Kris Battleson
HSE Manager, Richmond Refinery

September 25, 2025

Via E-mail

Bay Area Air District
Attn: Compliance and Enforcement Division
375 Beale Street, Suite 600
San Francisco, CA 94105

Chevron Richmond Refinery
July 2025 Flaring Causal Analysis Report

To Whom It May Concern:

Attached is the flaring causal analysis report for July 2025 for Chevron's Richmond Refinery. This report is submitted pursuant to Regulation 12, Rule 12, Section 12-12-406. The report is due within 60 days of the end of July 2025 for any reportable flaring events that occurred during the month of July 2025.

There was one (1) reportable flaring event that occurred in July 2025.

If you have any questions, please contact Wilma Dreessen at 510-242-2894 or wilma.dreessen@chevron.com.

Sincerely,

for
Kris Battleson

Attachment

cc: Danny Fung, Bay Area Air District (via e-mail, w/ attach)
Cristobal Frias, Bay Area Air District (via e-mail, w/ attach)
Chris Coelho, Bay Area Air District (via e-mail, w/ attach)
Haley Downing, Bay Area Air District (via e-mail, w/ attach)

Richmond Refinery
Chevron Products Company
A Division of Chevron U.S.A. Inc.
841 Chevron Way, Richmond, CA 94801
Tel (510) 242-1400
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Attachment I

Causal Analysis Report

Chevron Richmond Refinery
Reportable Flaring Events

July 29, 2025
Flaring Due to Compressor Trip

Refinery Flare Event – Cause Investigation Report

1. Date on which the report was drafted: September 25, 2025

2. The refinery name and site number:
Refinery: Chevron Richmond Refinery
Refinery Site Number: A0010

3. The assigned refinery contact name and phone number:
Contact Name: Wilma Dreessen
Contact Phone Number: (510) 242-2894

Is this a rescission/modification of a previous report: No

Date of initial report: Not Applicable

Reason for rescission/modification: Not Applicable

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4. **Identification of flare(s) at which the reportable event occurred by reviewing water seal monitoring data to determine which seals were breached during the event**

Flare	**Reportable Event (SO2 or Vent Gas Volume)**
RLOP (S-6039)	SO2; Vent Gas Volume

5. **The flaring event duration for each affected flare**

Flare (Source Number)	**Event Date**	**Start Time**	**End Time**
RLOP (S-6039)	29-July-25	7/29/2025 14:53	7/29/2025 19:08
FCC (S-6016)*	29-July-25	7/29/2025 18:26	7/29/2025 18:43

**Reporting per recommendation from BAAD to include vent gas volume and emission from the other flares occurring during the same flaring event.*

6. A brief description of the flaring event:

On July 29, 2025, a compressor tripped due to high liquid level in the compressor knockout drum, resulting in flaring from the RLOP flare. Level in the vessel is managed by a primary (auto) eductor and a secondary (manual) eductor. At the time of the event, both failed to adequately remove liquid from the vessel, resulting in the high-level safety trip of the compressor.

7. A process flow diagram showing the equipment and process units that were the primary cause of the event.
See Attachment Ia.

8. The total volume of vent gas flared (MMSCF) and emissions throughout the event per calendar day:

Flare (Source Number)	Event Date	Volume (mmscf)	CH4 (lbs.)	NMHC (lbs.)	SO2 (lbs.)
RLOP (S-6039)	29-July-25	1.35	171.9	1,398.8	53,304.2
FCC (S-6016)*	29-July-25	0.00397	0.31	7.0	4.5

**Reporting per recommendation from BAAD to include vent gas volume and emission from the other flares occurred during the same flaring event.*

9. A statement as to whether or not the gas was scrubbed to eliminate or reduce any entrained compounds and a list of the compounds for which the scrubbing was performed.

The vent gas was not scrubbed to eliminate or reduce any entrained compounds.

10. The primary cause of the flaring event including a detailed description of the cause and all contributing factors. Also identify the upstream process units that contributed vent Gas flow to the flare header and provide other flow instrumentation data where available.

Primary causal factor: Check valves associated with the auto eductor failed, rendering the auto eductor unable to remove liquid from the compressor knockout drum.

Contributing cause: The secondary (manual) eductor did not function due to plugging in the piping and was unable to remove liquid from the compressor knockout drum.

11. Describe all immediate corrective actions to stabilize the flaring event, and to reduce or eliminate emissions (flare gas recovered or stored to minimize flaring during the event). If a decision was made not to store or recover flare gas, explain why.

Emergency procedures were utilized to safely stabilize the impacted process plants.

12. Was the flaring the result of an emergency? If so, was the flaring necessary to prevent an accident, hazard or release to the atmosphere?

Flaring was an Emergency (defined in Regulation 12-12-201) as interpreted by the BAAD because it was caused by a sudden and infrequent equipment failure beyond the reasonable control of the Refinery. The failure of the check valves associated with the auto-eductor and the plugging of the manual eductor piping led to an unexpected high liquid level in the compressor knockout drum, resulting in flaring within a process unit that necessitates immediate corrective action to restore normal and safe operations.

13. If not the result of an emergency and necessary to prevent an accident, hazard or release to the atmosphere, was the flaring consistent with an approved FMP? If yes, provide a citation to the facility's FMP and any explanation necessary to understand the basis for this determination.

Flaring was consistent with Chevron's FMP Section 2.1 Table 2-2. Table 2-2 identifies sources that can be flared in non-emergency situations (e.g. start-up, shutdown).

14. If the flaring was due to a regulatory mandate to vent to flare, why couldn't the gas be recovered, treated, and used as fuel gas?

N/A. Flaring was not due to a regulatory mandate.

15. Identify and describe in detail each prevention measure (PM) considered to minimize flaring from the type of reportable flaring event that occurred.
a) State whether the PM is feasible (and will be implemented), or not feasible
b) Explain why the PM is not feasible, if applicable

The prevention measures listed below are feasible and will be considered:

1. Evaluate and recommend potential changes to check valve design. Check valve design should consider frequent cycling.
   Estimated Completion Date: 09/30/2025
2. Evaluate/update operator routine duty to ensure manual eductor functionality. Consider cycling/exercising manual eductor as well as steaming the through line into vessel to ensure line is free from plugging.
   Estimated Completion Date: 10/31/2025

Attachment Ia: Flaring Due to Compressor Trip