EXAMPLE PTE ANALYSIS FOR ONG MACT

Facility: Wellhead production
Equipment present: Glycol dehydrator, tank with flashing emissions, heater treater, and water storage tank

PTE Analysis

1. *Determine which emissions must be calculated*. Since this is a wellhead production facility, only emissions from glycol dehydrators and tanks with flashing emissions must be calculated and aggregated to determine if the facility is a major source. The heater treater and water tank are part of the "associated equipment" at the wellhead and are not included.

2. *Calculate emissions.*
   The glycol dehydrator and tank emission calculations are described below.

Glycol Dehydrator Emission Calculation Procedure

1. Determine gas throughput according to guidelines in Subpart HH. There are varying calculations depending on whether the unit has operated at least 5 years and whether production has declined steadily over that time (see Section 4.2 for more details).

For an example 5 MMscfd (design) dehydrator, the following annual production data are available:

	1994	1995	1996	1997	1998
Annual Throughput, MMscf	1,500	1,350	1,215	1,094	985
Daily Average, MMscfd	4.11	3.70	3.33	3.00	2.70

Because there are five years worth of production data and production has declined each year, this dehydrator can use the special provisions that allow it to use a throughput based on the actual average for the last three years multiplied by a safety factor of 1.2. So, its throughput is equal to:

$(3.33 + 3.00 + 2.70)/3 \quad x\ 1.2 = 3.61$ MMscfd

1. Determine the values for other parameters needed for GRI-GLYCalc. These include:
   Gas temperature and pressure
   Gas composition
   Glycol circulation rate & pump type

Flash tank temperature and pressure (if present)
Control device type and related data (if federally enforceable for the PTE calculation)

The rule states that the value of other parameters should be selected over the same time period over which the throughput is determined above. Other parameters shall be based on either the highest measured value or annual average.

For this example, those other parameters would be based on data from the most recent three years. The operator could use the highest measured value or annual average; it's assumed that the operator could also use the design, since that would be the highest possible.

2. Enter the data and run GRI-GLYCalc to determine HAP emissions.

Tank with Flash Emissions Calculation Procedure

1. Determine hydrocarbon liquid throughput according to guidelines in Subpart HH. There are varying calculations depending on whether the unit has operated at least 5 years and whether production has declined steadily over that time (see Section 4.2 for more details).

For an example 700 bbl tank (design) dehydrator, the following annual production data are available:

	1994	1995	1996	1997	1998
Annual Throughput, Barrels	200,000	160,000	150,000	180,000	160,000
Daily Average, bbl/day	548	438	411	493	438

Because there are five years worth of production data but production has not declined each year, this tank must use the highest annual production multiplied by a safety factor of 1.2. So, its throughput is equal to:

(200,000 bbl/year x 1.2)/365 days = 658 bbl/day

2. Determine the values for other parameters needed for the emission calculation. As discussed in Section 4.2, there are a variety of ways to calculate tank emissions, including AP-42 and E&P Tank (consult EPA's Chief website for more details). Another option is the Vasquez-Beggs equation, which is included in GRI HAPCalc 3.0. All of these calculations require a similar set of parameters, which likely include (but are not limited to) the following:

Gas temperature and pressure
Feed composition (pressurized fluid prior to flashing)
API gravity
Gas specific gravity
Tank capacity/size (and dimensions or orientation in some cases)
Control device type and related data (if federally enforceable for the PTE calculation)

The rule states that the value of other parameters should be selected over the same time period over which the throughput is determined above. Other parameters shall be based on either the highest measured value or annual average.

For this example, those other parameters would be based on data from the most recent three years. The operator could use the highest measured value or annual average; it's assumed that the operator could also use the design, since that would be the highest possible.

1. Enter the data into the selected emission calculation procedure to determine HAP emissions.