

**Upper Mississippi River  
Hazardous Spills Coordination Group**

**November 13, 2019  
Moline, Illinois**

**Meeting Summary**

**Participants**

Mike Rose*	Minnesota Pollution Control Agency
Rick Gann*	Missouri Department of Natural Resources
Darryl Aldrich	USCG MSD Quad Cities
Barbi Lee	USEPA, Region 5
Ramon Mendoza	USEPA, Region 5
Joe Davis	USEPA, Region 7
Jessica Evans*	USEPA, Region 7
Aleshia Kenney	USFWS
Kelly Warner	USGS
Faith Fitzpatrick*	USGS
David Soong*	USGS
Dave Donovan	Scott County (IA) EMA
Bob Bohannon	City of Moline
Brianna Huber	City of East Moline
Tony Houdyshell	CP Rail
Andrew Rockweiler	Pinnacle Engineering
Matt Stokes	STARS
Mark Ellis	UMRBA

*\*participated by phone*

**Call to Order and Introductions**

The meeting was called to order at 12:00 p.m. by Mark Ellis. Introductions of all participants followed.

**Approval of Previous Meeting Summary**

The summary of the October 16-17, 2018 UMR Spills Group meeting was approved without modification.

**Agency and Partner Updates**

*Iowa*

Joe Sanfilippo of Iowa DNR provided the group with a written update of the Turkey River bridge failure. The bridge failed on March 14, 2019 when five 80-foot spans were pushed off their piers by flood waters and an ice jam. CP Railroad replaced the bridge with a temporary bridge consisting of eight 40-foot sections, that was put into service on March 27, 2019. These temporary sections have now been replaced, with the final 80-foot span being installed this week. Plans are in place to remove the temporary causeway by the end of 2019. Removal of debris from the river and floodplain will not likely take place until Spring 2020.

## *Missouri*

Rick Gann reported that Skip Ricketts, who was an important player in the response community in Missouri and Saint Louis, retired in April. The DNR will not be hiring a replacement, but still has two On-scene Coordinators (OSC) in the Saint Louis area.

A lasting sheen was found on the Missouri River near its confluence with the Mississippi River. This area has been a problem area with many pipelines for many years. Responders suspected the leak was from an abandoned pipeline now owned by Marathon Petroleum, but were unable to verify due to flood conditions that prevented divers from investigating. The main pipeline could not be ruled out, as it is also not covered by deep sediments. Marathon is undertaking a project to drill horizontally under the Missouri River at a depth of 140 feet, through bedrock and sand, so there is no chance of river scouring exposing the pipeline.

Joe Davis added that Marathon presented at the RRT7 meeting that the active line had been scoured out and exposed. The company tried to cover the pipeline by dropping sandbags 68 feet upstream in 8 knot flow to land them on the exposed pipe. Once river levels drop, the company plans to remove the old pipe that crosses at Chesterfield, Missouri.

## *Minnesota*

Mike Rose reported that Minnesota has also been dealing with less staff. MPCA formerly had nine or ten emergency responders, but now has only six. Two are based in St. Paul and four at the regional offices in Duluth, Brainerd, Marshall, and Rochester. Interviews for a third St. Paul responder are being held this week. Rose noted that there was only one significant oil release, but some hazardous materials releases took place this year. In April, Magellan Pipeline had a 1500 bbl release to a drainage ditch and Cottonwood Lake, in the Minnesota River basin.

## *USCG*

Darryl Aldrich said that MSD Rock Island has mostly been busy with inspecting tows, barges, and facilities. Staff have been busy because of an increase in groundings, but fortunately there were no hull breaches so no spills of significance. Answering a query about his role, Aldrich said his rotation at Rock Island is for another two years.

## *USEPA, Region 5*

Ramon Mendoza reported that EPA Region 5 has a full-strength staff of 38 OSCs in the region. Recent hires include Adam Vrabec in southern Illinois, who moved to the agency from Missouri DNR. Mendoza noted that he is assigned to the Quad Cities and can respond to the area from Chicago in three hours. Mendoza said the sub-area contingency plan needs to get updated and will talk more about this later in the meeting.

