DMR Pollutant Loading Tool
Version 1.0

ABOUT THE LOADING TOOL AND BETA TESTING

1. OVERVIEW OF THE LOADING TOOL

You have a new tool for analyses of wastewater pollutant discharge data. This tool, the Discharge Monitoring Report Pollutant Loading Tool (abbreviated "Loading Tool") provides you with pollutant loadings you can use to answer questions about the amount and toxicity of pollutant discharges to U.S. waters.

The tool calculates pollutant loadings from monitoring and permit data from EPA's Permit Compliance System (PCS) and Integrated Compliance Information System for the National Pollutant Discharge Elimination System (ICIS-NPDES). The tool also includes wastewater pollutant discharge data from EPA's Toxics Release Inventory (TRI). Data are available for the years 2007 through 2010. This tool helps you access wastewater pollutant discharge data, if you are a general user or if you are a more technical user:

- If you are a **general user**, you can use the *EZ Search* or *TRI Search* to quickly find discharge monitoring data or TRI data based on simple searches.
- If you are a **technical user** (e.g., NPDES permit writer, watershed modeler, or regulatory agency), you can use the *Advanced Search* to access more detailed discharge monitoring data that you can download in a comma-separated value (CSV) file for further analysis in your own software application.

You can navigate the Loading Tool home page using the eight tabs described in Table 1.

Table 1. Loading Tool Tabs and Descriptions

Tab	Description
Overview	Provides general information about the tool including: (1) How to Navigate the Tool; (2) Loading Tool Data Sources; (3) Data Scope and Limitations; and (4) 2010 Beta Release and Testing.
EZ Search	General users can perform simple searches using DMR data. Results are displayed on a Web page in "top ten" lists to help you determine which discharges are important, which facilities and industries are producing these discharges, and which watersheds are impacted.
TRI Search	Similar search interface and display results as EZ Search but the data source is TRI data
Facility Search	Provides direct access to facility-level information, one facility at a time.
Advanced Search	Designed for technical users and provides increased flexibility on search criteria and data to be downloaded as a CSV file for post processing by the user.
Data Explorer	General users can create a thematic map of the United States in which states are shaded in blue in proportion to the user's search criteria. For example, the user can visually see the number of POTWs in each state with states shaded in dark blue having the most number of POTWs.
Everyday Searches	Provides access to trend charts and other 'canned' searches (by geographic location, industry sector, and/or pollutant) of DMR data that are often used by technical users. In particular, the "Facility Loading Calculations" on this tab details exactly how the tool

	calculates annual pollutant loads using DMR data
Users Guide/Technical Documents	Provides the instructions, guides, and metadata to assist users with the Loading Tool.

2. ABOUT THE DATA

The Loading Tool uses *discharge monitoring* and *permit data* from PCS and ICIS-NPDES. PCS and ICIS-NPDES are databases that automate entering, updating, and retrieving discharge monitoring and permit data.

Dischargers submit *discharge monitoring data* to their permitting authority using discharge monitoring report (DMR) forms. The permitting authority then enters these data into PCS or ICIS-NPDES and checks whether the discharger is in compliance with the NPDES permit requirements. Facilities report pollutant discharge monitoring data in their DMR as mass-based quantities (e.g., pounds per day) and/or concentrations (e.g., mg/L); however, discharges are reported using a wide variety of units.

Permit data include NPDES permit limits for water quality parameters (e.g., dissolved oxygen and temperature), specific chemicals (e.g., phenol), bulk parameters (e.g., biochemical oxygen demand), and flow. The permitting authority enters these data into PCS or ICIS-NPDES. PCS and ICIS-NPDES also include information on the facility's permit requirements, such as monitoring frequency.

- PCS and ICIS-NPDES are national in scope, including data from all 50 states and U.S. territories and tribes;
- PCS and ICIS-NPDES contain discharge data that facilities determine through effluent chemical analyses and metered flow; and
- PCS and ICIS-NPDES collectively include information for facilities in all point source categories that discharge directly to receiving streams.

The Loading Tool also uses data from the *Toxics Release Inventory* (TRI). TRI data are beneficial to analyzing wastewater pollutant discharges, in addition to DMR data, due to the following:

- TRI data are national in scope, including data from all 50 states and U.S. territories;
- TRI includes transfers to POTWs, not just direct discharges;
- TRI includes discharge data from manufacturing NAICS codes and some other industrial categories which may handle significant quantities of toxic chemicals; and
- TRI includes releases of many chemicals, not just those already identified as problems and limited in facility discharge permits.

