



ENVIRONMENTAL STRATEGIES CONSULTING LLC

11911 Freedom Drive, Suite 900 • Reston, Virginia 20190 • (703) 709-6500 • Fax (703) 709-8505

January 27, 2006

Mr. Jim Burke
Regional Hazardous Waste Remediation Engineer
New York State Department of Environmental Conservation
Region 7
615 Erie Boulevard West
Syracuse, NY 13204-2400

Re: November 2005 Vadose Zone Sampling Results
Former NCR Sewer Line
Emerson Power Transmission, Ithaca, New York

Dear Mr. Burke:

Environmental Strategies Consulting LLC, on behalf of Emerson, has prepared this letter report summarizing the soil vapor sampling conducted along a sewer line, which extends along the east limits of the Emerson Power Transmission (EPT) facility in Ithaca, New York. This sewer line serves the former NCR facility only and is marked on the city of Ithaca utility drawings, as "National Cash Register" sewer. The field investigation work followed the same procedures outlined in the amended Vadose Zone Work Plan submitted to the New York State Department of Environmental Conservation and approved in July 2005. Shallow vadose zone sampling points were installed at four locations where the sewer line traverses the EPT property to evaluate the potential for releases of volatile organic compounds (VOCs). This letter describes the sampling procedures and findings of that work.

Vadose Zone Sampling Procedures

The subject sanitary sewer line extends in a north direction from the former NCR site (currently Axiom) and traverses across the east limits of the EPT property. On November 18, 2005, four shallow vadose zone sampling points (VP-18 through VP-21) were installed along the subject sewer line on the EPT property (Figure 1).

The soil gas sampling points were installed by advancing a 2-inch outside diameter steel casing and a "blind" probe point to approximately 3 to 3.5 feet above the sewer line and ranged in depth from 3 feet to 4 feet below ground surface. A 6-inch-long, stainless steel screen fitted with 0.25-inch inside-diameter Teflon[®] tubing was lowered to the bottom of each borehole, which was then backfilled with quartz sand to form a 1-foot-thick sampling interval. The remaining annular space was sealed with a bentonite plug that was hydrated with potable water at the surface to prevent seepage into the sand pack.

To ensure for collection of a representative sample, a minimum of one well volume of soil gas was purged from the sampling equipment and the surrounding sand pack using a calibrated hand pump. Once the point was purged, the tubing was clamped (to prevent the entry of ambient air) and

TOMPkins COUNTY PUBLIC LIBRARY
24114307 24114308

connected to an Entek™ flow regulator. The clamp was removed and the regulator was connected to an evacuated 1-liter Entek™ canister to initiate the sample collection. The flow regulator was pre-set by the laboratory to collect a soil gas sample over 1 hour. The regulator was disconnected from the canister at the end of the 1-hour period to terminate sample collection. Once the sampling activities were complete, the tubing was removed from the ground and the borehole was capped with soil cuttings to match the surrounding surface. Disposable nitrile gloves were worn by the sampling personnel and the gloves were changed before sample collection and retrieval.

The Entek™ canisters were shipped to Centek Laboratories, LLC, of Syracuse, New York, which is certified by the New York State Department of Health Environmental Laboratory Approval Program. Samples of the soil gas in each canister were analyzed for VOCs by U.S. Environmental Protection Agency Method TO-15.