## *USEPA, Region 7*

Joe Davis reported that flooding on the Missouri River was the biggest challenge in 2019, particularly retrieving orphan containers and cleaning related releases. Two of three ESF 10 assignments have been completed; the third is currently open. Containers are being staged near Mound City. The USEPA and Missouri DNR staff cooperated to cover the river corridor, where floods remained up into forested areas all year.

Davis said a Norfolk Southern bridge over the Grand River failed due to flood debris piling up behind the bridge. The railroad eventually cut the rails to release the pressure, which swept the bridge away. This incident also blocked roads. Norfolk Southern has rebuilt the bridge and rail traffic resumed October 1.

Federal levees failed in several locations, causing extensive flooding. In-rushing water scoured holes up to forty feet deep in some places. Flood waters deposited sand up to several yards deep on farmland, leaving infertile ground that requires removal or extensive improvement to return the farm to use.

#### *USFWS*

Aleshia Kenney said that the agency has not had any significant releases to note. She gave the group an update on the Department of the Interior reorganization. The Rock Island Field Office, in Illinois, is a part of Unified Region 3, but also works in Iowa and Missouri, in Unified Region 4. The UMR National Wildlife and Fish Refuge is also split between regions 3 and 4. Following on to this, USEPA staff explained that their agency geographies have not changed, but internal structure has been changed to match that of Headquarters. These regions mirror FEMA regions.

Ramon Mendoza said that the jurisdictions are described in the Quad Cities sub-area plan, but without a graphic. He responded to questions that the next update could add maps to portray the jurisdictions of the various agencies that sign off of the plan. These affect notifications and the MOUs in effect in the area.

#### *Scott County, Iowa*

Dave Donovan said flooding has been the largest concern for the local response community, though the increased risks have not brought any significant oil releases to date. Wastewater and sewage releases have been the most problematic, as high water has caused the system to overflow for long periods of time. The treatment plant in Davenport has been working with FEMA to develop mitigation strategies to lessen the impact of such events. A river stage of 24' will force a shutdown of the plant; this year the river reached 22' 7". The current stage is at 13', only very recently dropping below flood stage at Lock and Dam 15.

Donovan said Scott County has engaged with National Weather Service (NWS) to inform decisions. Steady rains in May began the period of flooding, which lasted through the summer months. While the system has historically had floods, recent years have changed to long lasting floods, creating new problems for responders to tackle. Not only have flood waters been a direct challenge, a great increase in sediment deposits require more dredging. This in turn requires consultation with the USFWS.

#### *STARS*

Matt Stokes shared that CP Railroad recently had two near miss accidents with barges on the UMR near Le Claire, Iowa. A meeting is planned for November 14, 2019 in this same meeting room to discuss transportation safety. The most recent incident involved a train hauling hazardous materials and a fuel barge. Flood conditions increase the risk of such collisions, so longer flood seasons make this a pressing issue in the river corridor.

Dave Donovan said he heard about these incidents at a recent LEPC meeting; such events do not appear in National Response Center reports, yet he needs to be notified as the local emergency manager. Donovan noted that areas of erosion risk are delineated on the USACE navigation charts, but are not labeled clearly as potential collision areas.

#### *Quad Cities CAER*

Bill Skinner of Molo Petroleum was unable to attend the meeting, but sent a brief description of the local CAER group to introduce it to the UMR Spills Group. Skinner is a member of both the Dubuque CAER group and the Bettendorf Spill Co-op in the Quad Cities. He is working with CP Railroad to develop the Quad Cities CAER. The group first met in October 2018 and is made up of private industry and the response community. Their goal is to help members develop spills plans and hold drills to educate

members in spill response and clean up. The group focuses mainly on responding to spills on the Mississippi River, but include land responses as part of their scope of work.

Joe Davis attended the October 16, 2019 meeting of the CAER group. He shared that around a dozen participants focused on forming a consensus of what to do, how to assist planning efforts, and sharing knowledge, experience, and equipment among the local industry partners. Answering a question about how the CAER group and the Bettendorf Spill Co-op overlap, Matt Stokes said that participants had discussed this early on, but the co-op was not keen to expand into the CAER. They felt that MOAs were a tripping point that was not a comfortable fit at this time. He said the co-op members have MOUs for equipment sharing with legal responsibility clarity; they share, but responders are responsible for their own employees and use of the equipment.

