

**SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL DISTRICT**

**Guidelines for Operating Steam-Enhanced Wells During Repair or Maintenance
of Well Casing Vent Vapor Collection Equipment**

Approved By: _____ Signed _____ Seyed Sadredin Director of Permit Services	Date: <u>04/15/2002</u>
--	-------------------------

Purpose:

To establish procedures and requirements for incorporating into permits provisions for routine maintenance or repair of well-vent vapor collection systems serving steam-enhanced oil production wells.

Applicability:

This policy applies to steam-enhanced wells served by vapor collection systems. This policy does not apply to wells with permanently closed well vents.

Background:

Given the benefits of proper maintenance and repair in achieving sustained compliance and emission reductions, the District has worked with the industry to provide for a legal mechanism to perform such activities while assuring compliance with all applicable rules. The goal of this policy is to allow for maintenance and repair of the vapor recovery systems serving steam enhanced wells while the vapor piping is isolated and the vents on the affected wells are temporarily closed.

The primary rules that regulate the operation of steam-enhanced wells are District rule 2201 (New and Modified Stationary Source Review) and Rule 4401 (Steam Enhanced Crude Oil Production Well Vents).

Section 5.1 of Rule 4401 prohibits the operation of steam-enhanced crude oil production wells unless the uncontrolled VOC emissions from the well vents are reduced at least 99% by weight. Section 4.1 exempts any steam-enhanced crude oil production well undergoing service or repair from the requirements of the rule provided the well is not producing. The 99% vapor control requirements of Section 5.1 remain in effect whenever a steam-enhanced well is producing. Some wells are required to control emissions to greater than 99% under NSR BACT provisions.

It is District practice to require installation of vapor control on all equipment receiving production from wells with permanently closed casing vents which may experience an increase in emissions. Closing the well casing vents may increase the dissolved or

entrained gas content of the produced fluids routed to downstream production equipment (separators, free water knockouts, wash tanks, etc.). However, any impact on emissions at the downstream production equipment would be examined under New Source Review.

Temporary isolation of well vent vapor recovery piping, or temporary operation of steam-enhanced wells with closed casing vents is not expected to result in an increase in emissions from the wells themselves. However, the requirements of Rule 2201 (BACT and offsets) may apply to any emissions increases at downstream production equipment due to increases in dissolved or entrained gases contained in the produced fluids. For that reason, it is District practice to require installation of vapor control on equipment receiving production from wells with permanently closed casing vents to negate any potential emissions increase.

Discussion:

Proper maintenance and repair is essential for ongoing compliance with applicable requirements and for sustained reduction in emissions. Without routine maintenance and repair the equipment is often operated until reaching a state of disrepair or breakdown which can lead to significant excess emissions.

Absent specific maintenance and repair provisions in the applicable rules, such provisions can only be provided in a policy so long as compliance with all applicable rules and regulations is assured. Towards that end, this policy relies on the following premises:

- ◆ Operation of steam-enhanced wells with closed casing vents, or temporary isolation of vapor control piping for repair or maintenance activities does not necessarily constitute a violation of Rule 4401.
- ◆ Temporary isolation of well vent vapor recovery piping, or temporary operation of steam-enhanced wells with closed casing would not trigger BACT or Offsets at the vents since an emissions increase is not expected from the wells themselves.
- ◆ Rule 2201, Section 3.20.2 excludes episodes of routine maintenance or repair from consideration as a modification subject to New Source Review.
- ◆ Routine maintenance or repair can be interpreted to include maintenance or repair activities which require the closing of steam enhanced well vents or the shutting in or isolation of well vent vapor recovery systems while allowing concurrent production. To qualify as routine maintenance and repair, such activities must be identified and scheduled in advance and must be undertaken prior to reaching a non-compliance status. Unforeseen repair activities would not qualify as routine maintenance and may constitute a violation or be subject to the breakdown provisions under District Rules and Regulations. Continued production while conducting routine maintenance

and repair activities is allowed only if specifically provided for in the permit terms and conditions as alternative operating scenarios.

Wells operated with casing vents temporarily closed or isolated (less than 336 hours/year, cumulative) are not expected to have a significant impact on downstream production equipment. The 336 hours/year time limit for operating steam-enhanced wells with the casing vents closed or isolated during collection system repair and maintenance activities is consistent with the 15 day leak repair requirement in Section 5.3.1 of Rule 4401. Also, industry has indicated the 336 hour limit is sufficient for the majority of routine maintenance or repair activities performed on steam-enhanced wells and well vent vapor collection systems. However, in no way will this policy substitute for actions necessary to comply with breakdown reporting procedures or requirements outlined in District Rules and Regulations.

