RSMS Quickstart Guide

Disclaimer

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Guide

1. Open http://rsmstest.eastus.cloudapp.azure.com/ in any browser and log in (Figure 1).

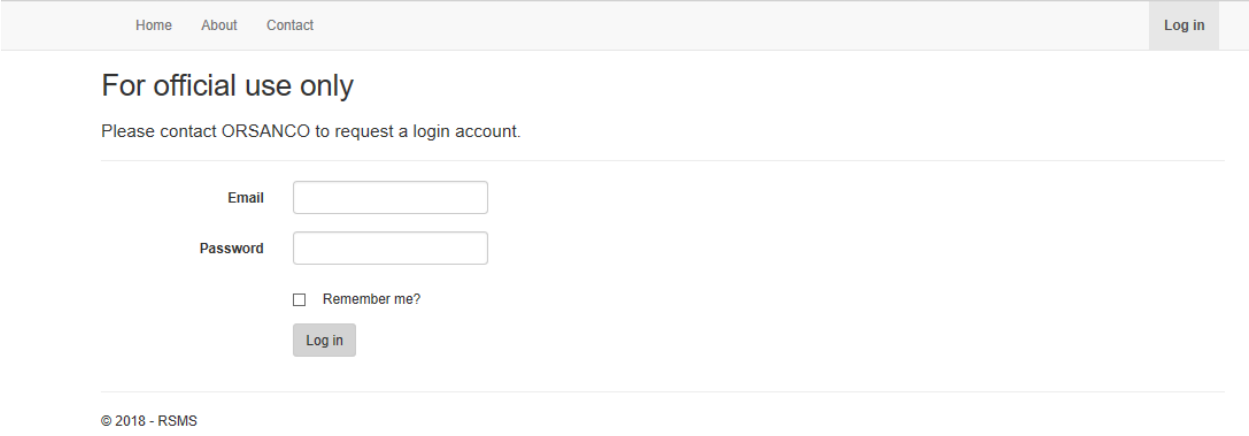


Figure 1

2. **Home** will be the default page after the user has logged in (Figure 2).

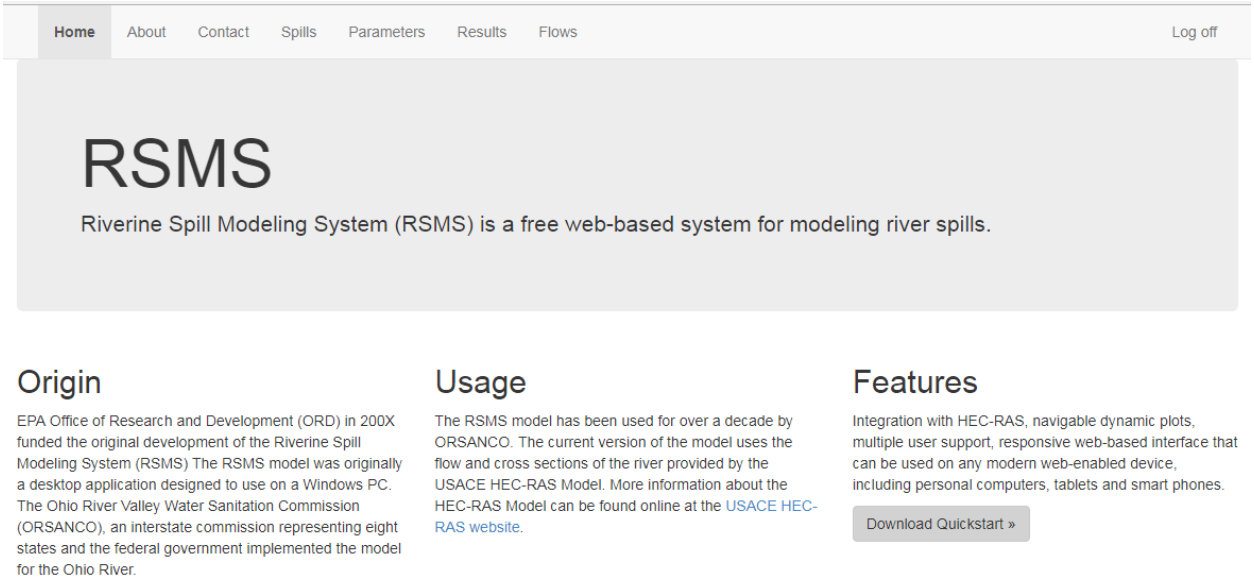
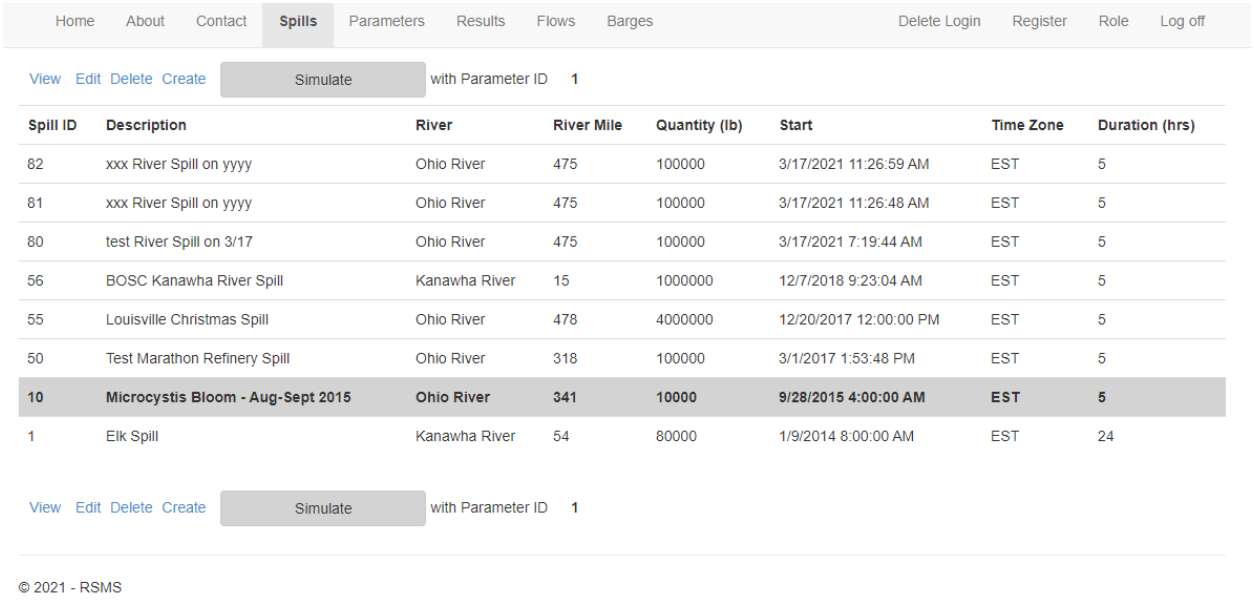


Figure 2

3. Click on the **Spills** Page.

   The active spill will be shown highlighted (Figure 3).



Spill ID	Description	River	River Mile	Quantity (lb)	Start	Time Zone	Duration (hrs)
82	xxx River Spill on yyyy	Ohio River	475	100000	3/17/2021 11:26:59 AM	EST	5
81	xxx River Spill on yyyy	Ohio River	475	100000	3/17/2021 11:26:48 AM	EST	5
80	test River Spill on 3/17	Ohio River	475	100000	3/17/2021 7:19:44 AM	EST	5
56	BOSC Kanawha River Spill	Kanawha River	15	1000000	12/7/2018 9:23:04 AM	EST	5
55	Louisville Christmas Spill	Ohio River	478	4000000	12/20/2017 12:00:00 PM	EST	5
50	Test Marathon Refinery Spill	Ohio River	318	100000	3/1/2017 1:53:48 PM	EST	5
10	**Microcystis Bloom - Aug-Sept 2015**	**Ohio River**	**341**	**10000**	**9/28/2015 4:00:00 AM**	**EST**	**5**
1	Elk Spill	Kanawha River	54	80000	1/9/2014 8:00:00 AM	EST	24

Figure 3

To create a spill, click on the **Create** action link to go to the **Create** page and use the form as shown in (Figure 4).

