

Team Number:

San Juan College High School

Area of Science: Environmental Science

Title: Establishing CH₄ absorbing Zeolite towers in the Four Corners Region and its potential for its local and global emission

Problem and Purpose of this study:

Methane (CH₄), a greenhouse gas that traps atmospheric heat is produced naturally by decomposition of organic wastes and anthropologically by agricultural practices, municipal solid waste landfills and by the processing and transportation of coal, oil and natural gas.

Space – based imaging spectrometers from California Institute of Technology has determined that the Four Corners Region where we are located has a large methane enhancement due to the presence of the oil, natural gas and coal industry. Current studies states that some species of Zeolites, porous materials commonly used as adsorbents (Kim et.al., 2013) has a very promising CH₄ sorption capacity.

Plan of Action:

By designing a computer simulation (through Netlogo or Starlogo) of CH₄ point and non – point sources, dispersion and emission distribution, we may be able to predict the effect of the establishment of absorption towers across the San Juan Basin – Four Corners, containing Zeolites and its enhanced forms in the reduction of CH₄ in the Four Corners atmosphere thereby also helping against global atmospheric influx.

Team Members

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Project Mentor(s)

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