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Date: July 23, 1998

Total Number of Pages (including cover sheet) 14

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## MESSAGE

S. S. Papadopulos & Associates, Inc. is pleased to submit on behalf of Sparton Technology, Inc., the attached "Alternative Proposal to Install a Recovery Well Pumping at Fifty Gallons per Minute" related to Sparton's Coors Road Facility in Albuquerque, New Mexico. The original of this document will be sent by regular mail.

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transmissivity of 18,000 gpd/ft. Because the proposed recovery well will be partially penetrating this interval, its capture zone could be wider and shallower[7].

After the recovery well is put into operation, pumpage from the existing on-site shallow recovery wells will be discontinued. During the first month of operation, the pumping rate of the well and water levels in the recovery well and in existing monitoring wells on the Sparton property and its vicinity will be monitored to assess the performance of the recovery system. The procedures to be used for this assessment will be similar to those that will be used to evaluate the performance of the off-site containment well[8].

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[7] Bair, Scott E. and Terry D. Lahm, 1996, **Variations in Capture-Zone Geometry of a Partially Penetrating Pumping Well in an Unconfined Aquifer**, Ground Water, v. 34, no. 5, pp 842-852.

[8] S. S. Papadopulos & Associates, Inc., 1998, **Work Plan for the Evaluation of the Off-Site Containment System Performance**, prepared for Sparton Technology, Inc., Coors Road Facility, Albuquerque, New Mexico, July 14.

