

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Rule 1118 Implementation Guidance Document**

April 12, 2006

Draft Rev: 2

**DRAFT**

---

Kurt Wiese  
District Counsel

---

Carol Coy  
Deputy Executive Officer  
Engineering and Compliance

## **TABLE OF CONTENTS**

Section 1	Introduction	1
Section 2	Applicability	2
Section 3	Effective Dates/Schedules	4
Section 4	Flare Events and Cause Analysis	6
Section 5	Sampling and Monitoring	10
Section 6	Pressure Relief Devices (PRDs)	13
Section 7	Essential Operational Needs	15
Section 8	Monitoring and Data Substitution	16
Section 9	Record Keeping, Reporting and Notification	18
Section 10	Plans	19
Section 11	Change of Ownership	20
Section 12	Other Issues	21
Section 13	Specific Examples for Unplanned Event Telephone Notification, Relative Cause Analysis, Specific Cause Analysis and Sampling obligations	22
Attachment A	Rule 1118 Reporting Requirements	28

## **SECTION 1 - INTRODUCTION**

On November 4, 2005, the Board amended Rule 1118 - Emissions from Refinery Flares to establish requirements to reduce emissions from refinery flaring events and allow them to operate for their intended purpose as a safety device in a manner that minimize emissions from all flaring events. The monitoring, recordkeeping and reporting provisions of the rule are also strengthened.

The purpose of this document is to clarify rule requirements and provide implementation guidance to facilities subject to this rule.

## **SECTION 2 – APPLICABILITY**

Sources subject to this rule include refineries, sulfur recovery plants and hydrogen production plants operated by the following facilities, or their successor:

- Air Products and Chemicals, Inc.
- BP West Coast Products
- Chevron USA Inc.
- ConocoPhillips
- ExxonMobil Corp.
- Equilon Enterprises LLC, Shell Oil US
- Paramount Petroleum Corp.
- Ultramar Inc.

For the purposes of establishing the annual crude capacity used to determine the Performance Targets, the following data<sup>§</sup> multiplied by 366 calendar days will be used. The capacity factor expressed in term of barrels per calendar day is used rather than the larger capacity expressed in barrels per stream day (operating day) because the rule intends to determine the crude oil processing capacity in calendar year 2004 using 366 calendar days and not the actual operating days of the crude unit for that year.

---

<sup>§</sup> This is the calendar day capacity number published by DOE as of January 1, 2005 (<http://www.eia.doe.gov/neic/rankings/refineries.htm>). This number reflects the crude oil processing capacity in calendar year 2004 and is to be used in determining compliance with Rule 1118(d)(1).

Refinery	Capacity (Barrels per Calendar Day)	Crude Oil Processing Capacity in Calendar Year 2004	2006 Target (tons/yr) 1.5 tons/mmbbls	2008 Target (tons/yr) 1.0 tons/mmbbls	2010 Target (tons/yr) 0.7 tons/mmbbls	2012 Target (tons/yr) 0.5 tons/mmbbls
BP West Coast Products	260,000	95,160,000	142.7	95.2	66.6	47.6
Chevron USA Inc.	260,000	95,160,000	142.7	95.2	66.6	47.6
ConocoPhillips*	139,000	50,874,000	76.3	50.9	35.6	25.4
ExxonMobil Corp.	149,500	54,717,000	82.1	54.7	38.3	27.4
Equilon Enterprises LLC, Shell Oil US**	98,500	36,051,000	54.1	36.1	25.2	18.0
Paramount Petroleum Corp.	50,000	18,300,000	27.5	18.3	12.8	9.2
Ultramar Inc.	80,887	29,604,642	44.4	29.6	20.7	14.8
Total	1,037,887	379,866,642	569.8	380.0	265.8	190.0

Notes:

\* For ConocoPhillips, emissions from their Carson and Wilmington plants will be combined and divided by the capacity given for the Wilmington plant (139,000 bbl/day) to determine the performance target.

\*\* For Equilon Enterprises LLC, emissions from their refinery and the SRU plant will be combined and divided by the refinery capacity (98,500 bb/day) to determine the performance target.

## **SECTION 3 – EFFECTIVE DATES/SCHEDULES**

### **3.1 When do I have to comply with the new flow measuring device standards as specified in Attachment A of the rule?**

#### **Problem Statement**

***Table 1 of Rule 1118(g)(3) provides two monitoring and recording standards based on the effective date. For the standards that are effective until June 30, 2007, it states that (footnote 2) all flow meters, flow indicators and recorders shall meet or exceed the minimum specifications listed below (i.e., previous standard) upon rule adoption or in Attachment A by January 1, 2007. For the standards that are effective July 1, 2007, it states that all flow meters, flow indicators and recorders shall meet or exceed the minimum specifications specified in Attachment A.***

***From the rule language, it is not clear if the effective date of the new flow measuring device is January 1, 2007 or July 1, 2007.***

#### **AQMD's Response**

From the time of rule amendment until June 30, 2007, facility operators have an option to either meet or exceed the existing flow meter specification listed in footnote 2 or meet or exceed the specification in Attachment A by January 1, 2007. The effective date of the new standards of Attachment A is the earlier of 1) the date the facility operator installs a new flow measuring device or modifies the existing flow measuring device, and verifies the effectiveness of the flow measuring device pursuant to Attachment A (i.e., becomes operational); or 2) July 1, 2007.