Answering a question about the various groups coordinating with each other, Dave Donovan said the CAER and LEPC have some overlap. The CAER meets on the third Wednesday of each quarter, the next meeting falling on January 15, 2020. For twenty years, the LEPC has been meeting monthly on a Friday. Originally, members went to the states to organize, but could not because they are within two states. The counties then made their own LEPCs and, in practice, merged into one. Donovan shared that they may have consolidated too many groups. Many at the table have different interests, which pushes discussion away from a standard LEPC focus on spills.

Davis said a Quad Cities Emergency Planning group could serve a combined purpose, as the co-op and CAER have many of the same people as the sub-area planning circle. This could be around fifty people from many sectors, such as County EMs, TSA, USCG, health, fire, and industry. The National Contingency Plan is for the County EMs to use and is the framework of the sub-area plan.

Ramon Mendoza added that notification and planning are usually paired with the UMR Spills Group. They have an opportunity to meet twice yearly and can hold calls for other reasons. He and Davis are in charge of maintaining the sub-area plan, which is currently missing updates from the local groups. Donovan said he can contribute to keep the plan current. Davis noted that EPA Region 7 has task order funding for the START contractor to update the plan, which needs a redo. Barbi Lee said a county fact sheet for Rock Island County was sent to the AMSC and is specific to spill response. This document could be shared with the other groups, too. Donovan said there must be one plan, regardless of format. He can work with the contractor to make it consistent with existing plans.

### **Scott County Flood Response**

Dave Donovan presented an overview of Scott County, Iowa flood response in 2019. The county worked with the NWS to get forecasts in late 2018 that showed strong similarity to the fall of 2007, which led to major flooding the next year. The county acquired a sandbag machine and stockpiled bags. The county held 31 meetings in 45 days from March through April to plan and prepare for the expected flooding. There were productive meetings with USCG, Iowa HSEM, NWS, Iowa American Water, support organizations, healthcare organizations, and community groups. Media blitzed the EMA with questions of worse impacts than were seen. On April 11, a state Disaster Declaration was made.

The biggest problem was the duration of the flood, not the height of the crest. Six-inch pumps were kept running behind the levee to keep it intact. The county Emergency Operations Center was open for all of May. Fifty-seven partner organizations were involved; a testament to good partnerships. Five municipal Incident Commands with Operations were run under Unified Command (UC). Briefings were given at Davenport City Hall. UC took calls from citizens and responded to community needs. A donations center with the Salvation Army took in \$120,000 worth of goods, using Salamander apps to issue badges

to validate residents and join donations to citizens. The system worked so well that the Salvation Army is implementing its use regionally and nationally to track public assistance requests.

One challenge that arose was a local media FOIA request to gain access to the EOC. UC revised its plan to allow controlled access so sensitive information was not disseminated. Donovan would do this differently in the future because it created a serious challenge on Day 3 of the response.

The county faced 96 consecutive days of the river in flood stage. Debris management became an important task faced by responders. The Public Information Officer (PIO) Team held many speaking engagements to promote partnerships that proved helpful in the response. There were minimal oil releases, mostly sheens from submerged vehicles. The biggest impact was from the 100,000 gallon wastewater release due to an overloaded system. Wastewater lost was diluted in a peak river flow of 1.9-million gallons per second, but the Quad Cities Water Supply Coalition cooperated and monitored to ensure no impact to the area's drinking water intakes. New plans for the treatment plant include consideration for a 27-foot river stage.

The City of Davenport is having a consultant analyze wetland impacts to build system-wide resilience. Seven sectors of the city have different characteristics that must be considered, including subsurface factors. This analysis can lead to a more robust system.

Answering a question about risk management, Donovan explained that there is a small risk of a worst-case scenario, but there are some unknown or unpredictable factors such as when two liquefied anhydrous ammonia barges grounded above the Quad Cities. Even though likelihood is low, the potential impact could be catastrophic. Donovan added that in this flood event, the city was very close to shutting the WWTP with unknown consequences. Contingencies must be developed. Currently, the Quad Cities Water Suppliers Coalition is applying for FEMA mitigation grants to establish high-capacity wells on both sides of the Mississippi River to ensure a backup water supply for the area.

