



# EMERGENCY ACTION PLAN

The Ragon Institute

400 Technology Square  
Cambridge, MA 02139-3585

February 2019

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## LIST OF ABBREVIATIONS AND ACRONYMS

<b>ARC</b>	International Agency for Research on Cancer
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation, and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CHP</b>	Chemical Hygiene Plan
<b>CMR</b>	Code of Massachusetts Regulations
<b>EAP</b>	Emergency Action Plan
<b>EC</b>	Emergency Coordinator
<b>EH&amp;E</b>	Environmental Health & Engineering, Inc.
<b>EH&amp;S</b>	Environmental Health and Safety
<b>HAZMAT</b>	hazardous materials
<b>HAZWOPER</b>	Hazardous Waste Operations and Emergency Response
<b>MADEP</b>	Massachusetts Department of Environmental Protection
<b>MCP</b>	Massachusetts Contingency Plan
<b>MGH</b>	Massachusetts General Hospital
<b>SDS</b>	Safety Data Sheet
<b>OHS</b>	Occupational Health Services
<b>PPE</b>	Personal Protective Equipment
<b>Ragon</b>	The Ragon Institute
<b>sf</b>	square feet

## CONTACT INFORMATION

Name/Title	Phone Number	E-mail
Jessica Healey, Matt Bedford, Justin Warrener, Environmental Health and Safety (EH&S)	774-244-7018 781-400-4073 617-293-0333 800-825-5343*	jhealey@eheinc.com mbedford@eheinc.com jwarrener@eheinc.com
EH&S Office – Ragon Institute - Room 963	857-268-7116	
Jessica Healey Biosafety Officer	774-244-7018 800-825-5343*	jhealey@eheinc.com
Alexandria Real Estate Management Office (8:30 a.m. – 5:00 p.m.)	617-661-6962	
Ted O’Leary, Alexandria Real Estate Facilities Manager and Emergency Coordinator	617-551-8539	toleary@are.com
Security at Tech Square 24 Hours	617-577-9177	
<i>Occupational Health Department:</i> Massachusetts General Hospital (MGH) OHS M – F, 7 a.m. – 5:00 p.m. (after hours report to MGH Emergency Room)	617-726-2217	
MGH Radiation Safety, Tara Medich	617-726-5128	tmedich@partners.org
Cambridge Police Department (Police, Fire, and Ambulance)	911	
Chemical Waste Pickup Contractor: Veolia Environmental Services	508-804-4857	
Hazardous Material Emergency Response Contractor: Veolia Environmental Services Inc. Contact: Derek Nelhuebel	800-354-2382	
Biological Waste/Sharps Contractor: Stericycle Inc.	866-783-7422	

\* **NOTE:** 800-825-5343 is the telephone number for the main switchboard for Environmental Health & Engineering, Inc. (EH&E), which is the company supplying environmental health and safety and biosafety support. Please specify the employee when the receptionist answers the telephone. For all emergencies please call Security at Tech Square at 617-577-9177 or 911.

## 1.0 GENERAL

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### 1.1 PURPOSE

This Emergency Action Plan (EAP) was developed for The Ragon Institute (Ragon) at 400 Technology Square, Cambridge, Massachusetts. This plan will be implemented by the Emergency Coordinator (EC), Alexandria Real Estate, and the Environmental Health and Safety (EH&S) Staff.

The purpose of the EAP is to provide Ragon with a single guidance for emergency preparedness and response. The purpose of this plan is:

- To act as a guide during actual emergency situations;
- To prevent or minimize hazards to human health and the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous materials to the air, soils, or surface waters; and
- To familiarize local emergency response personnel with the types of material handled and internal emergency response procedures.

### 1.2 SCOPE

This plan will establish specific emergency responses for Ragon. The emergency response will include facility personnel, outside resources, and the municipal offices to establish the response for each potential spill at the facility. The following regulations are being addressed in the EAP:

310 Code of Massachusetts Regulations (CMR) 30.351 (9)	Small Quantity Generator Requirements
310 CMR 30.520 – 524	Contingency Plan, Emergency Procedures, Preparedness and Prevention
29 Code of Federal Regulations (CFR) 1910.38	Employee/Tenant Emergency Action Plans and Fire Prevention
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response Standard (HAZWOPER)
310 CMR 40.0000	Massachusetts Contingency Plan (MCP)
40 CFR 302.4 – 302.6	Comprehensive Environmental Response Compensation and Liability Act (CERCLA): Reportable Quantities and Notification Requirements

In the case of a fire, the primary objectives are to *immediately notify* all building occupants, the Alexandria Real Estate Management Office or Security at Tech Square (after hours), and the Cambridge Fire Department, and *evacuate* to a designated location adjacent to Ragon. For all other emergencies, communications are coordinated through Security at Tech Square (617-577-9177 from an outside telephone).

### 1.3 LOCATION AND DISTRIBUTION OF PLAN

A copy of this Ragon EAP will be maintained in the following locations, and is available for inspection upon request:

- Alexandria Real Estate Management Office/ Security Command Center
- Ragon EH&S Office—Room 963

Copies will also be made available to any local emergency management agencies that become involved in an on-site emergency.

### 1.4 EAP UPDATES AND AMENDMENTS

The EAP will be reviewed and immediately amended whenever:

- There are regulatory changes requiring amendment to the EAP.
- The plan fails in an emergency.
- The facility or the materials within the facility (raw materials, waste, equipment, etc.) change so as to increase the potential for fire, explosion, or release of hazardous materials, hazardous waste, or hazardous waste constituents.
- The list of emergency contacts/coordinators and/or responsible personnel changes;
- The list of emergency equipment changes.
- There are any substantial changes in the operations and/or maintenance of the facility.
- Any other events that warrant EAP amendment or update.

## 2.0 FACILITY DESCRIPTION

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Facility: The Ragon Institute  
400 Technology Square  
Cambridge, Massachusetts 02139  
Telephone Number: 857-268-7000

NAICS/SIC Code: 541714/8733—Research and development in biotechnology  
(North American Industry Classification System/U.S. Standard Industrial Classification)

Owner: Alexandria Real Estate Equities  
700 Technology Square, Suite 302  
Cambridge, Massachusetts 02139  
Telephone Number: 617-551-8539  
Facsimile Number: 617-661-1658

Latitude: 42 36' 39.84"N  
Longitude: 71 09' 18.73"W

The tenants at Ragon currently handle the following materials that warrant this planning:

- Combustibles
- Corrosives
- Ignitables
- Toxics
- Reactives

## 3.0 SITE DESCRIPTION

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### 3.1 LOCATION AND SIZE

The Ragon space is within a multitenant building at 400 Technology Square, Cambridge, Massachusetts. The premises consist of a 211,909 square foot (sf) office and laboratory building. Ragon Institute will occupy approximately 74,675 sf consisting of half the first floor, 3000 sf on the basement level, and floors 7-9 of the building as follows:

Floor 1 (8,254 sf): 160-seat conference center, grant administration offices

Floor 7 (21,335 sf): laboratory/office space

Floor 8 (21,335 sf): laboratory/office space

Floor 9 (20,751 sf): laboratory/office space

Basement (3,000 sf): vivarium space, room 040B\*

\*Note that other rooms in the vivarium are under the purview of Massachusetts General Hospital (MGH) Center for Comparative Medicine (CCM) and are serviced by MGH Environmental Health & Safety.

The space is zoned for Biomedical Laboratory.

The facility is designed, constructed, maintained, and operated to prevent and to minimize the possibility of any threat to the public health, safety, or welfare, or the environment from a fire, explosion, or any other unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, surface water, or ground water.

### 3.2 HAZARDOUS MATERIALS

Hazardous materials are stored and used at the site. In general, two types of areas contain hazardous materials: laboratories and storage areas. Each laboratory maintains a chemical inventory and flammable materials inventory. Copies of these inventories are kept in the EH&S Office

Ragon is registered as a Small Quantity Generator (SQG) of hazardous waste:

Storage areas for hazardous chemicals, hazardous waste and compressed gases are located in segregated rooms in room 040B and floors 7 – 9. The hazardous waste main accumulation area is in Room 715.



## 4.0 FACILITY EAP/CONTINGENCY COORDINATORS

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The following paragraphs briefly describe the emergency response roles and general responsibilities that are employed for on-site personnel at the Ragon facility. Other personnel without specific safety designations should remember that safety is everyone's responsibility and should tailor their actions and decisions accordingly. In addition, local emergency response agencies and emergency response contractors/ consultants are on call to assist in the event of an emergency.

