

Verbatim Transcript for Advanced ECHO Webinar: Water

August 22, 2017

Good afternoon and welcome to a presentation on the Environmental Protection Agency's Enforcement and Compliance History Online website. Before we get started, let's review a few housekeeping items. Next slide, please.

Audio is available for this presentation through your computer's mic and speakers or by telephone. Your call-in number as well as your access code is in the control panel box on the right-hand side of your screen. All attendees have been muted to minimize background noise. If you have a question during the presentation, please type it into the questions box on the upper right-hand side of your screen. We will have a dedicated time to answer questions during the presentation. If you are experiencing any technical difficulties, please contact us and we will try to troubleshoot the issues.

A survey will appear on your screen once today's presentation concludes. Your feedback is very important, so please do take the time to fill out that survey once it is displayed. We also wanted to note that the recording and slides as well as the case study will be available on the ECHO Training page. Next slide, please.

Today's presentation will include a live demonstration of the ECHO website. Followed by questions and answers. Now, I would like to introduce Jessica Johnson of EPA's Office of Compliance to begin the presentation. Thank you all for joining us today.

Thank you. This is Jessie Johnson. I work in the Enforcement and Targeting Data division on the ECHO website. ECHO as Grant said is the Enforcement and Compliance History Online website. Today's webinar was advertised as an advanced webinar going into water trading tools. However, I would like to take a few moments to do a brief introduction on the ECHO web page. To introduce everyone to ECHO so that we are all on the same starting point, the U.S. Environmental Protection Agency provides public access to its regulatory compliance and enforcement data via the internet.

The Enforcement and Compliance History Online, which we call ECHO, is available at echo.epa.gov. This website is not a database source, but it integrates data from major EPA information systems for public access.

ECHO is the public website that provides compliance information about various regulated facilities. Data includes how a facility is regulated, when an inspection occurred, whether violations were found and whether any enforcement action was taken. We also provide dashboards with view of overall enforcement and compliance status trends as well as bulk data sets for download.

ECHO contains compliance history for more than 800,000 EPA-regulated facilities. This includes three-year compliance status and five-year inspection and enforcement history as well as data for the Clean Air Act stationary sources, Clean Water Act permitted dischargers, Resource Conservation and Recovery Act hazardous waste handlers and Safe Drinking Water Act public water systems.

Data is also provided for the Emergency Planning and Community Right-to-Know Act, the Federal Insecticide, Fungicide and Rodenticide Act as well as Toxic Substances Control Act. This data includes inspections and enforcement action details.

A brief introduction to the source of ECHO data. As I mentioned, ECHO itself is not a data system of records, but pulls data weekly from the Integrated Compliance Information System, the Resource Conservation and Recovery Act Information System, Safe Drinking Water Information System, Facility Registry System, Aniolacs, including the Toxics Release Inventory and Greenhouse Gas pollutant release data. You can visit our website and go to About the Data. This will help provide links to the data sources themselves as well as detailed information on when our data is reset.

ECHO provides many varying features to help with searches. We have facility searches for various sets of data as well as an EPA Enforcement Case Search. The Comparative Maps and State Dashboards as I mentioned earlier show national trends throughout the year as well as the Clean Water Act National Pollutant Discharge Elimination System Discharge Monitoring Report Pollutant Loading Tool, which we will show briefly today.

We are about to enter the live demo. As a reminder, please enter questions you have throughout the presentation into the question box so that we can put them in an order so that they flow together. We will answer them at the end.

The purpose of this training is to demonstrate some more advanced analysis that you can perform in ECHO. This will focus on water pollution compliance searches and reports. The tools we will be demonstrating include the DMR pollutant tool. This tool is currently available at cfpub.epa.gov/dmr. Currently, we are in the process of modernizing the site to fully integrate the loading tool with ECHO and expect to release the modernized tool this Fall.

