



Infrastructure, environment, facilities

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**Transmittal Letter**

To:  
Peter S. Ouderkirk, P.E.  
Project Manager  
New York State Department of Environmental  
Conservation  
Dulles State Office Building  
317 Washington Street  
Watertown, NY 13601-3787

Copies:  
Greg Rys, NYSDOH  
Chris Motta, ARCADIS  
Tom Blackman, LMC  
MariKay Fish, AIGDC

ENVIRONMENT

From:  
Jeffrey Bonsteel

Date:  
28 February 2008

Subject:  
GE West Lot Site, Utica, New York  
(Site No. 6-33-036)

ARCADIS Project No.:  
AY000265.0016

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|        |         |             |      |                                                                                 |         |
|        |         |             |      |                                                                                 |         |
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Imagine the result



Peter S. Ouderkirk, P.E.  
Project Manager  
New York State Department of Environmental Conservation  
Dulles State Office Building  
317 Washington Street  
Watertown, NY 13601-3787

Subject:  
Vapor Intrusion Study, GE West Lot Site, Utica, New York  
(Site No. 6-33-036)

Dear Mr. Ouderkirk:

On behalf of Lockheed Martin Corporation (Lockheed Martin), ARCADIS conducted a vapor intrusion study in response to the 1 May 2006 comment letter from NYSDEC to Lockheed Martin regarding the *Vapor Intrusion Pathway Evaluation* (ARCADIS 2006a). Through subsequent conversations with NYSDEC and NYSDOH, including an on-site meeting on 7 August 2006, a consensus was reached on the scope of work to investigate the potential off-site migration of soil gas from the GE West Lot Site. This scope of work was presented in the *Work Plan for Vapor Intrusion Study* (ARCADIS 2006b). The scope of work and results of the vapor intrusion study are presented in this report.

On 16 March 2007, four soil gas samples were collected from three locations on the New York State Department of Transportation (DOT) property adjacent to the West Lot Site located in Utica, New York (the Site). The results were compared to the soil gas results for five samples collected from four locations at the Site on 23 January 2007. The sample locations are shown on Figure 1. A summary of the results for the Site and the DOT property is provided in Tables 1 and 2, respectively. A comparison of the frequency of detection and range of concentrations is provided in Table 3.

The purpose of the sampling was to determine if conditions on the West Lot Site were impacting soil gas and potentially causing vapor intrusion issues on the DOT property. The results indicate that there is a source of impacts to soil gas that appears to be located on the DOT property, not related to the West Lot Site, and that conditions on the West Lot site are not impacting the DOT property. In addition, the results indicate that further investigation of the vapor intrusion pathway associated with conditions at the West Lot Site is not warranted. As such, if NYSDEC and NYSDOH determine that action is necessary to address vapor intrusion on the DOT property, such action should not involve ARCADIS or Lockheed Martin.

Imagine the result

P.O.  
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ENVIRONMENT

Date:  
28 February 2008

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Jeffrey Bonsteel

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Ext. 19

Email:  
Jeffrey.bonsteel@arcadis-  
us.com

Our reference:  
AY000265.0016

The conclusions of the vapor intrusion study for the West Lot Site are based on the following information:

- Although trichloroethene (TCE), tetrachloroethene (PCE), and 1,1,1-trichloroethane (1,1,1-TCA) were detected on the West Lot Site, they were not detected on the DOT property (detection limits were equal to or less than 1 microgram per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Furthermore, the on-site (West Lot Site) concentrations were less than NYSDOH air guidelines for sub-slab soil gas.
- Other site-related constituents present in groundwater, including vinyl chloride (VC), cis-1,2-dichloroethene (cis-1,2-DCE), and 1,1-dichloroethane (1,1-DCA), were not detected on the West Lot Site.
- Many of the laboratory identified constituents were only detected on the DOT property or were detected on the DOT property at a higher frequency or concentration (Table 3) as follows:
  - 4-Ethyltoluene; only detected on DOT property
  - Vinyl chloride; only detected on DOT property
  - cis-1,2-DCE; only detected on DOT property
  - 1,3,5-trimethylbenzene; detected at a higher frequency and concentration on DOT property
  - Chloroform; detected at a higher frequency and concentration on DOT property
  - Cyclohexane; detected at higher concentrations on DOT property
  - Xylenes; detected at higher concentrations on DOT property
  - Heptane; detected at higher concentrations on DOT property
  - Toluene; detected at higher concentrations on DOT property
  - 2,2,4-Trimethylpentane; detected at higher concentrations on DOT property
  - Ethylbenzene; detected at higher concentrations on DOT property
  - Hexane; detected in higher concentrations on DOT property

- The primary constituents detected on the DOT property do not match those detected on the West Lot Site (Figure 2). Individual and total concentrations of constituents on the DOT property are typically an order of magnitude greater than the concentrations on the West Lot Site (Figure 3, Figure 4, and Figure 5).
- Carbon dioxide (CO<sub>2</sub>), a typical landfill gas, was noted as an interfering compound by the laboratory in two samples collected from the DOT property.

Although TCE, PCE, and 1,1,1-TCA are constituents that have been detected frequently in on-site groundwater and at high concentrations compared to other constituents, the vapor intrusion study indicates that their pathway in soil gas does not extend off the West Lot Site. Under these conditions, there is no potential for exposure to TCE, PCE, or 1,1,1-TCA vapors in the off-site DOT buildings. Furthermore, the detected soil gas concentrations of these constituents are low (i.e., less than NYSDOH air guidelines for sub-slab soil gas) in all samples collected from the West Lot Site.

The distribution of site-related chlorinated constituents detected in soil gas is consistent with the findings presented in the *Vapor Intrusion Pathway Evaluation* (ARCADIS 2006b). The report shows that the groundwater plume migrates towards the south-southwest, not towards the building on the DOT property.

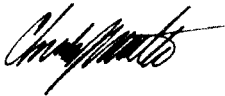
The detected constituents and the concentration gradients indicate there are impacts from the former New Hartford Village landfill. Soil gas at the DOT property appears to be representative of its historical use as a landfill and perhaps its current use as a DOT facility. Similarly, sub-slab soil gas sampling on the DOT property is expected to yield results attributable to the DOT property (and associated landfill) but not attributable to the West Lot Site. As such, further study of the vapor intrusion pathway associated with the West Lot Site is not warranted. If NYSDEC and NYSDOH determine that action is necessary to address vapor intrusion on the DOT property, such action should not involve ARCADIS or Lockheed Martin.