### 4.1 DESCRIPTION OF RESPONSIBILITIES

#### 4.1.1 Ragon Emergency Coordinator

Ragon's Emergency Coordinator, Ted O'Leary, oversees implementation of the EAP both during emergencies and throughout the year. The EC or designee directs the Fire Wardens and staff in the event of an on-site emergency. The EC has the responsibility and authority to activate the facility EAP based on the level, magnitude, and circumstances of an incident. Responsibilities include:

- Implementing the EAP during any on-site emergency. This includes activating internal facility alarms (except for Fire Alarms, which can be activated by all personnel) to notify personnel of emergency conditions.
- Assessing the need for and initiating evacuation in situations where evacuation is not automatic.
- Maintaining and testing emergency equipment.
- Reviewing and updating the EAP.
- Handling all communications with local emergency response agencies, emergency response contractors/consultants, and the media, as necessary.
- Notifying all appropriate local, state, or federal agencies and Building Management Personnel of an on-site emergency.
- Assessing the potential hazards to human health, safety, or welfare, and to the environment that result from an on-site emergency. The assessment will include the direct and indirect effects of the spill, fire, explosion, or release, including the effects of any hazardous material from fire suppression efforts, such as surface water run-off.

- Taking all reasonable measures to ensure that a release does not spread, recur or result in fires, etc.; this may include halting on-site operations.
- Monitoring for leaks, pressure build-up or ruptures in valves, pipes or other equipment when on-site operations are halted.
- Providing for the proper storage and/or disposal of any recovered waste, ensuring that all affected emergency equipment is cleaned and fit for use, and conducting post-emergency assessments after each emergency.

The EC may delegate some of the above responsibilities.

**Primary Emergency Coordinator and Fire Safety Plan Organizational Director:**

**Ted O’Leary**, Senior Director of Facility Services  
 Alexandria Real Estate Office:  
 Cell Phone: 617-661-6962  
 Home Telephone: 617-661-6962

**Primary Alternate Emergency Coordinator:**

**Matt Bedford**, Staff Scientist, EH&S  
 Office: 857-268-7116  
 Cell phone: 617-293-0333  
 Home Telephone: 857 210 8810

**Secondary Alternate Emergency Coordinator:**

**Justin Warren**, Technical Specialist  
 Office: 857-268-7116  
 Cell phone: 781-400-4073

**Tertiary Alternate Emergency Coordinator:**

**Amruta Samant**, Laboratory Manager  
 Office: 857-268-7148  
 Cell phone: 678-644-8632

**Radiation Emergencies:**

**Health Physics Office**  
 Office: 617-726-5128  
 Emergencies: MGH page operator 617 726 2000, pager ID 26521

### 4.1.2 Fire Wardens

Fire Wardens include representatives from all areas of the building. See Appendix C for current list of Fire Wardens by laboratory/office area. These individuals direct occupants during any evacuation. Fire Wardens maintain rosters for their departments and provide updated rosters to the EC. Fire Wardens assign Assistant Wardens who are responsible for the evacuation of individual disabled employees and identify appropriate evacuation procedures for disabled employees on a case-by-case basis.

In general, personnel chosen for this role have positions that require them to be regularly present in the building during working hours. Wardens are chosen for all shifts and alternates are also selected. Fire Wardens will receive training which includes evacuation procedures.

Responsibilities of the Fire Wardens include:

- Identifying and informing EH&S representatives of all disabled individuals (including temporarily disabled) in the assigned area, assigning capable department representatives to aid in their evacuation, and identifying evacuation procedures for those employees.
  
- Instructing employees in their assigned area as to the following:
  - Location of emergency exits and evacuation routes.
  - Location of first aid kits.
  - Location of alarm-pull stations.
  - Location of the established meeting area outside the building where all employees in the area should assemble after evacuation.
  
- Taking a head count, using staff roster, during any evacuation to ensure all employees have evacuated. Notify Ragon EC and Emergency Responders if any employees in their assigned area may still be in the building.

Each laboratory/office will assign an employee to assume the role of the Fire Warden.

## 4.2 EXTERNAL, RESPONDING AGENCIES OUTSIDE RAGON

The role of an external responding agency is to respond to incidents requiring equipment and materials not available at Ragon, or to assist the internal direct responders with releases of large quantities of hazardous materials.

For medical or fire emergencies the Cambridge Fire Department should be contacted.

For large quantity hazardous materials releases (release that is greater than one gallon):

**Third Party Responders** are contacted by the Ragon EC or designee. Third Party Responders are equipped to handle the containment and cleanup of serious and/or major spills (i.e., Level A or B responses requiring supplied air respiratory protection). Proof of Competency and/or Certification of their services must be on file in the EH&S Office and acknowledgement of the scope of their services must be in writing. Refer to Appendix D for Veolia Environmental Services Emergency Response Information.

**Cambridge Fire Department Hazardous Material (HAZMAT) Team:** The primary goals for the Cambridge Fire Department when dealing with hazardous materials are isolation, containment and stabilization of the incident. The Cambridge Fire Department HAZMAT team is an available resource for Ragon. *If called, the Cambridge Fire Department assumes the role of general supervisor and emergency coordinator under the regulatory guidelines set forth in 29 CFR 1910.120 and 310 CMR 30, respectively.* The Cambridge Fire Department has a completely staffed HAZMAT team and is available to Ragon anytime.

## 4.3 COMMUNICATIONS

### 4.3.1 Emergency Response Communications

During all emergency responses at Ragon, all response personnel must stay in contact with each other to ensure everyone's safety. At a minimum, the entry and backup teams stay in either voice or radio contact while in the suspected spill or release area. Backup teams maintain visual sight of entry teams during all phases of the entry. In the event that radio or voice contact cannot be maintained, the teams must exit the suspected spill or release area. The Technician communicates with outside sources such as third-party responders or the Cambridge Fire Department.

**At no time will anyone involved with the response operations be allowed to operate on their own or without any type of communication system.**

All Alexandria Real Estate staff and contractors have phones with radio capabilities to maintain communications during all phases of emergency response. However, all radios, phones or other communication equipment used in the spill or release area must be intrinsically safe.

Alexandria Real Estate is the on-site building management company responsible for the communication system.

### 4.3.2 Public Communications

Any communications written or verbal to the media will come from MGH public relation departments. Employees should decline to answer any questions and direct the questions to:

## **Massachusetts General Hospital Public Affairs Department.**

Office: 617-726-2206 (24-hour emergency number)

### **4.4 SITE SECURITY AND CONTROL**

The purpose of site security and control is to ensure that all personnel evacuate the immediate spill or release area and ensure no unauthorized personnel enter the zones once they have been established.

Control of all zones and the perimeter is managed by the Incident Commander and maintained in conjunction with the Alexandria Real Estate EC and Security. Site Security and Control is an ongoing process to ensure no un-authorized entry from any direction.

Site Security and Control during an emergency is maintained by Alexandria Real Estate Security and the EC. The Cambridge Fire Department or a third-party response team assumes control of Site Security and Control for larger response incidents.

For small, in-house responses, Alexandria Real Estate's security personnel maintain control and assure that no unauthorized personnel enter the evacuated area. The Incident Commander establishes, and Security maintains "mustering points" (locations where evacuated personnel gather to ensure everyone has exited the building) for all building personnel to report to, so that entrance accountability and control can be maintained. Security shall brief personnel on where they should go and the reason for the evacuation. Accountability of all personnel benefits outside response teams by identifying potential victims and/or verifying the absence of any victims in the evacuated area.

## 5.0 EMERGENCY RESPONSE—GENERAL

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All employees who work at Ragon are trained in basic emergency procedures. In all emergencies the primary objectives for employees are to notify the Alexandria Real Estate Management Office or Security at Tech Square and, when appropriate, move to a safe location. Employees are instructed in evacuation procedures, know who their Fire Wardens and Department Representatives are, and know the location of their designated outdoor meeting area. Employees who use hazardous materials are trained in proper handling and basic spill response procedures. The EC will schedule and administer periodic fire drills.

Laboratory personnel are trained and prepared to respond to emergencies that may occur in the laboratory environment. These emergencies may include:

- Fire and/or explosion.
- Accidents and injuries, especially those which may result in exposure to hazardous chemicals.
- Spills of hazardous chemicals and biological materials.
- Radiation spills.

Responses to these emergencies may include evacuation, spill cleanup, and/or first aid. This plan describes prudent emergency response practices and outlines Ragon policy regarding emergency response and incident reporting.

### 5.1 INFORMATION AND EMERGENCY NUMBERS

Through various Ragon training programs, laboratory personnel are informed about emergency response procedures, emergency contact numbers, evacuation routes, and the location of fire extinguishers, eyewash stations, safety showers, and other emergency equipment.

All Ragon occupants have been instructed to report all emergencies to the Security at Tech Square emergency telephone number (617-577-9177), which is posted near each telephone in laboratory and office areas. Emergency contact numbers for the EH&S staff, the Alexandria Real Estate Facilities, and Massachusetts General Hospital (MGH) Occupational Health Services (OHS) are posted near laboratory phones and within office areas. Refer to Appendix A for a complete list of Ragon emergency contact numbers.

### 5.2 NOTIFICATION

The following table lists the internal departments and the outside agencies to be notified in the event of a specific emergency.