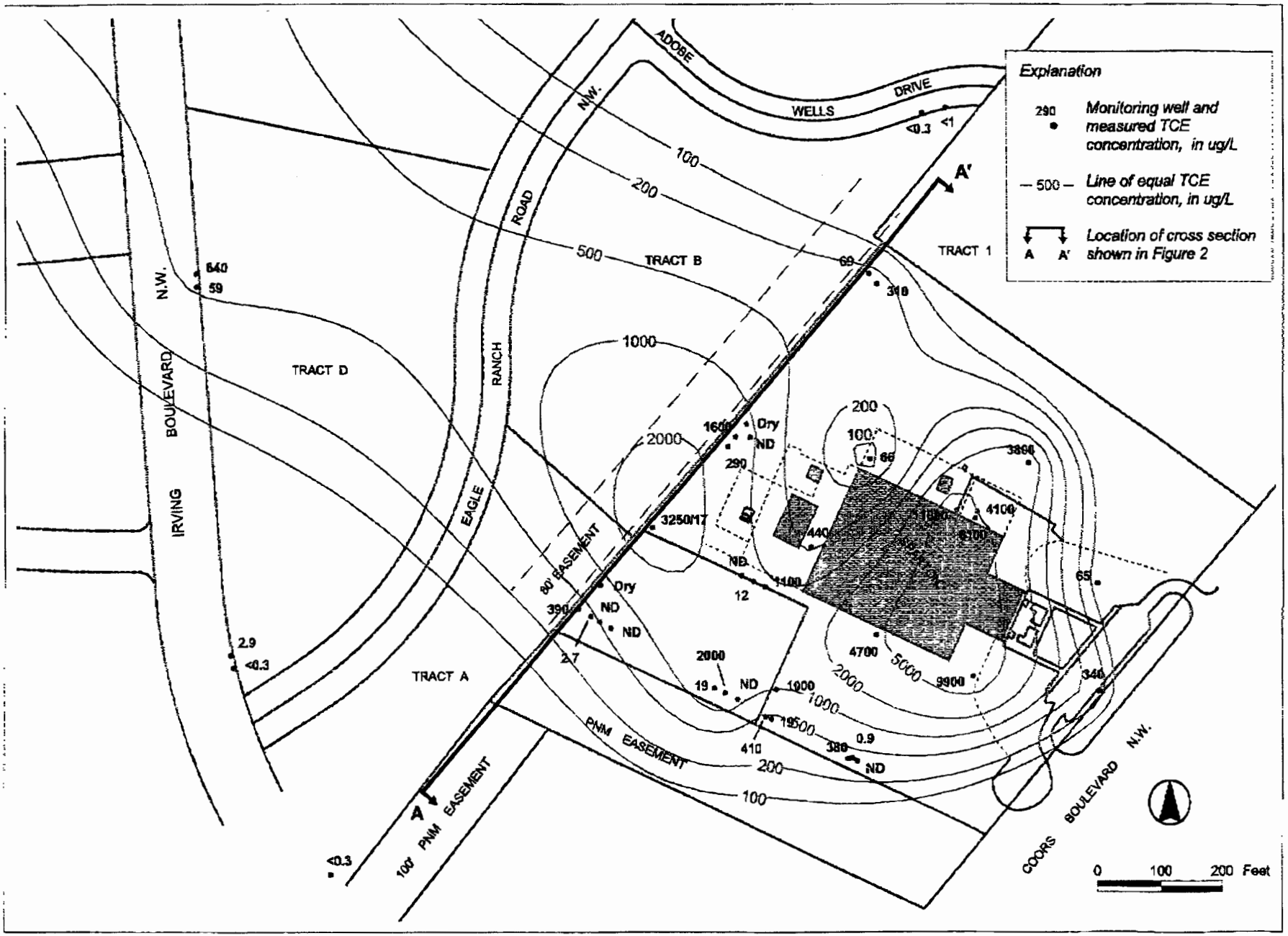


Figure 1 Distribution of TCE Concentrations at the Sparton Property and Vicinity