Today I will be using the modernized site for this demonstration. All of the searches I am showing can be performed in the current site. We will also demonstrate the ECHO map filter, effluent charts, and the detailed facility reports. Let us start with case study one. The purpose is to identify the largest dischargers of selenium in the state of California, examine which industries and facilities are discharging into impaired water bodies, and determine whether they have permit limits in place.

For the Water Pollution Search, we are going to start with the DMR Pollutant loading tool search. This is the modernized page that you will soon see in ECHO for the Water Pollution Search. This search allows you to search by location, pollutant, and industry and provides top ten lists of surface water dischargers. It prioritizes dischargers based on total mass and toxicity and allows you to search for the discharges that may have the biggest impact on aquatic life or human health.

In this example, let's examine selenium discharges in California. For this, I want to look at a full year of discharge data. Under the Reporting Year, I will select 2016. As I said, we are going to search in California. So, under State, I will select California. This is in the Location box. I will then go over to the Pollutant box and under Pollutant Name, I'll begin to type the pollutant "selenium" and there it is. To further narrow our results, I am going to look at facilities that are discharging to impaired water bodies and discharge pollutants that may contribute to the impairment.

Back under the Location box, towards the bottom, you can see a blue section that says Only Include Facilities That Discharge. We will select To Impaired Water Bodies and Pollutants Contributing to Water

Body Impairment. That is all on this search page that we will include. So, we will go ahead and select search.

The search specifics at the top of the search results page show us that the tool found 225 NPDES permits in California that discharge pollutants potentially contributing to a water body impairment and that 136 of these permits have requirements to monitor and report selenium discharges. Of these 136 permits, 89 are only required to monitor selenium in their effluents, while 47 have effluent limitations for selenium. This View All Facilities button is provided to allow users to get a full list of facilities that met their search criteria and see which facilities fall into each category.

Some users may want to focus on facilities with selenium's limits, while other users may be more interested in reviewing the facilities that do not have effluent limits or monitoring requirements for selenium to see if they possibly should have these limits.

The next table shows us the top ten industries with selenium discharges. It is not surprising to see the petroleum refining and electrical services at the top of this list, as these industries are known sources for selenium. The last table on this page ranks the individual facilities with the ten highest discharges of selenium to impaired waters in California. In this list, we see a powerplant, five refineries, a cement plant, and three sewage treatment plants. It is important to note that these facilities are on the list based on the magnitude of the discharges. These include both discharges that are in compliance within permit limits and discharges that exceed permit limits. To be in the top ten list is not necessarily a reflection of compliance issues.

On the right, we display the average and maximum concentration, the total pounds, total toxic weighted pounds, and the average facility flow. Using this information, we can see that this is top facility selenium load is the result of high waste water flows and trace selenium. Also, the fact that the maximum and minimum concentration for the year are equal, suggests that there may be a detection limit issue with this facility's report. This facility might be of interest in NPDES program staff who are conducting quality assurance of DMR data. But, we are going to skip that for this demonstration.

Let us look at the second facility, which has lower waste water flows and higher selenium concentration. Four report icons are displayed in the table. The L icon is for the facility's loading report. The E icon is for the facility's effluent charts report. The "D" icon is for the detailed facility report. The "P" icon is for more information on the facility's permit limits and monitoring requirements. We will select the permit limits and monitoring requirements.

For the purpose of this demo, I am going to zoom out once just so that I can fit everything into the table on the page. We will scroll down through the table to selenium. This table provides information about effluent limitations and monitoring requirements at the facility. We can see how long a limit has been in place, in this case it has been in place since August 2012, according to the monitoring period date range, how frequently the facility is required to monitor, in this case it is required to monitor monthly, and the concentration and quantity based limits. Those are these last two columns, including whether the limitation is based on maximum, average, total, or minimum values. Now, let us go to the Loading Report to see more information about the pollutant loads for this facility.

We will return to the water pollution and select "L" for the Pollutant Loading Report. The Pollutant Loading Report shows the top ten pollutants for the facility, ranked by mass and by toxic weighted load.

