Minnesota Pollution Control Agency

Closed Landfill Program Spatial Data Standards

Content and Formatting Manual Version 3.0

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Minnesota Pollution Control Agency

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Foreward

The Closed Landfill Program (CLP) Spatial Data Standards Manual (Manual) sets forth standards, guidelines, and requirements for geospatial data submittals to the CLP. The Manual is to be used by Minnesota Pollution Control Agency (MPCA) staff and MPCA Contractors providing services under the Land Survey Services Professional Master Contract. The Manual is designed primarily for use by technical CAD, database, and GIS staff, though other MPCA and Contractor staff may also need it to meet the content and format standards requested for CLP deliverables. The MPCA reserves the right to update these standards at any time. Once the MPCA has distributed any revised instructions to the MPCA Contractors, the MPCA Contractors are required to implement all changes based on the revision date of the Manual. Subsequent revisions will be posted to the MPCA Web site at: <http://www.pca.state.mn.us/about/contractorguidance.html>.

Users of the Manual may submit suggestions for changes, improvements, or notices of error in the Manual to Joe Julik or Margaret Voth in the Closed Landfill Unit, Remediation Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155.

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I. Introduction

1.0 Preface

Any data created, prepared, or shared by the Minnesota Pollution Control Agency (MPCA) Remediation Division, specifically the Closed Landfill Program (CLP), must meet certain data collection, accuracy, and format standards set at the state level by the Minnesota Office of Enterprise Technology (OET) and Minnesota Governor's Council on Geographic Information Systems and at the federal level by the National Geodetic Survey (NGS), Federal Geographic Data Committee (FGDC), U.S. Bureau of the Budget, and others. In addition to those requirements, several private sector standards – namely American Society for Photogrammetry and Remote Sensing (ASPRS) large-scale map accuracy, National Society of Professional Surveyors (NSPS) land title survey relative accuracy, and Corp of Engineers standards – have also increased the quality and reliability of static map and digital data products, and should also be considered excellent guidelines for producing dependable, accurate state data.

Elements from various state, federal, private, and internal MPCA spatial data standards have been combined into this comprehensive Manual. It is imperative that the MPCA create and promulgate high quality data with complete and detailed metadata and quantified spatial accuracy. High quality, complete data not only promotes active data sharing, but also supports the state's role as a leader in data standardization and public data dissemination. Format and content standards provide a means to track each individual dataset's lineage (i.e., how data was pieced together, from what sources, and using what means), assess each dataset's positional and attribute accuracy, and reinforce data quality controls. Standardization also ensures that feature definitions and other terminology are used consistently across multiple sites, improving both staff and external users' understanding of the information within each dataset. Collection methodologies and predefined data deliverables provide the MPCA with uniform data products that can be more easily integrated in existing centralized databases regardless of the Contractor utilized or MPCA staff managing a contract. By instituting rigorous spatial data standards, the MPCA will enable data users to better understand how each dataset is created and facilitate data users in judging the fitness of each dataset for their specific purposes.

2.0 Objective

The data collection procedures, content and format standards and deliverable requirements in this Manual are explained in detail in order to meet several institutional goals:

- To increase the ease of data sharing and promote data interoperability within the CLP and MPCA, as well as among state agencies.
- To allow for more precise data collection, creation, and dissemination, thus enabling more selective and informed data usage.
- To more easily integrate geospatial data and attributes into existing geographic information systems and both spatial and non-spatial databases.
- To more quickly and easily provide good quality digital data, maps, and other data products to the public, legislators, and MPCA staff.
- To advocate data integrity by upholding federal, Minnesota state, and Agency spatial data standards.

In an effort to achieve these goals, this manual will guide the user through several sections, each focusing on a different portion of the data's lineage, ranging from data collection to final deliverable submission. Specific standardization efforts will focus on the following:

- Terminology and definitions of all pertinent topographic, site, and property features associated with CLP sites.
- CLP data and attribute data collection methodologies.
- Relative and absolute positional accuracy requirements for each feature class.

- GIS file names, file structures, and deliverable file formats.
- Attribute table content and formatting, including field names, data types, and domains within each feature's attribute table.
- Deliverables with specified formats, including accuracy assessments and metadata.

3.0 Compliance

Compliance will require good communication among all members of the data creation team, from field data collection to final deliverable Quality Assurance (QA) Quality Control (QC) testing. **Due to the complexity of the data deliverables, it is essential that the Survey Crew Chief, CAD Specialist, and Geographic Information System (GIS) Specialist work together and review ALL the data requirements and deliverables** *PRIOR* **to any data collection or field work.** The CAD and GIS specialists will need to determine whether their deliverables will be created simultaneously or converted to meet the Closed Landfill Program's deliverable format requirements. The Survey Crew Chief will need to discuss attribute data collection practices and formats with the GIS and CAD Specialists to ensure definition continuity, attribute correctness, and adherence to the content standards. Teamwork and communication will be key to ensuring correct data transfer from survey data into CAD and GIS deliverables and will be the best way to ensure high data quality and verify compliance with required standards.

The MPCA reserves the right to request that any data deliverables improperly formatted be corrected before the submittal will be accepted. Any extra expenses incurred due to such edits will be the Contractor's responsibility.

II. Data Collection

Various data collection methodologies – including terrestrial survey, GPS, active remote sensing (e.g., LiDAR, radar, etc), passive remote sensing (e.g. aerial photography), and photogrammetry – may be implemented to create or derive data useful to the Closed Landfill Program. The best collection method for a particular project should be selected only after careful consideration of the features to be collected, required horizontal and vertical accuracies, and non-spatial attributes.

The surveyor is ultimately responsible for choosing appropriate data collection methods, but GPS methodologies for topographic and site feature collection should be considered very carefully as they are often much cheaper collection methods. GPS has been used to collect data with vertical accuracies within two cm local and five cm network with comparable horizontal accuracies, which would meet the accuracy requirements for all topographic features and most site features (California Geodetic Control Committee, 1995; Zilkoski et al, 1997).

1.0 Closed Landfill Program features

Closed Landfill Program (CLP) features, as the name suggests, include any and all features collected within, near, or adjacent to closed landfill sites. All CLP features have been split into three "survey type" headings according to the data's purpose and general characteristics. Topographic, property boundary, and site feature survey types refer to the general data collection strategies that will be necessary to collect the spatial and non-spatial data for each feature class within the survey type, but they **do not** mandate any particular data collection technique (i.e., a terrestrial survey, photogrammetry, GPS, etc).

The survey types' purpose is to identify broad similarities among feature class definitions, attribute table content, and collection methodologies. For example, the features listed as "property boundary features" are concerned with identifying legal boundaries, require a high level of accuracy, and often include attribute information on ownership and parcel identification number. Separating the features by survey type provides a convenient means of sorting and describing the requirements for a wide array of features, and provides the basis for dividing the program features into the more manageable groupings - property boundary features, topographic features, and site features – seen throughout the rest of this manual.

The following subsections include general descriptions of each survey type and corresponding CLP features are listed as bullet points. Definitions for each of the listed CLP feature can be found in Appendix I. Not all feature names match surveying terms or common language usage, so be cautious using industry standard terms as they may not match. For example, CAD often uses the terms "control monument," "monument," or "benchmark" to identify geodetic control points, but the CLP program prefers the standardized term "geodetic control monument." Additional property features typically denoted in CAD as iron or steel pipes, property lines, or property corners are combined within CLP terminology and identified as "property markers."

Specific features to be collected will vary by site. Note that it is possible to mix survey types within a single Work Order (as separate tasks). For more information on the accuracy requirements for each survey type and CLP feature, see Chapter II, Section 2.0 Positional Accuracy Requirements.

1.1 Topographic survey

A topographic survey provides information on a site's features and vertical relief. Topographic surveys are typically accomplished through either photogrammetry or terrestrial survey methods. Photogrammetric methods usually involve collecting aerial imagery in early spring or fall to avoid visual interference of foliage, and verifying elevations against a target or other ground control features visible from the air. Terrestrial survey techniques calculate elevations manually through triangulation with lasers or by using high-quality GPS. Terrestrial survey methods are generally only cost effective if a small area or limited number of features need elevations established.

- Contour
- Contour Index
- Spot Elevation

1.2 Property boundary survey

A property boundary survey identifies property boundaries and can be used to derive a legal description of enclosed parcels. The creation of property boundary survey features requires in-depth knowledge of property records, deeds, titles, and easements to determine the correct legal placement of property features, and the ability to interpolate those legal descriptions into GIS data and real-world property markers.

Property boundary features differ fundamentally from site and topographic features because they are "invisible" in the field. Parcels, MPCA Properties, Landfill Cleanup Agreement (LCA) Boundaries, Qualified Facilities, Land Management Areas, and easements are all legally defined areas of land, but unlike monitoring wells or spot elevations, their locations cannot be directly observed or collected in the field. Property markers (which identify property corners and posts located every 500 feet along each property line) cannot be placed without firm knowledge of the property's physical boundaries and are often the physical result of a property boundary survey. Property document searches and any resulting legal descriptions, maps, and property boundary features must be overseen by a Registered Land Surveyor licensed in Minnesota.

- Buffer Parcel
- Geodetic Control Monument
- Land Management Area (LMA)
- Landfill Cleanup Agreement (LCA) Boundary
- MPCA Easement
- MPCA Property
- Parcel
- Private Easement
- Property Marker
- Qualified Facility

1.3 Site feature survey

A survey of non-property boundary features at a closed landfill site. This survey type incorporates the broadest array of feature categories and required accuracies, but the included features are all either directly observable in the field or can be derived without the aid of a Registered Land Surveyor.

- Alarm
- Berm
- Bridge
- Buried Cable
- Lift Station
- Local Government Unit (LGU) Zoning
- Manhole
- Methane Area of Concern

- Buried Power
- Building
- Cascade Aerator
- Cleanout
- Closed Landfill Program (CLP) Zoning
- Communication Tower
- Concrete Pad
- Condensate Line
- Condensate Sample Point
- Condensate Tank
- Constructed Wetland
- Culvert
- Electric Meter
- Electrical Panel
- Erosion
- Fence
- Fence Gate
- Fissure
- Force Main
- Force Main Outlet
- Gas Engine
- Gas Extraction Well
- Gas Flare
- Gas/Oil Line
- Gas Passive Vent
- Gas Probe
- Geoprobe – Gas
- Geoprobe – Soil
- Geoprobe – Water
- Groundwater Area of Concern
- Groundwater Extraction Well
- Groundwater Plume
- Horizontal Vent
- Hydrant
- Illegal Disposal
- Infiltration Basin
- Invasive Weed
- Invert
- Lake
- Landfill Gas Line
- Leachate Line
- Leachate Sample Point
- Leachate Tank
- Monitoring Well
- Overhead Power Line
- Pond Outlet
- Pothole
- Power Pole
- Property Damage
- Quarry
- Railroad
- Riprap
- Road
- Sanitary Sewer
- Sedimentation Pond
- Settlement
- Signage
- Sinkhole
- Site Condition
- Slurry Wall
- Splitter Tank
- Storm Sewer
- Storm Water Conveyance
- Storm Water Ponding
- Stream
- Surface Water (SW) Elevation
- Surface Water (SW) Monitoring Station
- Tank
- Telephone Line
- Telephone Terminal
- Toe Drain Outlet
- Trail
- Treatment Pond
- Tree
- Waste Footprint
- Waste Processing Facility
- Water Level Control
- Water Main
- Water Supply Well
- Well Restriction Area
- Wetland
- Wooded Area
- Valve
- Vegetation Damage

2.0 Positional accuracy requirements

Positional accuracy requirements define the minimum accuracy necessary for each listed site, property, or topographic feature. These requirements were determined on a feature-by-feature basis to match each dataset's intended use.

Positional accuracy requirements differ from older, relative measures of accuracy by measuring data accuracy independent of the data's deliverable format. Positional accuracy is neither scale nor distance dependent, and

as such is measured and reported in ground units directly corresponding to the data's spatial reference system. Positional accuracy can be further divided into horizontal and vertical positional accuracy, which can be used to directly compare the fitness and usefulness of alternate datasets for a particular application. Horizontal and vertical positional accuracies are calculated separately and reported together in a single accuracy statement (when applicable).

The site, property, and topographic features in Sections 2.2 – 2.4 have been aggregated into general accuracy classes. Each accuracy class describes the vertical and horizontal accuracies required for a feature class. Accuracy requirements may also include local and network accuracy measurements, as indicated.

2.1 Accuracy assessment

The accuracy of each feature class must be verified by conducting a positional accuracy assessment utilizing the National Standard for Spatial Data Accuracy (NSSDA) methodology described in Chapter 3 of the FGDC's Geospatial Positioning Accuracy Standards (1998) and Minnesota IRM Standard 19. The NSSDA Standard uses root-mean-square error (RMSE) to estimate positional accuracy and reports accuracy as a distance or elevation in ground units (feet or meters) to the 95 percent confidence level. NSSDA accuracy assessments are meant to evaluate spatial data, not map products or any other scale-dependent data format.

An accuracy assessment report must also be submitted, showing the calculation of both the RMSE and NSSDA statistic for each dataset. Any test and independent higher accuracy data points utilized in an accuracy assessment must be labeled and submitted in shapefile format (including appropriate metadata and spatial reference systems) with the accuracy assessment report. Horizontal accuracies must be reported in meters and vertical accuracies in feet. A statement of data accuracy must also be included in each dataset's metadata.

A NSSDA accuracy assessment includes seven steps, as described in this excerpt from the Minnesota IRM Standard 19:

1. Determine if the test involves **horizontal accuracy**, **vertical accuracy** or both.
2. Select a set of **test points** from the data set being evaluated.
3. Select an **independent data set** of higher accuracy that corresponds to the data set being tested.
4. Collect **measurements** from identical points from each of those two sources.
5. Calculate a positional accuracy **statistic** using either the horizontal or vertical accuracy statistic worksheet.
6. Prepare an accuracy statement in a standardized **report** form.
7. Include that report in a comprehensive description of the data set called **metadata**.

The steps can be applied to derive either local accuracy, which compares features to other nearby features, or network accuracy, which compares features to a common vertical or horizontal datum. Local accuracy is generally higher, especially for elevations where local features can be compared by laser level much more readily than a comparison to geodetic monuments which may be miles away. Network accuracy, however, is much more useful for GIS data, as it allows users to more readily compare datasets and determine data fitness using state standard spatial reference systems.

As noted in the NSSDA standard, individual datasets may be aggregated for accuracy testing, particularly those datasets with very few features per feature class. Data may be submitted with higher accuracies (lower RMSE) than stated in the requirements, but feature classes with lower accuracies (higher RMSE) will not be accepted. For a more detailed description of accuracy assessment steps, calculation worksheets, and ways to comply with the state and federal regulations, see the original NSSDA standard and LMIC's helpful Positional Accuracy Handbook (URLs are included in the Reference section).

2.2 Topographic feature accuracy

Topographic features are used to characterize the surface elevation at either selected, discrete points or in isometric (equal-elevation) contours. Since the purpose of topographic features is to record highly accurate elevations, horizontal positional accuracy needs not be as rigorous. All topographic features require both horizontal and vertical accuracy assessments, and vertical elevations must be reported as orthometric heights in

feet (International Feet). The lineage metadata sections should be utilized to give detailed information on any existing data sources used to derive contour or spot elevation data and any processing done to create contoured surfaces.

Low XY, High Z

Contours must be created so that horizontal positional accuracies meet or exceed a one meter accuracy threshold in both local and network accuracies, and vertical accuracies meet or exceed 30 cm (~12 inches) in local and network accuracy. Contours will be created in two foot intervals and contour indices at 10 foot intervals, unless otherwise indicated in the Work Order.

- Contour
- Contour Index

Average XY, High Z

Spot elevations must have 15 cm (approximately six inches) horizontal and 15 cm vertical accuracies according to both local and network accuracies.

- Spot Elevation

2.3 Property boundary feature accuracy

A large part of the reliability of property boundary features depends on the completeness and clarity among the various property records, titles, deeds, and easements used to legally describe a property and confirm property line placement. Uncertainty resulting from ambiguous or conflicting documents, sparse monuments, and boundary line discrepancies are often beyond the surveyor's control and difficult to quantify; however, the surveyor is responsible for minimizing such uncertainties and delivering a "reasonable and prudent" professional opinion on the legal descriptions and locations of all properties.

Since the locations of property boundary features are derived from legal documents (based upon a surveyor's professional opinion) rather than observable real-world features, the positional accuracy of property features has a slightly different meaning and reporting procedure than site or topographic features. The positional accuracy of property features in a property boundary survey measures the accuracy to which a surveyor can locate the feature in the field; it does not include any measure of positional uncertainties due to legal interpretation. The surveyor is solely responsible for selecting the appropriate equipment and procedures necessary to obtain the stated property boundary feature accuracies.

As with all accuracy assessments, positional accuracies must be reported to the 95 percent confidence interval in the ground distance units matching the spatial reference standard (Chapter III, Section 2.0 Spatial reference system) and explained in detail in each feature's metadata. The completeness and lineage metadata sections will be utilized to give a detailed description of any legal documents, surveyor choices or opinions, and sources of uncertainty in the surveyor's final determination of property feature location. Local and network accuracies should be reported within each horizontal and vertical accuracy assessment.

Average XY, No Z

Property boundary features not located on MPCA-owned property should be collected to meet or exceed a horizontal accuracy of 15 cm (approx. six inches) or better in **both local and network accuracies.** Features outside the MPCA's property have less stringent requirements for horizontal positional accuracies, but accuracies may be increased to the "High XY, No Z" level on a site-by-site basis, if a need is indicated in the Work Order. If individual features or feature class positional accuracies are calculated to a higher level than required (for example, if the LCA Boundary is identical to the MPCA Property, the MPCA Property feature and accuracy can be used to create the LCA Boundary features). The metadata and attributes should be utilized to clearly and explicitly mark those features with higher accuracies.

MPCA Easements may be created directly from legal descriptions recorded in easement documents. If the resulting horizontal accuracies are better than 30 cm, no field survey or GPS data collection is necessary.

- LCA Boundary
- MPCA Easement
- Parcel (outside MPCA Property)
- Qualified Facility

High XY, No Z

For property boundary features requiring high horizontal accuracy, the allowable relative positional accuracy is 20 mm (0.07 ft), as described in the Accuracy Standards for American Land Title Association/American

Congress on Surveying and Mapping (ALTA/ASCM) Land Title Surveys (ALTA/ACSM Land Title Survey Standards, 2005). All property boundary features within areas owned by the MPCA should be collected to adhere to this high level of accuracy.

- Buffer Parcel
- Land Management Area
- Parcel (within MPCA Property)
- Private Easement
- Property Marker
- MPCA Property

High XY, High Z

Monuments should be established to meet or exceed a horizontal accuracy of 30 cm (~12 inches) or better in **both local and network accuracies** and a vertical accuracy of three millimeters (~ 0.01 foot) **in local accuracy only**. For existing geodetic control monuments, the NGS order/class accuracy grade should be pulled from NGS monument datasheets and reported alongside the calculated local and network accuracies. For set monuments, NGS order/class descriptions may also be reported, but will not be accepted as a substitute for positional accuracies in ground units.

- Geodetic Control Monument

2.4 Site feature accuracy

With the exception of the high vertical accuracy requirements of the "Average XY, High Z" points, all site features could be collected using GPS. GPS cannot yet collect elevation within the sub-centimeter accuracy required for hydrogeological analysis.

No Accuracy Assessment (Created by MPCA staff)

These features are dynamic by nature, and are **not subject to the accuracy assessment requirements** of other site features. Groundwater plumes are currently created by kriging from discrete well contamination concentrations, and areas of concern are determined by interpolating seasonal plume patterns and assessing risk.

- Groundwater Area of Concern
- Groundwater Plume
- Methane Area of Concern

Other features with Estimated XY values are created from existing parcel data, and **do not require an accuracy assessment**. The positional accuracy of these features is assumed to be the same as the parcel data they were created from.

- CLP Zoning
- LGU Zoning
- Well Restriction Area

These features **are not subject to the accuracy assessment requirements** of other site features. Features are temporal, usually created by MPCA inspectors by GPS in the field, and may or may not be stored for historical record keeping purposes. These features are assumed to have **two-five meter horizontal positional accuracy**.

- Alarm
- Erosion
- Fissure
- Illegal Disposal
- Invasive Weed
- Pothole
- Property Damage
- Settlement
- Signage
- Site Condition
- Storm Water Ponding
- Vegetation Damage

Low XY, No Z

Site feature locations must be recorded, but due to gradual feature boundaries (wetlands, lakes, wooded areas) or dynamic boundaries known to change under disparate site conditions (ponds, streams, and basins with varying water levels), some features are allowed a wider range of acceptable accuracy values.

