



3485 Pacheco Boulevard  
Martinez, CA 94553

**VIA EMAIL**

May 6, 2024

Bay Area Air Quality Management District  
375 Beale Street, Suite 600  
San Francisco, CA 94105

**Subject: March 5, 2024 Reportable FXG Flaring Event Incident Report - Public Version**

To Whom It May Concern:

Pursuant to Regulation 12 Rule 12 Section 406, Martinez Refining Company submits the following information regarding a reportable flaring event as defined in Regulation 12-12-208 that occurred on March 5, 2024. The attached report discusses the cause of the flaring event and any prevention measures considered to prevent recurrence of the event..

Should you have any questions or concerns regarding this report, please contact me at (925) 313-5387 or at [william.hewlett@pbfenergy.com](mailto:william.hewlett@pbfenergy.com).

Sincerely,

*William Hewlett*

William Hewlett  
Environmental Air Engineer  
Martinez Refining Company, LLC  
3485 Pacheco Boulevard  
Martinez, CA 94553  
O 925.313.5387  
C 925.305.7128  
[William.hewlett@pbfenergy.com](mailto:William.hewlett@pbfenergy.com)

Attachment

cc: [ccrowley@baaqmd.gov](mailto:ccrowley@baaqmd.gov)  
and [dfung@baaqmd.gov](mailto:dfung@baaqmd.gov)

## Regulation 12 Rule 12 Reportable Flaring Event Causal Analysis Report

1. **Report Date:** May 6, 2024
2. **Refinery Name and Site Number:** Martinez Refining Company - BAAQMD Site # A0011
3. **Refinery Contact and Phone Number:** William Hewlett (925) 313-5387
4. **Flare Identification:** [REDACTED] Flare S-1771
5. **Flaring Event Duration – [REDACTED] Startup:**
  - a. **Date:** March 5, 2024 – March 7, 2024
    - i. **Start Time:** March 5, 2024 at 19:00
    - ii. **End Time:** March 7, 2024, at 20:30
    - iii. **Total Duration of Event:** 49 Hours and 30 Minutes
6. **Brief Description of Flaring Event:**

[REDACTED] is a low-BTU fuel gas made in the [REDACTED] and burned in the refinery heaters along with refinery fuel gas. During startup, [REDACTED] was sent to the [REDACTED] flare resulting in flaring greater than 0.5 MMSCFD.

The [REDACTED] which produces the [REDACTED] was started up as part of an unscheduled major maintenance turnaround. To ensure safe and reliable operation of the refinery heaters that combust [REDACTED] as fuel, [REDACTED] cannot be burned in the refinery heaters during startup of the [REDACTED] since the gas composition changes significantly during these periods.
7. **Process Flow Diagram:** see attached process flow diagram
8. **Total Volume of Gas Flared:** 98,767,631 SCF
  - a. **Volume flared on 03/05/2024:** 33,490,780 SCF
  - b. **Volume flared on 03/06/2024:** 64,154,984 SCF
  - c. **Volume flared on 03/07/2024:** 1,121,868 SCF
9. **Total Emissions due to flaring based on Regulation 12 Rule 11 Methodology**
  - a. 318 lbs of methane
  - b. 95 lbs of non-methane hydrocarbons
  - c. 216 lbs of sulfur dioxide
10. **Was the Gas Scrubbed?** The [REDACTED] flared for this flaring event was scrubbed for H2S removal in the [REDACTED] Unit for the entire duration of the startup. The [REDACTED] Unit was put online on 3/5/24 at 19:10 and [REDACTED] production started after feeds were introduced on 3/5/24 at 23:05.
11. **Primary Cause of Flaring Event including Detailed Description of the Cause and Contributing Factors:**

The primary cause of the [REDACTED] flaring for this flaring event is the basic design of the [REDACTED] and how it must be shut down and started up. The [REDACTED] Unit was shut down in February, 2024 for maintenance purposes and the unit was started back up March 5, 2024.

During start-up, the unit is inventoried with coke and slowly heated up. Coke ignition occurs at approximately 750 deg F. Gas formed by the initial ignition of the coke is mostly nitrogen, oxygen

and CO<sub>2</sub> and must be flared because it does not have any heat content value. Feed is started to the unit as startup progresses. The gas being produced must be flared until it meets the specification of [REDACTED] (based on composition and BTU value) and the composition is stable enough to be burned in refinery heaters as fuel gas without risk of causing upset to the heaters. The [REDACTED] produced by the unit is burned in the refinery heaters as soon as possible during startup while ensuring safe, stable operation of the refinery heaters.

When the gas is first formed from the ignition of the coke, it contains too much oxygen to allow processing in the [REDACTED] Unit for sulfur removal. Oxygen above the vendor-specified limit will cause poisoning of the [REDACTED] amine. Once the gas oxygen content is below the limit, it is treated in [REDACTED] for sulfur removal prior to flaring.

**12. Immediate Corrective Actions Taken:**

To minimize flaring, the [REDACTED] was put back into the heaters as soon as possible after startup of the [REDACTED]

**13. Was the Flaring the Result of an Emergency?**

No, the flaring was required as part of a startup of the [REDACTED] unit.

