



San Luis Wellhead Protection Program

The City of San Luis (the City) is located in Yuma County in the southeast corner of Arizona on the United States-Mexico border. Groundwater is currently the sole source of drinking water for the City. Consequently, protection of the groundwater is crucial to the reliability of the water supply, public health, and the City's economic growth.

A wellhead protection plan for the City of San Luis was developed by WEST Consultants, Inc., as an economically feasible method for protecting the City's drinking water supply. The components of the wellhead protection plan are the delineation of the wellhead protection areas, the compilation of a contaminant source inventory, the development of management tools to protect the groundwater, and the formulation of a contingency plan for both short- and long-term losses of one or more wells.

The time of travel (TOT) criterion was used to determine the wellhead protection areas. Wellhead protection areas were delineated for the 5-, 10-, and 30-year TOTs using the WHPA computer program, developed by the U.S. Environmental Protection Agency (EPA). Because the wells partially penetrate a deep aquifer, an innovative method was developed to determine the effective aquifer thickness during pumping. The groundwater flow in the region had a steep hydraulic gradient with varying flow directions. Because of the steep hydraulic gradient, the shape of the wellhead protection areas varied significantly with flow direction. To account for this variability, the adopted wellhead protection areas were developed by merging the wellhead protection areas derived from a range of flow directions.

A comprehensive inventory of historical, present, and future land uses and activities was developed. Those land uses and activities that were associated with potential sources of contamination were identified and evaluated based on EPA guidelines. Potential contamination sources were identified for all areas within the City limits and the wellhead protection areas. The Priority Setting Approach, developed by the EPA, was used as a risk screening tool to assess the risks posed by the identified potential contamination sources.

The recommended management tools, which will reduce the risk of groundwater contamination, can be implemented easily, at a low cost to the community, without inhibiting economic growth. The recommended management strategies include public education, enforcement of existing state and federal regulatory controls, development of zoning ordinances and health regulations, implementation of best management practices, establishment of a household hazardous waste education program and collection events, and the development of a groundwater monitoring program in areas near high risk contamination sources.

A water supply contingency plan was developed, which outlines the available logistical support resources (i.e., personnel, equipment, supplies, and services), financial resources including grant and loan programs, and response procedures. In addition, the contingency plan describes both short-term and long-term water supply replacement options for the City, as well as water conservation measures and water-use restrictions that may be implemented during a water supply disruption.

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