### **FluOil Model**

Kelly Warner introduced the group to the USGS' water mission area, noting that the agency has a scientific role and no regulatory authority. The FluOil model was developed by David Soong, beginning with other models created for related purposes. USGS has over 700 river gages in Iowa, Illinois, and Missouri; part of over 8,000 nationally. These gages provide real-time information that is the base of flood forecasting. The agency performs groundwater modeling, using phytoforensics to identify pollutant plume movement underground, 3D water quality mapping, oil detection using autonomous vehicles, and other analyses. Water quality and gage records provide continuous data for real-time monitoring.

The USGS began working in oil spill science in 1983 in Bemidji, Minnesota researching plume movement. In 2016, the DOI IOSPP and EPA RARE programs provided seed money for this project, but 2/3 of the water mission area funding comes from other stakeholders, not appropriations. In 2018 the agency joined RRT5. Current IOSPP activity includes web apps showing time of travel, vulnerability mapping, and National Park Service hydraulic models.

Rivers have various flows, in turn having different effects on spills. Reliable input information is needed to make good predictions. USGS Streamstats (<https://streamstats.usgs.gov/ss/>) allows a user to pick a point for basin characteristics and output data. It is updated regularly for more accurate data that gets pulled into other models.

FluEgg is a model developed for an invasive carp study, looking at how hydraulics affect carp eggs, spawning, and movement. It has been used on the Illinois, Sandusky, and Kalamazoo Rivers. David Soong saw that eggs are shaped like oil droplets, so began changing the model to consider oil particulates

and properties. FluOil considers deposition, weathering, degradation, and formation of oil droplets. Model inputs include HEC-RAS flow, water temperature, spill location and time, and oil-particle aggregates (OPAs) characteristics. The model provides map or graph outputs that are easy to use and show transport mechanisms and visualization. It can be applied at different stages after a spill. Warner shared an example run on the Illinois River, including the graphic outputs. The model is still being developed and will be shared as public domain on the agency Geoplatform once it is final.

Ramon Mendoza noted that the model was used in the Kalamazoo River response to define cleanup areas. Faith Fitzpatrick said the USGS compared the model to observations and took time during the response to develop the model. In 2012, staff ran a variety of models in 2D and 3D to test impoundments, lakes, and special response practices. HEC-RAS was used for permitting techniques or structures for Operations. A flood inundation model was also implemented. Oiling in sediments was mapped by geomorphic units with depths, substrate, and velocity entered into a GIS and used for bathymetry with river cross sections. New LiDAR was flown to improve boundary conditions.

Mike Rose asked if the model has been used in any recent incidents for Natural Resource Damage Assessment, noting that it could be used to predict impacts that are normally hard to gage. Warner was not aware of any such application but agreed it would be a helpful tool. Fitzpatrick added that the model is set up to run as a web-based tool, so there is no need for ArcGIS software to use it. Soong said that biologists run FluEgg in this way. The first step is to get trained in its use, then georeferenced output to Google Earth. This helps them see where depositional areas are. Answering a question, Soong added that the model does not handle branching streams at this time. Fitzpatrick said the 3D model was used on the Kalamazoo River for side channels to identify enhanced deposition areas for periodic cleaning.

Rose asked if the model for deposition shows good correlation with observations. Soong said there is a working validation model, but there were questions about the input data during the Kalamazoo River cleanup. Responders used poles and recorded qualitative descriptions, which are hard to translate into numbers for model input. Following up on a comment about how such a model could reduce costs of reconnaissance and cleanup, Fitzpatrick noted that FluOil could be run for a longer time to see varying deposits and flow changes or test different rates of deposition for different oil types.

Answering a question about the effects of dredging, Soong said the model assumes OPAs have already formed. Such a modification could be made to consider a case in which dredging creates the OPAs. He added that the model considers vertical distribution but has not looked into accounting for the vertical accumulation on the riverbed.