### **3.2 When am I subject to the new definition of Flare Event?**

#### **Problem Statement**

***Under the new definition of Flare Event, a flow measuring device meeting the requirements of Attachment A of the rule has to be installed to determine when a flare event has ceased (below 0.12 ft/sec), or has to be based on the owner or operator demonstrating that no more vent gas was combusted based upon the monitoring records of the flare water seal level and/or other parameters as approved by the Executive Officer in the revised Flare Monitoring and Recording Plan. Although the definition of the flare event appears to be effective at the time of rule amendment, the new meter meeting the minimum velocity of .1 ft/sec is not in effect until June 30, 2007. Until a meter meeting new specification is installed there is no technical means to determine the flow velocity below the current accuracy range allowed until June 30, 2007.***

#### **AQMD's Response**

The effective date of the modified definition of the Flare Event will be the 1) same as the

effective date of the measuring device standards (See Section 3.1); or 2) approval date of the revised Flare Monitoring and Recording Plan if the plan specifies a method of determining when a flare event ceased other than the 0.12 ft/sec flow meter indicator.

See Sections 4.1 and 4.2 for the current requirements.

**3.3** *Rule 1118(c)(4) requires submission of a complete application to construct and operate a flare gas recovery and treatment system(s) by July 1, 2006 in order to meet the January 1, 2009 timeline. However, Rule 1118(c)(2) requires, among other items, information from an audit of the vent gas recovery capacity of each flare system, the available storage for excess vent gases and the scrubbing capacity available for vent gases by September 1, 2006. Since the information obtained from an audit of the vent gas recovery and the treatment capacity is needed to complete the permit application package needed for the July 1, 2006 submission, can we submit our application package along with the Rule 1118(c)(2) required items by September 1, 2006?*

AQMD's Response

Your permit application package for a flare gas recovery and treatment system(s) is due by July 1, 2006. However, additional information obtained from the Rule 1118(c)(2) requirements can be supplemented as a part of the original application package.

**3.4** *When do we start using the data substitution procedures? Does it become effective on January 1, 2006, or upon our revised Flare Monitoring and Recording Plan approval?*

AQMD's Response

The data substitution procedure is effective January 1, 2006.

## **SECTION 4 –FLARE EVENTS AND CAUSE ANALYSIS**

### **4.1 When does a flare event start?**

#### **Problem Statement**

***The rule defines Flare Event as any intentional or unintentional combustion of vent gas in a flare and describes when a flare event has ceased. However, the rule does not define what quantitative method will be used to determine when a flare event has occurred.***

***Currently approved plans do not specify when a flare event has started, and different facilities determine the start of a flare event differently. Some facilities record the start of a flare event if a flow meter registers a flow, some facilities have an artificial cutoff limit below which they assume no flow exists, and some facilities use other process parameters to determine if a flare event occurred.***

#### **AQMD's Response**

The method for determining when a flare event occurred will be as follows:

1. Prior to the effective date of the measuring device standards [See Section 3.1], use the method currently being used by the facilities to report a flare event. Once a revised Flare Monitoring and Recording Plan has been issued with a method of determining when a flare event started, the method specified in the plan will take precedence.

The existing Rule 1118 plan requires that when the gas flow is below the lower range of the flow meter, gas flow shall be assumed to equal to the lower range of the meter. Currently, the valid lower range of the flow meter is 1 ft/sec.

2. On or after the effective date of the measuring device standards, the start of a flare event will be when the flow velocity reaches 0.1 ft/sec. Alternate methods of determining the start of a flare event may be specified in the Flare Monitoring and Recording Plan. An approved alternate method would take precedence over the 0.1 ft/sec velocity indicator.

### **4.2 When does a flare event end?**

#### **Problem Statement**

***Before the effective date of the modified definition of Flare Event as stated in Section 3.2, how do I determine when a flare event ceased?***

#### **AQMD's Response**

The method for determining when a flare event ceased will be as follows:

1. Prior to the effective date of the measuring device standards [See Section 3.1],



use the method currently being used by the facilities to report a flare event. Once a revised Flare Monitoring and Recording Plan had been issued with a method of determining when a flare event started, the method specified in the plan will take precedence.

2. On or after the effective date of the measuring device standards, the end of a flare event will be when the flow velocity drops below 0.12 ft/sec. Since a flare event begins when the velocity reaches 0.1 ft/sec, a question was raised regarding when a flare event ends if the flow remains between 0.1 ft/sec and 0.12 ft/sec. Under this condition, determining when a flare event ended **will be made at a later time after gaining experiences with the new flow meters.**

Alternate methods of determining the termination of a flare event may be specified in the Flare Monitoring and Recording Plan. An approved alternate method would take precedence over the 0.12 ft/sec velocity indicator.

#### **4.3 Other than the flow velocity, what other methods will be allowed to determine if a flare event has started or ceased?**

##### AQMD's Response

The method used for determining when a flare event has started or ceased other than the flow indicator will be based on process specific parameters. Combination of parameters such as water seal level, pressure reading, and video monitoring data are some examples of the type of parameters that may need to be evaluated. Any parameters that are used in this determination must be measurable, recordable, verifiable, accurate, and enforceable.

#### **4.4 What type of proof is required and what will be the approval process to demonstrate that events occurring in multiple segments are one event?**

##### **Problem Statement**

**Sampling flare events that occur within 15 minutes of each other are considered a single event if the facility can demonstrate to the satisfaction of the Executive Officer that the events had a common cause and the release of vent gas originated from the same process unit.**

##### AQMD's Response

Indicate in the quarterly report to the District that the multiple segments are one event and keep records to prove that the determination of a single event is consistent with the rule definitions and requirements.

