



November 13, 2008

Mr. John Miller  
NYS Department of Environmental Conservation  
Division of Environmental Remediation  
625 Broadway  
Albany, New York 12233

RE: Addendum to Remedial Investigation Work Plan – Monitoring Well Installations  
2 Love Road Site  
NYSDEC Site #: C314113

Dear Mr. Miller:

The Remedial Investigation Work Plan for the 2 Love Road Site, dated March 3, 2005, indicated that an assessment of groundwater would be completed. This Addendum is being presented to describe work that will be conducted to accomplish this goal.

The Remedial Investigation at the Love Road site commenced on June 16, 2005. During soil sampling activities, approximately 48 test pits, 29 soil probes and two temporary monitoring wells were completed (Figure 1.) The depth to the underlying bedrock at the site was found to be highly variable (Figure 2.) Observations made during the initial phases of the site investigation indicate that the subsurface material at the site consists of a 1-2 ft. thick layer of construction fill underlain by a moderately soft to moderately dense fine sand, silt and clayey silt. Bedrock at the site is characterized as interbedded layers of greywacke and shale. Outcrops observed on the eastern margin of the site contain competent siltstone layers interbedded with somewhat less competent shale.

Bedrock contours at this site have formed a bowl-shaped depression where depth to rock was greater than 30 feet below grade; surrounded on virtually all sides by dramatic rises in elevation where the bedrock was very close to the ground surface and outcropped in some locations. Depth to groundwater at the site is also variable and groundwater appears to flow to the northwest based on conditions observed during the test pit investigation.

### **Well Installations**

Test pits and soil borings have indicated that fuel oil and gasoline-impacted soil is present over portions of the site and is located in the areas of concern as indicated on Figure 1. Based on the observed impacts in soil, the installation of four monitoring wells is proposed to determine if the groundwater has been impacted. The proposed locations of the wells are shown in Figure 1. A drilling contractor will install four monitoring wells within the observed contaminated area and in areas inferred to be hydraulically down gradient of the observed impacts in soil. Monitoring wells will be completed into the first water-bearing unit and if necessary may extend into bedrock. Impacts were observed at the soil-bedrock

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Mr. John Miller  
November 13, 2008  
Page 2

interface at several locations during the test pit investigation. Establishing wells at locations of observed soil impacts and areas down gradient of the observed impacts will allow us to determine whether the impacts have entered groundwater at the site and if they are migrating away from the source area. A summary table of the anticipated conditions is included below.

| Well ID | Location   | Anticipated Conditions   |
|---------|--|--|
| MW-1    | The well will be situated at southeast corner of AOC-02A and is upgradient of the former UST that was a suspected source of contamination. | Petroleum impacts were observed at depths ranging from 3.0 to 9.0 fbgs in TP-43, TP-44 and TP-45 and an UST was removed from vicinity of TP45. Bedrock is >10 feet below ground surface (fbgs.) The well will be advanced through overburden and if petroleum is observed at the rock interface, we may drill into rock to assess bedrock impacts. The final depth of well will depend on where the water-bearing unit is encountered.   |
| MW-2    | Downgradient of shallow overburden petroleum impacts observed in AOC-02B.  | Borings B-10 and B-12 showed bedrock at 12-13 fbgs. TP-18, TP-17 and TP-15 showed bedrock greater than 9-10 fbgs, with water at 8-9 fbgs. Several test pits show dense blue clay layer between 3-6 fbgs. The well will be advanced through overburden and may extend into the bedrock to assess bedrock impacts. The final depth of well will depend on where the water-bearing unit is encountered.   |
| MW-3    | Downgradient of shallow overburden petroleum impacts observed in AOC-01 (former fuel unloading area.)                                      | TP-24 indicates bedrock at 9.0 fbgs and TP-26 indicates bedrock at 3.0 fbgs. The well will be advanced through overburden and may extend into the bedrock to assess bedrock impacts. The final depth of well will depend on where the water-bearing unit is encountered.   |
| MW-4    | The well will be situated within AOC-01 in the area subject to the soil removal performed as an Interim Remedial Measure (IRM.)            | TP-09 showed bedrock <5 fbgs and TP-22, TP23, TP24 and TP-25 show bedrock ranging from 7-9 fbgs, with petroleum impacts observed in TP22 and TP-23. This area was the subject of an IRM and contaminated soil was excavated down to bedrock in this area. The well will be advanced through overburden and if petroleum is observed at the rock interface, we may drill into rock to assess bedrock impacts. The final depth of well will depend on where the water-bearing unit is encountered. |

