

## Establishment Inspection Report

Emergent BioSolutions Canada Inc.  
Winnipeg, Manitoba, R3T 5Y3

FEI: 3003153579

EI Start: 9/5/2019

EI End: 9/13/2019

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### SUMMARY

This comprehensive surveillance inspection of Emergent BioSolutions Canada Inc. (hence Emergent or the firm) was conducted in accordance with Compliance Program 7356.002A, Sterile Drug Process Inspections for the Medical Products and Tobacco Foreign Operations Group under eNspect Operation ID # 123978, and the firm's site dossier dated July 24, 2019.

In May of 2017, an abbreviated CBER inspection of the firm was conducted under CPGM 7345.848, Inspection of Biological Products (Level II, Plasma Derivatives) and covered the Quality, Production and Laboratory Control systems related to the hyper immune products and (b) (4) manufactured by the firm. At the close of the inspection, a four item FDA 483 Inspectional Observations form was issued to the firm for:

1. Aseptic processing areas are deficient regarding air handling systems that maintain air quality;
2. Aseptic controls to prevent the inclusion of foreign materials are deficient;
3. Product Safety Committee Meetings did not include recommendations for trend analysis; and
4. Specifications established during process validations are inadequate for (b) (4) steps.

During the current inspection, Observations 1 and 3 were confirmed to be corrected (Observations 2 and 4 were not directly assessed during the current inspection) (*see the Voluntary Corrections section of this report for additional details*).

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In January of 2015, a full CDER surveillance inspection was conducted under CPGM 7356.002A, Sterile Drug Process Inspections and covered the Quality, Production, Facility and Equipment and Laboratory Control systems. The inspection focused on the sterile processing and release of (b) (4) Injection, an aseptically filled small volume parenteral. At the close of the inspection a two item FDA Inspectional Observations form was issued for:

1. Procedures designed to prevent microbiological contamination of drug products purporting to be sterile do not include validation of the sterilization process; and
2. Aseptic processing areas are deficient regarding a system for cleaning and disinfecting the room and equipment to produce aseptic conditions.

During the current inspection, the two observations were confirmed to be corrected (*see the Voluntary Corrections section of this report for additional details*).

The firm continues to operate as: a manufacturer of hyperimmune products and (b) (4) (b) (4); as a contract manufacturer of (b) (4) Injection which is (b) (4) used in the (b) (4) (b) (4); and a manufacturer of the medical device (b) (4) (b) (4). The current inspection focused on the manufacture of (b) (4) Injection (product code SVS), and covered the Quality, Facilities and Equipment, Production and Material Control systems. At the close of the inspection, a single item FDA 483 Inspectional Observations form was issued for: Procedures designed to prevent microbiological contamination of drug products purporting to be sterile are not followed. Firm management promised a written response within 15 business days. In addition, one item was discussed with firm management: The firm's sterile gowning procedure does not clearly define each critical step in the gowning process.

No refusals occurred during the inspection and no samples were collected. The firm is registered with the FDA for 2019.

**ADMINISTRATIVE DATA**

Inspected firm:	Emergent BioSolutions Canada Inc.
Location:	155 Innovation Dr Winnipeg, Manitoba, R3T 5Y3
Phone:	204-275-4200
FAX:	204-275-4298
Mailing address:	155 Innovation Dr Winnipeg, Manitoba, R3T 5Y3
Email address:	
Dates of inspection:	9/5/2019-9/6/2019, 9/9/2019-9/13/2019
Days in the facility:	7
Participants:	<b>Jonathan G Matrisciano, Investigator</b>

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On 09/05/2019, I, Investigator Jonathan G. Matricciano identified myself and displayed my credentials to Jeffrey R. Broadfoot, Senior Director Quality, who stated he was the most responsible person at the firm. I held an opening meeting with firm management, and the firm provided a list of opening meeting participants (**Exhibit 1**).

On 09/13/2019, I held a close out meeting with firm management, and the firm provided a list of close out meeting participants (*see **Exhibit 1***). During the meeting, I issued a single item FDA 483 Inspectional Observations form to Jeffrey R. Broadfoot, Senior Director Quality for Emergent BioSolutions Canada Inc. (**Attachment 1**). In addition, I discussed one item with firm management (*see **General Discussion with Management section of this report for additional details***).

