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23 September 1993

Mr. Carl Stubbs
New Mexico Environment Department
RCRA Permit Section
P.O. Box 26110
Santa Fe, NM 87502

RE: RCRA Part B Permit Application, Amended August 1993
Ft. Bliss/McGregor Range, Otero County

Dear Mr. Stubbs:

Enclosed are copies of page 14 for the referenced document. Please insert these in your copies. Thank you.

Very truly yours,

ROY F. WESTON, INC.

Thomas W. Hoskings, Ph.D., P.E.
Department Manager

TWH/bl

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rock on the Hueco Mountain escarpment. The Hueco Limestone consists of massive bedded limestones, interbedded with reddish shales, and with a basal conglomerate.

In the northern part of the Hueco Mountains, are several sizeable igneous bodies. Hueco Tanks itself, and the peak of Cerro Alto a little to the east, are probably intrusive plugs or stocks. Other bodies are concordant with the sedimentary strata, some undoubtedly representing erosional remnants of larger intrusions.

The treatment unit is located on alluvial deposits near the northern terminus of the Hueco Mountains.

Regional Hydrology - Groundwater resources on the eastern side of the Hueco Bolson are sparse and of generally poor quality when compared with those on the west side of the Hueco Bolson, from which the City of El Paso derives its drinking water. Bolson deposits are composed of deep alluvial accumulations washed into intermontane areas from the surrounding highlands. The water bearing sediments which form this aquifer are generally unconsolidated, alternating, and discontinuous beds of silt, clay, sand, gravel, and boulders with associated caliche, gypsum, conglomerate, volcanic ash, tufts, and basalts (Taylor, 1981).

Precipitation and, to a minor extent, infiltration from the Rio Grande and Pecos Rivers, are the principal sources of recharge to the alluvial and Bolson deposits. Groundwater movement in this area begins with recharge along the foothills of the mountains and plateaus where the sediments are coarse grained and permeable, and possibly along the channels of ephemeral streams in the basins. Generally, recharge does not occur unless precipitation is sufficient to cause surface flow through the foothill areas in the ephemeral streams, otherwise the water is either directly evaporated or lost from the shallow subsurface by evapotranspiration.

Groundwater moves from recharge areas to discharge in the topographically lower parts of the basins. Fresh water is generally located in recharge areas that flank the topographically higher basin edge and may occur down gradient in distinct lenses intertongued with less permeable sediments which contain older, more saline waters. Total dissolved solids, chloride, and sulfate concentrations increase along the groundwater flow path by interaction with the rock matrix, dissolution of associated evaporite deposits, and/or evapotranspiration concentration. Basinward, slightly saline to saline groundwater may discharge naturally through evaporation, which can result in accumulation of salts on the land surface; may leave the topographically closed basin through the rocks that underlie the basin; or discharge directly to surface drainage such as the Rio Grande (Groundwater Availability in Texas).

Currently, large amounts of groundwater are withdrawn for municipal and industrial use in the El Paso area from the Hueco and lower Mesilla Bolsons. Overproduction of groundwater may result in a rise in dissolved constituents due to mixing of fresh water with slightly saline to saline water withdrawn from the sediments which underlie, overlie, or adjoin the fresh-water bearing zones.

The water table is generally deep, greater than 230 ft (70 m) below ground surface. Available well data from the area, Figure I.C-3, have been summarized, Table I.C-1, and used to