TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 6, 2020

MR JOE MCCLARAN
COO
FACADES XI LLC
15262 CAPITAL PRT
SAN ANTONIO TX 78249-1302

Re: Small Business Stationary Source Permit Application
Permit Number: 161922
Facades XI, LLC
Stucco and Acrylic Coating Manufacturing Facility
San Antonio, Bexar County
Regulated Entity Number: RN102783693
Customer Reference Number: CN605791425

Dear Mr. McClaran:

The Texas Commission on Environmental Quality (TCEQ) has made a preliminary decision on the above-referenced application. In accordance with Title 30 Texas Administrative Code § 39.419(b), you are now required to publish Notice of Application and Preliminary Decision. You must provide a copy of this preliminary decision letter with the draft permit at the public place referenced in the public notice.

If you have any questions, please call Mr. Huy Pham at (512) 239-1358, or write to the TCEQ, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Bonnie Evridge

Bonnie Evridge, Manager
Mechanical/Coatings New Source Review Permits Section
Air Permits Division

Enclosure

cc: Health Program Manager, Air Quality, San Antonio Metropolitan Health District, San Antonio
Air Section Manager, Region 13 - San Antonio

Project Number: 317851

Special Conditions

Permit Number 161922

1. This permit authorizes the construction and operation of stucco and acrylic coating manufacturing facilities. These facilities are located at 15262 Capital Port, San Antonio, Bexar County**.** This permit authorizes only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," and those sources are limited to the emission limits and other conditions specified in the table. In addition, this permit authorizes all emissions from planned startup and shutdown activities associated with facilities or groups of facilities that are authorized by this permit.

2. This permit does not include the facilities or maintenance, startup, or shutdown (MSS) activities at the site listed in Attachment I, except as noted in the MAERT. Instead, these facilities are authorized by a permit-by-rule (PBR) under Title 30 Texas Administrative Code (30 TAC) Chapter 106, standard exemption, exemption from permitting, or are a de minimis source listed under 30 TAC § 116.119. The lists provided in Attachment I are not intended to be all-inclusive and can be altered at the site without modifications to this permit.

3. A copy of this permit shall be kept at the site and made available at the request of personnel from the Texas Commission on Environmental Quality (TCEQ) or any other air pollution control agency with jurisdiction.

4. With the exception of fugitive sources, the holder of this permit shall clearly label all equipment at the property that has the potential of emitting air contaminants. Permitted emission points shall be clearly labeled corresponding to the emission point numbering on the MAERT.

Emission Limitations

5. Visible fugitive emissions shall not leave the property line for more than 30 cumulative seconds in any six-minute period.

6. Opacity of particulate matter emissions from baghouses shall not exceed 5 percent, averaged over a six-minute period. The Demonstration of Continuous Compliance section of Special Condition No. 16 requires a quarterly visible emissions determination to demonstrate compliance with the opacity limitations.

Fuel Specifications

7. This permit does not authorize the operation of an internal combustion engine in conjunction with this facility. The holder of this permit shall obtain prior authorization for any internal combustion engine that remains at a single point or location for more than 12 consecutive months. Any engine that remains at a single point or location for less than or equal to 12 consecutive months is not considered a stationary source and therefore no authorization is required.

Federal Applicability

8. The coating manufacturing facilities at the site shall comply with the applicable requirements of 40 CFR 63, Subpart CCCCCCC, National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing, if the facility processes, uses or generates any material containing any one of the following hazardous air pollutants:

A. Benzene, methylene chloride

B. Compounds of cadmium, chromium, lead, and/or nickel, in amounts greater than or equal to 0.1 percent by mass; or

C. Manganese compounds with a concentration greater than or equal to 1.0 percent by mass.

Operational Limitations, Work Practices, and Plant Design

9. The facility shall be limited to the following hourly and annual throughput rates:

Table 1: Hourly and Annual Throughput Limits

Source	Tons per hour	Tons per year in any rolling 12-month period
BAGGER (EPNs SDOOR1 and BGH1)	6.56	28,733
Acrylic finish mixer 1 and 2 dry material (EPN BGH2)	2.03	2,579.85
Latex Storage Tank (EPN AST1)	17.60	229.95
Latex Storage Tank (EPN AST2)	17.60	229.95
Latex Storage Tank (EPN AST3)	17.60	229.95

10. The facilities shall be limited to a maximum operating schedule of 4,380 hours per year.

11. Manufacturing operations shall not be conducted unless the dust collectors and building ventilation systems in the production areas are fully operational.

12. Mixer/disperser tanks shall be equipped with covers that shall be closed except for material additions or coating sample retrieval during mixing operations such that when in place, it maintains contact with the rim of the opening with a minimum opening for the disperser shaft. The covers shall be maintained free of holes, cracks, and other conditions that would reduce the contact with the full circumference of the tank and mixing/disperser shaft.

13. The capture and control/ventilation system for the mixer/disperser tanks and silos shall be designed and operated according to the following requirements:

A. The emissions of particulate matter (PM) from the stucco mixer tower, including the weigh hopper (FIN HOP1), mixer (FIN MIX1), discharge hopper (FIN HOP2), and the bagger (FIN BAGGER), shall be captured and routed to a dust collector (EPN BGH1) which has a maximum outlet grain loading of equal to or less than 0.005 grain per dry standard cubic foot. PM from the stucco bagger (FIN BAGGER) shall be captured with a minimum combined capture efficiency of 70%;

B. The emissions of particulate matter (PM) from the acrylic finish process, including the mixer/disperser tanks (FINs MIX2, MIX3, MIXDROP1, MIXDROP2), shall be captured and

routed to a dust collector (EPN BGH2) which has a maximum outlet grain loading of equal to or less than 0.002 grain per dry standard cubic foot and with an airflow of at least 1,500 standard cubic feet per minute;

C. The emissions of particulate matter (PM) from the silos (EPNs SBH1, SBH2, SBH3, SBH4, SBH5, SBH6, SBH7) shall each be captured and routed to a baghouse which has a maximum outlet grain loading of equal to or less than 0.0015 grain per dry standard cubic foot;

D. The capture and control system shall be operated and maintained in accordance with the manufacturer's recommendations to assure that the minimum control efficiency is met at all times when the silos, mixers, or disperser tanks are required to be operated;

E. The holder of this permit shall install, calibrate, and maintain a differential pressure gauge to monitor pressure drop across the baghouse or filter system. Each monitoring device that requires calibration shall be calibrated at least annually in accordance with the manufacturer's specifications and shall be accurate to within a range of ± 0.5 inch water gauge pressure (± 125 pascals) or a span of ± 3 percent. Each monitoring device that only requires to be zeroed shall be zeroed at least once a week;

F. The filter media differential pressure shall be maintained between 2 and 6 inches water column, or as defined by the manufacturer;

G. Pressure drop readings shall be recorded at least once per week. Bags or filters shall be replaced whenever the pressure drop across the filter media no longer meets the limits in Special Condition 13.F or the manufacturer's recommendation;

H. If the filter system operating performance parameters are outside of the 2 and 6 inches water column or the manufacturer's recommended operating range, the affected facility shall not be operated until the abatement equipment is repaired;

I. Planned maintenance on the dust collection system shall be performed only when the facilities being controlled by the dust collection system are not in operation;

14. In addition to the requirements in Special Condition 13, the ventilation system for the acrylic finish and product loading processes (EPN BGH2) shall be operated according to the following requirements:

A. The capture system's duct work shall be operated under negative pressure and an audio, visual, and olfactory (AVO) inspection of the capture system shall be performed monthly to check for leaking components. The capture system shall be maintained free of holes, cracks, and other conditions that would reduce the collection efficiency of the capture system;

B. An inspection and maintenance log shall be kept for the baghouses dust collector whereby the log shall note the date of each inspection, the name of the inspector and any repairs and/or maintenance work performed; and

C. Failure to maintain the required pressure drop across the filter media or the documentation of particulate, deposition originating from this site beyond the property lines of this site shall be considered as demonstrating that the filters are not being maintained in good condition.