During the inspection, all deficiencies were reviewed in depth with firm management (*see **Objectionable Conditions and Management's Response Section of this report***).

An FMD-145 copy of this report should be sent to:

Jeffrey R. Broadfoot, Senior Director Quality

155 Innovation Drive

Winnipeg, MB, Canada R3T 5Y3

Tel: 240-275-4200

Fax: 240-269-7003

[jbroadfo@ebsi.com](mailto:jbroadfo@ebsi.com)

All other official correspondence should be sent to:

Robert Kramer, CEO

Emergent BioSolutions Inc.

400 Professional Drive, Suite 400

Gaithersburg, MD 20879

Tel: 240-631-3200

Fax: 240-631-3203

[kramerb@ebsi.com](mailto:kramerb@ebsi.com)

**HISTORY**

The firm's history has not substantially changed as reported during the 2017 CBER inspection. The firm provided a copy of their opening presentation, which details the history and current status of the company (**Exhibit 2**). The firm also provided general information on their operating hours and scheduled facility closure information (**Exhibit 3**). In addition, the firm provided corporate address and contact information for Emergent BioSolutions Inc., Gaithersburg, MD (**Exhibit 4**).

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### U.S. Agent:

Manish Vyas, Vice President, Regulatory Affairs  
Emergent BioSolutions Inc.  
300 Professional Drive  
Gaithersburg, MD 20879  
Tel: 240-631-6419  
[vyasm@ebsi.com](mailto:vyasm@ebsi.com)

## JURISDICTION / INTERSTATE COMMERCE

The firm continues to operate as a manufacturer of hyperimmune products and (b) (4), a contract manufacturer of (b) (4), and a manufacturer of the medical device (b) (4). The firm provided a list of products which includes product name and (b) (4) number (**Exhibit 5**), as well as a list of licensed products and development products manufactured by the firm, which includes product name, license holder product type, and class information (**Exhibit 6**).

(b) (4) is (b) (4) used in the (b) (4) (see **Exhibit 2, pages 20 to 24**), and (b) (4) is currently held by (b) (4). The firm manufactures and aseptically fills vials of (b) (4) at the Winnipeg facility, and then ships unlabeled vials to (b) (4) for finished product labeling and (b) (4). The firm provided address information for (b) (4) (**Exhibit 7**), and copies of the labeling used to ship bulk cartons of (b) (4) to (b) (4) (**Exhibit 8**).

## INDIVIDUAL RESPONSIBILITY AND PERSONS INTERVIEWED

During the inspection, the firm provided copies of their organizational charts (see **Exhibit 2, pages 15 to 18**). In addition, the firm provided information for key personnel, including each individual's name, job title, qualifications, years of experience and responsibilities (**Exhibit 9**).

## MANUFACTURING/DESIGN OPERATIONS

### *Conduct of the Inspection*

This comprehensive CDER surveillance inspection of Emergent BioSolutions Canada Inc. was conducted in accordance with Compliance Program 7356.002A, Sterile Drug Process Inspections, and the firm's site dossier dated July 24, 2019 (**Attachment 2**). The inspection also covered the corrective actions the firm implemented related to deficiencies noted during the 2017 CBER inspection and 2015 CDER inspection.

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The firm is located in an approximately (b) (4) square foot facility, which is comprised of (b) (4) buildings. (b) (4)

. During the inspection, the firm provided a plan of the general facility layout (**Exhibit 10**), information and floor plans for all (b) (4) buildings (see **Exhibit 2, pages 10, 11, 12 and 14**), as well as a room classification plan showing each room's grade, pressure differential and air flow patterns (**Exhibit 11**).

(b) (4) Injection (b) (4) is manufactured using dedicated equipment in the non-dedicated Class C (b) (4) manufacturing area of Building (b) (4) (Room (b) (4)) (see **Exhibit 2, page 12**). It is then (u) (4) filtered and transferred via hose into the Class B filling room (b) (4) where it is aseptically filled into vials and stoppered on the non-dedicated filling line located in the Grade A area in room (b) (4) (see **Exhibit 11**). Filled and stoppered vials of (b) (4) are then transferred directly into the Grade C capping room (b) (4) where each vial is capped and sealed using non-dedicated capping equipment which is supplied with Grade A air (see **Exhibit 11**). During the inspection, the firm provided a copy of the (b) (4) process flow diagram (**Exhibit 12**), and a copy of the (b) (4) equipment list (**Exhibit 13**).

