



NEKO

**Tesoro Refining & Marketing Company LLC**

A subsidiary of Marathon Petroleum Corporation  
Martinez Refinery  
150 Solano Way  
Martinez, CA 94553-1487

August 21, 2019

**USPS CERTIFIED MAIL: 7018 0680 0000 1371 7665**

Mr. Jeff Gove  
Director of Enforcement  
Bay Area Air Quality Management District  
375 Beale Street, Suite 600  
San Francisco, CA 94105

**SUBJECT: June 18, 2019 Flare Event Causal Analysis**  
**Tesoro Refining and Marketing Company, subsidiary of Marathon Petroleum, Martinez Refinery Plant #B2758**

Dear Mr. Gove:

Pursuant to Regulation 12, Rule 12, and the Compliance Advisory dated June 25, 2007 from the BAAQMD Compliance and Enforcement Division, the flare causal analysis for the June 18, 2019 event is attached. This report is being submitted under both the requirements specified in Regulation 12-12-406, for a reportable event when flaring occurs within a facility, and the Required Contents for Causal Analysis Reports, outlined in the Compliance Advisory.

This event triggered a 5 Why's incident investigation. The investigation is complete, and the following report includes recommended corrective actions. If you have any questions or wish to discuss any of these items further, please feel free to call Sharon Lim at (925) 335-3467.

Sincerely,

David Chetkowski  
Advanced HES Professional

SYL/kds

Syl

Attachments

cc: (via e-mail)  
Ray Salalila, BAAQMD Enforcement Inspector  
Miguel Zepeda, BAAQMD Air Quality Inspector

**FLARE CAUSAL ANALYSIS REPORT**  
*Flaring Associated with #2 H2 Plant Startup*  
*June 18, 2019*

Public Copy

- 1) **Date on which the report was drafted.**  
August 19, 2019
- 2) **The refinery name and site number.**  
Tesoro Martinez Refinery, Plant # B2758
- 3) **The assigned refinery contact name and phone number.**  
Sharon Lim, Senior Engineer, (925) 335-3467
- 4) **Identification of the flare(s) at which the reportable event occurred by reviewing the water seal monitoring data to determine which seals were breached during the event.**  
Steam Flares, **S944 & S945**; Coker Flare, **S1517**; East Air Flare, **S854**; and West Air Flare, **S1012**. [REDACTED]
- 5) **The flaring event duration for each affected flare:**
  - a. **The date(s) of the event**  
June 18, 2019
  - b. **The start and end time of the event**  
Starting time 9:24 AM  
Ending time 12:30 PM
  - c. **The net duration of the event (in hours and minutes)**  
3 hours 6 minutes [REDACTED]
- 6) **A brief description of the flaring event**

Flaring was associated with the start-up of #2 Hydrogen Plant, putting off-spec hydrogen into the flare header and the trip of the flare gas recovery compressors due to the rapid depressurization of the Pressure Swing Adsorption (PSA) system.
- 7) **A process flow diagram showing the equipment and process units that were the primary cause of the event.**  
[REDACTED]
- 8) **The total volume of vent gas flared (MMSCF) throughout the event.**  
Based on the Regulation 12 Rule 11 Flare Monitoring report for July 2017, the corrected net gas flow to the flare was 0.502 MMSCF.
- 9) **The emissions associated with the flaring event per calendar day:**
  - a. # methane emitted = 34 lbs
  - b. # non-methane hydrocarbon emitted = 43 lbs
  - c. # SO<sub>2</sub> emitted = 4 lbs

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**Also provide the assumptions used to calculate emissions associated with the flaring event if they are different from those used for reporting under Regulation 12 Rule 11.**

The emissions associated with this flaring event were based on the methodology used for reporting under Regulation 12 Rule 11.

- 10) 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 scrubbing was performed.**

[REDACTED] The vented gas which was flared was not scrubbed in the refinery fuel gas treating system.

- 11) 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.**

The incident started when the #2 Hydrogen Plant, operated by Air Products, was being brought back online. When they opened the battery limits valve, their controls logic recognized a high differential pressure (DP) between their PSA system and the hydrogen product header and automatically opened their vent to flare recovery.

This rapidly depressured their PSAs to flare recovery and tripped the flare gas recovery compressors on high pressure. The compressors were restarted and #2 Hydrogen Plant rebuilt PSA pressure. The need to rebuild pressure extended the overall flaring duration. When #2 Hydrogen Plant was on specification, they exported hydrogen to header and stopped venting hydrogen to the flares and the flare gas recovery compressors.

The flow at 0.502 MMSCF was just slightly over the trigger for reporting at 0.5 MMSCF.

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

The second flare gas recovery compressor was started up. Refinery was at reduced rates already due to scheduled unit shutdowns.

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**13) 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 not the result of an "emergency" as defined by the BAAQMD.

*“Emergency: A condition at a petroleum refinery beyond the reasonable control of the owner or operator requiring immediate corrective action to restore normal and safe operation that is caused by sudden, infrequent and not reasonably preventable equipment failure, natural disaster, act of war or terrorism or external power curtailment, excluding power curtailment due to an interruptible power service agreement from a utility.”*

**14) If not the result of an emergency and necessary to prevent an accident, hazard or release to 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.**

Hydrogen Plant startup is discussed in the Flare Management Minimization Plan Section 3.4, Prevention Measures, Subsection 3.4.1 Maintenance Activities Including Startups and Shutdowns. Hydrogen has to be vented to the flare header until #2 Hydrogen Plant Product is on specification when the CO and CO2 concentrations have been reduced.

**15) If the flaring was due to a regulatory mandate, to vent to the flare, why couldn’t the gas be recovered, treated, and used as fuel gas?**

Not applicable.

**16) Identify and describe in detail each preventative measure (PM) considered to minimize the flaring from the type of reportable flaring event that occurred:**

a. **State whether the PM is feasible (and will be implemented), or not feasible**

	Corrective Actions (See Note)	Address Causes
1	Modify procedure to unblock battery limits earlier to avoid DP issue when opening.	The battery limit valve was opened prior to export, but after H2 was in system. This allowed the header pressure to be seen on a pressure indicator in unit even though control valve to refinery was closed and unit was still preparing to enter header. – Management of Change is in progress.

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2	Reconfigure logic on next outage to remove override.	All controllers were manual, but the logic over-rode the manual output. – Scheduled for next shutdown
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**Note: The corrective action is included for the sake of completeness. The implementation of the corrective actions is 100% the responsibility of Air Products. The contract between Tesoro and Air Products does not give Tesoro the ability to compel the implementation of the corrective action.**

**b. Explain why the PM is not feasible, if applicable**

Not applicable.