Other information includes a map for the facility and upstream and downstream monitoring stations, information about the receiving water impairments, and information about the water treatment technologies used at this facility. Let's scroll back up to see the selenium discharges.

In this table, we see the total pounds of selenium and we also see the maximum allowable selenium load in the next column. The Maximal Allowable Load is a calculated value based on the NPDES permit limit and the facility's waste water flow. It is a theoretical number of the amount of selenium this facility could discharge and still comply with their permit limits. Permit writers use this information to try to identify limits that are set too high and could be made more stringent. In this case, we see that the facility's discharges are fairly close to the allowable limit. Another way to visualize this is to go to the Effluent Charts.

We will return back to the water pollution search and select the "E" icon to do Effluent Charts. We will select selenium from the grid and go down to the chart. Here we see that facility's limits are set fairly close to the effluent concentrations that the facility is currently achieving with the treatment technologies in place. In fact, we can even see that they have one instance where they exceed their daily maximum concentration in 2017. Now we have examined permit limits and loading and DMR data in one facility. We will take some time for questions and then we will explore case number two.

Do we have any questions?

Yes. We have several questions. "Can ECHO do a multiple facility search"?

Yes. The Water Pollution search is searching for multiple facilities based on specific search criteria. At this time, you cannot search for multiple pollutants at a time, but there are search criteria to search for pollutant categories that span a group of pollutants. If that did not answer your question, please clarify.

"Is this version of the Pollutant Loading tool being displayed? Is it available to government users yet"?

The current version that we are demoing today is available for government users to test currently. It is expected to be made available to the public later this fall.

"Does the database include additional information on toxic weighted load e.g. what is its significance in how it was calculated"?

The toxic weighted loadings are pollutant specific and they are calculated using the pollutant loading multiplied by a toxic weighting factor. Those specific toxic weighting factors and how those were developed are provided on the technical support document page. We can follow up with a link to that information.

"Those are all of the questions for now".

Thank you very much. We will continue to accept questions in the question box and answer them following the second case search. I am going to go ahead and close out the previous windows just for space and loading purposes. The second case search will use a Water Search with the map filter. The purpose is to identify the facilities with mercury facilities who have not recently been inspected. In this example, we are going to use the ECHO water facility search to search on a pollutant of interest and identify facilities in a region that may warrant further attention.

For this, I have gone to the ECHO web page, echo.epa.gov. I will select Explore Facilities and then select Water under Evaluate Compliance. This will open up my search form. In this search page, you can enter search criteria to analyze results. Let's say for example that we are concerned with mercury as a pollutant and want to identify a region of concern. We will scroll down to the Pollutants section towards the bottom of the search page. Under Pollutants, we will enter "mercury". We will then check pollutants that have had violations in the past three years. Adding these criteria can help isolate issues that are specific to mercury rather than general issues at a facility that may not be associated with the pollutant of interest.

Our search is going to default to an inactive map, which is the search results we want today, but if you are more interested in looking at a data table, you can also select that. We will go ahead and select the search button to view facilities having Clean Water Act surface water discharges of mercury. Please bear with me while it loads.

An interactive map and data table are now presented on our page along with additional features that allow you to analyze and narrow your results. You can further refine your results to view facility level data by using any of the following features I am about to identify. You can pan or zoom using the plus or minus controls on the map or the wheel of your mouse. By doing this you can pan or zoom into the map for an area of interest. You can also select zoom too by entering a city, state, and or zip code to quickly zoom to an area of interest. If there is a point in the data table that you are interested in you can select a point and it will automatically load that facility in your Facility Summary.

You can also explore enforcement and compliance criteria by using the interactive check boxes in the current search panel on the right side of the page to refine facilities found. Today for this search we are going to select facilities with current violations. This will reduce the number of facilities shown. The map and data table will update and that will only include facilities that have current violations associated with their Clean Water Act permit.