Equipment and drug product containers and closures used to manufacture (b) (4) are staged in the Grade C component preparation room (b) (4) (see **Exhibit 11**). Vials used to manufacture (b) (4) are initially washed in the (b) (4) vial washer in room (b) (4), then (b) (4) in the (u) (4) (b) (4) before entry into the filling room (b) (4). Equipment and stoppers used to manufacture (b) (4) are also staged in room (b) (4), and are passed through the (b) (4) (b) (4) prior to entry into the filling room (u) (4). Post filling, all equipment is returned to the component preparation room for cleaning and storage, and all unused vials and stoppers are discarded.

## QUALITY SYSTEM

### *Quality Control Unit*

The firm's "Global Quality Manual" details the corporate level quality policy and management's and the quality control unit's roles and responsibilities throughout Emergent BioSolutions. Responsibilities outlined include areas such training, document control, investigations, corrective and preventative actions, change control, supplier and material control, laboratory controls, manufacturing controls, equipment and facility controls, environmental monitoring, and risk assessments. The signatures of responsible personnel were observed on all documentation reviewed during the inspection.

### *Quality Agreements*

The firm maintains quality and manufacturing agreements with customers for which they are acting



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as a Contract Manufacturing Organization (CMO). The quality and manufacturing agreements define each party's roles and responsibilities in such areas as material and equipment procurement; raw material, in-process; finished product and stability testing; manufacturing; filling; batch record review; packaging and labeling; and finished product release. I reviewed the firm's quality and manufacturing agreements with the holder of the (b) (4) for (b) (4), (b) (4). The agreements defined each party's roles and responsibilities, and were both signed and approved by both parties. During the inspection, firm management stated their agreements were being updated with the new holder of (b) (4) (b) (4). Firm management stated that their new agreements with (b) (4) would be substantially the same as the agreement with (b) (4). In addition, the firm provided an (b) (4) process responsibility flow chart outlining the firm's and (b) (4) responsibilities (**Exhibit 14**).

### *Elemental Impurity Testing*

As a contract manufacturer, the testing the firm performs for (b) (4) is controlled under the terms of the quality and manufacturing agreements with the holder of (b) (4). Under the agreements with (b) (4) (the previous holder of (b) (4)), the firm was not contracted to perform elemental impurity testing for (b) (4), and the firm is not contracted to perform elemental impurity testing by the current holder of (b) (4). For the firm's (b) (4) products, the firm initiated risk assessments of elemental impurities for their hyperimmune drug products (**Exhibit 15**) and Botulism Antitoxin drug product (**Exhibit 16**). The firm halted work when Q3D was revised to exclude "blood derivatives, including plasma and plasma derivatives" (*see Exhibits 15 and 16, page 8, last paragraph*).

### *Product Safety Committee / Adverse Event Reporting*

The firm's "Role and Responsibilities of The Product Safety Committee" procedure defines the committee's responsibilities for identifying, assessing, and communicating product safety risks, and the "Quality Assurance Investigations for Adverse Event Reports" procedure defines the requirements for the quality control unit to review manufacturing and testing records to determine if there is a relationship between Adverse Events and a specific lot or batch of a product. The firm also documents Product Safety Committee (PSC) Meeting minutes which details the committee's review of potential adverse events for all of the firm's products for which the firm has reporting responsibility; details trending information and details the quality control unit's review of manufacturing and testing records if required. During the inspection, I reviewed the procedures, PSC meeting minute information from 2017 to 2019, risk assessment reports and trending data without comment.

### *Investigations*

Complaint handling is controlled under the "Management of Product Complaints and Inquiries," and the "Customer Inquiries" procedures, which define the process for receipt, reporting, investigating, documenting, and resolving consumer complaints. The firm supplied a copy of their complaint log from 2017 to present, and firm management stated they have not received a consumer complaint for (b) (4) during that period. During the inspection, I reviewed the complaint log, and 2 of the three (b) (4) complaint files from 2017. The procedure, log and files were reviewed without comment.