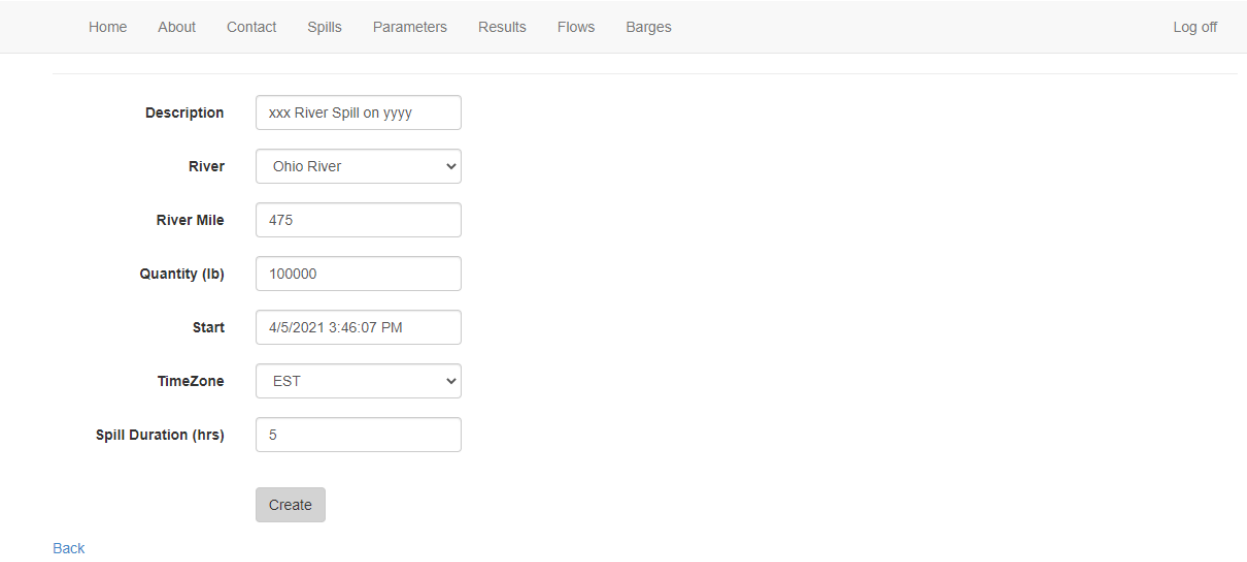


Figure 4

To view the details of a spill, click on that row and then click on the **View** action link to go to the **View** page for the selected spill (Figure 5).

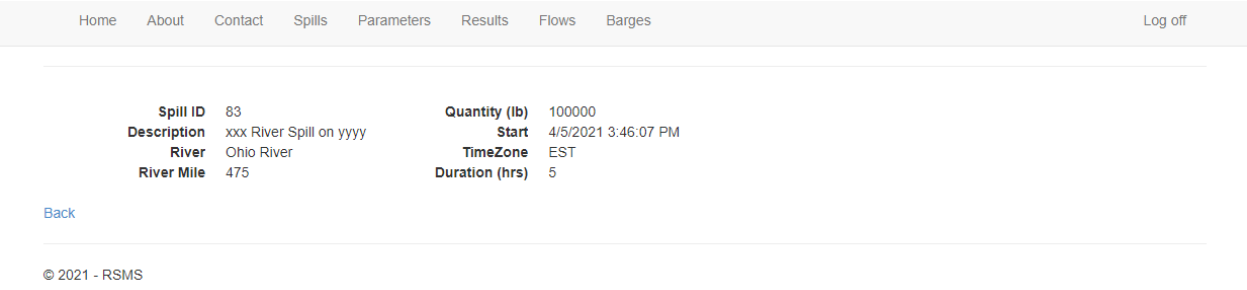


Figure 5

To edit a spill, click on that row and then click on the **Edit** action link to go to the **Edit** page and use the form as shown in (Figure 6)

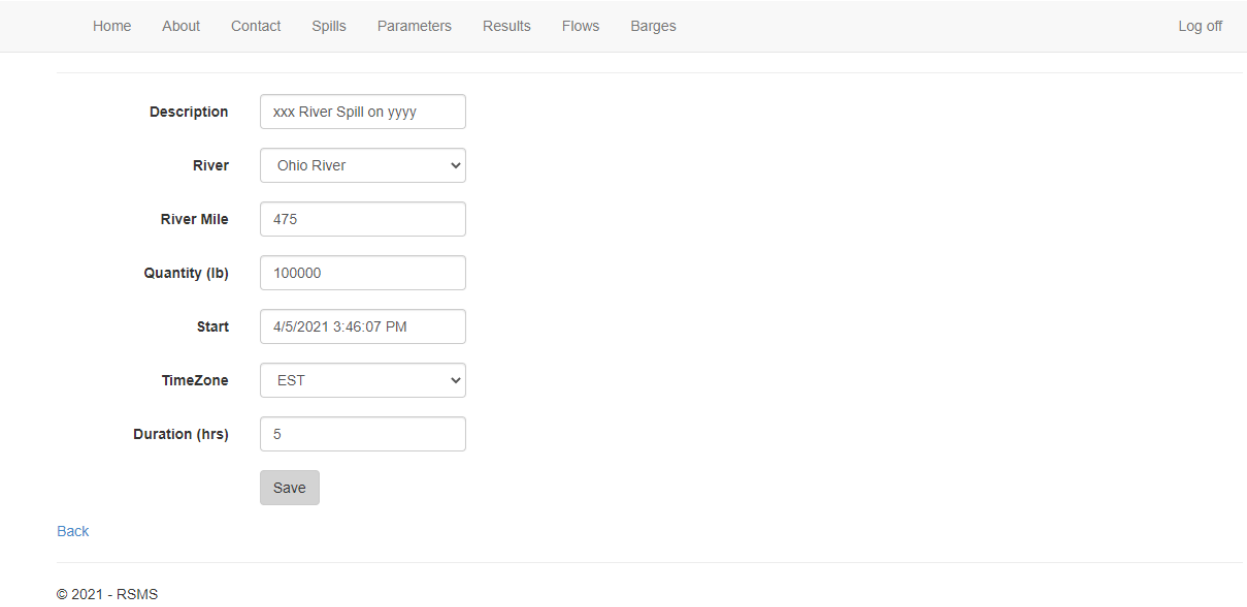


Figure 6

To delete a spill, click on that row and then click on the **Delete** action link. A confirmation pop up box will appear. Click ok to delete a spill (Figure 7).

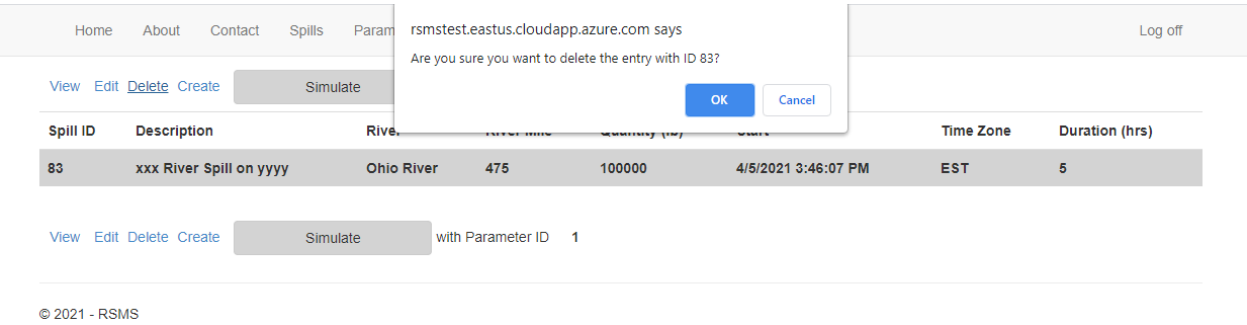


Figure 7

4. Click on the **Parameters** Page

The active parameter will be shown highlighted (Figure 8).