Table 5.1 Specific Emergency Notification							
Type of Emergency	Ragon EH&S	Alexandria Management Office	MGH CCM	Radiation <sup>1</sup>	Cambridge Fire Department	Cambridge Police Department	EMS <sup>2</sup>
Medical Emergency	✓	✓	✓				✓
Spill	✓	✓	✓	✓			
Fire	✓	✓	✓		✓		
Hostile Threat	✓	✓	✓		✓	✓	
Building Emergency (i.e., Flood, etc.)	✓	✓	✓				
<sup>1</sup> Radiation Safety is notified when radioactive material is involved in the incident. <sup>2</sup> Emergency Medical Services							

When a Ragon occupant calls, they have been instructed to call from a safe location and provide the following information:

- Identity of the caller
- Contact phone number
- Location of incident (building and room number)
- Type of incident

Also, the person who contacted any of the Ragon emergency telephone numbers will stay at the safe location until a representative from the Alexandria Real Estate, the Ragon EH&S Office, the Massachusetts General Hospital (MGH) Center for Comparative Medicine (CCM), Radiation Department, or Security arrives to the scene.

Laboratory personnel shall report every incident/accident (e.g., chemical spill, medical injury, accident resulting in damage to instruments or property, etc.) and “near miss” (incident/accident in which a chemical spill, medical injury, and/or property damage was barely avoided) to the EH&S Office at 857-268-7116. In the event of an incident/accident that results in injury, laboratory staff will seek medical attention from the MGH OHS or nearest hospital. In addition, laboratory personnel shall report situations or conditions that have the potential for causing an incident/accident to the EH&S Office, and/or Alexandria Real Estate.

Laboratory personnel reporting an emergency must fill out a “Ragon Incident Report Form” (see Appendix E). The form is available from the EH&S Office. All incidents/accidents and/or near misses are reviewed by the EH&S Office, MGH OHS and other parties involved, with the goal of identifying and disseminating corrective measures and precautions.

In the case when the emergency goes beyond the property’s boundaries, the EC will notify the Cambridge Fire Department, who serves as the Local Emergency Planning Committee (LEPC).

## 6.0 ENGINEERING CONTROLS, WORK PRACTICES, EMERGENCY RESPONSE EQUIPMENT

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### 6.1 ENGINEERING CONTROLS

Detailed specifications for hazardous materials storage and standard operating procedures for their use and handling can be found in the Ragon Chemical Hygiene Plan (CHP) and safety data sheets (SDS) maintained for this Facility.

Numerous engineering controls were included in the building design for the mixed-use occupancy at 400 Technology Square. Chemical fume hoods are used as a protective engineering control to contain laboratory work involving the use of hazardous or volatile chemicals. Flammable liquids storage cabinets are located throughout the Ragon laboratory floors.

### 6.2 SAFE WORK PRACTICES

Workers are expected to adhere to established safe work practices for their respective specialties. Work at the facility is conducted according to established protocol and guidelines for the safety and health of all involved. Detailed work practices are included in the Ragon CHP. General safe work practices include the following.

- Exits are clearly marked. Emergency phone numbers and evacuation plans are posted. The Cambridge Fire Department has been notified and will be updated on the type, quantity, and locations of hazardous materials stored on-site.
- All emergency equipment is regularly tested and maintained.
- Alarms and communication systems have been installed to notify on-site personnel of any emergency. In addition, a communication system with at least one backup has been installed for contacting police, fire, ambulance, or the Emergency Responders.
- Procurement, handling, storage, and disposal of hazardous materials are governed by the CHP and directed by the on-site EH&S staff. No unauthorized shipments of hazardous materials are accepted.
- In any unknown situation, always anticipate the worst conditions and plan responses accordingly. Report all potentially hazardous conditions to Security at Tech Square immediately.



- In the event of a hazardous materials spill, it is essential to minimize hazardous materials exposure by using the appropriate tools and clean-up equipment. Engineering controls may be implemented by the EC or designee, if warranted. Proper personal protective equipment (PPE) must be worn when conducting a cleanup of a hazardous material spill. Information on proper PPE can be obtained from the SDS of the spilled material or by contacting the Ragon EH&S Office. Plan work areas and procedures accordingly. Do not place equipment on surfaces that may be potentially contaminated.
- Smoking, eating, or drinking in any potentially contaminated area is not allowed. Oral ingestion of contaminants is the second most likely means of introducing toxic substances into the body (inhalation is the first).
- Personnel must be aware that chemical contaminants may mimic or enhance symptoms of other illnesses or intoxication.
- Security will maintain an emergency log. These records should become part of a permanent file.

### 6.3 EMERGENCY RESPONSE EQUIPMENT

Spill control, PPE, communication, fire control, power control, eyewashes, drench showers, first aid kits, and SDS are provided throughout the facility. Emergency materials and equipment are available in various locations throughout the Ragon facility. Inventories of each location are included in this section. Use the reference materials available in the Ragon EH&S Office to identify the hazardous nature of the spilled material. Some of the available references are:

- Hawley's Condensed Chemical Dictionary
- Chemical Protective Clothing
- Rapid Guide to Hazardous Chemicals in the Workplace
- National Institute for Occupational Safety and Health (NIOSH) Pocket Guide

#### 6.3.1 Spill Kits

Appropriate spill kits are kept in areas of hazardous material use or storage. Spill kits are inspected regularly and re-supplied as necessary. Two spill kits per floor are located in the laboratory areas on floors 7,8 and 9. One spill kit is located in the animal facility.

The contents of the laboratory spill kits are as follows:

Absorbent Materials	Personal Protective Equipment	Supplies
Acid neutralizer/solidifier	Goggles	Chemical waste bags
Caustic neutralizer/solidifier	Gloves	Clean-up scoop and scraper
Oil/Solvent based solidifier		
Body fluid/Water based/Mercury solidifier		
Absorbent pads		

### 6.3.2 Personal Protective Equipment

Anyone responding to a hazardous materials emergency must be protected from the potential hazards. The purpose of personal protective clothing and equipment is to shield or isolate individuals from the chemical, physical, radioactive and biological hazards that may be encountered during an emergency response. Careful selection and use of appropriate PPE and response equipment protects the respiratory system, skin, eyes, face, hands, feet, head, body, and ears. Use the SDS to determine the appropriate PPE.

### 6.3.3 Communication

On-site and off-site telephone service is available throughout the facility. An audible alarm system is installed at the facility and is automatically energized when the sprinkler system is activated by an emergency.

### 6.3.4 Fire Control

In case of a fire, the fire alarm pull stations are located throughout the Ragon near exits and stairwells.

A wet sprinkler system is used throughout the Ragon facility. For this type of sprinkler system, the parts are filled with water at sufficient pressure to provide an immediate continuous discharge if the sprinkler system is activated.

ABC fire extinguishers are located throughout the facility. This type of extinguisher can be used in trash, wood, paper, flammable liquids, and electrical fires. (Note: ABC dry chemical fire extinguisher may cause extensive damage to electrical equipment/ systems. Use ABC dry chemical fire extinguisher near high importance electrical equipment/systems only when no other extinguishers are available and there is imminent danger to property or personnel).

### 6.3.5 Eyewash Stations and Drench Showers

Eyewash stations and drench showers are located throughout the facility. Eyewash stations and emergency showers are labeled and are tested regularly by Alexandria Real Estate and EH&S staff.

### **6.3.6 First Aid Kits**

First Aid kits can be found throughout the Facility.

Occupants have been informed of the first aid kit locations. The kits are inspected regularly and restocked as necessary.

### **6.3.7 Safety Data Sheets**

SDSs available in each laboratory advise the level of protection necessary to safely work with a chemical. The EC will use this reference and other sources of information (i.e., manufacturer's literature) as a guide to determining the level of protection that response personnel will employ when responding to a release. Only employees medically cleared, fit-tested and trained in the selection and use of respirators per 29 CFR 1910.134 may use respirators.

## 7.0 EMERGENCY/CONTINGENCY PROCEDURES

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This section identifies the emergency contingency procedures undertaken for operations at this site. Other sections provide further information to be used under emergency conditions.

### 7.1 PERSONNEL ROLES, LINES OF AUTHORITY, AND COMMUNICATIONS

The site EC or designee is the primary authority for directing site operations under emergency conditions. All communications both on and off-site are directed through the EC.

### 7.2 EVACUATION

In the event of any emergency requiring evacuation, when the decision to evacuate is made, personnel will evacuate to locations indicated on the evacuation plan map and await further instruction. The site evacuation plan maps can be found in Appendix B. The Fire Wardens and Emergency Responders will assist in directing the evacuation. During evacuation, no one will enter the building except professional emergency response personnel (i.e., Cambridge Fire Department). Alexandria Real Estate and/or Ragon EH&S will assist when needed. The decision to allow re-entry into the building will be made by the EC in cooperation with and through assessment by professional emergency response personnel. As more information is received from the professional responders, it will be relayed to the appropriate agencies. The advisability and type of further response action will be coordinated and carried out by the EC.

If the EC or professional responders determine that conditions warrant evacuation of downwind residences and commercial operations, local agencies will be notified, and assistance requested. Designated on-site personnel will initiate evacuation of the immediate off-site area without delay.

Laboratory personnel shall observe the following procedures during an emergency building evacuation:

- Immediately evacuate the building if the fire alarm sounds or if directed to do so by public address or room-to-room announcement.
- DO NOT USE THE ELEVATORS. Use the exit stairs.
- Once safely out of the building, proceed to the designated meeting place (see maps in Appendix B). Do not leave the designated meeting place until instructed to do so.

