

## PART 1 - GENERAL

### 1.1 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, services, insurance, special permits, documentation, and equipment necessary to safely mitigate a water loss and remediate materials that have been impacted by a water loss within the boundaries specified by the "Scope of Work" on the associated Work Order.
- B. Water loss response includes the following:
  - 1. Mitigation of the water loss.
  - 2. Demolition and disposal of specified building materials, finishes, and furnishings.
  - 3. Drying of specified building materials, finishes, and furnishings.
- C. General Requirements
  - 1. Contractor is responsible to take appropriate measures ensuring that the project site will be safeguarded from contamination due to Work activities during the mitigation and remediation periods.
  - 2. All Work is to be performed in accordance with applicable codes, standards, and accepted industry practices. This includes compliance with regulatory requirements applicable at the time the work is performed and is not limited to requirements at the time of bid. All Work, including work practices, is to be craftsman-like and is subject to inspection by the Owner.
  - 3. The Work described in this section is a general description and is not intended as a complete listing of the Work to be accomplished. The Work associated with each Work Order may be expanded or deleted above and beyond the specified scope by the Owner to include other areas or materials that may be encountered during the course of the Work Order.
- D. Damages caused during the performance of water loss response activities shall be repaired by the Contractor (including, but not limited to, paint peeled off by barrier tape, nail holes, water damage, broken glass) at no additional cost to the Owner.
- E. Use of the Site: Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which Work is indicated are not to be disturbed.
- F. Contractor's Use of the Existing Building: Maintain existing building in a safe and weather tight condition throughout the construction period. Repair damage caused by water loss response operations. Take all precautions necessary to protect the building and its occupants during the Work period.
- G. Keep public areas such as hallways, stairs, elevator lobbies, and toilet rooms free of accumulation of waste, rubbish, and construction debris.
- H. Smoking or open fires shall not be permitted within the building enclosure or on the premises.

### 1.2 RELATED WORK

- A. Section 02 80 00 – Facilities Remediation
- B. Section 02 82 00 – Asbestos Removal
- C. Section 02 83 00 – Heavy Metal-Related Activities
- D. Section 02 84 00 – PCB Ballast and Mercury Light Tube Removal
- E. Section 02 85 00 – Silica and Fugitive Dust Control Activities

- F. Section 02 86 00 – PCB-Containing Bulk Material Removal
- G. Section 02 88 00 – Biological Contaminants

### 1.3 QUALITY CRITERIA

- A. Qualifications for Performance of Work: The following qualifications are required for the Contractor's personnel involved in water loss mitigation and remediation.
  - 1. The Contractor's Supervisor shall:
    - a. Hold current certification as a Water Damage Restoration Technician (WRT) by the Institute of Inspection, Cleaning, and Restoration Certification (IICRC), or equivalent.
    - b. Have documentation of successful completion of an OSHA 10 Hour General Industry Health and Safety course.
    - c. Be able to demonstrate and document competence and experience in responding to a wide variety of water loss episodes including high-rise commercial buildings, health care facilities, research laboratories, classroom settings, and special use buildings.
    - d. Have documented experience implementing control measures to prevent building occupant exposures to Work Area contaminants. Strong experience and understanding of Sheet Metal and Air-conditioning Contractors' National Association (SMACNA) Standard 1995, *IAQ Guidelines for Occupied Buildings Under Construction*.
    - e. Have documented experience and deference working with industrial hygienists and environmental consultants to provide a high-level of indoor environmental quality (IEQ) during and following water loss response events. This includes carefully following Work plans and protocols prepared for mitigation and remediation Work.
    - f. Experience using low-VOC and low-odor products, non-toxic chemicals, green methods, and discretion in discussing environmental hazards with occupants is required.
  - 2. The Contractor's Employees shall:
    - a. Have completed mold, moisture, and biohazard remediation awareness training, including but not limited to information on health effects of exposure to biohazards, safe work practices to prevent exposure to biohazards, and the use and limitation of personal protective equipment.

