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DEC's DUKES of Hazard

Spill Response Team to the Rescue!

by Shannon Brescher Shea

The train chugged its way through peaceful, rural Oneida on a chilly March morning. Among its cargo it carried liquefied propane, the solvent toluene, and a variety of other chemicals. However, its hazardous goods never reached their destination.

At 7:00 AM, the train derailed. Almost instantly, the propane burst into flames. Contrasted against the dawn sky, the fireball was visible from miles away. The fire set alight several other train cars, potentially exposing residents to poisonous vapors. Emergency response staff had to find a way to contain the fire and clean up the chemicals while protecting the public's safety.

Enter the Department of Environmental Conservation's Spill Response Team. By coordinating with local emergency personnel, the Spill Response Team is able to juggle their multiple roles as environmental emergency responders, remediators, and investigators.

Through their prompt fulfilment of these varied duties, the Response Team was able to protect the public from the threats posed by the Oneida disaster. Although few people lived in the immediate vicinity of the Oneida derailment, officials recommended evacuating homes and schools within one mile of the accident. In addition to the 4,000 people covered in this area, officials also shut down a 26-mile section of the state Thruway. As a result of these precautions, no one was hurt or injured despite the scale of the

accident. However, the disaster resulted in about two million dollars in damages, prompting an investigatory report which concluded that a broken rail caused the accident. Although most situations are not as dramatic, the Spill Response Team receives 17,000 calls annually reporting discharges into the environment. A discharge includes an action, whether accidental or intentional, that releases petroleum or other hazardous substances into the environment where they can damage land, water or other natural resources. The majority of these calls report petroleum-related accidents, which range in size from the Oneida train derailment to household heating oil spills. "Petroleum is much more ubiquitous than anything else," says Dennis Farrar, chief of the team's emergency response coordination section.

Spills can also include hazardous chemicals, grease, and even untreated sewage. Although most of these discharges occur at chemical and industrial facilities, residential spills are quite common as well. Occasionally, the team is even called to college and high school chemistry labs.

No location is invulnerable. Most areas in New York State have major highways, railways, or even canals that transport these hazardous materials.

Even normally protected areas can be at risk for chemical spills when a natural disaster occurs. Floods can tip over home oil tanks and wash out chemical and industrial plants, introducing hazardous materials into water bodies. In the 2006 Neversink flood in Orange and Sullivan Counties, the team recovered drums of hazardous substances out of trees.

Such spills can pose a variety of health and environmental threats to the public, responders, and local ecosystems. In the beginning, humans are most at risk for exposure via inhalation of fumes and skin contact. Corrosive substances can cause chemical burns, and petroleum can be toxic. With flammable substances, there is always a risk of fire or explosion.

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The chemicals spilled in the Oneida train derailment were highly flammable, causing the cars to catch fire.

However, once responders manage the initial threat, other risks emerge. Groundwater contamination is the major long-term threat. While we associate petroleum spills with oil-covered ocean birds, these accidents can pollute an entire region's drinking water. For example, areas of Long Island are particularly vulnerable to gasoline leaks, as they can travel easily through the region's sandy soil. Some areas have had to create entirely new water districts because of contaminated wells. In addition to human health, hazardous materials can also accumulate in animals throughout the food chain.

To minimize these risks and increase the likelihood of full recovery, the Spill Response Team reacts quickly. They are available 24-hours-a-day, 365 days of the year. The team of more than 80 responders always has at least nine responders on call, with another nine on standby. To handle a variety of challenges, the team includes technicians, petroleum/ hazardous materials specialists, engineers and even geologists.

When someone calls the Spill Response Team hotline, the team must make some tough decisions. The first decision is whether the regional responder should investigate the spill. The team only has the resources to respond to about 8,000 of the 17,000 annual calls and prioritizes them based on severity and urgency.

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Once they have reported to the scene, the responder cooperates with a variety of other agencies to limit the spill's risk. When the spill affects navigable waters, they often work with the U.S. Coast Guard and the Environmental Protection Agency's (EPA) emergency response

During the 2006 Southern Tier flood, DEC responders used air boats to recover hazardous materials and prevent contamination.

teams. They also work with their fellow DEC Forest Rangers and Environmental Conservation Officers, who are often first on the scene. Most importantly, they work closely with local fire departments and hazardous materials teams, who best know the area and its resources. "They work hard to build those strong relationships with local responders," Farrar said.

