



Minnesota Pollution Control Agency

# Closed Landfill Program

## NE Minnesota Closed Landfills

Closed Landfill Program  
Update to NEWAC

October 14, 2013



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# What We'll Discuss

- Background.
- Landfill Locations.
- Land Use Planning.
- Individual Landfills.
- Summary.
- Contacts.



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# Background

- Closed Landfill Program (CLP).
  - 1994 (Landfill Cleanup Act).
  - Alternative to Superfund.
- Responsible for Managing Risk at 112 Landfills.
  - Monitoring.
  - Risk Ranking of Sites.
  - Build & Maintain Remediation Systems.
  - Maintain Landfill Properties.
  - Partner with LGUs on Land Use Planning.



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# CLP Construction

Landfill Covers &  
Waste Relocation



Active Gas Extraction



GW Pump & Treat





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# CLP Post Closure Care

Maintain Cover Systems



Active Remediation



GW, SW & Gas  
Monitoring





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# CLP Contracts

- Monitoring & Analysis \*
- Design/Construction Oversight
- Operation & Maintenance
- Drilling
- Surveys
- Leachate Hauling

\* CLP Contract Available for use by Cooperative Purchasing Venture Members



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# CLP Manages Property

- Closed Landfill Program (CLP) is Responsible for Long-term Care of Property.
  - 8,400 acres in LMA property.
    - About 3,000 acres owned by State.
    - About 5,400 acres owned by LGUs & private owners.
- On-site remedial action equipment is installed, owned and operated by CLP.



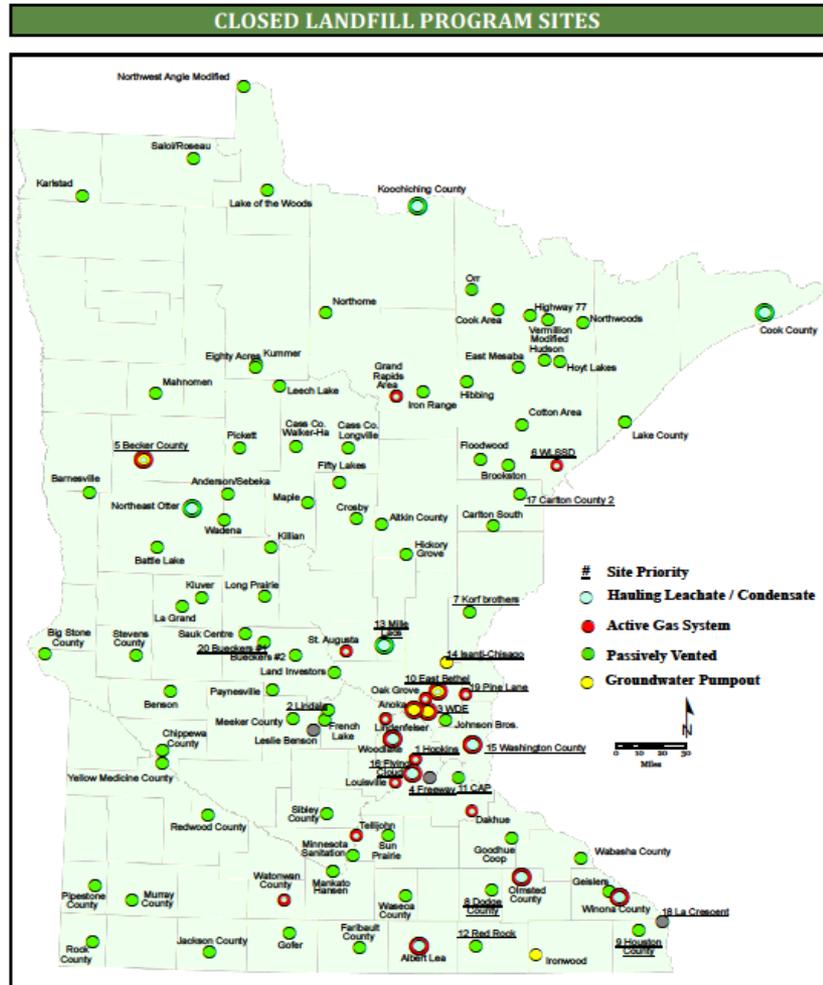
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# Location of Closed Landfills

112 closed landfills with remediation systems identified.

