

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 07 2 0 1 5 - 0 0 9

Project Number: 2015-02-051  
Installation Number: 510-1217

Parent Company: GlaxoSmithKline

Parent Company Address: 980 Great West Rd., Brentford, Middlesex TW8 9GS, UK

Installation Name: GlaxoSmithKline Consumer Healthcare, LP

Installation Address: 320 South Broadway, St. Louis, MO 63102

Location Information: Land Grant 00363

Application for Authority to Construct was made for:

Existing facility requesting a federally enforceable permit. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

  
Prepared by  
Kathy Kolb  
New Source Review Unit

  
Director or Designee  
Department of Natural Resources

JUL 14 2015

Effective Date

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources' regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

GlaxoSmithKline Consumer Healthcare, LP  
Land Grant 00363

1. Control Device Requirement-Fabric filter
  - A. GlaxoSmithKline Consumer Healthcare, LP shall control emissions from the equipment listed in Table 1 as using fabric filters and as specified in the permit application.
  - B. The fabric filters shall be operated and maintained in accordance with the manufacturer's specifications. The fabric filters shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
  - C. Replacement filters for the fabric filters shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
  - D. GlaxoSmithKline Consumer Healthcare shall monitor and record the operating pressure drop across the fabric filters at least once every week either manually (or recorded electronically in the facility's process control system) and make a visual inspection at least once every 24 hours logging the date/time and observation. If the visual inspection indicates any visible particulate, then a pressure drop reading will be monitored and logged. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance specifications.
  - E. GlaxoSmithKline Consumer Healthcare, LP shall maintain a copy of the fabric filters manufacturer's operating specifications and performance warranty on site.
  - F. GlaxoSmithKline Consumer Healthcare, LP shall maintain an operating and maintenance log for the fabric filters which shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

- 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
- G. As an alternative to Special Conditions 1.B. and 1.D., visible emissions may be used as an indicator of the proper operation of the control device. During proper operation no visible emissions are expected from this emission unit. The existence of visible emissions will indicate a decrease in the efficiency of the control device and corrective actions will be implemented. Observations will be made using a US EPA Method 22 trained observer and US EPA Method 22 like procedures.
- 1) Frequency: Visible emissions from the exhaust shall be monitored on a daily basis when the process is in operation.
  - 2) Duration: The duration of the observation shall be for a 2 minute time period.
  - 3) Threshold: The condition of no visible emissions is considered normal for this emission unit. When visible emissions are noted from the emission unit, it shall be documented and corrective actions taken.
  - 4) The observation of visible emissions from this emission unit will be considered an excursion and corrective actions shall be implemented within a reasonable period. An excursion does not necessarily indicate a violation of the applicable requirement. When the level of excursions exceed three percent of the of the total number of observations in a six month period and corrective actions fail to return the emission unit to a no visible emission condition, then the permittee shall conduct source testing within 90 days of the last excursion to demonstrate compliance with 10 CSR 10-6.400. If the test demonstrates noncompliance with the above emission limitation the permittee shall propose a schedule to implement further corrective actions to bring the source into compliance and demonstrate that compliance.
2. Operational Requirement - Solvent/Ink Cloths
- A. GlaxoSmithKline Consumer Healthcare, LP shall keep the ink solvents and cleaning solutions in sealed containers whenever the materials are not in use. GlaxoSmithKline Consumer Healthcare, LP shall provide and maintain suitable, easily read, permanent markings on all inks, solvent and cleaning solution containers used with this equipment.
3. Record Keeping and Reporting Requirements
- A. GlaxoSmithKline Consumer Healthcare, LP shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources'

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

personnel upon request. These records shall include SDS for all materials used.

- B. GlaxoSmithKline Consumer Healthcare, LP shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2015-02-051  
Installation ID Number: 510-1217  
Permit Number:

Installation Address:  
GlaxoSmithKline Consumer Healthcare, LP  
320 South Broadway  
St. Louis, MO 63102

Parent Company:  
GlaxoSmithKline  
980 Great West Rd.  
Brentford, Middlesex TW8 9GS, UK

Land Grant 00363

REVIEW SUMMARY

- GlaxoSmithKline Consumer Healthcare, LP has applied for a permit to require them to operate all control devices.
- The application was deemed complete on February 25, 2015.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Fabric filters are being used to control the PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Controlled potential emissions of all pollutants are below de minimis levels.
- This installation is located in St. Louis City, a non-attainment area for 2008 8 hour ozone, a maintenance area for the 1997 8-hour standard, and a non-attainment area for the 1997 PM<sub>2.5</sub> standard.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.