- Report injured or missing individuals to EH&S staff or the responding Fire Department as soon as possible.
- Do not re-enter the building until authorized to do so. Only the responding Fire Department and its designees can authorize re-entry after an evacuation in which the Fire Department has been summoned.

Evacuations are communicated to employees via fire alarm. These systems are maintained in working order and regularly tested at all Ragon facilities. In addition, regular evacuation drills are held at each facility. Employees are required to evacuate for each drill as if it were an actual incident.

## 7.3 FIRE EMERGENCIES

### 7.3.1 General Employee Procedures

Upon activation of the fire alarm system, the attention tone and voice message will be heard, and the strobe lights will flash throughout the building. The voice message, repeated twice, will be as follows:

**“Attention please: The signal tone you have just heard indicates the report of an emergency in this building. If your floor evacuation signal sounds after this message, please walk to the nearest stairway and leave the floor. While this report is being verified, occupants on other floors should await further instructions.”**

Upon completion of the second round of the voice message, the evacuation tone will sound on the floor from which the alarm was initiated, and on the floors above and below.

Upon hearing this alarm or in the event of a fire, smoke or similar emergency, personnel shall observe the following procedures:

- Promptly notify personnel in the immediate area to evacuate.
- Promptly activate the closest fire alarm.  
Red fire alarm pull boxes are located near stairwells and exit doors. Activating the pull box automatically notifies the municipal emergency response team (fire/rescue). Activating the pull box activates horn/light combination units alerting all personnel to evacuate the building.
- Do not try to put out the fire. Only a trained individual can attempt to extinguish a fire. Fire extinguishers are to be used only if the egress is blocked.

- Evacuate the building and proceed to the designated meeting location outside the building (see maps in Appendix B). Be cautious. Stay away from the building and windows.
- *Stay in your designated meeting location!* Roll call will be taken by the Fire Wardens. A tally will be given to the EC or his designee or to the Fire Department.

The following procedures are recommended when clothing is on fire:

- Immediately drop to the floor and roll. In case of ignition of another person's clothing, immediately assist that person to the floor and roll that person around to smother the flames.
- Rolling on the floor smothers the fire and helps keep flames out of the victim's face, thereby reducing inhalation of smoke. Safety showers or fire blankets are of secondary importance.
- Once the fire is out, call 9-**911** (i.e. "9" to reach an external line and "911" to reach municipal emergency services) immediately to obtain medical attention for the victim. Never attempt to remove clothing from a burn victim.

### 7.3.2 Fire Warden/Assistant Warden Procedures

When the alarm sounds:

- All personnel must leave the Building immediately.
- Direct visitors to the emergency exits.
- Ensure that disabled persons are assisted.
- Check all closed-door areas, such as restrooms, conference rooms, etc., where alarms may not be heard and make sure that all personnel are evacuated.
- Close doors when leaving.
- Report to the designated outdoor meeting location and proceed with roll call. Notify the EC or designee of any persons who may still be in the building.
- Wait for the "all clear" signal from the EC (or designee)/Fire Department before re-entering the Building.

## 7.4 NATURAL DISASTERS

### 7.4.1 Earthquake

The following steps are recommended to minimize injury in the event of an earthquake. If indoors follow these steps:

- Stay indoors until the shaking has stopped. Research has shown most injuries occur when people try to relocate within the building or try to leave during an earthquake.
- Drop to the ground and take cover under a sturdy piece of furniture, such as a table or desk. If you cannot take cover, protect your face and head using your arms and crouch in a corner until the earthquake has ceased.
- Stay away from windows, glass, exterior doors and walls and anything that can fall, such as lighting fixtures.
- Do not use a doorway unless you know it is strongly supported. Interior non-load bearing doorways will not offer protection.
- Do not use elevators.

If you are outdoors, follow the following safety precautions:

- Stay outdoors
- Move away from street lights, power lines and buildings.

#### **7.4.2 Hurricane and Tornado**

The following is a list of actions that can be taken during a hurricane to help avoid serious injury.

- Stay indoors during a hurricane.
- Stay away from windows and glass. Close interior and exterior doors.
- Close any blinds or curtains.
- Do not assume the hurricane has passed because of a lull in the storm. It may be the eye of the storm, in which case the winds will pick up again.
- Listen to the radio or television for current information.

#### **7.5 LABORATORY EXPLOSION/VIOLENT REACTION**

Laboratory personnel shall observe the following procedures in the event of an unexpected, violent chemical reaction, or a closed container with dry ice, the conditions of which may worsen and/or terminate with an explosion, fire, or release of a noxious gas:

- All work with chemicals that have the potential to result in a strong or violent reaction should be done within a fume hood.
- When a chemical reaction appears to be "out of control," immediately pull the hood sash closed, if possible to do so safely.

- If possible to do so safely, shut off or remove energy sources (e.g., electricity, flame, steam, or gas cylinder).
- If a chemical reaction occurs outside of a fume hood, such as during delivery or transit, the container should be placed in the closest fume hood, if safe to do so.
- If a fume hood is not available, leave the container where it is and evacuate the immediate area. Do not return until told it is safe to do so by an Emergency Coordinator.
- Chemicals that may react, explode or off-gas must never be placed into a sealed container. The resulting pressure build up may cause the outer container to explode.
- Promptly notify all personnel in the immediate area to evacuate.
- Evacuate the area and call 9-911.

## 7.6 EMERGENCY MEDICAL RESPONSE

This section outlines the response to medical emergencies (i.e., medical conditions that require immediate professional medical attention). There are two general categories of medical emergencies:

- **Life-threatening** medical emergencies include loss of consciousness, possible broken bones, suspected poisoning, and severe bleeding.
- **Non-life threatening** medical emergencies are those that require medical attention but do not pose an immediate risk to the victim's life.

When a medical emergency occurs, the person(s) discovering the situation must respond as follows:

1. DO NOT activate the fire alarm box.
2. Remain with the victim, if possible to do so safely, and summon assistance from someone nearby to call for help. If no assistance is available, proceed to the nearest safe telephone and call for help. Summon help in the following manner:
  - a. **In the case of life-threatening medical emergencies**, immediately dial 9-911 to summon an ambulance. Once the ambulance is on its way, call 617-577-9177 to alert Alexandria Real Estate/Security at Tech Square and EH&S staff.
  - b. **In the case of non-life-threatening medical emergencies**, dial 617-577-9177 to reach Alexandria Real Estate/Security at Tech Square and EH&S Staff.
  - c. **In either case**, provide the following information:



- 1) The nature of the medical emergency
- 2) The specific location of the medial emergency
- 3) Name of the injured person, your name, location of the emergency (e.g., Seventh Floor, Laboratory 700), and call-back phone number, if possible

Remember that when calling emergency services, remain on the line until they hang up (unless impossible to do so safely).

3. As necessary, administer first aid and/or cardiopulmonary resuscitation (CPR), if trained. If not trained, provide support, as necessary until qualified medical personnel arrive. If possible to do so safely, assist the victim with removing clothing contaminated with hazardous materials. Never try to remove clothing from a burn victim.
4. If exposure to a toxic material has taken place, summon assistance from someone nearby to obtain a copy of the SDS from the Laboratory SDS Notebook or the EH&S Office and provide this information to the responding medical personnel.

## 7.7 CHEMICAL SPILL OR ODOR

This section outlines the response to hazardous chemical spills, categorized as follows:

- An incidental release of a hazardous chemical that can be quickly absorbed or otherwise controlled at the time of release by laboratory personnel in the immediate release area.
- An emergency spill of a hazardous chemical that requires the response of properly trained personnel (i.e., the EH&S Office or their designee) from outside the immediate release area.

The primary consideration during any hazardous spill response is to avoid employee exposure and to prevent ignition of flammable material. Secondary considerations include preventing material from entering the sewer system, minimizing property damage, and reducing downtime.

Emergency spill response supplies are stored in the hazardous material handling and storage area (Room 715). There are two spill kits per floor in the laboratory areas and one in the animal facility. In addition, there is a spill kit on the loading dock.

Examples of spill kit contents include chemical absorbent and neutralization materials, disposal bags, and protective equipment. Laboratory personnel use these kits for cleaning incidental releases and possible defensive measures to contain an emergency spill. The EH&S Office or their designee uses these kits and other supplies, as necessary, during emergency response cleanup.

Laboratory personnel are informed about observation and analysis of chemical hazards and ambient conditions to determine if they can respond to a small chemical spill (i.e., incidental release) or if they need to evacuate and contact emergency personnel (i.e., emergency spill).

## 7.8 GENERAL PROCEDURES FOR SPILL RESPONSE

In the event of an emergency chemical spill, release, odor or smell, personnel shall observe the following procedures:

1. Do NOT activate the fire alarm pull box unless there is a fire associated with the spill.
2. Promptly notify personnel in the immediate area to evacuate.
3. Evacuate the area.
4. Proceed to the nearest safe location with a telephone, call 617-577-9177, and provide the following information:
  - a. Name, location and call-back telephone number
  - b. The nature of the emergency (i.e., if known, the identity of the spilled material or odor, the approximate quantities involved, etc.)
5. Stay at the safe location until a representative from Alexandria Real Estate, the Ragon EH&S Office, the Animal Facility, Radiation Department, or Security arrives to the scene.

