**Table CAM: Vapor Recovery Unit (VRU) CAM**

| | **Indicator 1** | **Indicator 2** |
|---|---|---|
| **Indicator** | Continuously monitoring the VRU outlet VOC concentration volume as % propane. | Monitor system performance through weekly inspections. |
| **Monitoring Approach** | Use a continuous emissions monitoring system | Visual determination |
| **Indicator Range Action Level Range** | The VRU is programmed to trigger a loading rack shutdown alarm (which ceases product loading at the racks) when VOC emissions from the VRU exceed 9.0 mg/L (90% of the permitted VOC emission limit of 10 mg/L). The VRU is also programmed to trigger a warning alarm when VOC emissions from the VRU exceed 6.8 mg/L (75% of the shutdown alarm of 9.0 mg/L). These alarm values are based on 6-hour rolling average values. | The VRU will be inspected to ensure that the various operating parameters are within the specified ranges as recommended by the manufacturer. Inspection includes completing a checklist once per week and recording instantaneous readings of various operating parameters such as operating pressures, temperatures, and flow rates of specific pieces of VRU equipment. |
| **Excursion Level/Reportable Incident Range** | Loading rack shutdown alarms will be recorded by the PLC. Product loading at the Emission Unit (EU) No. 017 loading racks will cease if the VOC emissions from the VRU exceed 9.0 mg/L on a 6-hour rolling average basis. An exceedance will occur when the VOC emissions exceed 10.0 mg/L on a 6-hour rolling average basis while active loading is occurring, which corresponds to a VRU stack outlet concentration of 0.42% VOC by volume.* | A reportable incident (although not necessarily indicative of an emission of VOC above permitted levels) would occur if the weekly inspections are not performed and documented. Operational failsafes, such as warning and shutdown alarms, are present for key operational parameters. Shutdown alarms must be resolved before normal VRU operations can be resumed. |

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|---|---|---|
| **Response to Indicators Action Level Range** | Breach of the action level range will trigger an investigation, corrective action, and an internal reporting requirement. Upon an action level alarm being acknowledged by the facility, an investigation will be triggered and a corrective action will be initiated within 24 hours. If onsite personnel cannot conduct the required corrective action, a contractor will be contacted and brought onsite as soon as possible. For extended VRU outages, the OFFU will be utilized as the control device for loading operations associated with EU No. 017. | Shutdown alarms must be resolved before normal VRU operations can be resumed. |
| **Performance Criteria Data Representativeness** | The correlation between the stack outlet VOC concentration (% by volume) and the continuous emissions monitoring system alarm set points are based on the most recent successful compliance stack test. The stack test was conducted in accordance with accepted EPA methods. | Facility personnel will utilize a checklist during the weekly VRU inspection to verify key operational parameters are within acceptable operating ranges. |
| **Verification of Operational Status** | The continuous emissions monitoring system is fully operational. | Weekly inspections are being performed and operational data are being documented. |
| **QA/QC Practices and Criteria** | The continuous emissions monitoring system is calibrated in accordance with manufacturer's specifications. | Use standardized inspection forms provided by the VRU manufacturer. |
| **Monitoring Frequency** | The outlet VOC concentration from the VRU is monitored continuously and visual alarms are triggered when the action level is breached. The outlet VOC concentration is recorded by a data acquisition system on 1-minute intervals. The concentration shall be averaged, as applicable, over the applicable averaging period. | Inspections will be conducted on a weekly basis. |

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|---|---|---|
| **Data Collection Procedures** | The outlet VOC concentration readings are recorded by a data acquisition system. Reports of the recorded VOC concentration data are generated daily. Also, the history of alarm occurrences is recorded. | Weekly inspections will be performed and data will be recorded on standardized inspection form provided by VRU manufacturer. |
| **Averaging Period** | The VRU discharge VOC concentration is averaged over a 6-hour continuous period. | N/A |
| **APCD Bypass Monitoring** | The VRU will serve as the primary control device for this PSEU. The OFFU will serve as the back-up unit. Under normal conditions, bypass of the VRU or OFFU cannot occur based on the design of the PSEU. Specifically, all vapors collected at the loading rack flow through a single header to the VRU or OFFU. Direction of the vapors to the VRU or OFFU will be controlled by a manual two way valve (i.e., if the valve is open to one control device it is closed to the other control device). There are no other lines coming from the loading rack, thus there are no alternative pathways for vapors to bypass the VRU or OFFU during normal operation. | |

* This value is based on test data compiled during the performance test conducted on September 23, 2010. This value may change based on the latest successful compliance demonstration and confirmation of proposed changes from EPC. A Title V permit modification is not required to approve the changes to the correlations between outlet VOC concentration (% VOC by volume) and VOC emissions (mg/L).