



**CONESTOGA-ROVERS
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MEMORANDUM

TO:	Peter Ramanauskas/EPA	REF. No.:	017322
FROM:	<i>TK</i> Thomas Kinney/MC/ds/27/Det.	DATE:	September 12, 2014
CC:	Dave Favero/RACER		
RE:	Southern Dissolved VOC Area PCC-Validation Pontiac, Michigan		

1.0 Introduction

Conestoga-Rovers & Associates (CRA) is providing this memorandum on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust to provide a summary of the dissolved volatile organic compound (VOC) area located in the southern portion of the PCC-Validation (Site) located in Pontiac, Michigan. This summary was requested by the United States Environmental Protection Agency (U.S. EPA) on January 15, 2014, during a meeting at CRA's office. Section 2.0 provides a brief discussion of the southern dissolved VOC area, including vertical and horizontal delineation and potential for migration. For the purposes of this Memorandum, only the southern dissolved VOC area is discussed.

Figure 1 provides a Site map with the location of the southern dissolved VOC area and a cross section key. Figure 2 presents a cross section through the southern dissolved VOC area with VOC concentrations for delineation purposes. Figure 7 is the groundwater contour map from the updated CA750 Report as referenced previously. The groundwater gradient near the southern dissolved VOC area is from east to west as presented in Figure 7 of the Updated September 20, 2013 Resource Conservation and Recovery Act (RCRA) Corrective Action Environmental Indicator (EI) RCRIS code (CA750) Migration of Contaminated Groundwater Under Control Report (EI CA750 Report) and attached to this memo.

2.0 Discussion

The impacted groundwater and potential migration pathways are discussed in the September 20, 2013 RCRA EI CA750 Report. The report is currently under review with the U.S. EPA. According to the September 20, 2013 RCRA EI CA750 Report, dissolved VOCs in groundwater meet the definition of "contaminated" at MW74-08 and MW91-12 because 1,1,1-Trichloroethane and trichloroethylene (TCE) were detected at MW74-08 above Part 201 Drinking Water Criteria (DWC) and TCE was detected at MW91-12 above DWC. A detailed discussion of the migration of contaminated groundwater and rational

why contaminated groundwater is expected to remain within the dimensions of the "existing area of groundwater contamination" is presented in the September 20, 2013 RCRA EI CA750 Report and further discussed below:

Vertical Extent of VOCs in Groundwater

The vertical extent of impacted groundwater is limited to the upper-most water bearing unit that generally consists of thin, discontinuous, and relatively low permeability (silty sands). The impacted sand unit is generally encountered between 950 and 940 feet above mean sea level (AMSL). Below the impacted sand unit, an unsaturated regional clay unit (e.g., aquitard) is encountered and extends to at least a depth of approximately 930 feet AMSL (see boring TMW70-08 in Figure 2). The approximately 10 feet of a regional clay unit below the impacted sand unit monitored by MW74-08 limits any potential downward vertical mobility of the impacted groundwater. Therefore, the vertical extent of the southern dissolved VOC area is limited to the upper-most water bearing unit located between 950 and 940 feet AMSL in the southern portion of the Site.

Lateral Extent of VOCs in Groundwater

The lateral extent of the southern dissolved VOC area is defined on-Site as described below:

- The southern dissolved VOC area first is delineated to the west due to a decrease in the ground surface elevation which truncates the unit. The VOC area is further delineated to the west (down-gradient) by clean monitoring wells MW35-07, MW37-07, MW82-12, MW87-12 and MW88-12. In addition, down-gradient temporary monitoring well TMW70-08 was installed during the 2007-2008 Phase II Environmental Site Assessment (ESA) but even though a wet zone was identified during drilling of the boring, a groundwater sample was not able to be collected due to insufficient water in the temporary monitoring well. It is unlikely the southern dissolved VOC area extends to or down-gradient past TMW70-08.
- The southern dissolved VOC area is delineated to the east (up-gradient) by clean monitoring wells MW48-07 and MW78-08. In addition, up-gradient temporary monitoring wells TMW80-08 and TMW81-08 were installed during the 2007-2008 Phase II ESA and no groundwater was encountered at TMW80-08 and VOCs were non-detect from TMW81-08. Up-gradient soil boring BH84-08 was installed during the 2007-2008 Phase II ESA and the saturated sand unit identified with the southern dissolved VOC area was not encountered (to a maximum depth of 20 feet below ground surface (bgs)). It is unlikely the southern dissolved VOC area extends up-gradient to or past BH84-08.
- The southern dissolved VOC area is delineated to the north by clean monitoring wells MW68-08, MW32-07, MW85-12 and to the south by clean monitoring wells MW88-12 and MW90-12

