



User's Guide for the Discharge Monitoring Report (DMR) Pollutant Loading Tool

EZ Search, Facility Search, and Advanced Search

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1. OVERVIEW

You have a new tool for analyses of wastewater pollutant discharge data. This tool, the Discharge Monitoring Report (DMR) Pollutant Loading Tool (abbreviated “Loading Tool”) provides you with pollutant loadings you can use to understand who is discharging what pollutant and where.

The tool calculates pollutant loadings from permit and DMR data from EPA’s Permit Compliance System (PCS) and Integrated Compliance Information System for the National Pollutant Discharge Elimination System (ICIS-NPDES). 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* to quickly find discharge monitoring 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.

The Loading Tool is divided into six tabs, with the “Overview” as the default view:

- **Overview:** This tab 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:** Allows you to perform simple searches.
- **Facility Search:** Provides you direct access to facility-level information, one facility at a time.
- **Advanced Search:** Offers you increased flexibility on search criteria and allows you to download data as a CSV file for post processing.
- **EPA Look-up Table Search:** Allows you to search crosswalks used by the Loading Tool to link information from different data sources.
- **Users Guide/Technical Documents:** Provides the instructions, guides, and metadata to assist you with using the Loading Tool and interpreting its output.

This user guide provides guidance for using the EZ Search, Facility Search, and Advanced Search. You can find guidance for using the EPA Look-up Table Search feature in the *User’s Guide for using the Look-Up Table Search Tab*.

2. EZ SEARCH

You can access pollutant loadings calculated from Discharge Monitoring Report (DMR) data quickly and easily using the EZ Search. The EZ Search can answer questions such as:

- Where is the discharge of interest (Location Search and Watershed Search option)?
- What is the pollutant of interest (Pollutant Search option)?
- Who is the discharger of interest (Industry Search option)?

This guide provides instructions and tips for using the EZ Search option and provides examples to illustrate how to combine these search options to produce results that answer more detailed questions. The following search options are available in the EZ Search:

- Location Search Option;
- Watershed Search Option;
- Pollutant Search Option;
- Industry Search Option; and
- Using Search Options in Combination.

2.1 Location Search Option

By default, the EZ Search reports results for nationwide loadings. A nationwide search includes all 50 U.S. states and U.S. territories and tribes. You can narrow the search to the specified geographic boundaries by specifying an EPA Region, state, county, city, or zip code, as shown in Figure 2-1.

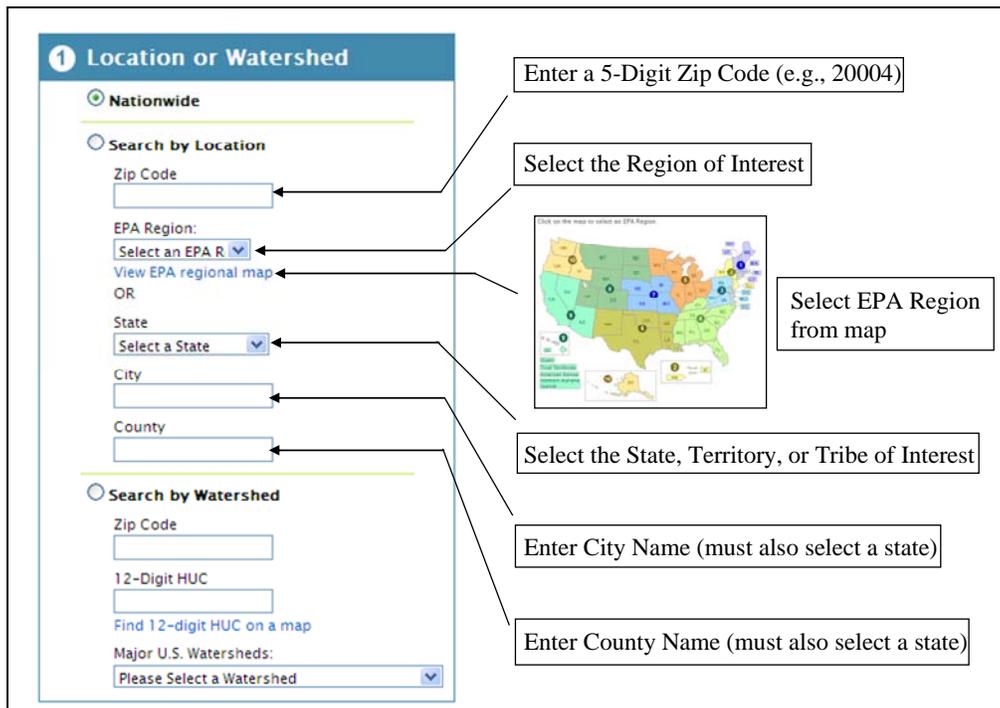


Figure 2-1. Location Search Option

2.1.1 Tips for Searching by Location

- The search fields in the DMR Pollutant Loading Tool provide options for retrieving information for the location of interest. Entering information for all location fields is unnecessary.
- Begin with broad search criteria (e.g., state) and narrow the search based on the results of the broad search. City names and county names must match exactly with the city and county names in the Permit Compliance System (PCS) database and Integrated Compliance Information System National Pollutant Discharge Elimination System (ICIS-NPDES) database. Therefore, if you enter a city or county name that is different than the PCS or ICIS-NPDES databases, your search may return no results.
- Avoid entering redundant search criteria. For example, specifying an EPA region when a state has already been selected is unnecessary.
- Zip Code, City, and County information are not populated for some facilities in the PCS and ICIS-NPDES databases. Therefore, searching on one of these fields may produce no results, even if a facility is present at the specified location.

2.2 Watershed Search Option

As an alternative to searching by location, you can filter DMR loadings data using the EZ Search by Watershed option. The EZ Search defines watersheds using the 12-digit HUC Code (HUC-12). You can specify a watershed of interest by entering a zip code, entering a 12-digit hydrologic unit code (HUC-12), or by selecting a major U.S. watershed from the drop down menu, as shown in