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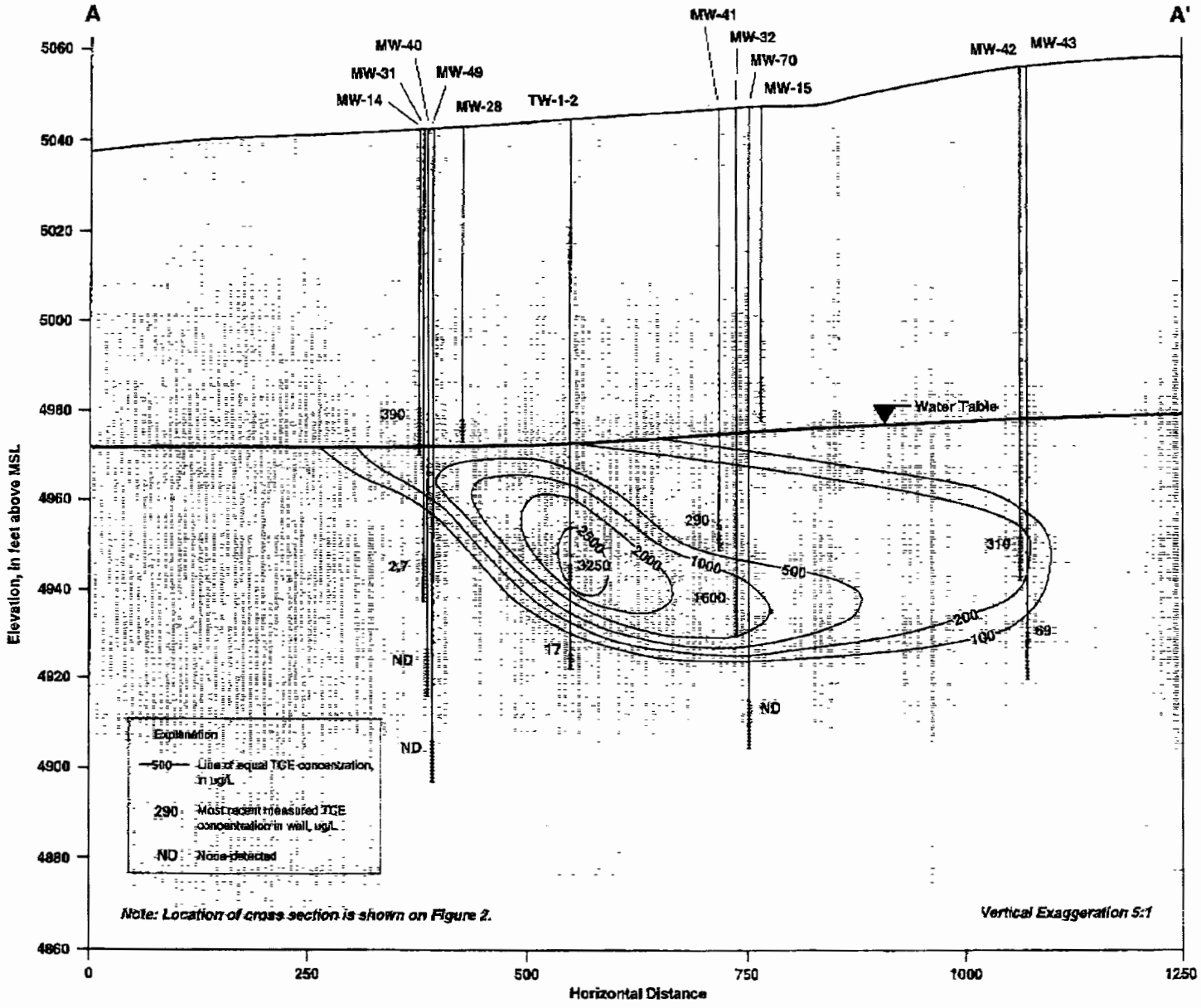