Open red circle sites are those with active gas systems in operation.

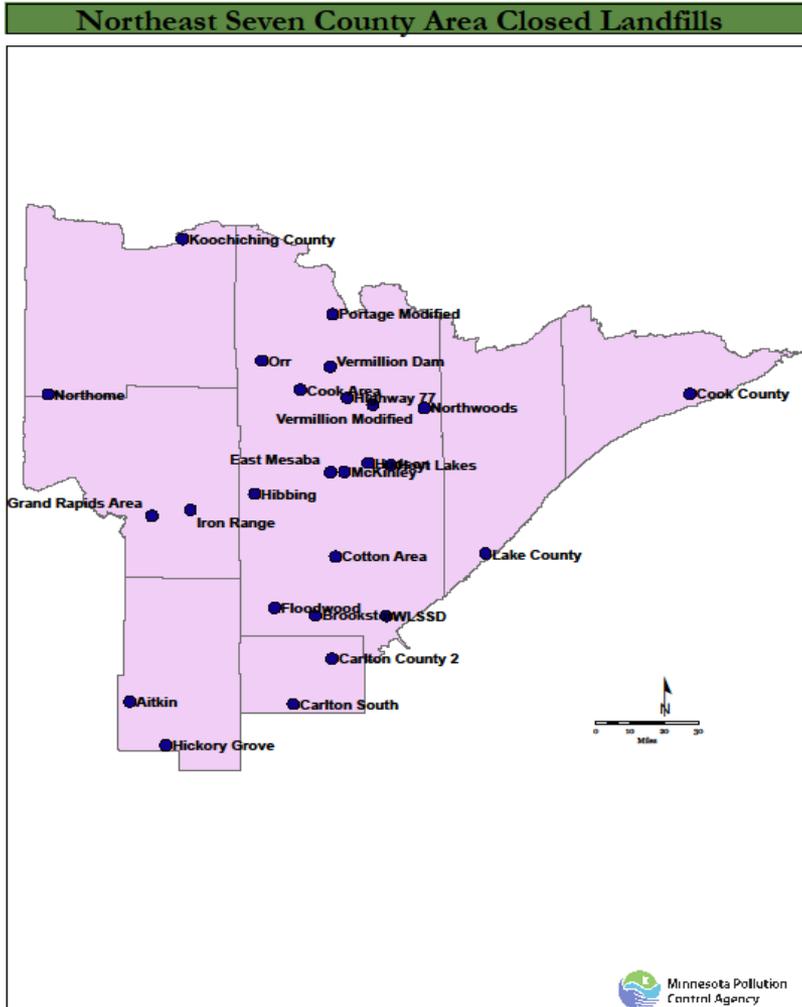
Sites with yellow dots are those with groundwater pump & treat systems in operation.





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# NEWAC Area Closed Landfills





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# Land Use Planning

## Minn. Stat. § 115B.412, subd. 9

Landfill Cleanup Act Requires MPCA to:

- Develop Land Use Plans.
- Local government unit's (LGU) Land Use Plan must be made consistent with MPCA's Plan.
- Plan provisions include:
  - prevent damage to on-site remediation systems.
  - any proposed use (development) will not increase potential hazard to human health or environment.