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Deviations are controlled under the “Deviation Report” procedure, which defines the process for investigating deviations associated with complaints, unexpected and undesired events, and non-conformances related to controlled materials. Deviations are classified as Level 1 (Minor/Non Critical), Level 2 (Major) or Level 3 (Critical) depending upon the impact to product quality. I reviewed the deviation logs from 2017 to 2019, and 8 deviation files from that period. The procedure, logs and files were reviewed without comment.

The firm’s “Corrective Action-Preventative Action (CAPA) Program” procedure defines the responsibilities and process for planning, implementing, tracking and evaluating CAPAs that arise from any deficiency determined to require a corrective or preventative action. I reviewed the (b) (4) CAPA log from 2017 to present, and 2 CAPA files from that period. The procedure, log and files were reviewed without comment.

### *Change Control*

The “Change Management” procedure defines the firm’s process for creating, approving, evaluating and implementing changes that have a potential impact on facilities, materials, equipment and processes. During the inspection, I reviewed the change control logs from 2017 to 2019, and reviewed change control documents and reports related to changes to environmental monitoring procedures, changes to the HEPA filtration system supplying the Grade A and B areas in the filling room (b) (4), and facility changes made to manufacturing suite (b) (4) used to manufacture hyperimmune products. The procedure, logs and reports were reviewed without comment.

## PRODUCTION SYSTEM

### *Personnel Gowning*

Personnel gowning is controlled under the “Gowning for Building (b) (4) Filling Procedure,” SOP018282 V. 7.0, Effective: 5/1/2019 (**Exhibit 17**), which defines the process filling operators use to appropriately gown prior to entering the aseptic filling room (b) (4). ***See Observation 1 for deficiencies associated with improper gowning technique, and Discussion Item 1 in the General Discussion with Management section for the failure of the procedure to fully define all steps in the gowning process.***

### *Process Validation*

The firm validated the aseptic filling operation for (b) (4) under the “Media Fill Validation Program” procedure, and developed media fill validation protocols and reports for the filling process used for (b) (4). The firm also developed “Air Visualization and Testing” protocols and reports to document the various smoke studies performed in the (b) (4) filling suite and (b) (4) capping room. As part of the Air Visualization and Testing qualifications, the firm conducted various smoke studies under static and dynamic conditions in the (b) (4) (Grade B) filling suite, the Grade A filling and stoppering line in (b) (4) and in the Grade C capping room and for the Grade A air fed capping equipment. During the inspection I reviewed:

- The Media Fill Validation Program procedure;
- The Process Validation protocols and reports for 6 mL vial media fill aseptic filling process;
- The Air Visualization and Testing protocols and reports for filling suite (b) (4) and capping room (b) (4);

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- And the static and dynamic smoke study videos for filling suite (b) (4) and capping room (b) (4). No deviations were noted during my review of the procedure, protocols, reports and smoke study videos.

*100% Visual Inspection of Sterile Drug Product Vials*

The firm conducts 100% visual inspection of all vials of (b) (4) using multiple inspection booths with (b) (4) background. The firm has developed procedures for performing and documenting visual inspections; training and testing inspectors; creating visual inspection test kits; documenting vial defects, potential contamination and failure rates; and for conducting and documenting additional testing of vials if predetermined failure rates are exceeded. During the inspection, I observed the visual inspection operation for (b) (4), Lot # (b) (4); reviewed the firm's visual inspection procedures and inspection documentation; and reviewed the firm's training procedures and training records for one inspector. No deviations were noted with the procedures, documentation, records, and during the visual inspection operation.

*Master and Batch Production Records*

The firm has developed multiple module master batch production records with associated procedures for every step in the manufacturing, filling, capping, inspection, packaging and testing operations for (b) (4). The quality unit controls the release of hard copy batch production records to production, and ensures that only the most recent revision of a batch production record is released. Batch production records include all information associated with the production of each batch, including material and equipment information, product test results, results of environmental and personnel monitoring, trending data as required, visual inspection, packaging and labeling information, deviation and investigation information, and requires each significant step in a process to be checked by a second individual. During the inspection, I reviewed the (b) (4) master batch records, the executed batch records and quality review information for (b) (4) Lot #s (b) (4) and (b) (4), and the procedures associated with manufacturing, filling, capping, visual inspection, packaging and labeling. No deviations were noted during my review of the procedures, master and batch production records.