Figure 2 Vertical Distribution of TCE Concentrations along the Northwestern Property Boundary

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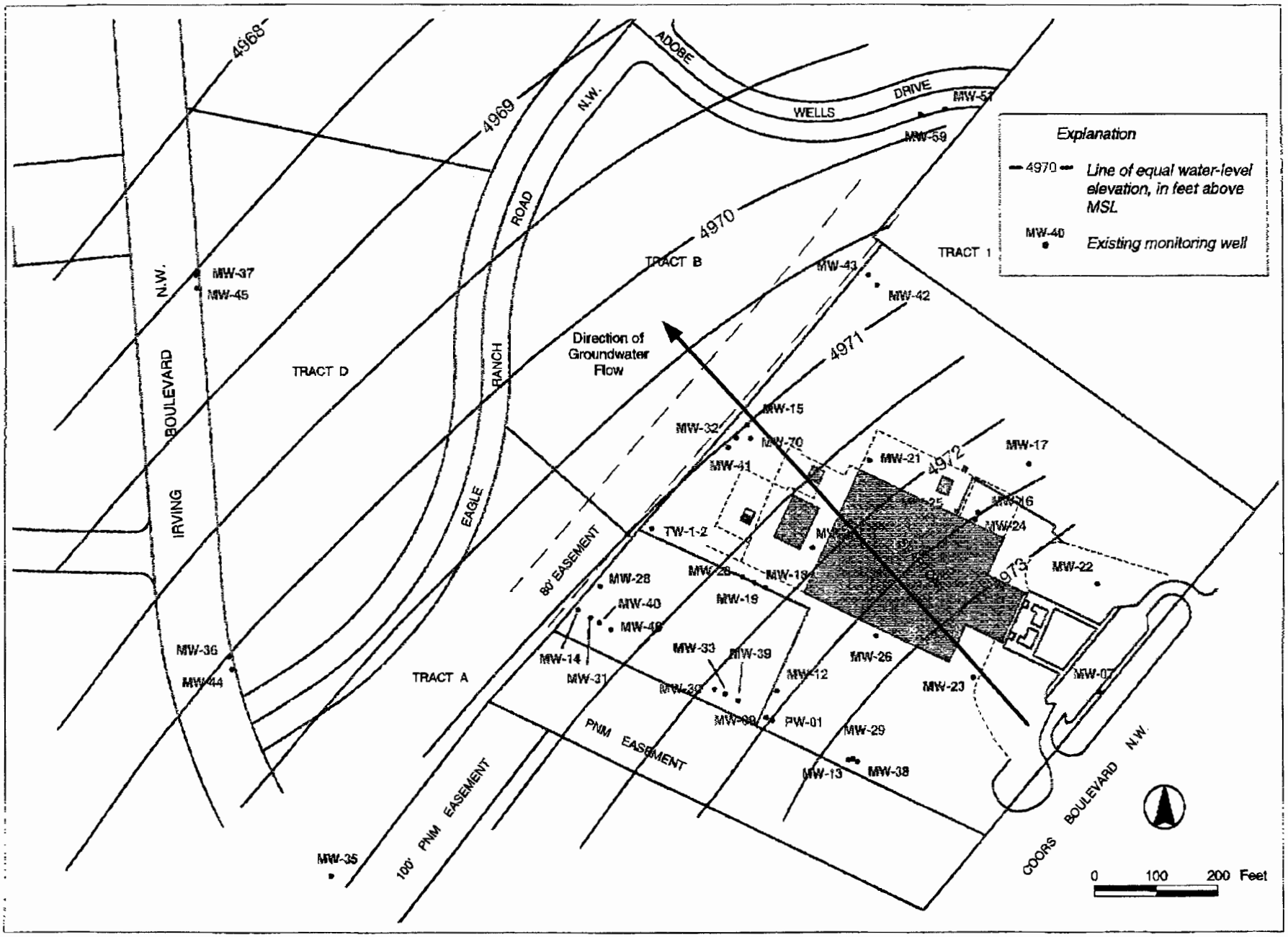