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# Affected Property Notice

## Minn. Stat. § 115B.412, Subd. 4

- MPCA will:
  - Provide LGU with maps depicting Land Management Area (LMA), ground water contaminant plumes and areas of concern (AOCs) for ground water and methane gas; and narratives explaining what is shown on maps
  - Make recommendations & provide technical advice to assist LGUs in adoption of land use controls
  - Maps & narratives updated as necessary



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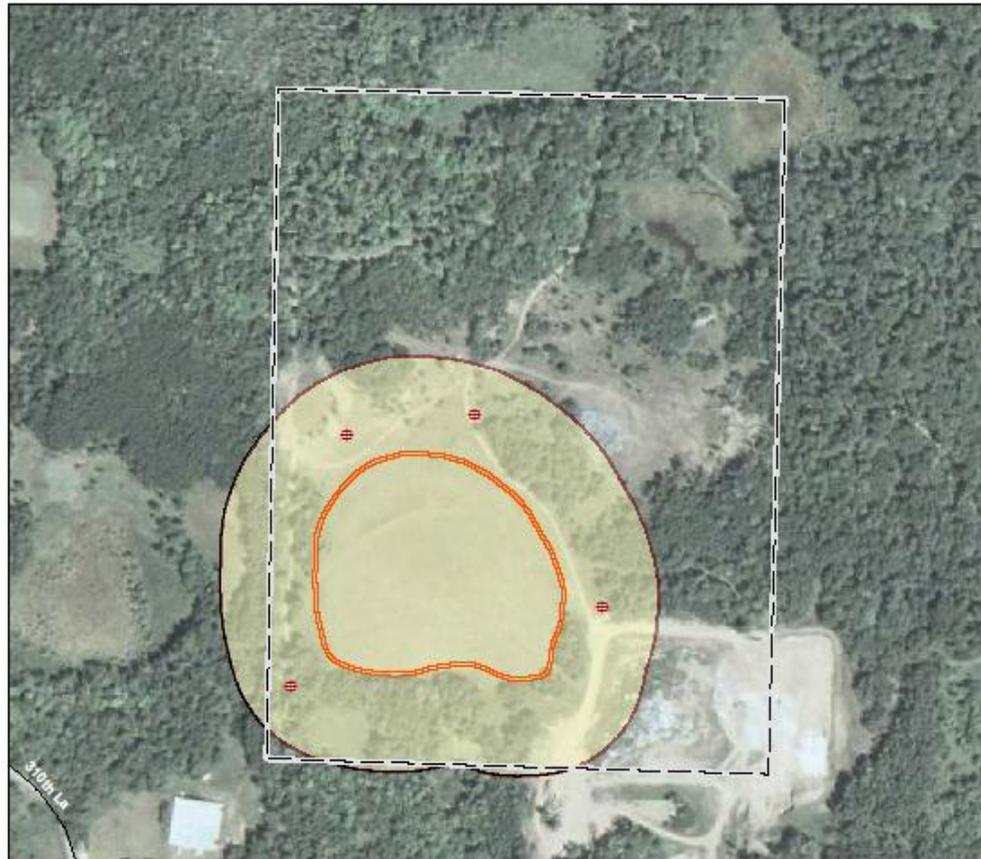
# Aitkin County Landfill

❑ LMA not correct – property issues.

❑ Property survey will be completed this Fall.

❑ Propose rezoning to Closed Landfill Restricted.

## CLP Methane Area of Concern: AITKIN COUNTY SANITARY LANDFILL



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### Site Contacts

Land Manager: Jean Hanson  
 Engineer: Peter Tiffany  
 Hydrogeologist: Kate Rolf

### Site Features

-  **Gas Probe**
-  **Waste Footprint**
-  **Land Management Area**  
Designates the property that is under the responsibility and control of the MPCA.
-  **Methane Area of Concern**  
Area surrounding the landfill that may be impacted by subsurface migration of methane gas.

DISCLAIMER: The State of Minnesota makes no representations or warranties to the user as to the accuracy, currency, suitability or reliability of this data for any purpose. This map depicts a reasonable approximation of impacts from the landfill only and makes no inference about impacts from other potential sources.