3.0 Conclusion

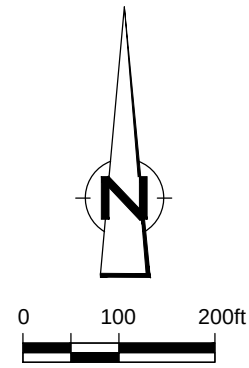
The southern dissolved VOC area is delineated both vertically and laterally and the likelihood of the extent of VOC contaminated groundwater expanding on-site or migrating to an off-Site receptor is very low to non-existent. This conclusion supports a "YES" determination of the RCRA EI CA750 identifying "Migration of Contaminated Groundwater Under Control" has been verified.

Encl: Figure 1 – Site Plan With Extent Of On-Site Southern VOC Exceedance And Cross-Section Location
Figure 2 – Cross-Section A-A'
Figure 7 – Groundwater Contour - October 2012

Figures



No	Revision	Date	Initial



- LEGEND**
- TP1-07 COMPLETED TEST PIT LOCATION
 - MW28-07 COMPLETED MONITORING WELL LOCATION
 - TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
 - BH8-07 COMPLETED SOIL BORING LOCATION
 - APPROXIMATE SITE BOUNDARY
 - EXISTING STRUCTURE
 - FORMER SITE STRUCTURE
 - STORM SEWER LINE
 - MANHOLE
 - CATCH BASIN
 - APPROXIMATE EXTENT OF VOC EXCEEDANCE OF GSI CRITERIA
 - A-A' CROSS-SECTION LINE

DRAFT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status	Date	Initial

SITE PLAN WITH EXTENT OF ON-SITE SOUTHERN VOC EXCEEDANCE AND CROSS-SECTION LOCATION

PCC-VALIDATION

PONTIAC, MICHIGAN



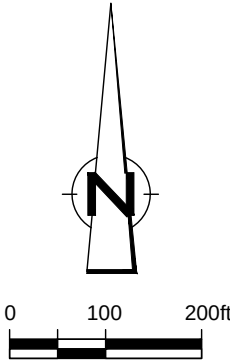
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Source Reference:

Project Manager: T.K.	Reviewed By: M.C.	Date: JULY 2014
Scale: 1:200	Project N°: 017322-T02	Report N°: MEMO027
		Drawing N°: 1



No	Revision	Date	Initial



LEGEND

- BH-98-12 COMPLETED SOIL BORING LOCATION BY CRA IN 2012
- MW88-12 COMPLETED MONITORING WELL LOCATION BY CRA IN 2012
- TP1-07 COMPLETED TEST PIT LOCATION
- MW28-07 COMPLETED MONITORING WELL LOCATION
- TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
- BH8-07 COMPLETED SOIL BORING LOCATION
- MW2-07 MONITORING WELL LOCATION RE-SAMPLED BY CRA IN 2012
- BH111-12 COMPLETED SOIL BORING LOCATION - DECEMBER 2012
- MW90-12 COMPLETED MONITORING WELL LOCATION - DECEMBER 2012
- APPROXIMATE SITE BOUNDARY
- EXISTING STRUCTURE
- FORMER SITE STRUCTURE
- M.H. MANHOLE
- C.B. CATCH BASIN
- 945 GROUNDWATER CONTOUR
- NU ELEVATION NOT USED

NOTE: GROUNDWATER CONTOURS REPRESENT UPPER WATER BEARING UNIT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved			
DRAWING STATUS			
Status	Date	Initial	

GROUNDWATER CONTOUR
OCTOBER 2012

PCC-VALIDATION

PONTIAC, MICHIGAN

 **CONESTOGA-ROVERS & ASSOCIATES**

Source Reference:

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Scale: 1:200	Project N°: 017322-T01	Report N°: 018 Drawing N°: 7