Please contact the undersigned if you have questions or comments.

Sincerely,



Jeffrey J. Bonsteel  
Project Scientist



Christopher J. Motta, CPG  
Project Manager

Copies:

Greg Rys – NYSDOH, Herkimer  
Tom Blackman – Lockheed Martin  
MariKay Fish - AIGDC

## References

ARCADIS 2006a. *Vapor Intrusion Pathway Evaluation*, GE West Lot Site, Utica, New York, March 2006.

ARCADIS 2006b. *Work Plan for Vapor Intrusion Study*, GE West Lot Site, Utica, New York, November 2006.

Environmental Protection Agency 2002. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils*. November 2002.



**ARCADIS**

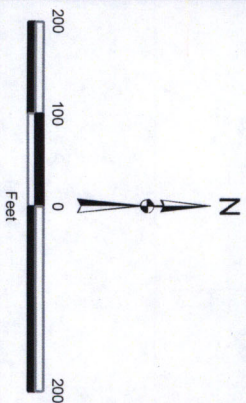
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Tel (518)452-7826 Fax (518)452-4398



## Site Map with Soil Gas Sampling Locations

Former GE West Lot Site  
Utica, Oneida County, New York

|                                                                                                                      |                              |                                                    |              |              |                  |
|----------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------|--------------|--------------|------------------|
| Map Date:                                                                                                            | File Name:                   | File Location:                                     | Produced By: | Checked By:  | Project Manager: |
| 9/5/2006                                                                                                             | Fig2_LockheedMartin_Site.mxd | G:\GIS\MA\PING\ENV_LockheedMartin_Utica_NY\ArcMap\ | T. Gore      | J. Bonsteel  | M. Sanford       |
| <h1>Site Map with Soil Gas Sampling Locations</h1> <p>Former GE West Lot Site<br/>Utica, Oneida County, New York</p> |                              |                                                    |              |              |                  |
| Dept. Manager:                                                                                                       |                              |                                                    |              | Geodatabase: |                  |
| M. Sanford                                                                                                           |                              |                                                    |              | M. Sanford   |                  |
| Project Number:                                                                                                      |                              |                                                    |              | Site Map     |                  |
| AY000265.0014                                                                                                        |                              |                                                    |              | Figure:      |                  |
| <h1>1</h1>                                                                                                           |                              |                                                    |              |              |                  |



**Figure 2. Comparison of Maximum Soil Gas Concentrations at the DOT Property and the West Lot Site.**

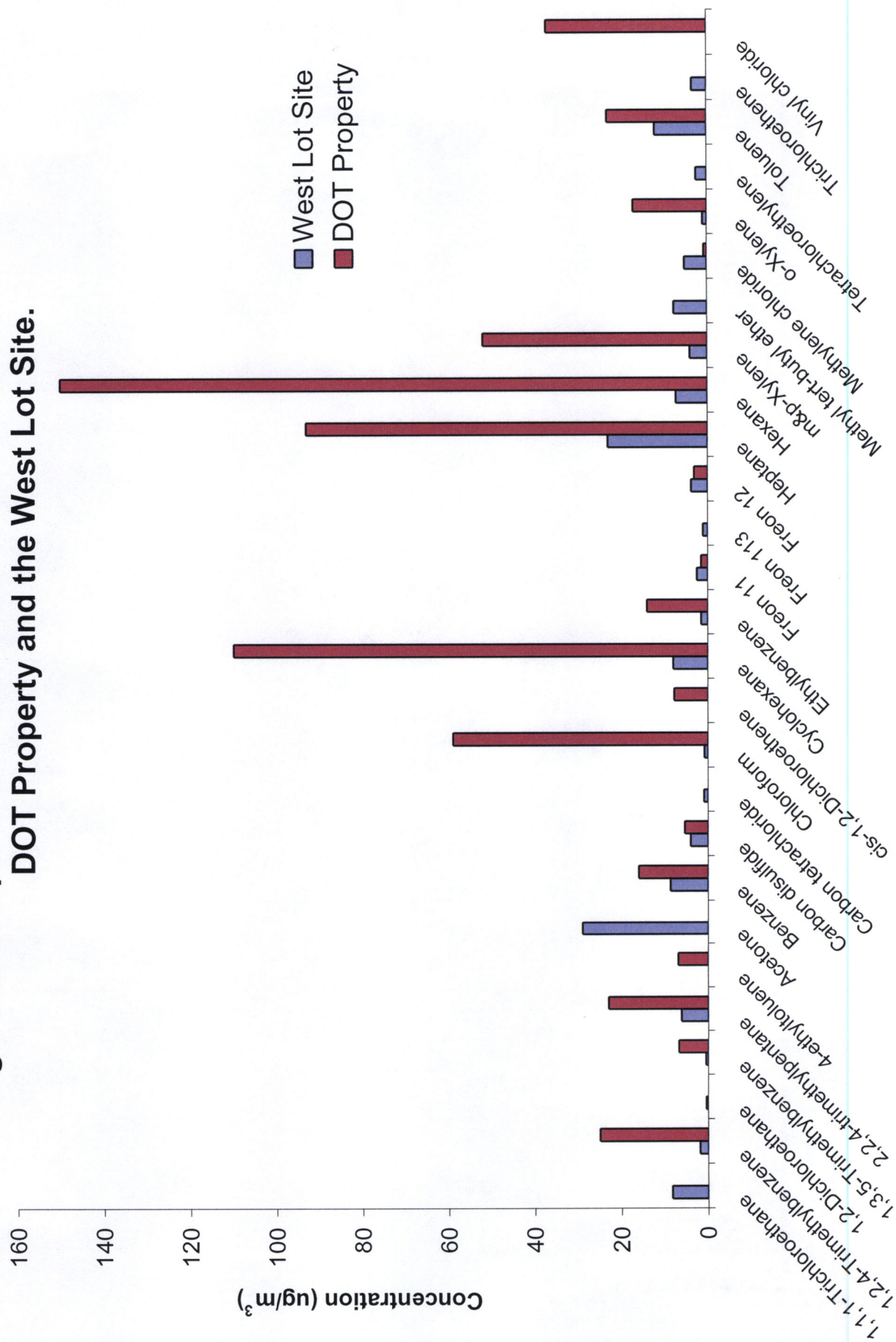


Figure 3. Soil Gas Concentrations of Constituents Detected at the West Lot Site.