Wells will be installed using an air-rotary drilling method. Wells will be advanced by first drilling through the fill and overburden material. Where bedrock drilling is necessary, the borehole will be advanced into bedrock approximately 5 feet, and a 4 or 6-inch steel casing will be socketed and grouted into competent rock. The bedrock will then be drilled as an open borehole into the first water bearing unit encountered that will yield appreciable



Mr. John Miller  
November 13, 2008  
Page 3

amounts of groundwater or to a maximum of 20 feet below the ground surface. A 2-inch PVC monitoring well will be installed in the borehole. The annular space will be filled with #1 sand to approximately two feet above the top of the screen. A bentonite seal will be placed above the sand pack and the remaining annular space will be filled with a high solids bentonite grout. The well screen will be set to intersect the upper surface of the water table. Monitoring well completion log forms will be completed. Monitoring well installation will follow standard Fuss & O'Neill Standard Operating Procedures (SOPs.)

### Groundwater Sampling

Prior to collection of groundwater samples, the depth of the water table will be measured using an electronic interface probe. Groundwater samples will be taken and analyzed after well development, as described in the Remedial Investigation Work Plan. Low flow sampling techniques will be used in accordance with Fuss & O'Neill SOPs and the procedures outlined in the project QAPP.

Samples will be submitted to a qualified laboratory for analysis for the RCRA-8 Suite of metals by EPA Method 6010; volatile organic compounds (VOCs) by EPA Method 8260 and the STARS list of semi-volatile organic compounds (SVOCs) by EPA Method 8021. An Analytical Services Protocol (ASP) Level B data deliverable will be requested from the lab on all samples and the groundwater sampling will include the collection of one field duplicate sample.

### Schedule

The drilling contractor has been contacted and is scheduled to begin work October 17, 2008. Please contact me by email at [gtoothill@fando.com](mailto:gtoothill@fando.com) or by phone at (845) 452-6801, Ext. 4203 with any questions or comments.

Sincerely,

Gregory A. Toothill, PE  
Engineer III

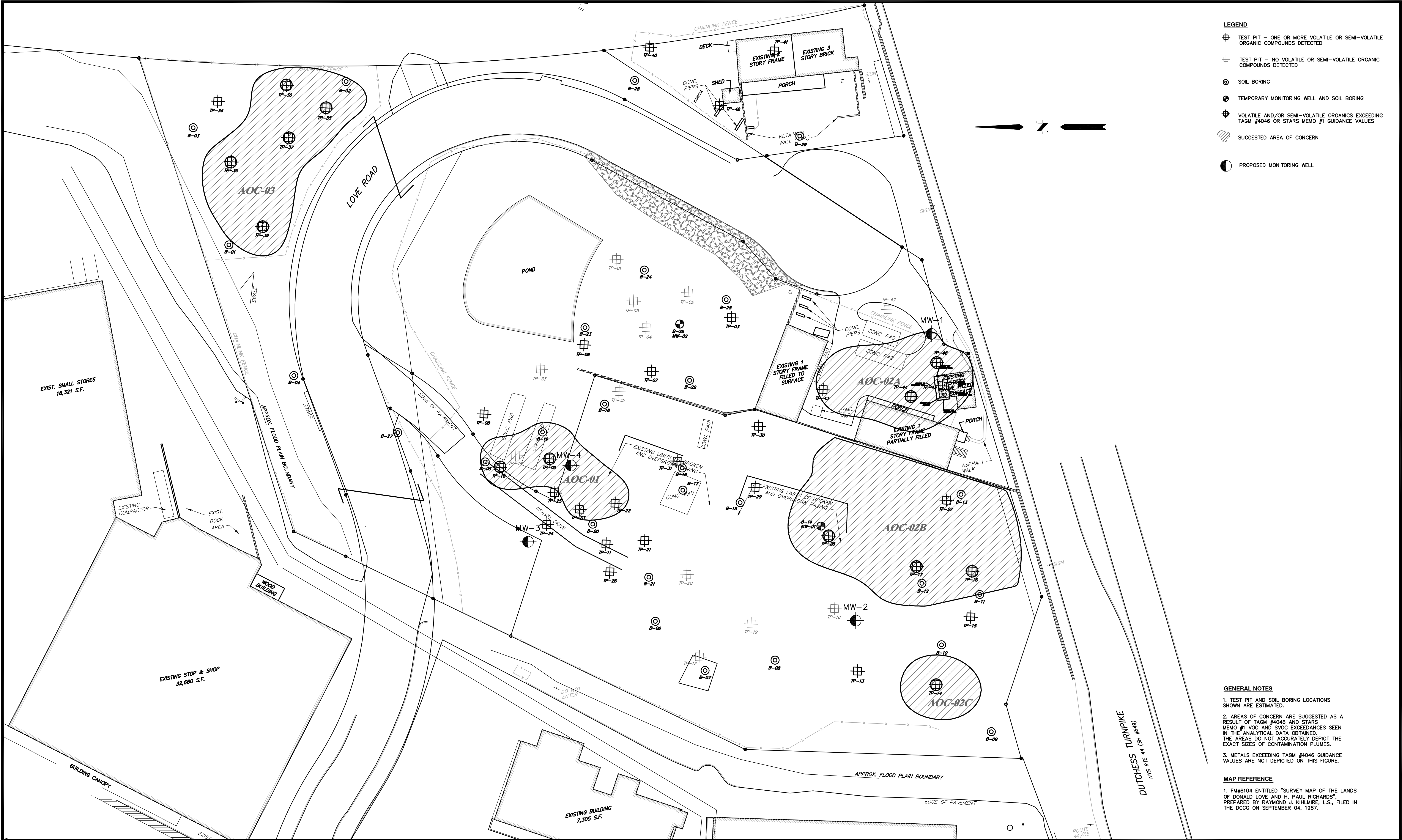
Andrew R. Zlotnick, LEP  
Vice President