Created 11/29/2011 by CLP Engineer Peter Tiffany  
 Meters 0 50 100 150  
 Feet 0 190 380 570  
 1:4,100





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# Grand Rapids Landfill

Change LMA zoning to Closed Landfill Restricted.

Address off-site gas and groundwater concerns through implementation of institutional controls such as setback or overlay to address future off-site receptors.

Staff performing active remediation O&M.

## Appendix D: CLP Groundwater Area of Concern [GWAOC] - GRAND RAPIDS AREA SANITARY LANDFILL



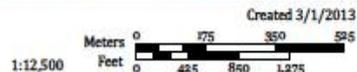
**Site Contacts**  
 Land Manager: Tom Newman  
 Engineer: Peter Tiffany  
 Hydrogeologist: Kate Rolf

**Site Features**

- Monitoring Well**
- Waste Footprint**
- Land Management Area**  
Designates the property that is under the responsibility and control of the MPCA.
- Groundwater Plume**  
Approximate area of the subterranean contaminated groundwater plume.
- Groundwater Area of Concern**  
An area where the groundwater may be affected by landfill contamination.



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Created 3/1/2013



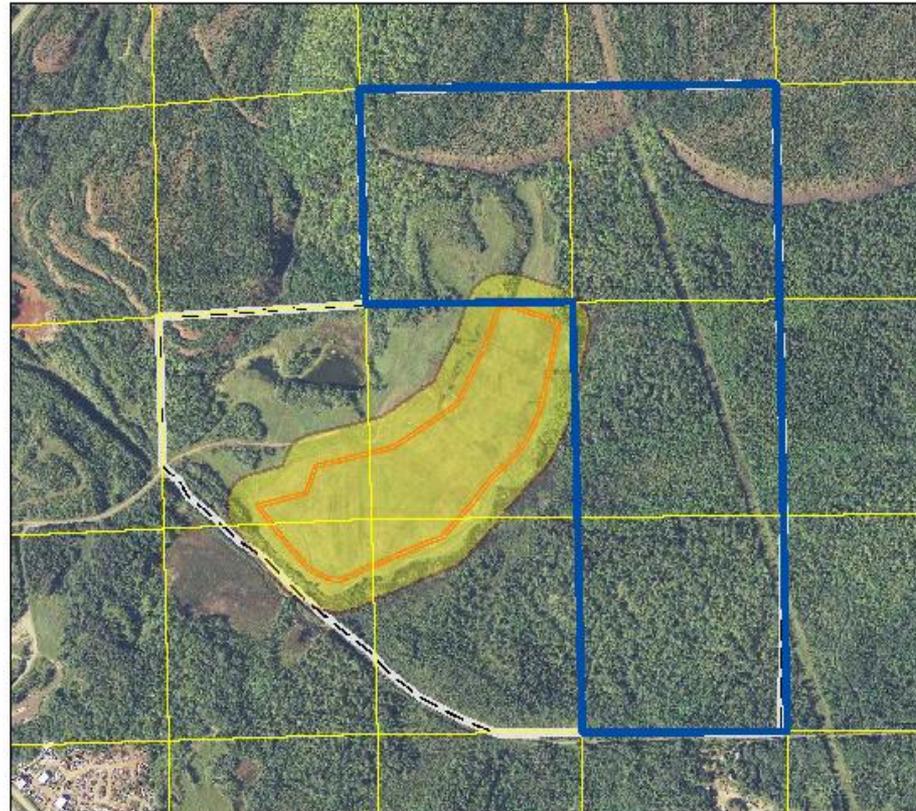
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# East Mesaba Landfill

## Landfill Methane Area of Concern

- ❑ Construction costs total \$5.5 million.
- ❑ 10 on-site solar flares.
- ❑ DNR requesting custodial control of property for expanded OHV trail use.
- ❑ LMA reduction to address DNR request.
- ❑ Transferring southeast 40 acre parcel.