#### **4.5 For a flare event lasting more than 24 hours, is each day a separate flare event for cause analysis?**

##### **Problem Statement**

**Rule states that a flare event that continues for more than 24 hours, each**

**day of venting of gases shall constitute a flare event, and requires facilities to 1) conduct a Specific Cause Analysis for any flare event, excluding planned shutdown, planned startup and turnarounds, with emissions exceeding either 100 pounds of VOC; 500 pounds of sulfur dioxide; 500,000 standard cubic feet of vent gas combusted; 2) Conduct an analysis and determine the relative cause of any other flare events where more than 5,000 standard cubic feet of vent gas are combusted.**

**For an event lasting more than 24 hours, should the analysis trigger point be computed separately for each day since each day is considered a separate event, or should the set point be computed as one flare event spanning multiple days since it is physically a single event?**

#### AQMD's Response

Under this rule, a flare event that continues for 24 hours or less will be considered a single flare event when there is a flow to the flare at 0.1 ft per second and ends when the flow velocity drops to 0.12 ft. per second (except as discussed in Section 4.1 and 4.2 above). If such event spans across the next day, it will still be considered a single flare event under the rule definition. Under this circumstance, the analysis trigger point must be computed cumulatively for the duration of the flare event.

However, when a flare event continues for more than 24 hours, the rule definition of Flare Event clearly states that each day is a separate flare event (this definition remains unchanged from the original Rule 1118). To be consistent with the past practice of reporting based on the midnight cutoff date, "each day" is interpreted as a calendar day rather than a 24- hour period. Consequently, the analysis trigger point must be computed for each calendar day that spans over multiple days. Each calendar day is a separate flaring event.

See Section 9.5 for the 24-hour notification requirement.

**4.6 My flare has a large baseline vent gas load due to the large amounts of purge gas we use. For this reason, it is very difficult to determine the beginning flow reading to determine if we exceed the 5,000 standard cubic feet of vent gas for the purposes of conducting the relative cause analysis. This problem gets compounded with multiple overlapping flare events. How can we resolve the issue of large baseline vent gas load due to the purge gas?**

#### AQMD's Response

Any purge gas that is generated at the facility (e.g., refinery fuel gas) is part of the vent gas and there is no need to distinguish between the portion of the vent gas that consists of purge gas and the portion that consists of non-purge gas.

**4.7 The rule requires a specific cause analysis for a flare event (excluding**

planned shutdown, planned startup and turnarounds) which results in 100 pounds of VOC, 500 pounds of sulfur dioxide or 500,000 standard cubic feet of vent gas combusted. The rule also requires a relative cause analysis for any other flare events where more than 5,000 standard cubic feet of vent gas are combusted.

**If my flare event triggers both the specific cause analysis and the relative cause analysis requirements, can I just perform the specific cause analysis?**

AQMD's Response

If a flare event triggers both the specific cause analysis and the relative cause analysis requirements, performing the specific cause analysis will be considered as satisfying the relative cause analysis.

## SECTION 5 – SAMPLING AND MONITORING

### **5.1** *Am I subject to the sampling requirements of Rule 1118(g)(3) prior to receiving an approved revised Flare Monitoring and Recording Plan?*

#### **Problem Statement**

*For example, Table 1 standards which are effective until June 30, 2007 require a daily representative sample for flare events that are not sampling flare event. However, my current plan is valid until a revised plan is issued, and the current plan only requires sampling only if the flare event is a recordable event. Am I subject to the daily sampling requirements?*

#### **AQMD's Response**

In addition to the requirement of the current plan, you are required to comply with the daily sampling requirements of Rule 1118(g)(3) starting January 1, 2006.

### **5.2** *Until a Revised Flare Monitoring and Recording Plan is approved and the facility is operated under the approved amended plan, is it a violation of the sampling requirement if a representative sample is not collected and analyzed for a sampling flare event (or recordable flare event) lasting less than 30 minutes.*

#### **AQMD's Response**

A Sample needs to be taken for either a Sampling Flare Event (current version of the rule) or a Recordable Flare Event (previous version of the rule) within 30 minutes of the start of each flare event.

The current version of the rule defines Sampling Flare Event as any flare event for a specific flare exceeding either a flow rate of 330 standard cubic feet per minute continuously for a period greater than 15 minutes, or any other flare event, as requested by the petroleum refinery and approved in writing by the Executive Officer. The previous version of the rule defines Recordable Flare Event as any flare event for a specific flare during which the flow rate of vent gases to that flare exceeds 330 standard cubic feet per minute continuously for a period greater than 15 minutes, or any other flare event, as approved in writing by the Executive Officer.

However, as allowed under the previous version of Rule 1118 (adopted 2/13/98), the amended Flare Monitoring and Recording Plan allows the use of a substituted data procedure in lieu of a representative sample for a flare event lasting less than 30 minutes. Therefore, until the Revised Flare Monitoring and Recording Plan is approved pursuant to Rule 1118 amended November 4, 2005, the use of substituted data procedure in accordance with Attachment B of the amended Rule 1118 in lieu of a representative sample for a sampling (or recordable) flare event will not be considered to be a violation of the rule or the amended plan.