**FACILITIES AND EQUIPMENT SYSTEM***Validation*

The "Facilities, Utilities and Equipment Validation Master Plan" defines the firm's approach to prospectively validating and maintaining the validated state of all GMP associated equipment, utilities, and facilities. The "Validation Maintenance" procedure defines the firm's approach to maintaining the validated state of all direct impact systems and processes, including requirements for periodic review and revalidation requirements. The firm also developed Validation Maintenance Schedules to track (b) (4) revalidation requirements, and generates (b) (4) Validation Maintenance Schedule Summary reports to track the completion of revalidation activities. The firm also conducts equipment specific installation, operational and performance qualifications, and develops equipment specific procedures for each piece of equipment.

During the inspection, I reviewed



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- The Validation master plan, Validation Maintenance procedure, 2019 maintenance schedule and 2018 maintenance report; and
- The Validation reports, Qualification reports and operating procedures for the (b) (4) (b) (4), (b) (4), and (b) (4) vial washer.

No deviations were noted during my review of the procedures, master plan, validation schedules, and validation and qualification reports.

### *Environmental and Personnel Monitoring*

The firm performs viable and nonviable environmental monitoring of Buildings (b) (4) under the “Environmental Monitoring (General Facility – 155 Innovation Drive)” procedure, and performs testing on a (b) (4) schedule. Viable and nonviable environmental monitoring of filling suite (b) (4) is conducted during filling equipment setup, during aseptic filling operations, and on a routine, (b) (4) basis and is controlled under the “Environmental Monitoring of Filling Operations” procedure. Personnel monitoring (glove fingertip and gowning materials) is also conducted on a routine basis as well as during filling equipment setup and aseptic filling operations in (b) (4), and personnel monitoring is controlled under the procedure “Filling Operator Gowning Qualification, Routine Monitoring, Re-Qualification and Trend Review.” Sample test results for environmental and personnel monitoring conducted during filling equipment setup and aseptic filling operations are documented in the batch production records for each lot manufactured. During the inspection, I reviewed:

- The environmental and personnel monitoring procedures;
- The August 2109 environmental monitoring test reports for the equipment preparation room, filling suite, filling equipment, and capping room;
- The environmental monitoring risk assessment reports for the equipment preparation room, filling suite, filling equipment and capping room; and
- The environmental and personnel monitoring test results associated with the manufacture of (b) (4) Lot #s (b) (4) and (b) (4).

No deviations were noted during my review of the procedures, reports, risk assessments and test results.

### *Facility and Equipment Cleaning*

The firm conducted equipment and facility cleaning validations, as well as validated the antimicrobial effectiveness of (b) (4) and (b) (4) for disinfecting the cleanrooms in the facility. As a result of the validation studies, the firm developed multiple procedures for performing and documenting facility and equipment cleaning operations including “Cleaning Program for the Classified Areas,” “Manual Cleaning and Sanitizing Equipment,” and “Manual Cleaning and Sanitizing of Equipment in Component Preparation.” During the inspection, I reviewed the cleaning validation reports for (b) (4) equipment, the facility cleaning validations for the use of (b) (4) and (b) (4), equipment and facility cleaning records and the procedures without comment.

### *(b) (4) Filter Integrity Testing*

Under the procedure “Filter Integrity Testing,” the firm conducts post use filter integrity testing for the (b) (4) µ filters used for (b) (4) filtration of (b) (4) prior to performing filling operations. Filter integrity testing is performed in-house using (b) (4)

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integrity tester, and results of the tests are documented in the batch records of each lot manufactured. During the inspection, I observed firm personnel performing the integrity testing of the (b) (4) (b) (4) µ filter used to (b) (4) filter (b) (4) Injection, (b) (4) mg/mL (b) (4) Lot # (b) (4)). In addition, I reviewed the integrity testing procedure and the filter integrity testing results for the filters used for (b) (4) filter (b) (4) Lot #s (b) (4) and (b) (4). No deviations were noted during my observations of the filter integrity testing, or during my review of the procedure and filter integrity test results.