- Approval of this permit is recommended with special conditions.

## INSTALLATION/PROJECT DESCRIPTION

GlaxoSmithKline's St. Louis (GSK) facility produces Tums (antacid), OsCal (calcium nutritional supplement) and Citrucel (dietary fiber supplement). Equipment is housed on five floors of the facility which is located on three quarters of a city block in downtown St. Louis.

Calcium carbonate and sugar are received in 2000 pound "super sacks" and corn starch is received in smaller, 50 pound packages. These three raw materials are pneumatically conveyed, through two receivers (each equipped with fabric filters), to two scaling vessels (also with fabric filters) that feed two mixers. Deionized water is also fed to the mixers. The resulting granulation mix is fed to two counter flow rotary dryers which are heated electrically.

Each dryer's emissions of particulates are controlled by a fabric filter equipped with a broken bag detector, which shuts down the unit if a broken bag is detected.

Dry granulation is sized and pneumatically conveyed through receivers (equipped with fabric filters) to six granulation storage silos. Granulation is fed to a separator, then to a fines receiver and a coarse receiver (each with fabric filters). These two receivers feed raw granulation into a blending process that also is fed talc, mineral oil, sugar and sodium hexametaphosphate. The sugar and sodium hexametaphosphate are fed through receivers with fabric filters.

The resultant "master lubricant blend" (MLB) receives flavoring additives and addition blending prior to being conveyed to presses that create tablets. The tablets are sent to lines which package them in foiled-wrapped rolls and plastic bottles. The packages are coded with production information using an alcohol-based ink.

OsCal granulation, in the form of oyster shell calcium carbonate, is received in bulk, blended in totes and sent to a tablet press. The resultant OsCal "cores" are sent to a coater in which a water-soluble coating is applied and the coated tablets are dried. Air flows through the coater into a fabric filter dust collector equipped with a broken bag detector, which shuts down the blower in the event of a bag failure.

Citrucel powder is fed to a tablet press and the tablets are sent to packaging. The tablet presses and packaging equipment are served by the dust collection systems described below.

The five dust collection and control systems that are located throughout the production facility capture and remove potential fugitive dust emissions from the following: bag dumping, weighing, filling and cleaning of MLB and tablet totes, table presses, conveyors and packaging lines. Each of the systems has a dedicated fabric filter. Broken bag detectors are scheduled to be installed on each filter by this summer, 2015.

The facility has five house vacuum systems that are used for general housekeeping.

Each of these systems has a dedicated fabric filter.

Cleanup activities are performed using a 70 percent solution of isopropanol.

There is no fuel burning equipment at the site. Process steam is purchased from Trigen Energy Corporation which supplies the downtown St. Louis area with steam.

### Historic Reliance

Past determinations of potential to emit (PTE) have relied on US EPA policy and guidance that provided for the following:

- Control devices on receivers and transfer equipment are considered an inherent part of the process (July 10, 2002 letter from Harnett, W.T., Information Transfer and Program Integration Division, OAQPS, to Herbert III, E.R.)
- Reduction in PTE from a control device is considered if operation is required by an enforceable permit, rule, compliance/enforcement document, or other legally and practically enforceable limit (multiple EPA policy and guidance memos on federal enforceability of limitations on potential to emit).

In addition, the de minimis permit/registration “exemption” provisions in the City of St. Louis air ordinance (St. Louis City Ordinance 68657) for sources emitting less than 200 lb/yr, resulted in the cooling towers and alcohol usage being the sole sources requiring registration. The City of St. Louis is no longer administering permitting activities.

At one point in the recent past, the Air Pollution Control Program took into account controls when determining PTE. It is unclear whether this was part of the consideration in not permitting some of the equipment installed at the facility. Since then the Air Pollution Control Program’s definition of PTE allows reductions from control devices and other processes limitations, only if they are included in a federally enforceable permit. (APCP guidance document “Discussion of Potential to Emit”, 5/31/2011; 10 CSR 10-6.020(2)(P)38 definition of “Potential to Emit”. The facility currently has no “federally enforceable” means to limit potential to emit, even though actual emissions are, and will continue to be, orders of magnitude less. GSK has requested that the Air Pollution Control Program issue a de minimis permit requiring the operation (and maintenance) of the appropriate particulate control devices during process operations to ensure practicable, enforceable means of limiting the facility’s potential emissions below the significance levels for particulate emissions.

All product is pneumatically conveyed and therefore the capture efficiency is 100%.