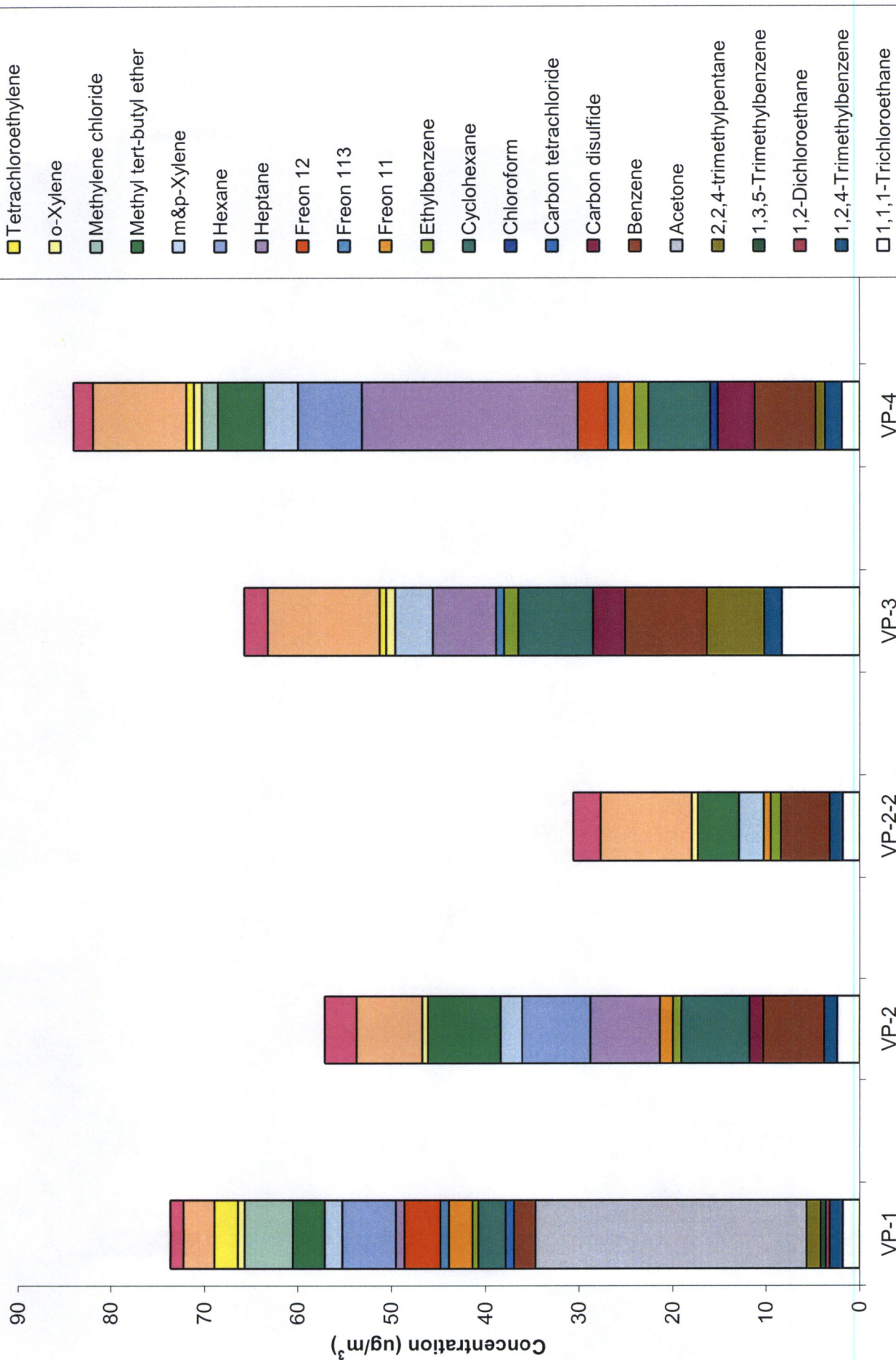


Figure 4. Soil Gas Concentrations of Constituents Detected at the DOT Property.

