



GENERAL ORDER

GENERAL ORDER 300.12

BioQuell Decontamination System

EMERGENCY SERVICES BUREAU

Issue Date: November 09, 2017

Revision Date: N/A

1 APPLICABILITY

2 All operational personnel.

3 POLICY

4 The Howard County Department of Fire and Rescue Services (Department) shall maintain a
5 deployable regional asset for specialty decontamination of equipment, apparatus and spaces
6 that have been or are suspected to have been exposed to a highly infectious or difficult to
7 eradicate bacteria or virus.

8
9 As a part of the Department's Infection Control plan, the device is to be utilized as part of the
10 regular preventative maintenance procedures for all ambulances in service with the
11 Department. Transport units will be routinely decontaminated as part of their regular
12 maintenance, at least bi-annually.

13
14 Management of the decontamination program and device are a joint effort between the
15 Emergency Services Bureau (ESB), the Bureau of Logistics (Logs), and the Bureau of
16 Occupational Safety and Health (BOSH).

- 17 • ESB oversees the administration of the program and coordinates any deployment of the
18 asset.
- 19 • Logs, specifically the Ground Support Unit (GSU), will store and maintain the device.
 - 20 ○ The GSU will be the primary operators of the device for Standard Work and
21 deployments.
- 22
23 • BOSH tracks all potential exposures, maintains records of any internal deployments of
24 the system, conducts any investigations, and completes any reporting requirements.
 - 25 ○ Peripherally, BOSH will assure hazardous materials safety standards are met at
26 all times.

27 DEFINITIONS

- 28 ➤ **BioQuell BQ50 EMS Suite:** Three-piece decontamination device that utilizes industrial
29 strength hydrogen peroxide in an atomized vapor to sterilize a carefully sealed space.

- 31 ➤ **Hydrogen Peroxide:** Peroxide solution for use in sterilization of spaces and surfaces.
32 BQ50 uses 35% Hydrogen Peroxide (household peroxide is 3%), it is considered a
33 hazardous material and must only be handled by a certified operator.
34
- 35 ➤ **Standard Work:** Defines the day-to-day use of the device.
36
- 37 ➤ **Asset Deployment:** Defines the terms and conditions under which the device can be
38 deployed in and out of County for the purposes of decontaminating other assets or
39 spaces within our UASI Region.
40
- 41 ➤ **Controlling Bureaus:** The BioQuell program is controlled by three stakeholder bureaus.
42 Each bureau manages specific functions of the program.

43 PROCEDURES

44 **STANDARD WORK:**

45 Identifies how and when the unit will be utilized for non-emergency/routine decontamination.

- 46 • The GSU will establish a schedule and workflow to assure all transport units are
47 decontaminated at least bi-annually.
- 48 • Transport units will be decontaminated while out of service for maintenance, repair, or
49 training lasting a minimum of two hours.
- 50 • The ESB and GSU will coordinate with operators to assure distribution of work as well as
51 the maintenance of operator proficiencies in the use of the system.
 - 52 ○ Overtime opportunities created by the program shall be distributed between
53 day-work and shift personnel as evenly as practical.
 - 54 ○ Any decontamination schedule developed should be posted to all operators for
55 awareness and participation opportunities.
- 56
- 57 • The GSU shall oversee all use of the BioQuell system:
 - 58 ○ Standard Work can be conducted by a single operator. For safety, at least one
59 other person should be present during decontamination operations to maintain
60 accountability of personnel.
 - 61 ○ The operation checklist and report supplied by BioQuell shall be used for all
62 decontaminations to assure uniform procedure and to reduce risk of injury to
63 personnel.
 - 64 ○ Completed decontamination reports will be filed by GSU and shared with ESB.
- 65

66 **ASSET DEPLOYMENT:**

67 Any instance that requires the BioQuell system to be utilized outside of the Standard Work is
68 referred to as Asset Deployment.

- 69 • Deployments are categorized as Internal or Regional.
 - 70 ○ Internal Deployment – Urgent deployment of the asset for decontamination of
71 Howard County Government owned/occupied property.

- Regional Deployment – These are urgent deployments outside of the County, typically to partner jurisdictions in our Urban Area Security Initiative (UASI) region.

Deployment Requests

- Any request to deploy the system shall be directed through the Infection Control Officer. The Infection Control Officer will initiate the call-down procedure delineated in the Infection Control Plan for exposures.
- The Infection Control Officer will contact the GSU designee to coordinate movement of the system to the requested location.
- For deployments, operators should be deployed in teams of two, as a minimum.

Deployment Documentation

- Operators will utilize the standard work documentation for any system deployment.
- Completed documentation shall be disseminated to each of the controlling bureaus for their records and should include the *BioQuell Decontamination Worksheet, Attachment A*, and a memo detailing the need for the deployment. The following bureaus will receive documentation:
 - ESB: maintains record of the deployment, exposure and any associated costs.
 - BOSH: maintains record of the exposure and conducts any investigation and reporting.
 - Logs: maintains record of the device use and any requisite maintenance.
- The documentation should NOT include information that would identify any personnel that may have been exposed to the pathogen. That information is tracked in the exposure and First Report of Injury documentation only.