Depending on the nature of the chemical incident, the EH&S Office or its designee shall provide further instructions (e.g., activation of the fire alarm system to evacuate the facility, if necessary).

Laboratory personnel who have received specific training regarding spill response shall observe the following more detailed procedures in the event of a chemical spill:

1. **Identify the material as soon as possible without risking personal exposure.**
  - a. If the exact name of the substance is not available, obtain the class (i.e., flammable, chlorinated, acidic, etc.) of the material.
  - b. Check the SDS for hazard data as well as special protection information and handling precautions.
  - c. If the material cannot be identified as hazardous or non-hazardous, it must be treated as hazardous.
  - d. If necessary, contact outside expertise (e.g., manufacturer) for identification and/or additional chemical information.
2. **Avoid personal exposure to the substance.**

- a. Put on the appropriate PPE as recommended in the SDS.
- b. Do not walk into or touch any spilled material.
- c. Avoid breathing any gases, vapors, fumes, or smoke.
- d. If the substance is unknown, leave the area.
- e. Do not assume that a hazardous material is harmless just because it does not have a smell.

**3. Contain the spill.**

- a. Use absorbent material from the spill kit to keep the hazardous material from spreading and prevent it from entering any sewer or drain.
- b. If possible to do so safely, shut off the source of the spill.
- c. Do not attempt to turn off power inside the affected area because this action may cause a spark and possibly ignite a flammable material.

**4. Decision to clean the spill or to obtain help.**

Laboratory personnel can clean up an incidental release if **all** the following conditions are met:

- a. The identity of the spilled material is known.
- b. The associated hazards are known, and they do not pose a significant health and safety threat. Check the SDS for this information.
- c. The volume of the spill is small (1 gallon or less) and no secondary hazards exist within the immediate surroundings (e.g. the spill is in a poorly ventilated closet; sources of heat or flame exist nearby).
- d. Cleanup personnel has been trained in proper spill clean-up methods and has confidence that the spill can be cleaned without exposing his/herself and others in the vicinity to undue risk.
- e. The procedures do not require special equipment (i.e., respirator, Tyvek clothing, special disposal methods).

If all of the conditions are not met, proceed to step 5. Otherwise, cautiously proceed with the spill cleanup.

Spill cleanup shall not be conducted alone. A co-worker shall observe the cleanup procedures and assist, if necessary. If at any point the cleanup personnel perceive the situation as a possible threat to their own health and safety or the health and safety of any person in the vicinity, they shall evacuate the area and contact the EH&S Office, the Alexandria Real Estate Management Office or Security at Tech Square, or 911 as appropriate.

After cleaning the spill, contact the EH&S Office for guidance regarding appropriate disposal for contaminated spill cleanup materials and completion of a “Ragon Incident Report Form.”

**5. Obtain help.**

Contact Security at Tech Square at 617-577-9177 and the EH&S Office immediately. If the situation is an emergency, immediately call 9-911.

**6. Isolate the hazard area and deny entry.**

- a. Without entering the immediate hazard area, move and keep people away from the spill.
- b. If the material is a gas or volatile liquid, evacuate the surrounding areas.
- c. In the surrounding area, use warning tape available from the spill kits to keep people out of the affected area.
- d. Only qualified personnel with the proper protective equipment and clothing will be allowed in the spill area.

**7. Do not attempt cleanup until further direction is given from qualified personnel.**

Ragon maintains an agreement with an outside contractor to provide 24-hour emergency spill response for major spills.

## **7.9 DECONTAMINATION OF PERSONNEL**

Laboratory personnel shall observe the following procedures in the event of skin contact with a hazardous chemical:

- Alert someone to contact Security at Tech Square and the EH&S Office or after hours call 9-911 **first and then** Security at Tech Square; if alone, continue with the procedures listed below and contact the EH&S Office as soon as it is feasible.
- Remove any protective personal clothing or jewelry that has been contaminated. If they can do so safely, nearby personnel may assist in this process.
- If the contamination material is **compatible with water**, wash the contaminated areas thoroughly using the eyewash and/or safety shower as necessary for at least 15 minutes. If they can do so safely, nearby personnel may assist by holding the victim’s eyes open and timing the washing process. If an extremely toxic chemical (e.g., sodium cyanide) or a material of unknown toxicity is involved, personnel must take precautions to avoid exposure to the material, such as donning personal protective equipment, before attempting to help the victim.

*Note: Ragon's eyewashes and safety showers are generally not connected to drains; large amounts of water can collect on the laboratory floor when eyewashes and showers are used. Personnel shall notify the Alexandria Real Estate Management Office as soon as possible to aid in the cleanup, and post signs to notify others of the wet floor.*

- If the contamination material is **incompatible with water** (e.g., trichlorosilane, sodium borohydride, calcium hydride), use paper towels or other compatible material lightly applied to the area of contamination to lift off the excess contamination.

*Note: Using an eyewash or safety shower in this circumstance may exacerbate rather than mitigate the situation.*

- Obtain medical attention either from MGH OHS or hospital. Alert all emergency responders to the nature and extent of the contamination, as well as any decontamination procedures.

## 7.10 RESPONSE PROCEDURES FOR SPECIFIC CHEMICAL CLASSES

The following section outlines procedures, categorized by specific chemical class, used by the EH&S Office or laboratory personnel who have received specific training regarding spill response. Spill response materials are found in wall mounted spill kits located in the laboratory areas.

### 7.10.1 Solvent Spills

Trained laboratory personnel shall observe the following procedures when cleaning a solvent spill:

- Use the solvent spill absorbent from a spill kit, spill pads, or pillows to absorb the spill, working from the perimeter inward.
- Pick up the solidified absorbent using the scoop and scrapper or pick up the saturated pads/pillows with a gloved hand and place them in a bag for disposal. Place the used gloves in the disposal bag and seal the bag.
- Fill out a hazardous waste label stored in a hazardous waste satellite accumulation area (SAA) and affix the label to the bag.
- Laboratory personnel shall consult the EH&S Office for proper disposal of the spill cleanup materials.

### 7.10.2 Acid Spills

Trained laboratory personnel shall observe the following procedures when cleaning an acid spill:

- Select the acid spill neutralizer. If necessary, use corrosive specific spill pads located in the hazardous waste main accumulation area.
- Read instructions carefully because in many kits a color change indicates neutralization.
- Wearing proper PPE, apply the acid neutralizer to the spill from the perimeter inward, applying sufficient neutralizer to obtain a uniform color change throughout. Do not proceed until color change is complete and foaming has ceased.

*Note: This step will be accompanied by slow boiling if concentrated acidic solutions are treated. Observe appropriate precautions when handling hot materials.*

- Pick up the neutralized spill material with the scoops and transfer to the plastic disposal bag provided. Wipe up any residual neutralized spill material with spill pads or pillows (moistened).
- Place used spill pads/pillows, scoops, and gloves in the disposal bag and twist seal with the bag tie provided. Fill out a hazardous waste label and affix to the bag.
- Laboratory personnel shall consult the EH&S Office for proper disposal of the spill cleanup materials.

### 7.10.3 Caustic Spills (e.g., Sodium Hydroxide, Ammonia)

Trained laboratory personnel shall observe the following procedures when cleaning a caustic spill:

- Select the caustic spill neutralizer. If necessary, use corrosive specific spill pads located in the hazardous waste main accumulation area.
- Read instructions carefully because in many kits a color change indicates neutralization.
- Wearing proper PPE, apply the caustic neutralizer to the spill from the perimeter inward, applying sufficient neutralizer to obtain a uniform color change throughout. Do not proceed until color change is complete and foaming has ceased.

*Note: This step will be accompanied by slow boiling if concentrated caustic solutions are treated. Observe appropriate precautions when handling hot materials.*

- Pick up the neutralized material with the scoops provided and transfer it to the plastic disposal bag provided. Place the used scoops and gloves in the disposal bag and twist seal with the bag tie provided.
- Fill out a hazardous waste label and affix the label to the bag.
- Laboratory personnel shall consult the EH&S Office for proper disposal of the spill cleanup materials.

#### 7.10.4 Mercury Spills

Trained laboratory personnel shall observe the following procedures when cleaning a mercury spill:

- Apply mercury spill absorbent provided in the laboratory spill kit.
- Select a mercury spill kit. Read and follow instructions.
- Use silvershield gloves (found in hazardous waste main accumulation area) with latex/nitrile gloves over them. Wear shoe covers if mercury has been spilled on the floor.
- Do not place elemental mercury waste in drains.
- Transfer the mercury to the disposal bag. Place the used scoops and gloves in the disposal bag and twist seal with the bag tie provided.
- Fill out a hazardous waste label and affix the label to the bag.
- Thoroughly wash hands, arms, and face after clean-up is complete.
- Laboratory personnel shall consult the EH&S Office for proper disposal of the spill cleanup materials.