Home About Contact Spills Parameters Results Flows Delete Login Register Role Log off

View Edit Delete Create

Parameter ID	Description	River Stations	Dispersion Factor	Decay rate (/day)	Simulation Duration (days)	Simulation Time step (hours)	Flow Tolerance (cfs)	Concentration Tolerance (mg/l)	Minimum Velocity (ft/s)	Flow Multiplier	Dead Zone Mainstem Average Velocity (cfs)	Dead Zone Exchange Rate	Dead Zone Flow Area Fraction
1	Default Simulation Parameters	49	0	0.00000	3	1	10	1	0.1	1	1	0.0000045	0.1
35	Simulation Parameters	50	0	0.00000	2	1	10	0.001	0.1	1	1	0.0000045	0.1
34	Test Simulation Parameters	150	0	0.00000	7	1	10	0.001	0.1	1	1	0.0000045	0.1
33	Simulation Parameters	80	0	0.00000	7	1	10	0.001	0.1	1	1	0.0000045	0.1

Figure 8

To create a Parameter, click on the **Create** action link to go to the **Create** page and use the form as shown in (Figure 9).

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Description: Simulation Parameters
River Stations: 50
Dispersion Factor: 0
Decay rate (/day): 0.00000
Simulation Duration (days): 3

Hide Advanced Settings

Simulation Time step (hours): 1
Flow Tolerance (cfs): 10
Concentration Tolerance (mg/l): 0.001
Minimum Velocity (ft/s): 0.1
Flow Multiplier: 1

Dead Zone
Mainstem Average Velocity (cfs): 1
Exchange Rate: 0.0000045
Flow Area Fraction: 0.1

Create

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Figure 9

To view the details of a parameter, click on that row and then click on the **View** action link to go to the **View** page for the selected parameter (Figure 10).

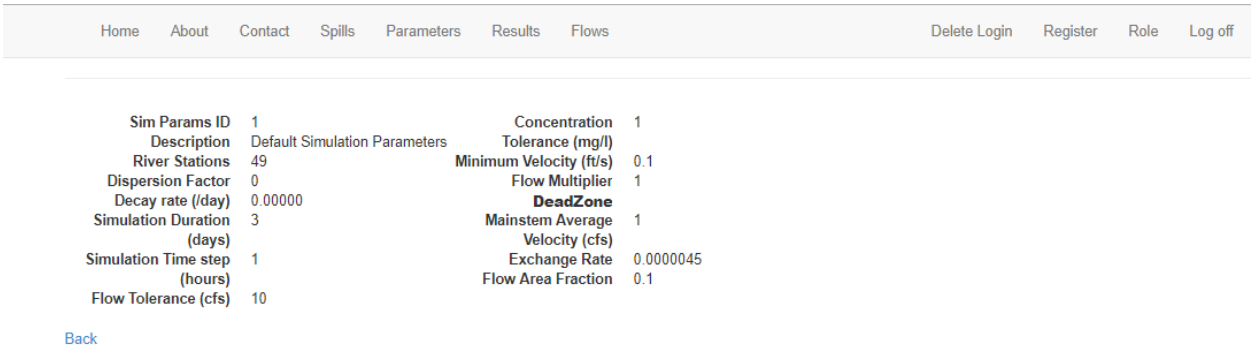

Figure 10

To edit a parameter, click on that row and then click on the **Edit** action link to go to the **Edit** page and use the form as shown in (Figure 11).

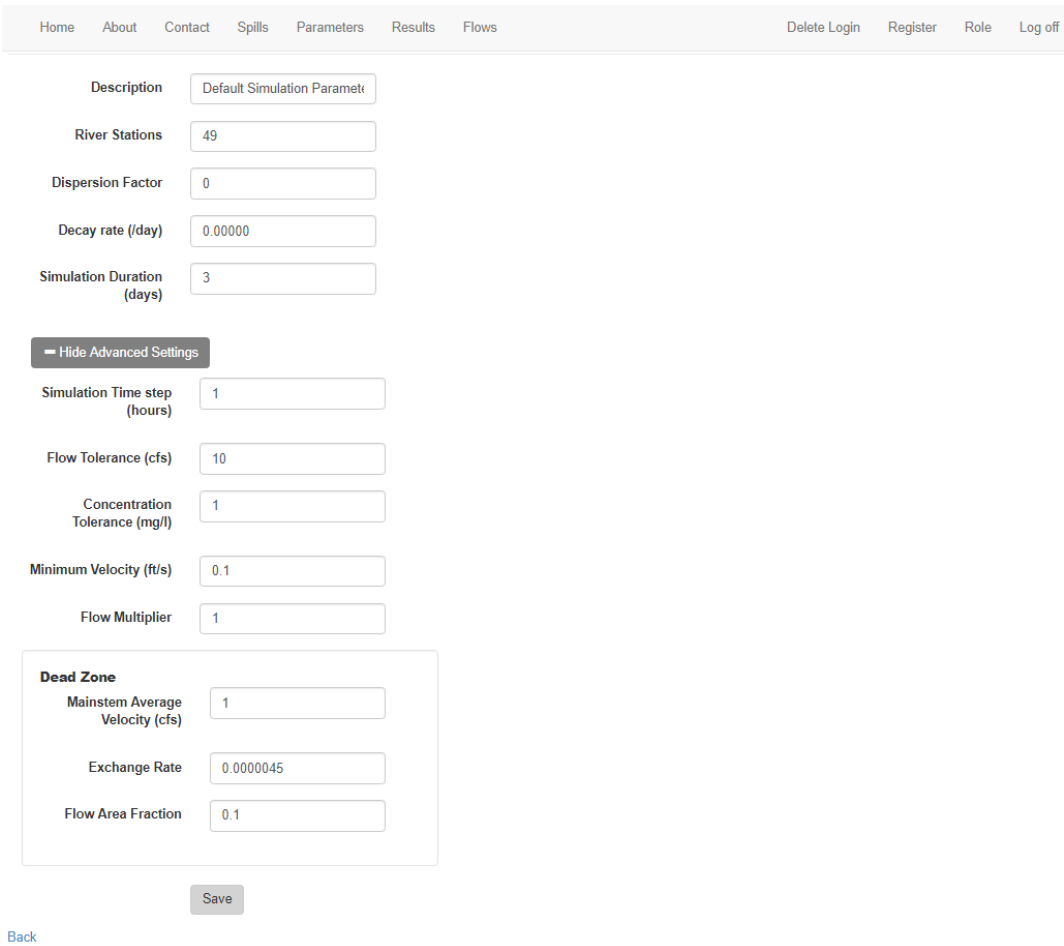

Figure 11

To delete a parameter, click on that row and then click on the **Delete** action link. A confirmation pop up box will appear. Click ok to delete a parameter (Figure 12).

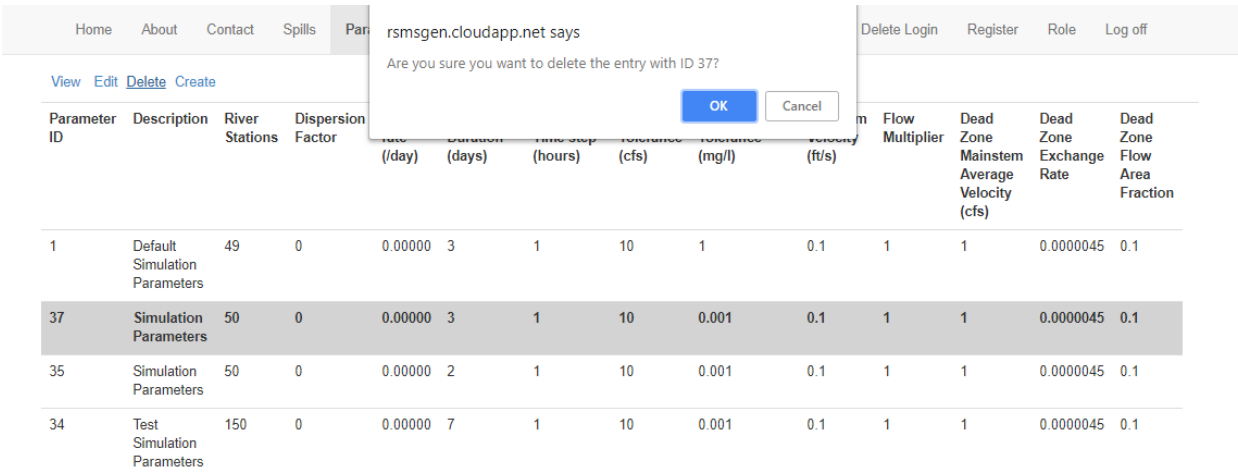

Figure 12

5. Click on the **Spills** Page

To run a simulation, click on that row and then click on the Simulate button. The simulation will run a spill alongside a parameter the *set of values* inside a parameter can be set up on the **Parameters** Page. When the simulation is complete a pop up box will be shown and the results from the run can be seen on the **Results** Page (Figure 13).