In summary, both the Amended Flare Monitoring and Recording Plan and the Revised Flare Monitoring and Recording Plan, requires that a representative sample be collected within 30 minutes of the start of a sampling (or recordable) flare event, and a substituted data procedure as specified in Appendix B of the amended Rule 1118 be used if a representative sample is not collected and analyzed. Because the amended plan allows the use of estimation in lieu of a representative sample for a flare event that lasts less than 30 minutes, failure to take a representative sample under this situation is not a violation under the amended plan. However, the Revised Flare Monitoring and Recording Plan will be approved based on Rule 1118 as amended on November 4, 2005, which does not allow the use of a substitute data procedure in lieu of a representative sample. Therefore, failure to collect a representative sample within 30 minutes of the start of a sampling flare event would be a violation of Rule 1118 and the revised plan.

### **5.3 *Is a sample not required if a flare event lasts 15 minutes or less?***

#### **Problem Statement**

***The rule requires that (Table 1, footnote 4) a sample shall be taken within 30 minutes of the start of each flare event. It also states that for flare events lasting 15 minutes or less, no representative sample is required***

#### **AQMD's Response**

Beginning January 1, 2006 until June 30, 2007, the following sampling requirements are in affect:

1. Sampling is not required if there is no flare event on that day.
2. If all flare events that occur on that day are flare events that are not sampling flare events, only one representative sample is required for that day. Flare events that are not a sampling flare event include:
  - a. Flare events that are longer than 15 minutes, but less than 330 SCFM, and
  - b. Flare events that are less than 15 minutes, but with a flow rate of greater than 330 SCFM.

If all flare events for that day last less than 15 minutes (by definition, these events are not sampling flare events), no sample is required for that day, but emissions will be calculated and reported according Attachment B, Section 1, Note (2). If a flare event exceeds 15 minutes and it is a sampling flare event (with the flow rate greater than 330 SCFM), the operator should start collecting a sample (For a sampling flare event lasting more than 15 minutes but less than 30 minutes, please refer to section 5.2 above.)

3. If both sampling flare events and flare events that are not sampling flare events occur on the same day, a representative sample collected for a sampling flare event may be used to satisfy a daily representative sample requirement for a flare event.

### **5.4 *What is considered a representative sample to meet the daily sampling***

***requirements for non-sampling event?***

***For example, can a sample be collected during periods of non vent flow conditions to satisfy the daily sampling requirement?***

AQMD's Response

One daily sample is required when there is at least one flare event lasting more than 15 minutes. Unless approved in the revised flare monitoring plan, a sample collected when no flow is going to the flare ("no flow condition") shall not be used to meet the daily sampling requirement, and shall not be used to calculate emissions. AQMD may, in the revised flare monitoring plan, allow representative daily sampling under "no flow condition" provided that the sample collected can be demonstrated to be equivalent to the vent gas sample that could have been released to the flare. For example, a sample collected downstream of a water seal during "no flow condition" cannot be considered as representative sample because the sample collected will be tainted by a purge gas. However, a sample collected upstream of water seal under "no flow condition" on a flare system serving a single process or multiple processes with similar vent gas stream can be considered as representative sample.

A representative sample is a sample of vent gas collected and vent gas is any gas generated at a facility subject to this rule that is routed to a flare (excluding assisting air or steam, which are injected in the flare combustion zone or flare stack via separate lines). When there is no flow, a representative sample cannot be collected unless allowed in the revised flare monitoring plan.

**5.5** ***The rule requires that a sample be taken within 30 minutes of the start of each flare event. If my flare event starts out as non-sampling flare event for more than 30 minutes (e.g., 200 SCFM for 40 minutes) and then suddenly reaches a flow rate greater than 330 SCFM for more than 15 minutes, how can I comply with the 30-minute time requirement? When I realize I went over 330 SCFM, the start of the flare event has past the 30-minute mark.***

AQMD's Response

For the case described above, AQMD interprets the "start of each flare event" as start of sampling flare event. Since a sampling flare event lasting more than 15 minutes must be sampled, the 30-minute time period starts the moment the flow reaches 330 SCFM (i.e., not 15 minutes after the flow reaches 330 SCFM).

## **SECTION 6 – PRESSURE RELIEF DEVICES (PRDs)**

- 6.1** *Rule 1118(c)(1)(C) requires an annual acoustical or temperature leak survey of all PRDs connected directly to a flare. Can a leak survey be performed using methods other than the acoustical or temperature method?*

*For example, SRU with a natural gas purge gas, sampling the purge gas for the sulfur content will give a positive indication of leak. If the sulfur content does not increase from what is expected from natural gas, it is a positive indication that no leak exists. If this is the case, must we also do an acoustical or temperature leak survey?*

### AQMD's Response

Currently, the rule requires either an annual acoustical or temperature leak survey and does not allow any other equivalent option.

- 6.2** *How can we conduct an annual acoustical or temperature leak survey if there is no planned turnaround for a process unit?*

*The rule requires that the annual acoustical or temperature leak survey shall be conducted no earlier than 90 days prior to the scheduled process unit turnaround.*

### AQMD's Response

Page III-4 of the Staff Report states "The inspection has to be conducted within 90 days prior to a scheduled turnaround, if one is scheduled for that calendar year." Therefore, if a turnaround is not scheduled for that year the survey can be conducted at any time during the year.

- 6.3** *Due to scheduling conflicts and time delay in ordering parts, can we perform our annual acoustical or temperature leak survey more than 90 days prior to the scheduled process unit turnaround?*

### AQMD's Response

The rule is very specific in that the annual acoustical or temperature leak survey shall be conducted no earlier than 90 days prior to the scheduled process unit turnaround.

