

April 14, 2004

Mr. Derek Delacourt  
**City of Rochester Hills**  
1000 Rochester Hills Drive  
Rochester Hills, MI 48309-3033

*RE: Status Update, Methane Assessment, Suburban Softball Project Area, Rochester Hills, Michigan (ASTI File 5450)*

Dear Mr. Delacourt:

This letter is intended to provide a summary of the methane readings collected at the above referenced project area. ASTI installed eight off-site groundwater monitor wells along the southern right-of-way of Hamlin Road (MW-1 through MW-4) and the northern right-of-way of the Rails to Trails (MW-5 through MW-8) on December 16 and 17, 2003. ASTI installed 18 methane vents in the Veteran's and Cardinal Landfill areas between March 2 and 4, 2004. In addition, a few years ago, a representative of Michigan's Department of Environmental Quality (DEQ) installed three monitoring vents on the residential property located northeast of the Suburban Softball property. Figure 1 shows the groundwater monitor well and vent locations.

On March 5, 2004, ASTI opened the groundwater monitor wells and the landfill vents to allow any gases in the well casings stabilize with atmospheric pressure. ASTI measured methane concentrations in the groundwater monitor wells, the landfill vents, and the monitoring vents on the residential parcel using a Landtec Model GEM-500 landfill gas analyzer capable of detecting methane concentrations from 0% to 100% by volume. The results of the screening are as follows:

OFF-SITE SAMPLE LOCATIONS

<u>Location</u> – % Methane (CH4)	<u>Location</u> – % Methane (CH4)	<u>Location</u> – % Methane (CH4)
Resid. West Side Vent 0%	Resid. Middle South Vent 3%	Resid. East South Vent 0%
MW-1 16.90%	MW-2 0.60%	MW-3 33.40%
MW-4 0%	MW-5 0%	MW-6 41.20%
MW-7 0.10%	MW-8 Not Recorded	

LANDFILL SAMPLE LOCATIONS

<u>Location</u> – % Methane (CH4)	<u>Location</u> – % Methane (CH4)	<u>Location</u> – % Methane (CH4)
SB-14 62.20%	SB-15 62.50%	SB-16 61.40%
SB-17 58.80%	SB-19 64.70%	SB-21 40.70%
SB-22 64.30%	SB-23 68.40%	SB-24 66.40%
SB-25 66.60%	SB-26 66.30%	SB-27 67.30%
SB-28 65.70%	SB-29 65.80%	SB-30 64.30%
SB-31 61.30%	SB-32 66.60%	SB-33 62.70%

On April 1, 2004, Mr. Ben Matthews with the DEQ Remediation and Redevelopment Division (RRD) collected methane readings from the three monitoring vents on the residential parcel. Mr. Matthews reported finding methane in the East South Vent (located closest to the apartment complex to the east) at a concentration of 15%.

Methane is a colorless, odorless gas that is flammable in air at concentrations ranging from 5% to 15% by volume. Methane can migrate in subsurface soil and can accumulate in subsurface structures such as utilities and basements and can also accumulate in structures above grade under the right conditions. If methane reaches concentrations between 5% and 15%, and there is an ignition source (pilot light, electrical short, etc.) then the methane can ignite causing an explosion.

Based on the methane concentrations identified as having migrated off the landfill property, as evidenced by the concentrations detected in the groundwater monitor wells and the monitoring vents installed on the residential property, Mr. Matthews has expressed his concern and his desire to install additional monitoring vents. As he discussed with us, he would like to install additional monitoring vents on the apartment complex property east of the landfill. It is ASTI's opinion that this would be prudent from a safety standpoint and would also provide additional delineating data in regard to methane migration from the landfill property.

If you have any questions, please contact me at 800-395-2784.

Sincerely,

APPLIED SCIENCE & TECHNOLOGY, INC. (ASTI)

Trevor I. Woollatt  
Hydrogeologist

Attachment – Figure 1

cc: Mr. Ben Matthews, DEQ – RRD  
Mr. Todd Fink, REI Brownstown, LLC