### EAST MESABA SANITARY LANDFILL



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Created 10/7/2013 by CLP Engineer Ben Klismith  
Meters 0 120 240 360  
1:9,300 Feet 0 420 840 1,260



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#### Site Contacts

Land Manager: Tom Newman

Engineer: Ben Klismith

Hydrogeologist: Kate Rolf





# Koochiching County Landfill

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❑ Acquired 4 acres from MnDOT west of Landfill and East of Blue Ox Trail.

❑ Construction costs total \$5.2 million.

❑ Working on transfer of west 20 acre City owned parcel & east 20 acre County owned parcel comprising 40 acre landfill parcel.

❑ No BA with City.

## CLP GW Area of Concern: KOOCHICHING COUNTY SANITARY LANDFILL



Site Contacts  
Land Manager: Tom Newman  
Engineer: Marty Osborn  
Hydrogeologist: Kate Rolf

### Site Features

- Monitoring Well**
- Waste Footprint**
- Land Management Area**  
*Designates the property that is under the responsibility and control of the MPCA.*
- Groundwater Plume**  
*Approximate area of the subterranean contaminated groundwater plume.*
- Groundwater Area of Concern**  
*An area where the groundwater may be affected by landfill contamination.*



1:5,200  
Created Aug 31, 2010 by CLP Hydrogeologist Kate Rolf

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# Lake County Landfill

❑ Mapping revealed waste footprint outside of Land Management Area.

❑ Site will be surveyed to address land issue.

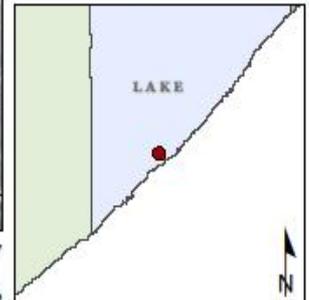
### CLP Methane Area of Concern: LAKE COUNTY SANITARY LANDFILL



 **Minnesota Pollution Control Agency**  
**Site Contacts**  
Land Manager: Jean Hanson  
Engineer: Peter Tiffany  
Hydrogeologist: Ingrid Verhagen

#### Site Features

-  **Gas Probe**
-  **Waste Footprint**
-  **Land Management Area**  
*Designates the property that is under the responsibility and control of the MPCA.*
-  **Methane Area of Concern**  
*Area surrounding the landfill that may be impacted by subsurface migration of methane gas.*



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Created 11/29/2011 by CLP Engineer Peter Tiffany  
Meters 0 50 100 150  
1:4,300 Feet 0 200 400 600



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Construction costs total \$12 million.

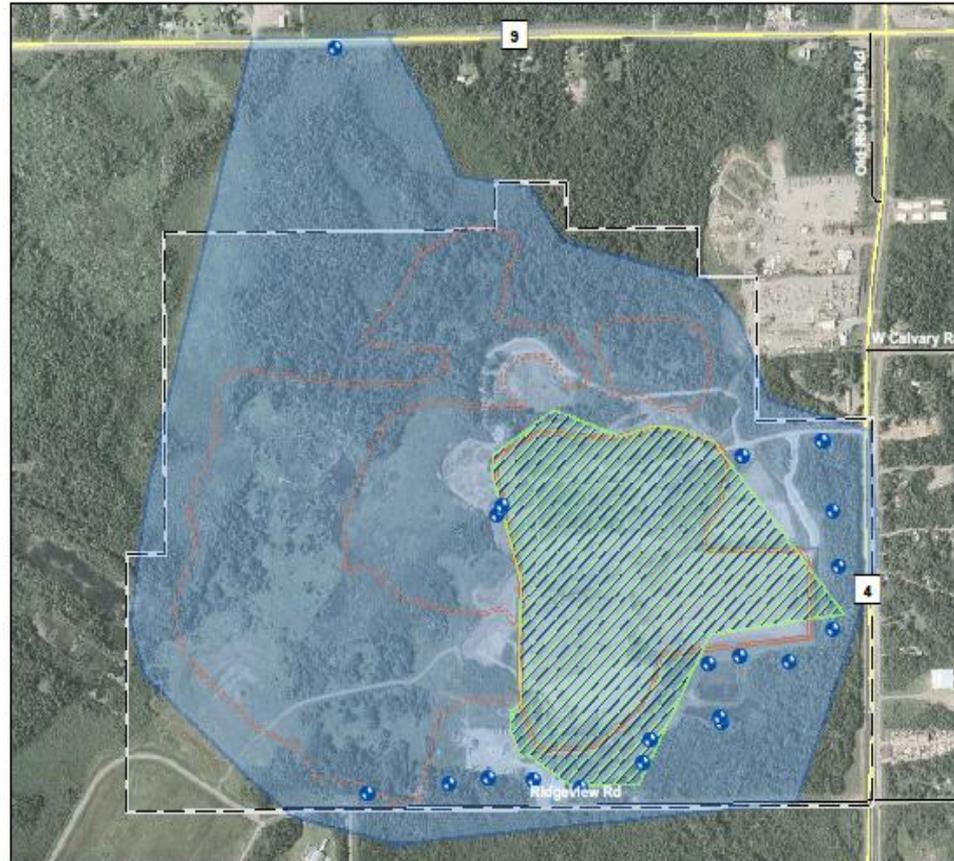
MPCA owns Landfill parcels.