- 6.4** *What procedure is required to perform the Acoustical leak survey? Can it be performed in-house or does it require outside contractors to perform the acoustical leak survey?*

### AQMD's Response

Acoustical leak survey must be performed using an instrument capable of detecting the leaks, and the person or persons conducting the acoustical leak survey must follow the manufacturer's instructions. The person conducting the leak survey can be a trained (in

the use of the acoustical leak survey instrument) in-house personnel or a qualified contractor.

**6.5** *Rule 1118(c)(1)(C) requires an annual acoustical or temperature leak survey of all PRDs connected directly to a flare. However, if a facility will be replacing all the PRDs during the turnaround period, is it necessary to perform the leak survey?*

AQMD's Response

The intent of the survey is to detect leaking components so they can be repaired or replaced. Therefore, if a facility is replacing all the PRDs during the turnaround period, it is not necessary to perform the leak survey.



## **SECTION 7 – ESSENTIAL OPERATIONAL NEEDS**

**7.1** *Does the fuel gas supplying the cogeneration unit have to meet the Rule 431.1 requirement before it can qualify as an essential operational need?*

*My facility has an electric generation unit (cogen unit) that produces electricity to be used in a state grid system. Since my facility is a SOx RECLAIM source, we are not subject to Rule 431.1. However, the definition of Essential Operational Need seems to imply that the fuel gas supplying the cogen unit has to comply with Rule 431.1 for the cogen unit to qualify as an essential operational need during fuel gas imbalance.*

AQMD's Response

The cogeneration unit at your facility is in the RECLAIM program, the provisions in Rule 431.1 does not apply to SOx RECLAIM facility (Rule 2001 (j)). Therefore, the requirement for meeting Rule 431.1 is not applicable to SOx emissions from equipment at facility subject to SOx RECLAIM.

## **SECTION 8 – MONITORING AND DATA SUBSTITUTION**

- 8.1** *The manufacturer of the flow meter will not guarantee the required low range accuracy per Attachment A of the rule.*

### AQMD's Response

AQMD (Rules division) will follow up with the manufacturer's representative.

- 8.2** *When is the accuracy test report due?*

### AQMD's Response

The accuracy report for the flow meter must be submitted to the District within 30 days of the completion of the accuracy test. The accuracy of the flow meter must be verified every 12 months. The initial accuracy test shall be conducted within a 12 month window starting from the operational date (See Section 3.1). A late test in any year will change the original 12 months window determined from the start of the operational date.

- 8.3** *What is the process of approving the use of substitute data?*

### ***Problem Statement***

***The Data Substitution Procedures allow for alternate methods using recorded and verifiable operational parameters and/or process data approved by the Executive Officer.***

### AQMD's Response

The process for approving alternate data substitution will be through a plan application (Form 400-P) along with fees required under Rule 306. The plan submittal and approval process may occur before or after the subject flare event. The default method is in effect until the plan is approved.

## **SECTION 9 – RECORD KEEPING, REPORTING AND NOTIFICATION**

### **9.1 *When does the new reporting format take effect? Will it apply retroactively?***

#### AQMD's response

The new reporting format will be effective for the reporting period beginning the first quarter of the calendar year 2006.

### **9.2 *What is the new reporting format?***

#### AQMD's response

See Attachment

### **9.3 *Will the facility be in violation of Title V permit if it complies with Rule 1118(h)(1)?***

#### **Problem Statement**

***Rule 1118(h)(1) requires that the video monitoring records only needs to be kept for 90 days. However, Title V recording keeping requires that all records must be kept for 5 years.***

#### AQMD's Response

The rule requirement is subject to the Title V recordkeeping requirements when the rule is approved as part of the State Implementation Plan (SIP) and when the facility is issued a Title V permit. Once both conditions are satisfied, all records required in the SIP approved rule must be kept for 5 years.

### **9.4 *The rule requires a color video monitor capable of recording a digital image of the flare and flame. However, due to weather condition (e.g., due to fog), some images may not show or clearly show the flame. Are the video records with no flame image due to weather acceptable in terms of meeting the requirements of Rule 1118(g)(7)?***

#### AQMD's Response

Yes.

### **9.5 *If I plan to vent to a flare for more than 24 hours, do I need to make multiple reports to the AQMD (i.e., one for each flare event)? As stated in Section 4.5, for a flare event lasting more than 24 hours, each calendar day is considered as a separate flare event.***

#### AQMD's Response

The rule requires that the notification must be made at least 24 hours prior to the start of a planned flare event. Therefore, the owner or operator can make one notification to the Executive Officer at least 24 hours prior to the start of a planned flare event and indicate

that there will be multiple flare events and specify the number of expected flare events.

**9.6** *If I have an unplanned shutdown followed by a start-up less than 24 hours, am I in violation of not providing the 24 hour notification of planned flare event during the start up phase?*

If the start-up resulted from an unplanned shutdown, the start up will be considered an unplanned event and the flaring resulting from it will not be subject to the 24-hour notification requirement.