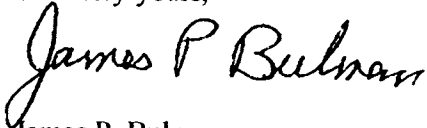
Results

The analytical results are summarized in Table 1 and copies of the laboratory reports are presented in Enclosure A. Concentrations of six VOCs were detected in one or more of the soil gas samples; 1,1,1-trichloroethane (TCA), cis-1,2-dichloroethene (cis-1,2-DCE), methylene chloride, tetrachloroethene (PCE), trans-1,2-dichloroethene, and trichloroethene (TCE). Three VOCs were detected in all four samples: TCE at concentrations ranging from 39.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in VP-19 to 536 $\mu\text{g}/\text{m}^3$ in sample VP-20, TCA at concentrations ranging from 5.21 $\mu\text{g}/\text{m}^3$ in VP-21 to 67.7 $\mu\text{g}/\text{m}^3$ in VP-18, and methylene chloride at concentrations ranging from 3.81 $\mu\text{g}/\text{m}^3$ in VP-19 to 6.96 $\mu\text{g}/\text{m}^3$ in VP-18. Two samples (VP-18 and VP-20) contained cis-1,2-DCE at concentrations of 3.26 $\mu\text{g}/\text{m}^3$ and 11.3 $\mu\text{g}/\text{m}^3$, respectively. PCE was detected in three samples at concentrations ranging from 2.28 $\mu\text{g}/\text{m}^3$ (VP-20) to 15.9 $\mu\text{g}/\text{m}^3$ (VP-19). The sample from VP-20 also contained 2.22 $\mu\text{g}/\text{m}^3$ of trans-1,2-DCE.

The results of the soil gas sampling demonstrate that the sewer line serving the former NCR site is a source of VOC releases. The VOCs detected in soil gas samples collected along the sewer line on the EPT property can only be attributable to releases from this sewer.

If you have any comments or questions, please do not hesitate to contact either Derek Chase (314-553-2767) or me.

Sincerely yours,



James P. Bulman
Executive Partner

JPB:sph:slp

k:\client\emerson\ithaca\sewer (soil gas)\ncrltr1-27-06.doc

Enclosures

cc\encl: Mr. Derek Chase, Emerson

Table 1

NCR Sewer Line Soil Vapor Results
Emerson Power Transmission
Ithaca, New York

Parameter	VP-18 3-4 11/18/05	VP-19 2.5-3.5 11/18/05	VP-20 2-3 11/18/05	VP-21 2-3 11/18/05	TRIP BLANK N/A 11/18/05
VOCs by EPA Method TO-15 (µg/m ³)					
1,1,1-Trichloroethane	677 C	571 C	27.7 C	5.21 I	0.832 UC
1,2-Dichloroethane	0.617 U	0.617 U	0.617 U	0.617 U	0.617 U
cis-1,2-Dichloroethene	3.26 C	0.604 UC	11.3 C	0.604 UC	0.604 UC
Methylene chloride	6.96	3.81	6.67	6.00 I	0.53 U
Tetrachloroethylene	10.9	15.9	2.28 I	1.03 U	1.03 U
trans-1,2-Dichloroethene	0.604 U	0.604 U	2.22	0.604 U	0.604 U
Trichloroethene	477	39.3	536	133 I	0.218 U
Vinyl chloride	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U

a/ U = compound not detected above reporting limit; I = associated internal standard criteria not met, estimated result;

C = analyte exceeds calibration criteria. Quantitation estimated.

All soil gas samples were analyzed using EPA-2 TO-15 - "Compendium of Methods for the Determination of Toxic Organic Compounds"

- LEGEND
- WATER LINE
 - SANITARY SEWER LINE
 - GAS LINE
 - STORM SEWER LINE
 - SOIL VAPOR LOCATION

NOTE: SOIL VAPOR RESULTS REPORTED IN UG/M³

APPROXIMATE LOCATION OF FORMER STREAM VALLEY

TCA	67.7
cis-1,2-DCE	3.26
Methylene Chloride	6.96
PCE	10.9
TCE	4.77

TCA	5.71
Methylene Chloride	3.81
PCE	15.9
TCE	39.3

TCA	27.7
cis-1,2-DCE	11.3
Methylene Chloride	6.67
PCE	2.28
Trans-1,2-DCE	2.22
TCE	3.98