Demonstration of Continuous Compliance

15. Upon request by the TCEQ Executive Director or the TCEQ Regional Director having jurisdiction, the holder of this permit shall perform ambient air monitoring, and/or other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere. The tests shall be performed during normal operation of the facilities and shall be performed in accordance with accepted TCEQ practices and procedures.

16. The holder of this permit shall conduct a quarterly visible emissions determination to demonstrate compliance with the opacity limitations specified in this permit for all baghouses. This visible emissions determination shall be performed: 1) during normal plant operations, 2) for a minimum of six minutes, 3) approximately perpendicular to plume direction, 4) with the sun behind the observer (to the extent practicable), and 5) at least two stack heights, but not more than five stack heights, from the emission point. If visible emissions are observed from the emission point, the owner or operator shall:

    A. Take immediate action to eliminate visible emissions, record the corrective action within 24 hours, and comply with any applicable requirements in 30 Texas Administrative Code (TAC) § 101.201, Emissions Event Reporting and Recordkeeping Requirements; or

    B. Determine opacity using 40 CFR Part 60, Appendix A, Test Method 9. If the opacity limit is exceeded, take immediate action (as appropriate) to reduce opacity to within the permitted limit, record the corrective action within 24 hours, and comply with applicable requirements in 30 TAC § 101.201, Emissions Event Reporting and Recordkeeping Requirements.

17. The holder of this permit shall conduct a quarterly visible fugitive emissions determination to demonstrate compliance with the visible fugitive emissions limitation specified in this permit. This visible fugitive emissions determination shall be performed: 1) during normal plant operations, 2) for a minimum of six minutes, 3) approximately perpendicular to plume direction, 4) with the sun behind the observer (to the extent practicable), 5) at least 15 feet, but not more than 0.25 mile, from the plume, and 6) in accordance with EPA 40 CFR Part 60, Appendix A, Test Method 22, except where stated otherwise in this condition. If visible fugitive emissions leaving the property line exceed 30 cumulative seconds in any six-minute period, the owner or operator shall take immediate action (as appropriate) to eliminate the excessive visible fugitive emissions. The corrective action shall be documented within 24 business hours of completion.

Material Usage Flexibility

18. In addition to the approved materials, the use of new materials or products that meet all of the following sub-conditions are allowed**.** Pollutants from categories of air pollutants not currently authorized on the MAERT cannot be authorized using this special condition. This special condition does not authorize the use of any chlorinated or fluorinated compound when emissions are routed to a thermal control device.

    A. All the ingredients of the new material are known; i.e., the weight percentages of the ingredients add to 100 percent or more.

    B. The maximum hourly (short-term) or annual emission rates from new or existing air contaminant ingredients (aka air contaminants) shall not cause any increases in the short-term or annual emission rates as listed on the MAERT.

C. Emissions from the new material shall only be from the emission points represented in the table provided in paragraph G(2) of this special condition.

D. Any air contaminant in the new material is exempt from paragraphs E through H of this special condition if the air contaminant is currently authorized under this permit and the proposed emission rate from each EPN is less than or equal to the authorized emission rate from the same EPN.

E. Any air contaminant in the new material is exempt from paragraphs F through H of this special condition if:

(1) The air contaminant is a particulate and no specific short-term effects screening level (ESL) is included in the most current set of ESLs available through the TCEQ Toxicity Factor Database (must meet NAAQS); or

(2) The air contaminant is not included in the most current set of ESLs available through the TCEQ Toxicity Factor Database.

If the compound is not on the current ESL list and does not belong to a category of compounds on the list, the permit holder shall request confirmation from the Toxicology Division that an ESL need not be created for authorization through this condition. If the Toxicology Division determines that an ESL is not required under this condition, confirmation that no ESL is required shall be kept on file by the applicant.

F. Any air contaminant in the new material is exempt from paragraphs G and H of this special condition if:

(1) it is emitted at a rate and has a short-term ESL and an annual ESL as stated in the following table; or

Emission Rate (lbs/hr)	Short-term ESL (µg/m^3)	Annual ESL (µg/m^3)
≤ 0.04	≥ 2 and < 500	≥ 0.2 and < 50
≤ 0.10	≥ 500 and < 3,500	≥ 50 and < 350
≤ 0.40	≥ 3,500	≥ 350

(2) it is not sprayed and it has at least one of the following physical characteristics:

(a) a vapor pressure less than 0.01 mm Hg (0.0002 psi) at 68°F;

(b) a boiling point at atmospheric pressure that is above 400°F (204°C), provided the compound is not heated above room temperature in the process; or

(c) a molecular weight that is above 200 g/g-mol, provided the compound is not heated above room temperature in the process.

G. For all other new air contaminants or increases in existing air contaminants, the following procedure shall be completed to determine if the short-term impacts are acceptable.

(1) Determine the emission rate of each air contaminant including emissions of the same air contaminant (if an existing air contaminant) from the currently authorized materials that may be emitted at the same time from each emission point.

(2) Multiply the emission rate of the air contaminant by the unit impact multiplier for each emission point from the following table to determine the off-property impact Ground Level Concentration $(GLC)_{MAX}$ for each emission point.

EPN	Unit Impacts ($\mu g/m^3$ per lb/hr)
ASTV1	210.80
ASTV2	210.80
ASTV3	210.80
SBH6	521.32
SBH7	521.32
BGH2	25.98

(3) Sum the impacts from each emission point/emission point group to determine a total short-term off-property impact (Total GLC_{MAX}) for the new or existing air contaminant.

(4) Compare the total short-term off-property impact to the short-term ESL for the air contaminant as shown below to determine if it is less than or equal to the ESL. If the total off-property impact exceeds the short-term ESL, then a permit amendment is required to authorize the emission rate for the air contaminant.

Total $GLC_{MAX} \leq ESL_{SHORT}$

Where:

Total GLC_{MAX} = The sum of the short-term GLCs from each emission point.

ESL_{SHORT} = The short-term ESL of the new or existing air contaminant from the most current set of ESLs available through the TCEQ Toxicity Factor Database and the date of the database retrieval or as specifically derived by the TCEQ Toxicology Division. The ESL shall be obtained in writing prior to the use of the new or increased air contaminant.