Other site features simply do not require high accuracies to meet the CLP's needs. Site features such as trees, lakes, and wooded areas may be digitized directly from a recent aerial orthophoto. Trails, railroads, communication towers, hydrants, road centerlines, etc, may be obtained from outside data sources and need not be collected in the field. Some non-remediation related underground features, including buried cables, utility pipelines, sewers, and features located several meters off the ground (such as power lines) also require lower accuracies and may be readily obtained or purchased from local government units or utility companies.

Low XY accuracy site features should be accurate to within two meters of the feature's horizontal location in network accuracy. When data is available from outside sources, the CLP may grant an exception to the required accuracies on a feature class-by-feature class basis. (Note: Feature class accuracy must still be reported in each feature class's metadata, regardless of the data's source.)

- Berm
- Bridge
- Buried Cable
- Buried Power
- Communication Tower
- Constructed Wetland
- Gas/Oil Line
- Hydrant
- Infiltration Basin
- Lake
- Overhead Power Line
- Power Pole
- Quarry
- Railroad
- Road
- Sedimentation Pond
- Stream
- Sinkhole
- Telephone Line
- Telephone Terminal
- Trail
- Treatment Pond
- Tree
- Waste Processing Facility
- Wetland
- Wooded Area

Average XY, No Z

Horizontal positional accuracy for the following site features is not to exceed 15 cm (approx. six inches) in both local and network accuracy.

- Building
- Cascade Aerator
- Cleanout
- Concrete Pad
- Condensate Line
- Condensate Sample Point
- Condensate Tank
- Culvert
- Electrical Panel
- Electric Meter
- Fence
- Fence Gate
- Force Main
- Force Main Outlet
- Gas Engine
- Gas Flare
- Geoprobe (Gas or Soil)
- Horizontal Vent
- Landfill Gas line
- Leachate Line
- Leachate Sample Point
- Leachate Tank
- Riprap
- Sanitary Sewer
- Slurry Wall
- Splitter Tank
- Storm Sewer
- Storm Water Conveyance
- Tank
- Valve
- Waste Footprint
- Water Main

Average XY, Average Z

Other site features require both horizontal and vertical positional accuracy to within 15 cm (approx. six inches) in both local and network accuracy.

- Gas Extraction Well
- Gas Passive Vent
- Gas Probe
- Geoprobe - Water
- Lift Station
- Manhole
- Pond Outlet
- Toe Drain Outlet
- Water Level Control
- Water Supply Well

Average XY, High Z

Select site features require extremely high vertical positional accuracies for precise hydrogeologic modeling. Though the horizontal positional accuracy may be as large as 15 cm local and network accuracy, the vertical positional accuracy must be within three mm (1/100 ft) in local accuracy only. Network accuracy for the vertical measurements must be reported in the assessment, though no required accuracy level has been set.

- Groundwater Extraction Well
- Invert
- Monitoring Well
- Surface Water Elevation
- Surface Water Monitoring Station

3.0 Positional data collection methods

Unless specified below, specific methods accompanying a surveyor's chosen data collection equipment and procedures will be at the discretion of the Surveyor or Contractor, so long as the required accuracy for a feature is achieved.

3.1 Required collection methodologies

Gas probe and monitoring well elevation sampling locations

When surveying monitoring wells and gas probes for elevation (Z), the surveyor must survey the north side of the inner casing when the well has no dedicated pump. This point must be permanently marked with a scribe or other permanent marking device. If there is a dedicated Grundfos pump, unscrew the discharge tubing and survey the access hole in the well cap. For any other pump system, pull out the discharge tubing and measure elevation from the hole in the cap. The picture on the right shows a Grundfos dedicated system with the access hole on the left. Horizontal locations should always be determined from the center of the site feature.

Tank elevation sampling locations

For condensate, leachate, or utility tanks with attached extraction access points, the tank's elevation will be measured from the opening of the access point. For tanks with remote pump out access points, the tanks' sampling point location will be surveyed. Horizontal point location will be measured from the center of the tank.

Others

All other features will be collected so as to best represent that feature's location. For example, road and trail data will be collected at the road or trail centerline, gas passive vents will be collected at the center of the pipe, property boundaries will be collected on the parcel boundary line, etc.

3.2 Feature class geometry

Some feature classes may require different collection techniques, depending on the data's typical mapping scale and purpose. For example, at small map scales (which show large areas with limited detail), buildings may appear to be points and streams or roads may appear to be lines; at large scales (which show small areas in greater detail), buildings can be visualized better by polygons and streams and roads can be described in greater detail by polygons.

The purpose of the data also influences the geometry of each feature class, independent of scale. Several features at Closed Landfill Program sites – including the Waste Footprint, MPCA property boundary, parcel boundaries, and others – could easily be collected as line features, but the need for surface area measurements makes polygon geometry a better fit. Likewise, we could ask for streams and rivers to be collected as highly detailed polygons rather than one centralized line, but that level of detail is unnecessary when approximate stream areas can be estimated from aerial photos.

To eliminate confusion, a comprehensive list of each feature class and its geometry type is included below. Features designated as "PointZ" or "LineZ" support 3D elevation data within the data type, much like the inherent XY locations of point features.

Points

- Alarm
- Cleanout
- Communication Tower
- Condensate Sample Point
- Condensate Tank
- Electrical Panel
- Electric Meter
- Force Main Outlet
- Gas Engine
- Gas Flare
- Geoprobe – Gas
- Geoprobe – Soil
- Hydrant
- Illegal Disposal
- Leachate Sample Point
- Leachate Tank
- Pothole
- Power Pole
- Property Damage
- Property Marker
- Signage
- Sinkhole
- Site Condition
- Splitter Tank
- Tank
- Telephone Terminal
- Tree
- Valve
- Vegetation Damage

PointZ

- Gas Extraction Well
- Gas Passive Vent
- Gas Probe
- Geodetic Control Monument
- Geoprobe - Water
- GW Extraction Well
- Invert
- Lift Station
- Manhole
- Monitoring Well
- Pond Outlet
- Spot Elevation
- SW Elevation
- SW Monitoring Station
- Toe Drain Outlet
- Water Level Control
- Water Supply Well

Lines

- Berm
- Bridge
- Buried Cable
- Buried Power
- Cascade Aerator
- Condensate Line
- Culvert
- Erosion
- Fence
- Fence Gate
- Fissure
- Force Main
- Gas/Oil Line
- Horizontal Vent
- Landfill Gas Line
- Leachate Line
- Overhead Power Line
- Railroad
- Road
- Sanitary Sewer
- Slurry Wall
- Storm Sewer
- Storm Water Conveyance
- Stream
- Telephone Line
- Trail
- Water Main

LineZ

- Contour
- Contour Index

Polygons

- Buffer Parcel
- Building
- CLP Zoning
- Concrete Pad
- Constructed Wetland
- Groundwater Area of Concern
- Groundwater Plume
- Infiltration Basin
- Invasive Weed
- Lake
- Land Management Area
- Landfill Cleanup Agreement (LCA) Boundary
- LGU Zoning
- Methane Area of Concern
- MPCA Easement
- MPCA Property
- Parcel
- Private Easement
- Qualified Facility
- Quarry
- Riprap
- Sedimentation Pond
- Settlement
- Storm Water Ponding
- Treatment Pond
- Waste Footprint
- Waste Processing Facility
- Well Restriction Area
- Wetland
- Wooded Area

3.3 Obtaining GIS data

Some site features may be impossible to survey directly in the field due to their location far above or below ground. If buried features such as utility lines, buried pipes, and underground tanks are in place prior to a survey and cannot be directly observed or surveyed, their placement may be obtained either from the Closed Landfill Program's previous As-Built survey renderings or CAD data, or, in the case of buried utilities, by purchasing the necessary dataset from the utility company or local government that maintains it. CLP engineering staff can provide digital CAD data and/or site As-Built drawings for deriving underground features upon request.

Other site features may be easily obtained from existing GIS datasets created and maintained by city or county governments, the Department of Natural Resources (DNR), or other public and private sources. Railroad, road, and trail centerlines, for example, should be obtained or purchased rather than surveyed if the data exists. Non-public site features, such as trails and access roads within the fenced Closed Landfill facility, will rarely be included in published datasets, and will probably need to be collected by GPS or other survey methods.

Data purchases must be confirmed with the project manager prior to purchase, and should meet the feature accuracy requirements whenever possible. Any original metadata, source information, and license agreements for purchased data must be included with the final deliverables. Any purchased or obtained data must be

identified individually in each feature's attribute table (in the data source and accuracy fields) as well as the appropriate metadata sections of each feature class.

4.0 Attribute data collection

The surveyor or Contractor should be aware that attribute data for several fields in the attribute table will need to be collected on-site. Plan accordingly to collect attribute data and site feature locations simultaneously. The CLP is not responsible for extra time or expense due to poor work planning, lack of communication between the CAD/GIS staff and the Surveyor, or attribute input not adhering to the domain requirements. Attribute errors and omissions must be corrected before final data submission.

Some attributes will not be collected in the field, and must be obtained from existing ancillary GIS or provided by CLP staff. See Chapter IV, Section 3.1 Ancillary attribute data sources and Section 3.2 MPCA provided attributes for more detailed information.

III. Database Format and Content Requirements

1.0 GIS/CAD file creation

1.1 GIS format requirements

GIS files, unless specifically noted, **must** be submitted using ESRI's personal geodatabase file format (ArcGIS version 9.2 or later). Each Closed Landfill Program site will have its own personal geodatabase, which will be divided into feature datasets based on the features' common themes (see Section 1.2 Personal geodatabase structure). Feature classes with point, pointZ, line, lineZ, or polygon geometries (as listed in Chapter II, Section 3.2 Feature class geometry) will be contained within the thematic feature datasets.

Exceptions: Contour data may be submitted in either ESRI shapefile format or ESRI personal geodatabase format. Spot elevation data may be submitted in ESRI shapefile format, ESRI personal geodatabase feature class format, or Excel spreadsheet format if each feature has a unique alphanumeric identifier to match the X,Y, and elevation (Z) values. Shapefiles **may** be permitted for other simple data requests, but written approval **must** be obtained from the MPCA **prior** to Work Order.

Why choose a proprietary geodatabase over the Open Geospatial Consortium-compliant shapefile format?

- The personal geodatabase format facilitates data sharing and integration between GIS and an existing Closed Landfill Program Oracle relational database management system (RDBMS).
- Shapefiles do not use rDBMS schema, nor do they provide any means of organizing data or showing relationships between datasets (each file stands alone).
- Shapefiles are slow and easily corruptible; geodatabases provide better performance.
- Shapefiles do not support topology (for geometry QAQC), domains, or require spatial reference systems.

By using feature datasets within the geodatabase, data can be organized thematically to show data relationships; for example, parcel corners and parcel lines could be added to a cadastral themed feature dataset. Feature datasets enable the use of topology, common (and mandatory) spatial reference systems, terrains, and control permission settings. They also allow the creation and enforcement of data integrity rules and topological relationships; for example, no gaps exist between parcel features, parcels must not overlap, road centerline segments must connect at their endpoints.

Annotation

Any annotation created for map products will be stored within the geodatabase in the "Annotation" feature dataset. The annotation need not be feature-linked. Annotation files for each feature class must be named according to the feature classes' naming convention, plus the "Anno" suffix.

Naming Conventions

Naming conventions for each site's personal geodatabase, feature datasets, and feature classes are described in detail in Chapter V, Section 1.3 Spatial Dataset Naming Conventions. The final personal geodatabase structure should look similar to the diagram on the following page.

Subtypes and Domains

Some feature classes require subtypes, and all use domains. In order to set up subtypes in ArcGIS 9.2 and 9.3, an ArcEditor or ArcInfo license is required. Domain creation is supported in ArcGIS 9.2 and 9.3 at all license levels. Subtypes and domains are discussed in detail in Chapter IV, Section 3.0 Attribute Content.

1.2 Personal Geodatabase Structure

The CLP features have been split into feature categories based on the features' common theme. These themes form the backbone of the personal geodatabase structure by organizing the personal geodatabase into smaller, more manageable segments and enforcing spatial reference requirements for each feature class within the datasets. The feature dataset organization also allow for faster, more intuitive data searching and retrieval for MPCA staff, more informed GIS layer utilization.

Feature Dataset Theme:	Theme Description:
Annotation	Annotation created from any category's feature classes typically utilized for labeling features in map products.
Elevation	Topographic features collected primarily for elevation measurements.
General Landfill	Common landfill features not falling within the scope of the other categories.
Groundwater Remediation	Features used to monitor or remediate groundwater, plus features connected to the groundwater remediation system.
Inspection	Features pertaining to the current state of the landfill and features created by MPCA staff during landfill inspections. Inspection features are usually temporary, but may be kept for historical recordkeeping.
Land Management	Features are used to track zoning, land use, and concern areas at and around a landfill. These features are primarily used for land use planning and landfill risk management.
Landfill Gas Remediation	Features used to monitor, collect, and extract landfill gas, plus features connected to the landfill gas remediation system.
Leachate Remediation	Features used to monitor, collect, and extract leachate, plus features connected to the leachate remediation system.
Surface Water	Natural and man-made surface water features, including any monitoring or remediation features located above ground and any features used to collect, divert, or remove surface water.
Survey	Features traditionally derived through high accuracy survey methods and relating to property boundary demarcation.
Utility	Public and private utility infrastructure and utility access points, including features from storm sewer, water, electric, telecommunication, transportation, and public safety utilities.

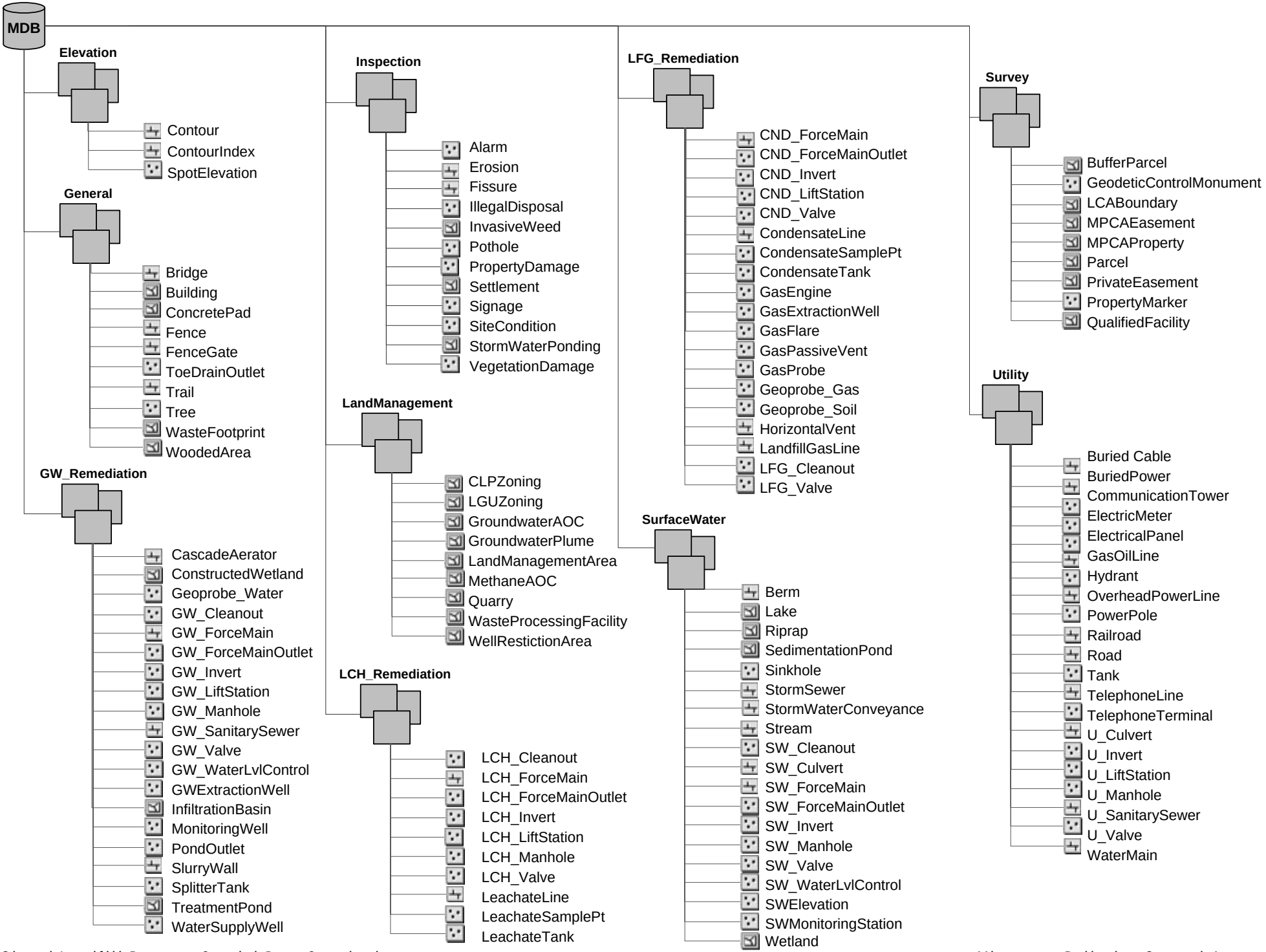
Each themed category corresponds to a single feature dataset in each site's personal geodatabase and contains the feature classes associated within that theme. Feature class placement within a themed feature dataset is constant and does not change between sites, though some sites may not require all eleven feature datasets and most surveys will only collect a subset of the possible feature classes at any given site.

Note: The Inspection feature dataset and all of its associated feature classes, plus many of the Land Management dataset feature classes are intended for internal MPCA use only. These feature classes will not be surveyed, purchased, or otherwise obtained by a Contractor.

Personal Geodatabase Schema Template

The feature classes included within each feature dataset are shown in the personal geodatabase schema diagram on the next page. A template of the geodatabase schema will be provided to each Contractor to ensure compliance with the CLP's GIS formatting standards. The template includes all ten feature datasets within the personal geodatabase, all feature classes within each feature dataset, all standardized fields within each feature class, and all domains used within the geodatabase. The correct spatial reference systems have been included in the template file, as well.

A free scripts is available from the ESRI online support that greatly streamlines geodatabase schema editing, QAQC, and the schema documenting process. The ArcGIS Diagrammer tool allows you to add domains and domain values, change the order of domain values (which is notoriously difficult in ArcCatalog), add feature classes and databases, add fields, and perform other database schema creation operations. ArcGIS Diagrammer is very easy to use and allows you to create and publish database schema in XML format for use in ArcCatalog as well alter geodatabases by exporting schemas from existing geodatabases.


MDB
Elevation
Contour
ContourIndex
SpotElevation
General
Bridge
Building
ConcretePad
Fence
FenceGate
ToeDrainOutlet
Trail
Tree
WasteFootprint
WoodedArea
GW_Remediation
CascadeAerator
ConstructedWetland
Geoprobe_Water
GW_Cleanout
GW_ForceMain
GW_ForceMainOutlet
GW_Invert
GW_LiftStation
GW_Manhole
GW_SanitarySewer
GW_Valve
GW_WaterLvlControl
GWExtractionWell
InfiltrationBasin
MonitoringWell
PondOutlet
SlurryWall
SplitterTank
TreatmentPond
WaterSupplyWell
Inspection
Alarm
Erosion
Fissure
IllegalDisposal
InvasiveWeed
Pothole
PropertyDamage
Settlement
Signage
SiteCondition
StormWaterPonding
VegetationDamage
LandManagement
CLPZoning
LGUZoning
GroundwaterAOC
GroundwaterPlume
LandManagementArea
MethaneAOC
Quarry
WasteProcessingFacility
WellRestictionArea
LCH_Remediation
LCH_Cleanout
LCH_ForceMain
LCH_ForceMainOutlet
LCH_Invert
LCH_LiftStation
LCH_Manhole
LCH_Valve
LeachateLine
LeachateSamplePt
LeachateTank
LFG_Remediation
CND_ForceMain
CND_ForceMainOutlet
CND_Invert
CND_LiftStation
CND_Valve
CondensateLine
CondensateSamplePt
CondensateTank
GasEngine
GasExtractionWell
GasFlare
GasPassiveVent
GasProbe
Geoprobe_Gas
Geoprobe_Soil
HorizontalVent
LandfillGasLine
LFG_Cleanout
LFG_Valve
SurfaceWater
Berm
Lake
Riprap
SedimentationPond
Sinkhole
StormSewer
StormWaterConveyance
Stream
SW_Cleanout
SW_Culvert
SW_ForceMain
SW_ForceMainOutlet
SW_Invert
SW_Manhole
SW_Valve
SW_WaterLvlControl
SWElevation
SWMonitoringStation
Wetland
Survey
BufferParcel
GeodeticControlMonument
LCABoundary
MPCAEasement
MPCAProperty
Parcel
PrivateEasement
PropertyMarker
QualifiedFacility
Utility
Buried Cable
BuriedPower
CommunicationTower
ElectricMeter
ElectricalPanel
GasOilLine
Hydrant
OverheadPowerLine
PowerPole
Railroad
Road
Tank
TelephoneLine
TelephoneTerminal
U_Culvert
U_Invert
U_LiftStation
U_Manhole
U_SanitarySewer
U_Valve
WaterMain

Feature Dataset Themes

The following subsections list the CLP features associated with each feature dataset. Definitions for each of the listed site features can be found in Appendix I.