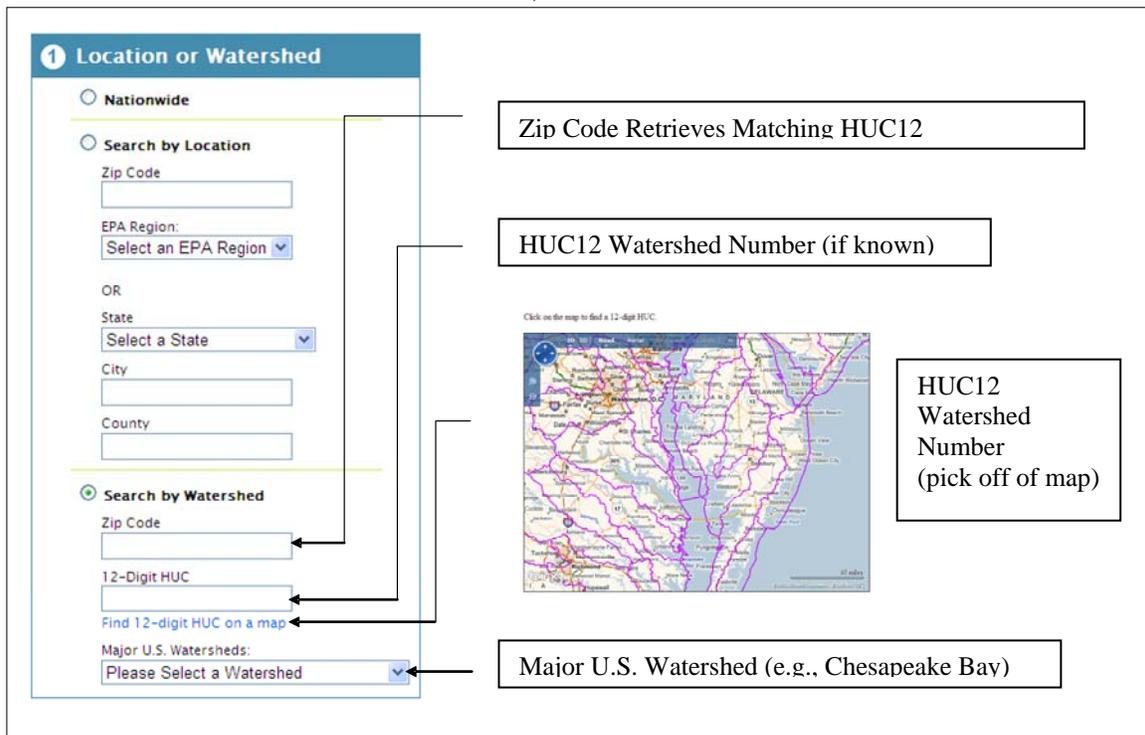


Figure 2-2. For example, users can easily focus their search to only include dischargers in the Chesapeake Bay watershed. The “Users Guide/Technical Documents” tab provides maps showing the geographic extent of each “major U.S. watershed.”

The screenshot shows a search interface titled "1 Location or Watershed". It has two main sections: "Search by Location" and "Search by Watershed".

- Search by Location:** Includes a "Zip Code" text field, an "EPA Region" dropdown menu (with "Select an EPA Region" as the current selection), and an "OR" separator. Below this are "State", "City", and "County" dropdown menus (with "Select a State" as the current selection).
- Search by Watershed:** Includes a "Zip Code" text field, a "12-Digit HUC" text field, a link "Find 12-digit HUC on a map", and a "Major U.S. Watersheds:" dropdown menu (with "Please Select a Watershed" as the current selection).

Callouts with arrows point to specific fields:

- "Zip Code Retrieves Matching HUC12" points to the "Zip Code" field in the "Search by Location" section.
- "HUC12 Watershed Number (if known)" points to the "12-Digit HUC" field in the "Search by Watershed" section.
- "HUC12 Watershed Number (pick off of map)" points to the "Find 12-digit HUC on a map" link.
- "Major U.S. Watershed (e.g., Chesapeake Bay)" points to the "Major U.S. Watersheds:" dropdown menu.

A map of the United States is shown on the right, with a callout "Click on the map to find a 12-digit HUC" pointing to it.

Figure 2-2. Watershed Search Option

2.2.1 *Tips for Searching by Watershed*

- The search fields provide three methods for specifying a watershed of interest. Do not enter information in more than one field.
- Begin with broad searches (e.g., zip code or major U.S. watershed) and narrow the search based on the results of the broad search. Approximately 50 percent of the NPDES permit IDs in PCS and ICIS-NPDES do not have a matching HUC-12 in the DMR Pollutant Loading Tool. Therefore, searching on a specific HUC-12 code may produce no results, even if a facility discharges to that watershed.

2.3 **Pollutant Search Option**

By default, the EZ Search reports results for all pollutants. These include approximately 1,000 pollutant parameters including specific chemicals (e.g., phenol), bulk parameters (e.g., biochemical oxygen demand), temperature, and wastewater flow. Specifying a single pollutant of interest or selecting a pollutant category, as shown in Figure 2-3, will narrow the search.

The screenshot shows a web interface titled "2 Pollutant" with three main sections:

- All Pollutants:** A radio button option that is currently selected.
- Specify Pollutant:** Contains two text input fields:
 - "Pollutant Name (or partial name)" with a callout box: "Enter full or partial pollutant name (e.g., nitr). Loading Tool will return a list of pollutants that contain the specified text string."
 - "Chemical Abstract Service Number (CAS) (without dashes)" with a callout box: "Enter the Chemical Abstract Service Number (CAS) (without dashes) for the pollutant of interest (e.g., 7439976)."
- Pollutant Categories:** A radio button option with a list of categories:
 - Metals
 - Nitrogen
 - Organic Enrichment
 - Pathogen Indicators
 - Phosphorus
 - Priority Pollutants
 - Solids
 - Temperature
 - Wastewater Flow
 A callout box points to this section: "Select one pollutant category from the list. The Loading Tool output will provide the aggregated load for the selected category."

Figure 2-3. Pollutant Search Option

2.3.1 Tips for Searching by Pollutant

- If possible, try to identify the Chemical Abstracts Service (CAS) Number for the pollutant of interest. A CAS Number look-up is provided in the Crosswalk Search (see Crosswalk Search User Guide). Chemical names in PCS and ICIS-NPDES are not standardized and may include common names or abbreviations. As a result, searching on a chemical name may return no results, even when data for the pollutant are present in the databases.
- For pollutants that do not have CAS Numbers, such as biochemical oxygen demand, try entering a partial name. Names of pollutants may be abbreviated in PCS or ICIS-NPDES, and entering the complete pollutant name may return no results.
- Entering certain parameters, such as “fecal coliform bacteria” or “whole effluent toxicity,” will not return results because these parameters are reported in units that cannot be expressed as mass quantities. You can view aggregated discharges pathogen indicators (such as fecal coliform bacteria) in units of “counts per 100mL” by selecting “pathogen indicators” in the Pollutant EZ Search option; however, because pathogen indicators require a unique calculation methodology, they are excluded from the results from other EZ Search Options.