**MATERIALS SYSTEM***Supplier Control*

The “Global GxP Supplier Quality Management Program” procedure defines the corporate level approach used to qualify, monitor and audit suppliers, including developing a corporate level approved supplier list. During the inspection I reviewed the procedure, the 2019 approved supplier list, the audit report results for the (b) (4) suppliers of vials, (b) (4) supplier of stoppers and the (b) (4) supplier of (b) (4) (b) (4) and (b) (4) used to manufacture (b) (4). No deviations were noted during my review of the procedures, audit results, and approved supplier list.

*Control of Drug Components, Containers and Closures*

The firm has developed procedures used for the receipt, quarantining, inspection, sampling, testing, and release of all drug components and the vials, stoppers, seals, labeling and inserts the firm uses to manufacture their drug products. The firm has also developed component, container and closure specific inspection requirements, sampling plans, test methods, test procedures and material release worksheets to document test results and release of components, containers and closures by the quality control unit. During the inspection, I reviewed the procedures, specifications, test results and release documents for the following components, containers and closures used to manufacture (b) (4): (b) (4) mL Glass Vials, and (b) (4) mm stoppers. No deviations were noted during my review of the procedures, specifications, test results and release documentation.

**MANUFACTURING CODES**

The firm uses an (b) (4)

**OBJECTIONABLE CONDITIONS AND MANAGEMENT'S RESPONSE****Observations listed on form FDA 483****OBSERVATION 1**

Procedures designed to prevent microbiological contamination of drug products purporting to be sterile are not followed.

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Specifically, on 09/06/2019, during the filling equipment setup operations for (b) (4) Injection, (b) (4) mg/mL (b) (4) Lot # (b) (4), a Lead Manufacturing Assistant was observed grasping the outside of his sterile boot covers to unfold the vinyl boot soles during the gowning process. The firm's procedures specifically require employees to only place their sterile, gloved hands inside the sterile boot covers, and to only grasp the vinyl boot sole from inside the sterile boot cover in order to unfold the boot cover sole.

Reference: 21 CFR 211.113(b)

**Supporting Evidence and Relevance and Discussion with Management:**

<b>Exhibit Number</b>	<b>Description</b>
17	SOP Gowning for Building (b) (4) Filling Procedure
18	Deviation Report, QN: 3100006930 rep v1 dated 09/12/2019

The firm's "Gowning for Building (b) (4) Filling Procedure," SOP018282 V. 7.0, Effective: 5/1/2019, defines the sterile gowning process operators are required to follow prior to entering the firm's Building (b) (4) filling Room (*see Exhibit 17*). The procedure defines the process operators are required to follow when they don sterile boot covers, and states "Gently work hands within the boot to relax the material and unfold the boot" and "If vinyl boot sole is stuck to itself, grasp from the inside of the boot and unfold. (Key Tip!)" (*see Exhibit 17, page 8, Appendix III, Step 7*).

On 09/06/2019, I observed the sterile gowning process being performed by a Lead Manufacturing Assistant (b) (6) in gowning room B154 prior to the filling equipment setup operations for (b) (4) Injection, (b) (4) mg/mL (b) (4) Lot # (b) (4). During the process, I observed Lead Manufacturing Assistant (b) (6) grasp the outside of his sterile boot covers to unfold the vinyl boot soles. I asked Lead Manufacturing Assistant (b) (6), who was also observing the gowning process, if it was appropriate for Lead Manufacturing Assistant (b) (6) to grasp the outside of the sterile boot covers. Lead Manufacturing Assistant (b) (6) stated it was not the appropriate technique and Lead Manufacturing Assistant (b) (6) should have placed his gloved hands inside the boot cover to unfold the vinyl sole.

During the inspection, I discussed with firm management that grasping the sterile boot on the outside is not appropriate gowning technique as is spelled out in the firm's procedures. The firm opened an "Incorrect Gowning Step by Filling Operator" Deviation Report, QN: 3100006930 rep v1 (*see Exhibit 18*) to address the issue. The firm retrained three of the (b) (4) operators on the Gowning for Building (b) (4) Filling Procedure, and committed to posting the gowning instructions on laminated placards within the gowning area to remind operators of each step in the gowning process. Firm management stated they understood the observation, and would address it in their written response to the FDA.

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### REFUSALS

No refusals were encountered.