Rice Lake Twp. Zoned parcels "Closed Landfill Restricted".

MPCA partner with City to identify old dump where land use is airport.

# WLSSD Landfill

## CLP GW Area of Concern: WESTERN LAKE SUPERIOR SANITARY DISTRICT LF



Site Contacts  
Land Manager: Jean Hanson  
Engineer: Peter Tiffany  
Hydrogeologist: Ingrid Verhagen

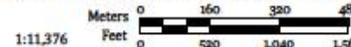
### Site Features

- Monitoring Well
- Waste Footprint
- Approximate Dump Footprint<sup>1</sup>
- Land Management Area  
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- Groundwater Plume  
*Approximate area of the subterranean contaminated groundwater plume.*
- Groundwater Area of Concern  
*An area where the groundwater may be affected by landfill contamination.*

1. Source: Remedial Investigation of the WLSSD Rice Lake Residue Waste Disposal Facility (SW-232) and Former City of Duluth Dump No. 2, RREM, February 1994

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Created Apr 27, 2011 by CLP Hydrogeologist Ingrid Verhagen





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- ❑ Groundwater plume currently impacting 4 residents.
- ❑ Residents using bottled water until treatment system installed.
- ❑ Investigate permanent drinking water remedy.
- ❑ BA land plus 1 additional parcel to be transferred to MPCA.

# Carlton County 2 Landfill

## CLP GW Area of Concern: CARLTON COUNTY 2 SANITARY LANDFILL



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Created 9/24/2013 by CLP Hydrogeologist Dave Oakes