The Ragon EH&S Office has implemented a program to use, whenever possible, alcohol thermometers instead of mercury thermometers to minimize the possibility of mercury spills and waste generation.

#### 7.11 CHEMICALS SPILLS INVOLVING RADIOACTIVE OR BIOLOGICAL HAZARDS

Certain spill situations may simultaneously involve chemical hazards and radioactive and/or biological hazards. Laboratory personnel shall observe the following guidelines for multiple hazard spills:

- Contact the MGH Radiation Safety Office at 617-726-5128 for all radioactive material emergencies.

- Contact the Security at Tech Square at 617-577-9177 to notify Ragon EH&S for biological material and chemical material emergencies.
- If possible to do so safely, remove any victims from the area of contamination and decontaminate the victim (see “Decontamination of Personnel” in this section).
- Consult “General Procedures for Spill Response” within this section.
- If possible to do so safely, neutralize at least one of the hazard components:
  - For a combination biohazard and chemical spill: If compatible, apply 5% bleach or 10% Wescodyne to the area of contamination. Allow 30 minutes of contact time to neutralize the biohazard. Follow chemical spill response guidelines to continue with cleanup.
  - For a combination radioactive and chemical spill: If compatible, apply an acid or base neutralizer to corrosive spills or absorb chemical and other liquid spills with spill kit absorbent material. Follow radioactive spill response guidelines found in the Radiation Safety Manual to continue with cleanup.
  - When neutralization is not feasible, do not attempt to clean the spill. Obtain further instruction from the Ragon EH&S Office.

## 7.12 POLICE ACTION

- If there is any concern requiring police response (e.g., illegal entry, worker strife, etc.), phone Security at Tech Square from a safe location. Speak clearly and slowly, giving:
  - Your full name
  - The location of the problem (as specific as possible)
  - The type of concern
  - Any other pertinent information

Stay on the line until you are sure the receiving party understands.
- Help Desk personnel will alert the Police Department.

## 7.13 BOMB SCARES

- Upon receiving a bomb threat over the telephone, remain calm and attempt to gain as much information about the possible threat such as:
  - When and how is it set to explode?
  - Where is the bomb?
  - Why does the caller want to hurt someone?
  - What is the caller’s name?

Also note the following:



- Time of the call.
- Are there any background noises?
- Is the caller male or female?
- Are there other voice characteristics?
- Notify Security at Tech Square and a supervisor in the area.
- When you phone Security at Tech Square, speak clearly and slowly, giving:
  - Your full name
  - The location of the possible bomb threat (as specific as possible)
  - The time that it may be set to go off
  - Any other pertinent information

Stay on the line until you are sure the receiving party understands.

- Security or the supervisor may instruct you to immediately pull the fire alarm, so be prepared to do so. Security will contact the EA Responders, including Fire Wardens. If this is the case, evacuate immediately, following the same procedures as if there were a fire.
- Personnel are instructed to NOT TOUCH ANYTHING. Make sure boxes, packages, etc. are known to personnel. Do not touch any unrecognized objects.
- If evacuation is desired or authorized, personnel are to take only familiar handbags, briefcases, and personal packages with them.

*Note: It is important that office areas be kept clear of empty or opened boxes, bags, etc., at all times. All such items should be placed in appropriate storage areas*

## 8.0 EMERGENCY TELEPHONE NUMBERS

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### 8.1 EMERGENCY AND RELEASE NOTIFICATION/RESPONSE TELEPHONE NUMBERS

**\*\*Note:** to dial an outside number from Ragon you must first dial 9\*\*

#### EMERGENCY TELEPHONE NUMBERS

Police	911
Fire	911
Ambulance	911
Poison Control	800-222-1222
MGH—Occupational Health: Monday – Friday, 7 a.m. – 4:30 p.m. (after hours report to MGH Emergency Room)	617-726-2217
MGH Radiation Safety, Tara Medich	617-726-5128
<b>Hospitals</b>	
Massachusetts General Hospital	617-726-2000
Brigham & Women’s Hospital	617-732-5500
Cambridge Hospital	617-665-1000

#### CHEMICAL RELEASE NOTIFICATION/RESPONSE

Cambridge Hazardous Materials Response Team	911
Alexandria Real Estate Management Office (daytime)	617-661-6962
Security at Tech Square 24 Hours	617-577-9177
Massachusetts Department of Environmental Protection (MADEP) Emergency Response (24 Hour Spill Hotline)	888-304-1133
MADEP—Northeast Regional Office	978-694-3200
State Police Headquarters	617-740-7600 508-820-2300
U.S. Environmental Protection Agency (EPA) National Response Center (NRC) Hotline	800-424-8802
Northeast EPA Customer Call Center	888-372-7341
U.S. Coast Guard Emergency NRC Boston Office	800-424-8802 617-565-9200
Marine Safety Office	800-673-1057
Federal Bureau of Investigation—Boston Office	617-742-5533
Massachusetts Water Resources Authority (MWRA) Toxic Reduction and Control	617-242-6000
After Hours MWRA Spill Hotline	617-305-5940/5950
John Norton, Industrial Coordinator	617-305-5656

## CHEMICAL RELEASE CLEAN-UP CONTRACTORS

Veolia Environmental Services

800-354-2382

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Environmental Health & Engineering, Inc.  
(EH&S Manager/Consultant)

800-TALK EHE  
(800-825-5343)

## 9.0 EMERGENCY NOTIFICATION AND SPILL REPORTING REQUIREMENTS

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This section outlines the requirements and procedures for notifying local, state and federal regulatory agencies when a reportable spill or release of oil or hazardous materials, including raw chemicals or hazardous waste, into the environment occurs.

If a spill meets certain state or federal criteria, the EC or his/her designee will be responsible for making the required calls and submitting the required written reports as further outlined in Section 9.6.

**Note:** All spills and releases that are equal to or exceed reportable quantities must be reported to the Cambridge Fire Department and regulatory agencies. Spills and releases that do not exceed reportable quantities or are contained within the building should be reported to the Cambridge Fire Department by means of a “courtesy call.” The Cambridge Fire Department strongly encourages Ragon to report any spill or release of a hazardous substance, gasoline, or oil that does **not** exceed reportable quantities, but requires an outside vendor to conduct clean up. See Section 9.2 for a summary decision matrix of the regulatory agencies to be notified, and Section 9.3 for a summary of the typical reportable quantities to assess if notification is necessary.

### 9.1 DEFINITIONS

A **spill** is when a liquid, solid or gas releases out of the containers or equipment in which they are normally found.

A **release** requiring notification, as described in this section, is a sudden, continuous or intermittent release of any hazardous material to the environment that occurs in less than 24 consecutive hours.

A **release to the environment** includes releases to soil, surface water, groundwater or ambient air. If the release is contained it is not reportable. A release is contained when it is inside the building or dike and did not evaporate to the ambient air, permeate to the soil, or leak from cracks in the dike or building.

A **threat of release** means a substantial likelihood of a release of oil and/or hazardous material which requires action to prevent or mitigate damage to health, safety, public welfare or the environment which may result from the release.

**Timing of Notification** for all reportable releases must be made as soon as possible as knowledge is obtained that the release meets any of the notification criteria of this section. Reports of releases to the U.S. Environmental Protection Agency (EPA) should be made as soon

as possible and to the Massachusetts Department of Environmental Protection (MADEP), within two hours of the release.

## 9.2 DECISION MATRIX FOR NOTIFICATION

EC is required to do certain notifications in case of certain types of release. The following is a decision matrix for notification in case of release.

I. All spills and releases (“Courtesy Notification of the event” if within building)	Then immediately report to:	Cambridge Fire Department 617.349.4900
II. The substance is included on the Massachusetts Oil and Hazardous Materials List in 310 CMR 40.1600 and is reportable as a two-hour release under the Massachusetts Contingency Plan (MCP) or Superfund Amendments and Reauthorization Act (SARA)	Then immediately report to:	Cambridge Fire Department and Massachusetts Department of Environmental Protection (MADEP)
III. The substance is reportable under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	Then immediately report to:	Cambridge Fire Department, MADEP, National Response Center (NRC)
IV. The substance is not strictly reportable under II or III above but the release poses a threat to the public health, safety or welfare of the environment	Then immediately report to	Cambridge Fire Department , MADEP, NRC (only if CERCLA)