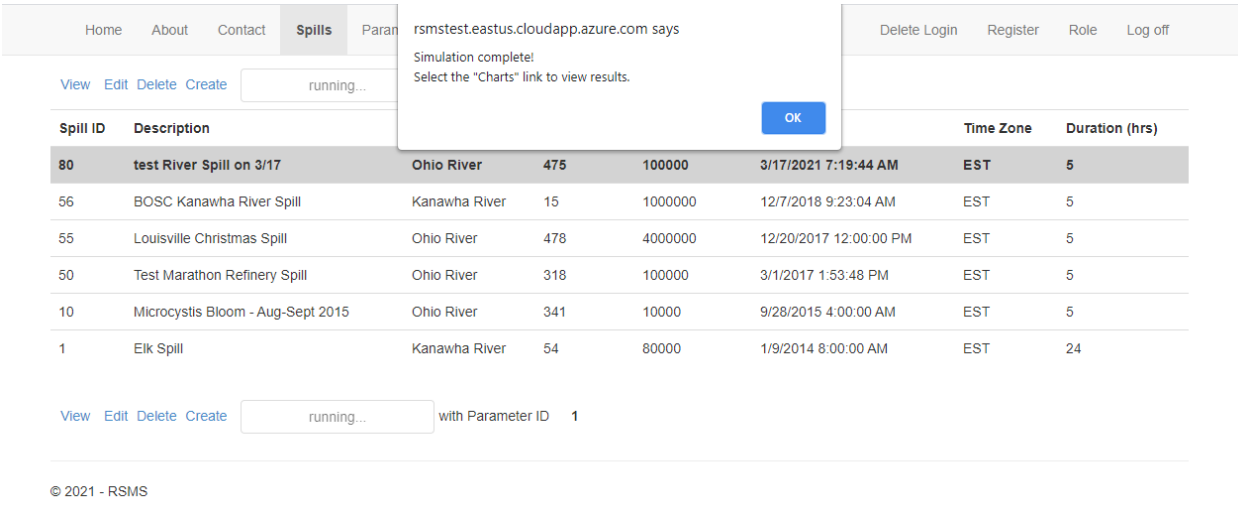

Figure 13

6. Click on the **Results** Page

The active result will be shown highlighted (Figure 14).

Home About Contact Spills Parameters **Results** Flows Barges Delete Login Register Role Log off

View | Delete | Charts | Map | Downloads: C vs X C vs T Flow

Results ID	Run Date Time	Spill ID	Spill Description	River	Parameters ID	Parameters Description
315	**4/5/2021 7:50:55 PM**	**80**	**test River Spill on 3/17**	**Ohio River**	**1**	**High Decay Rate Simulation Parameters**
314	4/5/2021 7:45:52 PM	10	Microcystis Bloom - Aug-Sept 2015	Ohio River	1	High Decay Rate Simulation Parameters
313	3/15/2021 7:58:01 PM	56	BOSC Kanawha River Spill	Kanawha River	1	High Decay Rate Simulation Parameters
312	3/15/2021 7:53:31 PM	56	BOSC Kanawha River Spill	Kanawha River	1	High Decay Rate Simulation Parameters
239	1/6/2020 9:02:33 PM	55	Louisville Christmas Spill	Ohio River	1	High Decay Rate Simulation Parameters

Figure 14

To view the details of a result, click on that row and then click on the **View** action link to go to the **View** page for the selected result (Figure 15).

Home About Contact Spills Parameters Results Flows Barges Delete Login Register Role Log off

Scenario ID	315	**Trailing Edge Parameter**	0
Run Date Time	4/5/2021 7:50:55 PM	**Global Flow Multiplier**	1
Spill ID	80	**Time Step Length**	1
Spill Description	test River Spill on 3/17	**Reporting Timestep Length**	1
River	Ohio River	**Decay Rate**	0
River Mile	475	**Simulation Duration (day)**	5
Quantity (lb)	100000	**Dead Zone Average Velocity**	1
Spill Start Date Time	3/17/2021 7:19:44 AM	**Dead Zone Exchange Rate**	4.5E-06
Duration (hrs)	5	**Dead Zone Flow Area Multiplier**	0.1
Spill Time Zone	EST	**First Time Step**	0
Parameter ID	1	**Last Time Step**	119
Parameter Description	High Decay Rate Simulation Parameters	**Last Mile**	253.6
Segments	50	**Max Concentration**	0.7468
Flow Tolerance	10	**Spill Location Main Stem**	506.8
Concentration Tolerance	0.001	**Spill Location Tributary**	0
Minimum Velocity	0.1		
Dispersion	0		
Leading Edge Parameter	0		

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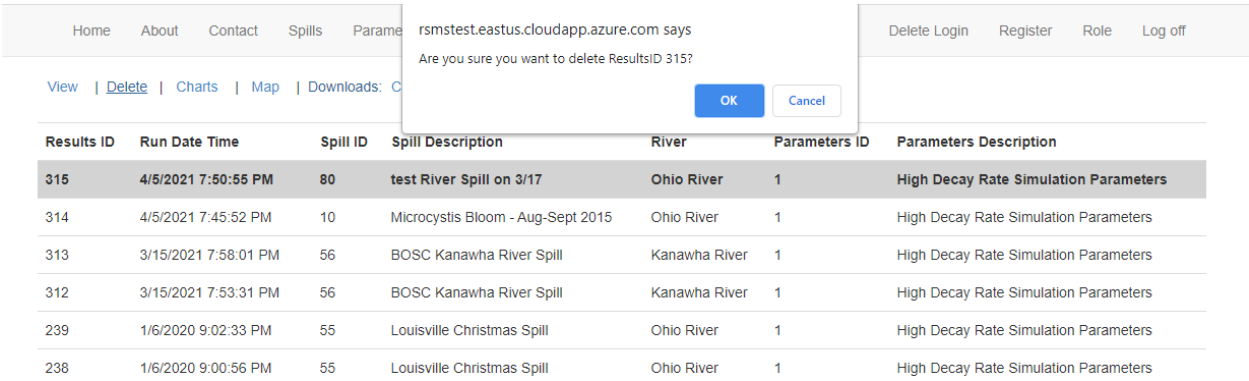
Figure 15

To delete a result, click on that row and then click on the **Delete** action link. A confirmation pop up box will appear. Click ok to delete a result (Figure 16).



Results ID	Run Date Time	Spill ID	Spill Description	River	Parameters ID	Parameters Description
315	4/5/2021 7:50:55 PM	80	test River Spill on 3/17	Ohio River	1	High Decay Rate Simulation Parameters
314	4/5/2021 7:45:52 PM	10	Microcystis Bloom - Aug-Sept 2015	Ohio River	1	High Decay Rate Simulation Parameters
313	3/15/2021 7:58:01 PM	56	BOSC Kanawha River Spill	Kanawha River	1	High Decay Rate Simulation Parameters
312	3/15/2021 7:53:31 PM	56	BOSC Kanawha River Spill	Kanawha River	1	High Decay Rate Simulation Parameters
239	1/6/2020 9:02:33 PM	55	Louisville Christmas Spill	Ohio River	1	High Decay Rate Simulation Parameters
238	1/6/2020 9:00:56 PM	55	Louisville Christmas Spill	Ohio River	1	High Decay Rate Simulation Parameters

Figure 16

To view the charts of a result, click on that row and then click on the **Charts** action link to go to the **Charts** page for the selected result. There are four different charts on this page.