Elevation Features

- Contour
- Contour Index
- Spot Elevation

General Landfill Features

- Bridge
- Building
- Concrete Pad
- Fence
- Fence Gate
- Toe Drain Outlet
- Trail
- Tree
- Waste Footprint
- Wooded Area

Groundwater Remediation Features

- Cascade Aerator
- Cleanout
- Constructed Wetland
- Force Main
- Force Main Outlet
- Geoprobe – Water
- Groundwater Extraction Well
- Infiltration Basin
- Invert
- Lift Station
- Manhole
- Monitoring Well
- Pond Outlet
- Sanitary Sewer
- Slurry Wall
- Splitter Tank
- Treatment Pond
- Valve
- Water Level Control
- Water Supply Well

Inspection Features

- Alarm
- Erosion
- Fissure
- Illegal Disposal
- Invasive Weed
- Pothole
- Property Damage
- Settlement
- Signage
- Site Condition
- Storm Water Ponding
- Vegetation Damage

Land Management Features

- CLP Zoning
- Groundwater Area of Concern
- Groundwater Plume
- Land Management Area
- Local Government Unit Zoning
- Methane Area of Concern
- Quarry
- Waste Processing Facility
- Well Restriction Area

Landfill Gas Remediation Features

- Cleanout
- Condensate Line
- Condensate Sample Point
- Condensate Tank
- Force Main
- Force Main Outlet
- Gas Engine
- Gas Extraction Well
- Gas Flare
- Gas Passive Vent
- Gas Probe
- Geoprobe – Gas
- Geoprobe – Soil
- Horizontal Vent
- Invert
- Landfill Gas Line
- Lift Station
- Valve

Leachate Remediation Features

- Cleanout
- Force Main
- Leachate Sample Point
- Leachate Tank

- Force Main Outlet
- Invert
- Leachate Line
- Lift Station
- Manhole
- Valve

Surface Water Features

- Berm
- Cleanout
- Culvert
- Force Main
- Force Main Outlet
- Invert
- Lake
- Manhole
- Riprap
- Sedimentation Pond
- Sinkhole
- Storm Sewer
- Storm Water Conveyance
- Stream
- Surface Water Elevation
- Surface Water Monitoring Station
- Valve
- Water Level Control
- Wetland

Survey Features

- Buffer Parcel
- Geodetic Control Monument
- Landfill Cleanup Agreement (LCA) Boundary
- MPCA Easement
- MPCA Property
- Parcel
- Private Easement
- Property Marker
- Qualified Facility

Utility Features

- Buried Cable
- Buried Power
- Communication Tower
- Culvert
- Electrical Panel
- Electric Meter
- Gas/Oil Line
- Hydrant
- Invert
- Lift Station
- Manhole
- Overhead Power Line
- Power Pole
- Railroad
- Road
- Sanitary Sewer
- Tank
- Telephone Terminal
- Valve
- Water Main

1.3 CAD format requirements

For spatial reference system requirements, see Chapter III, Section 2.1 Spatial reference system format requirements.

For deliverable requirements and accepted file formats, see Chapter V, Section 1.2 CAD deliverables.

For a list of feature classes and geometry types that may be required for each CAD file, see Chapter II, Section 3.2 Feature class geometry.

More information forthcoming.

1.4 Conversion Options between CAD and GIS

Spatial data must be submitted in GIS format unless specifically noted in the Work Order. Files may be created in CAD format and then converted to GIS, or vice versa. However, due to the complexity of the GIS requirements and the difficulties in creating CAD symbols to match the CLP's symbology, we highly recommend that GIS be utilized as the primary data and map creation system. The CAD requirements set forth in this standard are very limited, and the CAD products for the property boundary survey and site feature survey are secondary to the GIS files in both either usefulness within the Closed Landfill Program and their

attribute content. In the future, it is possible that the CAD format submittals may be eliminated entirely for these two survey types.

The conversion options provided below are meant to be informational only; the MPCA is not responsible for increased costs or conversion problems encountered when using the following conversion information.

GIS to CAD

GIS files created in ESRI's ArcGIS 9.2 or 9.3 can be converted directly into CAD format.

ArcGIS 9.3 includes an "Export to CAD" tool that is very fast and easy to use, but requires an ArcInfo license. CAD data created this way uses layer names that automatically conform to the CAD and GIS naming conventions (IF the original GIS file also conformed to the standards), and the conversion preserves the original feature attributes from the GIS file in each CAD layer's table.

This is currently the fastest, most reliable method of GIS to CAD conversion; any problems encountered on the CAD side when using data converted from GIS files should be sent to the Closed Landfill Program.

CAD to GIS

ESRI's ArcGIS does contain tools to convert CAD datasets and drawings to personal geodatabases. However, the CAD is very limited in attribute conversion capabilities, which are the most extensive and specific requirement for the CLP's GIS files. Without special preparation in AutoCAD and/or an ArcInfo license, any attributes entered in CAD title blocks would need to be manually re-entered in the GIS attribute tables.

ESRI has written technical papers to facilitate CAD to GIS conversion that may be helpful:

> *ESRI. 2004. How To: Convert CAD annotation to a personal geodatabase with appropriate font size. Technical Article 27242, revised 2006. URL http://support.esri.com/.*
>
> ESRI. 2008. Mapping Specification for DWG/DXF (MSD). Revised June 2008, URL http://webhelp.esri.com/arcgisdesktop/9.3/pdf/Mapping_Specification_for_DWG.pdf.

Several freeware options are readily available to convert CAD .dxf or .dwg files to ESRI shapefiles, but would require additional conversion to personal geodatabase format and careful quality control to ensure feature location shifts and coordinate decimal rounding do not degrade the data quality.

AutoCAD Map 3D may also be a viable option for CAD to GIS transfers.

2.0 Spatial reference system

The reference system of spatially aligned data is essential in assuring that real-world locations are modeled correctly in a digital environment. A spatial reference system defines a horizontal or vertical location relative to the Earth's surface and can be identified as either geographic or projected coordinate systems. Geographic coordinate systems use longitude and latitude to identify real-world features on a spheroid (approximation of Earth's surface) relative to the Earth's center. Projected or Cartesian coordinate systems map small areas as flat, gridded surfaces and identify features by their X (West-East) and Y (North-South) distances from a set origin. Projections should be selected according to the data's intended use, as each projection varies in its ability to maintain correct shapes, area sizes, directions, and distances over an area.

Without spatial reference data, data cannot be accurately mapped against aerial photos or measured against other landscape features. Data mapped without explicit spatial reference information may not represent the true locations of their real-world counterparts and may be easily misinterpreted or misused. Incorrectly assuming the spatial reference of a dataset can introduce significant positional errors ranging from inches between similar projections to hundreds of meters among incorrect datum or spheroids.

2.1 Spatial reference system format requirements

Each GIS or CAD file submitted must have its coordinate system defined within the data file regardless of data format. For feature classes and feature datasets within a personal geodatabase, the spatial reference data is stored internally as a part of the geodatabase. For shapefiles, a separate projection file with extension

.prj is created when the spatial reference is set. For raster data, the coordinate system must be included either as a header within the file or as a world file, depending on the file format.

The spatial reference must also be described in each data file's metadata. Necessary spatial reference information includes the projected coordinate system, datum, unit of measurement, and spheroid or ellipsoid.

In an effort to support data exchange, the State of Minnesota has mandated the use of a specific spatial reference system for all inter-state data transfers (MN State Data Transfer Standard, IRM Standard 17, version 1). The Closed Landfill Program has chosen to adhere to this standard to facilitate rapid data transfers, reduce internal data processing time, and prevent the unnecessary introduction of locational errors.

GIS format standard

Horizontal Coordinate System

Projected coordinate system: Universal Transverse Mercator (UTM)
Datum: Revised North American Datum of 1983, NAD83
Zone: Zone 15 (extended)
Units: Meters
Ellipsoid: GRS1980

Projection Parameters (for use when manually setting projection parameters)
Projection name: Transverse Mercator
Scale factor: 0.9996
Longitude of central meridian: 93 00 00 degrees
Latitude of origin: 00 00 00 degrees
False easting (meters): 500,000
False northing (meters): 0
Units: Meters
Ellipsoid: GRS1980
Datum: NAD83

Vertical Coordinate System (PointZ and LineZ features only)

Vertical Datum: North American Vertical Datum 1988 (NAVD88)
Units: International (S.I.) Feet **note, this is **not** the native format of this coordinate system and will need manually altered to meet the CLP Standard*
Vertical Datum: NAVD 1988

CAD format standard

Horizontal Coordinate System

Projection: Lambert Conformal Conic
Geographic Coordinate System: Local County's HARN Adjusted Coordinate system
Datum: North American Datum of 1983, High Area Reference Network adjusted by county (NAD83_HARN)
Units: U.S. Survey Foot
Ellipsoid: GRS1980 Adjusted by county

Vertical Coordinate System

Vertical Datum: North American Vertical Datum 1988 (NAVD88)
Units: U.S. Survey Foot **note, this is **not** the native format of this coordinate system and will need manually altered to meet the CLP Standard*
Vertical Datum: NAVD 1988

3.0 Metadata

3.1 Metadata format requirements

The term "metadata" refers to documentation aimed at describing a dataset. Metadata allows data users to understand how and when the data was collected and processed, how accurate it is, and what attribute table values mean. Ultimately, complete and detailed metadata allows users to gauge the fitness of the dataset for a

given task. Basic metadata for any spatial or non-spatial files would provide information such as dataset title, file type, creation and publishing dates, and publisher information. To be useful, digital GIS & CAD file metadata must provide additional information, including an explanation of the data's purpose, accuracy, completeness, collection methods and lineage, spatial reference, and defines attribute table fields and domain codes.

The Federal Geographic Data Committee (FGDC) developed a set of comprehensive metadata standards in 1993 and updated them to coincide with international ISO 19115 standards in 1998. The State of Minnesota combined and simplified the federal standards within the Content Standard for Digital Geospatial Metadata (CSDGM), Version 2 (FGDC-STD-001-1998) to increase data sharing, improve the quality of metadata content, and ensure metadata completeness within state agencies. The state's standardized metadata format is referred to as the "Minnesota Geographic Metadata Guidelines" (MGMG), and has been adopted by the Minnesota Office of Enterprise Technology as IRM Guideline 17, version 1.2.

All GIS and CAD files must be submitted with **complete** metadata. A separate metadata file is required for each feature class and must be specific to that feature class where applicable (particularly in the Data Quality, Entity and Attribute Information, and Identification Information sections of the MGMG).

Metadata for GIS and CAD files must be submitted as an XML file associated with each feature class and using the same name prefix as the described feature class; text files will not be accepted. A copy of the metadata should also be submitted as a PDF or other static document whenever possible.

Examples of MGMG metadata can be viewed at the DNR's Data Deli site. For a particularly good example of complete and detailed metadata, see http://deli.dnr.state.mn.us/metadata.html?id=L260000162101 and click on "full."

3.2 Metadata content requirements

MGMG metadata is organized into seven sections. The **minimum mandatory** elements within each of these seven categories are listed as bullet points below, and detailed explanations of the components of MGMG metadata and their relationship to CSDGM elements can be found on LMIC's Web site at: www.gis.state.mn.us/stds/metadata.htm.

MGMG metadata requirements

Identification information

- Originator
- Title
- Abstract
- Purpose
- Contact information
- Bounding coordinates
- Time period of content date
- Currentness reference (include field collection dates)
- Maintenance/update frequency
- Access constraints
- Use constraints

Data quality information

- Attribute accuracy
- Logical consistency
- Completeness
- Horizontal positional accuracy
- Vertical positional accuracy
- Lineage

Spatial reference information

- UTM zone number and direction
- Coordinate offsets/adjustments
- Horizontal coordinate scheme
- Ellipsoid
- Horizontal datum
- Horizontal units
- Altitude (vertical) datum
- Altitude (vertical) units
- Depth (invert) datum
- Depth (invert) units

Entity and attribute information

- Entity and attribute overview
- Entity and attribute detailed citation

Spatial data organization information

- Spatial object type
- Native dataset environment

Distribution information

- Publisher
- Publication date
- Distributor organization
- Distributor contact information
- Distribution liability

Metadata reference information

- Metadata date
- Metadata contact person
- Metadata contact organization
- Metadata standard name and version

An example of a complete "Data Quality" metadata section would include detailed explanations for each collection method, especially when features with multiple collection methods and accuracies are combined into a single file. Sufficiently detailed metadata for feature collection methods and accuracy will include the following: the original coordinate system and accuracy level for converted coordinates; the GPS unit type, unit accuracy, and feature accuracy for surveyed and GPS coordinates; local and network accuracy for surveyed features; the number of satellites, PDOP, and differential correction information for GPS and surveyed coordinates, when feasible; and the collection method and accuracy of the original data sources for digitized and interpreted coordinates.

LMIC created a style sheet to create and edit MGMG metadata in ArcCatalog. The MGMG Metadata Editor tool can be downloaded from www.lmic.state.mn.us/chouse/arccatalog.html#install. The MGMG Metadata Editor must be set as the default metadata editor under | ArcCatalog | Tools | Options | Metadata | to open correctly.

Additional resources available from LMIC also include helpful tips for creating good metadata ("Top Ten Ways to Create Metadata That's Just Ducky," www.lmic.state.mn.us/pdf/topten.pdf) and optional ways to divide the task of metadata creation (www.lmic.state.mn.us/pdf/MGMG_expertise.pdf).

IV. Attribute Formatting and Content Requirements

1.0 Attribute table

An attribute table consists of multiple fields (columns) of spatial and non-spatial data and rows that correspond to single or multipart features. The attributes shown in the attribute template include all possible fields. Some attributes are required for all feature classes, others only for select features. Also, subtypes, domains, and input options may change for a field depending on the feature class.

1.1 Attribute Table Format

Though some fields are common to every feature class, many other are included only in specific feature classes or feature classes with specific geometry types. The following table explains the format requirements and applicable feature classes for each field. The leftmost column shows the field names as they appear in an attribute table and the applicable features column lists each feature class or type of feature class containing the field. The remaining columns provide a detailed formatting template for each field, including its precision and scale (numeric) or length (date and text), any associated domain names, the field's data dictionary definition, domain and attribute examples, and text case and naming convention requirements.

*NOTE: Precision and scale need not be set when creating fields within geodatabase feature classes, and any values entered into these optional fields will be reset to null automatically when the field is created. The precision and scale values shown here indicate the number of expected digits and visible decimal places for each numeric field, as set within the field properties window in the attribute table.

Table 1.2 Attribute Table Template

Field Name	Applicable Features	Field Type	Precision & Scale*	Field Length	Domain	Field Definition	Example	Text Case and Conventions
Auto-Generated								
OBJECTID	All	ObjectID					1	
Shape	All	Geometry					Point Z	
Shape_Area	Polygon	Double (Auto)					1235712222.12354	
Shape_Length	Line Line Z Polygon	Double (Auto)					713542.12444	
Site Information								
COMMONFACI	All	Text		50		Common name of Closed Landfill Facility	Washington County Sanitary Landfill	See naming conventions, Chapter V., Section 1.3
COUNTYID	All	Short Integer	2, NA		COUNTYID	Two digit county ID; standard PLS code for each county.	82	
DESC_INT	All	Short Integer	4, NA		DESC_INT_PT DESC_INT_LN DESC_INT_PY	Four-digit integer assigned to each feature class. The first digit of the code shows the geometry type of the feature: points will be numbered 1xxx, lines 2xxx, and polygons 3xxx. The second digit corresponds to the category of the feature and the last two digits identify each unique feature.	1401 (Cleanout - LFG)	
FACILITYID	All	Text		8		The MN Solid Waste Permit Number, Water Pollution Control Permit Number, or a combination of numbers (where facilities are combined) used to uniquely identify the closed landfill.	MNSW001	See naming conventions, Chapter V., Section 1.3
FACILITYAD	All	Text		50		Facility's address	4029 Jamaca Ave	Mixed case, include spaces, abbreviate street type
FACILITYCITY	All	Text		40		Facility's city	Lake Elmo	Mixed Case
FACILITYST	All	Text		2		Facility's state	MN	Uppercase
FACILITYZIP	All	Text		5		Facility's zip code	55042	
FACILITYCO	All	Text		20		Facility's county	Washington	Mixed Case
FIPS_CODE	All	Text		3	FIPS_CODE	A federally standardized three-digit code representing each county.	163 (Washington)	
PLS_RANGE	All	Text		4		Public land survey range number and direction.	R56W	Uppercase
PLS_SEC	All	Text		2		Public land survey section number.	15	
PLS_TOWN	All	Text		5		Public land survey township number.	T168N	Uppercase
TOWNSHIP	All	Text		40		Township name.	Featherstone	Mixed Case
Source Information								
COLL_DATE	All	Date		8			10/10/2006	MM/DD/YYYY; no spaces
COLL_METHOD	All	Text		3	COLL_METHOD	The method used to collect data.	GPS (non-survey grade GPS)	Uppercase letter code
DATA_SOURCE	All	Text		35		Identifies the source (organization, contractor, or agency) used to obtain coordinates. Contractors must identify a feature's creator if they did not survey the data themselves. (E.g., NWI data was created by the DNR, roads data by MNDOT, etc).	DNR	Mixed case for contractor names, uppercase for abbreviations
HORIZ_ACC	All	Short Integer	1, NA		HORIZ_ACC	Feature's horizontal positional accuracy.	5 (2-5 meters)	
VERTICAL_ACC	Point Z Line Z	Short Integer	1, NA		VERTICAL_ACC	Feature's vertical positional accuracy.	1 (3 mm or better)	

Field Name	Applicable Features	Field Type	Precision & Scale*	Field Length	Domain	Field Definition	Example	Text Case and Conventions
Spatial Information (varies by geometry type)								
AREA_ACRES	Polygon	Double	Auto, 2			Area of a polygon converted to acres. (Area sq meters * 0.000247 = acres)	1564897.59	
CASING_ELEV	Monitoring Well GW Extraction Well Water Supply Well	Double	6, 3			Elevation at the top of casing on a sample station in feet.	945.985	
ELEVATION	Point Z Line Z	Double	6, 3			Elevation of a feature above mean sea level, as measured in the vertical coordinate system **NAVD88;** elevations shall include three significant digits.	1100.012	
GROUND_ELEV	Monitoring Well GW Extraction Well Water Supply Well	Double	6, 3			Ground elevation at a sample station in feet.	975.021	
UTMNORTHING	Point Point Z	Double	10, 3			Universal Transverse Mercator Northing coordinate reported to the nearest **thousandth of a meter.**	4984000.563	
UTMEASTING	Point Point Z	Double	9, 3			Universal Transverse Mercator Easting coordinate reported to the nearest **thousandth of a meter.**	487769.752	
Feature Information (varies by feature class)								
BONDSPENT	Buffer Parcel Parcel MPCA Easement Private Easement	Short Integer	1, NA		BOND_DOLLARS	Parcels where Bond money was spent on improvements.	0 (No)	
BUILDING_TYPE	Building	Short Integer	2, NA		BUILDING_TYPE	Building type and primary use.	2 (Blower)	
COMMONSTAT	Monitoring Well Pond Outlet Condensate Sample Point Leachate Sample Point Gas Extraction Well GW Extraction Well Gas Flare Gas Probe Gas Passive Vent Water Supply Well SW Elevation SW Monitoring Station Geoprobe (G, S, W) Treatment Pond Constructed Wetland Splitter Tank Infiltration Basin Sedimentation Basin Invert Lift Station Manhole	Text		25		The name by which a sample station (gas probe, monitoring well, geoprobe, etc) is commonly referred, e.g. MW-6, GP-9.	GP-102A	Uppercase for abbreviated number/letter codes, mixed case for owner names

