Martinez
Refining Company

3485 Pacheco Boulevard
Martinez, CA 94553

VIA EMAIL

April 23, 2024

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

Subject: **February 6, 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 February 6, 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.

Sincerely,

Will 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

Attachment

cc: ccrowley@baaqmd.gov
and dfung@baaqmd.gov

Regulation 12 Rule 12 Reportable Flaring Event Causal Analysis Report

1. **Report Date:** April 23, 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] Shutdown:**
   a. **Dates:** February 6, 2024 to February 12, 2024
      i. **Start Time:** February 6, 2024 at 11:05
      ii. **End Time:** February 11, 2024 at 04:12
      iii. **Total Duration of Event:** 4 days, 17 hours, and 7 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 shutdown, [redacted] was sent to the [redacted] flare resulting in flaring greater than 0.5 MMSCFD.

   The [redacted] which produces the [redacted] was shut down for 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 shutdown 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:** 96,669,906 SCF

   a. **Volume of Gas Flared 2/6/24:** 1,657,361 SCF
   b. **Volume of Gas Flared 2/7/24:** 9,320,152 SCF
   c. **Volume of Gas Flared 2/8/24:** 26,849,867 SCF
   d. **Volume of Gas Flared 2/9/24:** 23,664, 373 SCF
   e. **Volume of Gas Flared 2/10/24:** 28,497,393 SCF
   f. **Volume of Gas Flared 2/11/24:** 6,680,760 SCF

9. **Total Emissions due to flaring based on Regulation 12 Rule 11 Methodology**

   a. 9,530 lbs of methane
   b. 26 lbs of non-methane hydrocarbons
   c. 179 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 shutdown. The [redacted] Unit shut down (and feeds were taken offline) at 20:00 on 2/6/24 and the [redacted] Unit remained online until 20:00 on 2/8/24.

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] Unit and how it must be shut down and started up. The [redacted] Unit was shut down in February for

maintenance purposes. During a [redacted] Unit shutdown, flaring is necessary because the composition of the [redacted] changes as the feed is removed from the unit impacting the quality of the flexigas. The [redacted] is burned in the refinery heaters as long as possible during a shutdown and only removed as necessary to ensure safe, stable operation of the refinery heaters. The material is treated in the [redacted] Unit as long as possible to remove H2S and directed to the flare to ensure combustion of any remaining carbon and sulfur in the gas.

12. **Immediate Corrective Actions Taken**:
To minimize flaring, the [redacted] was burned in the heaters as long as possible during the shutdown.

13. **Was the Flaring the Result of an Emergency?**
No, the flaring was required as part of a [redacted] Unit shutdown.

14. **Was the Flaring Consistent with an Approved FMP?**
Yes, the flaring was consistent with Martinez Refining Company approved Flare Management 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)-20 – Flaring Due to Process Upsets or Unanticipated Equipment Failure 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 [redacted] shut down could not be eliminated but was minimized in the following ways:

- Operations carefully reviews and follows the shutdown 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 long as possible prior to shutting down.
- The [redacted] was treated in the [redacted] Unit for sulfur removal as long as possible during shut down to minimize SO2 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 SO2 emissions from flaring of [redacted] while Flexsorb Unit is offline.

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

Figure 1: Process Flow Diagram