**9.7** *The rule requires that the Executive Officer must be notified within one hour of any unplanned flare event with emissions exceeding either 100 pounds of VOC or 500 pounds of SO<sub>2</sub>, or exceeding 500,000 SCF of flared vent gas. However, even though my flow is below 500,000 SCF limit, I will not be able to determine what the VOC or SO<sub>2</sub> emissions were until I get the sampling results back. Under this condition, can I report to the Executive Officer within one hour of obtaining the sampling results?*

AQMD's Response

The rule is specific in that the notification must be made within one hour of any unplanned flare event. When an unplanned flare event occurs, you must make an estimate of the emissions to determine if a notification is required. Once the sampling results are obtained, you can make correction to the initial notification.

**9.8** *In reference to Section 9.7 above, when does the one hour notification start?*

AQMD's Response

Page III-10 of the Rule 1118 Staff report provides an answer:

“The one hour time requirement starts at the time the refinery operator facility knows or should have known that the aforementioned mass levels may have been emitted or the vent gas as measured by the flow meter is determined to exceed 500,000 standard cubic feet of vent gas.”

## **SECTION 10 – PLANS**

RESERVED

## **SECTION 11 – CHANGE OF OWNERSHIP**

**11.1** *If a facility goes through change-of-ownership, is the previous plan valid under the new owner?*

### AQMD's Response

Plans are not transferable to the new owner. The new owner must submit a plan application.

## SECTION 12 – OTHER ISSUES

<b>12.1</b>	<i>The rule requires that we submit technical information to the Executive Officer including the available storage for excess vent gases. How do we comply with the requirement to incorporate a vent gas storage system if it is not technically feasible?</i>
<u>AQMD's Response</u> Submit a detailed explanation that clearly indicates why the storage of vent gas is not technologically feasible.	

**SECTION 13 – SPECIFIC EXAMPLES FOR UNPLANNED EVENT  
TELEPHONE NOTIFICATION, RELATIVE CAUSE  
ANALYSIS, SPECIFIC CAUSE ANALYSIS AND  
SAMPLING OBLIGATIONS**

**13.1** *An unplanned flaring event starts at 6 AM and ends at 6:14 AM. The total flow was 4.6 MSCF.*

AQMD's Response

Assumption: VOC < 100 lbs; SO<sub>2</sub> < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO<sub>2</sub> &lt; 500 Lbs.</u>
Relative Cause Analysis [R1118(c)(1)(E)]	Not required since flow < 5,000 SCF
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO<sub>2</sub> &lt; 500 Lbs.</u>
Sample [R1118(g)(3)]	Not required since the duration of flare event lasted 15 minutes or less.

**13.2** *An unplanned flaring event starts at 6 AM and ends at 6:17 AM. The total flow was 5.6 MSCF and the flow rate did not exceed 330 SCFM.*

AQMD's Response

Assumption: VOC < 100 lbs; SO<sub>2</sub> < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO<sub>2</sub> &lt; 500 Lbs.</u>
Relative Cause Analysis [R1118(c)(1)(E)]	Required since flow > 5,000 SCF.
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO<sub>2</sub> &lt; 500 Lbs.</u>
Sample [R1118(g)(3)]	Not required (unless otherwise required to comply with the daily sampling requirement) since the flow rate did not exceed 330 SCFM.



**13.3 An unplanned flaring event starts at 6 AM and ends at 6:17 AM. The total flow was 5.6 MSCF and the flow rate exceeded 330 SCFM.**

AQMD's Response

Assumption: VOC < 100 lbs; SO2 < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs.</u>
Relative Cause Analysis [R1118(c)(1)(E)]	Required since flow > 5,000 SCF.
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs.</u>
Sample [R1118(g)(3)]	Required since the flow rate exceeded 330 SCFM and the duration of flare event lasted 15 minutes.

**13.4 An unplanned flaring event starts at 6 AM and ends at 10:30 AM. The total flow was 89.1 MSCF and the flow rate did not exceed 330 SCFM. On the same day, another unplanned flaring flare event starts at 1 PM and ends at 1:03 PM. The total flow from the second event was 1.7 MSCF and the flow rate exceeded 330 SCFM.**

AQMD's Response

There are two separate events.

Assumption: For each flaring event, VOC < 100 lbs; SO2 < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Not required for either flare events since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs for each flare event.</u>
Relative Cause Analysis [R1118(c)(1)(E)]	Required for the first flaring event since flow > 5,000 SCF. Not required for the second flare event.
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	Not required for either flaring event since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs for each flare event.</u>
Sample [R1118(g)(3)]	Not required for the first flaring event (unless otherwise required to comply with the daily sampling requirement) since the flow rate did not exceed 330 SCFM.  Not required for the second flaring event since the duration is 15 minutes or less.

**13.5** *An unplanned flaring event starts at 6 AM and ends at 10:30 AM the next day (i.e., greater than 24 hours). The total flow for the entire period was 685 MSCF and total flow for the first 24 hours was 570 MSCF. The flow rate exceeded 330 SCFM during the entire period. The total flow at midnight was 430 MSCF.*

AQMD's Response

There are two separate events. The first event from 6 AM to midnight (430 MSCF). The second flaring event from midnight to 10:30 AM (685 – 430 = 255 MSCF).

Assumption: For each flaring event, VOC < 100 lbs; SO2 < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Not required for either flare events since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs for each flare event.</u>
Relative Cause Analysis [R1118(c)(1)(E)]	Required for both flare events since flow > 5,000 SCF
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	Not required for either flare events since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs for each flare event.</u>
Sample [R1118(g)(3)]	Required for both events.