Field Name	Applicable Features	Field Type	Precision & Scale*	Field Length	Domain	Field Definition	Example	Text Case and Conventions
COWARDIN_CLASS	Wetland	Text		2	COWARDIN_CLASS	Identifies the substate or vegetative life form of wetlands to the Cowardin class level.	US (Unconsolidates Shore)	
COWARDIN_SUBSYS	Wetland	Text		2	COWARDIN_SUBSYS	Identifies water permanence, gradient, velocity, substrate, and flora of wetlands to the Cowardin subsystem level.	L2 (Littoral)	
COWARDIN_SYS	Wetland	Text		1	COWARDIN_SYS	Identifies wetlands to the Cowardin system level.	L (Lacustrine)	
COWARDIN_WREG	Wetland	Text		1	COWARDIN_WREG	Identifies the water regime of wetlands in the Cowardin classification system.	K (Artifically Flooded)	
DAMAGE_TYPE	Property Damage Vegetation Damage	Short Integer	2, NA		VEG_DAMAGE PROP_DAMAGE	Damage to site vegetation or MPCA propery discovered during site inspections.	1 (Animal Burrow)	
DELTAID	Land Management Area	Text		40		Landfill's program interest or site ID as derived from SW Delta.		
ELECTRIC	Fence	Short Integer	1, NA		ELECTRIC	Identifies Electric Fences.	0 (Not Electric)	
FLOW_DIR	Invert	Short Integer	1, NA		FLOW_DIRECTION	Pipe waterflow direction.	1 (Inlet)	
GASDETECTION	Building	Short Integer	1, NA		GASDETECTION	Identifies buildings with methane detection systems.	1 (Gas Detection)	
HASAERATOR	Treatment Pond	Short Integer	1, NA		HASAERATOR	Identifies treatment ponds with aerators.	1 (Yes)	
HASALARM	Monitoring Well GW Extraction Well Gas Flare Leachate Tank Manholes Building Lift Station	Short Integer	1, NA		HASALARM	Presence or absence of alarms on a landfill feature.	0 (No)	
HASTROUT	Stream	Short Integer	1, NA		HASTROUT	Identifies designated trout streams.	0 (No)	
INVERT_DIR	Invert	Text		5		Marks both the vertical location (by number) and the direction (by letter code) of the invert on a pipe within a manhole, lift station, or other structure.	N10	Uppercase, no spaces
INVERT_ELEV	Invert	Double	6, 3			The elevation of the lowest inside point of a pipe either at the entrance or exit of a manhole, catch basin, or culvert recorded to the **nearest thousanth of a foot (0.001 feet);** must use NAVD88.	1000.023	
INVERT_LOC	Invert	Short Integer	1, NA		INVERT_LOC	Identifies inverts measured for pipe ends within manholes or lift stations.	2 (In a Manhole)	
LEASED	Buffer Parcel Parcel	Short Integer	1, NA		LEASED	Identifies parcels the MPCA owns and leases to a third party.	1 (Leased)	
LEASEE	Buffer Parcel Parcel	Text		50		Identifies the third party leasing the parcels (provided by the MPCA).	Fred Smith	Mixed case, include spaces; list using commas if necessary
MEASUREMENT_TYPE	SW Elevation	Short Integer	1, NA		MEASUREMENT_TYPE	SW Elevation measurement type.	3 (Staff Gauge)	
NAME	Stream Road Trail Waste Processing Facility Quarry Railroad Lake Wooded Area Wetland	Text		50		Feature's proper names, e.g., Rum River, Hay Creek, County Road C, Cannon Valley Trail, Northeast Ottertail County Demolition Landfill, Lake Owasso, Lake of the Woods, Soo Line Railroad, Jake Cooke National Forest, etc.	Mississippi River	Mixed case, include spaces

Field Name	Applicable Features	Field Type	Precision & Scale*	Field Length	Domain	Field Definition	Example	Text Case and Conventions
OWNERSHIP	Buffer Parcel Parcel MPCA Easement Private Easement Water Supply Well Buried Power Communication Tower Gas/Oil Line Overhead Power Line Power Pole Railroad Tank Telephone Line Telephone Terminal Water Main Sanitary Sewer (GW, U) Storm Sewer Waste Processing Facility Quarry	Short Integer	1, NA		OWNERSHIP	Identifies public, private and MPCA ownership.	1 (Public)	
PARCEL_GEOMETRY	Parcel	Short Integer	1, NA		PARCEL_GEOMETRY	Identifies unclosed or incompletely defined parcels, such as those derived from unclosed CAD lines	1 (Complete Parcel)	
PARCEL_ID	Buffer Parcel Parcel	Text		17		Unique parcel identification number (PIN) assigned by a county to a particular parcel of land.	902620430008	No spaces
PARCEL_OWNER	Buffer Parcel Parcel	Text		50		Parcel owner's name.	Joseph Julik	Mixed case, include spaces; list owners using commas if necessary
PID	Geodetic Control Monument	Test		10		For NGS monuments, the station's permanent identifier. For new or unregistered monuments, a unique CLP identifier.	PP2457	Uppercase, no spaces
PIPE_TYPES	Invert	Short Integer	1, NA		PIPE_TYPES	Type of pipe the invert is measured within.	1 (Culvert)	
PUBLIC_USE	Trail Road	Short Integer	1, NA		PUBLIC_USE	Indicates whether public acces and use are authorized.	1 (Authorized)	
SIGN_TYPE	Signage	Short Integer	1, NA		SIGN_TYPE	Identifies signs on MPCA Property.	1 (No Trespassing)	
SOLARFLARE	Gas Passive Vent	Short Integer	1, NA		SOLARFLARE	Identifies gas vents with solar-powered flares.	0 (No Flare)	
SPECIES	Invasive Weed	Short Integer	2, NA		INV_SPECIES	Invasive species name.	3 (Purple Loostrife)	
SPOT_ID	Spot Elevation	Text		11		Alphanumeric unique identifier for each spot elevation. The first three or four digits indicate the site's numeric facility ID or solid waste permit number; the last five digits identify a specific spot elevation datapoint	001SP00025	Uppercase, no spaces
TANK_DESC	Tank	Text		45		Tank description and purpose.	Underground Gas Tank	Mixed case, include spaces
TANK_LOC	Tank Leachate Tank Condensate Tank Splitter Tank	Short Integer	1, NA		TANK_LOC	Identifies tanks locationed above or below ground.	1 (Above)	
TANK_VOLUME	Tank Leachate Tank Condensate Tank Splitter Tank	Long Integer	10, NA			Maximum tank volume in gallons.	50000000	

Field Name	Applicable Features	Field Type	Precision & Scale*	Field Length	Domain	Field Definition	Example	Text Case and Conventions
TRESPASS	Property Damage Vegetation Damage	Short Integer	1, NA		TRESPASS	Identifies damages due to trespassers.	1 (Yes)	
UNIQUESTAT	Monitoring Well Pond Outlet Condensate Sample Point Leachate Sample Point Gas Extraction Well GW Extraction Well Gas Flare Gas Probe Gas Passive Vent Water Supply Well SW Elevation SW Monitoring Station Geoprobe (G, S, W) Treatment Pond Constructed Wetland Splitter Tank Infiltration Basin Sedimentation Basin	Text		10		A Minnesota Department of Health (MDH) unique well number, created at the MPCA from a station number generator.	82L01014	Uppercase, no spaces
UTIL_OWNER	Communication Tower Buried Power Buried Cable Gas/Oil Line Overhead Power Line Power Pole Railroad Tank Telephone Line Telephone Terminal Water Main Sanitary Sewer Storm Sewer Water Main	Text		50		Utility Owner(s).	Excel Energy	Mixed case, include spaces; list owners using commas if necessary
WASTE_VOLUME	Waste Footprint	Long Integer	9, NA			Estimated current waste volume in cubic yards.	1000000	
WELL_TYPE	Monitoring Well	Short Integer	1, NA		MONITORINGWELL_TYPE	Separates piezometers from monitoring wells.	2 (Piezometer)	
WELL_TYPE	GW Extraction Well	Short Integer	1, NA		GWEXTRWELL_TYPE	Identifies GW extraction well subtypes.	1 (Barrier Well)	
WELL_TYPE	Water Supply Well	Short Integer	1, NA		WATERSUPPLYWELL_TYPE	Identifies water supply well subtypes.	2 (Irrigation)	
FACILITY_TYPE	Waste Processing Facility	Short Integer	1, NA		FACILITY_TYPE	Idenitifies solid waste processing facilities near landfills by their solid waste type.	1 (Ash)	

1.3 Feature class attribute tables

Due to the number and variety of fields required for each feature class, a complete listing of the fields required for each individual feature class has been provided in Appendix II. The feature class diagrams have been alphabetized within each feature dataset for easy reference.

Each diagram includes a feature's geometry type (point, line, or polygon), identifies whether the feature class contains Z values (i.e., pointZ or lineZ types), field names, field data types, domain names, and text field lengths. The diagram also includes each feature class's definition in the upper right corner and a short version of each field's definition to the right of the field. Precision and scale values always appear as zeros and may be ignored.

The feature class diagrams were auto-generated by the Geodatabase Diagrammer application sample, which is available from the ArcScripts site on www.esri.com.

2.0 Attribute fields

Some of the fields in each attribute table require specific predetermined attribute inputs. The field inputs have either been coded with letters, numbers, or number ranges in order to increase data consistency, usefulness, and interoperability through standardized field inputs. These standardized attribute inputs are referred to as "domains," and each attribute domain narrows a field's possible inputs to either those within a set numerical range or those within a list of suitable attribute inputs.

2.1 Domain formatting and templates

The attribute template table (Table 2.1 from the previous section) listed the domain names for each field requiring standardized inputs.

For those text fields with highly variable values that could not be standardized, text casing guidelines and naming conventions were created to increase the consistency of the data's appearance and format. (See Table 1.2 in Chapter IV, Attribute Formatting and Content Requirements.)

Domain templates were auto-generated by the Geodatabase Diagrammer and can be viewed in Appendix II.

2.2 Additional field descriptions

Some fields (with or without domains) require more detailed descriptions than can be achieved in the short alias descriptions shown within the Geodatabase Diagrammer diagrams or the attribute table template shown in previous sections. For these fields, more expansive definitions and explanations are included below.

Field: INVERT_ DIR

The INVERT_DIR identifies both the vertical location and the direction of the pipe within a manhole, lift station, or other structure.

Cardinal and primary intercardinal direction attribute codes:	Vertical location:
N	Marks both the vertical location (by number) and the direction (codes shown at left) of the invert on a pipe within a manhole, lift station, or other structure. Numbering will proceed from top (ground level) to bottom and from North (0 degrees) clockwise until all pipes are uniquely identified by direction and number code. E.g., N1, N2, NE3, E4, SE5, SE6, etc.
S	
E	
W	
NE	
NW	
SE	
SW	

Field: FIPS_CODE

These three digit codes comply with the MN State Enterprise Architecture IRM Standard 15, version 1 and are equivalent to the Minnesota portion of the Federal Information Processing Standard (FIPS) Publication 6-4. For example: Aitkin, 001; Anoka, 003; Becker, 005; etc.

3.0 Attribute content

3.1 Ancillary attribute data sources

As previously mentioned, some feature classes require additional, specific attribute information only obtainable from publically available ancillary datasets. The examples below list features and fields requiring attributes from external datasets, and offer suggestions for where to find the necessary attribute data.

NWI Polygons

Wetland features' attribute tables have four specialized fields that define the waterbody according to the federal standard definitions found in "Classification of Wetlands and Deepwater Habitats in the U.S.," (Cowardin et al, 1979). The classification provides a key for determining wetland types in the field, and can be found online at www.wbdg.org/ccb/ENVREG/habitat.pdf**.**

The U.S. Fish and Wildlife service conducted a National Wetland Inventory (NWI) to locate and identify wetlands and waterbodies according to the Cowardin system. The Minnesota DNR maintains a GIS repository with a copy of the NWI polygon dataset. The DNR's NWI dataset includes subclass and class corrections for Minnesota waters and metadata describing the coding system used to describe each wetland (www.lmic.state.mn.us/chouse/metadata/nwi.html).

The Cowardin classification codes used in the DNR's NWI polygon data are identical to the codes required for the COWARDIN_SYS, COWARDIN_SUBSYS, COWARDIN_CLASS, AND COWARDIN_WREG fields in this geodatabase, and NWI data must be used to derive the waterbodies' attribute data.

Trout Streams

The stream feature class includes the field HASTROUT to identify designated trout streams. Streams with an official "trout stream" designation can be identified within the attribute table of the DNR's trout stream dataset.

Parcel Data

Parcels attributes, including parcel identification number and owner names, may need to be obtained through county record searches, digital parcel datasets, or other means.

3.2 MPCA provided attributes

CLP staff will provide attribute data for some fields on a site-by-site basis, including:

Field Name	Field Description
COMMONFACI	The common facility ID or common name of Closed Landfill Facility.
FACILITYID	The Minnesota Solid Waste Permit Number, Water Pollution Control Permit Number, or a combination of numbers (where facilities are combined) used to uniquely identify the closed landfill.
COMMONSTAT	The name or code by which a sample station (gas probe, monitoring well, geoprobe, etc) is commonly referred.
UNIQUESTAT	An eight or nine digit alphanumeric unique identifier for sample stations that **may** correspond to the Minnesota Department of Health's well identifiers.
FACILITYAD	Facility's address

FACILITYCITY	Facility's city
FACILITYST	Facility's state
FACILITYZIP	Facility's zip code
FACILITYCO	Facility's county

The MPCA will also identify Bond parcels, or parcels in which Bond dollars were spent to make site improvements, building types, leasees, and other domain-specific data, as necessary.

V. Deliverables

1.0 GIS and CAD deliverables

All survey data must be submitted digitally in an ArcGIS 9.2 or later personal geodatabase. If requested in the Work Order, a second 2004 or later .dxf or .dwg AutoCAD file may also be submitted. Metadata, accuracy statements, and spatial references for each file must follow the standards outlined elsewhere in this Manual.

1.1 GIS deliverables

All GIS data, unless specifically noted, must be submitted electronically in ESRI's proprietary personal geodatabase (.mdb) format. Use of the Open Geospatial Consortium (OGC) shapefile (.shp) format is permitted for specific deliverables, if pre-approved below. For any other deliverables, shapefiles **may** be permitted, but written approval must be obtained from the MPCA prior to Work Order finalization. The MPCA reserves the right to deny a Contractor's request to submit deliverables in shapefile or any other alternate file format.

Contour data may be delivered in either ESRI shapefile format or ESRI personal geodatabase feature class format. Spot elevation data may be submitted in ESRI shapefile format, ESRI personal geodatabase feature class format, or Excel spreadsheet format if each feature has a unique alphanumeric identifier to match the X,Y, and elevation (Z) values. Each GIS file must report vertical elevations as orthometric heights in International Feet using the NAVD88 datum and horizontal locations in UTM, Zone 15 (extended) NAD83 projection. Regardless of format, all GIS files must be submitted with the appropriate vertical and horizontal spatial reference files. The spatial reference information, including datums, ellipsoids, units, and map projections used to collect data must also be indicated on the Excel spreadsheet.

With prior permission, spot elevation data may also be submitted as an Excel spreadsheet rather than a GIS file. In such cases, the Excel file must include fields for vertical and horizontal coordinate data (X,Y, & Z), and an alphanumeric identifier unique to each data point. The spatial reference information, including datum, ellipsoids/spheroids, measurement units, and map projections used to collect and report data must also be indicated on the spreadsheet, preferably in separate columns. Spot elevation horizontal locations must be reported in meters using the UTM, Zone 15 (extended), and NAD 83 projection. Vertical elevations must be reported as orthometric heights in International Feet using the NAVD 88 datum.

1.2 CAD deliverables

CAD files will not be accepted without complete metadata and spatial reference systems, but need not duplicate the attributes delivered in the GIS file. CAD layers must correspond to the feature classes listed Chapter II, Section 1.0 Closed Landfill Program features and must follow the naming conventions for CAD Datasets and CAD Layers in Chapter V, Section 1.3 Spatial dataset naming conventions.

1.3 Spatial dataset naming conventions

Personal geodatabase and CAD dataset names

One personal geodatabase will be submitted for each Closed Landfill, named by concatenating the site name to the date of submittal (ex: AlbertLea_10102008.mdb). If a Contractor is submitting data for multiple sites, a separate personal geodatabase must be submitted for each site.

The preferred format for each site's name has been provided in the table below:

Landfill name	Facility ID	Personal GDB name
Adams	MNSW187	Adams
Aitkin Area	MNSW145	Aitkin
Albert Lea	MNSW085	AlbertLea
Anderson/Sebeka	MNSW114	Anderson
Anoka / Ramsey	MNSW094	Anoka
Barnesville	MNSW022	Barnesville
Battle Lake	MNSW086	BattleLake
Becker Co	MNSW099	Becker
Benson	MNSW108	Benson
Big Stone Co	MNSW096	BigStone
Brookston Area	MNSW163	Brookston
Bueckers 1	MNSW018	Bueckers1
Bueckers 2	MNSW030	Bueckers2
Carlton Co 2	MNSW102	CarltonCo2
Carlton Co S	MNSW253	CarltonCoS
Chippewa Co	MNSW052	Chippewa
Cook (Area)	MNSW237	CookArea
Cook County	MNSW294	CookCounty
Cotton	MNSW175	Cotton
Crosby	MNSW181	Crosby
Crosby-American Property	MNSW016	CrosbyAmProp
Dakhue	MNSW050	Dakhue
Dodge Co	MNSW121	Dodge
East Bethel	MNSW047	EastBethel
East Mesaba	MNSW097	EastMesaba
Eighty Acre	MNSW051	EightyAcre
Faribault Co	MNSW069	Faribault
Fifty Lakes	MNSW243	FiftyLakes
Floodwood	MNSW164	Floodwood
Flying Cloud	MNSW014	FlyingCloud
Freeway	MNSW057	Freeway
French Lake	MNSW059	FrenchLake
Geislers	MNSW026	Geislers
Gofer	MNSW076	Gofer
Goodhue Coop	MNSW157	GoodhueCoop
Grand Rapids	MNSW135	GrandRapids
Greenbush	MNSW133	Greenbush
Hansen	MNSW113	Hansen
Hibbing	MNSW161	Hibbing
Hickory Grove	MNSW150	HickoryGrove
Highway 77	MNSW262	Hwy77
Hopkins	MNSW058	Hopkins
Houston Co	MNSW126	Houston
Hoyt Lakes	MNSW038	Hoy Lakes
Hudson	MNSW128	Hudson
Iron Range	MNSW073	IronRange
Ironwood	MNSW049	Ironwood
Isanti-Chisago	MNSW129	IsantiChisago
Jackson Co	MNSW101	Jackson
Johnson Bros	MNSW008	JohnsonBros
Karlstad	MNSW115	Karlstad
Killian	MNSW078	Killian
Kluver	MNSW029	Kluver
Koochiching	MNSW191	Koochiching
Korf Bros	MNSW019	KorfBros
Kummer	MNSW031	Kummer
La Crescent	WPCC5203	LaCrescent
LaGrand	MNSW141	LaGrand
Lake County	MNSW140	LakeCounty
Lake of the Woods	MNSW171	LakeoftheWoods
Land Investors	MNSW575	LandInvestors
Leech Lake	MNSW146	LeechLake
Leslie Benson	WPCC5303	LeslieBenson
Lincoln Co	MNSW084	Lincoln
Lindala	MNSW117	Lindala
Lindenfelser	MNSW044	Lindenfelser
Long Prairie	MNSW039	LongPrairie
Longville-Remer	MNSW169	LongvilleRemer
Louisville	MNSW032	Louisville
Mahnomen Co	MNSW122	Mahnomen
Mankato	MNSW064	Mankato
Mankato-Hansen	MN65113	MankatoHansen
Maple	MNSW033	Maple
McKinley	MNSW003	McKinley
Meeker Co	MNSW070	Meeker
Mille Lacs Co	MNSW082	MilleLacs
MN Sanitation	MNSW063	MNSanitation
Murray Co	MNSW104	Murray
Northeast Otter Tail	MNSW178	NEOtterTail
Northome	MNSW225	Northome
Northwest Angle	MNSW236	NWAngle
Northwoods	MNSW068	Northwoods
Oak Grove	MNSW043	OakGrove

Landfill name	Facility ID	Personal GDB name
Olmsted Co	MNSW005	Olmsted
Orr	MNSW204	Orr
Paynesville	MNSW172	Paynesville
Pickett	MNSW130	Pickett
Pine Lane	MNSW072	PineLane
Pipestone Co	MNSW120	Pipestone
Portage Mod	MNSW247	PortageMod
Red Rock	MNSW062	RedRock
Redwood Co	MNSW083	Redwood
Rock Co	MNSW077	Rock
Salol / Roseau	MNSW137	SalolRoseau
Sauk Centre	MNSW116	SaukCentre
Sibley Co	MNSW002	Sibley
St Augusta	MNSW035	StAugusta
Stevens County	MNSW066	Stevens

Landfill name	Facility ID	Personal GDB name
Sun Prairie	MNSW091	SunPrairie
Tellijohn	MNSW067	Tellijohn
Vermillion Dam	MNSW176	VermillionDam
Vermillion Mod	MNSW177	VermillionMod
Wabasha Co	MNSW154	Wabasha
Wadena	MNSW007	Wadena
Walker-Hackensack	MNSW179	WalkerHackensack
Waseca Co	MNSW100	Waseca
Washington Co	MNSW001	Washington
Watonwan Co	MNSW081	Watonwan
WDE	MNSW028	WDE
Winona Co	MNSW025	Winona
WLSSD	MNSW232	WLSSD
Woodlake	MNSW061	Woodlake
Yellow Medicine	MNSW042	YellowMed

Feature dataset names

Each personal geodatabase may be split into up to 11 separate feature datasets, depending on the scope of the survey and the survey types conducted at the site. These feature datasets correspond to the feature dataset categories defined in Chapter III, Section 1.2 Personal geodatabase structure, and are used to separate the feature classes into similar themes. The feature datasets must be named as shown in the list below, with no spaces and no special characters:

Categories	***Naming convention***
Annotation	Annotation
Elevation	Elevation
General Landfill	General
Groundwater Remediation	GW_Remediation
Inspection	Inspection
Land Management	LandManagement
Landfill Gas Remediation	LFG_Remediation
Leachate Remediation	LCH_Remediation
Surface Water	SurfaceWater
Survey	Survey
Utility	Utility

The feature dataset theme descriptions can also be seen on page 12.

