

# **Decontamination of Residence Following a Sewer Backup**

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## B. INTRODUCTION

On the morning of 30 September 1991, the owner of our firm, Tom Mistick, received a phone call from Mr. Franklin Bowen who had called requesting cleanup of his basement following a sewer backup. Tom transferred the call to me and I spoke with Mr. Bowen about his problem. Mr. Bowen had explained how he and his wife had been called back early from a trip due this disaster. When asked how bad the problem was, he told me that the sewage residue was approximately three feet high and had been sitting in his home for up to three weeks. The residue had been pumped out the night before by the municipality (who had recommended us to him) and he was requesting immediate cleanup and deodorization. It was with that statement that I suggested to Mr. Bowen that he move out of his home until restoration could be effected and that I would be over immediately with a cleanup crew. It is procedure in our firm to explain to the insured that typically the insurance company does not cover this type of loss and that if that was the case, he would be responsible for paying us direct. He agreed and we were on our way to his home.

Assignment was made by: Mr. Franklin Bowen, Owner

Address of property inspection: 1127 Arrowood Drive  
Pittsburgh, PA

Referred by: Mount Lebanon Public Works Department

Report Prepared by: Paul Campbell  
Project Manager  
Insurance Restoration Services

### C. BACKGROUND

Mr. Bowen recounted the events leading to his initial call to me to decontaminate his home as such: When he returned home from his trip and found the disaster, he told his wife to check-in to a motel and he called a plumber believing it was a problem with his house sewer. Ninety-four feet of electric eel failed to open the obstruction so Mr. Bowen called the Public Works Department. They arrived and could not find which main sewer was the one to investigate as three traversed the community. After finding the correct main by use of a boroscope, it was decided that tree roots had caved in the ceramic lining of the sewer causing the obstruction.

It was at that time that our firm was referred to him for the cleanup and decontamination but the Public Works Department would not assume the responsibility to pay the bill. The fire department was called to pump out the basement and proceeded to do so at 2:00 AM on 30 September 1991.

The official date of loss as reported: 29 September 1991

Type of Loss: Sewage backup

#### D. INVESTIGATION

This report was prepared as a result of the visual inspection of the property by Paul Campbell and the verbal and written accounts of Mr. Franklin Bowen, owner of the subject property.

The methods of restoration and decontamination indicated in this report come partly from the technical reference manuals on the subject and with consultation of leaders in the disaster restoration field. Those who consulted on the report are Cliff Zlotnik, CR of Unsmoke Systems, on materials of disinfection, Martin King, CR, on deodorization and severe sewage contamination, and David Cinciripini, Project Manager for Insurance Restoration Services, who collaborated on sub-surface disinfection methods.

#### E. INSPECTION

INSPECTION DATE: 30 September 1991      INSPECTION TIME: 10:00 AM

LOCATION OF INSPECTION: 1127 Arrowood Drive  
Pittsburgh, PA

OWNERS' NAME: Franklin F. & Joan F. Bowen

INSPECTION BY: Paul Campbell, Project Manager

WEATHER CONDITIONS: Overcast skies; 61°F; RH 44%

PROPERTY DESCRIPTION: 25 year old brick ranch with tile roof, three bedrooms, family room, kitchen, utility room, two

bathrooms, two car garage, basement with attached crawl space. The home is approximately 2400 SF. The general condition of the home was very well kept and meticulous. The home is situated in an affluent suburb of Pittsburgh. Approximate value of the home is \$250,000. The home is brick veneer construction with interior plaster walls. The baseboard, casings and trim are of a oak wood with solid interior doors. Built-in bookcases comprised 25% of the family room. Floors comprised of carpet and ceramic tile. The interior decor was of a modern nature.

Mr. Bowen met me in the driveway and took me though the garage and into a doorway to the main house. This entry brought me into the laundry room with the basement access directly ahead. It was not difficult to confirm the severity of the problem as the stench met me instantly at the doorway to the basement. The carpeted steps were ruined by traffic to the damaged basement. The basement was fully occupied with contents which immediately presented an access problem. Luckily the floor was painted concrete and not carpeted or tiled. Nonetheless, raw sewage residue covered them.