Attachments: Figure 1  
Figure 2

c: Kelly Hardisty, Redl Properties



## FIGURE 1



|           |      |             |    |                 |      |
|-----------|------|-------------|----|-----------------|------|
|           |      |             |    | PROJ. MANAGER:  |      |
|           |      |             |    | CHIEF DESIGNER: |      |
|           |      |             |    | REVIEWED BY:    | DATE |
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| 1.        |      |             |    |                 |      |
| No.       | DATE | DESCRIPTION | BY |                 |      |
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| SCALE:          |  |
| HORZ.: 1" = 30' |  |
| VERT.:          |  |
| DATUM:          |  |
| HORZ.:          |  |
| VERT.:          |  |
| 30 15 0 30      |  |
| GRAPHIC SCALE   |  |



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SUPPLEMENTAL INVESTIGATION  
MONITORING WELL LOCATIONS  
2 LOVE ROAD

TOWN OF POUGHKEEPSIE DUTCHESS COUNTY, NEW YORK

PROJ. No.: 20040761.A2N  
DATE: NOVEMBER 2008

FIG. 1



## FIGURE 2





LEGEND

- BEDROCK CONTOUR
- SURFACE CONTOUR

NOTE: THIS DRAWING WAS CREATED USING BASEMAP ENTITLED "Xbase-ACAD2000.dwg" PROVIDED BY THE CHAZEN COMPANIES. SURFACE CONTOURS WERE IN A SEPARATE BASEMAP ENTITLED "Xtopo.dwg" ALSO PROVIDED BY THE CHAZEN COMPANIES. BEDROCK CONTOURS WERE CREATED USING DATA FROM TEST PITS AND SOIL PROBES COMPLETED BY FUSS & O'NEILL ON 6/16/2005-6/21/2005, AND 8/01/2005, RESPECTIVELY.

|     |      |                 |      |
|-----|------|-----------------|------|
|     |      | PROJ. MANAGER:  |      |
|     |      | CHIEF DESIGNER: |      |
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| 1.  | DATE | DESCRIPTION     | BY   |
| No. |      | REVISIONS       |      |

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| VERT.:          |  |
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| 0 30 60         |  |
| GRAPHIC SCALE   |  |



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HERBERT REDL PROPERTIES  
TOPOGRAPHIC MAP: BEDROCK AND SURFACE CONTOURS  
2 LOVE ROAD  
TOWN OF POUGHKEEPSIE  
DUTCHESS COUNTY, NEW YORK

PROJ. No.: 20040761.A1N  
DATE: NOVEMBER 2008

FIG. 2