1. CXPLT results (Figure 17)
    a. The CXPLT chart shows the spill concentration at a certain distance from the spill location.
    b. The user can use the slider bar below the graph to change what hour of the spill the graph represents.
    c. There's also a checkbox titled *Autoscale*, which will enable or disable auto-scaling of the Y-axis.
2. CTPLT results (Figure 18)
    a. The CTPLT chart shows the spill concentration at a certain hour after the spill start time.
    b. The user can use the slider bar below the graph to change what mile past the spill location the graph represents.
    c. There's also a checkbox titled *Autoscale*, which will enable or disable auto-scaling of the Y-axis.
3. Leading, Trailing, and Peak Concentration results (Figure 19)
   This graph has four lines that show how long it takes for each part of the plume to reach a certain distance from the initial spill.
    a. Trailing Edge.
    b. Peak Arrival.
    c. Leading Edge.
    d. Peak Concentration.
4. Mass Balance results (Figure 20)

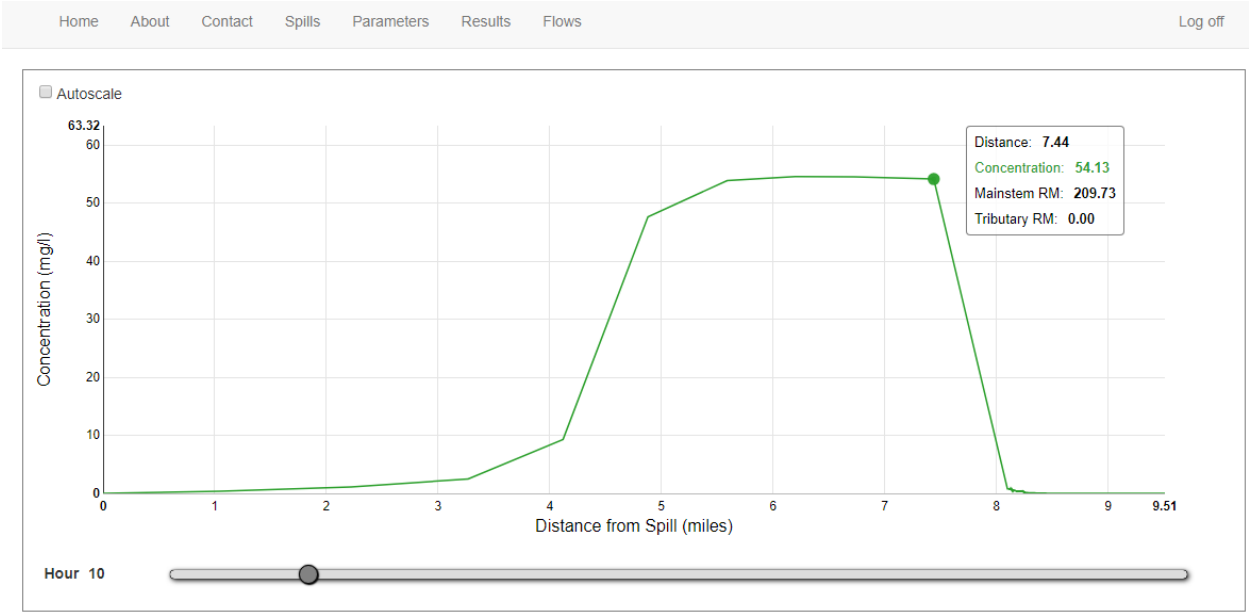


Figure 17 – Spill Plume at a particular time (hours since spill)

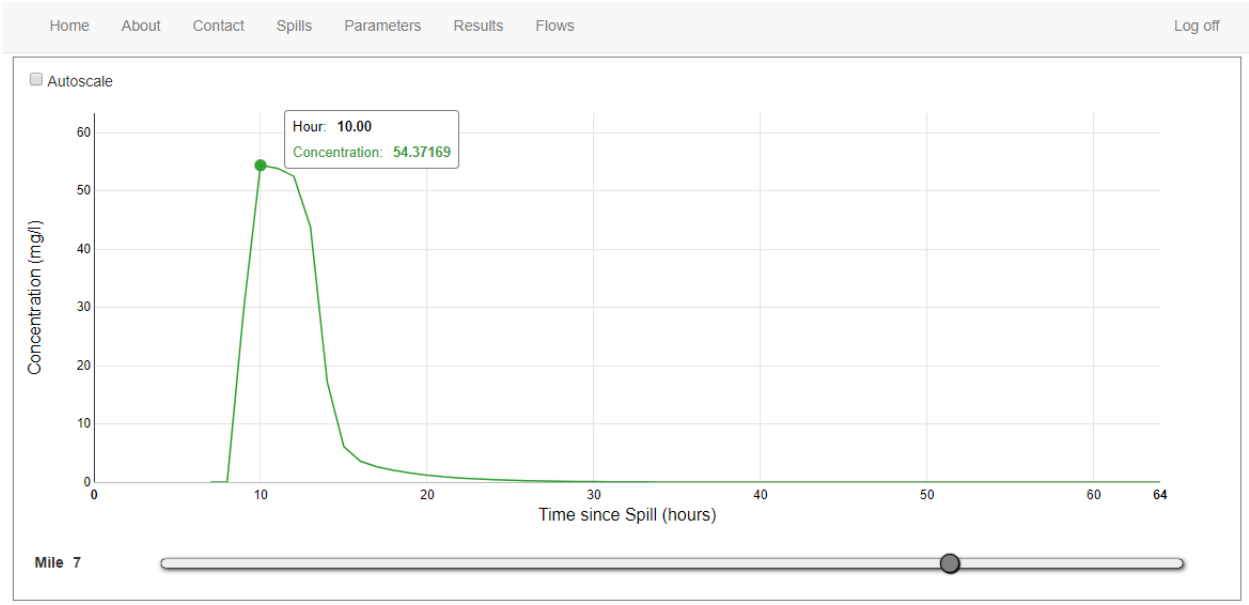


Figure 18 – Spill Plume at a particular distance (miles from spill location)