1:9,540  
Meters 0 130 260 390  
Feet 0 330 660 990



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### Site Contacts

Land Manager: Jean Hanson

Engineer: Peter Tiffany

Hydrogeologist: Dave Oakes

### Site Features

- Monitoring Well
- Waste Footprint
- Land Management Area**  
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- Groundwater Plume**  
 Approximate area of the subterranean contaminated groundwater plume.
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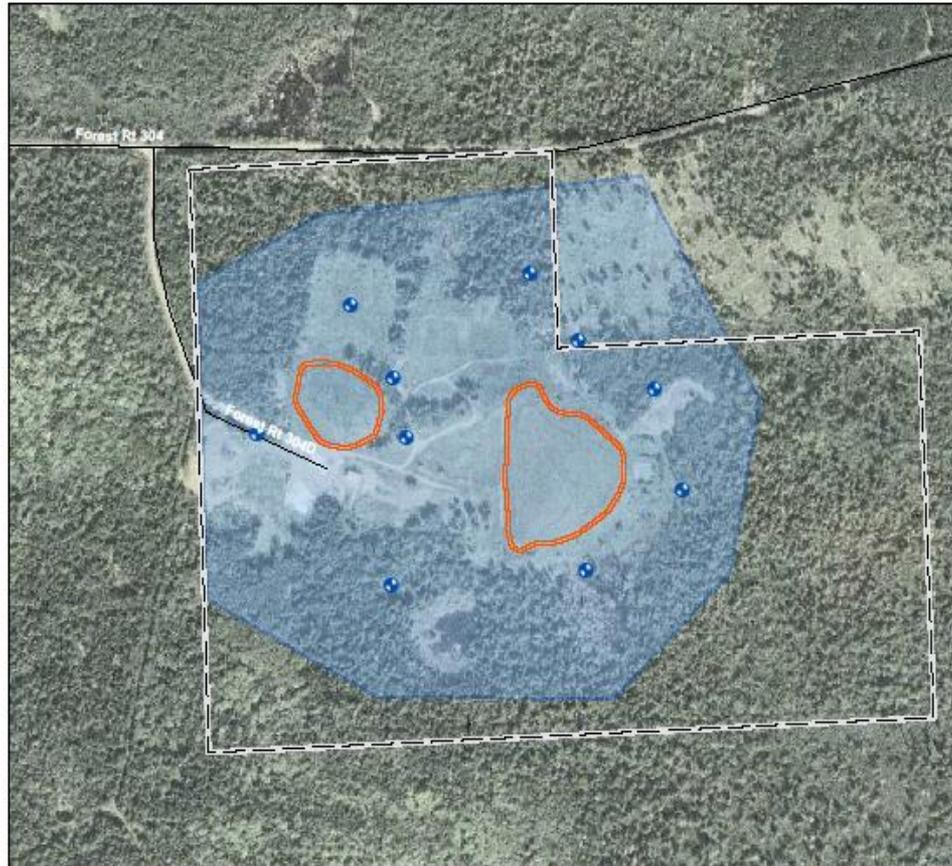


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# Cook County Landfill

- Demo debris Landfill & MSW Landfill.
- LMA ownership issues.
- County to implement land use plan.

## CLP GW Area of Concern: COOK COUNTY SANITARY LANDFILL



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### Site Contacts

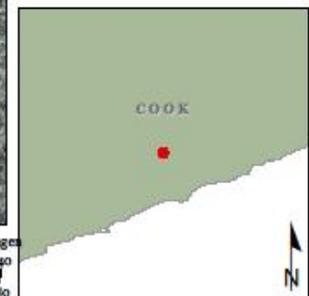
Land Manager: Jean Hanson

Engineer: Peter Tiffany

Hydrogeologist: Ingrid Verhagen

### Site Features

- Monitoring Well**
- Waste Footprint**
- Land Management Area**  
*Designates the property that is under the responsibility and control of the MPCA.*
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Created Jun 14, 2011 by CLP Hydrogeologist Ingrid Verhagen



1:5,472



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# CLP New Initiatives

- Active Remediation O&M by CLP Staff.
- Solar Power Renewable Energy.
- LMA Reduction and De-listing.
  - Landfill delist only possible where waste has been removed.
- Land Use Planning.



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# Summary

- CLP has long-term care responsibility for 112 closed landfills.
- CLP partners with LGUs to implement land use planning on and around landfills.
- CLP is open to responsible development opportunities (e.g. solar).



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# Contacts

Supervisor: Doug Day (651) 757-2302

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Land Management: Tom Newman: (651) 757-2609

Email: [tom.newman@state.mn.us](mailto:tom.newman@state.mn.us)

Land Management: Jean Hanson: (651) 757-2408

Email: [jean.hanson@state.mn.us](mailto:jean.hanson@state.mn.us)

Web Site & Legislative Annual Reports:

[www.pca.state.mn.us/cleanup/closedlandfills.html](http://www.pca.state.mn.us/cleanup/closedlandfills.html)