For this permit, there are no new emission units being installed.

No permits have been issued to GlaxoSmithKline Consumer Healthcare, LP from the Air Pollution Control Program.

Table 1: Emission Point Description

Emission Point	Point Description	Control Device	GSK Equipment No.
EP-01	Dust Collector No. 1 (Dryer No. 1)	Fabric Filter <sup>a</sup>	3126
EP-02	Dust Collector No. 2 (Dryer No. 2)	Fabric Filter <sup>b</sup>	3144
EP-03	Calcium Carbonate Receiver	Fabric Filter <sup>c</sup>	3055
EP-04	Sugar Receiver No. 1	Fabric Filter <sup>c</sup>	3060
EP-05	Sugar Receiver No. 2	Fabric Filter <sup>c</sup>	3178
EP-06	Sodium Hex Receiver	Fabric Filter <sup>c</sup>	3239
EP-07	Adipic Acid Receivers Nos. 1 & 2	Fabric Filter <sup>c</sup>	4164/4165
EP-08	OsCal Filter Receiver	Fabric Filter <sup>c</sup>	3507
EP-09	Scale Vessel No. 1	Fabric Filter <sup>c</sup>	3070
EP-10	Scale Vessel No. 2	Fabric Filter <sup>c</sup>	3075
EP-11	Fines Vacuum	Fabric Filter <sup>c</sup>	3079
EP-12	Fines Vacuum Receiver	Fabric Filter <sup>c</sup>	3200
EP-13	Coarse Vacuum Receiver	Fabric Filter <sup>c</sup>	3194
EP-14	Silos 1, 2 & 3 Vacuum Receivers	Fabric Filter <sup>d</sup>	3125*
EP-15	Silos 4, 5 & 6 Vacuum Receivers	Fabric Filter <sup>d</sup>	3143**
EP-16	Coater Dust Control Exhaust	Fabric Filter <sup>e</sup>	3515
EP-17	Dust Control System No. 1 (2 <sup>nd</sup> floor)	Fabric Filter <sup>f</sup>	5287
EP-18	Dust Control System No. 2 (3 <sup>rd</sup> floor)	Fabric Filter <sup>g</sup>	5378
EP-19	Dust Control System No. 3 (4 <sup>th</sup> floor)	Fabric Filter <sup>h</sup>	7088
EP-20	Dust Control System No. 4 (4 <sup>th</sup> floor)	Fabric Filter <sup>i</sup>	7094
EP-21	Dust Control System No. 5 (4 <sup>th</sup> floor)	Fabric Filter <sup>i</sup>	7087
EP-22	House Vacuum System No. 1 (1 <sup>st</sup> floor)	Fabric Filter <sup>k</sup>	3051/3053
EP-23	House Vacuum System No. 2 (1 <sup>st</sup> floor)	Fabric Filter <sup>k</sup>	3017
EP-24	House Vacuum System No. 3 (2 <sup>nd</sup> floor)	Fabric Filter <sup>k</sup>	5738/5742
EP-25	House Vacuum System No. 4 (3 <sup>rd</sup> floor)	Fabric Filter <sup>k</sup>	3637
EP-26	House Vacuum System No. 5 (4 <sup>th</sup> floor)	Fabric Filter <sup>k</sup>	3487
EP-27	Cooling Tower		
EP-28	Isopropanol (IPA)(70%) Usage		
EP-29	Ink and Makeup Solvent Usage		
EP-30	CaCO <sub>3</sub> (Smooth Dissolve) Receivers	Fabric Filter <sup>c</sup>	4009/4011
EP-31	Calcium Unloader Receiver	Fabric Filter <sup>c</sup>	3681
EP-32	Sorbitol Receivers	Fabric Filter <sup>c</sup>	3999/4001
EP-33	Avicel Receivers	Fabric Filter <sup>c</sup>	4156
	Mineral Oil Storage Tank No. 1	These tanks are not emission units since they contain only mineral oil.	
	Mineral Oil Storage Tank No. 2		
	Mineral Oil Storage Tank No. 3		
	Mineral Oil Day Tank		

<sup>a</sup>MAC FRTSPCL fabric filter with broken bag detection. Exhausts to the atmosphere.

<sup>b</sup>MAC fabric filter with broken bag detection. Exhausts to the atmosphere.

<sup>c</sup>Fabric filter exhausting inside building. Filter is inherent part of pneumatic conveying/storage function of the receiver.

<sup>d</sup>Fabric filters on each of three receivers, with one blower exhausting inside building. Filters are inherent part of the pneumatic conveying/storage function of the receivers.

