Figures
SITE LOCATION

UMore Mining Area
Dakota County, MN

Source: MnDOT, MN DNR, Dakota County, Barr, James R. Hill, HKGi.
USGS topographic map background downloaded from the U.S.
Department of Agriculture, Natural Resources Conservation Service.
Figure 2
SOC LOCATIONS
SSI/RI Report
Sites of Concern 4 and 5
UMore Mining Area
Dakota County, MN

Source: Dakota County, Barr, James R. Hill, HKGi.

SOC1 Former Railroad "Y"
SOC2 Forestry Research/Former GOW Storage
SOC3 Ag. Engineering/K Street Dump
SOC4 Former DNT Platform and Drainage Ditch
SOC5 Central Services/Former DNT Bunkers (AOC 5)
SOC6 Southern Complex Storage Buildings and Wash Pads
SOC7 Susp. Disposal Area
SOC8 Undet. Use Area
Figure 3

SOC 4 AND SOC 5

SSI/RI Report
Sites of Concern 4 and 5
UMore Mining Area
Dakota County, MN

Source: Dakota County, Barr, SEH, HKGi, Bay West (2008)
Figure 4

CROSS SECTION A-A’
SSI/RI Report
SOCs 4 and 5
UMore Mining Area
Dakota County, Minnesota

Legend
- Approximate Ground Surface
- Boring and Temporary Wall Screen Interval
- Approximate Water Table in Outwash, Based on 07/01/09 Data
- Approximate Water Level in Temporary Monitoring Wells

Notes:
1. Geology for O-series borings from Prosource, 2008
2. Water samples collected from temporary wells on 9/2/09, 9/8/09, and 9/16/09
3. Groundwater elevation in temporary wells do not represent static water level elevations.

Approximate Ground Surface
Approximate Horizontal Scale in Feet
20X Vertical Exaggeration
Figure 5

CROSS SECTION B-B'
SSI/Rl Report
SOCs 4 and 5
UMore Mining Area
Dakota County, Minnesot
<table>
<thead>
<tr>
<th>Formation Name and Graphic</th>
<th>Description</th>
<th>Site Nomenclature</th>
<th>Hydrogeologic Role</th>
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<tbody>
<tr>
<td>Unconsolidated Glacial Deposits</td>
<td>Unconsolidated sand and gravel containing fine grained diamicton and lacustrine deposits.</td>
<td>Outwash (sand &amp; gravel deposit)</td>
<td>Surficial Aquifer</td>
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<tr>
<td>St. Peter</td>
<td>Fine to medium grained sandstone (Not present in SOCs 4 and 5)</td>
<td>St. Peter Formation Sandstone</td>
<td>Aquifer (where saturated)</td>
</tr>
<tr>
<td>Shakopee and Oneota</td>
<td>Thin to medium-bedded crystalline dolomite</td>
<td>Prairie Du Chien Group</td>
<td>Aquifer</td>
</tr>
<tr>
<td>Jordan</td>
<td>Fine to coarse sandstone</td>
<td>Jordan Formation Sandstone</td>
<td>Aquifer</td>
</tr>
<tr>
<td>St. Lawrence</td>
<td>Dolomitic shale and siltstone</td>
<td>St. Lawrence Formation</td>
<td>Regional Confining Unit</td>
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</table>

Figure 6

GENERALIZED STRATIGRAPHIC COLUMN
SSI/RI Report
SOCs 4 and 5
UMore Mining Area
Dakota County, Minnesota
Background: 2009 Aerials Express imagery for the Twin Cities.

Source: Metropolitan Council, MnDOT, Dakota County, Barr, ProSource, James R. Hill, HKGi.

Water levels used for this map are from wells completed in the uppermost saturated unit and within 25 feet of the water table. Well MW-C4-311 completed in St. Peter Sandstone confined by glacial till.

Figure 7
GROUNDWATER FLOW MAP
(UPPERMOST SATURATED UNIT)

SSI/RI Report
Sites of Concern 4 and 5
UMore Mining Area
Dakota County, MN
Source: Dakota County, Barr, SEH, HKGi, Bay West (2008).

2. Sample locations are approximate and may vary depending on site conditions.

Notes:

Direct Push Boring for Ag. Chem. Soil Sampling
Direct Push Boring for Soil Sampling
Direct Push Boring for Soil and/or Groundwater Sampling
Surface Soil Sample
Test Trench

UMo Mining Area (UMA)
Site of Concern (SOC) Boundary
OU1 Operable Unit Boundary
OU2 Operable Unit Boundary
OU3 Operable Unit Boundary

Figure 8

SOC 4 AND SOC 5 OPERABLE UNITS AND SAMPLING LOCATIONS

SSRI Report
Sites of Concern 4 and 5
UMo Mining Area
Dakota County, MN
## SOC 4 Soil Sampling Results

### SOC 4 Soil Sampling Results

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<th>Parameters</th>
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<th>Parameter &amp; Concentration - Regulatory Criteria</th>
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<td>SOC 4-GP2 (1-3)</td>
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### Site of Concern (SOC) Boundary

- **UMore Mining Area (UMA)**
- **Source:** Dakota County, MN

### Background

- 2009 Aerials Express imagery for the Twin Cities.
## GROUNDWATER FLOW DIRECTION

### SOC 4 AND SOC 5 GROUNDWATER SAMPLING RESULTS

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### Background:

- 2009 Aerials Express imagery for the Twin Cities.
- Source: Metropolitan Council, MnDOT, Dakota County, Barr, ProSource, James R. Hill, HKGi.

- **Figure 10**
- SOC 4 AND SOC 5 GROUNDWATER SAMPLING RESULTS
- SSI/RR Report
- Sites of Concern 4 and 5
- UMore Mining Area
- Dakota County, MN

- **Barr Footer:** Date: 12/18/2009 11:54:19 AM   File: I:\Client\UofM_UmorePark\Work_Orders\SIRI_Supp_Site_Inspection_Rem_Invest\Maps\Reports\SIRI_Report\Fig10_SOC4_&_SOC5_GW_Sampling_Results.mxd

- Direct Push Boring For Soil and/or Groundwater Sampling
- UMore Mining Area (UMA)
- Site of Concern (SOC) Boundary
- UMore Park Boundary

- Source: Metropolitan Council, MnDOT, Dakota County, Barr, ProSource, James R. Hill, HKGi.
DNT STORAGE BUNKERS (SOC 5 OU #1) SAMPLING RESULTS
SSI/RI Report
Sites of Concern 4 and 5
UMore Mining Area
Dakota County, MN

Figure 12

Source: Dakota County, Barr, SEH, HKGi, Bay West (2008).
Figure 13
PESTICIDE (SOC 5 OU 2), AND PETROLEUM (SOC 5 OU 3) RELEASE AREA
SOIL SAMPLING RESULTS

SSI/RI Report
Sites of Concern 4 and 5
UMore Mining Area
Dakota County, MN
### Figure 14

**GREEN SPACE AREA AND OTHER SOIL SAMPLING RESULTS**

**SSI/IR Report**
Sites of Concern 4 and 5
UMore Mining Area
Dakota County, MN

#### Table: Soil Sampling Results

<table>
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<th>Sample Location</th>
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<td>SOC5-SS2B</td>
<td>Metals</td>
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**Notes:**
1. Based on field observation, test trenches may consist of discontinuous test pits excavated throughout the planned trench limits.  
2. Sample locations are approximate and may vary depending on site conditions.  

Source: Dakota County, Bear, SEH, HRG, Bay West (2009)
### Table 1: Water Supply Well Sampling Results

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**WSW-208402**

**WSW-208405**

**WSW-207607**

**WSW-207605**

---

**Background:** 2009 Aerials Express

---

**Source:** MnDOT, MN DNR, Dakota County, Barr, SEH.

---

**Figure 15**

**WATER SUPPLY WELL SAMPLING RESULTS**

SSI/RI Report
Sites of Concern 4 and 5
UMore Mining Area
Dakota County, MN

---

**UMore Mining Area (UMA)**

---

**Water Supply Well**

**Sampling Location**

Direct Push Boring for Soil and/or Groundwater Sampling
Figure 16
REMEDIAL ACTION LOCATIONS
SSI/RI Report
Sites of Concern 4 and 5
UMore Mining Area
Dakota County, MN

Remediation Proposal
- DNT Storage Bunker Surface Soils
- Buried Debris
- Surface Soil PAH

Additional Investigation Needed
- Petroleum Release Area (Estimated)
- Green Space

Interim Corrective Action
- NW Drainage Ditch

Notes:
1. Based on field observation, test trenches may consist of discontinuous test pits excavated throughout the planned trench limits.
2. Sample locations are approximate and may vary depending on site conditions.
Source: Dakota County, Barr, SEH, HKGi, Bay West (2008).