H. For all other new air contaminants or increases in existing air contaminants, the following procedure shall be completed to determine if the annual impacts are acceptable.

(1) Determine the annual emission rate (tpy) of each air contaminant including emissions of the same air contaminant (if an existing air contaminant) from the currently authorized materials that may be emitted at the same time from each emission point.

(2) Convert the annual emission rate to an hourly emission rate using 4380 hours per year and 2000 pounds per ton.

(3) Multiply the hourly emission rate (lb/hr) of the air contaminant determined in paragraph H(2) of this special condition by the unit impact multiplier for each emission point from the table provided in paragraph G(2) of this special condition to determine the off-property impact GLC_{MAX} for each emission point.

(4) Sum the impacts from each emission point to determine a total off-property impact (Total GLC_{MAX}) for the new or existing air contaminant.

(5) Multiply the total off-property impact (Total GLC_{MAX}) determined in paragraph H(4) of this special condition by 0.08 to determine the annual off-property impact (Annual GLC_{MAX}) for the new or existing air contaminant.

(6) Compare the annual off-property impact to the annual ESL for the air contaminant as shown below to determine if it is less than or equal to the ESL. If the annual off-property impact exceeds the annual ESL, then a permit amendment is required to authorize the emission rates for the air contaminant.

Annual $GLC_{MAX} \leq ESL_{ANNUAL}$

Where:

ESL_{ANNUAL} = The annual ESL of the new or existing air contaminant from the most current set of ESLs available through the TCEQ Toxicity Factor Database or as specifically derived by the TCEQ Toxicology Division.

Recordkeeping Requirements

19. In addition to the recordkeeping requirements specified in General Condition No. 7 and 40 CFR Part 60, Subpart A, the following records shall be maintained at this facility site and made available at the request of personnel from the TCEQ or any other air pollution control program having jurisdiction to demonstrate compliance with permit limitations. These records shall be totaled for each calendar month, retained for a rolling 24-month period, and include the following:

A. Quarterly observations for visible fugitive emissions and/or opacity observations;

B. Records of weekly baghouse differential pressure readings;

C. Records of AVO inspections and maintenance log for the ventilation control device capture system;

D. Daily, monthly, and annual amounts of materials processed, summarized in tons per hour, tons per month, and tons per year;

E. Actual hours of operation;

F. Records of road cleaning, application of road dust control, or road maintenance for dust control;

G. Inspections, malfunctions, repairs, and maintenance of abatement equipment (including bag replacement) as actions occur; and

H. Manufacturer's documentation on the equipment, to include the dispersers and baghouse, used in the acrylic manufacturing process;

I. A copy of the manufacturer's suggested cleaning and maintenance schedule for abatement equipment.

J. Environmental Data Sheet (EDS) or similar documentation (including material safety data sheets) for all resin, coating solids, and solvents used in the acrylic finish manufacturing operations. The EDS or similar documentation for materials shall indicate the maximum composition of all constituents.

Pollution Prevention

20. All spills shall be cleaned up immediately using appropriate procedures.

21. All resin, coating solids, and solvent spills shall be cleaned up immediately using appropriate procedures, and the associated waste materials shall be stored in closed containers.

22. Towels, rags, sponges, or other absorbent materials used for cleanup shall be placed into closed containers immediately after use and shall be kept in storage until properly removed from the site.

23. All filters used for the control of PM from the coating manufacturing operations shall be removed and disposed of in such a manner that minimizes trapped PM from escaping into the atmosphere.

24. All fillers, additives, and other powder materials shall be handled in such a manner as to minimize dust emissions. Material collected in the dust collector shall be stored in closed containers.

25. Containers that contain waste coatings and solvent, equipment, cleaning waste and spill cleanup materials may be opened to allow for the addition or removal of material and shall be closed immediately after the transfer operation is complete. All waste materials shall be kept in storage until removed from the plant site in accordance with all applicable waste rules.

Date: DRAFT

Attachment I

Permit Number 161922

Activities and Authorizations

Source or Activity – De Minimis	Authorization
Application of aqueous detergents, surfactants, and other cleaning solutions containing not more than one percent of any organic compound by weight or containing not more than five percent of any organic compound with a vapor pressure less than 0.002 pounds per square inch absolute.	§ 116.119(a)(1)
Manual application of cleaning or stripping solutions or coatings without aerosol propellants for maintenance	§ 116.119(a)(1)
Usage of organic chemicals including lubricants, greases, and oils without propellants other than air or nitrogen for maintaining equipment	§ 116.119(a)(1)
Application of aerosol-propelled organic liquids using hand-held devices for maintaining equipment and other facilities where usage is no more than four aerosol cans or 64 ounces per day on a 12-month rolling average basis	§ 116.119(a)(1)

Date: DRAFT

Emission Sources - Maximum Allowable Emission Rates

Permit Number 161922

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
SBH1	Cement Silo 1 Baghouse Stack	PM	0.02	0.05
		PM10	0.02	0.05
		PM2.5	< 0.01	0.01
SBH2	Cement Silo 2 Baghouse Stack	PM	0.02	0.05
		PM10	0.02	0.05
		PM2.5	< 0.01	0.01
SBH3	Silica Silo Baghouse Stack	PM	0.02	0.05
		PM10	0.02	0.05
		PM2.5	< 0.01	0.01
SBH4	Lime Silo Baghouse Stack	PM	0.02	0.05
		PM10	0.02	0.05
		PM2.5	< 0.01	0.01
SBH5	Fly Ash Silo Baghouse Stack	PM	0.02	0.05
		PM10	0.02	0.05
		PM2.5	< 0.01	0.01
BGH1	Stucco Mixer Tower Baghouse Stack	PM	0.06	0.14
		PM10	0.06	0.14
		PM2.5	0.06	0.14
BGH2	Acrylic Finish Manufacturing Baghouse Stack	VOC	8.19	9.95
		PM	0.09	0.19
		PM10	0.09	0.19
		PM2.5	0.09	0.19
		HAPs	< 0.01	< 0.01
SDOOR1	Stucco bagger (5)	PM	< 0.01	< 0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		PM10	< 0.01	< 0.01
		PM2.5	< 0.01	< 0.01
ASTV1	Latex Silo 1	VOC	5.13	0.09
ASTV2	Latex Silo 2	VOC	5.13	0.09
ASTV3	Latex Silo 3	VOC	5.13	0.09
SBH6	Sand Silo Baghouse Stack	PM	0.02	0.05
		PM10	0.02	0.05
		PM2.5	< 0.01	0.01
SBH7	Calcium Carbonate Silo Baghouse Stack	PM	0.02	0.05
		PM10	0.02	0.05
		PM2.5	0.02	0.05

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
HAPs - hazardous air pollutants as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: TBD

RABA KISTNER
19111 North Dallas Parkway
Dallas, TX 75287
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P 972.385.8069
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TBPE Firm F-3257

Project No. AHF2004900
September 1, 2020

Air Permits Initial Review Team (APIRT)
Texas Commission on Environmental Quality (TCEQ)
12100 Park 35 Circle, Bldg. C
Austin, TX 78753

RE: Facades XI, LLC
New Source Review (NSR) Registration
Customer No. CN605791425
Regulated Entity No. RN102783693

Dear Mr. Bowers:

On behalf of Facades XI LLC, Raba Kistner Inc., has enclosed the required documentation as required by the form PI-1 for TCEQ's consideration and approval of a New Source Review (NSR) permit being utilized to authorize emissions sources from the site to be located at 15262 Capital Port, San Antonio, Texas 78249.