### GENERAL DISCUSSION WITH MANAGEMENT

On 09/13/2019, I held a close out meeting with firm management, and the firm provided a list of close out meeting participants (*see Exhibit 1*). During the meeting, I issued a single item FDA 483 Inspectional Observations form to Jeffrey R. Broadfoot, Senior Director Quality for Emergent BioSolutions Canada Inc. (*see Attachment 1*).

I explained that the FDA 483 observation would receive further review by the agency, and the firm had the option to respond in writing to the FDA within fifteen business days. After reading the observation aloud, Mr. Broadfoot stated the firm would respond in writing to the observation within 15 business days.

In addition, I discussed one item with firm management:

During the inspection, I observed the sterile gowning process being performed by two Lead Manufacturing Assistants in the filling gowning room. During the process, the Lead Manufacturing Assistants would wipe down the outer packaging for sterile boots, hoods, coveralls, goggles and gloves with sterile (b) (4) prior to placing the packages on the dividing bench inside the gowning room. Lead Manufacturing Assistant (b) (6) stated that operators have received external training that requires the outer packaging of all gowning materials to be wiped down with sterile (b) (4) prior to being placed on the dividing bench in the gowning room. My review of the firm's "Gowning for Building (b) Filling Procedure," SOP018282 V. 7.0, Effective: 5/1/2019, indicates that the procedure does not define the requirement to wipe down the outer packaging of the gowning materials with sterile (b) (4) prior to placing them on the dividing bench (*see Exhibit 17, page 2, section 2.2.5*). During the inspection, I discussed with firm management that the procedure should define each critical step in the gowning process to ensure the gowning process is performed appropriately and consistently by all operators. Firm management stated they understood my concerns, and would determine the most appropriately method to correct the issue.

### SAMPLES COLLECTED

No samples were collected.

### VOLUNTARY CORRECTIONS

Deficiencies were noted at the firm during the January 0f 2015 CDER inspection and May 2017 CBER inspection *see Summary section of this report for additional information*). During the current inspection, the following corrections were noted:

- Product Safety Committee (PSC) Meeting minutes included the committee's review of potential adverse events for all of the firm's products where the firm has reporting responsibility and included trending information and documentation of the quality control unit's review of manufacturing and testing records if required.



**Establishment Inspection Report**

Emergent BioSolutions Canada Inc.

Winnipeg, Manitoba, R3T 5Y3

FEI: **3003153579**

EI Start: 9/5/2019

EI End: 9/13/2019

- The firm opened a CAPA, conducted validation studies and implemented the use of (b) (4) as disinfectant agents for the firm's cleanrooms and building areas.
- The firm opened a CAPA, and under their change control procedures, the firm made changes to the HEPA air filtration system supplying the Grade A and B areas in filling room (b) (4). The firm is also conducting in-house, (b) (4) filter velocity / integrity testing and performed an effectiveness check for changes made to the HEPA air filtration system.
- The firm provided additional training to filling personnel to improve personnel's aseptic technique used during filling operations. During the current inspection, filling personnel demonstrated good aseptic technique during the filling operations for (b) (4) (b) (4) Injection, (b) (4) mg/mL (b) (4) Lot # (b) (4).

**EXHIBITS COLLECTED**

Exhibit	Document Description	Pages
1	List of meeting participants	1
2	Opening Presentation	25
3	General firm information	1
4	Corporate Information	1
5	Product list	1
6	List of licensed and development products manufactured by the firm	2
7	(b) (4) address information	1
8	Labeling for (b) (4) bulk shipments	4
9	List of key personnel	2
10	General facility layout	1
11	Room classification plan	1
12	(b) (4) process flow diagram	3
13	(b) (4) equipment list	4
14	Responsibility Flow Chart	1
15	Elemental Impurity risk assessment for hyperimmune products	36
16	Elemental Impurity risk assessment for Botulism Antitoxin	44
17	Gowning for Building (b) Filling Procedure SOP018282 V. 7.0, Effective: 5/1/2019	9
18	Deviation Report, QN: 3100006930 rep v1 dated 09/12/2019	17

**ATTACHMENTS**

Attachment	Document Description	Pages
1	FDA 483 Inspectional Observations form issued on 09/05/2019	2
2	Site Dossier	3

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Jonathan G. Matricciano  
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Digitally signed by Jonathan G. Matricciano -S  
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Date: 2019.11.07 17:38:38 -05'00'

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Jonathan G. Matricciano  
Investigator