Other data sources used by the Loading Tool include:

- Watershed Assessment Tracking and Environmental ResultS (WATERS) web services for retrieving information about receiving waterbodies (available online at http://www.epa.gov/waters/geoservices/index.html);

- 2008 Clean Watershed Needs Survey (CWNS) for providing information about treatment technologies in place at municipal wastewater treatment plants (available online at http://www.epa.gov/cwns/cwns2008.htm);
- EPA's Facility Registry System (FRS) for providing facility identification and location information, and to link facility ID's from PCS and ICIS-NPDES to facility IDs in TRI and CWNS (available online at: http://www.epa.gov/enviro/html/fii/index.html);
- EPA's Substance Registry Services (SRS) to provide pollutant identification information that allows users to identify which other EPA data systems, environmental statutes, or other sources have information about a particular pollutant (available online at: http://iaspub.epa.gov/sor_internet/registry/substreg/home/overview/home.do); and
- EPA's STOrage and RETrieval (STORET) Data Warehouse to identify water monitoring stations upstream and downstream of facility discharges (available online at: http://www.epa.gov/storet/).

2.1 Data Limitations

You should recognize the limitations of the pollutant loadings calculated by the Loading Tool:

- PCS and ICIS-NPDES:
  - PCS and ICIS-NPDES only include information about discharges of pollutants that a facility is required by permit to monitor; facilities are not required to monitor or report all pollutants they actually discharge.
  - Permitting authorities are not required to submit DMR data to PCS or ICIS-NPDES for facilities that they classify as "minor" dischargers[1].
  - DMR data may be entered into the PCS or ICIS-NPDES database manually, which can lead to data-entry errors.
  - Discharge data are entered into PCS and ICIS-NPDES using a variety of measurement units. The Loading Tool can only calculate mass discharges for pollutants that are measured either as mass quantities or concentrations. Therefore some pollutants, such as toxicity parameters measured as percent, are excluded from the Loading Tool. Further, the Loading Tool cannot calculate a load for concentration measurements if a wastewater flow measurement is not provided.
  - Standard Industrial Classification (SIC) codes used to identify a facility's industrial category are not included for all facilities; therefore, some facilities cannot be classified by industry.
  - North American Industrial Classification System (NAICS) codes, used to classify a facility's industrial activity in other EPA databases, are not included in PCS and are included in ICIS-NPDES for only a small number of facilities.

[1] Minor facilities are identified by NPDES permitting authorities based on: toxic pollutant potential, ratio of discharge flow/stream flow volume, conventional pollutant loading, public health impact, water quality factors, and proximity to costal waters. Minor facilities may have a smaller impact on receiving waters than major facilities. Therefore, they receive less regulatory attention.

— Although PCS may include more than one SIC code per facility, the Loading Tool only uses the primary SIC code to classify facilities by industry.

- TRI:

  — While TRI is national in scope, not all facilities report discharges to TRI and not all pollutants that are discharged are reported to TRI. A facility must report their releases to TRI if it:
    1. Is in a specific industry sector (e.g., manufacturing, mining, electric power generation);
    2. Employs 10 or more full-time equivalent employees; and
    3. Manufactures or processes >25,000 lbs. of a TRI-listed chemical or otherwise uses >10,000 lbs. of a listed chemical in a given year. Note that persistent bioaccumulative toxic chemicals (PBTs) have lower reporting thresholds.

  — Release reports are, in part, based on estimates, not measurements, which may result in inaccurately reported releases.

  — Certain chemicals (polycyclic aromatic compounds (PACs), dioxin and dioxin-like compounds, and metal compounds) are reported as a class, not as individual compounds. Because the individual compounds in the class have widely varying toxic effects, the potential toxicity of chemical releases can be inaccurately estimated.

  — Facilities are identified based on primary NAICS code, which is self-reported by the facility. EPA generally relies on facility claims regarding the NAICS code identification. The primary NAICS code is associated with the facility's revenues, and may not necessarily reflect the industrial activities related to their pollutant discharges.

3. DEVELOPMENT STATUS AND DEPLOYMENT SCHEDULE

Starting in August 2008, EPA's Office of Water (OW) worked with EPA's Office of Enforcement and Compliance Assurance (OECA) and EPA's Office of Environmental Information (OEI) to design a pollutant load calculation tool using both PCS and ICIS-NPDES data. OW completed the development of the load calculations in September 2009, in support of the preliminary *2010 Effluent Guidelines Program Plan*. After successful development of the load calculations, OW and its partners developed a web-based version of the tool and its components. The web-based version of the tool was created to provide greater transparency and utility of DMR data in PCS and ICIS-NPDES. EPA initially released the Loading Tool as a beta version on 2 December 2010 with 2007 data to incorporate early public input on the development of the new tool. EPA received 38 comments during the public comment period. EPA reviewed these comments and incorporated suggested enhancements into the tool. See EPA's *Comment Response Document for the December 2010 Beta Release of the Discharge Monitoring Report (DMR) Pollutant Loading Tool* for the public comments and EPA responses to these comments. EPA continues to solicit input and suggestions on the tool. Please send your comments and suggestions to: waterloadings@epa.gov.

For more information about EPA's software testing and quality assurance procedures for the Loading Tool, see Section 5.0 of the *Technical Users Support Document for the DMR Pollutant Loading Tool*.