Facades XI LLC is also requesting an expedited permit review with submittal of form APD-EXP and APD-APS.

We appreciate your assistance with this application. Please contact us at (972) 385-8069should you have questions regarding this registration.

Very truly yours,

RABA KISTNER INC.

Amelia Hudson
Division Manager - Compliance

Elliot Townsend
Operations Manager

AH/ET/kr

Attachments

Copies Submitted: TCEQ Region 13 San Antonio - via STEERS
Joe McClaran – Facades XI, LLC

NEW SOURCE REVIEW PERMIT APPLICATION

FACADES XI, LLC
15262 CAPITAL PORT
SAN ANTONIO, TEXAS 78249

SUBMITTED TO:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AUSTIN, TEXAS

PREPARED BY:

RABA KISTNER, INC.
1011 W. LEWIS ST.
CONROE, TX 77301

RKI PROJECT NO. AHF2004900

JULY 2020

TABLE OF CONTENTS

1 INTRODUCTION

Facades XI, LLC intends to construct a stucco and acrylic coating manufacturing facility to be located at 15262 Capital Port, San Antonio, Bexar County, TX 78249. The site will consist of five (5) silos containing raw aggregate materials and an enclosed mixing and bagging system for the manufacture of stucco. In addition to the mixing of aggregates to produce stucco, the site will also manufacture an acrylic coating product by mixing raw latex, liquid additives, and solid materials in one (1) mixing.

This application for authorization under an NSR permit contains the information as required on the TCEQ Form PI-1, including a detailed process description, site map, process flow diagram(s), emission calculations, and other supporting documentation to demonstrate that the operations meet the requirements of 30 TAC 116, Subchapter B.

The fee of $5,610 has been paid through the TCEQ STEERS system. An expedited review fee of an additional $10,000 has also been paid.

2 PROCESS DESCRIPTION

Stucco Manufacturing Process

The site receives raw aggregates delivered via truck and unloaded pneumatically into silos (FINs: SILO1-SILO5). The raw aggregates received on-site include Portland cement, silica/sand, hydrated lime, and fly ash. These materials are unloaded into one of five (5) silos dedicated to specific material use: two (2) 450-barrel (bbl) silos containing cement (FINs: SILO1, SILO2), one (1) three 350-bbl containing silica sand (FIN: SILO3), one (1) 350-bbl containing lime (FIN: SILO4), and one (1) 350-bbl containing fly ash (FIN: SILO5). Each silo is equipped with a dedicated dust collector using fabric filters with a 99.99% control efficiency (EPNs: SBH1-SBH5).

The process of mixing the aggregates for the purpose of manufacturing stucco begins with the transfer of the raw aggregates from each silo using fully enclosed screw augers to the weigh hopper (FIN: HOP1). The screw augers transfer the material from the bottom of the silos located on the exterior of the building to the weigh hopper, located within the building at the top of the mixing tower. Once transferred, the raw aggregates are accurately weighed within the weigh hopper using the appropriate ratios needed to manufacture the desired specification for the stucco. Particulate matter generated from the transfer of material from the silos into the weigh hopper via screw auger are routed via a direct connection to a fabric filter baghouse (EPN: BGH1). The baghouse is a CAMCORP Model 4FSBH45x16 dust collector with a 99.99% control efficiency in removing particulate matter before discharging emissions to the atmosphere. There are no fugitive emissions associated with weigh hopper (FIN: HOP1), as the hopper is fully enclosed and controlled by BGH1.

Once appropriately weighed for the stucco specification, the raw aggregates within the weigh hopper are transferred via gravity drop to the aggregates mixer (FIN: MIX1), which has the capacity of mixing forty-five cubic foot (45-ft^3) batches. MIX1 is a fully enclosed mixing vessel. Particulate matter emissions generated by the gravity transfer of aggregates from HOP1 to MIX1 are routed via direct connection from MIX1 to BGH1. The particulate matter emissions generated and subsequently routed to BGH1 are removed with a 99.99% efficiency before being discharged to the atmosphere. After the materials have been adequately mixed within MIX1, the mixed aggregates, now a stucco specification mix, drop from the mixer to the fully enclosed discharge hopper (FIN: HOP2). Emissions generated by the gravity transfer of the stucco mix from the MIX1 to HOP2 are routed via direct connection to BGH1, where particulate matter emissions are removed with a 99.99% efficiency before being discharged to the atmosphere. There are no fugitive emissions associated with weigh hopper (FIN: HOP2), as the hopper is fully enclosed and controlled by BGH1.

After the transfer of the stucco mix is transferred to HOP2, the discharge hopper is utilized as a surge vessel for storing the mixed product before the stucco mix is gravity fed to the bagging system (FIN: BAGGER). The bagger equipment includes two (2) bagging hoses that fill eighty pound (80-lb) bags with the final stucco mixture, using gravity to transfer the stucco mix from HOP2 and into the bags. The stucco mix transfer process completed by the BAGGER is unenclosed and open to the ambient air within the building. Emissions generated from the bagging operations are controlled by two (2) suction shroud collection points within the immediate vicinity of the stucco mix transfer points. These collection points capture fugitive particulate matter emissions with an approximately 70% efficiency, where particulate matter emissions captured are removed with a 99.99% efficiency by BGH1 before being discharged to the atmosphere. The 30% of fugitive particulate matter emissions not captured by the collections points are

released within the enclosed building, where the majority of the particulate matter drops out of the ambient air and accumulates the building floor. The remaining stucco mix not captured by BGH1 or deposited on the building floor are conservatively assumed to be emitted through the nearest building roll-up doorway (EPN: SDOOR1).

After the bags have been filled with the stucco mix, the bags are sealed and subsequently flipped, flattened, and weighed, then lifted using a robotic arm onto the pallet conveyor. Shipping pallets are loaded with the filled bags then wrapped in plastic for delivery to customers. There are no emissions generated by the bag finishing and shipping process as the bags are fully enclosed.

