

**RESPONSE TO COMMENTS
FROM OHIO EPA ON THE DRAFT
SUMMARY SITE-WIDE GROUNDWATER MONITORING REPORT (1997-1998)
FORMER PLUM BROOK ORDNANCE WORKS, SANDUSKY, OHIO**

Comment 1: ITC has calculated horizontal hydraulic gradients for the unconsolidated overburden zone (Section 6.1.1) and the consolidated bedrock zone (Section 6.1.2) using potentiometric surface maps generated from each quarterly water level measurement event (Appendix D). ITC calculated the gradient values using multiple transects across each potentiometric surface map for each zone and averaging the values to account for seasonal variation. The Ohio EPA recommends that in the future, instead of using potentiometric contour lines as the endpoints for the different transects, ITC should use actual monitoring wells and their corresponding water level elevations as the endpoints to calculate the horizontal hydraulic gradient. The reason for this is the contour line is an approximation or interpolation of the water level across the saturated zone of interest and is not an actual field measurement. By using actual field measurements of a pair of monitoring well ground water level elevations as endpoints, a more accurate hydraulic gradient can be calculated.

Response: It is agreed that, where applicable, using water levels from two monitoring wells is the most appropriate method for determining hydraulic gradients. However, it is relatively rare that two wells are situated on the same approximate groundwater flowpath that would allow the monitoring well data to be directly used in the calculation of hydraulic gradients. In future reports, where possible and/or appropriate, data from two wells should be used.

Comment 2: The Ohio EPA requests that ITC provide a brief discussion in a forthcoming submittal to explain how background data obtained from background wells screened within the unconsolidated overburden and consolidated bedrock zones will be utilized to evaluate downgradient ground water quality at the NASA Plum Brook Station. The 1997-1998 Site-Wide Ground Water Monitoring Summary Report compares ground water analytical results from each area of concern to Risk Based Concentrations but not to any background (inorganic) concentration.

Response: A future Work Plan and Scope of Work will provide how background data collected from overburden and bedrock wells will be utilized to evaluate downgradient groundwater quality.