Feature class and CAD layer names

Feature class names are shown below, organized by feature dataset:

Feature dataset	*Feature classes*	*Naming convention*
Elevation	Contour	Contour
	Contour Index	ContourIndex
	Spot Elevation	SpotElevation
General	Bridge	Bridge
	Building	Building
	Concrete Pad	ConcretePad
	Fence	Fence
	Fence Gate	FenceGate
	Toe Drain Outlet	ToeDrainOutlet
	Trail	Trail
	Tree	Tree
	Waste Footprint	WasteFootprint
	Wooded Area	WoodedArea
GW_Remediation	Cascade Aerator	CascadeAerator
	Constructed Wetland	ConstructedWetland
	Water Geoprobe	Geoprobe_Water
	Cleanout	GW_Cleanout
	Force Main	GW_ForceMain
	Force Main Outlet	GW_ForceMainOutlet
	Invert	GW_Invert
	Lift Station	GW_LiftStation
	Manhole	GW_Manhole
	Sanitary Sewer	GW_SanitarySewer
	Valve	GW_Valve
	Water Level Control Structure	GW_WaterLvlControl
	Groundwater Extraction Well	GWExtractionWell
	Infiltration Basin	InfiltrationBasin
	Monitoring Well	MonitoringWell
	Pond Outlet	PondOutlet
	Slurry Wall	SlurryWall
	Splitter Tank	SplitterTank
	Treatment Pond	TreatmentPond
	Water Supply Well	WaterSupplyWell
Inspection	Alarm	Alarm
	Erosion	Erosion
	Fissure	Fissure
	Illegal Disposal	IllegalDisposal
	Invasive Weed	InvasiveWeed
	Pothole	Pothole
	Property Damage	PropertyDamage
	Settlement	Settlement
	Signage	Signage
	Site Condition	SiteCondition
	Storm Water Ponding	StormWaterPonding
	Vegetation Damage	VegetationDamage

LandManagement	CLP Zoning	CLPZoning
	Land Management Area	LandManagementArea
	LGUZoning	LGUZoning
	Groundwater Area of Concern	GroundwaterAOC
	Groundwater Plume	GroundwaterPlume
	Methane Area of Concern	MethaneAOC
	Quarry	Quarry
	Waste Processing Facility	WasteProcessingFacility
	Well Restriction Area	WellRestrictionArea
LCH_Remediation	Cleanout	LCH_Cleanout
	Force Main	LCH_ForceMain
	Force Main Outlet	LCH_ForceMainOutlet
	Invert	LCH_Invert
	Lift Station	LCH_LiftStation
	Manhole	LCH_Manhole
	Valve	LCH_Valve
	Leachate Line	LeachateLine
	Leachate Sample Point	LeachateSamplePt
	Leachate Tank	LeachateTank
LFG_Remediation	Condensate Sample Point	CondensateSamplePt
	Condensate Line	CondensateLine
	Condensate Tank	CondensateTank
	Force Main	CND_ForceMain
	Force Main Outlet	CND_ForceMainOutlet
	Invert	CND_Invert
	Lift Station	CND_LiftStation
	Valve	CND_Valve
	Gas Engine	GasEngine
	Gas Extraction Well	GasExtractionWell
	Gas Flare	GasFlare
	Gas Passive Vent	GasPassiveVent
	Gas Probe	GasProbe
	Gas Geoprobe	Geoprobe_Gas
	Soil Geoprobe	Geoprobe_Soil
	Horizontal Vent	HorizontalVent
	Landfill Gas Line	LandfillGasLine
	Cleanout	LFG_Cleanout
	Valve	LFG_Valve
SurfaceWater	Berm	Berm
	Lake	Lake
	Riprap	Riprap
	Sedimentation Pond	SedimentationPond
	Storm Sewer	StormSewer
	Storm Water Conveyance	StormWaterConveyance
	Stream	Stream
	Cleanout	SW_Cleanout
	Culvert	SW_Culvert
	Force Main	SW_ForceMain
	Force Main Outlet	SW_ForceMainOutlet
	Invert	SW_Invert
	Manhole	SW_Manhole
	Valve	SW_Valve

	Water Level Control Structure	SW_WaterLvlControl
	Surface Water Elevation	SWElevation
	Surface Water Monitoring Station	SWMonitoringStation
	Wetland	Wetland
Survey	Buffer Parcel	BufferParcel
	Geodetic Control Monument	GeodeticControlMonument
	LCA Boundary	LCABoundary
	MPCA Easement	MPCAEasement
	MPCA Property	MPCAProperty
	Parcel	Parcel
	Private Easement	PrivateEasement
	Property Marker	PropertyMarker
	Qualified Facility	QualifiedFacility
Utility	Buried Cable	BuriedCable
	Buried Power	BuriedPower
	Communication Tower	Communicationower
	Electric Meter	ElectricMeter
	Electrical Panel	ElectricalPanel
	Gas/Oil Line	GasOilLine
	Hydrant	Hydrant
	Overhead Power Line	OverheadPowerLine
	Power Pole	PowerPole
	Railroad	Railroad
	Road	Road
	Tank	Tank
	Telephone Line	TelephoneLine
	Telephone Terminal	TelephoneTerminal
	Culvert	U_Culvert
	Invert	U_Invert
	Lift Station	U_LiftStation
	Manhole	U_Manhole
	Sanitary Sewer	U_SanitarySewer
	Valve	U_Valve
	Water Main	WaterMain

1.4 Map Symbology

All maps must be printed using the symbols shown below. Style files and layer files compatible with ArcGIS 9.2 and 9.3 are available for map creation and will be provided.

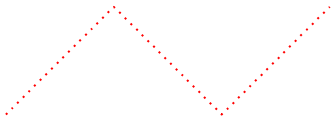
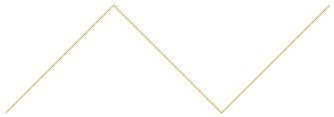
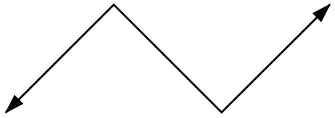
Point symbols

Symbol	Feature class	Outline RGB color	ESRI Outline color name	Interior fill RGB color	ESRI Interior fill color name	Basic shape
1	Cleanout	0, 0, 0	Black	255, 255, 255	White	Empty hexagon
g	Communication Tower	0, 0, 0	Black	0, 0, 0	Black	Filled square
#	Condensate Sample Point	168, 0, 0	Tuscan red	255, 255, 255	White	Empty square
K	Condensate Tank	168, 0, 0	Tuscan red	255, 255, 255	White	Empty circle
	Force Main Outlet					
6	Gas Engine	168, 0, 0	Tuscan red	255, 255, 255	White	Empty square
O	Gas Extraction Well	168, 0, 0	Tuscan red	255, 255, 255	White	Empty square
h	Gas Flare	168, 0, 0	Tuscan red	255, 255, 255	White	Empty Square
)	Gas Passive Vent	168, 0, 0	Tuscan red	255, 255, 255	White	Empty Square
W	Gas Probe	168, 0, 0	Tuscan red	255, 255, 255	White	Empty square
=	Geodetic Control Monument	0, 0, 0	Black	255, 255, 255	White	Empty triangle

Symbol	Feature class	Outline RGB color	ESRI Outline color name	Interior fill RGB color	ESRI Interior fill color name	Basic shape
	Geoprobe – Gas	0, 77, 168	Ultra blue	255, 255, 255	White	Empty diamond
	Geoprobe – Soil	115, 76, 0	Burnt umber	255, 255, 255	White	Empty diamond
	Geoprobe – Water	168, 0, 0	Tuscan red	255, 255, 255	White	Empty diamond
	GW Extraction Well	0, 77, 168	Ultra blue	255, 255, 255	White	Empty circle
	Hydrant	0, 0, 0	Black	230, 0, 0	Poinsettia red	Hydrant
	Invert	0, 0, 0	Black	0, 0, 0	Black	Solid circle
	Leachate Sample Point	38, 115, 0	Fir green	255, 255, 255	White	Empty circle
	Leachate Tank	38, 115, 0	Fir green	255, 255, 255	White	Empty circle
	Lift Station	0, 0, 0	Black	255, 255, 255	White	Empty circle
	Manhole	0, 0, 0	Black	255, 255, 255	White	Empty circle
	Monitoring Well	0, 77, 168	Ultra blue	255, 255, 255	White	Empty circle
	Pond Outlet					
a	Power Pole	0, 0, 0	Black	N/A	N/A	Letter "P"

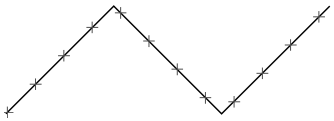
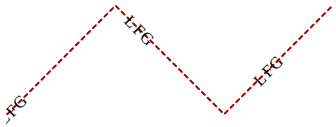
Symbol	Feature class	Outline RGB color	ESRI Outline color name	Interior fill RGB color	ESRI Interior fill color name	Basic shape
&	Property Marker	0, 0, 0	Black	255, 255, 255	White	Empty circle
	Splitter Tank					
	Spot Elevation					
N	SW Elevation	0, 77, 168	Ultra blue	255, 255, 255	White	Empty triangle
#	SW Station	0, 77, 168	Ultra blue	0, 77, 168	Ultra blue	Empty test station
K	Tank	0, 77, 168	Ultra blue	255, 255, 255	White	Empty circle
—	Telephone Terminal	0, 0, 0	Black	N/A	N/A	Phone
W	Toe Drain Outlet	0, 0, 0	Black	190, 232, 255	Sodalite blue	N/A
ù	Tree	38, 115, 0	Fir green	N/A	N/A	Empty circle
⧗	Valve	0, 0, 0	Black	255, 255, 255	White	Hourglass
›ɔ	Water Level Control	0, 77, 168	Ultra blue	N/A	N/A	Empty arrow
(	Water Supply Well	0, 77, 168	Ultra blue	255, 255, 255	White	Empty circle

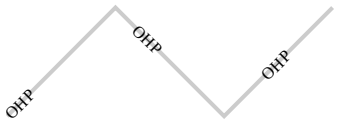
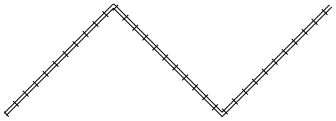
Line symbols

Symbol	Feature class	RGB Line color	ESRI Color name	Line pattern	Line width	Text and line symbols	Default or standard
	Buried Power	255, 127, 127	Medium coral light	Dotted	1	None	
	Cascade Aerator	0, 77, 168	Ultra blue	Parallel dashed		None	
	Contour	221, 168, 64	None	Solid	0.4	None	ESRI Contour default
	Contour Index	164, 121, 22	None	Solid	1.2	None	ESRI Contour index default
		0, 0, 0	Black	Solid	1	Arrow ends	ESRI Arrows at start and end default

NOTE: Due to the letters used to distinguish some utility lines, digitizing must be done from the left to the right. All letter symbols should be legible on the lines and readable from left to right; this may require that some features be manually flipped in order to draw line symbols correctly.

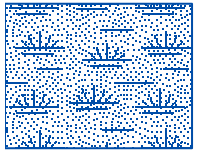
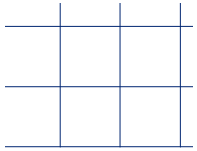
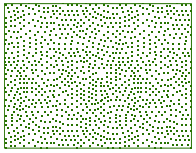
Culvert

Symbol	Feature class	RGB Line color	ESRI Color name	Line pattern	Line width	Text and line symbols	Default or standard
	Fence	0, 0, 0	Black	Solid	0.75	X	
	Fence Gate						
	Force Main	137, 112, 68	Leather brown	Dash-dot	2	FM	
	Gas/Oil Line	112, 68, 137	Blackberry	Solid	1	NG	
	Landfill Gas Line	168, 0, 0	Tuscan red	Long dash	1	LFG	
	Leachate Line	38, 115, 0	Fir green	Dash-dot	1.2	L	

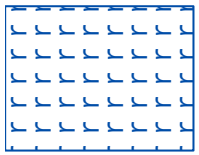
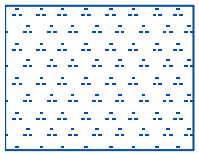
Symbol	Feature class	RGB Line color	ESRI Color name	Line pattern	Line width	Text and line symbols	Default or standard
	Overhead Power Line	204, 204, 204	20% Gray	Solid	2	OHP	
	Railroad	0, 0, 0	Black	Parallel solid	0.4	None	ESRI Railroad default
	Road	0, 0, 0	Black	Solid	0.4	None	ESRI Collector street default
	Sanitary Sewer	102, 205, 171	Jadeite	Dashpot-dot-dot	1.5	SAN	
	Storm Sewer	190, 232, 255	Sodality blue	Dash-dot-dot	1.5	SS	190, 232, 255
	Stream	190, 232, 255	Sodality blue	Solid	2	None	190, 232, 255

Symbol	Feature class	RGB Line color	ESRI Color name	Line pattern	Line width	Text and line symbols	Default or standard
	Telephone Line	78, 78, 78	70% Gray	Solid	1	Phone	
	Trail						
	Water Main	0, 77, 168	Ultra blue	Short dash	1.5	W	

Polygon symbols

Symbol	Feature class	Outline RGB color	ESRI Outline color name	Interior fill RGB color	Outline pattern	Outline width (points)	Interior fill RGB color	ESRI Interior fill color name	Interior pattern
	Building	78, 78, 78	70% Gray	Solid	0.4	78, 78, 78	70% Gray	Solid	78, 78, 78
	Constructed Wetland	0, 77, 168	Ultra blue	Solid	1	0, 77, 168	Ultra blue	Picture fill, ESRI marsh plus speckle	0, 77, 168
	Groundwater Area of Concern	Clear	Clear	None	0.4	0, 38, 115	Dark navy	Square check	Clear
	GW Plume	38, 115, 0	Fir green	Solid	0.4	38, 115, 0	Fir green	Speckled	38, 115, 0
	Infiltration Basin	38, 115, 0/ 178, 178, 178	Fir green/ 30% gray	Dashed solid	2	Clear	Clear	None	38, 115, 0/ 178, 178, 178

Symbol	Feature class	Outline RGB color	ESRI Outline color name	Interior fill RGB color	Outline pattern	Outline width (points)	Interior fill RGB Color	ESRI Interior fill color name	Interior pattern
	Lake	190, 232, 255	Sodalite blue	Solid	0.4	190, 232, 255	Sodalite Blue	Solid	190, 232, 255
	Land Management Area								
	LCA Boundary	56, 168, 0	Leaf green	Solid	2.5	Clear	Clear	None	56, 168, 0
	Leased Parcel	178, 178, 178	30% Gray/black	Solid with dashes	2.5	Clear	Clear	None	178, 178, 178
	Methane Area of Concern	Clear	Clear	None	0.4	245, 122, 122	Medium coral	Diamond check	Clear
	MPCA Easement								

Symbol	Feature class	Outline RGB color	ESRI Outline color name	Interior fill RGB color	Outline pattern	Outline width (points)	Interior fill RGB color	ESRI Interior fill color name	Interior pattern
	Parcel	255, 255, 0	Solar yellow	Solid	1	Clear	Clear	None	255, 255, 0
	Private Easement								
	Property Boundary								
	Qualified Facility	0, 169, 230	Moorea blue	Solid	1.75	Clear	Clear	None	0, 169, 230
	Sedimentation Pond	0, 77, 168	Ultra blue	Solid	1	0, 77, 168	Ultra blue	Marker fill, wavy lines	0, 77, 168
	Treatment Pond	0, 77, 168	Ultra blue	Solid	1	0, 77, 168	Ultra blue	Picture fill, three-dot clusters	0, 77, 168

Symbol	Feature class	Outline RGB color	ESRI Outline color name	Interior fill RGB color	Outline pattern	Outline width (points)	Interior fill RGB color	ESRI Interior fill color name	Interior pattern
	Waste Footprint	168, 0, 0	Tuscan red	Solid with hashes	1.2/ 7	Clear	Clear	None	168, 0, 0
	Wetland	190, 232, 255	Sodalite blue	Solid	1	Clear	Clear	Picture fill, ESRI swamp	190, 232, 255
	Wooded Area	180, 215, 158	Sage dust	Scalloped	8	180, 215, 158	Sage dust	Solid	180, 215, 158

Symbology for missing feature classes forthcoming.

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Appendix I

1.0 Definitions

Alarm

An alarm mounted on various landfill features - monitoring wells, groundwater extraction wells, manholes, lift stations, tanks, or flares - that signals any abnormality with the function of that feature.

Attribute

A value (text, numeric, date/time, blob, raster, etc) within a cell of an attribute table that contains descriptive information about a single feature or group of multipart features.

Attribute data, attribute table

A table or database containing spatial and non-spatial attributes (descriptive data) about a feature. An attribute table is arranged so that each row represents a feature and each column represents one feature attribute. In a personal geodatabase, both spatial and attribute data are stored together in an internal table (ESRI, 2008). In a CAD information system, attribute data can be stored externally in extended data tables or internally as attribute blocks.

Attribute domain

Attribute domains provide a list of suitable values that are allowed in a field (column) database table or feature class attribute table. Attribute domains can also be coded so that a number or letter represents another value, for example, coded domains of 1, 2, and 3 could refer to the land use classes residential, industrial, and open space.

Berm

An area of raised earth used to direct the flow of surface water off the cover at a closed landfill.

Bridge

The centerline of a bridge.

Buffer parcel

A parcel owned by the MPCA that is outside of the Landfill Cleanup Agreement (LCA) Boundary and contains no known waste.

Building

Any building larger than 10 square meters. To view the building type domain, see Appendix II, Section 1.11 Domains.

Buried cable

Buried internet, television, communication, or other non-electric cables.

Buried power

A set of wires, either sheathed or in conduit, used to conduct electricity. Buried lines are typically trenched between 12 to 24 inches into the ground.

Cascade aerator

Open or enclosed water remediation system.

Cleanout

A capped pipe that provides access to gas, leachate, or water pipes, and is used for inspection and jetting of those pipes.

CLP feature

CLP or Closed Landfill Program features include any and all property boundary, topographic, or site features collected on or near a closed landfill at the request of the Closed Landfill Program.

CLP zoning

Zoning recommendations derived from Closed Landfill Use Plans.

Communication tower

Telephone, internet, cellular, or other communication towers located on or near a landfill.

Concrete pad

A flat section of concrete.