Acrylic Coating Manufacturing Process

In addition to the stucco manufacturing process, the site also produces a single acrylic finish, which may be utilized by stucco consumers as a finishing coating applied to a stucco facade. The process of manufacturing the acrylic coating begins when the site receives liquid acrylic latex via truck that is unloaded via pumps into one of three (3) 4,000-gallon bulk tanks (FINs: AST1-AST3, LLOAD1-LLOAD3; EPNs: ASTV1-ASTV3). Bulk sand and calcium carbonate are delivered and unloaded pneumatically in to two (2) 250-bbl silos (EPNs: SBH6-SBH7; FINs: SILO6-SILO7). The site also receives additional acrylic solids and liquid components in drums, totes, and bags that are stored in the original containers in which they are received. The solid materials used to manufacture the acrylic coating include: powdered gelling agent, filler, titanium dioxide, ethyl hydroxyethyl cellulose, cellulosic thickener, marble aggregate filler, sand, and calcium cabonate. The liquid materials used to manufacture the acrylic coating include: acrylic latex, bactericide, biocide, propylene glycol, dispersants, defoamer, and surfactant. The bulk latex stored in AST1, AST2, and AST3 is transferred via an enclosed transfer system (FIN: MIXLOAD1, MIXLOAD2) to one of two (2) dual-shaft disperser/mixer (FIN: MIX2, MIX3). MIX2 and MIX3 are mixing vessels equipped with a dual shaft agitation mixer and are utilized to mix all liquid and solid materials into the acrylic coating product. Batch production is alternated between the mixers to allow for cleaning of the equipment between batches. The loading of VOC-containing components into the mixing tanks generates VOC emissions, which are routed from the fully enclosed mixers to the acrylic baghouse (EPN: BGH2).

In conjunction with the latex material, the other liquid materials stored in other vessels within the building are pumped into MIX2/MIX3. Sand and calcium carbonate from SILO6 and SILO7 are transferred pneumatically to MIX2/MIX3 (FINs: MIXDROP1, MIXDROP2). The remaining solid materials are transferred pneumatically and gravity fed in specific quantities to MIX2/MIX3 (FINs: MIXDROP1, MIXDROP2), which subsequently mixes all materials using mechanical agitation to a uniform consistency. Particulate matter generated by the pneumatic and gravity transfer of the dry materials into MIX2/MIX3 are routed to the acrylic baghouse (EPN: BGH2) from each mixer. The acrylic baghouse is a CAMCORP Model 10TR10x100 dust collector with a 99.99% control efficiency. The fully enclosed mixers capture 100% of fugitive particulate matter emissions, then particulate matter emissions captured are removed with a 99.99% efficiency by BGH2 before being discharged to the atmosphere.

After the mixing of the materials are complete, the process of manufacturing the acrylic coating is complete. The acrylic coating is transferred from MIX2/MIX3 via pumps to metered loading area (FIN: AFLOAD), where the acrylic latex is loaded into 5-gallon buckets for delivery to customers. The fill station will be fully enclosed with a plexi-glass or other synthetic enclosure, with openings only for egress/regress of pails on the conveyor. The dust collector (EPN: BGH2) will be connected to the top of the hood

enclosure and provide sufficient airflow to ensure 100% collection of any pail loading emissions in accordance with BACT.

Maintenance, Startup, and Shutdown Operations (MSS)

The building floor may require periodic collection of dry raw materials used in the processes for housekeeping. Any material collected will be manually swept by site personnel and stored in enclosed containers within the building until it is properly disposed of off-site. Particulate matter emissions from this process are estimate to be negligible given their infrequent nature.

Both BGH1 and BGH2 baghouses will accumulate dry materials within the hoppers of each baghouse. The 55-gallon drums affixed to each hopper must be periodically emptied and disposed of when at capacity. The material within the drums will be transferred to an appropriate vessel and disposed of off-site. Particulate matter emissions from this process are estimate to be negligible given their infrequent nature.

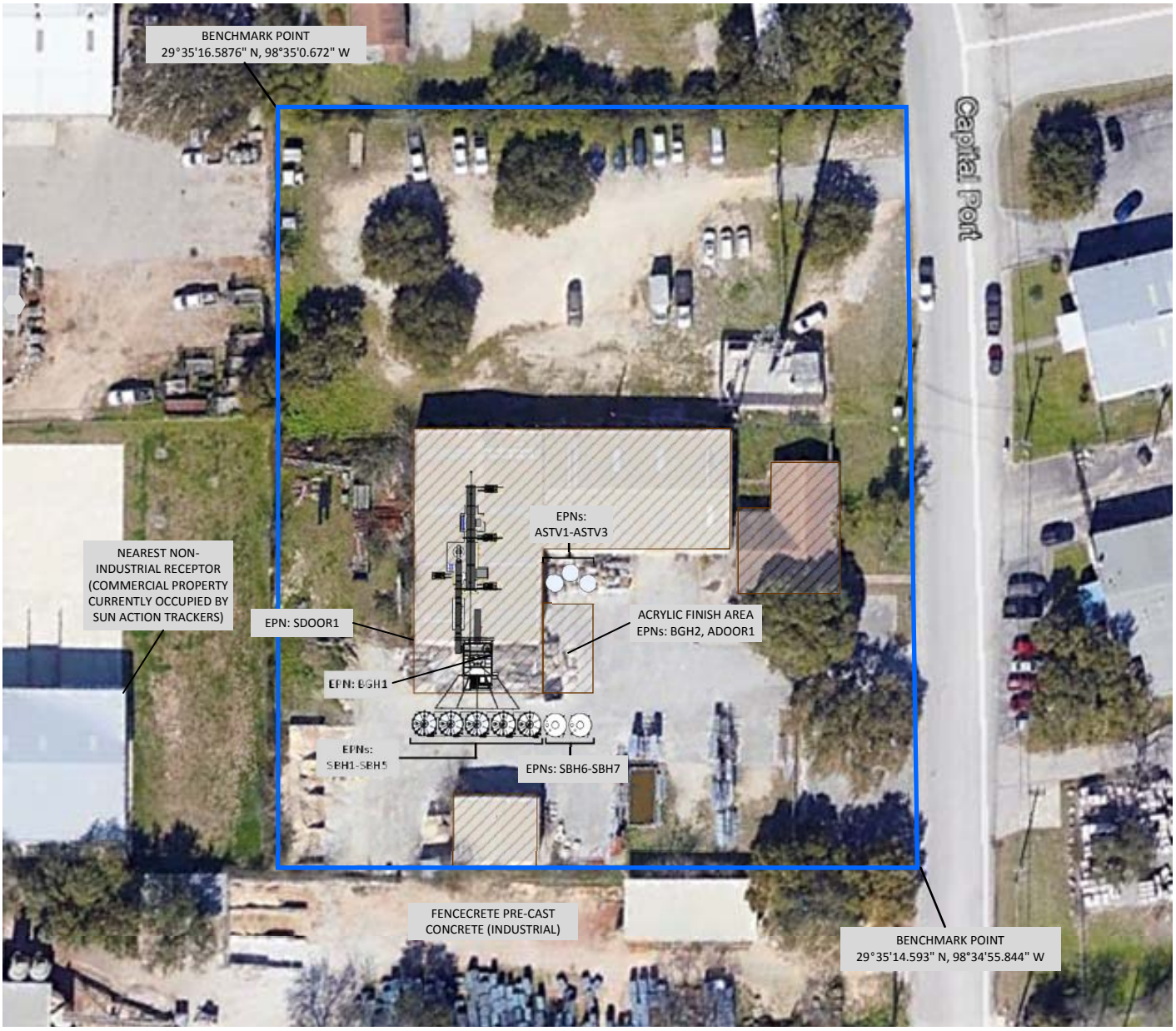
The site is also incorporating by reference the following MSS de minimis activities, authorized under 30 TAC 116.119(1):

1. Application of lubricants (including greases and oils) without aerosol propellants other than air and/or nitrogen, for maintaining equipment and other facilities.
2. Manual application of cleaning or stripping solutions or coatings. Manual application includes application using brushes, cloth pads, sponges, droppers, tube dispensing equipment, or spray bottles and pump-up sprayers without aerosol propellants.
3. Application of aqueous detergents, surfactants, and other cleaning solutions containing not more than one percent of any organic compound by weight or containing not more than five percent of any organic compound with a vapor pressure less than 0.002 pounds per square inch absolute.
4. Application of aerosol-propelled organic liquids using hand-held devices for maintaining equipment and other facilities where usage is no more than four aerosol cans or 64 ounces per day on a 12-month rolling average basis.