### 9.3 REPORTABLE QUANTITY CRITERIA

Hazardous Material	Report Releases or Threat of Release to Cambridge Fire Dept. and MADEP if:	Report Releases to NRC, MADEP and Cambridge Fire Dept. if:
Release of oil or hazardous material listed in 310 CMR 40.1600 of the Massachusetts Contingency Plan (MCP) to a storm water drainage system.	Any release. Massachusetts Water Resources Authority (MWRA) also needs to be notified.	Not applicable
Release of oil or hazardous material listed in 310 CMR 40.1600 of the MCP to a sanitary sewerage system.	Any release. MWRA also needs to be notified.	Not applicable
Listed oil or hazardous material	1. Reportable Quantity (RQ) listed in 310 CMR 40.1600 of the MCP 2. RQ for SARA Extremely Hazardous Substance listed in Appendix A of 40 CFR Part 355	Final RQ for CERCLA substance listed in 40 CFR 302.4 (if final RQ is noted with # or ##, use statutory RQ)
Mixtures of listed hazardous materials with known concentration of constituents	Individual quantities of constituents the respective RQs <b>OR</b> Total quantity of mixture/solution release is 50 lbs. (whichever is less)	Individual quantities of constituents $\geq$ the respective RQs
Mixtures of listed hazardous materials with unknown concentrations of constituents	Total quantity released is the RQ of the material with the lowest RQ <b>OR</b> Total quantity of material is 10 lbs. (whichever is less)	Total quantity released is the RQ of the material that has the lowest RQ
Characteristic hazardous waste: toxicity characteristic (310 CMR 30.1258)	Total quantity of material is $\geq$ the RQ for the component that exhibits the toxicity characteristic	Total quantity of material is $\geq$ the RQ for the component that exhibits the toxicity characteristic
Characteristic hazardous waste: ignitable, reactive, corrosive, infectious (310 CMR 40.0347)	10 pounds	100 pounds
Polychlorinated biphenyls (PCBs)	Material contains <500 parts per million (ppm) PCBs, or report if release 10 gallons (310 CMR 40.0352);	1 pound (as listed in 40 CFR 302.4)
	Material contains concentration 50 ppm, or report if >1 gallon;	
	ANY quantity of PCB-containing material that results in direct exposure to humans or personal property.	
<p>NRC            National Response Center MADEP        Massachusetts Department of Environmental Protection</p> <p><b>NOTE:</b> Check for exclusions in: 310 CMR 40.0317, 40 CFR 302.4, and 40 CFR 355.40</p>		

### 9.4 CONTENT OF TELEPHONE NOTIFICATIONS

The EC or designee in conjunction with the Ragon EH&S Office will be responsible for making the telephone notification and, at a minimum, supply the following information (record the date, time of call and person receiving call for each agency notified by telephone):

- Person Making Notification:
  - Name
  - Telephone Number
- Location of Release or Threat of Release
- Date and Time the Release Occurred
- Chemical Name of Substance Released
- Notification Criteria that is the Basis for Reporting
- Source of the Release or Threat of a Release
- Release was into: AIR, SEWER, SURFACE, WATER, OR GROUND
- Known or Anticipated Acute or Chronic Health Risks
- Advice on Medical Attention for Exposed Individuals (If Appropriate)
- Name and Telephone Number of Person(s) to Contact for Further Information
- Responsible Actions Taken or Planned as a Result of the Release
- Response Personnel at Scene
- Name and Telephone Number of the Owner/Operator at the Location of the Release or Threat of a Release
- Name and Telephone Number of the Contact Person at the Location of the Release or Threat of a Release

Additional Information if there is a spill of Hazardous Waste

- Name, Address, and Identification Number of Generator
- For Each Waste Involved In Spill:
  - Shipping Name
  - Hazard Class
  - United Nations Identification (U.N.) Number

## 9.5 WRITTEN NOTIFICATION OF RELEASES

The tenant's EC will be responsible for the following required written notifications.

### **Massachusetts Contingency Plan (MCP) Releases**

Within 60 days of the original telephone notification, submit a completed Release Notification Form, meeting the requirements of 310 CMR 40.0371 to the MADEP regional office.

Massachusetts Department of Environmental Protection  
 Northeast Regional Office  
 Bureau of Waste Site Cleanup  
 205B Lowell Street  
 Wilmington, MA 01887

## **Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act (CERCLA/SARA) Releases**

*In addition to immediate telephone calls to local, state and federal response centers, a written notification is required to be filed as soon as practicable after the release. Written notification must include, in addition to the oral notification requirement information listed above, the following:*

- Update information included in the initial notice.
- Provide information on:
  - Actual response action taken
  - Advice regarding medical attention necessary for exposed individuals

Send reports to the following agencies:

- Regional Administrator EPA Region I
- Emergency Response Office MADEP
- Local Emergency Planning Committee (LEPC)
- Cambridge Police Department



## 10.0 ADMINISTRATIVE

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Personnel authorized to participate in emergency response activities at this facility have reviewed and been trained for site operations by the EH&S Office and EC.

Please see Appendix A for the Ragon *Emergency Contact List* and Alexandria Real Estate *After Hours Call Center Procedures*.

## 11.0 HAZARDOUS CHEMICAL HANDLING

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### 11.1 HAZARDOUS CHEMICALS ON SITE

Through on-going training programs, the EC(s) will inform employees on the proper storage and handling precautions for all hazardous substances.

### 11.2 INCOMPATIBLE SUBSTANCES

The Compatibility Guide presented below is a listing of potentially incompatible substances for the purpose of managing hazardous chemicals and wastes. This general guide should be used to avoid mixing incompatible substances during routine operations and spill clean ups.

### 11.3 COMPATIBILITY GUIDE

Many hazardous chemicals, when mixed with other wastes or chemicals, can produce effects which are harmful to human health or the environment, such as: (1) heat or pressure; (2) fire or explosion; (3) violent reaction; (4) toxic dusts, mists, fumes, or gases; or (5) flammable fumes or gases.

In the following lists, the mixing of a Group A material with Group B material may have the potential consequences as noted:

#### **GROUP 1-A**

Acetylene sludge  
Alkaline caustic liquids  
Alkaline cleaner  
Alkaline corrosive liquids  
Alkaline corrosive battery fluid  
Caustic wastewater  
Lime sludge and other corrosive alkalides  
Lime wastewater  
Lime and water  
Spent caustic

#### **GROUP 1-B**

Acid sludge  
Acid and water  
Battery acid  
Chemical cleaners  
Electrolyte, acid  
Etching acid liquid or solvent  
Pickling liquor and other corrosive acids  
Spent acid  
Spent mixed acid  
Spent sulfuric acid

*Potential consequences: Heat generation, violent reaction.*

**GROUP 2-A**

Aluminum  
 Beryllium  
 Calcium  
 Lithium  
 Magnesium  
 Potassium  
 Sodium  
 Zinc powder  
 Other reactive metals and metal hydrides.

**GROUP 2-B**

Any waste in Group 1-A or 1-B  
 Any waste in Group 1-A or 1-B  
 Any waste in Group 1-A or 1-B  
 Any waste in Group 1-A or 1-B  
 Any waste in Group 1-A or 1-B  
 Any waste in Group 1-A or 1-B  
 Any waste in Group 1-A or 1-B  
 Any waste in Group 1-A or 1-B  
 Any waste in Group 1-A or 1-B

*Potential consequences: Fire or explosion, generation of flammable hydrogen gas.*

**GROUP 3-A**

Alcohols  
 Water

**GROUP 3-B**

Any concentrated waste in Groups 1-A or 1-B  
 Calcium  
 Lithium  
 Metal hydrides  
 Potassium  
 SOCl<sub>2</sub>, SOCl<sub>2</sub>, PCl<sub>3</sub>  
 CH<sub>3</sub>SiCl<sub>3</sub>  
 Other water-reactive waste

*Potential consequences: Fire explosion, or heat generation of flammable or toxic gases.*

**GROUP 4-A**

Alcohols  
 Aldehydes  
 Halogenated hydrocarbons  
 Nitrated hydrocarbons  
 Unsaturated hydrocarbons  
 Other reactive organic compounds and solvents

**GROUP 4-B**

Concentrated Group 1-A or 1-B wastes  
 Concentrated Group 1-A or 1-B wastes  
 Group 2-A wastes  
 Group 2-A wastes  
 Group 2-A wastes  
 Group 2-A wastes

*Potential consequences: Fire, explosion, or violent reaction.*

**GROUP 5-A**

Spent cyanide and sulfide solutions

**GROUP 5-B**

Group 1-B wastes

*Potential consequences: Generation of toxic hydrogen cyanide*

**GROUP 6-A**

Chlorates  
Chlorine  
Chlorites  
Chromic acid  
Hypochlorites  
Nitrates  
Nitric acid, fuming  
Perchlorates  
Permanganates  
Peroxides  
Other strong oxidizers

**GROUP 6-B**

Acetic acid and other organic acids  
Concentrated mineral acids  
Group 2-A wastes  
Group 4-A wastes  
Other flammable and combustible wastes  
Other flammable and combustible wastes  
Other flammable and combustible wastes  
Other flammable and combustible wastes  
Other flammable and combustible wastes  
Other flammable and combustible wastes  
Other flammable and combustible wastes

*Potential consequences: Fire, explosion, or violent reaction.*

## 12.0 POST-EMERGENCY OPERATION, CRITIQUE, AND FOLLOW-UP

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The EC(s) shall ensure that no chemicals or wastes that may be incompatible with the released material are managed or stored in the affected area until spill cleanup procedures are completed. The EC(s) shall make sure that emergency equipment in the affected area is cleaned and fit for use before resuming facility operations. The EC(s) shall also notify local, state, or federal emergency response agencies (if necessary) before operations are resumed.

