes and counted the PVVs which we observed VOC flow from, excluding Tank 80. We observed VOC flow from 21 PVVs on the crude oil and ballast water storage tanks, comprising about 27% of the 77 PVVs we were able to closely observe. See Table 1 for a summary of vents observed with VOC emissions.

Table 1: Crude oil and ballast water storage tank PVVs observed with VOC emissions.

Tank	PVV	Camera: Video File
5	G	Gx620: FLIR0157
5	H	Gx320: FLIR0108
6	B	Gx320: FLIR0107
6	C	Gx320: FLIR0106, FLIR0107
7	B	Gx620: FLIR0152, FLIR0154, FLIR0155, FLIR0156
7	C	Gx620: FLIR0137, confirmed second day again FLIR0152, FLIR0154, FLIR0156
7	D	Gx620: FLIR0153
9	B	Gx620: FLIR0160
9	E	Gx620: FLIR0159
9	F	Gx620: FLIR0161
9	G	Gx620: FLIR0158
10	C	Gx320: FLIR0109
10	D	Gx320: FLIR0110
11	A	Gx620: FLIR0144
11	I	Gx620: FLIR0139, FLIR0140, FLIR0142; Gx320: FLIR0099, FLIR0100, FLIR0101
11	K	Gx620: FLIR0138
12	K	Gx620: FLIR0141
93	North	Gx320: FLIR0103, FLIR0104
94	South	Gx620: FLIR0147
94	East	Gx620: FLIR0148, FLIR0149
94	North	Gx620: FLIR0150

On September 11, 2024, Ms. Boyette transmitted the facility's response to my inspection information request and making a blanket CBI claim on all documents contained in it. On September 25, 2024, I e-mailed Ms. Boyette for clarification regarding the CBI claims, and requesting she send me two of the documents separately (due to their file paths being too long to un-zip). On October 1, 2024, Ms. Boyette responded with the two documents and withdrawing Alyeska's CBI claims to all of the documents besides "Document TV-18," but requesting that Alyeska be given the chance to review all photographs and videos for potential CBI before they were released. I agreed to this request.