The state has recovered millions of dollars in damages from **companies reluctant to take responsibility** for their pollution.

Upon arrival, responders decide whether it is safe enough to become involved. They use oxygen sensors, combustible gas meters, and other devices to measure flammable or toxic fumes. If the spill has caught fire, sometimes it is actually more dangerous to extinguish it than to let it burn out. "Sometimes we just have to let them burn," Farrar says. "It's a tactical decision." Interfering in the site can disturb the spill, increasing the fire's unpredictably. With water-reactive materials, such as oil, traditional fire-fighting methods actually accelerate the fire. When a gasoline tanker overturned near Schroon Lake in the Adirondacks, responders decided against extinguishing the fire. In the end, the team only needed to clean up a small amount, as the fire consumed most of the gasoline.

Once the responders have limited a spill's immediate danger, they decide how to clean it up. They choose their tools based on the size and type of spill. In the case of an oil spill near a river or lake, they work to contain it, often by using "booms." Made of oleophilic ("oil-liking") and hydrophobic ("water-disliking") materials, booms can either limit the spill's spread or directly absorb the oil. Responders may use skimmers as well, which suck the oil off of the water's surface and deposit it in a large vacuum truck. To determine if the spill has contaminated groundwater, they drill small wells and collect samples. For long-term remediation work, responders may enlist the assistance of a combination of chemical and biological helpers. Under specific conditions, responders use microorganisms that "eat" petroleum, rendering it harmless.

Long-term remediation occurs after the team has completed its initial response. When groundwater contamination occurs, it may take months or even years to clean up a site. On many occasions, DEC often hands over responsibility for the site to the responsible party, but continues to monitor the remediation process.

Remediating a site also requires the team to investigate the circumstances of the spill. Although the spiller is legally required to report their accident, they often don't. The Spill Response Team then takes on the role of environmental detectives, working to determine the spill's source. If the team is able to trace the source of

What Can I Do?

The Spill Response Team answers thousands of calls a year, many of them preventable. To prevent a heating oil spill or leak in your own home, regularly inspect your heating oil tanks. Likewise, place your tank in a location where it is properly supported. Many home heating oil spills occur because of an overturned tank. Even a minor disruption, such as ice falling off of a roof, can significantly damage a tank. Also, if your house uses heating oil, try to obtain homeowner's insurance that covers petroleum spills. However, as many insurance companies do not cover such spills, proper care and maintenance is essential to preventing home oil spills.

If you come across a spill, do not delay; call the New York State Spill Response Hotline: **1-800-457-7362**. If the spill appears potentially explosive or dangerous, call your local fire department as well. Early reporting and remediation is the key to limiting a spill's long-term effects on public health and ecology.

the discharge to the suspected party, the spiller will usually admit to the accident.

If a spiller refuses to take responsibility, the Attorney General's office can sue. In these cases, the Spill Response Team may serve as expert witnesses. Because of these investigations, spillers do eventually take responsibility for about 90 percent of spills. "Without the system, a lot of the spillers would walk away without a response, or at least not a proper, complete response," said Farrar.

Requiring spillers to bear the burden includes paying for the remediation. Even small spills can result in big costs. A small home oil spill that seeps into groundwater can cost more than $100,000 to clean! The state has recovered millions of dollars in damages from companies reluctant to take responsibility for their pollution.

Through this comprehensive system, the Spill Response Team is often able to prevent severe damage. For example, in February of this year, responder Waldemar Przylozynski took action at a fire in Long Island. While undergoing repairs, a car caught fire at a local gas station. The flames spread to flammable materials on the shelves, triggering an explosion that caused the roof to cave in. While more than 100 firefighters fought the flames, Przylozynski directed the station owner to pump out nearby dry wells as the contaminated water flowed into them. These wells were near a recharge basin, an area where water seeps into the ground much faster than it ordinarily would. By pumping out the wells, Przylozynski prevented the contaminated water from entering the town's drinking water supply. In gratitude, the Town of Islip's Town Supervisor rewarded his efforts with a citation of honor. Only one of many, this case demonstrates how the Spill Response Team's quick and skillful responses keep New York's waters and lands clean for all.

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Spill Response Team members demonstrate the use of gas meters and oxygen sensors, used to determine if a site is safe to work in or not.