BULK GASOLINE LOADING RACKS

Date Initiated:

October 21, 1998

Dates Modified / Updated:

April 25, 2008

PROCESS DESCRIPTION:

Gasoline vapor emissions occasionally occur at the pressure release valves on the tanker trucks during bulk loading operations. A District emission estimate of 0.02 lbs ROG/1000 gallons loaded has been developed by the Vapor Recovery Section. Speciation of these hydrocarbon emissions is expected to be identical to reformulated gasoline vapor. Emissions from spillage and leaks at the loading rack are currently assumed to be negligible. The following estimation procedures are used by the District to calculate loading rack emissions;

Ea = [42 x (Qg + Qt + (Qd x 0.127)) / 1000] x EF x Ci / 100

Eh = Ea / H

Where:

Ea = Annual emissions of each listed substance, (lbs/year)

Eh = Maximum hourly emissions of each listed substance, (lbs/hour)

42 = Conversion factor (gallons / barrel)

Qg = Annual loading rack throughput of gasoline, (barrels/year)

Qt = Annual loading rack throughput of transmix, (barrels/year)

Qd = Annual loading rack throughput of diesel, (barrels/year)

0.127 = Fraction of diesel & jet fuel loading resulting in gasoline vapor emissions

EF = Loading rack emission factor, (lbs TOG/ 1000 gallons throughput)

= 0.02 lbs TOG/1000 gallons throughput

Ci = Weight percent of each compound in the gasoline vapor (%)

EMISSIONS INFORMATION:

Emission factors for gasoline vapor emissions at the loading rack have been developed using the District TOG factor (0.02 lbs/1000 gallons throughput) and the EPA reformulated gasoline vapor speciation profile below;

Reformulated Gasoline Vapor Composition

Pollutant	Weight Percent (%)
TOG	100.0
ROG	100.0
Benzene	0.4
Ethyl Benzene	0.1
Hexane, Isomer of	1.4
Toluene	1.1
Xylenes	0.4
2,2,4-Trimethylpentane	0.7

ASSUMPTIONS / LIMITATIONS:

- The loading rack emission factor was developed by the District during field testing at local bulk gasoline terminals. Emission are primarily associated with pressure relief valve leaks and releases that occur during loading. Speciation of the hydrocarbon emissions is assumed to be identical to reformulated gasoline vapor.

- Gasoline vapor speciation is based on information in the EPA NESHAPS Document for the Gasoline Distribution Industry (vapor speciation for reformulated / oxygenated fuel). Gasoline liquid speciation is based on the CAPCOA Industry wide Risk Assessment Guidelines (liquid speciation).

- A portion of the diesel fuel throughput (12.7%) and all of the transit mix throughput are included with the gasoline throughput for emission estimation purposes. This assumes all diesel and transit mix shipped off site are processed through the loading rack.

- Where multiple facilities share a loading rack, the total value for all fuel throughputs must be reported to correctly estimate emissions.

FORMS:

Use a separate reporting form for each loading rack on site if possible. Report only fuels dispensed through the subject loading rack as throughput.