2.4 Industry Search Option

By default, the EZ Search reports results for all industries. The results include discharge data from approximately 140,000 publicly- and privately-owned facilities with operations covering more than 900 Standard Industrial Classification (SIC) Codes. You can limit the results to discharges for municipal wastewater treatment plants (publicly-owned treatment works, i.e., POTWs) or industrial facilities. You can further narrow searches for industrial dischargers to only include results for a specific Point Source Category, 2-digit SIC code, or 4-digit SIC Code.

As shown in Figure 2-4, the EZ Search also links to the current industrial category rankings from EPA's most recent Annual Review of Existing Effluent Limitations Guidelines¹.

The screenshot shows the 'Industry' search interface. It includes three radio buttons: 'All Point Sources' (selected), 'Publicly Owned Treatment Works (POTWs) Only', and 'Industrial Point Sources'. Below these are dropdown menus for 'Point Source Category' (set to 'All Point Source Categories') and '2-Digit SIC Code' (set to 'All SIC Codes'). There is an 'OR' separator and a text input field for 'Enter a 4-digit SIC Code'. A 'SIC Code lookup' link is below the input field. At the bottom, there is a link for 'Industrial Category Rankings' with a sub-link 'Top Industrial Dischargers of Toxic Pollutants'. Callout boxes provide instructions: 'Select to only see discharges for publicly-owned wastewater treatment facilities.' points to the POTWs radio button; 'Select to only see discharges for industrial facilities.' points to the Industrial Point Sources radio button; 'To narrow Industrial Point Sources search: Select a Point Source Category; or Select a 2-digit SIC Code; or Enter a 4-digit SIC Code.' points to the dropdowns and input field; and 'Click to view industrial category rankings from EPA's most recent Annual Review of Existing Effluent Limitations Guidelines for the Effluent Guidelines Program Plan.' points to the Industrial Category Rankings link.

Figure 2-4. Industry Search Option

2.4.1 Tips for Searching by Industry

- The menus and search fields provide options for selecting an industry of interest. Do not specify search criteria in multiple fields. For example, selecting a 2-digit SIC code is unnecessary if a 4-digit SIC code has been entered. In addition, Point Source Category classifications and SIC code classifications are not a one-to-one match. Therefore specifying both a Point Source Category and a 2-digit SIC code for a search may return no results.
- Begin with a broad search and then further refine the search to the 4-digit SIC code or Point Source Category of interest, based on the results. PCS and ICIS-NPDES do not have DMR data for all industries. For example, the databases may have no DMR data for industries consisting only of minor dischargers.
- It should be noted that not all facilities in SIC code 4952 (“Sewerage Systems”) are POTWs. POTWs are owned by the state or municipality. Privately-owned treatment works, Federally-owned treatment works, and other treatment plants not owned by municipalities are not considered POTWs. Therefore a search on “SIC code = 4952” will not necessarily yield the same results as selecting the POTW radio button.

2.5 Using Search Options in Combination

In addition to using the Location, Watershed, Pollutant, and Industry EZ Search options separately, you can use the EZ Search options in combination to answer questions, such as the following:

¹U.S. EPA. Preliminary 2010 Effluent Guidelines Program Plan. Available online at: <http://www.epa.gov/guide/304m/index.html>

1. How many U.S. power plants have limits for arsenic?
2. Which industrial sectors in the Great Lakes Region discharge the largest amounts of mercury?
3. Which U.S. watersheds receive the largest nitrogen discharges from municipal wastewater treatment plants?
4. What are the “top ten” pollutants discharged by petroleum refineries in EPA Region 6?

The following examples illustrate how to use the EZ Search to answer each of these questions.

2.5.1 EZ Search Example 1: How many U.S. power plants have limits for arsenic?

To use the EZ Search to determine how many U.S. power plants have limits for arsenic, use the following steps:

- **Step 1:** Enter search criteria as shown in Figure 2-5 and click *Search*.

The screenshot shows the EZ Search interface with three main sections:

- 1) Location or Watershed:** The "Nationwide" radio button is selected. Below it are fields for "Search by Location" (Zip Code, EPA Region, State, City) and "Search by Watershed" (12-Digit HUC, Major U.S. Watersheds). A callout box points to the "Nationwide" selection with the text: "1) Set Location Search to 'Nationwide' to include all U.S. Power Plants."
- 2) Pollutant:** The "Specify Pollutant" radio button is selected. The "Pollutant Name (or partial name)" field contains "arsenic". Below it is a field for "Chemical Abstract Service Number (CAS)". A callout box points to the "arsenic" text with the text: "2) Type 'arsenic' in Pollutant Name search field."
- 3) Industry:** The "Industrial Point Sources" radio button is selected. Under "Point Source Category", "Steam Electric Power Generating" is selected in the dropdown menu. Below it are fields for "2-Digit SIC Code" (set to "All SIC codes") and "Enter a 4-digit SIC Code". A callout box points to the "Steam Electric Power Generating" selection with the text: "3) Select 'Steam Electric Power Generating' from Point Source Category Menu."

At the bottom of the form is a "Search" button and a link for "Advanced Search".

Figure 2-5. EZ Search Example 1 – Criteria

- **Step 2:** The EZ Search will produce a list of pollutants containing the word “arsenic” (e.g., arsenic, trivalent arsenic, total recoverable arsenic) as shown in Figure 2-6. Click *View Results* next to “arsenic” to view the EZ Search Results page.

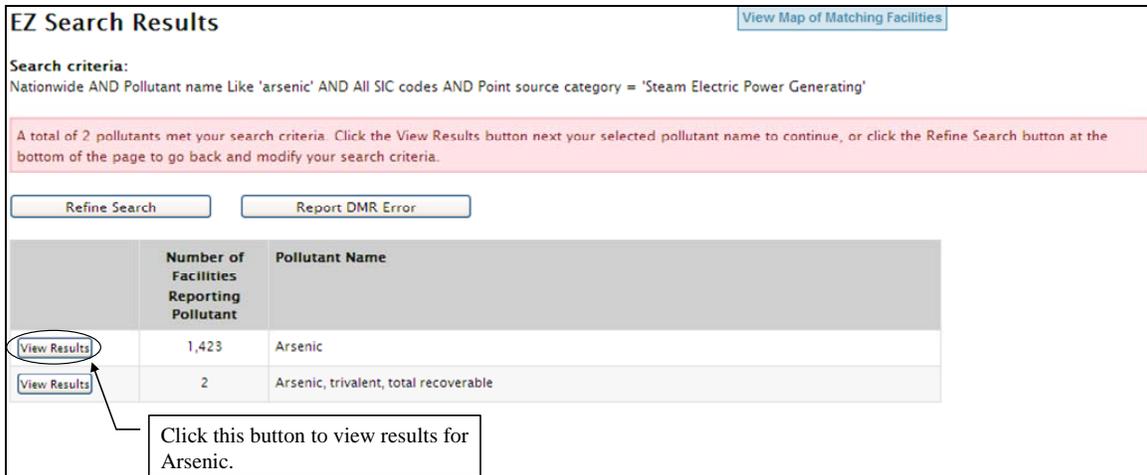


Figure 2-6. EZ Search Example 1 – Specify Pollutant

- **Step 3:** The EZ Search displays a table of search statistics at the top of the Results page, shown in Figure 2-7.

