Table 1: VRU CAM

	Indicator 1	Indicator 2	Indicator 3
Indicator	Regeneration cycle vacuum. Specifically, monitoring the vacuum on the regenerating bed to confirm that it remains at or above 25.5 inches of mercury (in. Hg) vacuum.	Documentation of inspection, maintenance and operator training program, and carbon bed testing.	Documentation of inspection, maintenance, and leak checks of vapor recovery system.
Monitoring Approach	Pressure transmitter, relayed to system PLC.	Proper VRU operation is verified by performing periodic inspections and maintenance by properly trained personnel. Daily operator checks include regenerating bed operating temperature profile, cycle time, operating pressures, operating temperatures, and verification of relevant fluid levels. Daily operator checks are performed each day that an operator is on duty during normal working days. Quarterly maintenance is performed by the VRU vendor under a maintenance contract in accordance with the standard maintenance specifications for the system. Testing of the carbon in each bed (lab analysis of adsorptive capacity) will also be performed annually.	Monthly leak check of vapor collection system
Indicator Range Action Level Range*	A corrective action is triggered when the regenerating carbon bed decreases to less than 26.5 in. Hg vacuum during regeneration. When the action level range is breached, a visual alarm is triggered on the control panel. This alarm must be acknowledged by an operator to turn off.	NA	A corrective action is triggered if an LEL reading of 10% - <20% is detected during an inspection.

	Indicator 1	Indicator 2	Indicator 3
Excursion Level/Reportable Incident Range*	When the regenerating carbon bed vacuum decreases to 25.5 in. Hg during regeneration, a visual alarm is triggered and vapors are no longer sent to the VRU. Normal loading operations will continue and the VRU will be bypassed and the vapors delivered to the VCU. In the event both the VRU and VCU are not available, normal loading operations shall cease and the loading rack shall be shut down. An excursion/ reportable incident occurs when the loading rack fails to shutdown within operational time limits, normally two minutes or less.	A reportable incident (although not necessarily indicative of an emission of VOC above permitted levels) occurs if the periodic inspections, scheduled preventative maintenance, or carbon test is not performed or documented, or if corrective action is not initiated within 24 hours of detection to correct any problems identified during the inspection, maintenance of the unit or carbon testing.	A reportable incident (although not necessarily an emission of VOC above permitted levels) occurs if an LEL reading equal to or above 20% is detected during an inspection.
Response to Indicators Action Level Range	Failure of both the VRU and VCU will trigger an investigation, corrective action and an internal reporting requirement. Upon an action level alarm being acknowledged by the facility, a corrective action will be initiated within 24 hours. If onsite personnel cannot conduct the required corrective action, the contracted maintenance group will be notified of the incident within 24 hours and will be brought onsite as soon as possible.	NA	Exceeding the action level range will trigger an investigation, corrective action and an internal reporting requirement. Leaks will be repaired within 30 calendar days.
Excursion Level/Reportable Incident Range	An excursion will trigger an investigation, corrective action, and an external reporting requirement. The VRU will be immediately bypassed with the vapors delivered to the VCU. Upon the discontinuation of vapor flow to the VRU, a visual alarm is triggered and a corrective action will be initiated within 24 hours of acknowledgement of the alarm. If onsite personnel cannot conduct the required corrective action, the contracted maintenance group will be notified of the incident within 24 hours and will be brought onsite as soon as possible. Until such time that the corrective action is completed, vapors will be delivered to the VCU.	A reportable incident will trigger an investigation, corrective action, and an external reporting requirement. Corrective actions will be initiated within 24 hours of the detection of the reportable incident.	A reportable incident will trigger an investigation, corrective action and an external reporting requirement. Leaks will be repaired within 15 calendar days.

	Indicator 1	Indicator 2	Indicator 3
Performance Criteria Data Representativeness	The pressure cycle is measured in the vacuum pump suction line. The minimum accuracy of the pressure transmitter is +/- 1.0 percent. The pressure transmitter is equipped with a visual alarm that is triggered when the regenerating carbon bed vacuum decreases to the Action Level. The alarm has to be acknowledged by an operator to turn off. The pressure transmitter is also equipped with an additional visual alarm that is triggered when the carbon bed vacuum decreases to the excursion level.	Trained personnel using documented inspection and maintenance procedures will verify VRU operation. Carbon samples will be properly taken using representative samples taken from both beds.	As required by 40 CFR 60.502(j), leaks are inspected using sight, sound and smell. Additionally, a handheld monitor is used to check for leaks in the vapor collection system bladder tank.
Verification of Operational Status	NA	NA	NA
QA/QC Practices and Criteria	Pressure transmitter is calibrated annually.	New operators are given 40 hours of hands-on training with a qualified operator, prior to working alone.	Procedures are followed according to 40 CFR 60.502(j), NSPS for Bulk Gasoline Terminals. In addition, the bladder tank is inspected for leaks using a handheld monitor.
QA/QC Practices and Criteria (cont'd)	Alarm light operation is visually checked each day that an operator is on duty during normal working days. New operators are given 40 hours of hands-on training by a qualified operator, prior to working independently.	Each operator is given one day of hands-on training annually with the VRU maintenance contractor on proper maintenance, operation and repair of the VRU. Quarterly maintenance is performed by a licensed contractor with extensive knowledge of VRU operation and maintenance.	
Monitoring Frequency	Pressure profile is monitored and recorded continuously during each regeneration cycle and visual alarms are triggered when the action level/excursion level is breached. Regeneration cycle is monitored visually, once per 24 hour shift when operator is on duty during normal working days. Alarm light is checked daily when operator is on duty.	Periodic operation and maintenance checks conducted by onsite trained operators. Contract maintenance group performs quarterly scheduled maintenance. Carbon bed testing is performed annually.	Monthly leak check of vapor collection system.

