| Draft 7/23/2011 | Alberta | Alberta Environment | BC | Sask | GNWT | NL Off | Federal/NEB | Federal/EnvCan | USEPA |
|---|---|---|---|---|---|---|---|---|---|
| | Petroleum Registry | Specified Gas Emitters Regulation | Reported as (Flare, Fuel, Vent or Shrinkage?) | Reported as (Flare, Fuel, Vent or Shrinkage?) | Reported as (Flare, Fuel, Vent or Shrinkage?) | Reported as (Flare, Fuel, Vent or Shrinkage?) | Reported as (Flare, Fuel, Vent or Shrinkage?) | Reported as (Flare, Fuel, Vent or Shrinkage?) | |
| | Reported as (Flare, Fuel, Vent or Shrinkage?) | | | | as per NEB | | | | |
| 1 Fuel Gas to Flare (enhance combustion) | Fuel | Flare | Fuel | Fuel | Flare | Flare | Flare | Flare | Flare |
| 2 Fuel Gas for Flare Pilots | Fuel | Flare | Flare | Fuel or Flare | Flare | Flare | Flare | Flare | Flare? |
| 3 Purge gas to flare | Fuel | Flare | Flare | Fuel or Flare | Flare | Flare | Flare | Flare | Flare |
| 4 Vented Fuel Gas | Fuel | Vent | Vented | Fuel | Vented | Vented | Vented | Vented | Vented |
| 5 Upset Acid Gas Flaring | Flare | Flare | Flare | Flare | Flare | Flare | Flare | Flare | Likely only fuel and not the acid gas? Would include uncombusted fuel. |
| 6 Continuous acid gas flaring | Acid Gas Shrinkage | Flare | Acid Gas Shrinkage | Flare | Flare | Flare | Flare | Flare | Likely only fuel and not the acid gas? Would include uncombusted fuel. |
| | | | | | The NEB has the option to condition the reporting of flaring as part of an authorization or certificate | | The NEB has the option to condition the reporting of flaring as part of an authorization or certificate | | |

Flare and Vent Gas Reporting

Instructions – please fill out the excel spreadsheet by adding your province/territory. The numbered questions below correspond to the 6 questions in the spreadsheet above.

Fuel Gas Questions

1. How is fuel that is added to the flare reported? This would include the addition of sweet gas to sour gas or to acid gas for the purpose of increasing the heating value of the gas to improve combustion efficiency or to improve the dispersion of $SO_2$ (to minimize ground level concentrations of $SO_2$).
2. How is fuel gas for flare pilots reported?
3. How is fuel gas that is used as purge gas/blanket gas,to prevent backflash and routed to flare, reported?
4. How do you report vented fuel gas that is used to drive pneumatic pumps (e.g. chemical injection pumps) or pneumatic controllers/instrumentation?

Acid Gas ($CO_2$ and $H_2S$) Flaring

5. How is upset acid gas flaring that is normally conserved (either through sulphur recovery or acid gas injection) reported when it is flared?
6. How is acid gas, that is under normal operations flared, reported?

**Notes for Alberta:**

For gas plants and other facilities we encourage companies to add fuel gas to improve combustion efficiency. There is a requirement for new facilities to meet a minimum heating value of 20 MJ/m3 to help ensure complete combustion. Existing facilities that have not had problems with stable combustion and/or odours can operate as low as 12 MJ/m3.
Sour gas or acid gas flaring must be modeled to ensure that when gas is flared the Alberta Ambient Air Quality ground level objective for $SO_2$ is met. The maximum ambient level is 450 ug/m3 $SO_2$ on a 1 hr average basis http://environment.alberta.ca/0994.html. Fuel Gas will be added in cases where wider dispersion is needed to meet this requirement.
Any gas that is used as fuel must be reported as fuel gas in Alberta. The intent is that where gas is being used as fuel to improve combustion/dispersion or drive equipment it should be reported as fuel.

In Alberta, gas plants with small amounts of $H_2S$ in the inlet (<1 t/d sulphur equivalent) are allowed to flare acid gas on a continuous basis. This acid gas flared is reported as acid gas shrinkage.
Alberta restricts the amount of flaring that occurs over the year at gas plants to 0.5% percent of raw gas receipts. Volumes of acid gas which are continuously flared (as per approval) or volumes of fuel gas which are added to the flare are not part of this 0.5% restriction.

**Notes for British Columbia**

1. Alberta requirements related to minimum heating value, continuous acid gas flaring and upset acid gas flaring apply in B.C.
2. Fuel gas used for pilots, purge gas and vented gas sent to flare is reported as flared gas in British Columbia. There are two reasons for doing so:
   a. Public perception -- it is difficult to say that a facility is not flaring when there is a visible flame at the top of the flare stack.
   b. Decision tree analysis to reduce/eliminate flaring applies to pilot / purge / vented gas. At many facilities, the biggest flaring reductions have resulted from changes such as improved flare pilot technology, optimization of purge gas rates, improved blanket gas regulation and repair of leaks to the flare system.