From the Search Statistics table, you can view information about the total number of power plants that are included in the search results, the number of power plants that report arsenic discharges on DMRs, and the number of power plants that have permit limits for arsenic.

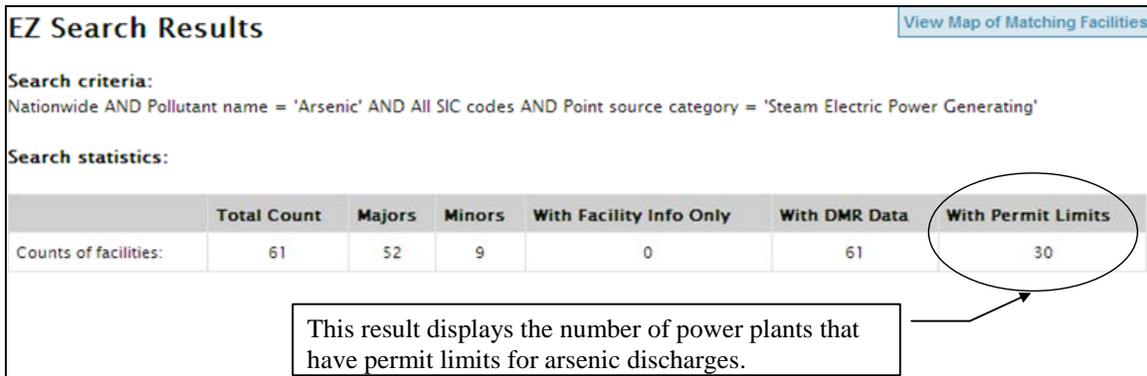


Figure 2-7. EZ Search Example 1 – Results

2.5.2 Example EZ Search 2: Which industrial sectors in the Great Lakes Region discharge the largest amounts of mercury?

To use the EZ Search to determine which industrial sectors in the Great Lakes region discharge the largest amounts of mercury, use the following steps:

- **Step 1:** Enter search criteria as shown in Figure 2-8 and click *Search*.

The screenshot shows the EZ Search interface with three main columns:

- Column 1: Location of watershed**
 - Options: Nationwide, Search by Location, Search by Watershed.
 - Search by Location fields: Zip Code, EPA Region (dropdown), State (dropdown), City, County.
 - Search by Watershed fields: Zip Code, 12-Digit HUC, Major U.S. Watersheds (dropdown menu with "Great Lakes" selected).
- Column 2: Pollutant**
 - Options: All Pollutants, Specify Pollutant, Pollutant Categories.
 - Specify Pollutant fields: Pollutant Name (or partial name) (text input with "mercury" entered), Chemical Abstract Service Number (CAS) (without dashes) (text input).
 - Pollutant Categories list: Metals, Nitrogen, Organic Enrichment, Pathogen Indicators, Phosphorus, Priority Pollutants, Solids, Temperature, Wastewater Flow.
- Column 3: Industry**
 - Options: All Point Sources, Publicly Owned Treatment Works (POTWs) Only, Industrial Point Sources.
 - Industrial Point Sources fields: Point Source Category (dropdown), 2-Digit SIC Code (dropdown), Enter a 4-digit SIC Code (text input), SIC Code lookup.
 - Section: Industrial Category Rankings, Top Industrial Dischargers of Toxic Pollutants.

Callouts and annotations:

- Callout 1: "1) Select 'Great Lakes' from Major U.S. Watersheds menu." points to the dropdown menu in the Search by Watershed section.
- Callout 2: "2) Type 'mercury' in Pollutant Name search field." points to the text input field in the Specify Pollutant section.
- Callout 3: "3) Select 'All Point Sources' from Industry Column." points to the "All Point Sources" radio button in the Industry section.

At the bottom of the form, there is a "Search" button and a link: "If you would like more detailed information, try the [Advanced Search](#) >".

Figure 2-8. EZ Search Example 2 – Sectors with Mercury Discharges to Great Lakes

- **Step 2:** The EZ Search will produce a list of pollutants containing the word “mercury” (e.g., mercury or methylmercury). Click *View Results* next to “mercury” to view the EZ Search Results page. The second table in the EZ Search results presents Top SIC Discharges table, shown in Figure 2-9.

The Top SIC Discharges table displays the total mercury discharges for each 4-digit SIC code. The table only displays the top ten SIC codes for mercury discharges. You can click *Download All Data* to download the full list of industries (classified by 4-digit SIC code) that report mercury discharges in the Great Lakes Region.

Top SIC Discharges (2007)						
4-Digit SIC Code	SIC Description	Avg Conc (mg/L)	Max Conc (mg/L)	Total Pounds (lbs/yr)	Total TWPE (lbs-eq/yr)	Avg Flow (MGD)
4952	SEWERAGE SYSTEMS	3.067	166	228,170	26,720,975	6.92
4911	ELECTRICAL SERVICES	0.0016	0.13	509	59,620	226
3295	MINE & EARTHS, GROUND OR TREAT	0.17	0.72	91.6	10,730	0.15
3211	FLAT GLASS	0.074	0.59	56.2	6,589	0.24
3714	MOTOR VEHICLE PARTS & ACCESSOR	0.0027	0.0064	4.12	483	0.48
3312	BLAST FURN/STEEL WORKS/ROLLING	8.42E-006	0.00011	0.13	15.3	52.3
2911	PETROLEUM REFINING	2.26E-006	2.26E-006	0.11	13.06	89.9
2621	PAPER MILLS	2.106E-006	2.58E-005	0.107	12.5	21.8
2812	ALKALIES AND CHLORINE	1.23E-005	0.00021	0.052	6.14	1.075
2611	PULP MILLS	9.96E-007	1.5E-005	0.038	4.52	11.3

 [Download All Data](#)

Figure 2-9. EZ Search Example 2 – Results

2.5.3 Example EZ Search 3: Which U.S. watersheds receive the largest nitrogen discharges from municipal wastewater treatment plants?

To use the EZ Search to determine which U.S. watersheds receive the largest nitrogen discharges from municipal wastewater treatment plants, use the following steps:

- **Step 1:** Set up a search as shown in Figure 2-10 and click *Search*.