## PART 2 - PRODUCTS

### 2.1 ANTI-MICROBIALS, BIOCIDES, DEODORIZERS

- A. Antimicrobials, biocides, or deodorizers shall be used only with the written consent of the Owner.
  - 1. Such products shall hold current registration under the United States Environmental Protection Agency (USEPA) Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) where applicable.
  - 2. Such products shall be applied and used according to the manufacture's recommendations.
  - 3. Contractor shall seek to utilize low-VOC, low-odor products, non-toxic chemicals, and green methods when possible.

## PART 3 - EXECUTION

### 3.1 WATER LOSS RESPONSE

#### A. Coordination and Communication

1. The Owner shall have overall control of the site and primary responsibility to communicate with building owners, building representatives, occupants, and facilities personnel.
2. The Owner shall be responsible for requesting the Contractor to respond to a water loss.
3. The Contractor shall be responsible for coordinating the water loss response with all involved parties including the Owner.
4. Coordinating access to Work Areas shall be the responsibility of the Contractor.

#### B. Evaluation

1. The water loss shall be considered Category III as specified by the ANSI/IICRC S500 most current edition unless an IICRC Certified Water Remediation Technician (WRT) has documented otherwise. Category III water damage is water damage to a structure where the origin is unsanitary or potentially infectious to humans.
2. The Category and Class of the water loss shall be determined by an IICRC certified WRT in accordance with the ANSI/IICRC S500 most current edition.
3. The Category and Class of the water loss shall be determined by the Owner, if available.
4. The Category and Class of the water loss may be determined by the Contractor if the Owner cannot be immediately contacted and for purposes of mitigation only. The Contractor must submit documentation of the determination to the Owner for approval prior to remediation.
5. If the water loss is determined to be Category II or Category III, then the requirements of Section 02 85 00, Biological Contaminants, are mandated for the mitigation and remediation efforts.
6. If suspect regulated building materials are to be impacted, then the Contractor must obtain a good faith inspection report from the Owner prior to mitigation or remediation. If regulated materials are to be impacted, then the appropriate section(s) of this contract are to be additionally followed.

### 3.2 MITIGATION

#### A. Mitigation of a water loss typically involves the following:

1. Identification of the source of the water loss.
2. Halting the water loss.
3. Water extraction and disposal.
4. Removal of affected furnishing, supplies, equipment, and belongings from the impacted areas.

#### B. Mitigation of a water loss shall be executed under the direction of the Contractor in accordance with the recommendations of the ANSI/IICRC S500 most current edition.

#### C. Products such as antimicrobials, disinfectants, sanitizers, or deodorizers shall not be used without the expressed written consent of the Owner.

D. Documentation

1. The Contractor shall record and retain written and photo-documentation of existing conditions prior to, during, and upon completion of mitigation.
2. The Contractor shall record and retain psychrometric measurements and calculations obtained during the mitigation.
3. The Contractor shall record and retain a written narrative describing site conditions, mitigation activities, equipment usage, and any other information deemed relevant.

3.3 REMEDIATION

- A. Remediation of a water loss typically involves the following:
1. Demolition and disposal of materials that cannot be salvaged.
  2. Drying of materials that can be salvaged.
- B. Remediation of a water loss may proceed upon receipt of a Work Order issued and signed by the Owner.
- C. Remediation of the water loss shall be executed under the direction of the Contractor's Project Manager in accordance with the recommendations of the ANSI/IICRC S500 most current edition.
- D. Site specific procedures have been established for certain facilities associated with the University of Washington, such as the University of Washington Medical Center. A Site Specific Remediation Protocol may be drafted at the request of the Owner. If such a document has been issued, then the Contractor's Project Manager shall execute the remediation in accordance with the remediation protocol and the remediation protocol will have precedence over the recommendations of the ANSI/IICRC S500 most current edition.