Condensate line

Buried pipes used to transport condensate within an active landfill gas remediation system.

Condensate sample point

An access point for collecting landfill gas condensate from a tank or sump.

Condensate tank

A buried tank used to collect landfill gas condensate formed in the landfill gas lines.

Constructed wetland

Wetland constructed as part of a remediation system; a wetland that did not develop naturally.

Construction and design survey

Construction and design surveys typically include tasks such as topographic surveying of existing site conditions, staking to lay out grades and verify waste quantities, preparing final record drawings for a construction survey, and any other survey services related to construction, environmental response actions, or remediation. These surveys generally have limited deliverables, or have deliverables provided to a third party rather than to the MPCA.

Contour

An isometric line showing equal elevations on a set interval.

Contour index

An isometric line of equal elevations used to make topographic maps more legible. The index contour includes only every fifth contour line (i.e., the contour index shows contours ten feet apart in elevation).

Culvert

Buried pipe used to convey surface water beneath roads or berms. Culverts should be shorter than storm sewers.

Domain

A range of values specified for a particular database entry, i.e. a list of building names or well numbers that are valid inputs to a table.

Easement

See Private Easement for the definition of non-MPCA easements on MPCA-owned land and MPCA Easement for the CLP's easements on others' property.

Electrical panel

A control panel or fuse box for monitoring the circuits used by pumps and gas remediation features.

Electric meter

A meter showing electricity usage on site.

Ellipsoid height

Ellipsoid heights measure elevations relative to a reference ellipsoid rather than a geoid. GPS units typically measure ellipsoid heights.

Erosion

An area in the landfill cover, roads, or engineered waterways where materials have been moved or removed by rain, runoff, or wind.

Feature class

An individual GIS file of point, line, or polygon geometry that holds both the spatial and attribute data for a particular set of features.

Fence

Enclosure used to prevent trespassing into Closed Landfills.

Fence gate

A line marking the gate's location on a fence.

Fissure

Cracks in the soil on or near the landfill's final cover usually caused by either methane gas migration out of the soil or severe drought.

Force main

A pipe used to transport water, leachate or condensate under positive pressure.

Force main outlet

An outlet on the water, leachate or condensate force main pipe.

Gas engine

An engine that burns landfill gas used to generate electricity.

Gas extraction well

A pipe installed either vertically or horizontally in waste and connected to a vacuum source used to withdraw landfill gas to be burned in a flare or gas engine.

Gas flare

A device used to combust landfill gas in a controlled manner.

Gas/oil line

Buried pipe lines owned by utility companies that carry explosive fluids such as natural gas.

Gas passive vent

A vertical pipe installed in the waste used to prevent lateral gas transfer and release landfill gas to the atmosphere.

Gas probe

A vertical pipe installed in soil outside of the waste footprint to monitor the concentration of methane and other compounds present in the soil pore space.

Geodatabase

A database used to store feature geometry, a spatial reference system, attributes, and behavioral rules for data, as well as allow data query and manipulate. Personal geodatabases store data in Microsoft Access and are not true relational databases, while file geodatabases utilize a relational database management system equipped with a spatial data extender to store and query spatial and non-spatial attributes.

Geodetic control monument

A permanent marker, usually installed from the surface to a depth below frost depth, with precise horizontal (x, y) and vertical coordinates (z) established by surveyors and referenced to predetermined datum. Established NGS or MNDOT monuments are examples of geodetic control monuments.

Geoprobe

A push-probe advanced in soil or waste (Soil or Gas Geoprobe) in order to sample soil gas and/or landfill gas, or used to collect water samples at various depths.

Groundwater area of concern

An area of land surrounding a landfill where the presence of certain activities that require the use of groundwater may be impacted or precluded by existing contamination from the landfill or may cause the

groundwater flow direction to change, thereby impacting the user. (Feature class generated by MPCA Hydrogeologists)

Groundwater extraction well

A well used to pump water out of the aquifer in order to treat the extracted groundwater.

Groundwater plume

Approximate area of subterranean contaminated groundwater plume. (Feature class generated by MPCA Hydrogeologists)

Horizontal vent

A horizontal pipe installed in the waste or adjacent soils to prevent lateral gas migration and to release landfill gas to the atmosphere.

Hydrant

A fire hydrant.

Illegal disposal

Garbage dumped in unpermitted areas, such as at the entrance to a closed landfill facility or in adjacent fields and woods.

Infiltration basin

A man-made impoundment used to collect and slowly seep water or treated wastewater back into the soil.

International foot

The International Foot is a common unit of measurement in the U.S., while the U.S. Survey Foot is used exclusively for surveying. An International (S.I) Foot is two parts per million shorter than a U.S. Survey Foot, so that one inch equals 2.54 centimeters and one foot equals 0.3048 meters.

Interoperability

Interoperability refers to a dataset, file format, or system's ability to function in multiple environments. Interoperability allows users some flexibility in how they use, view, and manipulate data, including the types of software, hardware, data storage systems, and operating system can be used with the data.

Invert

A point at the inlet or outlet of a pipe that marks the flow line (the lowest point of a single drop of liquid inside the pipe). The invert point is used to record the location and elevation at the flow line on both ends of a pipe. The invert is usually recorded in a manhole, lift station, pond outlet, or culvert and may be recorded within pipes in the leachate, condensate, groundwater, and surface water remediation systems. In Utilities, the invert measures the lowest point in a pipe without liquid contents.

Lake

Water body larger than 20 acres and at least two meters deep.

Landfill cleanup agreement

Negotiated legal document defining a landfill's boundaries.

Landfill cleanup agreement boundary

See LCA Boundary.

Landfill gas line

Buried pipelines used to transport landfill gas from a gas extraction well to a flare or gas engine.

Land management area

An area defined by MPCA Staff to manage risks near a closed landfill. The area encompasses 1) the LCA Boundary (the lands described in the Landfill Cleanup Agreement or LCA), 2) the MPCA Property (all MPCA-owned parcels within or adjacent to the landfill), 3) all waste areas, including landfilled waste not falling within the Solid Waste Permit boundary. A Land Management Area **MAY** also include adjacent property integral to response actions, easements, or off-site CLP equipment.

LCA boundary

The closed landfill; specifically, the LCA Boundary identifies areas described in a Landfill Cleanup Agreement as belonging to the landfill that contained waste at the time of execution.

Leachate line

Buried pipes used to transport landfill leachate, usually under positive pressure.

Leachate sample point

A location in a tank or pipe or a seep where leachate is collected for chemical analysis.

Leachate tank

A sample point (may be the pump out access) on or above a collection vessel to collect leachate from a lined landfill. Leachate tanks are usually, but not always, buried underground.

LGU zoning

Zoning developed by the Local Government Unit (LGU) for the area including and/or surrounding a closed landfill.

Lift station

A structure that collects leachate, condensate, groundwater, or wastewater flowing to it by gravity that then pumps the fluid under pressure to another location.

Local accuracy

"A value expressed in cm that represents the uncertainty in the coordinates of the control point relative to the coordinates of the other directly connected, adjacent control points at the 95 percent confidence level. The reported local accuracy is an approximate average of the individual local accuracy values between this control point and other observed control points used to establish the coordinates of the control point." (Zilkoski et al, 1997)

Manhole

A vertical structure extending from the surface to below grade allowing access to various types of equipment or pipes.

Metadata

Information provided to describe other data. Basic metadata for any data type provides information such as dataset title, file type, creation dates, and publisher information. Digital GIS & CAD file metadata also provides an explanation of the data's purpose, accuracy, currentness, spatial reference, and defines attribute table fields and attribute codes.

Methane area of concern

An area beyond the Waste Footprint in a landfill where the landfill gas concentrations, specifically the methane concentration, is high enough to be of concern. (Feature class generated by MPCA Engineers)

Monitoring well

A permanent well constructed to monitor groundwater elevations and sample aquifers for various landfill contaminants.

MPCA easement

An easement on private or publicly owned lands to grant land access rights to the MPCA.

MPCA property

The combined area of **MPCA-owned parcels** defined in the Landfill Cleanup Agreement (LCA), plus any other adjacent **MPCA-owned parcels**.

Network accuracy

"A value expressed in cm that represents the uncertainty in the coordinates of the control point with respect to the geodetic datum at the 95 percent confidence level. For NSRS network accuracy classification, the datum is

considered to be best supported by NGS. By this definition, the local and network accuracy values at CORS sites are considered to be infinitesimal, i.e., to approach zero". (Zilkoski et al, 1997)

Orthometric height

The height of an object relative to the geoid (rather than ellipsoid); the positive distance between the geoid and a point measured along a plumb line. Orthometric height will be used interchangeably with "elevation."

Overhead power line

Electric wires suspended from power poles.

Parcel

A legally described tract of land adjacent to, near, or on a landfill.

Pond outlet

The outlet of an infiltration or sedimentation pond into the regional drainage system.

Positional accuracy

The positional accuracy requirements define the minimum accuracy necessary for each listed site, property, or topographic feature. Positional accuracy requirements differ from older, relative measures of accuracy by measuring data accuracy independent of the data's deliverable format (i.e., true data accuracy rather than map accuracy). Positional accuracy is neither scale nor distance dependent, and as such is measured and reported in ground units corresponding to the data's spatial reference system (centimeters or meters for horizontal units; inches or feet for vertical units). Horizontal and vertical positional accuracies can be used to directly compare the fitness and usefulness of alternate datasets for a particular application. Accuracy requirements may also include local and network accuracy measurements.

Pothole

A hole created by vermin or erosion on Closed Landfill site roads.

Power pole

A utility pole used to support overhead electrical equipment, power lines, or telephone lines.

Private easement

An easement within MPCA-owned property allowing land access rights to private or public entities.

Property boundary survey

A property boundary survey allows the State to locate the property lines enclosing a site. This survey is used to identify and mark property corners and can be used to derive a legal description of the parcels. See Chapter II, Section 1.0 Closed Landfill Program Features to see a list of all property boundary features.

Property marker

A marker such as an iron pipe that has horizontal coordinates (x, y) established by surveyors, typically marking property corners and intermediate property boundaries a maximum of 500 feet apart.

Qualified facility

A subset of the Land Management Area that includes all landfilled waste areas described in the Solid Waste Permit (*not* the Landfill Cleanup Agreement) and waste areas not identified in the permitted area. Waste areas outside the permitted area may either be located within the MPCA Property boundary if they are located on MPCA-owned parcels or may be located on adjacent public or privately owned properties.

NOTE: Qualified Facility is a legacy term originating from legal statute used primarily for enforcement action. The "Qualified Facility" GIS feature should only be collected and used for legal actions. For general program use, more descriptive and useful GIS features including Land Management Area, LCA Boundary, parcels, MPCA Easements, or MPCA Property features are preferred.

Quarry

A gravel pit, mine, or rock quarry.

Railroad

A line feature collected at the centerline of a railroad.

Riprap

Rock or cable concrete used to dissipate the energy of water flowing downslope and to prevent erosion.

Road

A line feature collected at the centerline of a paved or unpaved road. This includes site access roads.

Sanitary sewer

A buried pipe used to transport water or wastewater, usually by gravity, from one point to another.

Sedimentation pond

A lined or unlined impoundment used to collect surface runoff and to allow soil particles to settle prior to a controlled discharge to a receiving stream or infiltration basin.

Settlement

Uneven elevation changes at a landfill due to methane gas release and waste decomposition.

Shapefile

A collection of files combined in a GIS to visualize point, line, or polygon vector data. Shapefiles are typically composed of multiple files with .shp, .shx, .dbf, .prj, .sbn, .sbx, and .xml extensions, and require these multiple files to work property. Shapefiles were developed by ESRI and are now an open spatial data format supported by the Open Geospatial Consortium.

Signage

Signs, typically marking “No Trespassing” zones, at each landfill.

Sinkhole

A circular, funnal-shaped depression formed on karst topography. Sinkholes form when erosion and solution cause a collapse in the underlying soil and limestone, resulting in a direct connection between surface water and groundwater.

Slurry wall

An underground wall designed to prevent groundwater migration off-site.

Solid waste permit

A regulatory document that allows for the disposal of waste, defines the area of waste disposal, and attaches certain conditions for proper operation, development, and environmental monitoring at a landfill. Closed Landfills retain their Solid Waste Permits and permit numbers to connect legacy documents to current Closed Landfills.

Spatial reference system

A spatial reference system defines a horizontal or vertical location relative to the Earth’s surface and can be identified as either geographic or projected coordinate systems. Geographic coordinate systems use longitude and latitude to identify real-world features on a spheroid relative to the Earth’s center. Projected or Cartesian coordinate systems map small areas as flat, gridded surfaces and identify features by their X (West-East) and Y (North-South) distances from a set origin.

Splitter tank

A tank in the groundwater remediation system.

Spot elevation

Elevation point used as a control for topographic surveys and to assess the vertical accuracy of point features with elevations. Spot elevations include XY Cartesian coordinates as well as elevations (Z). Horizontal locations must be reported in meters using the UTM, Zone 15 (extended) NAD 83 projection. Vertical elevations must be reported as orthometric heights in International Feet using the NAVD88 datum.

Storm sewer

A buried pipe used to transport collected surface water by gravity to a discharge point such as a sedimentation pond or surface water.

Storm water conveyance

A ditch or surface feature used to transport surface water off the cover.

Storm water ponding

Areas of settlement where surface water drains and is held until it evaporates or percolates.

Stream

A natural surface water that flows intermittently or continuously by gravity and supports aquatic life (includes both rivers and streams).

Subtype

Subtypes are categories of features that can be created within a geodatabase to subset features with the same attributes. Only one field can be used to create subtypes in a given feature class, and that field must be an integer. For example, a land use layer with coded attribute domain of 1, 2, and 3 could also be used to set the subtypes residential, industrial, and open space. Subtypes enable a field to be populated via drop-boxes or numbers in the attribute table, make editing data faster and less vulnerable to spelling errors. Also, subtypes and domains can be paired so that entering the subtype also populates secondary fields.

Surface water elevation

Point locations used to monitor surface water elevation. Point locations may mark culvert and bridge measuring points or staff gauges.

Surface water monitoring station

A sampling location used to measure surface water elevation and monitor surface water for contamination.

Telephone line

Wires or fiber optic cable, either overhead or buried, used for telecommunications.

Telephone terminal

A weather-proof enclosure installed by the local telephone company that supplies connection points for telephone lines from off-site to on-site telephone, modem, or other landline telecommunication equipment.

Toe drain outlet

A pipe outlet that conveys water flowing through the drainage layer of the final cover to the surface off the landfill footprint.

Topographic survey

A topographic survey provides information on a site's features and vertical relief. Topographic surveys are typically accomplished through either photogrammetry or terrestrial survey methods. Photogrammetric methods usually involve collecting aerial imagery in early spring or fall to avoid visual interference of foliage, and verifying elevations against a target or other ground control features visible from the air. Terrestrial survey techniques may be cost effective if a small area or limited number of site features need elevations established. See Section II. Data Collection, subsection 1.0 Site Features to see a list of all topographic features.

Trail

The centerline of an authorized or unauthorized trail used by the public near or on a landfill.

Treatment pond

A lined constructed basin used to volatilize VOCs and/or settle solids from contaminated water prior to its discharge into a receiving stream, infiltration basin, or sanitary sewer.

U.S. Survey Foot

The U.S. Survey Foot is an English unit of measure used for surveying in the United States. A U.S. Survey Foot is slightly longer than the usual foot, so that 1 meter equals exactly 39.37 inches and 0.3048006096

meters. In an International (S.I) Foot, one inch equals 2.54 centimeters and one foot equals 0.3048 meters. To convert U.S. Survey Feet to meters, multiply the U.S. Survey Feet by the fraction 1200/3937.

Valve

A device, usually buried, used to control flow of water, wastewater, leachate, condensate, or landfill gas by mechanical means such as a ball gate or flap (butterfly).

Waste footprint

The waste footprint marks the perimeter of all known waste deposits at a site, including waste not falling within the permitted area.

Waste processing facility

A transfer station, demolition or ash landfill, compost pile, canister, or other solid waste processing facility.

Water level control

Water level control structure for groundwater remediation systems.

Water main

A buried pipe used to transport potable water under pressure.

Water supply well

A domestic (private) or municipal (public) water supply well monitored by the CLP.

Well restriction area

An area posing a high risk for groundwater contamination; current wells located in restriction areas are not recommended for drinking water use, and any new wells should meet safety and drilling restrictions recommended by CLP Staff.

Wetland

A wetland is an area with predominately undrained hydric soils that at least periodically supports aquatic vegetation and is covered by water at some point during the growing season. Unlike a constructed wetland, a natural wetland has not been created for remediation purposes. (See Cowardin et al, 1979 or Section 404 of Clean Water Act for more information on what constitutes a wetland.)

Wooded area

An area with multiple trees; a wooded area or forest.

2.0 Abbreviations

ALTA/ACSM

American Land Title Association/American Congress on Surveying and Mapping

AOC

Area of Concern

ASPRS

American Society for Photogrammetry and Remote Sensing

CAD

Computer-Aided Drafting (the information system), also Computer-Aided Design Drawing (a data file).

CLP

Closed Landfill Program

ESRI

Environmental Systems Research Institute, Inc.

FGCC

Federal Geodetic Control Committee

FGDC

Federal Geographic Data Committee

GIS

Geographic Information System

GPS

Global Positioning System

HRL

Health Risk Limits

LiDAR

Light Ranging and Detection

LCA

Landfill Cleanup Agreement

LGU

Local Government Unit

LMIC

Land Management Information Center in Minnesota

MDH

Minnesota Department of Health

MGMG

Minnesota Geographic Metadata Guidelines

MNDOT

Minnesota Department of Transportation

MPCA

Minnesota Pollution Control Agency

NGS

National Geodetic Survey

NMAS

National Map Accuracy Standards

NSSDA

National Standard for Spatial Data Accuracy

OET

Minnesota Office of Enterprise Technology

OGC

Open Geospatial Consortium

rDBMS

Relational Database Management System

RMSE

Root Mean Square Error

QA/QC

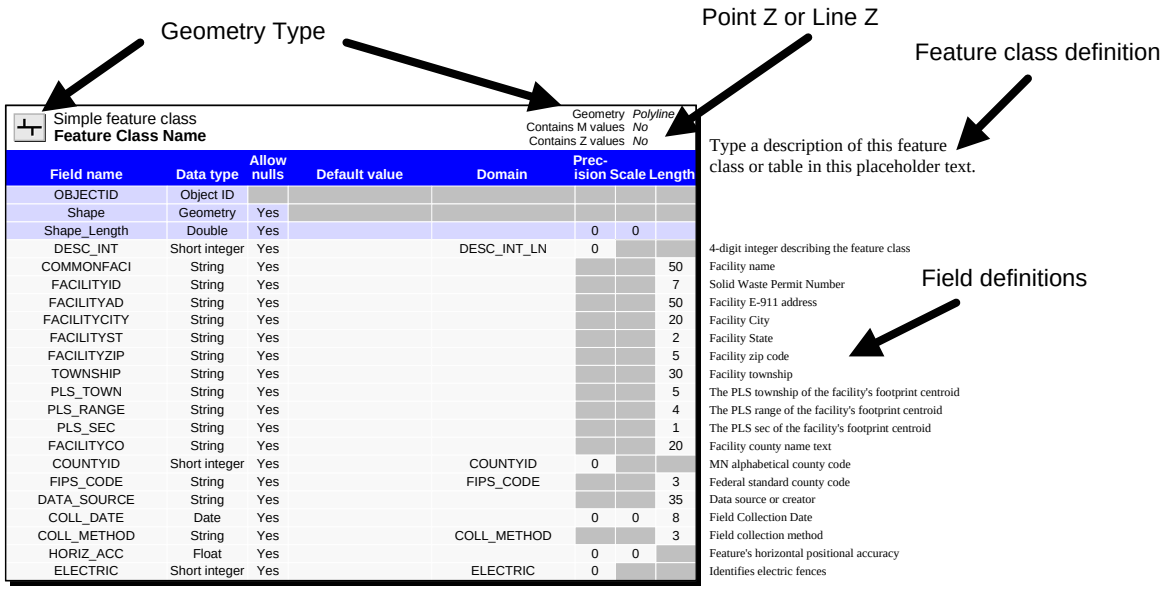
Quality Assurance/Quality Control

Appendix II

1.0 Feature class attribute tables

The feature class diagrams have been alphabetized within each feature dataset for easy reference in the following order: Elevation, General, Groundwater Remediation, Inspection, Land Management, Leachate Remediation, Landfill Gas Remediation, Surface Water, Survey, and Utility.