Operating Schedule

While the site will normally only operate nine (9) hours per day, five (5) days per week, the maximum operating schedule requested with this application is 365 days per year and 12 hours per day, or 4,380 hours per year.

3 AREA MAP AND PLOT PLAN



0 50 100 150 200

Feet

EPNs:

SBH1	CEMENT SILO 1 BAGHOUSE
SBH2	CEMENT SILO 2 BAGHOUSE
SBH3	SILICA SILO BAGHOUSE
SBH4	LIME SILO BAGHOUSE
SBH5	FLY ASH SILO BAGHOUSE
SBH6	SAND SILO BAGHOUSE
SBH7	CALCIUM CARBONATE SILO BAGHOUSE
BGH1	STUCCO MIXER TOWER BAGHOUSE
BGH2	ACRYLIC FINISH PROCESS BAGHOUSE
SDOOR1	STUCCO BUILDING FUGITIVES
ADOOR1	ACRYLIC FINISH BUILDING FUGITIVES
ASTV1	AST 1 VENT
ASTV2	AST 2 VENT
ASTV3	AST 3 VENT

LEGEND

PROPERTY BOUNDARY

BUILDING

MAP: GOOGLE EARTH
IMAGE DATE: 02/2019

FACADES XI
PLOT PLAN

FACADES XI
15262 CAPITAL PORT
SAN ANTONIO, TX 78249

RABA KISTNER, INC.
1011 W. LEWIS ST.
CONROE, TX 77301
WWW.RKCI.COM

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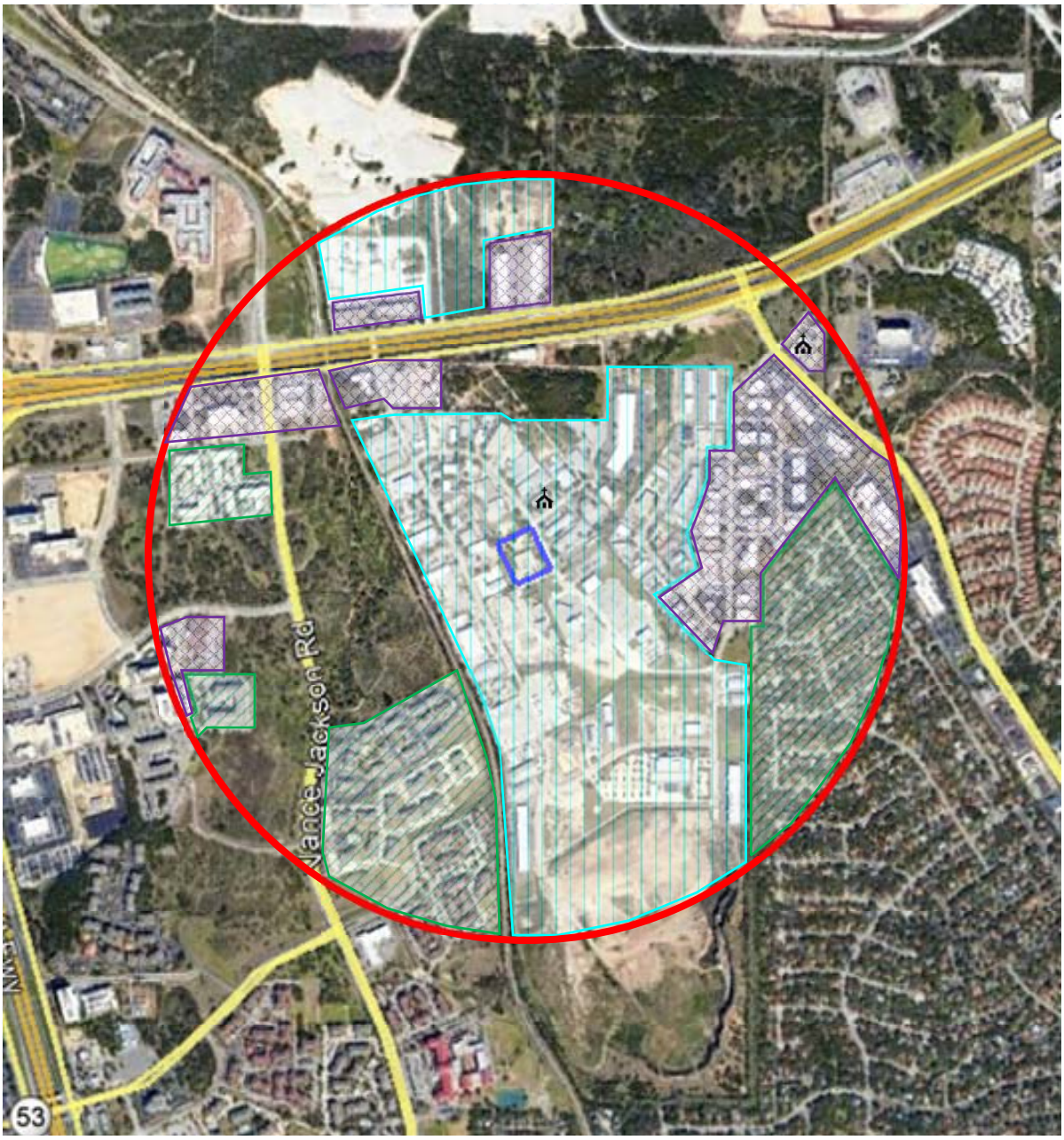