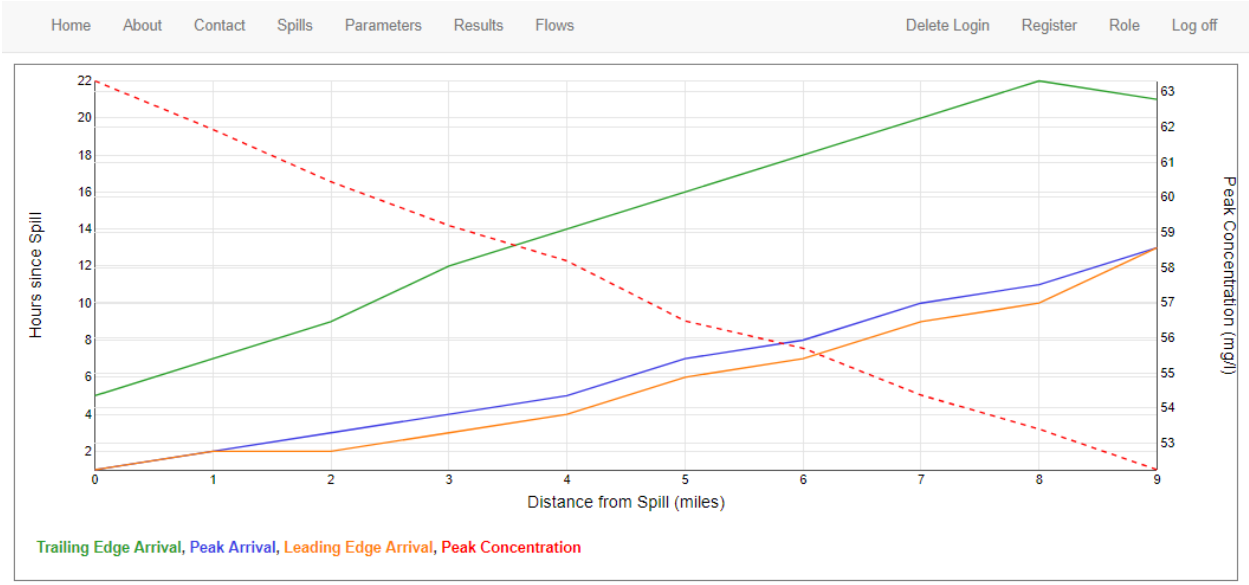


Figure 19

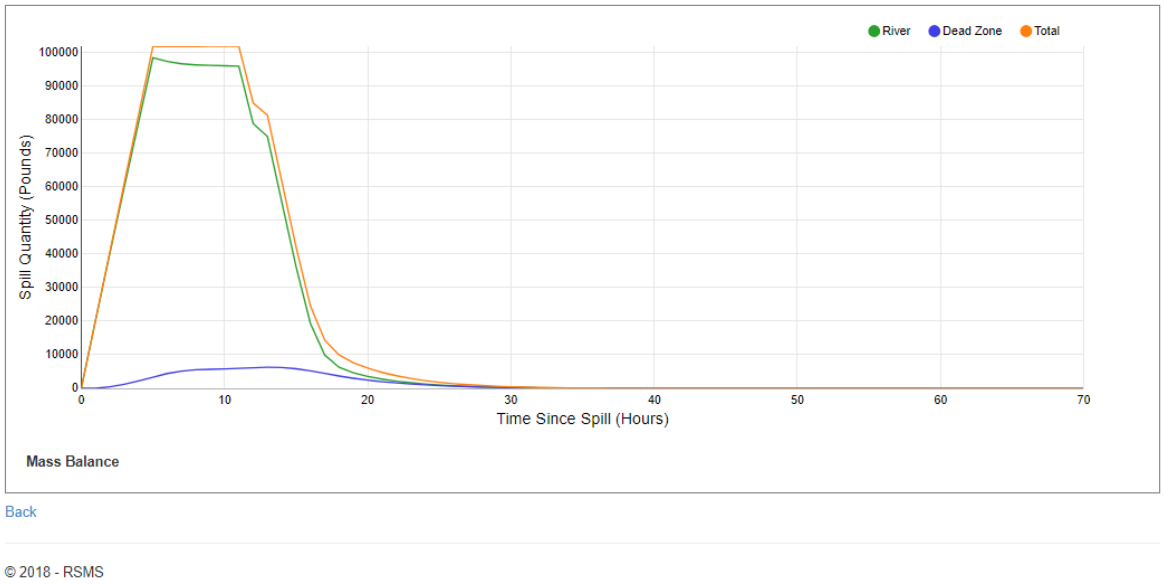


Figure 20

To view the results of a scenario on a map, click on that row and then click on the **Map** action link to go to the **Map** page for the selected result. (Figure 21).

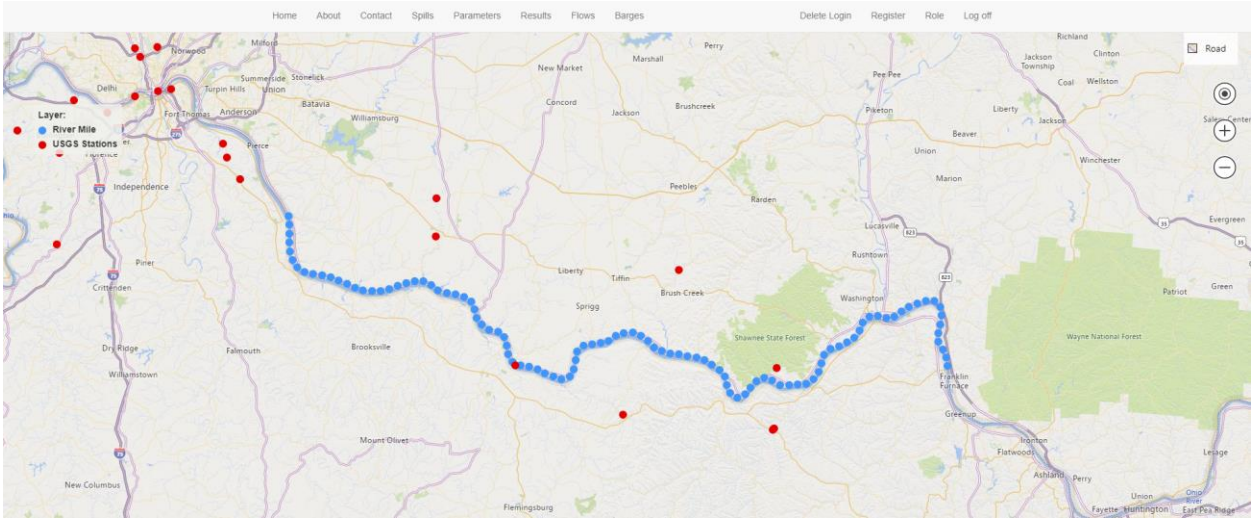


Figure 21

Clicking on a blue pushpin will show a graph of the Spill plume at that river mile (Figure 22).

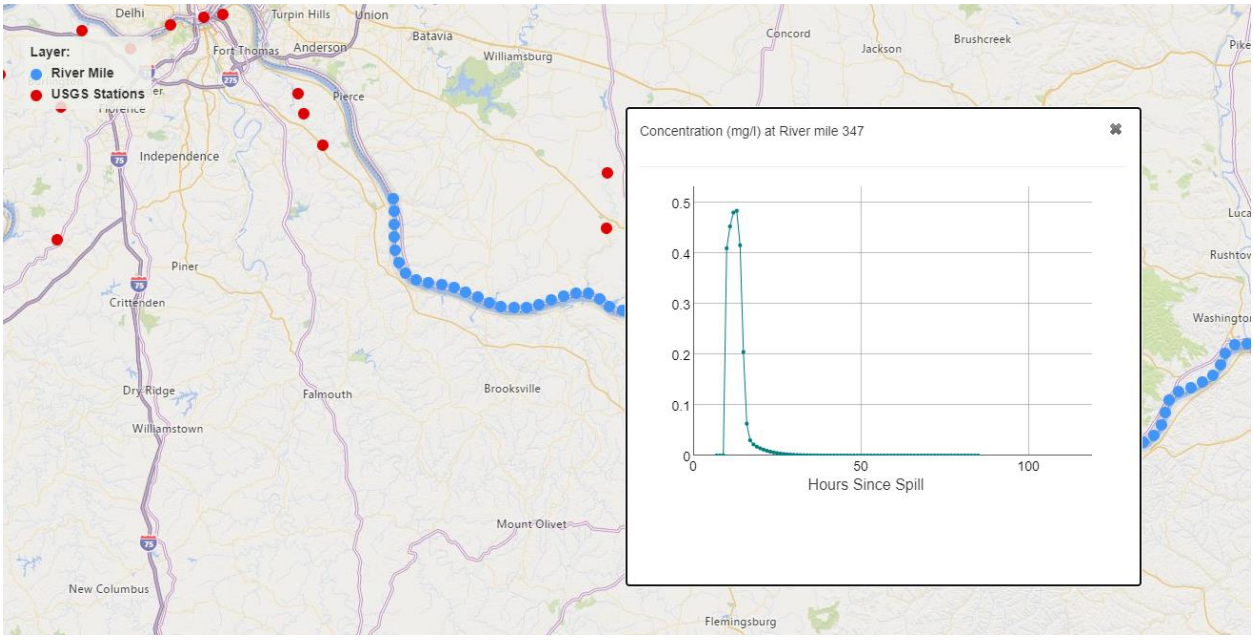


Figure 22

Red pushpins represent USGS stations on the rivers affected by the spill (Figure 23 and 24). Clicking on a red pushpin shows for Flow and Stage data graphs for that USGS station.