An example of a feature class attribute table is shown below. Each diagram includes the feature's geometry type (point, line, or polygon), identifies whether the feature class contains Z values (i.e., pointZ or lineZ types), and lists field names, data types, domain names, and text field lengths. The diagram also includes each feature class's definition in the upper right corner and a short version of each field's definition to the right of the field. Precision and scale values always appear as zeros and may be ignored.



Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					20	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					30	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the facility's footprint centroid
PLS_RANGE	String	Yes					4	The PLS range of the facility's footprint centroid
PLS_SEC	String	Yes					1	The PLS sec of the facility's footprint centroid
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Float	Yes			0	0		Feature's horizontal positional accuracy
ELECTRIC	Short integer	Yes		ELECTRIC	0			Identifies electric fences

The feature class diagrams were auto-generated by the Geodatabase Diagrammer application sample, which is available from the ArcScripts site on www.esri.com. The Geodatabase Diagrammer tool can be run from within ArcCatalog to document the geodatabase design with complete attribute table templates, field descriptions, field types and lengths, and domain codes. All of the feature class attribute tables shown in Appendix II were created using the Geodatabase Diagrammer tool.

1.1 ElevationFeatures

Simple feature class
Contour

Geometry *Polyline*
Contains M values *No*
Contains Z values *Yes*

An isometric line showing equal elevations on a set interval.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
ContourIndex

Geometry *Polyline*
Contains M values *No*
Contains Z values *Yes*

An isometric line of equal elevations used to make topographic maps more legible.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
SpotElevation

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Elevation point used as an X, Y, Z control for topographic surveys and to assess the vertical accuracy of features with elevations.

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

1.2 General Landfill Features

Simple feature class
Bridge

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

The centerline of a bridge.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
Building

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Any building larger than 10 square meters.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
BUILDING_TYPE	Short integer	Yes		BUILDING_TYPE	0			Building type and primary use
GASDETECTION	Short integer	Yes		GASDETECTION	0			Identifies buildings with gas detection systems
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
ConcretePad

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

A flat section of concrete.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
Fence

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Enclosure used to prevent trespassing into Closed Landfills.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
ELECTRIC	Short integer	Yes		ELECTRIC	0			Identifies electric fences

Simple feature class
FenceGate

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A line marking the gate's location on a fence.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
ToeDrainOutlet

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A pipe outlet that conveys water flowing through the drainage layer of the final cover to the surface off the landfill footprint.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
Trail

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

The centerline of an authorized or unauthorized trail used by the public near or on a landfill.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
PUBLIC_USE	Short integer	Yes		PUBLIC_USE	0			Indicates whether public acces and use are authorized

Simple feature class
Tree

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A single tree

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
WasteFootprint

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

The waste footprint marks the perimeter of all known waste deposits at a site, including waste not falling within the permitted area.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the feature's centroid
PLS_RANGE	String	Yes					4	The PLS range of the feature's centroid
PLS_SEC	String	Yes					2	The PLS section of the feature's centroid
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
WASTE_VOLUME	Long integer	Yes			0			Current waste volume in cubic yards
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
WoodedArea

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

An area with multiple trees; a wooded area or forest.

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

1.3 Groundwater Remediation Features

Simple feature class
CascadeAerator

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Open or enclosed water remediation system.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
ConstructedWetland

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Wetland constructed as part of a remediation system; a wetland that did not develop naturally.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
Geoprobe_Water

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A push-probe used to collect water samples at various depths.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
GW_Cleanout

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A capped pipe that provides access to water pipes, and is used for inspection and jetting of those pipes.

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
GW_ForceMain

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A pipe used to transport water under positive pressure.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
GW_ForceMainOutlet

Geometry *Point*
Contains M values *No*
Contains Z values *No*

The outlet of a water force main.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
GW_Invert

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A point at the inlet or outlet of a pipe that marks the flow line (the lowest point of a single drop of water inside the pipe).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
INVERT_ELEV	Double	Yes			0	0		Invert elevation
INVERT_DIR	String	Yes					5	Invert's direction and an identifying number
PIPE_TYPES	Short integer	Yes		PIPE_TYPES	0			Type of pipe the invert is measured in
INVERT_LOC	Short integer	Yes		INVERT_LOC	0			Identifies inverts measured for pipe ends within manholes or lift stations
COMMONSTAT	String	Yes					25	Common Station ID of the feature (pipe, manhole, or lift station) the invert is measured in
FLOW_DIR	Short integer	Yes		FLOW_DIRECTION	0			Pipe waterflow direction
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
GW_LiftStation

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

A structure that collects water flowing to it by gravity that then pumps the water under pressure to another location.

Simple feature class
GW_Manhole

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

A vertical structure extending from the surface to below grade allowing access to various types of equipment or pipes.

Simple feature class
GW_SanitarySewer

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A buried pipe used to transport water, usually by gravity, from one point to another.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

Simple feature class
GW_Valve

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A device, usually buried, used to control flow of water by mechanical means such as a ball gate or flap (butterfly).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
GW_WaterLvlControl

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Water level control structure for groundwater remediation systems

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
GWExtractionWell

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A well used to pump water out of the aquifer in order to treat the extracted water.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
WELL_TYPE	Short integer	Yes		GWEXTRWELL_TYPE	0			Identifies extraction well types
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Casing and ground elevations' vertical positional accuracy
CASING_ELEV	Double	Yes			0	0		Elevation at the top of casing on a sample station
GROUND_ELEV	Double	Yes			0	0		Ground elevation at a sample station

Simple feature class
InfiltrationBasin

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

A man-made impoundment used to collect and slowly seep water or treated wastewater back into the soil.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
MonitoringWell

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A permanent well constructed to monitor groundwater elevations and sample aquifers for various landfill contaminants.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
WELL_TYPE	Short integer	Yes		MONITORINGWELL_TYPE	0			Separates piezometers from monitoring wells
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Casing and ground elevations' vertical positional accuracy
CASING_ELEV	Double	Yes			0	0		Elevation at the top of casing on a sample station
GROUND_ELEV	Double	Yes			0	0		Ground elevation at a sample station

Simple feature class
PondOutlet

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

The outlet of an infiltration or sedimentation pond into the regional drainage system.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
SlurryWall

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

An underground wall designed to prevent groundwater migration off-site.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
SplitterTank

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A tank in the groundwater remediation system.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
TANK_LOC	Short integer	Yes		TANK_LOC	0			Identifies tanks locationed above or below ground
TANK_VOLUME	Long integer	Yes			0			Maximum tank volume in gallons
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
TreatmentPond

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

A lined constructed basin used to volatilize VOCs and/or settle solids from contaminated water prior to its discharge into a receiving stream, infiltration basin, or sanitary sewer.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASAERATOR	Short integer	Yes		HASAERATOR	0			Identifies treatment ponds with aerators
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
WaterSupplyWell

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A water supply well monitored by the CLP.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
WELL_TYPE	Short integer	Yes		WATERSUPPLYWELL_TYPE	0			Identifies extraction well types
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Sample station ownership
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Casing and ground elevations' vertical positional accuracy
CASING_ELEV	Double	Yes			0	0		Elevation at the top of casing on a sample station
GROUND_ELEV	Double	Yes			0	0		Ground elevation at a sample station

1.4 Inspection Features

Simple feature class
Alarm

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
Erosion

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
Fissure

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
IllegalDisposal

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
InvasiveWeed

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
SPECIES	Short integer	Yes		INV_SPECIES	0			Invasive Species
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
Pothole

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
PropertyDamage

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
DAMAGE_TYPE	Short integer	Yes		PROP_DAMAGE	0			Damage to MPCA property discovered during site inspections
TRESPASS	Short integer	Yes		TRESPASS	0			Identifies damages due to trespassers
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
Settlement

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
Signage

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
SIGN_TYPE	Short integer	Yes		SIGN_TYPE	0			Sign type
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
SiteCondition

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
StormWaterPonding

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
VegetationDamage

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
DAMAGE_TYPE	Short integer	Yes		VEG_DAMAGE	0			Damage to site vegetation discovered during site inspections
TRESPASS	Short integer	Yes		TRESPASS	0			Identifies damages due to trespassers
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

1.5 Land Management Features

Simple feature class
CLPZoning

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
ZONING_TYPE	String	Yes					40	Zoning type for each feature
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Zoning recommendations derived from Closed Landfill Use Plans.

Simple feature class
GroundwaterAOC

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

An area of land surrounding a landfill where certain activities may be impacted or precluded by existing contamination from the landfill or may cause the groundwater flow direction to change.

Simple feature class
GroundwaterPlume

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Approximate area of subterranean contaminated groundwater plume.

Simple feature class
LandManagementArea

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

An area defined by MPCA Staff to manage risks near a closed landfill.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the feature's centroid
PLS_RANGE	String	Yes					4	The PLS range of the feature's centroid
PLS_SEC	String	Yes					2	The PLS section of the feature's centroid
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
DELTA_ID	String	Yes					30	Landfill's program interest/site ID from SW Delta
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
LGUZoning

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Zoning developed by the Local Government Unit (LGU) for the area including and/or surrounding a closed landfill.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
ZONING_TYPE	String	Yes					40	Zoning type for each feature
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
MethaneAOC

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

An area beyond the Waste Footprint in a landfill where the landfill gas concentrations, specifically the methane concentration, is high enough to be of concern.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
Quarry

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

A gravel pit, mine, or rock quarry.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
WasteProcessingFacility

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

A transfer station, demolition landfill, ash landfill, compost pile, canister, or other solid waste processing facility.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
FACILITY_TYPE	Short integer	Yes		FACILITY_TYPE	0			Facility subtypes
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
WellRestrictionArea

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

An area posing a high risk for groundwater contamination.

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

1.6 Leachate Remediation Features

Simple feature class
LCH_Cleanout

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

A capped pipe that provides access to leachate pipes, and is used for inspection and jetting of those pipes.

Simple feature class
LCH_ForceMain

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

A pipe used to transport leachate under positive pressure.

Simple feature class
LCH_ForceMainOutlet

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

An outlet on the leachate force main.

Simple feature class
LCH_Invert

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A point at the inlet or outlet of a pipe that marks the flow line (the lowest point of a single drop of leachate inside the pipe).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
INVERT_ELEV	Double	Yes			0	0		Invert elevation
INVERT_DIR	String	Yes					5	Invert's direction and an identifying number
PIPE_TYPES	Short integer	Yes		PIPE_TYPES	0			Type of pipe the invert is measured in
INVERT_LOC	Short integer	Yes		INVERT_LOC	0			Identifies inverts measured for pipe ends within manholes or lift stations
COMMONSTAT	String	Yes					25	Common Station ID of the feature (pipe, manhole, or lift station) the invert is measured in
FLOW_DIR	Short integer	Yes		FLOW_DIRECTION	0			Pipe waterflow direction
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
LCH_LiftStation

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A structure that collects leachate flowing to it by gravity that then pumps the leachate under pressure to another location.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
LCH_Manhole

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A vertical structure extending from the surface to below grade allowing access to various types of equipment or pipes.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
LCH_Valve

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A device, usually buried, used to control flow of leachate by mechanical means such as a ball gate or flap (butterfly).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
LeachateLine

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Buried pipes used to transport landfill leachate, usually under positive pressure.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
LeachateSamplePt

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A location in a tank or pipe or a seep where leachate is collected for chemical analysis.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
LeachateTank

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A sample point on or above a collection vessel to collect leachate from a lined landfill.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
TANK_LOC	Short integer	Yes		TANK_LOC	0			Identifies tanks locationed above or below ground
TANK_VOLUME	Long integer	Yes			0			Maximum tank volume in gallons
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

1.7 Landfill Gas Remediation Features

Simple feature class
COND_ForceMain

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A pipe used to transport condensate under positive pressure.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
COND_ForceMainOutlet

Geometry *Point*
Contains M values *No*
Contains Z values *No*

An outlet on the condensate force main.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
COND_Invert

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
INVERT_ELEV	Double	Yes			0	0		Invert elevation
INVERT_DIR	String	Yes					5	Invert's direction and an identifying number
PIPE_TYPES	Short integer	Yes		PIPE_TYPES	0			Type of pipe the invert is measured in
INVERT_LOC	Short integer	Yes		INVERT_LOC	0			Identifies inverts measured for pipe ends within manholes or lift stations
COMMONSTAT	String	Yes					25	Common Station ID of the feature (pipe, manhole, or lift station) the invert is measured in
FLOW_DIR	Short integer	Yes		FLOW_DIRECTION	0			Pipe waterflow direction
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

A point at the inlet or outlet of a pipe that marks the flow line (the lowest point of a single drop of condensate inside the pipe).

Simple feature class
COND_LiftStation

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

A structure that collects condensate flowing to it by gravity that then pumps the condensate under pressure to another location.

Simple feature class
COND_Valve

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A device, usually buried, used to control flow of condensate by mechanical means such as a ball gate or flap (butterfly).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
CondensateLine

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Buried pipes used to transport condensate.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
CondensateSamplePt

Geometry *Point*
Contains M values *No*
Contains Z values *No*

An access point for collecting landfill gas condensate from a tank or sump

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
CondensateTank

Geometry *Point*
Contains M values *No*
Contains Z values *No*

The pumpout access point on a buried tank used to collect landfill gas condensate formed in the landfill gas lines.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
TANK_LOC	Short integer	Yes		TANK_LOC	0			Identifies tanks locationed above or below ground
TANK_VOLUME	Long integer	Yes			0			Maximum tank volume in gallons
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
GasEngine

Geometry *Point*
Contains M values *No*
Contains Z values *No*

An engine that burns landfill gas used to generate electricity.

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
GasExtractionWell

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A pipe installed either vertically or horizontally in waste and connected to a vacuum source used to withdraw landfill gas to be burned in a flare or gas engine.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
GasFlare

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A device used to combust landfill gas in a controlled manner.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
GasPassiveVent

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
SOLARFLARE	Short integer	Yes		SOLARFLARE	0			Idenitfies gas vents with solar-powered flares
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

A vertical pipe installed in the waste used to prevent lateral gas transfer and release landfill gas to the atmosphere.

Simple feature class
GasProbe

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

A vertical pipe installed in soil outside of the waste footprint to monitor the concentration of methane and other compounds present in the soil pore space.

Simple feature class
Geoprobe_Gas

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A push-probe advanced in soil or waste used to sample soil gas or landfill gas.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
Geoprobe_Soil

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A push-probe advanced in soil used to collect a soil sample at various depths.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
HorizontalVent

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A horizontal pipe installed in the waste or adjacent soils to prevent lateral gas migration and to release landfill gas to the atmosphere.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
LandfillGasLine

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Buried pipelines used to transport landfill gas from a gas extraction well to a flare or gas engine.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
LFG_Cleanout

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A capped pipe that provides access to gas pipelines and is used for inspection and jetting of those pipes.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
LFG_Valve

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A device, usually buried, used to control flow of landfill gas by mechanical means such as a ball gate or flap (butterfly).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

1.8 Surface Water Features

Simple feature class
Berm

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

An area of raised earth used to direct the flow of surface water off the cover at a closed landfill.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
Lake

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Water body larger than 20 acres or greater than or 2 meters deep.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
Riprap

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Rock or cable concrete used to dissipate the energy of water flowing downslope and to prevent erosion.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
SedimentationBasin

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

A lined or unlined impoundment used to collect surface runoff and to allow soil particles to settle prior to a controlled discharge to a receiving stream or infiltration basin.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
Sinkhole

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A circular, funnal-shaped depression formed on karst topography that results in a direct connection between surface water and groundwater.

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
StormSewer

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A buried pipe used to transport collected surface water by gravity to a discharge point such as a sedimentation pond or surface water.

Field name	Data type	Allow nulls	Default value	Domain	Prec-ision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

Simple feature class
StormWaterConveyance

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A ditch or surface feature used to transport surface water off the cover.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
Stream

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A natural surface water that flows intermittently or continuously by gravity and supports aquatic life (includes both rivers and streams).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
HASTROUT	Short integer	Yes		HASTROUT	0			Identifies designated trout streams

Simple feature class
SW_Cleanout

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A capped pipe that provides access to surface water pipelines, and is used for inspection and jetting of those pipes.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
SW_Culvert

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Buried pipe used to convey surface water beneath roads or berms.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
SW_ForceMain

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A pipe used to transport surface water under positive pressure.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
SW_ForceMainOutlet

Geometry *Point*
Contains M values *No*
Contains Z values *No*

An outlet on the surface water force main.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
SW_Invert

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
INVERT_ELEV	Double	Yes			0	0		Invert elevation
INVERT_DIR	String	Yes					5	Invert's direction and an identifying number
PIPE_TYPES	Short integer	Yes		PIPE_TYPES	0			Type of pipe the invert is measured in
INVERT_LOC	Short integer	Yes		INVERT_LOC	0			Identifies inverts measured for pipe ends within manholes or lift stations
COMMONSTAT	String	Yes					25	Common Station ID of the feature (pipe, manhole, or lift station) the invert is measured in
FLOW_DIR	Short integer	Yes		FLOW_DIRECTION	0			Pipe waterflow direction
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

A point at the inlet or outlet of a pipe that marks the flow line (the lowest point of a single drop of surface water inside the pipe).

Simple feature class
SW_Manhole

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

A vertical structure extending from the surface to below grade allowing access to various types of equipment or pipes.

Simple feature class
SW_Valve

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A device, usually buried, used to control flow of surface water by mechanical means such as a ball gate or flap (butterfly).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
SW_WaterLvlControl

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Water level control structure for surface water remediation.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
SWElevation

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
MEASUREMENT_TYPE	Short integer	Yes		MEASUREMENT_TYPE	0			SW Elevation measurement type
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Point locations used to measure surface water elevation. Point locations may mark culvert and bridge measuring points or staff gauges.

Simple feature class
SWMonitoringStation

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
COMMONSTAT	String	Yes					25	Common Station ID
UNIQUESTAT	String	Yes					10	Unique Station ID
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

A sampling location used to measure surface water elevation and monitor surface water for contamination.

Simple feature class
Wetland

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
COWARDIN_SYS	String	Yes		COWARDIN_SYS			1	Identifies wetlands to the Cowardin system level
COWARDIN_SUBSYS	String	Yes		COWARDIN_SUBSYS			2	Identifies water permanence, gradient, velocity, substrate, and flora of wetlands to the Cowardin subsystem level
COWARDIN_CLASS	String	Yes		COWARDIN_CLASS			2	Identifies the substate or vegetative life form of wetlands to the Cowardin class level
COWARDIN_WREG	String	Yes		COWARDIN_WREG			1	Identifies the water regime of wetlands and in the Cowardin classification system
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

A wetland is an area with predominately undrained hydric soils that at least periodically supports aquatic vegetation and is covered by water at some point during the growing season.

1.9 Survey Features

Simple feature class
BufferParcel

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

A parcel owned by the MPCA that is outside of the LCA Boundary and contains no known waste.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
PARCEL_OWNER	String	Yes					50	Parcel Owner(s)
PARCEL_ID	String	Yes					20	Parcel ID Number (PIN)
BONDSPENT	Short integer	Yes		BONDSPENT	0			Parcels where Bond money was spent on improvements
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Parcel ownership
LEASED	Short integer	Yes		LEASED	0			Identifies parcels the MPCA owns and leases to a third party
LEASEE	String	Yes					50	Identifies the third party leasing the parcels
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
GeodeticControlMonument

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A permanent marker, usually installed from the surface to a depth below frost depth, with precise horizontal (x, y) and vertical coordinates (z) established by surveyors and referenced to predetermined datum.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
LCABoundary

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the feature's centroid
PLS_RANGE	String	Yes					4	The PLS range of the feature's centroid
PLS_SEC	String	Yes					2	The PLS section of the feature's centroid
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Identifies areas described in a Landfill Cleanup Agreement as belonging to the landfill that contained waste at the time of execution.

Simple feature class
MPCAEasement

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
BONDSPENT	Short integer	Yes		BONDSPENT	0			Parcels where Bond money was spent on improvements
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Easement ownership
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

An easement on private or publicly owned lands to grant land access rights to the MPCA.

Simple feature class
MPCAProperty

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

The combined area of **MPCA-owned parcels** defined in the Landfill Cleanup Agreement (LCA), plus any other adjacent **MPCA-owned parcels**.