**14. Was the Flaring Consistent with an Approved FMP?**

Yes, the flaring was consistent with Martinez Refining Company approved Flare Minimization Plan (FMP). As stated on page 3-1 of the FMP, Martinez Refining Company believes the key to flare minimization is careful planning to avoid flaring coupled with evaluation of any flaring events that occur and incorporation of lessons learned back into the planning process to further reduce flaring. As part of the FMP, Martinez Refining Company developed procedures to implement this process. As stated on page 3-1 of the FMP, "When these procedures are followed, any flaring is consistent with the FMP." Operations followed procedure C(F)-21 – Flaring Due to Unit Startup, Unit Shutdown, Major Maintenance, or Turnaround Activities and C(F)-22 – Fuel System Management during Flaring Events. Also see discussion under Section 401.4 on page 4-84 of the FMP

**15. Was the Flaring due to a Regulatory Mandate to Vent to a Flare?**

The flaring was not due to a regulatory mandate to vent to the flare.

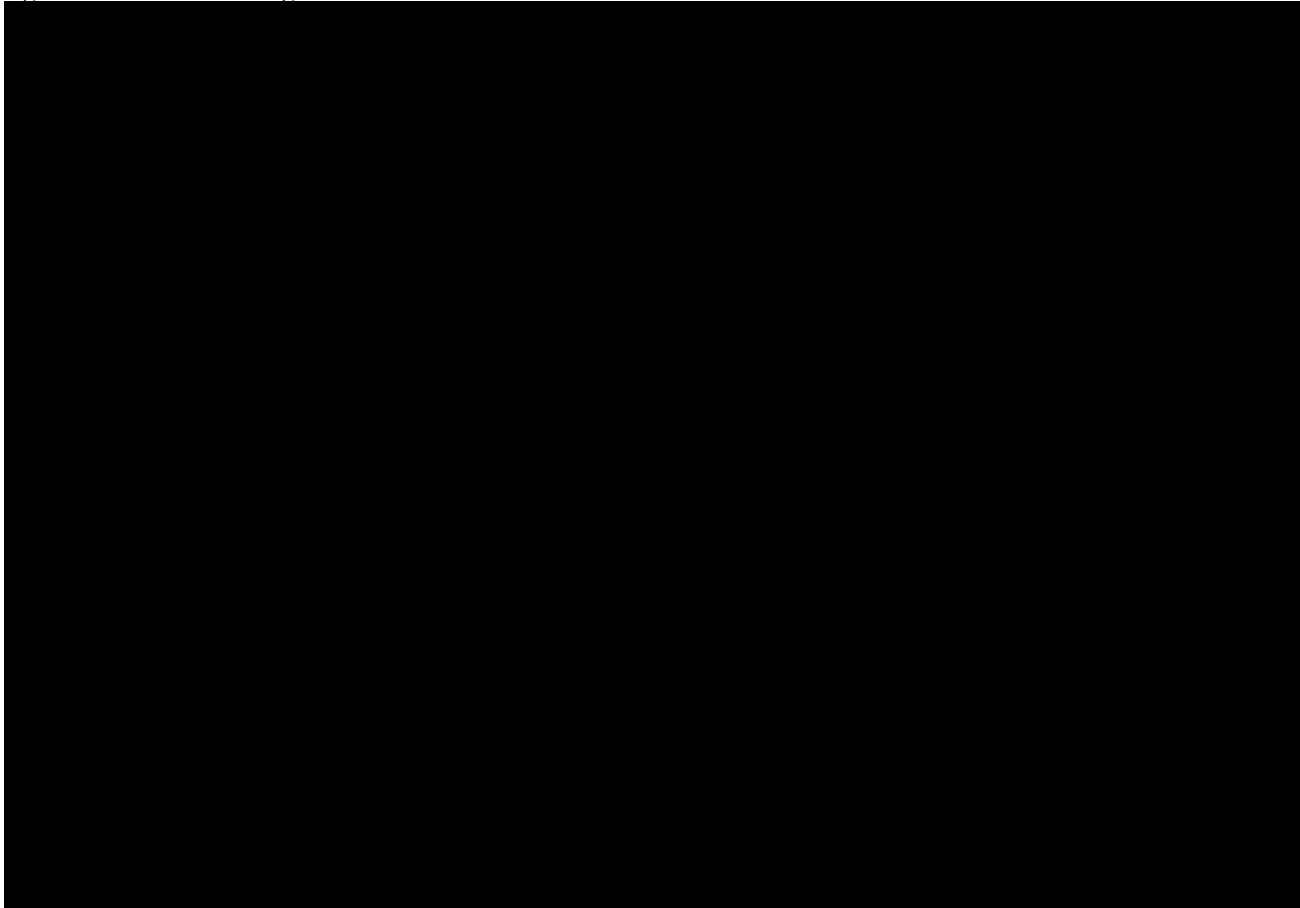
**16. Prevention Measures Considered to Minimize Flaring from this Type of Flaring Event**

The flaring of [REDACTED] during this [REDACTED] startup could not be eliminated but was minimized in the following ways:

- Operations carefully reviews and follows the startup procedures to minimize the amount of flaring while ensuring the stable operation of the heaters that combust [REDACTED]
- To minimize flaring, the [REDACTED] was burned in the refinery heaters as soon as possible after the startup of the Flexicoker unit.
- The [REDACTED] was treated in the [REDACTED] Unit for sulfur removal as soon as possible during startup to minimize SO<sub>2</sub> emissions. As required by the design of the [REDACTED] process, [REDACTED] must be removed from [REDACTED] at a certain oxygen concentration to avoid poisoning the [REDACTED] solution. MRC's permit to operate limits the SO<sub>2</sub> emissions from flaring of [REDACTED] while [REDACTED] Unit is offline.

Any learnings from this startup will be incorporated into the startup procedures to assure there is continuous improvement in flare minimization during future [REDACTED] Unit turnarounds.

Figure 1: Process Flow Diagram



**BUSINESS CONFIDENTIAL/TRADE SECRET**