**13.6** *An unplanned flaring event starts at 6 AM at a steady flow rate of 200 SCFM. The flow continues and at 6:20 AM the flow rate increases to 600 SCFM. At 6:30 AM the flow rate drops to 400 SCFM for another 45 minutes and stops.*

AQMD's Response

There is only one event. Total flow for the event = 200 SCFM x 20 minutes + 600 SCFM x 10 minutes + 400 SCFM x 45 minutes = 28 MSCF.

Assumption: VOC < 100 lbs; SO2 < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs for each flare event.</u>
Relative Cause Analysis [R1118(c)(1)(E)]	Required since flow > 5,000 SCF
Specific Cause Analysis	Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs;</u>

[R1118(c)(1)(D)] [R1118(i)(3)]	<u>and SO2 &lt; 500 Lbs for each flare event.</u>
Sample [R1118(g)(3)]	Required since it exceeded both the flow rate (>330 SCFM) and duration (>15 minutes). This is a sampling flare event.

**13.7** *An unplanned flaring event starts at 6 AM at a steady flow rate of 200 SCFM. The flow continues and at 6:20 AM the flow rate increases to 30,000 SCFM. At 6:32 AM the flow rate drops to 300 SCFM for another 10 hours and stops.*

AQMD's Response

There is one flare event.

Total flow for the event = 544 MSCF.

Assumption: VOC < 1000 lbs; SO2 < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Required since flow > 500 MSCF.
Relative Cause Analysis [R1118(c)(1)(E)]	Required since flow > 5,000 SCF. (See Section 4.7)
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	Required since flow > 500 MSCF.
Sample [R1118(g)(3)]	Not required (unless otherwise required to comply with the daily sampling requirement) since the flow rate did not exceed 330 SCFM for more than 15 minutes.

**13.8** *An unplanned flaring event starts at 6 AM and ends at 5:00 AM the next day. The total flow at midnight was 430 MSCF and the total flow from midnight to 5 AM was 150 MSCF. The flow rate for the entire duration was greater than 330 SCFM.*

AQMD's Response

There is one flare event with 580 MSCF Total flow.

Assumption: VOC < 100 lbs; SO2 < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Required since the flow is > 500 MSCF.
--	--

Relative Cause Analysis [R1118(c)(1)(E)]	Required since the flare event exceeded 5000 SCF.
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	Required since the flow is > 500 MSCF.
Sample [R1118(g)(3)]	Required since it exceeded both the flow rate (>330 SCFM) and duration (>15 minutes).

**13.9 My flare uses a refinery fuel gas as purge gas and has a constant flow of 8,000 SCFH (~133 SCFM In the absence of other flare events, what are my requirements?)**

AQMD's Response

This flare always has a flare event due to the purge gas flow. The purge alone will contribute to 192 MSCF in a 24-hour period. For a flare event lasting more than 24 hours, each day is a separate event (See Section 4.5).

Assumption: VOC < 100 lbs; SO2 < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	Each calendar day: Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs for each flare event.</u>
Relative Cause Analysis [R1118(c)(1)(E)]	Each calendar day: Required since the flow > 5,000 SCF.
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	Each calendar day: Not required since the flow is < 500 MSCF, <u>VOC &lt; 100 lbs; and SO2 &lt; 500 Lbs for each flare event.</u>
Sample [R1118(g)(3)]	Each calendar day: Not required (unless otherwise required to comply with the daily sampling requirement) since the flow rate did not exceed 330 SCFM.

**13.10 This is the same flare as Section 13.9. An unplanned flaring event starts as follows:**

- 1. At 8 AM, unplanned flare event starts.**
- 2. At Midnight, the total flow has reached 600 MSCF at a constant flow rate.**
- 3. At 10 AM the next day, the unplanned flare event stopped and only the purge gas remains. The total flow during this period (midnight to 10 AM) was 400 MSCF at a constant flow rate. Starting at 10 AM, only the purge gas remains to be flared..**

AQMD's Response

There are two flare events starting from midnight to midnight on the first day, and the second flare vent from midnight to midnight the next day.

1. First flare event: Flow rate =  $600 \text{ MSCF} / (16 \text{ hrs} * 60 \text{ minutes}) = 625 \text{ SCFM}$
2. Second event: Flow rate =  $400 \text{ MSCF} / (10 \text{ hrs} * 60 \text{ minutes}) = 667 \text{ SCFM}$ . Total flow from midnight to midnight =  $400 \text{ MSCF} + 133 \text{ SCFM (purge gas)} * 14 \text{ hrs} * 60 \text{ minutes} = 512 \text{ MSCF}$

Assumption: VOC < 100 lbs; SO2 < 500 Lbs

Unplanned Event Telephone Notification [R1118(i)(2)]	<u>Required for both flare events since flow &gt; 500 MSCF.</u>
Relative Cause Analysis [R1118(c)(1)(E)]	Required for both flare events. (See Section 4.7 for the second flare event requirement.) since flow > 5000 SCF
Specific Cause Analysis [R1118(c)(1)(D)] [R1118(i)(3)]	<u>Required for both first flare events since flow &gt; 500 MSCF..</u>
Sample [R1118(g)(3)]	Required for both flare events.