### **Quad Cities UMR Surface Water Suppliers Coalition**

Brianna Huber and Bob Bohannon introduced the Coalition to the group, which was first formed in the early 1990s. Activity lost traction before being restarted in 2014. It currently is very active and members include the Cities of East Moline, Moline, and Rock Island, Iowa American Water, and the Rock Island Arsenal. The Coalition aims to enhance spill readiness and monitor Mississippi River water conditions.

Huber emphasized that the Coalition members' top priority is to receive notifications of any spill event. The group has processes to deal with a shutdown, testing, and decontamination, but none are equipped to fully support the neighboring cities if a major spill event shut down the intakes. There are five intakes in seven miles of river, off the main channel. Each is different: Moline has a multi-level intake, East Moline one level four feet off the bed, Rock Island in the dam. Operators are still new to spill response but are building a support network.

Matt Stokes pointed out that the only legal mandate for reporting spills is to the NRC and the state, asking if there was a way to expedite notifications? Barbi Lee noted that FRPs should have them on their call

lists already. Darryl Aldrich added that USCG gets the NRC reports and calls the operators for any relevant incident. Huber said the Coalition wants to be notified of all incidents so they can prepare and decide if it warrants action. Stokes asked if a spill happened in Minneapolis, would the Minnesota Duty Officer contact the City; Mike Rose said it was doubtful, but a valid concern. Local familiarity is needed, which is a potentially weak link in the call chain. Ramon Mendoza said that Duty Officers or OSCs are responsible for water intake notification and are trained to do so. Joe Davis concurred, noting that USEPA Region 7 does the same. Rick Gann noted that Missouri gets notification from Region 7; he added that the UMR Spills Group email listserv is another way that members can share information.

Huber continued by explaining that the operators need the spilled material's Safety Data Sheet number to know what is threatening the intake. Other important information includes the spill location and amount, if it is leaking from a barge – and if so, from the top or bottom of the tank. Their greatest concern is if the spilled material sinks. The Coalition learned that regional HazMat teams will only identify material that is retrieved from the water surface, they are not equipped to test unknown substances or those mixed into the water column. The operators have labs to test for water quality parameters, but not for identifying substances. Such samples must be sent to an offsite lab for analysis, returns from which will take several hours at minimum. Utility staff would need to remain on site, so support would be needed for this.

The utilities do not have boom or other response equipment and rely on local fire, police, and other entities for deployment. Huber said it is important to note that there is no known mechanism to put in place to protect intakes from sinking substances. This presents the operators with an important unknown factor in response. Because of this, the best response is to contain spilled material before it sinks or gets mixed into the water column. It is likely that the utilities will shut down the intake until the contamination passes, for a maximum of 24 hours. Before resuming operation, the intake may need to be cleaned. In a worst-case scenario, this could mean a shutdown of a month or more to clean the entire utility.

If the utility is contaminated, assistance may be needed to clean the system. Huber says it would be ideal to have direction from the USEPA on decontamination procedures. Tankers would be needed to haul away contaminated water, utility basins would need to be cleaned, and other parts of the water movement and storage system may also need to be cleaned.

Barbi Lee noted that USEPA Region 5 has some funding available for tabletop exercises for Tier II or RMP facilities. Water suppliers could tap into this by partnering with other facilities in the area.

## **Mapping and Planning Updates**

### *Greater St. Louis Sub-area*

Jessica Evans reported that the sub-area held two meetings in 2019 to walk through the plan and update administrative items. The group plans to update the existing response strategies in a combined effort with UMRBA's Mississippi River planning work in the spring of 2020. Key personnel will be trained to use the Survey123 and Collector apps beforehand. Information and data collected in the field will be transferred into a GIS platform to complete the update. The sub-area plan will be completed in the summer of 2020.

### *Minneapolis/St. Paul Sub-area*

Mark Ellis said the sub-area met on May 23, 2019 in Saint Paul, MN. OSC David Morrison presented an IAP-format plan for participants to review. Feedback from users has been incorporated into the document. The planning steering committee has a conference call scheduled for December 12, 2019 to

discuss the plan and next steps. This may include revisiting response strategies, which are woefully out of date.