A formalized critique of each emergency incident will be made by the EC(s). Specifically, the EC(s) will hold a debriefing session with Floor Wardens/Building Manager after each evacuation. If a security video camera system is in place at the facility, the EC(s) will also arrange for the facility's security videotape to be archived after all building emergencies and evacuations (including fire drills). The EC(s) will ensure that written records of the critique or debriefing are kept and changes are made to this EAP, if warranted. Corrective actions to prevent repeat incidents shall be assessed and implemented by the EC(s), if warranted.

## **APPENDIX A**

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### **EMERGENCY CONTACT LIST AND AFTER HOURS CALL CENTER PROCEDURES**

## EMERGENCY CONTACT LIST AND AFTER HOURS CALL CENTER PROCEDURES

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Name/Title	Emergency Phone	Other Phone
Matt Bedford , Staff Scientist, Environmental Health and Safety (EH&S)	617-293-0333	857-210-8810
Jessica Healey Biosafety Officer	774-244-7018	
Alexandria Real Estate Management Office (8:30-5:00PM)	617-661-6962	
Ted O'Leary, Alexandria Real Estate Facilities Manager	617-551-8539	
Security at Tech Square 24-hour Command Center*	617-577-9177	
<i>Occupational Health Department:</i> Massachusetts General Hospital (MGH) OHS M – F, 7 a.m. – 5:00 p.m. (after hours report to MGH Emergency Room)	617-726-2217	
MGH Radiation Safety RSO: Tara Medich	617-726-5128	Pager Operator: 617 726 2000 pager # 26521
Cambridge Police Department (Police, Fire, and Ambulance)	911	
Hazardous Material Emergency Response Contractor: Veolia Environmental Services, Inc. Contact: Derek Nelhuebel	800-354-2382	

\* For after hours EH&S emergencies, Security at Tech Square 24-hour Command Center should be contacted immediately.

## **APPENDIX B**

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### **EVACUATION ROUTES AND EMERGENCY EXITS AND EVACUATION ASSEMBLY POINTS**



# EVACUATION ASSEMBLY POINTS



ALEXANDRIA.



## **APPENDIX C**

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### **FIRE WARDENS**

## FIRE WARDENS

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The Ragon Institute, 400 Technology Square, Cambridge, MA 02139

857-268-7000

Michael Waring Lead Fire Warden [mwaring@partners.org](mailto:mwaring@partners.org)

### 9<sup>th</sup> Floor

Michael Waring [mwaring@partners.org](mailto:mwaring@partners.org)

Yong Xie [yxie3@mgh.harvard.edu](mailto:yxie3@mgh.harvard.edu)

Julie Boucau [jboucau@mgh.harvard.edu](mailto:jboucau@mgh.harvard.edu)

### 8<sup>th</sup> Floor

Alicja Trocha [atrocha@partners.org](mailto:atrocha@partners.org)

Thomas Diefenbach [tdiefenbach@mgh.harvard.edu](mailto:tdiefenbach@mgh.harvard.edu)

### 7<sup>th</sup> Floor

Karen Power [kapower@partners.org](mailto:kapower@partners.org)

Caitlyn Linde [clinde1@partners.org](mailto:clinde1@partners.org)

Amruta Samant [asamant@mgh.harvard.edu](mailto:asamant@mgh.harvard.edu)

### 1<sup>st</sup> Floor

Diane Rubin [drubin@partners.org](mailto:drubin@partners.org)

Julianna Cogswell [jcogswell1@mgh.harvard.edu](mailto:jcogswell1@mgh.harvard.edu)

### Basement

Whitney Roberts [wbroberts@mgh.harvard.edu](mailto:wbroberts@mgh.harvard.edu)

## APPENDIX D

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### VEOILIA ENVIRONMENTAL SERVICES CONTRACT



January 18, 2017

Ragon Institute  
400 Technology Square  
Room 963  
Cambridge, MA 02139  
Attn: Matt Bedford

*Dear Matt:*

***RE: EMERGENCY RESPONSE PROCEDURES AND CONTACTS***

If Ragon Institute deems an Emergency of a Chemical or Biological nature beyond the capabilities of its internal staff, or requires Response coverage for the shipment of it's products within the New England region, Veolia Environmental Services Technical Solutions, LLC (VEOLIA) is prepared to respond, and has the technical personnel and equipment capabilities to manage the incident.

**EMERGENCY RESPONSE PROCEDURES**

In the event of a chemical spill or other emergency situation, it is important that pertinent information be accurately and efficiently relayed to VEOLIA personnel. Much time and money can be saved if the situation is assessed properly and the appropriate manpower and equipment are mobilized. The following steps should be taken when an employee is responding to a chemical spill/emergency and requests the services of VEOLIA.

- 1.) If possible, identify the spilled chemical and quantity. Also note the location of the spill.
- 2.) **CALL VEOLIA 24/7 @ 1-800-354-2382**
- 3.) Give your name, Company, location and telephone number to the person answering the call. Please indicate that you are calling to report a spill and need assistance.
- 4.) During normal working hours (8:30am-5:00pm) you will be passed through to your Technical Account Representative (Greg Reynolds), Safety Officer (Richard Finnegan) or Operation Manager (Ray Gallagher).

Veolia E S Technical Solutions, L.L.C.  
398 Cedar Hill Street, Marlboro, MA 01752  
tel: 800-354-2382 - fax: 508-804-4836  
www.VeoliaES.com

Proprietary and Confidential  
Exhibit A

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- 5.) Veolia Environmental Services has manned Emergency Response phone lines 24/7
- 6.) Once the level of response has been determined, the appropriate personnel and equipment will be mobilized. It is anticipated that a VEOLIA service team will arrive at your site within 1-2 hours of the initial telephone call. VEOLIA will mobilize from our Charlestown, MA Service Center.

#### **EMERGENCY RESPONSE EQUIPMENT**

The following emergency response equipment is provided with each service vehicle at time of service by VEOLIA:

- ☉ 85 gallon drum overpack
- ☉ Vermiculite
- ☉ Personal Protective Equipment (tyveks, gloves, boots, respirators)
- ☉ ABC dry chemical fire extinguisher
- ☉ Fully equipped first aid kit including eye wash
- ☉ Drum opening tools, shovel, poly sheeting
- ☉ Empty containers
- ☉ pH paper to assess corrosivity
- ☉ Spare fuses, flashlights
- ☉ Reflective triangles
- ☉ Mobile phone

#### **ADDITIONAL SPILL EQUIPMENT**

- ☉ Vacuum Trucks & Rolloff Containers
- ☉ Special pumps and tools
- ☉ Large stock of absorbents (vermiculite, speedi-dry, booms, activated carbon, lime)
- ☉ Self-Contained Breathing Apparatus
- ☉ Earth excavation equipment and water-tight dump trailers



If you have any questions or comments regarding this proposal please feel free to contact me at (508)630-5062. We appreciate your consideration of this offer and your confidence in our environmental service.

Sincerely,

*Sarah A Hickey*

Sarah A Hickey  
Account Manager

\_\_\_\_\_  
Accepted By (authorized signature)

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Purchase Order #

\_\_\_\_\_  
Date

Veolia E S Technical Solutions, L.L.C.  
398 Cedar Hill Street, Marlboro, MA 01752  
tel: 800-354-2382 - fax: 508-804-4836  
www.VeoliaES.com

Proprietary and Confidential  
Exhibit A

## APPENDIX E

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### RAGON INSTITUTE INCIDENT RESPONSE FORM



## RAGON INSTITUTE INCIDENT RESPONSE FORM

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DATE REPORTED: \_\_\_\_\_ TIME REPORTED:

\_\_\_\_\_

How reported:     Called Alexandria Facilities/Security     Called EH&S  
Office

Initiated by: \_\_\_\_\_ Phone #: \_\_\_\_\_ Ragon Room  
#: \_\_\_\_\_ Group/Platform: \_\_\_\_\_ Floor Manager:

\_\_\_\_\_

MGH OHS Contacted?    No    Yes – Follow-up date:

\_\_\_\_\_

### DESCRIPTION:

Injury – describe:

\_\_\_\_\_

Potential biological, rDNA or chemical exposure – list material/agent:

\_\_\_\_\_

\_\_\_\_\_

Symptoms - briefly characterize symptoms:

\_\_\_\_\_

Chemical/biological/radiation spill – list material:

\_\_\_\_\_

Odor – briefly characterize odor:

\_\_\_\_\_

Other:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

DATE RESPONDED: \_\_\_\_\_ TIME RESPONDED:

\_\_\_\_\_

EH&S RESPONDER: \_\_\_\_\_ FACILITIES RESPONDER:

\_\_\_\_\_

ASSESSMENT/FINDINGS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CORRECTIVE ACTION:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

---

\_\_\_\_\_ Is incident reportable to IBC, NIH or outside agency?  No  Yes –

list: \_\_\_\_\_

EH&S Follow-up Required?  No (resolved)  Yes – Follow-up date:

\_\_\_\_\_

Follow-up action plan:

\_\_\_\_\_  
\_\_\_\_\_

Distributed to: \_\_\_\_\_

eMail

Fax

\_\_\_\_\_

eMail

Fax