	Indicator 1	Indicator 2	Indicator 3
Data Collection Procedures	The operator records the pressure profile during one regeneration cycle per 24 hour shift, except when operator is not on duty (weekends, holidays, etc.) Copies of these pressure profile records are maintained onsite. Alarm light and status are checked and recorded once per day except when operator is not on duty (i.e., weekends, holidays). Alarm lights will not turn off until acknowledged. After the period when an operator is not on duty, the next shift operator on duty will initiate VRU operation inspection as soon as possible after beginning shift. Periods when the interlock system shuts down the loading rack are recorded.	Results of daily inspections are recorded in the VRU Weekly Inspection Report. Incidents when plant personnel take the VRU out of service for routine maintenance are recorded in a Monthly Maintenance and Malfunction Report. The maintenance service company prepares a quarterly maintenance report and a copy is left at the terminal prior to their departure. Results of the carbon bed testing are maintained onsite. Documentation of operator training along with the quarterly maintenance report and carbon bed test results are maintained onsite.	Records of leak checks, leaks found, and corrective actions taken are kept on file at the facility.
Averaging Period	None.	None.	None.
APCD Bypass Monitoring	The VRU/VCU control system is designed such that either system can operate as the primary control device and both systems have the capacity to handle the maximum flow rate of vapors from the loading rack; however, the VRU is the primary control device during normal operation. Under normal operating conditions, bypass of the APCD (i.e., the VRU or VCU) cannot occur based on the physical design of the loading rack. Specifically, all vapors collected at the loading rack flow through a single header to the VRU/VCU. There are no other vapor lines leaving the loading rack; thus there are no alternate pathways for vapors to bypass the VRU/VCU during normal operation. Additionally, the loading rack is designed to prohibit loading operations from commencing unless either the VRU or VCU are online and ready to receive vapors from loading rack operations.		

*Indicator ranges for Compliance Indicator No. 1 were developed using EPA guidance and equipment specifications, and are supported by emission test analyses. Emission test results are included in Appendix B.

Table 2: VCU CAM

	Indicator 1	Indicator 2
Indicator	Operate VCU with pilot flame present at all times.	Documentation of inspection, maintenance and operator training program.
Monitoring Approach	Monitor presence of pilot flame.	Proper VCU operation is verified by performing daily inspections of the assist air blower, the vapor line valve, and the emergency shutdown system. Verification is done by way of visual observation or with an automated alarm or shutdown system. A quarterly inspection of the VCU is performed by a qualified VCU maintenance contractor under a maintenance contract in accordance with the standard maintenance specifications for the system.
Indicator Range **Action Level Range***	Presence of a pilot flame.	NA

	Indicator 1	Indicator 2
Excursion Level/Reportable Incident Range	Non-detection of a pilot flame.	A reportable incident (although not necessarily indicative of an emissions level in excess of permitted levels) occurs if the quarterly inspections or scheduled preventative maintenance is not performed, documented, or if corrective action is not initiated according to the Monitoring and Inspection Plan. Corrective action should be initiated within 24 hours of detection to correct any problems identified during the inspection and maintenance of the unit.
Response to Indicators Action Level Range	If the presence of a pilot flame is not detected, loading rack operations are automatically shut down or all vapors must be routed to the VRU as long as it is fully functional.	NA
Performance Criteria Data Representativeness	The presence of a pilot flame indicates normal designed operation of the unit and that combustion of vapors should be occurring during truck loading.	Trained personnel using documented inspection procedures verify proper VCU operation. In the event the equipment is not operating properly, the VCU maintenance contractor is contacted to perform the necessary repairs.
Verification of Operational Status	The PLC system continuously verifies the operational status of the UV detector.	NA

	Indicator 1	Indicator 2
QA/QC Practices and Criteria	Calibration, maintenance, and operation of UV sensing devices will be performed following manufacturer's specifications.	New operators are given appropriate hands-on training with a qualified operator, prior to working alone. Quarterly maintenance is performed by a licensed contractor with extensive knowledge of VCU operation and maintenance.
Monitoring Frequency	UV detectors and an alarm system continuously monitor the presence of a pilot flame.	Periodic operation and maintenance checks are conducted by onsite trained operators. Contract maintenance staff perform quarterly scheduled maintenance.
Data Collection Procedures	Note in logbook all action level incidents (i.e., instances where no pilot flame is detected but when loading has occurred).	Incidents when plant personnel take the VCU out of service for maintenance are recorded in a Maintenance and Malfunction Report. The maintenance service company prepares a maintenance report and a copy is left at the terminal prior to their departure. Documentation of operator training for new hires along with the maintenance report is maintained onsite.
Averaging Period	None.	None.
APCD Bypass Monitoring	The VRU/VCU control system is designed such that either system can operate as the primary control device and both systems have the capacity to handle the maximum flow rate of vapors from the loading rack; however, the VRU is the primary control device during normal operation. Under normal operating conditions, bypass of the APCD (i.e., the VRU or VCU) cannot occur based on the physical design of the loading rack. Specifically, all vapors collected at the loading rack flow through a single header to the VRU/VCU. There are no other vapor lines leaving the loading rack; thus there are no alternate pathways for vapors to bypass the VRU/VCU during normal operation. Additionally, the loading rack is designed to prohibit loading operations from commencing unless either the VRU or VCU are online and ready to receive vapors from the loading rack operations.	