Figure 3 Water Levels and Direction of Groundwater Flow in the Lower Flow Zone

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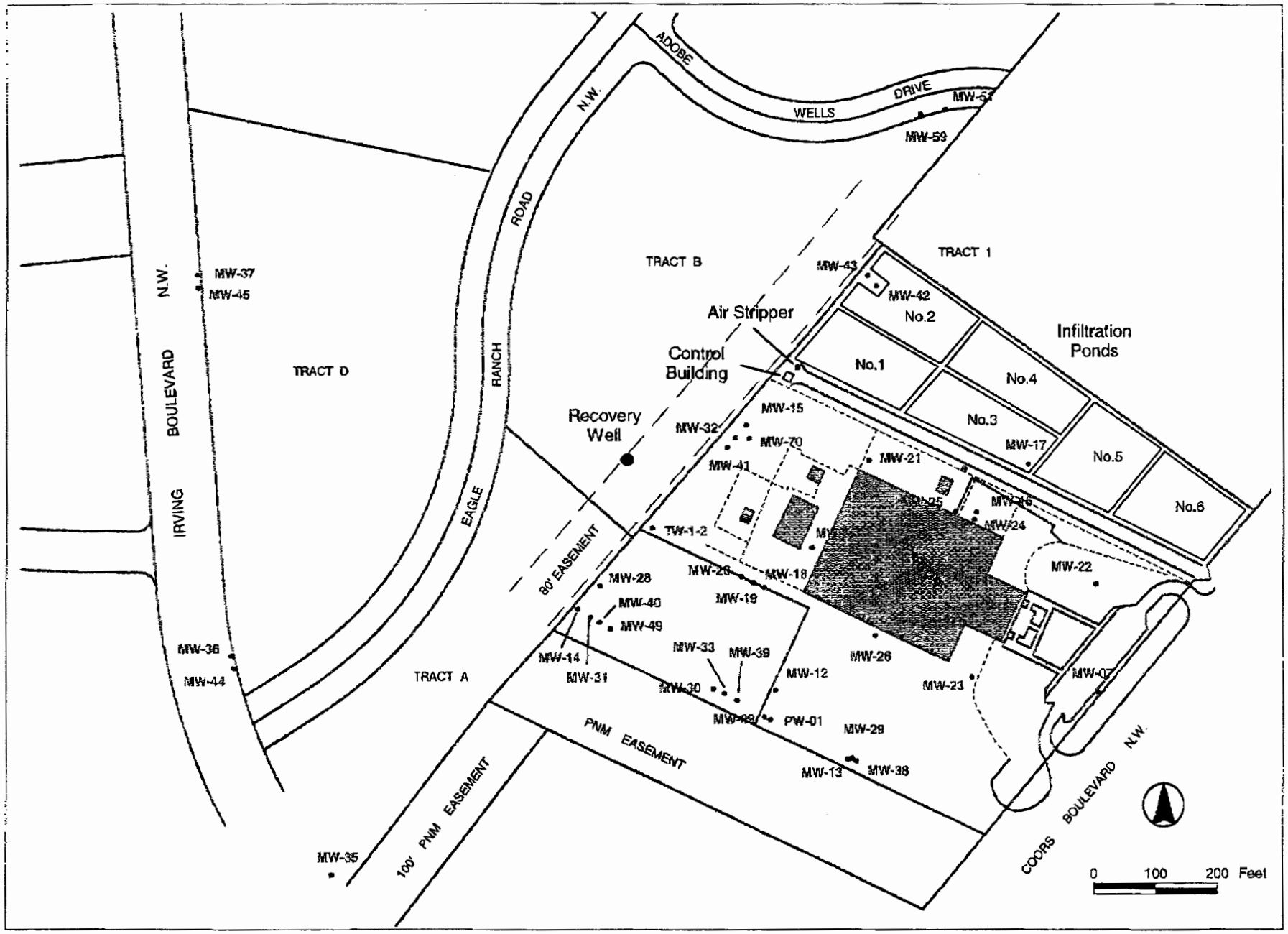