3.4 DEMOLITION.

- A. Demolish building materials, finishes, or furnishing (i.e. wall systems, floor covering, office supplies, etc.) as specified in the Work Order, Scope of Work, or Site Specific Remediation Protocol. Demolition shall be conducted within a critical barrier enclosure. Demolition shall not begin until:
1. The Work Area enclosure system has been inspected and approved by the Owner.
  2. Negative pressure ventilation is functioning adequately.
- B. Preparation of the Work Area
1. The Contractor shall post warning signs at all entrances or openings to the enclosed Work Areas. Warning signs may be in the form of continuous plastic tape. The warning signs shall have black characters on a red background and read as follows: "DANGER". All emergency exits/corridors must be kept open. Fire suppression systems must remain functional or additional systems put in place at the discretion of the Owner.
  2. Pre-clean using HEPA filtered vacuums or wet cleaning methods, remove furnishings and install drop cloths, as appropriate. Do not use methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.
  3. Following pre-cleaning, remove from the Work Area all dry, uncontaminated objects that are movable to protect them from potential damage.
  4. Work Area preparation for critical barrier enclosures shall be performed as follows:
    - a. Work Areas shall be enclosed with one layer of 6-mil polyethylene sheeting. Depending on the remediation project this can be installed as a lean-to, tent or full-height

containment. Walls and ceilings that are not covered will have to be cleaned following remediation.

- b. Establish airlock at entrance to the critical barrier enclosure.
  - c. Incorporate a HEPA-filtered exhaust system into the critical barrier enclosure to establish a negative pressure within the enclosure. Vent the exhaust to the outside of the building when practical.
5. The Contractor shall document that a negative pressure differential has been established. The negative pressure differential may be confirmed with a manometer, a magnehelic gauge, smoke tubes, or visual observations.

C. Demolition procedures

- 1. Remove all specified materials using hand tools where appropriate.
- 2. The limited use of water for dust control is allowed provided its use is controlled and does not damage finishes or furnishing.
- 3. In the case wallboard and plaster, the Contractor shall remove the wall or ceiling material in manageable pieces by cutting into large sections to reduce the amount of dust released during demolition activities or by removing screws. All wallboard screws shall be removed with care without damaging metal studs or lumber.
- 4. To facilitate restoration, the following procedures shall be followed for drywall demolition unless otherwise specified by the Work Order, Scope of Work, or the Site Specific Remediation Protocol:
  - a. When the damaged drywall is limited to an elevation of less than twelve inches above the floor level, then remove the drywall to an elevation of twelve and three eighths inches.
  - b. When the damaged drywall is limited to an elevation of more than twelve inches but less than twenty four inches above the floor level, then remove the drywall to an elevation of twenty four and three eighths inches.
  - c. When the damaged drywall is limited to an elevation of more than twenty four inches but less than forty eight inches above the floor level, then remove the drywall to an elevation of forty eight and three eighths inches.
  - d. When the damaged drywall is limited to an elevation of more than forty eight inches, then remove the entire sheet of drywall.
- 5. Remove batting insulation and other porous debris within wall cavities, as applicable.
- 6. Removed material shall not be dropped or thrown. Remove material intact or as components whenever possible and carefully lower to the floor. If this cannot be feasibly accomplished, a dust-tight chute shall be constructed to transport the material to containers on the floor, or the material may be containerized at elevated levels (e.g., on scaffolds) and carefully lowered to the ground by mechanical means.
- 7. Single bag all waste material prior to removal from the Work Area or immediately upon removal of the barrier. Disposal bags shall not be overfilled.
- 8. Handcarts or equivalent shall be used to transport waste containers or materials. Waste containers or materials shall be raised and securely transported, and shall not be dropped or slid.

9. Disposal containers shall be securely sealed to prevent accidental opening and leakage. Bags may be placed in drums for staging and transportation to the landfill.
  10. Large components removed intact may be wrapped in a layer of 6-mil polyethylene sheeting secured with tape for transport to the landfill.
  11. The Work Area shall be cleaned of all visible dust and debris prior to the visual inspection by the Owner. Re-cleaning may be required, at no additional cost to the Owner, until all suspect material is removed. Re-cleaning and inspection will continue until no visible suspect material remains.
- D. The Contractor shall monitor the demolition Work for indications of abnormal microbial ecology (i.e. suspect visible fungal growth, musty odors, etc.). If abnormal microbial ecology is suspected, the Contractor shall immediately notify the Owner.