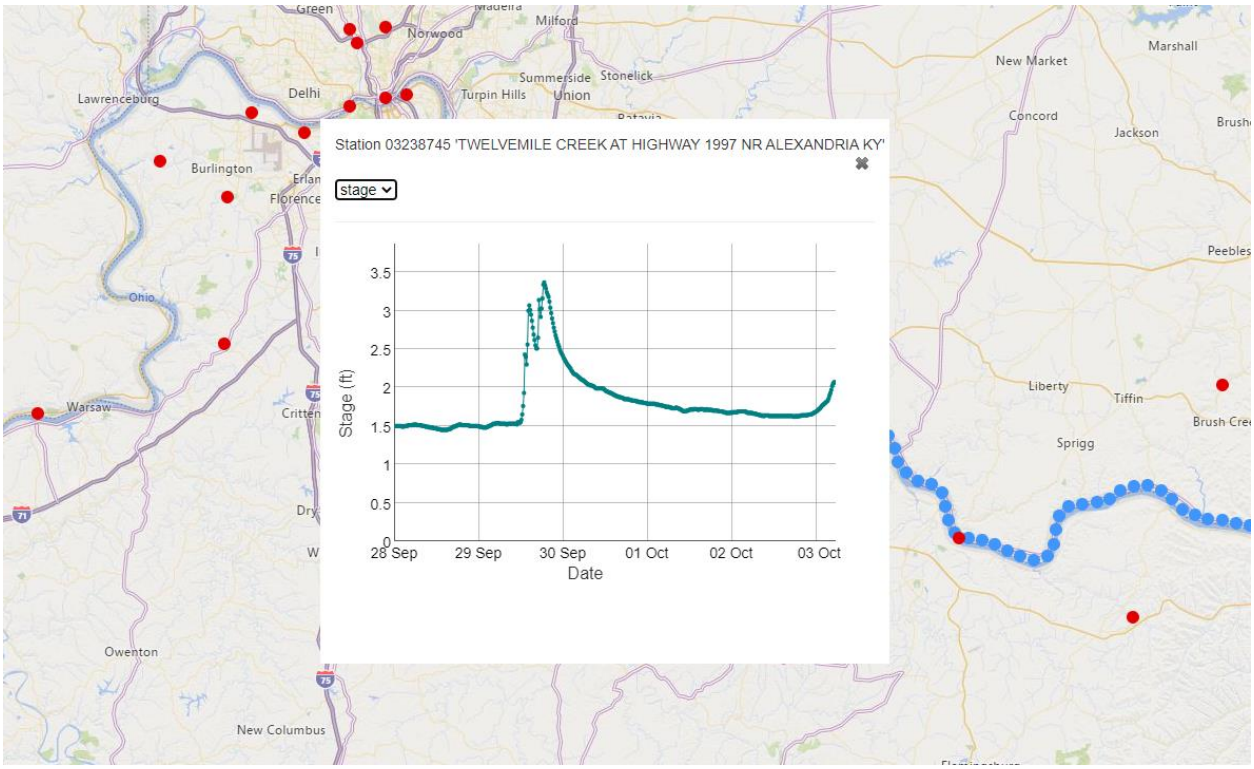


Figure 23

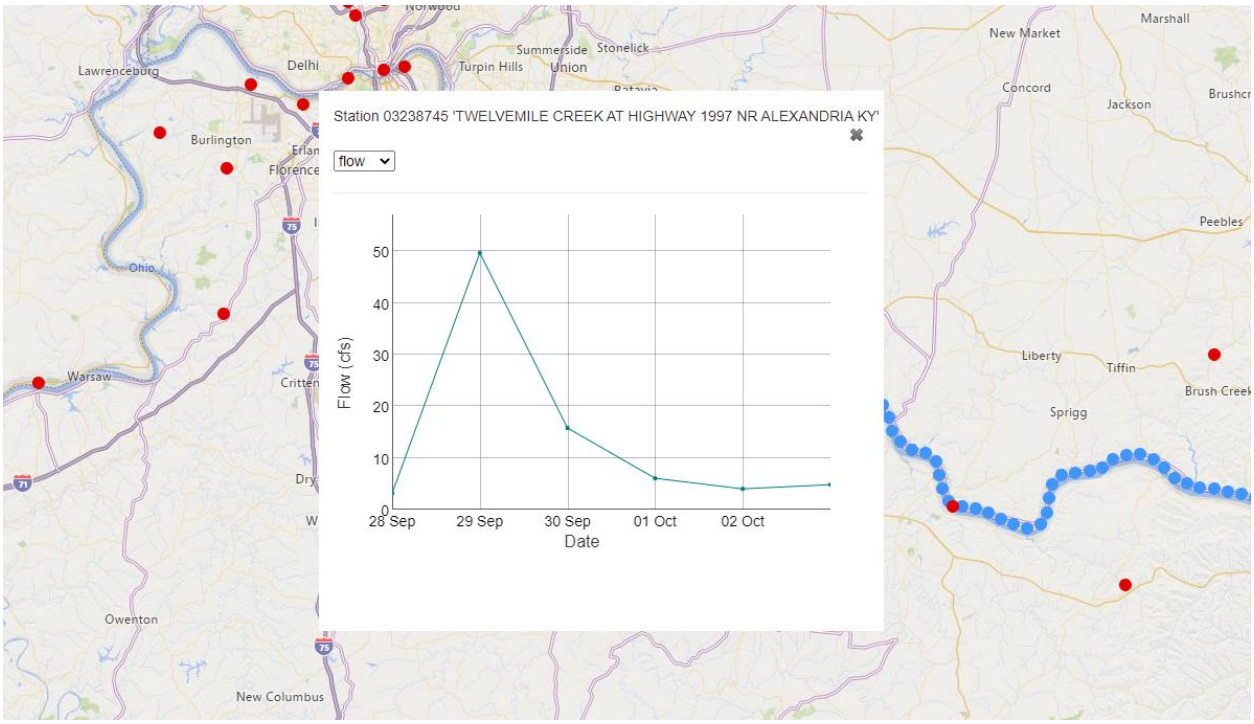


Figure 24

To download the results of a scenario in a concentration vs. distance view click on that row and then click on the **C vs X** action link for the excel file to download.

To download the results of a scenario in a concentration vs. time view click on that row and then click on the **C vs T** action link for the excel file to download.

To download the .nfq flow file of a scenario click on that row and then click on the **Flow** action link for the .nfq file to download.

Click on the **Flow** Page

Choose your river to view the flow charts (Figure 25 and 26).

The user can use the slider bar below the graph to change what River mile or day the graphs represent.