To give us a better idea of where facilities are that have violations, but have not had an on-site inspection within the last five years, we are going to check Facilities Without On-site Inspections. This might tell us where we need to focus our efforts. There seems to be a number of unexpected facilities clustered in the Great Lakes region. We will zoom into the Great Lakes area. At this point, we see the facilities displayed on the map with greater than symbols as well as some facilities with blank symbols. To determine what these icons mean we can check out the map legend.

In the map legend, we see that the greater than sign means that the facility was inspected more than five years ago. A blank icon means that a facility was never inspected. We have now narrowed our results to seven facilities. We can use the information in the table below to determine which facilities we may want to take a closer look at.

I am going to double click the Effluent Violations to sort in a descending order. Here we see that the facility in Wisconsin has the largest number of effluent violations. By looking at the map for this facility we can see that it has never had an on-site inspection. We will zoom in to Wisconsin and specifically, this facility. I am opening up my map layers so that we can see the zoom level of our map. To enable the water map layers, we see that we must be zoomed into 48 percent. So, I will continue zooming in towards this facility until my Current Zoom reaches 48 percent.

On the map, we can also check this facility's proximity to different categories of waterways, including ones with TMDL, impaired waterways, or assessed waterways that are determined, not impaired. To enable this feature as I said, we must be at 48 percent zoom level. We can see the level in the sidebar. Now that we are at 48 percent we can select various map layers. Today we will look at impaired waters. We can see that this facility is located very close to an impaired water body. However, it is important to note that the water body impairment is not necessarily related to mercury or other pollutants discharged by this facility.

To get more information we will need to open the Detailed Facility Report as well as other reports on this page. In this table below we will select the “C” icon to open the Detailed Facility Report. We will scroll down under Enforcement and Compliance to the three-year compliance status by quarter. Here we see the three-year history of instances of effluent exceeding and other water violations. We can also confirm that there are no records in the Compliance History or Enforcement.

Also on this page under Environmental Conditions we get information about the receiving water body. This information can confirm that the facility is in fact discharging to an impaired water body, but the water body is impaired for PCBs and not linked to any of the facility's effluent exceeding.

Each column in this table represents a three-month time period the table goes off the page, but towards the bottom of the table you can scroll over and see all 12 quarters for the three years. The dates are indicated in the column heading. The value presented in the table is the exceedings of the discharge over the permit limit, expressed as a percentage. Only one value is presented for each quarter. This is the highest percentage for that three-month period. Values shown in bold and red are exceedings that were determined to be a significant violation. To see more details about these violations you can click on the pollutant name to view the Effluent Charts.

We will click on mercury, because that is what we were looking at and scroll down to the charts. One table shows concentrations for mercury and the other table shows quantity. The Y-axis shows the pounds and the X-axis shows the dates. These charts present the actual effluent measurements that are reported on a monthly basis. Viewing this information helps to provide more context about the magnitude of the discharges and the frequency in which violations occur.

Lastly, I would like to highlight one other feature about the Facility Search table. We will go back to the facility search results. Under the “Reports” icon, we have links to other reports as well. Because we did a water search, ECHO only displays the reports that include information relevant to the Clean Water Act. For this facility, we can view the detailed facility report and effluent chart. The “L” icon will take you to the DMR Pollutant Loading Tool report for this facility. I already have it loaded here. In this report, you can see this facility's discharges expressed in total pounds per year. I'm showing the 2015 loading, because they correspond to the year with the facility's effluent exceedances. For mercury, we see a yellow flag and a blue flag. The yellow flag indicates that the discharge exceeded effluent limits at some time during the year. The blue flag is a data quality flag. It is shown any time when monthly concentrations or quantities differ by more than three orders of magnitude. It does not necessarily mean the data are wrong, but it's presented to alert users to a potential data quality issue that may be worth investigating further.