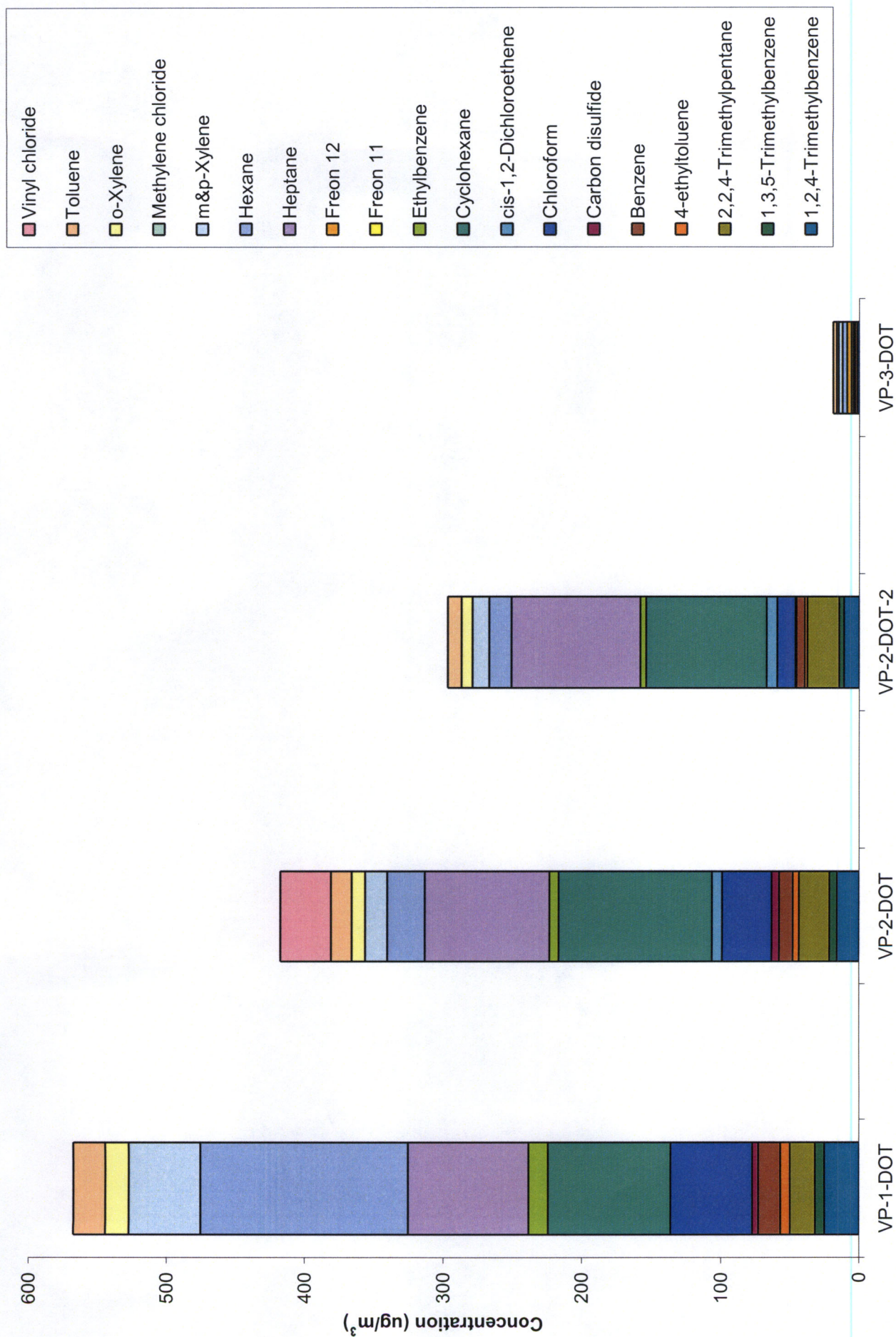


Figure 5. Comparison of Compounds Detected in All Samples From the DOT Property to Compounds Detected in Samples From the West Lot Site.

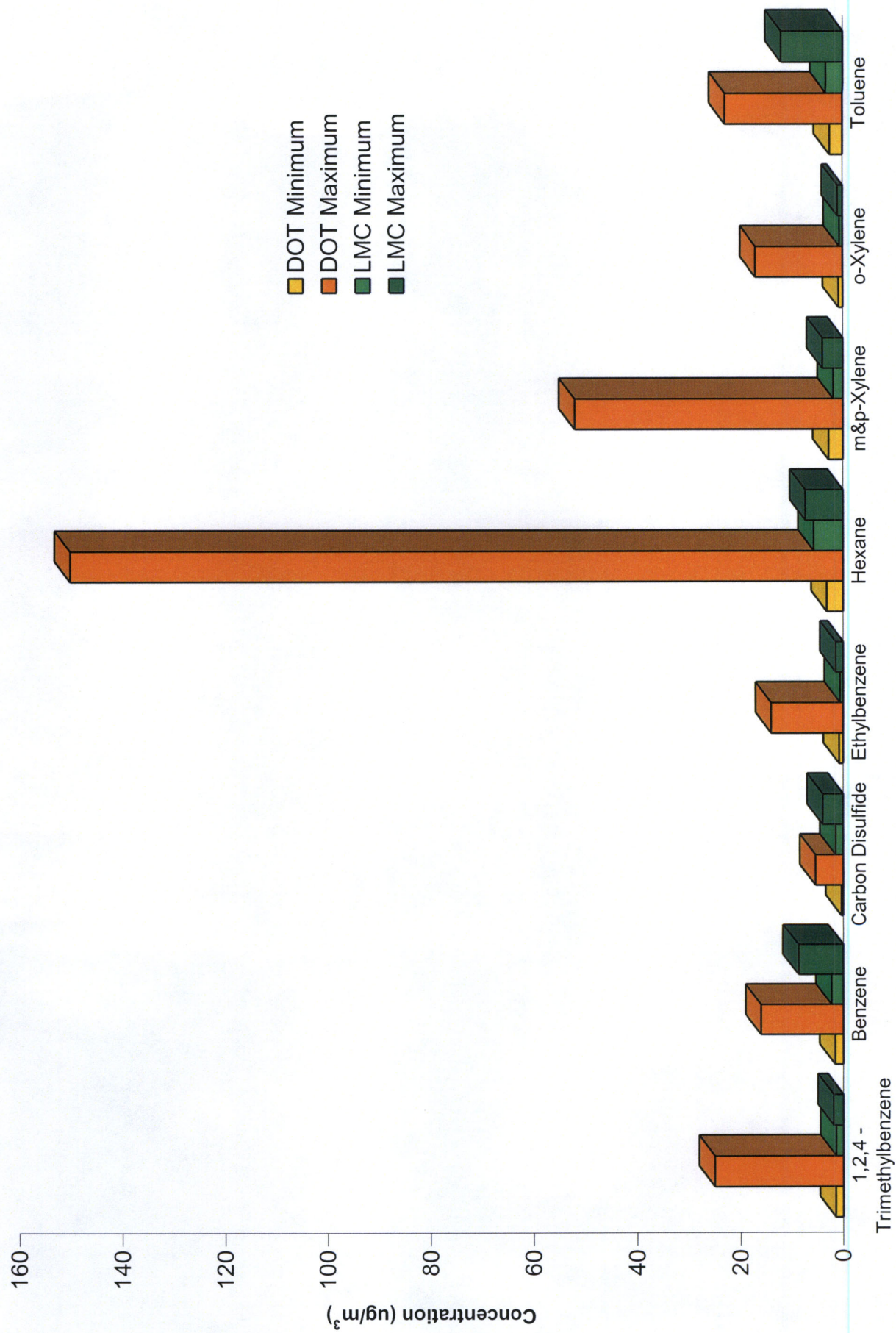


Table 1. Summary of Soil Gas Data for the West Lot Site.