Figure 4 Proposed 50-gpm Recovery Well and Associated Facilities

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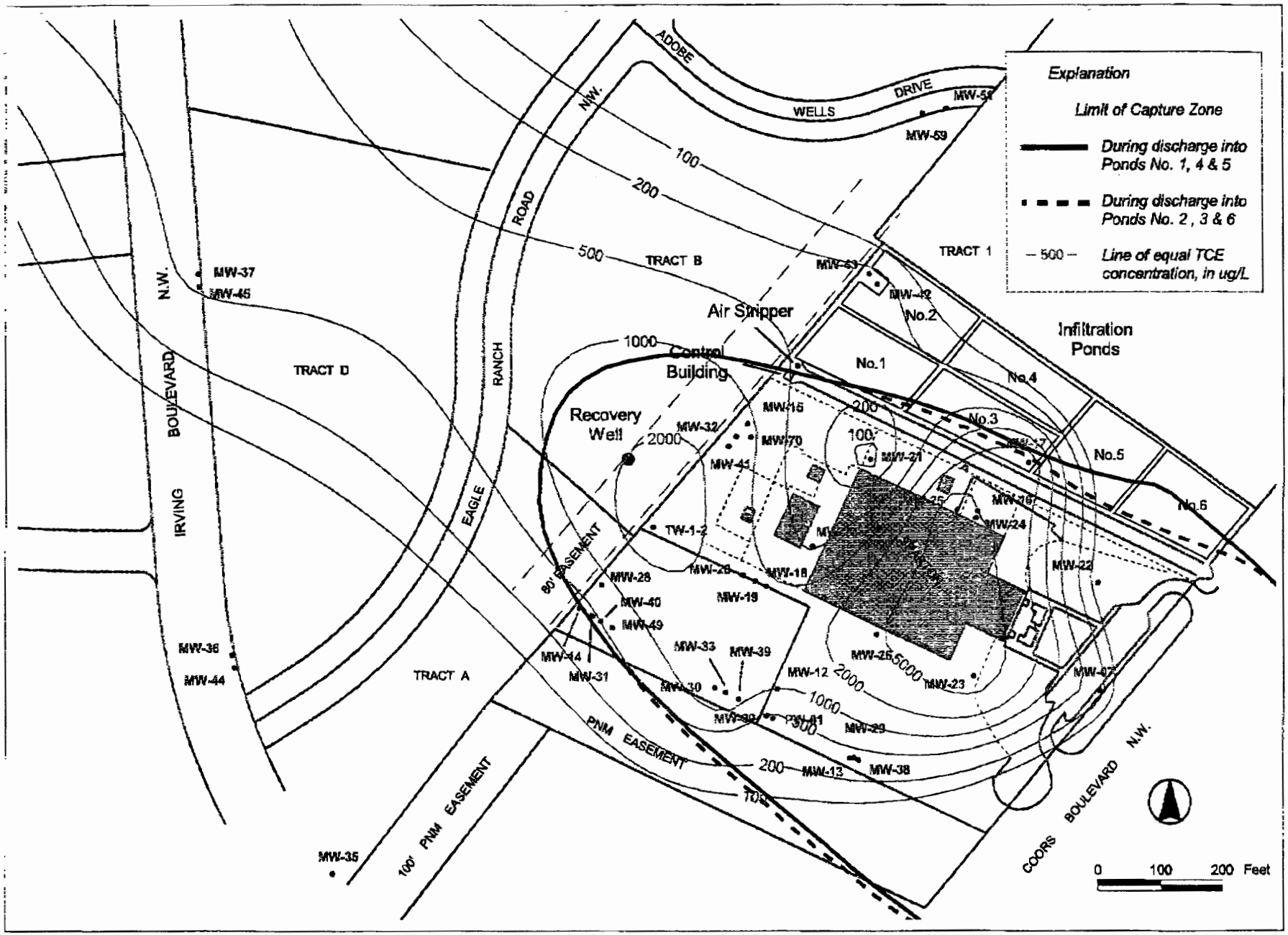