#### *Quad Cities Sub-area*

Ramon Mendoza said that the current Quad Cities plan needs an update to meet the needs of current stakeholders. For example, the notifications page is outdated and the sensitive species and FRP lists should be reviewed. Joe Davis added that the USEPA has some year-end funding available for a START contractor to update the plan and possibly support the development of an IAP and supporting documents. This funding could also extend to support training such as a 1-day SCAT orientation to teach local participants the process and how it fits into response, and using data collection tools.

#### *Great Rivers Sub-area*

Barbi Lee said that OSC Heath Smith has been working to develop GRP sites in the Cape Girardeau area. This sub-area involves coordinated planning in three USEPA regions and states. There have been planning calls but more activity is needed to complete the plan.

### **Training and Exercises**

#### *Wakota CAER*

Matt Stokes reported that Wakota CAER is buying a significant amount of boom for their response equipment caches. New Conex boxes are being added to the group's inventory as new caches and to replace old containers.

#### *Red Wing CAER*

Stokes said that Red Wing CAER has been active and wants to set up a communications exercise that focuses on radio interoperability between Minnesota and Wisconsin. The group is applying for a grant to fund the exercise development.

#### *Dubuque CAER*

Stokes continued his report with a list of Dubuque CAER meetings that have been scheduled for 2020:

- January 16: tank car training with CP Railroad, including an MC-306 transport car;
- April 16: communication exercise on the river, including the participation of local cities;
- July 16: river response training;
- October 15: response using Lock & Dam 11; may seek permission to use lock chamber in the exercise.

#### *Quad Cities CAER*

Stokes also shared the list of Quad Cities CAER meetings scheduled for 2020:

- January 15: area spill response plan review;
- April 15: Bettendorf Spill Cooperative exercise, including boom deployment;
- July 15: Tour of the East Moline Water Plant
- October 15: Demonstrate underflow dams and ditch containment strategies.

#### *Clinton, Iowa Full-scale Exercise*

Stokes said that plans are currently being developed to hold a full-scale exercise in Clinton, Iowa on September 9-10, 2020. The dates are not firm yet, pending talks with the city. Sponsors will include two railroads and three local industry partners. The framework is to use day one to stand up Incident and

Unified Command and organize first response. Day two will focus on remedial action for a scenario of a spill on the Mississippi River that includes air and liquid releases. Answering a question, Stokes said planners are leaning toward a scenario involving sinking oil and anhydrous ammonia.

Planning is underway in the next month. The group plans to hold a tabletop exercise on either July 8 or 22, 2020 to lead up to the full-scale exercise. This includes training local participants in preparation. A similar event was held in Winnipeg, Canada this year with a scenario of LPG transfer and rail car training. Currently the exercise has been developed internally. Next steps will be to include the city and local industry, then regulatory partners. Much work remains, but the group wants to ensure maximum participation by making people in the area aware it will be coming.

### **Other Business**

Tony Houdyshell noted that the 2020 Clean Waterways conference will be held on April 8-9 in Indianapolis, Indiana. The planning committee has set up a good agenda with response and planning tracks. The conference website will go live soon.

Mark Ellis closed with two topics for the group to consider before the next meeting. He shared prints of the latest version of the draft UMR Spills Group flyer for participants to review. Participants are asked to provide feedback about how the flyer could be improved to broaden awareness of this group among potential industry or other local partners.

Ellis then asked the group to consider additional mapping or planning work that UMRBA could do to benefit members. UMRBA's contract with USEPA allows for additional funds to be applied to perform project work to enhance the development of the Inland Sensitivity Atlas and related planning and response strategy development. A suggestion that prompted this request came from the Wisconsin DNR, asking if there was a way to identify features that are impacted by floods. For example, state responders discovered on several occasions that boat ramps were underwater or inaccessible while attempting to carry out their duties. Having a GIS-based dataset that includes information about the river stage at which the feature is impacted could save responders significant time in emergency situations. Ellis asked attendees to consider this or other such related applications of the ISA and similar data that would benefit their missions.

### **Future Meeting Schedule**

Following the previous discussion, the group will leave the date for the next UMR Spills Group meeting open until talks with the Greater St. Louis Sub-area take place in January, 2020.

*[With no further business, the meeting adjourned at 5:00 on November 13, 2019]*