| Analyte                   | Property:    | West Lot Site     |                   |                   |                   |                   |
|---------------------------|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                           | Sample ID:   | C0701029-001A     | C0701029-002A     | C0701029-003A     | C0701029-004A     | C0701029-005A     |
|                           | Sample No:   | VP-1              | VP-2              | VP-2-2            | VP-3              | VP-4              |
|                           | Sample Date: | 1/23/2007         | 1/23/2007         | 1/23/2007         | 1/23/2007         | 1/23/2007         |
|                           | Units:       | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> | µg/m <sup>3</sup> |
| 1,1,1-Trichloroethane     |              | 1.8               | 2.4               | 1.8               | 8.3               | 1.9               |
| 1,1,2,2-Tetrachloroethane |              | 1 U               | 1 U               | 1 U               | 1 U               | 1 U               |
| 1,1,2-Trichloroethane     |              | 0.83 U            | 0.83 U            | 0.83 U            | 0.83 U            | 0.83 U            |
| 1,1-Dichloroethane        |              | 0.62 U            | 0.62 U            | 0.62 U            | 0.62 U            | 0.62 U            |
| 1,1-Dichloroethene        |              | 0.6 U             | 0.6 U             | 0.6 U             | 0.6 U             | 0.6 U             |
| 1,2,4-Trichlorobenzene    |              | 1.1 U             | 1.1 U             | 1.1 U             | 1.1 U             | 1.1 U             |
| 1,2,4-Trimethylbenzene    |              | 1.4               | 1.4               | 1.4               | 1.9               | 1.8               |
| 1,2-Dibromoethane         |              | 1.2 U             | 1.2 U             | 1.2 U             | 1.2 U             | 1.2 U             |
| 1,2-Dichlorobenzene       |              | 0.92 U            | 0.92 U            | 0.92 U            | 0.92 U            | 0.92 U            |
| 1,2-Dichloroethane        |              | 0.41 J            | 0.62 U            | 0.62 U            | 0.62 U            | 0.62 U            |
| 1,2-Dichloropropane       |              | 0.7 U             | 0.7 U             | 0.7 U             | 0.7 U             | 0.7 U             |
| 1,3,5-Trimethylbenzene    |              | 0.55 J            | 0.75 U            | 0.75 U            | 0.75 U            | 0.75 U            |
| 1,3-Butadiene             |              | 0.34 U            | 0.34 U            | 0.34 U            | 0.34 U            | 0.34 U            |
| 1,3-Dichlorobenzene       |              | 0.92 U            | 0.92 U            | 0.92 U            | 0.92 U            | 0.92 U            |
| 1,4-Dichlorobenzene       |              | 0.92 U            | 0.92 U            | 0.92 U            | 0.92 U            | 0.92 U            |
| 1,4-Dioxane               |              | 1.1 U             | 1.1 U             | 1.1 U             | 1.1 U             | 1.1 U             |
| 2,2,4-Trimethylpentane    |              | 1.5               | 0.71 U            | 0.71 U            | 6.2               | 1                 |
| 4-Ethyltoluene            |              | 0.75 U            | 0.75 U            | 0.75 U            | 0.75 U            | 0.75 U            |
| Acetone                   |              | 29                | 0.72 U            | 0.72 U            | 0.72 U            | 0.72 U            |
| Allyl chloride            |              | 0.48 U            | 0.48 U            | 0.48 U            | 0.48 U            | 0.48 U            |
| Benzene                   |              | 2.3               | 6.5               | 5.2               | 8.7               | 6.5               |
| Benzyl chloride           |              | 0.88 U            | 0.88 U            | 0.88 U            | 0.88 U            | 0.88 U            |
| Bromodichloromethane      |              | 1 U               | 1 U               | 1 U               | 1 U               | 1 U               |
| Bromoform                 |              | 1.6 U             | 1.6 U             | 1.6 U             | 1.6 U             | 1.6 U             |
| Bromomethane              |              | 0.59 U            | 0.59 U            | 0.59 U            | 0.59 U            | 0.59 U            |
| Carbon disulfide          |              | 0.47 U            | 1.5               | 0.47 U            | 3.4               | 4                 |
| Carbon tetrachloride      |              | 0.9 J             | 0.96 U            | 0.96 U            | 0.96 U            | 0.96 U            |
| Chlorobenzene             |              | 0.7 U             | 0.7 U             | 0.7 U             | 0.7 U             | 0.7 U             |
| Chloroethane              |              | 0.4 U             | 0.4 U             | 0.4 U             | 0.4 U             | 0.4 U             |
| Chloroform                |              | 0.74 U            | 0.74 U            | 0.74 U            | 0.74 U            | 0.79              |
| Chloromethane             |              | 0.31 U            | 0.31 U            | 0.31 U            | 0.31 U            | 0.31 U            |
| cis-1,2-Dichloroethene    |              | 0.6 U             | 0.6 U             | 0.6 U             | 0.6 U             | 0.6 U             |
| cis-1,3-Dichloropropene   |              | 0.69 U            | 0.69 U            | 0.69 U            | 0.69 U            | 0.69 U            |
| Cyclohexane               |              | 2.9               | 7.3               | 0.52 U            | 8                 | 6.6               |
| Dibromochloromethane      |              | 1.3 U             | 1.3 U             | 1.3 U             | 1.3 U             | 1.3 U             |
| Ethyl acetate             |              | 0.92 U            | 0.92 U            | 0.92 U            | 0.92 U            | 0.92 U            |
| Ethylbenzene              |              | 0.62 J            | 0.88              | 1.1               | 1.5               | 1.5               |
| Freon 11                  |              | 2.5               | 1.4               | 0.74 J            | 0.86 U            | 1.7               |
| Freon 113                 |              | 0.93 J            | 1.2 U             | 1.2 U             | 0.86 J            | 1.1 J             |
| Freon 114                 |              | 1.1 U             | 1.1 U             | 1.1 U             | 1.1 U             | 1.1 U             |
| Freon 12                  |              | 3.8               | 0.75 U            | 0.75 U            | 0.75 U            | 3.2               |
| Heptane                   |              | 0.92              | 7.4               | 0.62 U            | 6.7               | 23                |
| Hexachloro-1,3-butadiene  |              | 1.6 U             | 1.6 U             | 1.6 U             | 1.6 U             | 1.6 U             |
| Hexane                    |              | 5.7               | 7.3               | 0.54 U            | 0.54 U            | 6.8               |
| Isopropyl alcohol         |              | 0.37 U            | 0.37 U            | 0.37 U            | 0.37 U            | 0.37 U            |
| m&p-Xylene                |              | 1.9               | 2.3               | 2.7               | 4                 | 3.7               |
| Methyl butyl ketone       |              | 1.2 U             | 1.2 U             | 1.2 U             | 1.2 U             | 1.2 U             |
| Methyl ethyl ketone       |              | 0.9 U             | 0.9 U             | 0.9 U             | 0.9 U             | 0.9 U             |
| Methyl isobutyl ketone    |              | 1.2 U             | 1.2 U             | 1.2 U             | 1.2 U             | 1.2 U             |
| Methyl tert-butyl ether   |              | 3.4               | 7.7               | 4.4               | 0.55 U            | 4.9               |
| Methylene chloride        |              | 5.2               | 0.53 U            | 0.53 U            | 0.53 U            | 1.7               |
| o-Xylene                  |              | 0.71              | 0.62 J            | 0.66              | 0.97              | 0.84              |
| Propylene                 |              | 0.26 U            | 0.26 U            | 0.26 U            | 0.26 U            | 0.26 U            |
| Styrene                   |              | 0.65 U            | 0.65 U            | 0.65 U            | 0.65 U            | 0.65 U            |
| Tetrachloroethylene       |              | 2.5               | 1 U               | 1 U               | 0.69 J            | 0.83 J            |
| Tetrahydrofuran           |              | 0.45 U            | 0.45 U            | 0.45 U            | 0.45 U            | 0.45 U            |
| Toluene                   |              | 3.3               | 7                 | 9.7               | 12                | 10                |
| trans-1,2-Dichloroethene  |              | 0.6 U             | 0.6 U             | 0.6 U             | 0.6 U             | 0.6 U             |
| trans-1,3-Dichloropropene |              | 0.69 U            | 0.69 U            | 0.69 U            | 0.69 U            | 0.69 U            |
| Trichloroethene           |              | 1.4               | 3.4               | 2.9               | 2.5               | 2.1               |
| Vinyl acetate             |              | 0.54 U            | 0.54 U            | 0.54 U            | 0.54 U            | 0.54 U            |
| Vinyl bromide             |              | 0.67 U            | 0.67 U            | 0.67 U            | 0.67 U            | 0.67 U            |
| Vinyl chloride            |              | 0.39 U            | 0.39 U            | 0.39 U            | 0.39 U            | 0.39 U            |