OPERATORS:

The Department will maintain a team of certified BioQuell operators. Efforts will be made to assure that operators are assigned to each of the controlling bureaus, particularly Logs.

- The Infection Control Officer shall maintain a working knowledge of the BioQuell system’s capabilities, mechanics and its place in the Infection Control Plan.
- Operators shall maintain their certifications by participating in Standard Work and/or deployments on an annual basis.
- Operators will conform to the BioQuell operational checklist and safety procedures while utilizing the system.

STORAGE & MAINTENANCE:

- The BioQuell system is maintained and stored by the GSU.
- The system shall be stored and utilized in accordance with the manufacturer’s recommendation.
- Safety data sheets associated with the system shall be maintained in proximity with the system and shall accompany the system in the event of a deployment.

114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139

REFERENCES

- UASI H&M MOU Regional Asset Utilization
- DHMH/JCAHO Infection Control Recommendations
- BioQuell User Manual
- CDC Infection/Exposure Control Recommendations

SUMMARY OF DOCUMENT CHANGES

New General Order

FORMS/ATTACHMENTS

- Attachment A: BioQuell Decontamination Worksheet

APPROVED



John S. Butler, Fire Chief
Office of the Fire Chief

Author:



Joseph Dixon, Assistant Chief
Emergency Services Bureau



**Howard County Department
of Fire & Rescue**

Bioquell Decontamination Worksheet

Unit / Space Decontaminated	Date	Time
Reason for Decon (circle one →)	Standard Work	Deployment
Technician 1	Technician 2	Technician 3
Starting Temp / Humidity	Start Time	Finish Time

Deployment Demographics		
Unit Deployed:	Internally	Regionally
Regional Partner: <small>(If deployed outside HCDFRS)</small>		
Suspect Pathogen:		
Reason for Deployment:		
MOU Signed:	Y/N	Signer Function:

Pre-Cycle Checklist	Check (as completed)	Initial
• Normal cleaning performed to remove any gross contaminants and soil before start		
• Expose all surfaces (open all cabinets, drawers, compartments, prop mattresses, etc).		
• Remove absorbent and incompatible materials (linens, masks, open meds, glucose testing reagents, etc)		
• Seal outside compartment doors, AC ducts and returns and external vents and close all windows. Make the space air tight		
• Position the BQ-EMS unit and aeration units in the space to provide maximum coverage (patient compartment for ambos, crew cab for vehicles)		
• Connect all Bioquell equipment to together and to a power source(s)		
• Power on the equipment: <ul style="list-style-type: none"> ○ HMI 1st (External Control Unit) ○ BQ-EMS unit 2nd ○ Aeration Units 3rd 		
• Place Chemical Indicators in several areas around		

the space		
• Final walkthrough and inspection		
• Seal door(s) with impervious tape and start the cycle		
• Place warning signs and barrier tape on any access points		
• Begin the HPV cycle		

During the Cycle	Time Performed	Leaks? Resolved?
• Unit Monitored		
• Unit Monitored		
• Unit Monitored		
• Unit Monitored		
• Unit Monitored		

Cycle Completion (Cycle halts when peroxide level is less than 1.0 ppm)	Time Performed	PPM Reading?
• Verify H2O2 < 1.0ppm at the door		

Post Cycle	Check (as completed)	Initial
• Stop cycle on screen		
• Collect Chemical Indicators		
• Power down the Bioquell units		
• Unseal all vents		
• Disconnect all Bioquell cables		
• Return Apparatus/Space to normal condition		
• BQ50 readied for next service and stored		

Verification of Decontamination	Signature
Technician In Charge	

General Instructions:

- This form can be printed or completed on electronically. It must be present while conduction decon operations for real-time documentation of times and checks.
- Hard copy forms shall be signed and initialed, where indicated. Forms completed electronically shall be saved to the appropriate file with the technician's EID as part of the file name.
- All files will be saved electronically with the following naming scheme:
 - o BQ Decon-UnitorSpace-DDMMYYYY-TechEID
 - o Ex: BQ Decon-Sta5gym-10282016-3421

For Deployments:

- The team should keep a time/activity log (ICS214) from notification of deployment until all personnel have returned to home or their normal work place. Include a list of any supplies used for cost tracking.
- Copies of all decontamination logs should be provided to the Infection Control Officer (or designee) of the regional partner receiving the service.
- Copies of the ICS214, Decontamination Logs and any payroll slips should be processed through HCDFRS Logistics for timekeeping and cost management.
- The Infection Control Officer (HCDFRS) and BOSH shall be notified before any deployment and the scope of work completed to assure proper State and Federal reporting.
- Notify EMS Operations/ESB for regional deployments for UASI Health & Medical MOU action.