

The Huasna Valley is a place of temperature extremes. Summertime high temperatures can reach over 110 degrees while wintertime low temperatures can be in the single digits. The daily fluctuation in temperature between daytime highs and nighttime lows can be up to 70 degrees. This daily cycle of hot daytime temperatures and cold nighttime temperatures increases sugar levels in fruiting crops, making Huasna fruit especially sweet if it is planted so as to avoid late spring frosts.

Everyone who lives on the Huasna Valley floor knows about the difficulties of growing frost sensitive crops in the spring and fall due to our cold morning temperatures. Several residents high enough on the hillsides have fruit bearing citrus trees and enjoy an almost frost free climate, while valley floor farmers can't plant corn, beans or squash until early May, and potato and winter squash crops are sometimes damaged by frosts in early October.

Normally nighttime air temperatures are warmer closer to earth and the air temperatures decrease with increasing altitude. In Huasna, due to the topography of the pocket valley and climatic conditions that give rise to nighttime radiative cooling, the air temperature increases with increasing altitude, an effect known as temperature inversion.

The extreme temperature inversion in the Huasna Valley can be seen in the population of native vegetation on the hillsides. Descending into the valley from the ridgelines you find a decrease in the number of native plant species present and on the valley floor there exists a smaller number of successful native species of plants than at the higher elevations on the hillside. Native plants like Ceanothus, which grow extensively throughout the county and can be found on the hillsides surrounding Huasna do not grow in the lower elevations of the valley.

This nighttime temperature inversion, where cold air is trapped in our pocket valley and air temperatures increase with altitude is of great concern to valley residents since the settling and trapping of cold air each night can also trap emissions, particulate matter, dust, and odors associated with Exceleron's proposed industrial facility. The trapping of smog and reflection of noise by temperature inversion conditions are well documented phenomena.

The Huasna Valley Association has just completed an analysis of four years of temperature data collected at two different elevations in the Huasna Valley. We will submit the raw data and results of our analysis to the EIR consultant following this meeting.

One of the most important results of this analysis is the discovery that over the past 4 years, 90% of our nights have resulted in a temperature inversion condition. There is a 370 foot difference in elevation between Exceleron's proposed shipping facility, where most emissions and noise will occur, and well pad #2 on the ridgeline. Over the past four years we calculate the **average** the nighttime temperature inversion difference between these locations to be 13 degrees. Such a severe temperature inversion can

trap emissions and particulate matter resulting in smog in the Huasna Valley on 90% of all mornings. This inversion can also trap odors in our pocket valley and amplify noise from Exceleron's industrial facility. The potential environmental impact analysis in the EIR must consider the presence of this temperature inversion and the effect it may have on the impacts from this project, including emissions, odor, particulate matter, emission of hazardous gases, and noise.