U - Constituent not detected

J - Estimated concentration

Table 2. Summary of Soil Gas Data for the DOT Property.

| Analyte                   | Property:<br>Sample ID:<br>Sample No:<br>Sample Date:<br>Units: | DOT Property                                                |                                                             |                                                               |                                                             |                                                                  |
|---------------------------|-----------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------|
|                           |                                                                 | C0703026-001A<br>VP-1-DOT<br>3/16/2007<br>µg/m <sup>3</sup> | C0703026-002A<br>VP-2-DOT<br>3/16/2007<br>µg/m <sup>3</sup> | C0703026-004A<br>VP-2-DOT-2<br>3/16/2007<br>µg/m <sup>3</sup> | C0703026-003A<br>VP-3-DOT<br>3/16/2007<br>µg/m <sup>3</sup> | C0703026-005A<br>Ambient-1 DOT<br>3/16/2007<br>µg/m <sup>3</sup> |
| 1,1,1-Trichloroethane     |                                                                 | 0.83 U                                                      | 0.83 U                                                      | 0.83 U                                                        | 0.83 U                                                      | 0.83 U                                                           |
| 1,1,2,2-Tetrachloroethane |                                                                 | 1 U                                                         | 1 U                                                         | 1 U                                                           | 1 U                                                         | 1 U                                                              |
| 1,1,2-Trichloroethane     |                                                                 | 0.83 U                                                      | 0.83 U                                                      | 0.83 U                                                        | 0.83 U                                                      | 0.83 U                                                           |
| 1,1-Dichloroethane        |                                                                 | 0.62 U                                                      | 0.62 U                                                      | 0.62 U                                                        | 0.62 U                                                      | 0.62 U                                                           |
| 1,1-Dichloroethene        |                                                                 | 0.6 U                                                       | 0.6 U                                                       | 0.6 U                                                         | 0.6 U                                                       | 0.6 U                                                            |
| 1,2,4-Trichlorobenzene    |                                                                 | 1.1 U                                                       | 1.1 U                                                       | 1.1 U                                                         | 1.1 U                                                       | 1.1 U                                                            |
| 1,2,4-Trimethylbenzene    |                                                                 | 25                                                          | 16                                                          | 11                                                            | 1.5                                                         | 0.9                                                              |
| 1,2-Dibromoethane         |                                                                 | 1.2 U                                                       | 1.2 U                                                       | 1.2 U                                                         | 1.2 U                                                       | 1.2 U                                                            |
| 1,2-Dichlorobenzene       |                                                                 | 0.92 U                                                      | 0.92 U                                                      | 0.92 U                                                        | 0.92 U                                                      | 0.92 U                                                           |
| 1,2-Dichloroethane        |                                                                 | 0.62 U                                                      | 0.62 U                                                      | 0.62 U                                                        | 0.62 U                                                      | 0.62 U                                                           |
| 1,2-Dichloropropane       |                                                                 | 0.7 U                                                       | 0.7 U                                                       | 0.7 U                                                         | 0.7 U                                                       | 0.7 U                                                            |
| 1,3,5-Trimethylbenzene    |                                                                 | 6.8                                                         | 5.4                                                         | 3.5                                                           | 0.75 U                                                      | 0.75 U                                                           |
| 1,3-Butadiene             |                                                                 | 0.34 U                                                      | 0.34 U                                                      | 0.34 U                                                        | 0.34 U                                                      | 0.34 U                                                           |
| 1,3-Dichlorobenzene       |                                                                 | 0.92 U                                                      | 0.92 U                                                      | 0.92 U                                                        | 0.92 U                                                      | 0.92 U                                                           |
| 1,4-Dichlorobenzene       |                                                                 | 0.92 U                                                      | 0.92 U                                                      | 0.92 U                                                        | 0.92 U                                                      | 0.92 U                                                           |
| 1,4-Dioxane               |                                                                 | 1.1 U                                                       | 1.1 U                                                       | 1.1 U                                                         | 1.1 U                                                       | 1.1 U                                                            |
| 2,2,4-Trimethylpentane    |                                                                 | 18                                                          | 22                                                          | 23                                                            | 0.71 U                                                      | 0.71 U                                                           |
| 4-Ethyltoluene            |                                                                 | 6.9                                                         | 4.4                                                         | 2                                                             | 0.75 U                                                      | 0.75 U                                                           |
| Acetone                   |                                                                 | 0.72 U                                                      | 0.72 U                                                      | 0.72 U                                                        | 0.72 U                                                      | 0.72 U                                                           |
| Allyl chloride            |                                                                 | 0.48 U                                                      | 0.48 U                                                      | 0.48 U                                                        | 0.48 U                                                      | 0.48 U                                                           |
| Benzene                   |                                                                 | 16                                                          | 10                                                          | 5.9                                                           | 1.6                                                         | 1                                                                |
| Benzyl chloride           |                                                                 | 0.88 U                                                      | 0.88 U                                                      | 0.88 U                                                        | 0.88 U                                                      | 0.88 U                                                           |
| Bromodichloromethane      |                                                                 | 1 U                                                         | 1 U                                                         | 1 U                                                           | 1 U                                                         | 1 U                                                              |
| Bromoform                 |                                                                 | 1.6 U                                                       | 1.6 U                                                       | 1.6 U                                                         | 1.6 U                                                       | 1.6 U                                                            |
| Bromomethane              |                                                                 | 0.59 U                                                      | 0.59 U                                                      | 0.59 U                                                        | 0.59 U                                                      | 0.59 U                                                           |
| Carbon disulfide          |                                                                 | 4.6                                                         | 5.4                                                         | 0.76                                                          | 0.41 J                                                      | 0.47 U                                                           |
| Carbon tetrachloride      |                                                                 | 0.96 U                                                      | 0.96 U                                                      | 0.96 U                                                        | 0.96 U                                                      | 0.96 U                                                           |
| Chlorobenzene             |                                                                 | 0.7 U                                                       | 0.7 U                                                       | 0.7 U                                                         | 0.7 U                                                       | 0.7 U                                                            |
| Chloroethane              |                                                                 | 0.4 U                                                       | 0.4 U                                                       | 0.4 U                                                         | 0.4 U                                                       | 0.4 U                                                            |
| Chloroform                |                                                                 | 59                                                          | 36                                                          | 13                                                            | 0.74 U                                                      | 0.74 U                                                           |