Figure 5 Areal Limit of the Capture Zone of the Proposed 50-gpm Recovery Well

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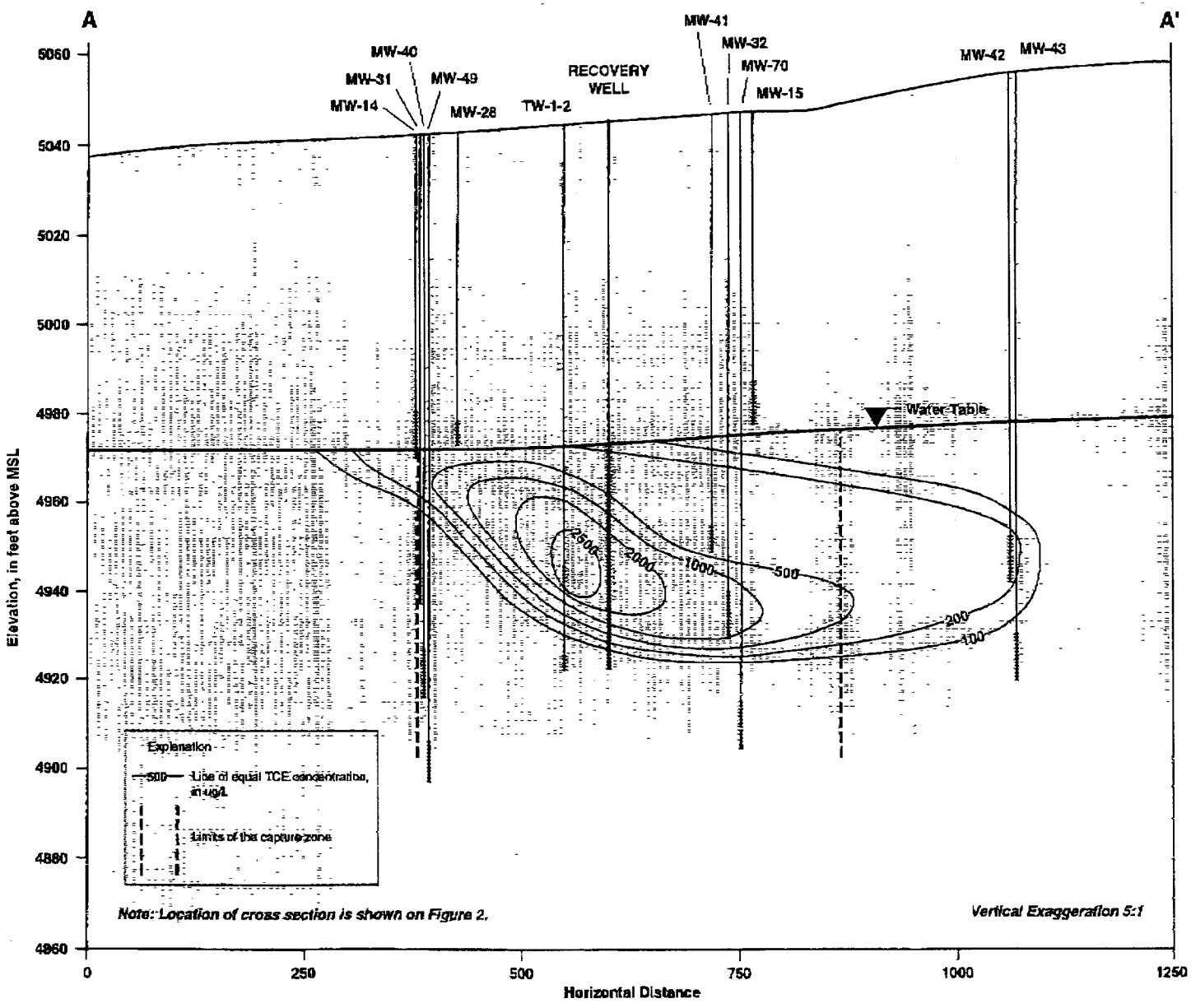


Figure 6 Vertical Limit of the Capture Zone of the Proposed 50-gpm Recovery Well

flowing groundwater and by water infiltrating from the ponds, and will eventually be captured by the off-site containment well.

The depicted capture zone of the well was determined using the transmissivity and hydraulic gradient values mentioned in Section 2.0 and the software AqModel[5]. The effects of the infiltration ponds were incorporated into this analysis by simulating each pond by multiple injection wells. Based on pan evaporation data from the Los Lunas Experiment Farm near Albuquerque, the evaporation rate from the ponds was calculated as 4.3 feet per year[6]; this approximately corresponds to a five percent evaporation loss from the ponds and it was taken into account in simulating the pond effects. As shown in Figure 5, recharge from the infiltration ponds will cause the capture zone to be somewhat skewed with respect to the average direction of groundwater flow. There will also be a slight change in the limit of the capture as discharge of the treated water is switched from one three-pond set to the other; however, the width of the capture zone along the northwestern property boundary will remain essentially the same, about 480 feet. The vertical projection of this width of the capture zone along the property boundary is shown in Figure 6, superimposed on the current vertical distribution of TCE concentrations. Based on these TCE concentrations, the mass of TCE to be captured by the recovery well is calculated to be about 85 percent of the TCE mass currently leaving the Sparton property across this boundary.

The horizontal and vertical extent of the capture zone presented in Figures 5 and 6 are based on calculations that assume a well fully penetrating the saturated interval corresponding to the

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[5]O'Neill, G. T., 1992, **AqModel Version 2.1 User's Manual**, WellWare™, 3160 Woods Circle, Davis, California 95616

[6]Gary L. Richardson of Metric Corporation, personal communication, July 22, 1998.