The walls were concrete block that were painted with a high water mark of approximately three feet in some areas (Photo 1). Sewage was still leaching at the base of the walls (Photo 2). The ceiling was exposed floor joists. Contents were already beyond restoration. The books in the bookcase were swollen and could

not be removed (Photo 3). Mr. Bowen was exceptionally concerned with his recording equipment and volumes of slides. This concern was not nearly as primary as the health and odor elimination problem that was on this inspector's mind.

The furnace blower compartment had been completely immersed as were the controls to the water heater (Photo 4). The living areas of the home experienced no visual damage other than the silver settings which were severely tarnished. Otherwise the extensive odor permeated every porous material in the site.

This inspection was made using the existing lighting of the home, the natural light from the outside and a flashlight for darker inaccessible basement areas and the crawl space.

#### F. SCOPE OF REPAIRS

The first priority was to knock down the extensive odor. A "Vaportek" deodorizing system was set up which installs into the return air duct of a forced air furnace, utilizing the blower on the furnace to distribute a more pleasant odor to all rooms. Prior to this installation the furnace and ductwork were cleaned and disinfected.

Each room of the living areas needed to be cleaned and deodorized. All fabrics were either cleaned on site or taken to

a dry cleaner for proper cleaning. All walls, ceilings and woodwork were cleaned with an appropriate disinfectant cleaner. All furniture was cleaned. The carpets were cleaned and deodorized. The silver settings were cleaned and polished on site to the acceptable luster of the owner.

The basement was emptied of its contents entirely. All salvageable pieces were processed and stored on site in the garage. Damaged contents were inventoried and disposed (Exhibit A). Electronic equipment was taken to a specialist for examination. All of the slides were taken to a specialist who removed them from their mount, cleaned the film and remounted the slides in new mounts.

The water heater was replaced due to damaged controls. All hard surface areas were scrubbed and flushed with clean water to remove raw residue. Weep holes were drilled into each cell of the block walls about 6 inches apart around the perimeter to allow standing water to be released (Photo 7). Each hole was injected with a disinfectant hospital-grade cleaner and allowed to dwell for twenty minutes (Photo 8). The disinfectant cleaner was applied to the walls and floors and rinsed after twenty minutes, then cleaned again the same way.

After all surfaces had been cleaned and disinfected twice, drying equipment was set up and monitored daily for four days until dry.

During the drying period, the owner complained of a sweet pungent odor now present in the home. It was determined by this estimator that the Vaportek system employed for deodorization was making the odor worse. The system was disconnected and a call to Martin King, CR, was made. After explaining the type of work and what had already been accomplished, he determined that we were over deodorizing and that we now had to eliminate that new odor as well. His suggestion was to introduce fresh air into the area in combination with a negative air machine equipped with a charcoal filter (being successfully used by others), alternating these two processes until the air was purified. This was implemented immediately and proved highly successful.

After drying, the weep holes were filled and walls and floors painted. The exposed wood floor joists were sealed for odor. All contents were restored to the basement area.

The methods used were a combination of experience and searching other sources of expertise in the form of outside consultants and chemical manufacturers. This professional's expectations were to provide the best methods known in the restoration industry at the time and is in no way the only method.



#### G. SPECIFICATIONS AND PRICES

This work was conducted in two phases and thus there are two scopes of work attached. The emergency phase is comprised of the initial removal of damaged contents, disinfecting and cleaning of the basement areas, taking the salvaged contents to specialists for restoration, and drying of the basement areas (Exhibit A).

The restoration phase is comprised of the cleaning and deodorizing of all the living areas structure and contents (Exhibit B).

#### H. PRICE BASIS

The prices associated with this scope of work reflect the fair market prices for labor, materials and equipment as dictated in this area. Other factors which were considered for working in a contaminated environment include health and safety issues with regard to personal protection and immunizations.

All work was performed by trained technicians in the restoration arts with properly trained supervisors. The work was accomplished during normal working hours (8:00 AM to 4:30 PM).