3) Select "POTWs Only" from the Industry column to limit EZ Search to include only municipal wastewater treatment plants.

2) Select "Nitrogen" from Pollutant Categories to have EZ Search rank output by total annual nitrogen discharges.

1) Set Location Search to "Nationwide" to include all U.S. POTWs.

Figure 2-10. EZ Search Example 3 – Nitrogen Discharges from Municipal Wastewater Treatment Plants

When you click “Search”, the Loading Tool will produce total annual nitrogen loads for all facilities that are identified as POTWs in their facility information. The Loading Tool calculates the nitrogen load by aggregating loads for the following nitrogen forms:

- Total Nitrogen;
- Total Kjeldahl Nitrogen (TKN);
- Organic Nitrogen;
- Nitrate;
- Nitrite; and
- Ammonia.

When aggregating loads for the various nitrogen forms, the Loading Tool uses a selection hierarchy to select the nitrogen forms that best represent the total nitrogen load for each facility:

- If total nitrogen is reported, then the Loading Tool uses the Total Nitrogen load to represent the facility’s total nitrogen load;
- If Total Nitrogen is not reported and TKN is reported, then the Loading Tool calculates the facility’s total nitrogen load as:

$$TKN + Nitrate + Nitrite$$

- If Total Nitrogen and TKN are not reported and Organic Nitrogen is reported, then the Loading Tool calculates the facility’s total nitrogen load as:

$$Organic\ Nitrogen + Ammonia + Nitrate + Nitrite$$

- If Total Nitrogen, TKN, and Organic Nitrogen are not reported, then the Loading Tool calculates the facility’s total nitrogen load as:

$$Ammonia + Nitrate + Nitrite$$

Table 2-1 presents three examples of possible calculation scenarios for total nitrogen.

Table 2-1. Total Nitrogen Load Calculation Examples

Facility A		Facility B		Facility C	
Total Nitrogen:	1,500 lb/yr	Total Nitrogen:	lb/yr	Total Nitrogen:	lb/yr
TKN:	lb/yr	TKN:	1,500 lb/yr	TKN:	lb/yr
Organic Nitrogen:	lb/yr	Organic Nitrogen:	20 lb/yr	Organic Nitrogen:	lb/yr
Ammonia:	1,200 lb/yr	Ammonia:	lb/yr	Ammonia:	1,200 lb/yr
Nitrate:	lb/yr	Nitrate:	200 lb/yr	Nitrate:	1,000 lb/yr
Nitrite:	lb/yr	Nitrite:	50 lb/yr	Nitrite:	50 lb/yr
Facility A's Total Nitrogen Load:	1,500 lb/yr	Facility B's Total Nitrogen Load:	1,750 lb/yr	Facility C's Total Nitrogen Load:	2,250 lb/yr

- Step 2:** The EZ Search will display the EZ Search Results page. The second table in the EZ Search Results is the Top Receiving Watersheds table, shown in Figure 2-11.

The Top Receiving Watersheds table displays the total nitrogen discharges to each U.S. sub-watershed (classified by HUC-12). The discharges are shown in milligrams per liter and pounds per year (lb/yr), and are ranked by descending pounds. The table only displays the ten sub-watersheds in the U.S. that receive the largest nitrogen discharges. You can click *Download All Data* to download the full list of sub-watersheds (classified by HUC-12 code) that receive nitrogen discharges from municipal wastewater treatment plants.

Top Receiving Watersheds (2007)						
HUC-12 Code	HUC Name	Avg Concentration (mg/L)	Max Concentration (mg/L)	Total Pounds (lbs/yr)	Total TWPE (lbs-eq/yr)	Avg Flow (MGD)
180701040302	Lower Dominguez Channel	17.5	36	34,181,487	0	311
180702031003	Greenville Banning-Santa Ana River	28.4	30	19,927,707	0	230
031602040403	Grand Bay	1,394,020	13,940,098	16,875,296	0	0.018
180703041300	Mission Beach-Frontal Pacific Ocean	31.5	32.5	15,553,624	0	162
200600000302	Waolani Stream	23.2	24.4	4,664,675	0	66.04
180500040203	Lower Arroyo Las Positas	21.3	26.3	4,600,410	0	70.5
180500041002	Oakland Inner Harbor-San Francisco Bay	21.06	23	4,484,747	0	69.2
180500040502	South San Ramon Creek	20.74	22.6	4,300,850	0	67.3
180701040601	Manhattan Beach-Frontal Santa Monica Bay	3.92	4.1	3,407,821	0	285
101900030304	Cherry Creek-South Platte River	8.4	10.4	3,205,670	0	127

 [Download All Data](#)

Figure 2-11. EZ Search Example 3 – Results

2.5.4 Example EZ Search 4: What are the “top ten” pollutants discharged by petroleum refineries in EPA Region 6?

To use the EZ Search to determine the largest pollutant discharges for petroleum refineries in EPA Region 6, use the following steps:

- **Step 1:** Specify search criteria as shown in Figure 2-12 and click *Search*.

The screenshot displays the EZ Search interface with three main sections: 1) Location or Watershed, 2) Pollutant, and 3) Industry. Annotations provide step-by-step instructions:

- 1) Select "Region 06" from the EPA Region menu.** This points to the "EPA Region:" dropdown menu in the "Search by Location" section, which is currently set to "06".
- 2) Set Pollutant Search to include "All Pollutants".** This points to the "All Pollutants" radio button in the "Pollutant" section.
- 3) Enter the 4-digit SIC code for Petroleum Refining (2911).** This points to the "Enter a 4-digit SIC Code:" input field in the "Industry" section, which contains the value "2911".

Other visible details include the "Search" button at the bottom left and a link for "Advanced Search" at the bottom right.

Figure 2-12. EZ Search Example 4 – Largest Discharges from Petroleum Refineries in Region 6

- **Step 2:** The EZ Search will display the EZ Search Results page. The second table in the EZ Search Results is the Top Pollutants table, shown in Figure 2-13.

The Top Pollutants table displays the pollutants with the highest discharges in terms of pounds and the pollutants with the highest toxic-weighted pound equivalents. The table only displays the top ten pollutants. Click *Download All Data* to view all Petroleum Refinery discharges for Region 6 in pounds or toxic-weighted pound equivalents.

EPA calculates TWPE using DMR data and pollutant specific toxic weighting factors (TWFs) in order to rank the relative toxicities of different pollutant discharges. Pollutants have different toxicities to human health and aquatic communities and the TWPE unit provides a relative measure of how the potential toxic nature of one pollutant compares against another pollutant. It is important to note that this value is not a measure of risk or potential for human health impacts. EPA presently lacks on a national scale the detailed exposure assessment data and tools necessary to complete a risk assessment with these DMR data (e.g., analyze for each industrial facility the fate and transport of discharged pollutants in an actual waterbody, exposure pathways of pollutants to populations in a watershed, and uptake of the discharged pollutants).

