

1.0 INTRODUCTION

The long-term (i.e., chronic) health effects from air emissions of six toxins are analyzed in this report. The toxins being analyzed include benzene, toluene, ethylbenzene, xylenes, n-hexane, and formaldehyde. Emissions of each of these hazardous air pollutants are being analyzed for their impact on chronic health, and emissions from two of these pollutants (namely benzene and formaldehyde) are being analyzed for their carcinogenic effects. A modeling analysis is conducted to determine the long-term chronic impacts from toxic emissions on receptors in the vicinity of the wells and at locations of possible residents. Because the impact from these emissions will be localized, the modeling analysis is done on a local scale (i.e., receptors located within a few hundred meters of the emissions sources). The predicted hazardous air pollutant impacts are then evaluated for significance by comparing them with "acceptable exposure levels".

USEPA's ISCST3 dispersion model (December 1998; Version 98356) is used to determine ambient concentrations of each of the six toxins. The ISCST3 model is appropriate for determining ambient impacts in simple terrain from multiple sources.

A discussion of the significance thresholds for both chronic non-carcinogenic and carcinogenic health effects is presented in Section 2. The emissions, stack parameters, and source and receptor configurations for the dispersion modeling analysis are presented in Section 3. Section 4 contains the selected dispersion model options and meteorology. Finally, Section 5 contains a discussion of the modeling results, and a comparison with the applicable significance thresholds.