TCA	5.21
Methylene Chloride	6.00
TCE	1.33

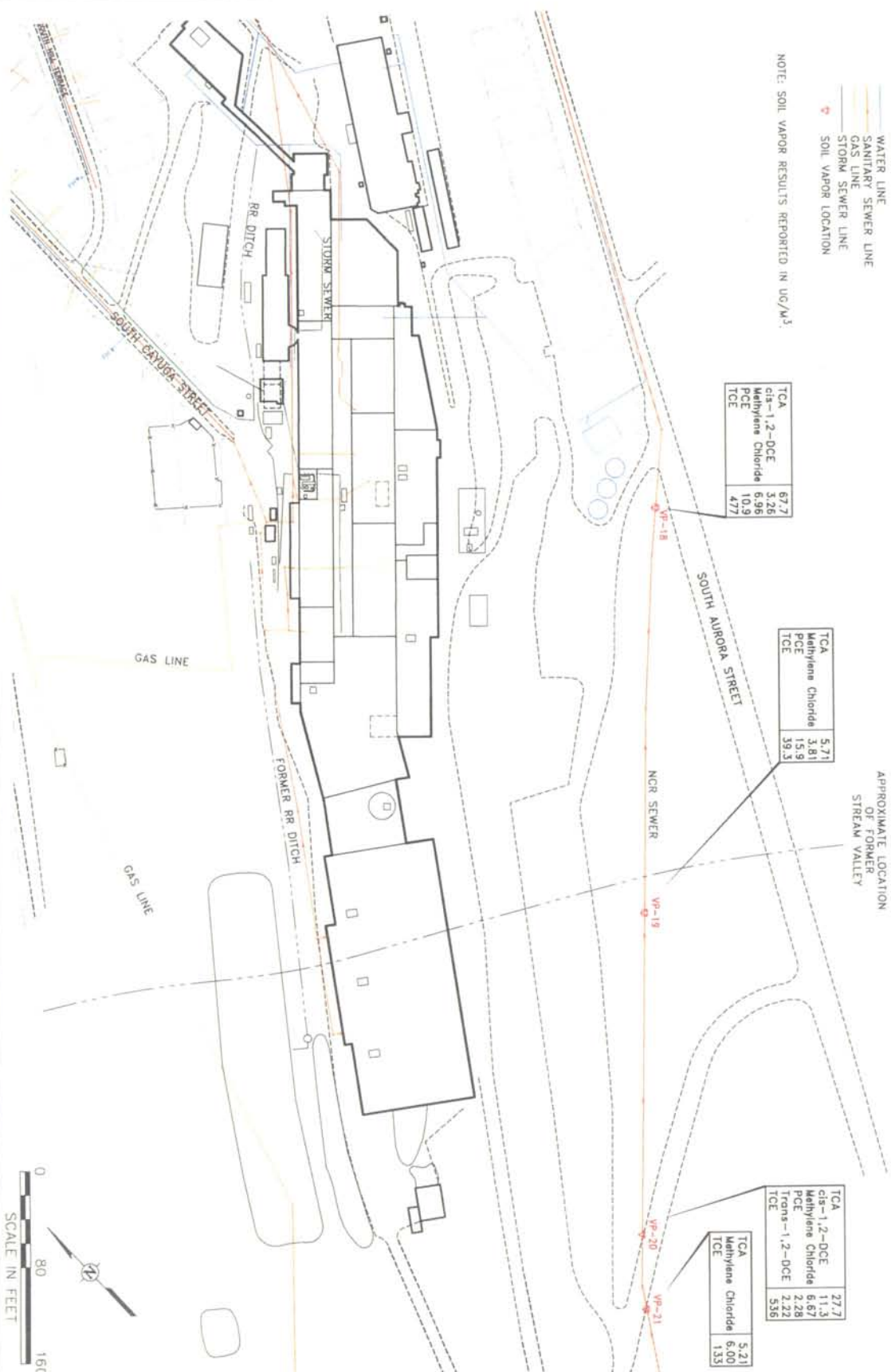


Figure 1
Soil Vapor Sampling Results - NCR Sewer Line
Emerson Power Transmission
Ithaca, New York