Top Pollutants by Pound (2007)		Top Pollutants by Toxic-Weighted Pounds (2007)	
Pollutant Name	Total Pounds	Pollutant Name	Total TWPE
Solids, total dissolved	118,157,259	Sulfide	89,603
Chemical oxygen demand (COD)	43,361,922	Cyanide	78,633
Solids, total suspended	30,967,666	Selenium	4,138
Carbon	17,928,406	Lead	3,744
Sulfate	5,978,942	Chlorine	3,041
BOD, 5-day, 20 deg. C	4,625,788	Benzo[a]pyrene	2,215
Oil and grease per production	4,537,961	Ammonia	1,880
Chloride	3,757,818	Zinc	1,664
Oil and grease per production	3,499,046	Fluoride	1,652
Ammonia	1,693,982	Benz[a]anthracene	1,364


[Download All Data](#)


[Download All Data](#)

Figure 2-13. EZ Search Example 4 – Results

To convert pollutant loadings into TWPE, EPA multiplies the pollutant mass (in pounds) by its toxic weighting factor (TWF). For example, total mercury (CAS No. 7439976) has a TWF equal to 117 TWPE/lbs-mercury while total copper (CAS No. 7440508) has a TWF equal to 0.63 TWPE/lbs-copper. Therefore a discharge of 1 pound of mercury equals 117 TWPE discharged while a discharge of 1 pound of copper equals 0.63 TWPE discharged. Not all pollutants have a toxic weighting factor (for example, Total Suspended Solids), which means that these pollutants do not have a toxicity score (i.e., TWPE = 0).

EPA’s Office of Water’s Engineering and Analysis Division (EAD) developed TWFs for use in its effluent limitations guidelines and standards (ELGs) development program to allow comparison of pollutants with varying toxicities using data from PCS, ICIS-NPDES, and EPA’s Toxics Release Inventory (TRI).² The DMR Pollutant Loading Tool makes this data more available to the public (as this facility specific TWPE discharges were previously available only through EPA’s docket system supporting its ELG program).

² See a general discussion of how EPA develops, calculates, and uses TWFs in the following document: “Toxic Weighting Factor Development in Support of CWA 304(m) Planning Process,” June 2006. [Available at: www.regulations.gov. Document No. EPA-HQ-OW-2004-0032-1634].

3. FACILITY SEARCH

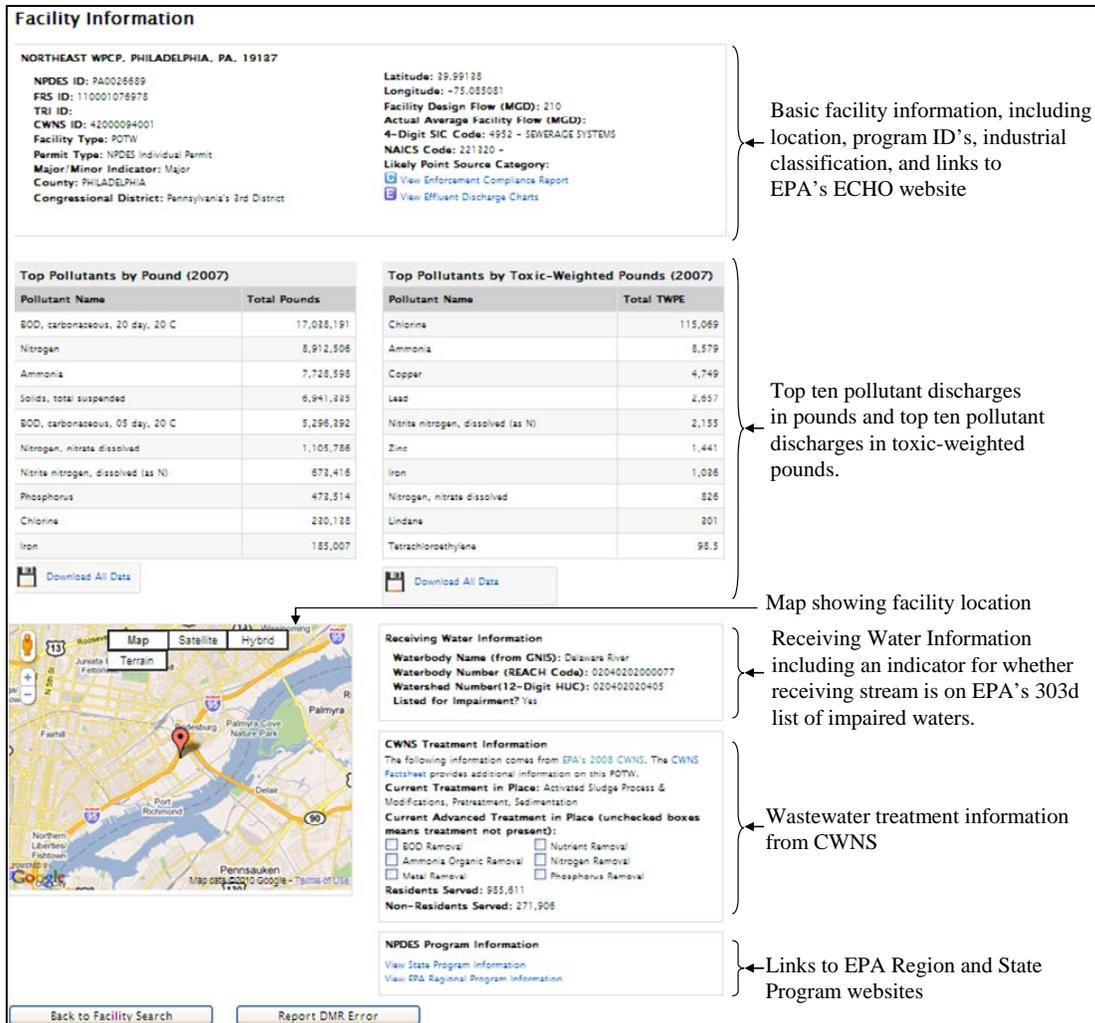
You can directly access basic facility information and top pollutant discharges for a particular facility using the Facility Search. You can identify the facility of interest by specifying a partial name and/or state, or entering one of the following program IDs:

- National Pollutant Discharge Elimination System (NPDES) permit ID;
- Facility Registry System ID (FRS) ID;
- Toxics Release Inventory (TRI) ID; or
- Clean Watershed Needs Survey (CWNS) ID.

Figure 3-1 displays the Facility Search Option and Figure 3-2 presents an example of the Facility Search output.

The screenshot shows a web form titled "Facility Search". At the top, there are instructions: "Instructions. This Facility Search provides direct access to basic facility information and top pollutant discharges for one facility at a time. Enter or select a value for one or more of the criteria below and click the Search button to retrieve information on a facility in the DMR pollutant loadings database. The Facility Search tool will find the facility(ies) that match all of the entered criteria. If more than one facility matches, a list of facilities will be provided from which you can choose. For more information about how to use this search feature, refer to the [User's Guide for the Discharge Monitoring Report \(DMR\) Pollutant Loading Tool \(PDF\)](#) (1 pg. xxxK) or [Frequently Asked Questions and Answers \(FAQ\)](#)." Below the instructions are several input fields: "Facility name" (text box), "State" (dropdown menu), "NPDES ID" (text box), "FRS ID" (text box), "TRI ID" (text box), and "CWNS ID" (text box). A "Search" button is located at the bottom left. Annotations with arrows point to the "Facility name" field with the text "Enter a full or partial facility name". An arrow points to the "State" dropdown with the text "Use this alone to generate a list of facilities by State, or use in combination with facility name to limit facility search to a particular State." A bracket groups the four ID fields with the text "If known, enter any one of the following Program ID's:" followed by a bulleted list: "• 9-character NPDES ID (e.g., DC0000094);", "• 12-character FRS ID (e.g., 110001136271);", "• 15-character TRI ID (e.g., 20019BNNNG3400B); or", "• 11-digit CWNS ID (e.g., 11000001003)."

Figure 3-1. Facility Search Option



Basic facility information, including location, program ID's, industrial classification, and links to EPA's ECHO website

Top ten pollutant discharges in pounds and top ten pollutant discharges in toxic-weighted pounds.

Map showing facility location

Receiving Water Information including an indicator for whether receiving stream is on EPA's 303d list of impaired waters.

Wastewater treatment information from CWNS

Links to EPA Region and State Program websites

Figure 3-2. Example Facility Search Results

3.1.1 Tips for Searching by Facility

- Avoid entering redundant search criteria. For example, specifying facility name or state when a program ID has been entered is unnecessary.
- Wherever possible, search for facilities using program IDs. Facility names can change frequently, and many facilities have multiple names. As a result, searching on an exact facility name may not produce results.
- Due to variations in naming conventions at facilities, entering a full name may produce no results. First try entering a partial name. If a partial name returns no results, then try further shortening the name fragment. If this still produces no results, try selecting a state and leaving the facility name field blank. The DMR Pollutant Loading Tool will produce a list of facilities for the selected state with hyperlinks to the Facility Results page. The facility list can also be downloaded.

4. ADVANCED SEARCH

You can create customized searches and access detailed loadings data using the Advanced Search. In this section, you will find information on Advanced Search options and tips for using the Advanced Search. The Advanced Search screen is presented in Figure 4-1.

You can use the Advanced Search to:

- Select loadings summed either on an annual- or monitoring period-level.
- Specify criteria for:
 - Query timeframe (e.g., year or range of monitoring period dates);
 - Industry sector;
 - Facility identification;
 - Facility/Permit type;
 - Facility location;
 - Receiving watershed;
 - Facility outfall/monitoring location; and
 - Pollutant.
- Select calculation methodologies for:
 - Calculating pollutant loadings for discharges reported as “non-detect;”
 - Estimating pollutant loadings for monitoring periods with no reported discharges;
 - Calculating pollutant loadings for grouped parameters; and
 - Calculating pollutant loadings for aggregated nutrient parameters.

When you complete an Advanced Search, the DMR Loading Tool generates a comma separated value (CSV) results file. You may transfer the .csv results file to an offline database program or spreadsheet program for analysis.

Choose to view output on an annual or monitoring period basis

Select Level of Detail for Loadings Output:

Timeframe

Year: Choose year (beta version set to 2007)

Monitoring Period Range Start:

Monitoring Period Range End: } Choose to view monitoring period basis

Facility/Permit Type

Facility Type:

Permit Type:

Major/Minor Indicator:

Industry Classification

2-digit SIC code:

4-digit SIC code:

NAICS code:

Receiving Watershed

HUC Region:

HUC Code:

Facility Identification

FRS ID:

NPDES Permit ID:

Separate multiple NPDES Permit IDs with a comma or carriage return. LIMIT: 400

Facility Name:

Pollutant

Chemical Abstract Service (CAS) Number:

Pollutant:

[Look up pollutant](#)

Parameter code:

[Look up parameter code](#)

Facility Location

City:

State:

Zip Code:

County:

EPA Region:

Facility Latitude: (example: 35.1789)

Facility Longitude: (example: -147.25687)

Facility Outfall/Monitoring Locations

Permit Feature ID (outfall/pipe number):

Permit Feature Latitude:

(example: 35.1789)

Permit Feature Longitude:

(example: -147.25687)

Monitoring location code:

Loading Calculation Options

Set Non-Detects Equal to: Zero | 1/2 Detection Limit | Detection Limit

Estimation Function:

Parameter Grouping Function:

Nutrient Aggregation Function:

} Options for different methods of reporting loads

Figure 4-1. Advanced Search Fields

4.1 **Advanced Search User Options**

The Advanced Search provides you with a wide range of options for accessing pollutant loadings. In the Advanced Search, you can perform a query to produce an output file containing all pollutant loadings for an entire industry sector, or perform a narrow search to only provide pollutant loadings from a specific facility outfall during a particular monitoring period.

4.1.1 *Greater Level of Detail*

Unlike the EZ Search, the Advanced Search does not sum pollutant loadings by geographic location, receiving watershed, or industry sector. Instead, the Advanced Search output lists the individual pollutant loadings that meet your specified search criteria. Each of the resulting pollutant loadings is specific to a particular NPDES permit, facility outfall, and pollutant parameter. By default, the Advanced Search provides annual loadings; however, you can also select the loadings for a specified monitoring period. Analyzing loads for a specified monitoring period may be useful, for example, if you are analyzing the loadings for seasonal changes.

4.1.2 *Advanced Search Fields*

Table 4-1, found at the end of this section, presents the search fields that you can use to filter the loadings data. None of the search fields are required to produce an output file; however, unfiltered loadings data will result in a large result file that may slow the performance of the tool. If you specify search criteria for one or more of the categories shown in Table 4-1, TABLE_1 you will narrow the scope of the search and reduce the size of the result file.

4.2 **Loading Calculation Options**

You can use the Advanced Search to customize loading calculations to meet a wide range of analytical needs. It is important to note how the Advanced Search methodology differs from the EZ Search methodology. To generate the simplified top ten rankings presented in the EZ Search results, the DMR Pollutant Loading Tool uses several calculation methodologies, including:

- Estimating loads for discharges reported as “non-detect;”
- Estimating loads for monitoring periods with no reported discharges;
- Grouping pollutant parameters that represent the same chemical; and
- Aggregating loads for nitrogen and phosphorus compounds (i.e., nutrients).

These methods may not be appropriate for all end-uses of the loadings data; therefore, the Advanced Search offers a more versatile alternative. The Advanced Search calculation methodologies are described in detail in *The Technical Users Background Document for the DMR Pollutant Loading Tool*³.

³ *The Technical Users Background Document for the DMR Pollutant Loading Tool (available on User Guide tab)*

4.2.1 Discharges reported as non-Detect

When a pollutant is reported as “not detected,” its actual concentration may be zero, the detection limit, or some value between zero and the detection limit. With the Loading Tool, you can choose to calculate annual loads using one of three methods: setting all non-detects to zero, setting all non-detects to ½ the detection limit, and setting all non-detects to the detection limit.

To generate the loadings in the EZ Search, the DMR Pollutant Loading Tool uses a fourth method. It sets non-detects equal to zero if the pollutant was not detected for all monitoring periods in the reporting year. If the pollutant was detected in at least one monitoring period, then the DMR Pollutant Loading Tool sets the non-detects equal to ½ the detection limit.

4.2.2 Estimation Function

The estimation function applies to situations where monitoring data for one or more monitoring periods in a reporting year are missing. The estimation function applies an estimation factor to annual loads to extrapolate the load to account for the missing monitoring data. This estimation factor is not applied to monitoring periods where the facility indicated that no discharge occurred.

To generate loadings results for the EZ Search, the DMR Pollutant Loading Tool sets the estimation function to “on.” You can choose to turn this estimation function on or off for the Advanced Search. (Note: The estimation function is only available for loadings that are calculated on an annual basis).

4.2.3 Parameter Grouping Function

To generate the loadings in the EZ Search, the DMR Pollutant Loading Tool uses a parameter grouping function to avoid double-counting loads for pollutant parameters that represent the same pollutant. For example, an NPDES permit may require a facility to measure a pollutant in more than one way, such as total lead and dissolved lead. Because “total” includes “dissolved,” summing total and dissolved would result in double counting. Using the parameter grouping function, the DMR Pollutant Loading Tool selects the parameter that best represents the total pollutant discharge to calculate the total pollutant load. For instance, if a facility reported discharges of both total lead and dissolved lead, the DMR Pollutant Loading Tool selects total lead (ignoring dissolved lead) to calculate the lead load.

If you turn off the parameter grouping function, the Advanced Search results will include loads for each pollutant parameter, reported separately (for the example, total lead and dissolved lead will be listed separately).

4.2.4 Nutrient Aggregation Function

The DMR Pollutant Loading Tool uses a nutrient aggregation methodology to generate nitrogen and phosphorus pollutant category loads for the EZ Search. You have the option to use this methodology to calculate total nitrogen and total phosphorus loads in the Advanced Search.

If you turn off the nutrient aggregation function, the Advanced Search results will include loads for each nutrient parameter, reported separately (for the example, ammonia and nitrate will be reported separately).

4.3 Tips for Using the Advanced Search

- Avoid entering redundant search criteria. For example, specifying an EPA Region when a state has been selected is unnecessary.
- Wherever possible, search for facilities using program IDs. Facility names can change frequently, and many facilities have multiple names. As a result, searching on an exact facility name may not produce results.
- Try entering partial names for facility name, county name, and city name. The Advanced Search will return records that contain the entered text fragment (string). Similarly, try entering partial latitudes and longitudes. If you are searching on a partial name or latitude/longitude returns no results, try further shortening the text fragment in the search field.
- See *The Technical Users Background Document for the DMR Pollutant Loading Tool*⁴ for full documentation of the DMR Pollutant Loading Tool development and calculation methodologies.

⁴ See the “Users Guide/Technical Documents” tab on the Loading Tool website.

Table 4-1. Advanced Search Fields and Instructions

Search Field	Instructions	Search Field	Instructions
Timeframe		Facility/Permit Type	
Year	Enter DMR reporting year (e.g., 2007)	Facility Type	Select a facility type from the menu.
Monitoring Period Range Start	Select start date for monitoring period range (month and year)	Permit Type	Select a permit type from the menu.
Monitoring Period Range End	Select end date for monitoring period range (month and year)	Major/Minor Indicator	Select “majors only” or “minors only” from the menu.
Industry Classification		Receiving Watershed	
2-Digit SIC code	Select 2-digit SIC code for Industry Sector of interest from menu	HUC Region	Select 2-digit HUC region from menu.
4-Digit SIC code	Enter 4-digit SIC code for Industry Sector of interest (e.g., 2821)	HUC Code	Enter 12-digit HUC code (e.g., 020700110302)
NAICS Code	Enter 6-digit NAICS code for Industry Sector of interest (e.g., 325110)		
Facility Identification		Pollutant	
FRS ID	Enter 12-character FRS ID (e.g., 110001136271)	CAS Number	Enter the CAS Number (without dashes) for the pollutant of interest (e.g., 7439976).
NPDES Permit ID	Enter 9-character NPDES ID (e.g., DC0000094)	Pollutant	Enter pollutant name or use pollutant search link to identify pollutant of interest
Facility Name	Enter a full or partial facility name. The search output will include all records with facility names containing the specified text string.	Parameter Code	Enter 5-digit parameter code (e.g., 50060) or use the parameter search link to identify parameter of interest
Facility Location		Facility Outfall/Monitoring Location	
City	Enter full or partial city name. The search output will include all records with cities containing the specified text string.	Permit Feature ID	Enter 3-digit code for facility outfall of interest (e.g., 001)
State	Select state from menu		
Zip Code	Enter 5-digit zip code (e.g., 20004)		
County	Enter full or partial county name. The search output will include all records with counties containing the specified text string.	Permit Feature Latitude	Enter full or partial latitude (e.g., 35.178)
EPA Region	Select EPA Region from menu	Permit Feature Longitude	Enter full or partial longitude (e.g., -147.2568)
Facility Latitude	Enter full or partial latitude (e.g., 35.178)	Monitoring Location Code	Enter the 1-digit code for the monitoring location code of interest (e.g., 2)
Facility Longitude	Enter full or partial longitude (e.g., -147.2568)		