# ATTACHMENT A

## Rule 1118 Reporting Requirements

### Quarterly Submittal by Facility:

#### *Electronic*

- Flare Event Data
- Daily Gas (Vent and Pilot/Purge) Usage
- Pilot Flame Failure Summary
- Unplanned Flare Monitoring System Downtime Report
- Planned (Maintenance) Flare Monitoring System Downtime Report

#### *Hard Copy*

- Summary of Relative and Specific Cause Analysis results

### Annual Submittal by Facility:

#### *Hard Copy*

- PRD Survey (see attached)
- Performance Target calculations (to be developed)



## Flare Event Data Column Entry Instructions for Facility:

Column	Heading	Instruction
1	Facility ID#	Enter the six digit AQMD-assigned Facility ID#.
2	Flare Name	Uniquely identify each flare using a consistent name.
3	Flare Event Type	Enter the type of flare event as follows: <ul style="list-style-type: none"> <li>• 1= &gt;100# VOC, &gt;500# SOX, and/or &gt;500,000 scf vent gas</li> <li>• 2 = &gt;5,000 scf vent gas (but ≤ 500,000 scf vent gas)</li> <li>• 3 = sampling event not described in options 1 or 2</li> <li>• 4 = non-sampling flare event</li> </ul>
4	Flaring Event Start Date	Using the format specified in the spreadsheet, enter the <i>date</i> the flare event began.
5	Flaring Event Start Time	Using the format specified in the spreadsheet, enter the <i>time</i> the flare event began – use military time.
6	Flaring Event Stop Date	Using the format specified in the spreadsheet, enter the <i>date</i> the flare event ended.
7	Flaring Event Stop Time	Using the format specified in the spreadsheet, enter the <i>time</i> the flare event ended – use military time.
8	Date Representative Sample Obtained	Using the format specified in the spreadsheet, enter the <i>date</i> that the representative sample for the current flare event entry was obtained.
9	Time Representative Sample Obtained	Using the format specified in the spreadsheet, enter the <i>time</i> that the representative sample for the current flare event entry was obtained – use military time.
10	Total Flare Event Gas Flow Data Source	Enter the source of the Total Event Gas Flow data. Enter: <ul style="list-style-type: none"> <li>• 1= Calculated,</li> <li>• 2 = Continuous Monitoring Device,</li> <li>• 3 = Default Data Substitution Procedure per Rule 1118 Attachment B,</li> <li>• 4 = Alternatively Approved Data Substitution Procedure,</li> <li>• 5 = Alternative Data Substitution Procedure – Pending Approval)</li> </ul>
11	Total Flare Event Gas Flow	Report the total flare event vent gas flow in Mscf.
12	HHV Data Source	Enter the source of the HHV data. Enter: <ul style="list-style-type: none"> <li>• 1= Calculated,</li> <li>• 2 = Representative Sample,</li> <li>• 3 = Data obtained from representative sample taken on same day,</li> <li>• 4 = Data taken from previous days' representative sample,</li> <li>• 5 = Continuous Monitoring and Recording Device (value reported to be determined),</li> <li>• 6 = Default Data Substitution Procedure per Rule 1118 Attachment B,</li> <li>• 7 = Alternatively Approved Data Substitution Procedure,</li> </ul>

		<ul style="list-style-type: none"> <li>• 8 = Alternative Data Substitution Procedure – Pending Approval)</li> </ul>
13	HHV	Report the flare event HHV of the flare event in Btu/scf.
14	[S] as SO <sub>2</sub> Data Source	<p>Enter the source of the [S] as SO<sub>2</sub> data. Enter:</p> <ul style="list-style-type: none"> <li>• 1= Calculated,</li> <li>• 2 = Representative Sample,</li> <li>• 3 = Data obtained from representative sample taken on same day,</li> <li>• 4 = Data taken from previous days’ representative sample,</li> <li>• 5 = Semi-Continuous Monitoring Device (value reported to be determined),</li> <li>• 6 = Default Data Substitution Procedure per Rule 1118 Attachment B,</li> <li>• 7 = Alternatively Approved Data Substitution Procedure,</li> <li>• 8 = Alternative Data Substitution Procedure – Pending Approval)</li> </ul>
15	[S] as SO <sub>2</sub>	Report the flare event total Sulfur concentration as SO <sub>2</sub> in ppm.
16	PM10	Report the flare event PM10 emissions in pounds (See Rule 1118 Attachment B for Guidelines.)
17	NOx	Report the flare event NOx emissions in pounds. (See Rule 1118 Attachment B for Guidelines.)
18	ROG/NMHC	Report the flare event VOC/ROG/NMHC emissions in pounds. (See Rule 1118 Attachment B for Guidelines.)
19	CO	Report the flare event CO emissions in pounds. (See Rule 1118 Attachment B for Guidelines.)
20	Total S as SO <sub>2</sub>	Report the flare event total Sulfur as SO <sub>2</sub> emissions in pounds. (See Rule 1118 Attachment B for Guidelines.)
21	Cause of Flare Event	<p>Indicate the cause of the flare event. Enter:</p> <ul style="list-style-type: none"> <li>• “0” for Unknown,</li> <li>• “1” for Turnaround Activity,</li> <li>• “2” for Maintenance,</li> <li>• “3” for Emergency Shutdown,</li> <li>• “4” for Planned Start-Up or Shutdown,</li> <li>• “5” for Essential Operational Need,</li> <li>• “6” for Process Upset,</li> <li>• “7” for Process Vent,</li> <li>• “8” for Fuel Gas,</li> <li>• “9” for Other</li> <li>• “10” for N/A</li> </ul>
22	Date Specific Cause Analysis Conducted	If a Specific Cause Analysis was required for the current flare event (see Rule 1118(c)(1)(D)), report the date the analysis was conducted using the format specified in the spreadsheet.