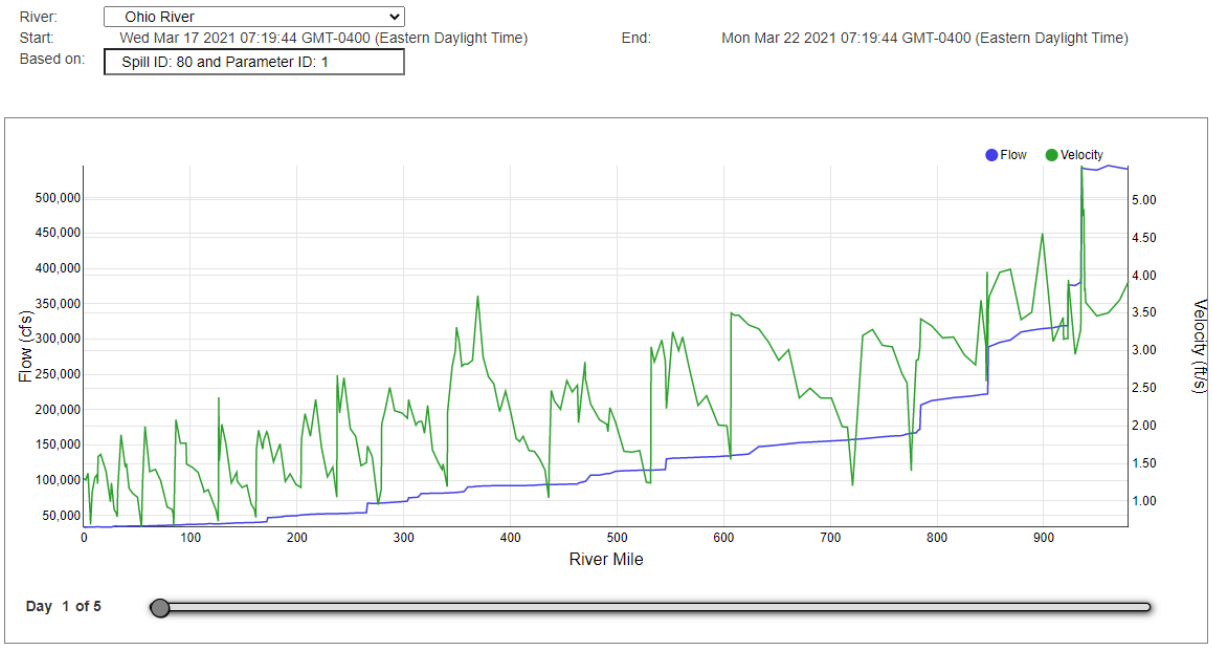


Figure 25

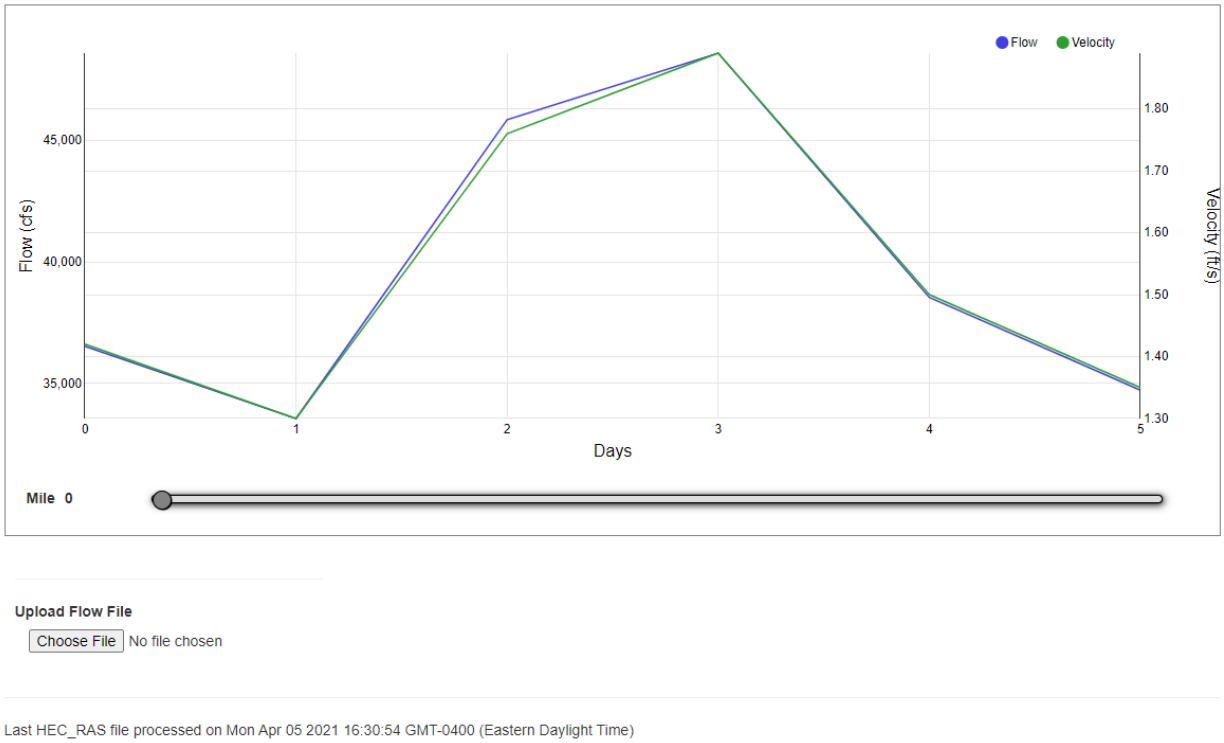


Figure 26

7. Click on the **About** tab (on mobile devices activate the dropdown first) (Figures 27, 28 and 29).

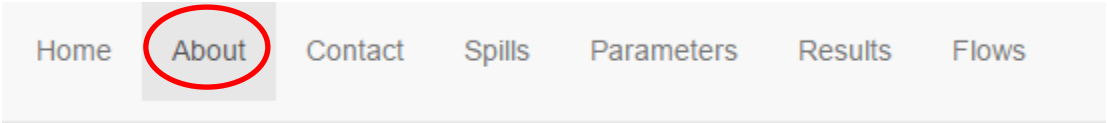


Figure 27

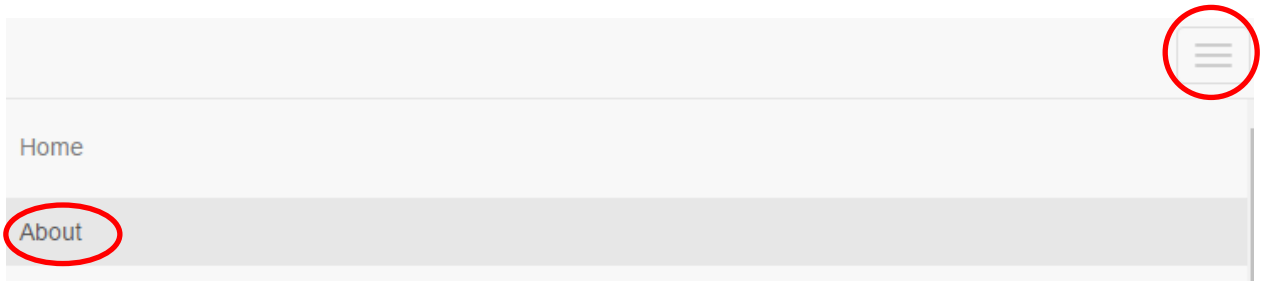


Figure 28

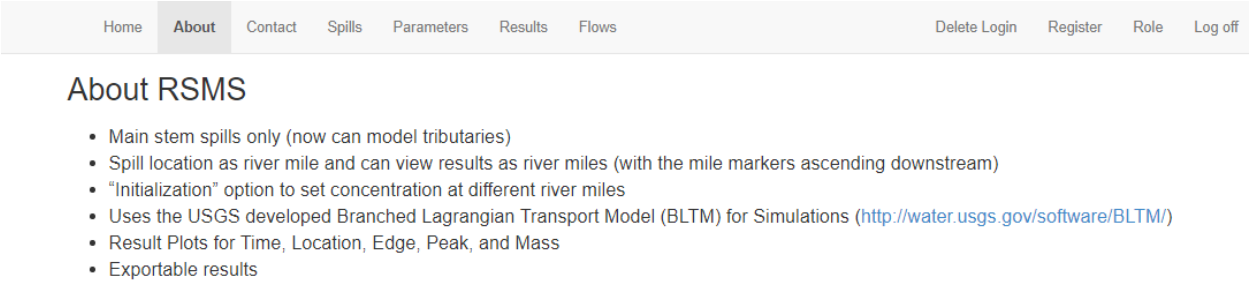


Figure 29

8. Click on the **Contact** tab (Figure 30).

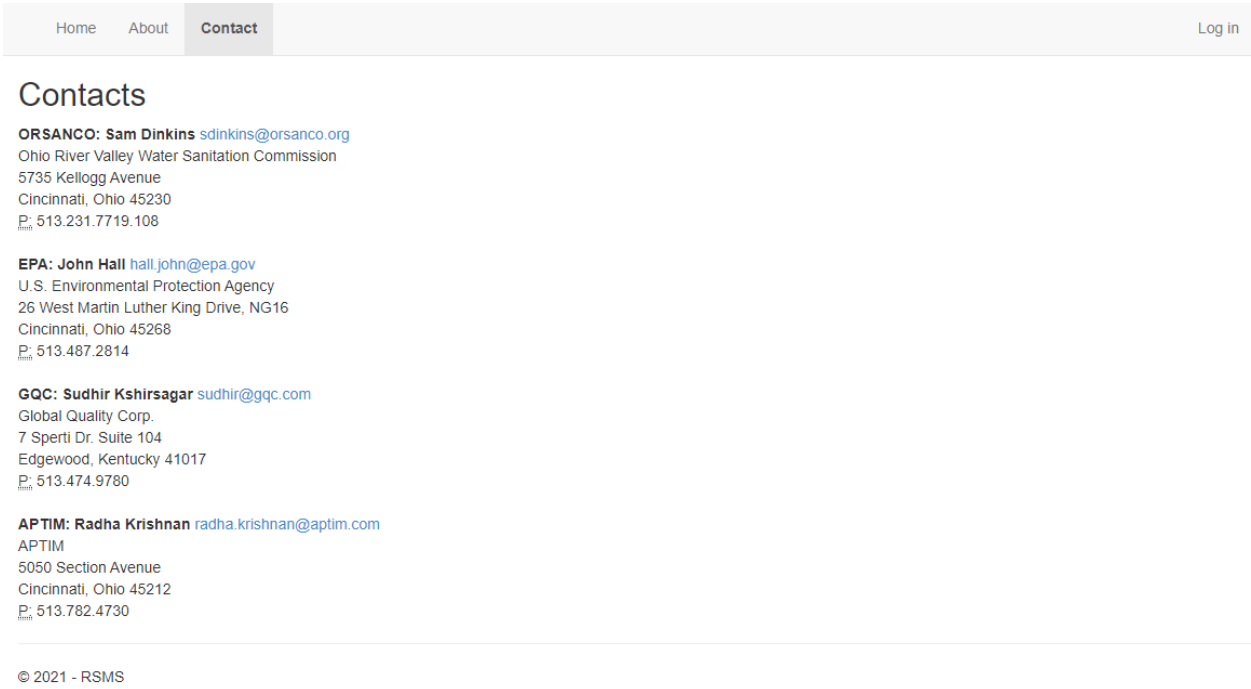


Figure 30