Some key takeaways before we start the question and answer section: ECHO provides several tools to analyze the Clean Water Act. There's the wide facility search, the DMR loading tool, effluent charts, and

the detailed facility report. In our first case study, we used the loading tool to identify facilities with the largest discharges that may negatively impact the surrounding environment. In our second case study, we used the water facility search and map filtering features to identify facilities with a large number of violations without a recent inspection. In both cases, we used effluent charts and the detailed facility reports to access more detailed information. These tools all use the same underlying data, but we've shown how offering different clearing capabilities and reports can help users answer different questions.

We'll now take your questions and answers that you've commented in the questions box. As we answer questions, feel free to add more. And while we're answering questions, I will leave up our "Helpful Links & Contacts" page.

We have several questions. "In ECHO, can I export batch data as a CSV and/or an Excel for conversion to geodatabase or other relational database applications?"

Yes, there are a number of ways to download data from the water search results. Just above the data table on the left is a "Download Data" button. Once you select that, there will be an option to download the data as a CSV, Excel, or GeoJSON file. If you are downloading as a CSV, and are interested in mapping these facilities, latitude and longitude are provided in the download.

"Can we upload our GIS files to ECHO to match facilities within our interested area?"

Not at this time, but you can use ECHO to download that information and plug it into another mapping software. If you do have location information for specific facilities, you can search by latitude or longitude on the Water Search Form itself.

We had two questions about searching by geographic area. The user was specifically searching on Region 7 and noticed some single facilities outside that EPA region. We do sometimes see inconsistencies in the geographic information associated with the facilities. Sometimes that can indicate a data error or missing information, and sometimes the facility location may be associated with the owner instead of the actual facility location. On the ECHO homepage, we have links to ECHO tutorials. There is a tutorial on how to report an error if you do identify any specific inconsistencies. That walks through an example to report the error to EPA so that it can be evaluated and corrected.

"In ECHO, can you search for low-level mercury results by facility?"

On the Water Facility Search, when you search, there are several search criteria under the Pollutant section. There is an option. We search by pollutant. There's also the option to search by parameter, which is more specific than pollutant. That can mean it's looking at both the name of the pollutant and the form. You can look there to see if there's a specific parameter for low-level mercury, or see how many parameters there are specifically for mercury in NPDES.

"Does ECHO have access to toxic release information?"

If you're referring to TRI release data, yes, ECHO links to and makes available TRI information. In the Water Search Results, we provide specifically the water releases. You can even search by TRI water releases as well. Those are available as additional columns in the Results table, both direct water discharges and transfers to municipal sewage treatment plants. ECHO does not currently have information on accidental releases.

“How would I search for facility names and locations of facilities in Region 7 within the 311 NAICS classification that have water regulation engagement?”

On the Water Search, you can search by geographic area, so by EPA region. Under “Facility Characteristics,” we also have several options to search by industrial code, which is a NAICS code. The submitter of the question acknowledged that not all facilities have NAICS codes at this point, so if you’re searching by NAICS, you may be excluding some facilities if they don’t report that information at this time. You can search by SIC code as well. We provide lookups to look up the appropriate code for searching.

I think those are all the questions at this time. If you have other questions, you can always email the ECHO Helpline.

Thank you. I would like to take one second to point out that I realized that, during the demo, I never pointed out the “Contact Us.” Should any questions arise on any of the pages throughout ECHO, in the right corner is a “Contact Us” button. Feel free to use that button.

As a reminder, the presentation and the case studies are already listed. It’s under the “Help” tab, then “Training.” You can access the presentation PDF as well as the practice water searches. As soon as the recording is finished and put together, the “Register for the Advanced ECHO Webinar” will be replaced with a link to the recording.

I want to thank you all for your time today and for tuning into our Advanced ECHO Webinar. Stay tuned for more information coming up for our quarterly webinar.

Again, thank you all so much for joining us today. Before we close things out, I want to mention a quick reminder. At the conclusion, when things are shut down, please feel free to fill out the survey afterwards. Your feedback is very helpful. Thank you again for participating today and have a great day.