| Chloromethane             |                                                                 | 0.31 U                                                      | 0.31 U                                                      | 0.31 U                                                        | 0.31 U                                                      | 0.31 U                                                           |
| cis-1,2-Dichloroethene    |                                                                 | 0.6 U                                                       | 7.4                                                         | 7.8                                                           | 0.6 U                                                       | 0.6 U                                                            |
| cis-1,3-Dichloropropene   |                                                                 | 0.69 U                                                      | 0.69 U                                                      | 0.69 U                                                        | 0.69 U                                                      | 0.69 U                                                           |
| Cyclohexane               |                                                                 | 88                                                          | 110                                                         | 87                                                            | 0.52 U                                                      | 0.52 U                                                           |
| Dibromochloromethane      |                                                                 | 1.3 U                                                       | 1.3 U                                                       | 1.3 U                                                         | 1.3 U                                                       | 1.3 U                                                            |
| Ethyl acetate             |                                                                 | 0.92 U                                                      | 0.92 U                                                      | 0.92 U                                                        | 0.92 U                                                      | 0.92 U                                                           |
| Ethylbenzene              |                                                                 | 14                                                          | 6.6                                                         | 4.1                                                           | 0.79                                                        | 0.66 U                                                           |
| Freon 11                  |                                                                 | 0.86 U                                                      | 0.86 U                                                      | 0.86 U                                                        | 1.5                                                         | 1.7                                                              |
| Freon 113                 |                                                                 | 1.2 U                                                       | 1.2 U                                                       | 1.2 U                                                         | 1.2 U                                                       | 1.2 U                                                            |
| Freon 114                 |                                                                 | 1.1 U                                                       | 1.1 U                                                       | 1.1 U                                                         | 1.1 U                                                       | 1.1 U                                                            |
| Freon 12                  |                                                                 | 0.75 U                                                      | 0.75 U                                                      | 0.75 U                                                        | 3.1                                                         | 2.9                                                              |
| Heptane                   |                                                                 | 87                                                          | 90                                                          | 93                                                            | 0.62 U                                                      | 0.62 U                                                           |
| Hexachloro-1,3-butadiene  |                                                                 | 1.6 U                                                       | 1.6 U                                                       | 1.6 U                                                         | 1.6 U                                                       | 1.6 U                                                            |
| Hexane                    |                                                                 | 150                                                         | 27                                                          | 16                                                            | 3.2                                                         | 1.3                                                              |
| Isopropyl alcohol         |                                                                 | 0.37 U                                                      | 0.37 U                                                      | 0.37 U                                                        | 0.37 U                                                      | 0.37 U                                                           |
| m&p-Xylene                |                                                                 | 52                                                          | 16 J                                                        | 12                                                            | 2.8                                                         | 0.88 J                                                           |
| Methyl butyl ketone       |                                                                 | 1.2 U                                                       | 1.2 U                                                       | 1.2 U                                                         | 1.2 U                                                       | 1.2 U                                                            |
| Methyl ethyl ketone       |                                                                 | 0.9 U                                                       | 0.9 U                                                       | 0.9 U                                                         | 0.9 U                                                       | 0.9 U                                                            |
| Methyl isobutyl ketone    |                                                                 | 1.2 U                                                       | 1.2 U                                                       | 1.2 U                                                         | 1.2 U                                                       | 1.2 U                                                            |
| Methyl tert-butyl ether   |                                                                 | 0.55 U                                                      | 0.55 U                                                      | 0.55 U                                                        | 0.55 U                                                      | 0.55 U                                                           |
| Methylene chloride        |                                                                 | 0.53 U                                                      | 0.53 U                                                      | 0.53 U                                                        | 0.71                                                        | 0.53 U                                                           |
| o-Xylene                  |                                                                 | 17                                                          | 9.7 J                                                       | 7.8                                                           | 0.84                                                        | 0.66 U                                                           |
| Propylene                 |                                                                 | 0.26 U                                                      | 0.26 U                                                      | 0.26 U                                                        | 0.26 U                                                      | 0.26 U                                                           |
| Styrene                   |                                                                 | 0.65 U                                                      | 0.65 U                                                      | 0.65 U                                                        | 0.65 U                                                      | 0.65 U                                                           |
| Tetrachloroethylene       |                                                                 | 1 U                                                         | 1 U                                                         | 1 U                                                           | 1 U                                                         | 1 U                                                              |
| Tetrahydrofuran           |                                                                 | 0.45 U                                                      | 0.45 U                                                      | 0.45 U                                                        | 0.45 U                                                      | 0.45 U                                                           |
| Toluene                   |                                                                 | 23                                                          | 15                                                          | 10                                                            | 2.5                                                         | 1.9                                                              |
| trans-1,2-Dichloroethene  |                                                                 | 0.6 U                                                       | 0.6 U                                                       | 0.6 U                                                         | 0.6 U                                                       | 0.6 U                                                            |
| trans-1,3-Dichloropropene |                                                                 | 0.69 U                                                      | 0.69 U                                                      | 0.69 U                                                        | 0.69 U                                                      | 0.69 U                                                           |
| Trichloroethene           |                                                                 | 0.82 U                                                      | 0.82 U                                                      | 0.82 U                                                        | 0.82 U                                                      | 0.82 U                                                           |
| Vinyl acetate             |                                                                 | 0.54 U                                                      | 0.54 U                                                      | 0.54 U                                                        | 0.54 U                                                      | 0.54 U                                                           |
| Vinyl bromide             |                                                                 | 0.67 U                                                      | 0.67 U                                                      | 0.67 U                                                        | 0.67 U                                                      | 0.67 U                                                           |
| Vinyl chloride            |                                                                 | 0.39 U                                                      | 37                                                          | 0.39 U                                                        | 0.39 U                                                      | 0.39 U                                                           |