Simple feature class
Parcel

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

A legally described tract of land adjacent to, near, or on a landfill.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
PARCEL_OWNER	String	Yes					50	Parcel Owner(s)
PARCEL_ID	String	Yes					20	Parcel ID Number (PIN)
BONDSPENT	Short integer	Yes		BONDSPENT	0			Parcels where Bond money was spent on improvements
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Parcel ownership
LEASED	Short integer	Yes		LEASED	0			Identifies parcels the MPCA owns and leases to a third party
LEASEE	String	Yes					50	Identifies the third party leasing the parcels
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
PrivateEasement

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

An easement within MPCA-owned property allowing land access rights to private or public entities.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
BONDSPENT	Short integer	Yes		BONDSPENT	0			Parcels where Bond money was spent on improvements
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Easement ownership
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres

Simple feature class
PropertyMarker

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

A marker such as an iron pipe that has horizontal coordinates (x, y) established by surveyors, typically marking property corners and boundaries.

Simple feature class
QualifiedFacility

Geometry *Polygon*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PY	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the feature's centroid
PLS_RANGE	String	Yes					4	The PLS range of the feature's centroid
PLS_SEC	String	Yes					2	The PLS section of the feature's centroid
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
AREA_ACRES	Double	Yes			0	0		Feature Area in Acres
Shape_Length	Double	Yes			0	0		
Shape_Area	Double	Yes			0	0		

A subset of the Land Management Area that includes all landfilled waste areas described in the Solid Waste Permit (*not* the Landfill Cleanup Agreement) and waste areas not identified in the permitted area.

NOTE: Qualified Facility is a legacy term originating from legal statute used primarily for enforcement action. The "Qualified Facility" GIS feature should only be collected and used for legal actions. For general program use, more descriptive and useful GIS features including Land Management Area, LCA Boundary, parcels, MPCA Easements, or MPCA Property features are preferred.

1.10 Utility Features

Simple feature class
BuriedCable

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Buried media, communication, or other non-power cables.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

Simple feature class
BuriedPower

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A set of wires, either sheathed or in conduit, used to conduct electricity.

Field name	Data type	Allow nulls	Default value	Domain	Prec-ision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

Simple feature class
CommunicationTower

Geometry *Point*
Contains M values *No*
Contains Z values *No*

Telephone, internet, cellular, or other communication towers located on or near a landfill.

Field name	Data type	Allow nulls	Default value	Domain	Precision			
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
ElectricalPanel

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A control panel or fusebox for monitoring the circuits used by pumps and gas remediation features.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
ElectricMeter

Geometry *Point*
Contains M values *No*
Contains Z values *No*

An meter showing electricity usage.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
GasOilLine

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Buried pipe lines owned by utility companies that carry explosive fluids such as natural gas.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

Simple feature class
Hydrant

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A fire hydrant or other hydrant connected to a water supply.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
OverheadPowerLine

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Electric wires suspended from power poles.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

Simple feature class
PowerPole

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A utility pole used to support overhead electrical equipment, power lines, or telephone lines.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
Railroad

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

The centerline of a railroad.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

Simple feature class
Road

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

The centerline of a paved or unpaved road.

Field name	Data type	Allow nulls	Default value	Domain	Prec-ision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
PUBLIC_USE	Short integer	Yes		PUBLIC_USE	0			Indicates whether public acces and use are authorized

Simple feature class
Tank

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A tank

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
FEAT_DESC	String	Yes					35	In-depth feature descriptions and names
TANK_LOC	Short integer	Yes		TANK_LOC	0			Identifies tanks locationed above or below ground
TANK_VOLUME	Long integer	Yes			0			Maximum tank volume in gallons
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
TelephoneLine

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Wires or fiber optic cable, either overhead or buried, used for telecommunications.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

Simple feature class
TelephoneTerminal

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A weather-proof enclosure that supplies connection points for telephone lines from off-site to on-site telephone, modem, or other landline telecommunication equipment.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
U_Culvert

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Buried pipe used to convey utilities beneath roads or berms.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy

Simple feature class
U_Invert

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A point at the inlet or outlet of a utility pipe that marks the lowest point inside the pipe.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
INVERT_ELEV	Double	Yes			0	0		Invert elevation
INVERT_DIR	String	Yes					5	Invert's direction and an identifying number
PIPE_TYPES	Short integer	Yes		PIPE_TYPES	0			Type of pipe the invert is measured in
INVERT_LOC	Short integer	Yes		INVERT_LOC	0			Identifies inverts measured for pipe ends within manholes or lift stations
COMMONSTAT	String	Yes					25	Common Station ID of the feature (pipe, manhole, or lift station) the invert is measured in
FLOW_DIR	Short integer	Yes		FLOW_DIRECTION	0			Pipe waterflow direction
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
U_LiftStation

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

A structure that collects wastewater flowing to it by gravity that then pumps the wastewater under pressure to another location.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

Simple feature class
U_Manhole

Geometry *Point*
Contains M values *No*
Contains Z values *Yes*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
HASALARM	Short integer	Yes		HASALARM	0			Presence or absence of alarms on a landfill feature
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting
VERTICAL_ACC	Short integer	Yes		VERTICAL_ACC	0			Feature's vertical positional accuracy
ELEVATION	Double	Yes			0	0		Elevation

A vertical structure extending from the surface to below grade allowing access to various types of equipment or pipes.

Simple feature class
U_SanitarySewer

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

A buried pipe used to transport wastewater, usually by gravity, from one point to another.

Simple feature class
U_Valve

Geometry *Point*
Contains M values *No*
Contains Z values *No*

A device, usually buried, used to control flow of water or wastewater by mechanical means such as a ball gate or flap (butterfly).

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
DESC_INT	Short integer	Yes		DESC_INT_PT	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
PLS_TOWN	String	Yes					5	The PLS township of the point
PLS_RANGE	String	Yes					4	The PLS range of the point
PLS_SEC	String	Yes					2	The PLS section of the point
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
UTMNORTHING	Double	Yes			0	0		UTM Northing
UTMEASTING	Double	Yes			0	0		UTM Easting

Simple feature class
WaterMain

Geometry *Polyline*
Contains M values *No*
Contains Z values *No*

A buried pipe used to transport potable water under pressure.

Field name	Data type	Allow nulls	Default value	Domain	Precision	Scale	Length	
OBJECTID	Object ID							
Shape	Geometry	Yes						
Shape_Length	Double	Yes			0	0		
DESC_INT	Short integer	Yes		DESC_INT_LN	0			4-digit integer describing the feature class
COMMONFACI	String	Yes					50	Facility name
FACILITYID	String	Yes					7	Solid Waste Permit Number
FACILITYAD	String	Yes					50	Facility E-911 address
FACILITYCITY	String	Yes					40	Facility City
FACILITYST	String	Yes					2	Facility State
FACILITYZIP	String	Yes					5	Facility zip code
TOWNSHIP	String	Yes					40	Facility township
FACILITYCO	String	Yes					20	Facility county name text
COUNTYID	Short integer	Yes		COUNTYID	0			MN alphabetical county code
FIPS_CODE	String	Yes		FIPS_CODE			3	Federal standard county code
DATA_SOURCE	String	Yes					35	Data source or creator
COLL_DATE	Date	Yes			0	0	8	Field Collection Date
COLL_METHOD	String	Yes		COLL_METHOD			3	Field collection method
HORIZ_ACC	Short integer	Yes		HORIZ_ACC	0			Feature's horizontal positional accuracy
OWNERSHIP	Short integer	Yes		OWNERSHIP	0			Utility ownership
UTIL_OWNER	String	Yes					50	Utility Owner(s)

1.11 Domains

Coded value domain
BONDSPENT

Description *Tracks bond dollar restrictions per parcel*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	Not Bonded
1	Bonded

Coded value domain
BUILDING_TYPE

Description *Building types or primary use*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Air Stripper Blower
2	Blower
3	Equipment Storage
4	Flare Blower
5	Garage
6	Groundwater Treatment
7	Manifold
8	Meter
9	Office
10	Pole Barn
11	Storage
12	Tank
13	Landfill Gas-to-Energy

Coded value domain
COLL_METHOD

Description *Describes how the data was obtained*
Field type *String*
Split policy *Default value*
Merge policy *Default value*

Code	Description
S	Classical Survey
SL	Classical Survey with leveling
CAD	Converted from CADD, raster, or other data type
DP	Digitized (from aerial photo or DOQ)
DC	Digitized (from CADD or other digital data)
DG	Digitized (from georeferenced map, JPEG, or other static image)
D	Digitized (from topo or DRG)
GPS	GPS (non-survey quality)
SG	GPS (survey quality)
GL	GPS with leveling (non-survey quality)
SGL	GPS with leveling (survey quality)
II	Image Interpretation (automated)
M	Manual estimate
P	Photogrammetry
RS	Remote Sensing
UNK	Unknown

Range domain
COUNTYID

Description *Two-digit Minnesota*
Field type *County ID numbers*
Split policy *(non-FIPS)*
Merge policy *Short integer*

Minimum value	Maximum value
1	87

Coded value domain
COWARDIN_SYS

Description *Identifies wetlands to the Cowardin system level*
Field type *String*
Split policy *Default value*
Merge policy *Default value*

Code	Description
P	Palustrine
L	Lacustrine
R	Riverine

Coded value domain
COWARDIN_SUBSYS

Description *Identifies water permanence, gradient, velocity, substrated, and flora of wetlands to the Cowardin subsystem level*
Field type *String*
Split policy *Default value*
Merge policy *Default value*

Code	Description
L1	Limnetic
L2	Littoral
R1	Lower Perennial
R2	Upper Perennial
R3	Intermittent
R4	Unknown Perennial

Coded value domain
COWARDIN_CLASS

Description *Identifies the substate or vegetative life forms of wetlands to the Cowardin class level*
Field type *String*
Split policy *Default value*
Merge policy *Default value*

Code	Description
AB	Aquatic Bed
EM	Emergent Wetland
FO	Forested Wetland
ML	Moss-Lichen Wetland
SS	Scrub-Shrub Wetland
RB	Rock Bottom
RS	Rocky Shore
SB	Streambed
UB	Unconsolidated Bottom
US	Unconsolidated Shore

Coded value domain
COWARDIN_WREG

Description *Identifies the water regime of wetlands in the Cowardin classification system*
Field type *String*
Split policy *Default value*
Merge policy *Default value*

Code	Description
A	Temporarily Flooded
B	Saturated
C	Seasonally Flooded
D	Seasonally Flooded/Well Drained
E	Seasonally Flooded/Saturated
F	Semi-permanently Flooded
G	Intermittently Exposed
H	Permanently Flooded
J	Intermittently Flooded
K	Artificially Flooded
U	Unresolved
W	Intermittently Flooded/Temporary
Y	Saturated/semi-permanent/seasonal
Z	Intermittently Exposed/permanent

Coded value domain
DESC_INT_LN

Description *Unique numeric identifiers for each line feature*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
2705	Berm
2001	Bridge
2305	Buried Cable
2306	Buried Power
2602	Cascade Aerator
2403	Condensate Line
2102	Contour Index
2101	Contour
2704	Culvert (SW)
2304	Culvert (Utility)
2801	Erosion
2002	Fence
2003	Fence Gate
2802	Fissure
2601	Force Main (GW)
2501	Force Main (LCH)
2401	Force Main (LFG)
2701	Force Main (SW)
2302	Gas/Oil Line
2404	Horizontal Vent
2402	Landfill Gas Line
2502	Leachate Line
2307	Overhead Power Line
2308	Railroad
2309	Road
2603	Sanitary Sewer (GW)
2303	Sanitary Sewer (Utility)
2604	Slurry Wall
2703	Storm Sewer
2706	Storm Water Conveyance
2702	Stream
2310	Telephone Line
2004	Trail
2301	Water Main

Coded value domain
DESC_INT_PY

Description *Unique numeric identifiers for each polygon feature*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
3201	Buffer Parcel
3001	Building
3901	CLP Zoning
3002	Concrete Pad
3601	Constructed Wetland
3903	Groundwater Area of Concern
3904	Groundwater Plume
3602	Infiltration Basin
3801	Invasive Weed
3702	Lake
3905	Land Management Area
3202	LCA Boundary
3902	LGU Zoning
3906	Methane Area of Concern
3203	MPCA Easement
3204	MPCA Property
3205	Parcel
3206	Private Easement
3907	Qualified Facility
2908	Quarry
3704	Riprap
3703	Sedimentation Pond
3802	Settlement
3803	Storm Water Ponding
3603	Treatment Pond
3003	Waste Footprint
3909	Waste Processing Facility
3910	Well Restriction Area
3701	Wetland
3004	Wooded Area

Coded value domain
DESC_INT_PT

Description *Unique numeric identifiers for each point feature*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1801	Alarm
1601	Cleanout (GW)
1501	Cleanout (LCH)
1401	Cleanout (LFG)
1701	Cleanout (SW)
1301	Communication Tower
1407	Condensate Sample Point
1408	Condensate Tank
1310	Electric Meter
1311	Electrical Panel
1602	Force Main Outlet (GW)
1502	Force Main Outlet (LCH)
1402	Force Main Outlet (LFG)
1702	Force Main Outlet (SW)
1409	Gas Engine
1410	Gas Extraction Well
1411	Gas Flare
1412	Gas Passive Vent
1413	Gas Probe
1201	Geodetic Control Monument
1414	Geoprobe - Gas
1415	Geoprobe - Soil
1613	Geoprobe - Water
1610	GW Extraction Well
1302	Hydrant
1802	Illegal Disposal
1603	Invert (GW)
1503	Invert (LCH)
1403	Invert (LFG)
1703	Invert (SW)
1303	Invert (Utility)
1507	Leachate Sample Point
1508	Leachate Tank
1606	Lift Station (GW)
1506	Lift Station (LCH)
1406	Lift Station (LFG)
1306	Lift Station (Utility)
1604	Manhole (GW)
1504	Manhole (LCH)
1704	Manhole (SW)
1304	Manhole (Utility)
1607	Monitoring Well
1611	Pond Outlet
1803	Pothole
1307	Power Pole
1804	Property Damage
1202	Property Marker
1805	Signage
1709	Sinkhole
1806	Site Condition
1612	Splitter Tank
1101	Spot Elevation
1706	SW Elevation
1707	SW Monitoring Station
1308	Tank (Utility)
1309	Telephone Terminal
1001	Toe Drain Outlet
1002	Tree
1405	Valve (Condensate)
1605	Valve (GW)
1505	Valve (LCH)
1404	Valve (LFG)
1705	Valve (SW)
1305	Valve (Utility)
1807	Vegetation Damage
1608	Water Level Control (GW)
1708	Water Level Control (SW)
1609	Water Supply Well

Coded value domain
ELECTRIC

Description *Identifies electric fences*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	Not Electric
1	Electric

Coded value domain
FACILITY_TYPE

Description *Waste processing facility subtypes*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Ash
2	Canister
3	Compost
4	Demolition
5	Transfer Station

Coded value domain
FIPS_CODE

Description *Federal standard codes for MN counties*
Field type *String*
Split policy *Default value*
Merge policy *Default value*

Code	Description
001	AITKIN
003	ANOKA
005	BECKER
007	BELTRAMI
009	BENTON
011	BIG STONE
013	BLUE EARTH
015	BROWN
017	CARLTON
019	CARVER
021	CASS
023	CHIPPEWA
025	CHISAGO
027	CLAY
029	CLEARWATER
031	COOK
033	COTTONWOOD
035	CROW WING
037	DAKOTA
039	DODGE
041	DOUGLAS
043	FARIBAULT
045	FILLMORE
047	FREEBORN
049	GOODHUE
051	GRANT
053	HENNEPIN
055	HOUSTON
057	HUBBARD
059	ISANTI
061	ITASCA
063	JACKSON
065	KANABEC
067	KANDIYOHI
069	KITTSON
071	KOOCHICHING
073	LAC QUI PARLE
075	LAKE
077	LAKE OF THE WOODS
079	LE SUEUR
081	LINCOLN
083	LYON

Coded value domain
FIPS_CODE, continued...

Description *Federal standard codes for MN counties*
Field type *String*
Split policy *Default value*
Merge policy *Default value*

Code	Description
087	MAHNOMEN
089	MARSHALL
091	MARTIN
085	MCLEOD
093	MEEKER
095	MILLE LACS
097	MORRISON
099	MOWER
101	MURRAY
103	NICOLLET
105	NOBLES
107	NORMAN
109	OLMSTED
111	OTTER TAIL
113	PENNINGTON
115	PINE
117	PIPESTONE
119	POLK
121	POPE
123	RAMSEY
125	RED LAKE
127	REDWOOD
129	RENVILLE
131	RICE
133	ROCK
135	ROSEAU
139	SCOTT
141	SHERBURNE
143	SIBLEY
137	ST LOUIS
145	STEARNS
147	STEELE
149	STEVENS
151	SWIFT
153	TODD
155	TRAVERSE
157	WABASHA
159	WADENA
161	WASECA
163	WASHINGTON
165	WATONWAN
167	WILKIN
169	WINONA
171	WRIGHT
173	YELLOW MEDICINE

Coded value domain
FLOW_DIRECTION

Description *Pipe waterflow direction*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Inlet
2	Outlet

Coded value domain
GASDETECTION

Description *Identifies buildings with gas detection systems*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	No Gas Detection System
1	Gas Detection System

Coded value domain
GWEXTRWELL_TYPE

Description *GW Extraction well subtypes*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Barrier Well
2	Recovery Well
3	Other

Coded value domain
HASAERATOR

Description *VOC remediation in treatment ponds*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	No Aerator
1	Aerator

Coded value domain
HASALARM

Description *Presence or absence of an alarm*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	No Alarm
1	Alarm

Coded value domain
HASTROUT

Description *Identified designated trout streams*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	Not a designated trout stream
1	Designated trout stream

Coded value domain
HORIZ_ACC

Description *Feature's horizontal accuracy*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	15 cm (~6 in) or better
2	30 cm (~12 in) or better
3	1 meter or better
4	2 meters or better
5	2-5 meters
6	5-10 meters
7	>10 meters
8	Unknown

Coded value domain
INV_SPECIES

Description *Invasive species name*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Buckthorn
3	Garlic Mustard
4	Purple Loosestrife
6	Thistle

Coded value domain
INVERT_LOC

Description *Identifies inverts inside manholes or lift stations*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	In a Lift Station
2	In a Manhole
3	Pond Outlet

Coded value domain
LEASED

Description *Identifies parcels the MPCA owns and leases to a third party*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	No
1	Yes

Coded value domain
MEASUREMENT_TYPE

Description *SW elevation point location types*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Bridge Point
2	Culvert Point
3	Staff Gauge

Coded value domain
MONITORINGWELL_TYPE

Description *Monitoring well subtypes*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Monitoring Well
2	Piezometer

Coded value domain
OWNERSHIP

Description *Parcel ownership*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Private
2	Public (non-MPCA)
3	MPCA

Coded value domain
PIPE_TYPES

Description *Invert pipe types*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Condensate Line
2	Culvert
3	Force Main
4	Landfill Gas Line
5	Leachate Line
6	Sanitary Sewer
7	Storm Sewer
8	Storm Water Conveyance
9	Water Main

Coded value domain
PROP_DAMAGE

Description *Damage to MPCA property discovered during site inspections*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Animal Burrow
2	Fence
3	Fence Gate
4	Gas Vent or Probe
5	Monitoring Well
6	Torn Cover
7	Recreational Vehicle (Snowmobile/ATM)
8	Vehicle
9	Other

Coded value domain
PUBLIC_USE

Description *Trail or road use authorization*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	Not Authorized
1	Authorized

Coded value domain
SIGN_TYPE

Description *Signs on MPCA property*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	No Trespassing
2	No Swimming/ Avoid Water Contact

Coded value domain
SOLARFLARE

Description *Idenitfies gas vents with solar-powered flares*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	No Solar Flare
1	Solar Flare

Coded value domain
TANK_LOC

Description *Identifies tanks locationed above or below ground*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Above Ground
2	Below Ground

Coded value domain
TRESPASS

Description *Damage due to trespassers*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
0	No
1	Yes

Coded value domain
VEG_DAMAGE

Description *Damage to site vegetation discovered during site inspections*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Dead Vegetation
2	Gas Burns
3	Leachate Seep
4	Poisonous Plants
5	Poor Cover Soils
6	Other

Coded value domain
VERTICAL_ACC

Description *Feature's vertical accuracy*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	3 mm (~0.01 ft) or better
2	30 mm (~0.1 ft) or better
3	15 cm (~6 in) or better
4	30 cm (~12 in) or better
5	1 meter or better
6	>1 meter
7	Unknown

Coded value domain
WATERSUPPLYWELL_TYPE

Description *Water supply well subtypes*
Field type *Short integer*
Split policy *Default value*
Merge policy *Default value*

Code	Description
1	Industrial
2	Irrigation
3	Potable