### 3.5 DRYING

- A. Dry building materials, finishes, or furnishing (i.e. wall systems, floor covering, office supplies, etc.) as specified in the Work Order, Scope of Work, or Site Specific Remediation Protocol.
- B. Preparation of the Work Area
1. The Contractor shall post warning signs at all entrances or openings to the enclosed Work Areas. Warning signs may be in the form of continuous plastic tape. The warning signs shall have black characters on a yellow background and read as follows: "CAUTION".
  2. Pre-clean to remove settled dust and remove furnishings. Do not use methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.
  3. Remove from the Work Area all dry, uncontaminated objects that are movable to facilitate drying.
- C. Set up drying equipment including dehumidifiers and fans in accordance with the recommendations presented in the ANSI/IICRC S500 most current addition or the Site Specific Remediation Protocol.
- D. The Contractor shall establish a daily schedule to monitor condensate collection vessels and empty as necessary. The daily schedule will be documented and submitted to the Owner on a daily basis.
- E. The Contractor shall conduct psychrometric readings at the intake and exhaust of each dehumidifier and in surrounding areas adjacent to the Work Area. The readings shall be collected and recorded at least daily at the beginning and at the end of the shift, and submitted to the Owner by the start of the next shift. Measurements shall include, at a minimum the following:
1. Percent Relative Humidity
  2. Temperature
  3. Dew point or Specific Humidity
- F. The Contractor shall conduct moisture measurements of materials that are being dried. The readings will be collected and recorded at least daily at the beginning and at the end of the shift, and submitted to the Owner by the start of the next shift.
- G. The Contractor shall monitor the drying for indications of abnormal microbial ecology (i.e. suspect visible fungal growth, musty odors, etc.). If abnormal microbial ecology is suspected, the Contractor shall immediately notify the Owner.

### 3.6 SITE SECURITY

- A. Contractor shall be responsible for site security during water loss response operations.
- B. The Work Area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractor's employees Owner employees and representatives; federal, state and local inspectors and other authorized or designated individuals.

### 3.7 PERSONNEL PROTECTION REQUIREMENTS

- A. Protective Clothing: Provide protective equipment to all workers in the Work Area including eye protection, protective gloves, coveralls, footwear, and hard hats as deemed necessary by the Contractor, the Site Specific Remediation Protocol, or regulatory standards.
- B. Additional Protective Equipment: Disposable coveralls and footwear shall be provided by the Contractor to the Owner or other authorized visitors inspecting the jobsite.

### 3.8 WORK AREA CLEARANCE

- A. The water loss response Work is complete when the Work Area is visually clean, scheduled materials have been removed and disposed of, and scheduled materials have been dried to the predetermined standards.
- B. The Owner shall conduct a final visual inspection of the Work Area for completeness of Work and the presence of any visible dust or debris following all demolition using the criteria for completeness of cleanup as defined by ASTM Standard E1368-11 ("No dust, dirt, or debris should be visually detectable on the final inspection of the Work Area.").
- C. The Contractor will verify that all scheduled materials have been dried to the predetermined standards. The pre-determined dry standards shall be determined by the Owner in the absence of specification in a Site Specific Remediation Protocol.
- D. The dry standards will generally be the baseline moisture content of similar adjacent materials that have not been impacted by the water loss but this may vary due to site specific conditions.
  - 1. The dry standards for gypsum drywall will not exceed 0.5 as measured on scale 3 with a Delmhorst BD-2100 moisture meter, or equivalent.
  - 2. The dry standards for dimensional lumber will not exceed 16 as measured on scale 1 with a Delmhorst BD-2100 moisture meter, or equivalent.
- E. Following review and acceptance by the Owner of the Contractor's documented visual clearance and moisture content readings, the area will receive clearance.
- F. Upon receipt of clearance, the Contractor may dismantle the Work Area barriers and signage.

### 3.9 DISPOSAL PROCEDURES

- A. Remove waste containers from the areas during agreed upon hours.
- B. Remove waste materials from the site without creating dust or contamination of the site and dispose of in a lawful manner.

**END OF SECTION**