<sup>e</sup>Fabric filter, exhausting to the atmosphere.

<sup>f</sup>Collects from bottle fillers, vibrating feeders with enclosures/hood. Discharges into the building.

<sup>g</sup>Collects from tablet presses (3<sup>rd</sup> floor), bottle fillers (2<sup>nd</sup> & 3<sup>rd</sup> floor). Discharges into the room.

<sup>h</sup>Collects from tablet presses (4<sup>th</sup> floor), transfer to conveyor, conveyors. Discharges into HVAC air handling unit.

<sup>i</sup>Collects from tote filling/cleaning (4<sup>th</sup> & 5<sup>th</sup> floors), screener, Discharges into the room.

<sup>j</sup>Collects Korsch tablet presses. Discharges into the room.

<sup>k</sup>Quick connect vacuum lines at multiple locations for housekeeping.

\*Blower for Vacuum Receivers Nos. 3149, 3152 & 3155.

\*\*Blower for Vacuum Receivers Nos. 3160, 3162 & 3165.

## EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the EPA online database WebFIRE. For the dryer emissions, PM and PM<sub>10</sub> emission factors were used (SCC 3-05-016-04). For this review, PM<sub>2.5</sub> emissions were considered to be the same as PM<sub>10</sub>. The dryers are controlled by a fabric filter with a 99.5% control efficiency for PM and PM<sub>10</sub>.

Likewise only the PM emission factor for the remaining material handling equipment was obtained from WebFire (SCC 3-05-016-15). Also for this review, PM<sub>10</sub> and PM<sub>2.5</sub> emissions were considered the same as PM. Those emissions are also controlled by a fabric filter. The Coater Exhaust (EP-16), the Dust Control System No. 1 through No. 5 (EP-17, EP-18, EP-19, EP-20 and EP-21), and the House Vacuum System No. 1 through No. 5 (EP-22, EP-23, EP-24, EP-25, and EP-26) emissions were calculated using a mass balance equation. These units are also controlled by a fabric filter.

Emissions estimates from the IPA and ink solvent assumed that 100% of the VOCs were emitted to the atmosphere.

The cooling tower emissions were calculated using the method from the New Mexico Environment Department, Air Quality Bureau, Technical Memorandum, September 9, 2013, "Calculating TSP, PM<sub>10</sub> and PM<sub>2.5</sub> from Cooling Towers".

There are no haul roads at the facility.

The following table provides an emissions summary for this project. Existing potential emissions were never calculated. Over the past years, under the jurisdiction of the local agency (St. Louis City), GlaxoSmithKline was not required to submit an Emission Inventory Questionnaire (EIQ). They will be required to submit an EIQ beginning in 2015. Potential emissions of the application represent the potential of the existing equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions <sup>a</sup>	Potential Emissions of the Application (tons/year)
PM	25.0	N/A	N/A	13.49
PM <sub>10</sub>	15.0	N/A	N/A	3.44
PM <sub>2.5</sub>	10.0	N/A	N/A	3.44
SO <sub>x</sub>	40.0	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A
VOC	40.0	N/A	N/A	2.075
CO	100.0	N/A	N/A	N/A
GHG (CO <sub>2</sub> e)	75,000 / 100,000	N/A	N/A	N/A
GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

## APPLICABLE REQUIREMENTS

GlaxoSmithKline Consumer Healthcare, LP shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065. An operating permit is not required because the potential to emit is de minimis.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

### Special Conditions

- Because this permit requires the use of fabric filters and is federally enforceable, this facility is exempt from 10 CSR 10-6.400 *Restriction of Emission of Particulate Matter From Industrial Processes*.
- Compliance with *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220 can be demonstrated using the procedure described in Method 22 or Method 9.

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommend that this permit be granted with special conditions.

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated February 10, 2015, received February 23, 2015, designating GlaxoSmithKline as the owner and operator of the installation.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SDS</b> .....	Safety Data Sheet
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Ms. Jill Guetersloh  
Manager, EHS  
GlaxoSmithKline Consumer Healthcare, LP  
320 South Broadway  
St. Louis, MO 63102

RE: New Source Review Permit - Project Number: 2015-02-051

Dear Ms. Guetersloh:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).

Ms. Jill Guetersloh  
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If you have any questions regarding this permit, please do not hesitate to contact Kathy Kolb at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:kkd

Enclosures

c: SLRO Regional Office  
PAMS File: 2015-02-051

Permit Number: