282b Environmental Community Impact Assessment Associated with a Multiuse Industrial Facility: Scientific Rigor, Uncertainties, Transparency and Participation of Stake Holders

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Assessment of the potential impact of hazardous waste sites on local communities is a challenge when emissions and monitoring data are lacking, multiple chemicals and radionuclides are present, and information on population activity patterns is unavailable. Despite uncertainty due to data quality and modeling reliability, unbiased scientific evaluation and transparent risk communication are critical to gaining public trust. The above issues are illustrated in a recent case study involving a major multi-use aerospace complex that has been in operation since 1948. The major objective of the study was to present a transparent and scientifically defensible independent evaluation of the facility's potential impact on surrounding communities, considering different exposure scenarios and future land use options.

The present case study has focused on the Santa Susana Field Laboratory (SSFL) facility located approximately 30 miles northwest of downtown Los Angeles, between Simi and San Fernando Valleys, CA. It is a complex of industrial facilities occupying roughly 2,600 acres in the Simi Hills of Ventura County, with altitudes ranging from approximately 1,500 feet to 2,200 feet. Since 1948 the site was used primarily for testing liquid fuel-propelled rocket engines, many of the early rocket testing activities were related to the Apollo space missions. Main sources of contaminants were from rocket engine testing (RET), air stripping towers, open pit burning, nuclear reactor accidents and research activities. Operations at SSFL have involved the use of organic solvents, hydrazine fuels, kerosene-based fuels, oxidizers, liquid metals, asbestos, PCBs, and radionuclides.

The methodology included review of existing data, initial screening of chemicals of concern using the SCRAM model and refinement of SCRAM scores using contaminant health-based standards, emission estimates (from site operations and from the contaminated soil subsurface at the site), modeling of contaminant air dispersion using the CALPUFF model, exposure pathway analysis, and identification of potential toxic “hot spots”. The UCLA study team interacted with both concerned individual residents and public groups to determine issues and areas of greatest public concern. A presentation framework was then designed to gain public confidence in the study methodology and conclusions. Chemicals and specific “hot spots” were presented and compared for a range of exposure scenarios in terms of ratios of estimated doses to acceptable doses as a quantitative measures of site impact. Finally, the results of the study, will be presented with respect to the analysis of potential past and future impacts associated with various land use scenarios.