

OEHHA Evaluation of “Criteria for Determining when Air Quality in the Porter Ranch and Surrounding Communities Has Returned to Typical (Pre-SS-25 Leak) Levels”

The South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB) have jointly developed the “Criteria for Determining when Air Quality in the Porter Ranch and Surrounding Communities Has Returned to Typical (Pre-SS-25 Leak) Levels”. The criteria are for use in determining when air quality in Porter Ranch and surrounding communities returns to levels consistent with what was typical prior to the leaking well (SS-25) at the Southern California Gas Company (SoCal Gas) Aliso Canyon natural gas storage facility.

SCAQMD and CARB intend that satisfaction of these criteria will demonstrate that outdoor air contaminants in the communities near the Aliso Canyon natural gas storage facility have returned to levels that would be expected under typical conditions and that the emissions from the well SS-25 are not impacting the community’s overall air quality.

SCAQMD and CARB have additionally stated that the criteria 1) are designed for public health protection and take into consideration the available scientific information and pollutant measurements collected to date in the surrounding communities and elsewhere; 2) are based on levels that are typically observed in the outdoor air in other areas throughout the greater Los Angeles region; and 3) are designed to keep benzene and hydrogen sulfide levels in the Porter Ranch and surrounding communities below the existing science-based levels of health concern.

The Office of Environmental Health Hazard Assessment (OEHHA) believes that these criteria are scientifically valid. The residents of Porter Ranch and the surrounding communities should not experience adverse health impacts from air quality satisfying the criteria standards.

OEHHA has reviewed the Outdoor Air Criteria section of the overall criteria document, and has made the following determinations:

1. SCAQMD/CARB Criteria for Methane:

No “grab” measurements (an instantaneous sample collected for subsequent laboratory analysis) of methane concentrations conducted by SCAQMD, CARB, or SoCal Gas higher than 5 parts per million (ppm), nor hourly averages higher than 4 ppm, nor 12-hour or 24-hour averages higher than 3 ppm at the Aliso Canyon facility fence line or in the Porter Ranch or surrounding communities, unless it is demonstrated that a source other than the Aliso Canyon facility is causing the higher measurements.

OEHHA Determination:

Methane levels that meet the SCAQMD/CARB criteria will be protective of the health of Porter Ranch residents.

The methane level criteria is set primarily to make sure that the SS-25 well has not resumed leaking, since no toxic effects from methane would be expected at levels far above the criteria levels listed above.

2. SCAQMD/CARB Criteria for Hydrogen Sulfide:

No measurements of hydrogen sulfide (H₂S) conducted by SCAQMD, CARB, or SoCal Gas higher than 10 parts per billion (ppb) (substantially below the California 1-hour standard of 30 ppb) at the Aliso Canyon facility fence line or in the Porter Ranch or surrounding communities, unless it is demonstrated that a source other than the Aliso Canyon facility is causing the higher measurements.

OEHHA Determination:

Hydrogen sulfide levels that meet the SCAQMD/CARB criteria will be protective of the health of Porter Ranch residents.

The hydrogen sulfide criteria level is one-third of the hydrogen sulfide acute (short-term) Reference Exposure Level (REL). Acute RELs are levels at which infrequent one-hour exposures are not expected to result in adverse health effects. Acute health effects due to hydrogen sulfide exposure would not be expected at the hydrogen sulfide criteria level.

3. SCAQMD/CARB Criteria for Public Nuisance:

No public nuisance related to mercaptan odors detected in the Porter Ranch or surrounding communities and verified by SCAQMD through its established complaint response and surveillance procedures for implementation of California Health & Safety Code Section 41700, unless it is demonstrated that a source other than the Aliso Canyon facility is causing the public nuisance.

OEHHA Determination:

The absence of mercaptan odors verified by SCAQMD as meeting the Public Nuisance criteria will be protective of the health of Porter Ranch residents.

The adverse effects experienced by Porter Ranch residents (e.g. nausea, headaches) have been a reaction to the odorants (t-butyl mercaptan and tetrahydrothiophene) added to the natural gas leaked by well SS-25. Porter Ranch residents should not experience the adverse effects listed above if they are not subjected to objectionable mercaptan odors.

4. SCAQMD/CARB Criteria for Mercaptans:

No measurements of mercaptans conducted by SCAQMD, CARB, or SoCal Gas higher than 5 ppb at the Aliso Canyon facility fence line or in the Porter Ranch or surrounding communities, unless it is demonstrated that a source other than the Aliso Canyon facility is causing the higher measurements.

OEHHA Determination:

Mercaptan levels meeting the SCAQMD/CARB criteria will be protective of the health of Porter Ranch residents.

The mercaptan criteria works in conjunction with the Public Nuisance criteria. Humans can smell the odorants found in Aliso Canyon natural gas (t-butyl mercaptan and tetrahydrothiophene) at levels of less than 1 ppb, while monitoring equipment typically cannot detect levels lower than 5 ppb. Exceeding the 5 ppb mercaptan limit would indicate a substantial gas leak at Aliso Canyon.

5. SCAQMD/CARB Criteria for Benzene:

No grab or 1-hour average measurements of benzene concentrations conducted by SCAQMD, CARB, or SoCal Gas higher than 2 ppb (substantially below the California acute exposure standard of 8 ppb), nor 12-hour or 24-hour averages higher than 1 ppb (equivalent to the California chronic exposure standard of 1 ppb) at the Aliso Canyon facility fence line or in the Porter Ranch or surrounding communities, unless the methane thresholds are not exceeded, which demonstrates that a source other than the Aliso Canyon facility is causing the higher measurements.

OEHHA Determination:

Benzene levels meeting the SCAQMD/CARB criteria will be protective of the health of Porter Ranch residents.

The “grab” (5 – 10 minute duration) and 1-hour average air measurement benzene criteria level is one-fourth of the acute benzene REL. The 12 or 24-hour average air measurement benzene criteria level is set at the chronic (long-term) REL. The chronic REL is a concentration at which adverse noncancer health effects would not be expected in the general population exposed continuously over a lifetime.

Additionally, the time period used for grab samples (5 – 10 minute duration) is substantially shorter than the 1-hour period used to set the acute REL. This provides additional protection, since adverse health effects are more likely to be seen with longer exposures. Similarly, the 12/24-hour average air measurement benzene criteria level uses a duration of exposure far shorter than the time period used for the chronic REL (an annualized average air concentration over a lifetime), which provides additional protection.