Definitions:

Routine Repair and Maintenance: Maintenance or repair activities which require the closing of steam enhanced well vents or the shutting in or isolation of well vent vapor recovery systems while allowing concurrent production. To qualify as routine maintenance and repair, such activities must be identified and scheduled in advance and must be undertaken prior to reaching a non-compliance status. Unforeseen repair activities would not qualify as routine maintenance and may constitute a violation or be subject to the breakdown provisions under District Rules and Regulations. Continued production while conducting routine maintenance and repair activities is allowed only if specifically provided for in the permit terms and conditions as alternative operating scenarios.

Routine Repair and Maintenance Activities: Those activities necessary to properly maintain the mechanical condition of casing collections systems, piping, and associated components. Such activities include, but are not limited to:

- Closure of valves necessary to safely isolate the work area.
- Relief of pressured systems necessary to safely isolate the components.
- Inspection of casing collection systems, piping, and associated components.
- Pressure testing of casing collection systems, piping, and associated components.
- Replacement of components as needed to prevent failures.
- Plugging of redundant fin tubes.
- Corrosion prevention.

Temporary maintenance periods: Periods of system downtime when routine repair and maintenance activities are conducted that prevent the well vent vapors from being collected and disposed not exceeding 336 hours per calendar year total for each system.

Maintenance Plan: Bi-annual plans identifying each permit unit and illustrate them on a detailed map of the system, identify the period and duration of each maintenance episode for each system, an estimate of VOC emissions released during maintenance, and the procedures that will be used to maintain and isolate affected equipment.

Well Vent Vapor Collection System: A discrete collection of piping and components that may gather, cool, condense, and/or compress vapors from steam-enhanced well vents. Multiple vapor collection systems that serve the same pool of wells in series or in parallel constitute one system for the purpose of determining the allowable number of maintenance hours per calendar year.

Procedures and Requirements for Routine Well Maintenance and Repair:

Operators desiring to use this policy must apply for an Authority to Construct to incorporate necessary provisions into their Permit to Operate providing for alternative operating scenarios allowing for continued production while conducting routine maintenance and repair activities.

Along with the ATC application, the permittee must submit an initial bi-annual maintenance plan. Sources shall schedule their maintenance programs during the November to May, non-ozone season.

The following permit conditions must be incorporate in the ATC and PTO:

- *During temporary periods of maintenance covered in the permittee's bi-annual maintenance plan the permittee may conduct maintenance or repair activities contained in the District approved bi-annual maintenance plan without shutting-in production from wells served by the well vent vapor collection system, for no more than a total of 336 hours during any one calendar year for each system. When multiple vapor recovery systems serve the same wells in series or in parallel, a total of 336 hours of maintenance shall be allowed for all systems combined [District Rule 2201]*
- *During temporary periods of maintenance covered in the permittee's bi-annual maintenance plan, the well vents must be closed unless well vent vapors are routed to a properly functioning vapor recovery system that complies with District rule 4401 and all otherwise applicable provisions of this permit. [District Rules 2201 and 4401]*
- *During temporary periods of maintenance covered in the permittee's bi-annual maintenance plan, well vent vapor recovery piping may be temporarily shut-in or isolated for routine maintenance or repair activities without closing the well vents normally served by a well vent vapor collection system provided that well vent vapors are routed to a vapor recovery system that complies with District rule 4401 and all otherwise applicable provisions of this permit. [District Rules 2201 and 4401]*

- *Well vent vapor collection system piping and components shall be maintained as required by Rule 4401, and well vent vapors shall not be vented or bled-off to the atmosphere except for those actions necessary to safely isolate vessels and piping for routine maintenance. [District Rules 2201 and 4401]*
- *The District shall be notified at least 48 hours prior to the start of each maintenance program. No later than 10 days after completing each maintenance episode, the permittee shall notify the District in writing of the date, time, duration, well number(s), and description of the maintenance or repair activity completed. [District Rule 2201]*
- *Permittee shall maintain records of the date, time, and duration of each maintenance or repair episode requiring the temporary closure of well vent(s), or the temporary isolation of well vent vapor recovery piping. Such records shall include well identification numbers and a description of the maintenance or repair activity completed, and shall be maintained for a period of up to 2 years, and be made readily available to the District upon request. [District Rules 1070 and 2201]*
- *Permittee shall submit to the District bi-annual maintenance plans. The maintenance plan must identify each permit unit and illustrate them on a detailed map of the system, identify the period and duration of each maintenance episode for each system, an estimate of VOC emissions released during maintenance, and the procedures that will be used to maintain and isolate affected equipment. [District Rules 2201]*

RESCINDED