U - Constituent not detected

J - Estimated concentration

Table 3. Frequency and Range of Concentrations for Constituents Detected at the West Lot Site and the DOT Property.

| Analyte                   | DOT Property            |                                                          | West Lot Site           |                                                          |
|---------------------------|-------------------------|----------------------------------------------------------|-------------------------|----------------------------------------------------------|
|                           | Frequency of Detections | Range of Detects Min -- Max ( $\mu\text{g}/\text{m}^3$ ) | Frequency of Detections | Range of Detects Min -- Max ( $\mu\text{g}/\text{m}^3$ ) |
| 1,1,1-Trichloroethane     | 0/4                     | -- -- --                                                 | 4/4                     | 1.8 -- 8.3                                               |
| 1,1,2,2-Tetrachloroethane | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,1,2-Trichloroethane     | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,1-Dichloroethane        | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,1-Dichloroethene        | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,2,4-Trichlorobenzene    | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,2,4-Trimethylbenzene    | 4/4                     | 1.5 -- 25                                                | 4/4                     | 1.4 -- 1.9                                               |
| 1,2-Dibromoethane         | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,2-Dichlorobenzene       | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,2-Dichloroethane        | 0/4                     | -- -- --                                                 | 1/4                     | 0.41 -- 0.41                                             |
| 1,2-Dichloropropane       | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,3,5-Trimethylbenzene    | 3/4                     | 3.5 -- 6.8                                               | 1/4                     | 0.55 -- 0.55                                             |
| 1,3-Butadiene             | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,3-Dichlorobenzene       | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,4-Dichlorobenzene       | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 1,4-Dioxane               | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| 2,2,4-Trimethylpentane    | 3/4                     | 18 -- 23                                                 | 3/4                     | 1 -- 6.2                                                 |
| 4-Ethyltoluene            | 3/4                     | 2 -- 6.9                                                 | 0/4                     | -- -- --                                                 |
| Acetone                   | 0/4                     | -- -- --                                                 | 1/4                     | 29 -- 29                                                 |
| Allyl chloride            | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Benzene                   | 4/4                     | 1.6 -- 16                                                | 4/4                     | 2.3 -- 8.7                                               |
| Benzyl chloride           | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Bromodichloromethane      | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Bromoform                 | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Bromomethane              | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Carbon disulfide          | 4/4                     | 0.41 -- 5.4                                              | 3/4                     | 1.5 -- 4                                                 |
| Carbon tetrachloride      | 0/4                     | -- -- --                                                 | 1/4                     | 0.9 -- 0.9                                               |
| Chlorobenzene             | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Chloroethane              | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Chloroform                | 3/4                     | 13 -- 59                                                 | 1/4                     | 0.79 -- 0.79                                             |
| Chloromethane             | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| cis-1,2-Dichloroethene    | 2/4                     | 7.4 -- 7.8                                               | 0/4                     | -- -- --                                                 |
| cis-1,3-Dichloropropene   | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Cyclohexane               | 3/4                     | 87 -- 110                                                | 4/4                     | 2.9 -- 8                                                 |
| Dibromochloromethane      | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Ethyl acetate             | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Ethylbenzene              | 4/4                     | 0.79 -- 14                                               | 4/4                     | 0.62 -- 1.5                                              |
| Freon 11                  | 1/4                     | 1.5 -- 1.5                                               | 3/4                     | 0.74 -- 2.5                                              |
| Freon 113                 | 0/4                     | -- -- --                                                 | 3/4                     | 0.86 -- 1.1                                              |
| Freon 114                 | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Freon 12                  | 1/4                     | 3.1 -- 3.1                                               | 2/4                     | 3.2 -- 3.8                                               |
| Heptane                   | 3/4                     | 87 -- 93                                                 | 4/4                     | 0.92 -- 23                                               |
| Hexachloro-1,3-butadiene  | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Hexane                    | 4/4                     | 3.2 -- 150                                               | 3/4                     | 5.7 -- 7.3                                               |
| Isopropyl alcohol         | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| m&p-Xylene                | 4/4                     | 2.8 -- 52                                                | 4/4                     | 1.9 -- 4                                                 |
| Methyl butyl ketone       | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Methyl ethyl ketone       | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Methyl isobutyl ketone    | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Methyl tert-butyl ether   | 0/4                     | -- -- --                                                 | 3/4                     | 3.4 -- 7.7                                               |
| Methylene chloride        | 1/4                     | 0.71 -- 0.71                                             | 2/4                     | 1.7 -- 5.2                                               |
| o-Xylene                  | 4/4                     | 0.84 -- 17                                               | 4/4                     | 0.62 -- 0.97                                             |
| Propylene                 | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Styrene                   | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Tetrachloroethylene       | 0/4                     | -- -- --                                                 | 3/4                     | 0.69 -- 2.5                                              |
| Tetrahydrofuran           | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Toluene                   | 4/4                     | 2.5 -- 23                                                | 4/4                     | 3.3 -- 12                                                |
| trans-1,2-Dichloroethene  | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| trans-1,3-Dichloropropene | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Trichloroethene           | 0/4                     | -- -- --                                                 | 4/4                     | 1.4 -- 3.4                                               |
| Vinyl acetate             | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Vinyl bromide             | 0/4                     | -- -- --                                                 | 0/4                     | -- -- --                                                 |
| Vinyl chloride            | 1/4                     | 37 -- 37                                                 | 0/4                     | -- -- --                                                 |

U - Constituent not detected

J - Estimated concentration