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LEGEND

- PROPERTY BOUNDARY
- 3,000 FT BUFFER
- CHURCH
- MIXED INDUSTRIAL/COMMERCIAL
- RESIDENTIAL
- COMMERCIAL

MAP: GOOGLE EARTH
IMAGE DATE: 02/2019

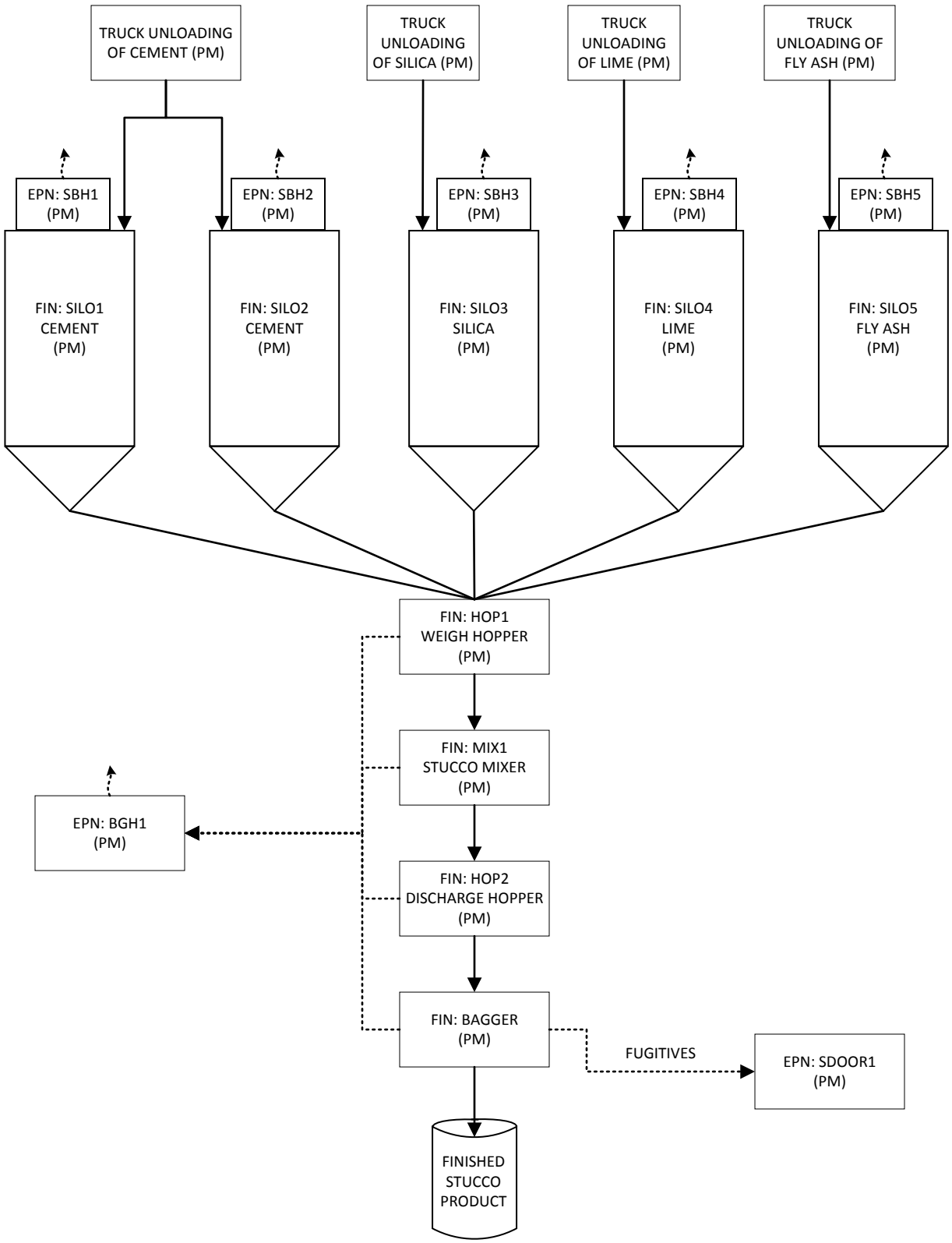
FACADES XI
AREA MAP

FACADES XI
15262 CAPITAL PORT
SAN ANTONIO, TX 78249

RABA KISTNER

RABA KISTNER, INC.
1011 W. LEWIS ST.
CONROE, TX 77301
WWW.RKCI.COM

4 PROCESS FLOW DIAGRAM



PROCESS FLOW DIAGRAM - STUCCO

FACADES XI
15262 CAPITAL PORT
SAN ANTONIO, TX 78249

RABA KISTNER, INC.
1011 W. LEWIS ST.
CONROE, TX 77301
WWW.RKCI.COM

TRUCK UNLOADING OF LATEX
FIN: LLOAD1-LLOAD3 (VOC)

FIN: LLOAD1-LLOAD3 (VOC)

EPN: ASTV1
FIN: AST1
(VOC)

EPN: ASTV2
FIN: AST2
(VOC)

EPN: ASTV3
FIN: AST3
(VOC)

FINs: MIXLOAD1, MIXLOAD2 (VOC)

RECEIPT/STORAGE OF BACTERICIDE

RECEIPT/STORAGE OF BIOCIDE

RECEIPT/STORAGE OF PROPYLENE GLYCOL

RECEIPT/STORAGE OF DISPERSANT

RECEIPT/STORAGE OF DISPERSING AGENT

RECEIPT/STORAGE OF DEFOAMER

RECEIPT/STORAGE OF SURFACTANT

RECEIPT/STORAGE OF POWDERED GELLING AGENT

RECEIPT/STORAGE OF FILLER

RECEIPT/STORAGE OF TITANIUM DIOXIDE

RECEIPT/STORAGE OF CELLULOSE

RECEIPT/STORAGE OF THICKENER

RECEIPT/STORAGE OF MARBLE AGGREGATES

FIN: MIXLOAD1, MIXLOAD2 (VOC)
FIN: MIXDROP1, MIXDROP2 (PM)

TRUCK UNLOADING OF SAND (PM)

EPN: SBH6
(PM)

FIN: SILO6
SAND
(PM)

TRUCK UNLOADING OF CALCIUM CARBONATE (PM)

EPN: SBH7
(PM)

FIN: SILO7
CALCIUM CARBONATE
(PM)

FINs: MIX2 and MIX3 (VOC)
MIXERS

FIN: MIXDROP1, MIXDROP2 (PM)

FIN: AFLOAD
(VOC)

ACRYLIC
FINISH PAILS

EPN: BGH2
(PM, VOC)

LEGEND

HOSE/PNEUMATIC TRANSFER

MANUAL TRANSFER

PM POINT SOURCE EMISSIONS

PROCESS FLOW DIAGRAM – ACRYLIC FINISH

FACADES XI
15262 CAPITAL PORT
SAN ANTONIO, TX 78249

RABA KISTNER, INC.
1011 W. LEWIS ST.
CONROE, TX 77301
WWW.RKCI.COM

5 TCEQ FORMS

5.1 PI-1 WORKBOOK
5.2 EMEW WORKBOOK
5.3 CDF

Texas Commission on Environmental Quality
Form PI-1 General Application
General

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

A. Company Information

Company or Legal Name:	Facades XI, LLC

Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at:

https://www.sos.state.tx.us

Texas Secretary of State Charter/Registration Number (if given):	803394251

B. Company Official Contact Information: must not be a consultant

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Joe
Last Name:	McClaran
Title:	COO
Mailing Address:	15262 Capital Port
Address Line 2:	
City:	San Antonio
State:	TX
ZIP Code:	78249
Telephone Number:	210-867-6991
Fax Number:	
Email Address:	joe@facadesxi.com

C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Amelia
Last Name:	Hudson
Title:	Division Manager - Compliance
Company or Legal Name:	Raba Kistner, Inc.
Mailing Address:	19111 North Dallas Parkway
Address Line 2:	Suite 115
City:	Dallas
State:	TX
ZIP Code:	75287
Telephone Number:	972-385-8069
Fax Number:	972-385-8165
Email Address:	ahudson@rkci.com

D. Assigned Numbers

The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.

Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	CN605791425

Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	RN102783693

II. Delinquent Fees and Penalties

Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: https://www.tceq.texas.gov/agency/financial/fees/delin	No

III. Permit Information

A. Permit and Action Type **(multiple may be selected, leave no blanks)**

Additional information regarding the different NSR authorizations can be found at:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the drop-down the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	Action Type Requested (do not leave blank)	Permit Number (if assigned)
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Initial	
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Not applicable	
Nonattainment: *Not applicable, Initial, Major Modification*	Not applicable	
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Not applicable	

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	Combination (list below)
List the permit number, registration number, and/or PBR number.	NSR permit; de minimis

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No

Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference. At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo:

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	No

E. Associated Federal Operating Permits

Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	No

IV. Facility Location and General Information	
A. Location	
County: Enter the county where the facility is physically located.	Bexar
TCEQ Region	Region 13
County attainment status as of Sept. 23, 2019	Marginal Ozone nonattainment
Street Address:	15262 Capital Port
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	San Antonio
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	78249
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	
Use USGS maps, county maps prepared by the Texas Department of Transportation, or an online software application such as Google Earth to find the latitude and longitude.	
Latitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Latitude is the angular distance of a location north of the equator and will always be between 25 and 37 degrees north (N) in Texas.	029:35:15.6084
Longitude (in degrees, minutes, and nearest second (DDD:MM:SS)) for the street address or the destination point of the driving directions. Longitude is the angular distance of a location west of the prime meridian and will always be between 93 and 107 degrees west (W) in Texas.	098:34:58.1952
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No
B. General Information	
Site Name:	Facades XI
Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	Stucco manufacturing and acrylic finish production facility to include storage of raw materials, weighing, mixing, and bagging/packaging finished products
Are there any schools located within 3,000 feet of the site boundary?	No

C. Portable Facility	
Permanent or portable facility?	Permanent

D. Industry Type	
Principal Company Product/Business:	Stucco manufacturing
A list of SIC codes can be found at: https://www.naics.com/sic-codes-industry-drilldown/	
Principal SIC code:	3299
NAICS codes and conversions between NAICS and SIC Codes are available at: https://www.census.gov/eos/www/naics/	
Principal NAICS code:	32799

E. State Senator and Representative for this site	
This information can be found at (note, the website is not compatible to Internet Explorer): https://wrm.capitol.texas.gov/	
State Senator:	Donna Campbell
District:	25
State Representative:	Lyle Larson
District:	122

V. Project Information

A. Description	
Provide a brief description of the project that is requested. (Limited to 500 characters).	Application for initial NSR permit for stucco manufacturing facility

B. Project Timing	
Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).	
Projected Start of Construction:	August 1, 2020
Projected Start of Operation:	October 1, 2020

C. Enforcement Projects	
Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No

D. Operating Schedule	
Will sources in this project be authorized to operate 8760 hours per year?	No
If no, provide details in your permit application materials.	
Does this facility operate seasonally?	No

VI. Application Materials

All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)

A. Confidential Application Materials	
Is confidential information submitted with this application?	No

B. Is the Core Data Form (Form 10400) attached?	Yes
https://www.tceq.texas.gov/assets/public/permitting/centralregistry/10400.docx	
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. You do not need to submit calculations for sources which are not changing emission rates with this project. Please note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review. It can be emailed with the submittal of this application workbook.	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
H. Is a material balance (Table 2, Form 10155) attached?	N/A

I. Is a list of MSS activities attached?	Yes
Are the MSS activities listed and discussed separately, each complete with the authorization mechanism or emission rates, frequency, duration, and supporting information if authorized by this permit?	Yes
J. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
K. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant's consultant cannot sign the application. **Important Note: Signatures must be original in ink, not reproduced by photocopy, fax, or other means, and must be received before any permit is issued.**

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382; the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name:	Joe McClaran
Signature:	
Original signature is required.	
Date:	

I. Additional Questions for Specific NSR Minor Permit Actions

E. Concrete Batch Plants

Is this a project for a concrete batch plant?	No

VIII. Federal Regulatory Questions	
Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.	
A. Title 40 CFR Part 60	
Do NSPS subpart(s) apply to a facility in this application?	No
B. Title 40 CFR Part 61	

Do NESHAP subpart(s) apply to a facility in this application?	No

C. Title 40 CFR Part 63

Do MACT subpart(s) apply to a facility in this application?	No

IX. Emissions Review

A. Impacts Analysis

Any change that results in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet of this workbook.

Does this project require an impacts analysis?	Yes

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	No

C. Air Pollutant Watch List

Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at:

https://www.tceq.texas.gov/toxicology/apwl/apwl.html

Is the proposed facility located in a watch list area?	No

D. Mass Emissions Cap and Trade

Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

Permit primary industry (must be selected for workbook to function)	Mechanical / Agricultural / Construction

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)	Unit Type Notes (only if "other" unit type in Column O)
New/Modified	Yes	SILO1	SBH1	Cement Silo 1	PM					0.02	0.05	*0.02*	*0.05*	Storage: Silo	
					PM10					0.02	0.05	*0.02*	*0.05*		
					PM2.5					0.004	0.01	*0.004*	*0.01*		
New/Modified	Yes	SILO2	SBH2	Cement Silo 2	PM					0.02	0.05	*0.02*	*0.05*	Storage: Silo	
					PM10					0.02	0.05	*0.02*	*0.05*		
					PM2.5					0.004	0.01	*0.004*	*0.01*		
New/Modified	Yes	SILO3	SBH3	Silica Silo	PM					0.02	0.05	*0.02*	*0.05*	Storage: Silo	
					PM10					0.02	0.05	*0.02*	*0.05*		
					PM2.5					0.003	0.01	*0.003*	*0.01*		
New/Modified	Yes	SILO4	SBH4	Lime Silo	PM					0.02	0.05	*0.02*	*0.05*	Storage: Silo	
					PM10					0.02	0.05	*0.02*	*0.05*		
					PM2.5					0.003	0.01	*0.003*	*0.01*		
New/Modified	Yes	SILO5	SBH5	Fly Ash Silo	PM					0.02	0.05	*0.02*	*0.05*	Storage: Silo	
					PM10					0.02	0.05	*0.02*	*0.05*		
					PM2.5					0.003	0.01	*0.003*	*0.01*		
New/Modified	Yes	HOP1, HOP2, MIX1, BAGGER	BGH1	Stucco Mixer Tower Baghouse	PM					0.06	0.14	*0.06*	*0.14*	Control: Bag Filter/Baghouse	
					PM10					0.06	0.14	*0.06*	*0.14*		
					PM2.5					0.06	0.14	*0.06*	*0.14*		
New/Modified	Yes	MIXDROP1, MIXDROP2	BGH2	Acrylic Finish Process Baghouse	PM					0.09	0.19	*0.09*	*0.19*	Control: Bag Filter/Baghouse	
					PM10					0.09	0.19	*0.09*	*0.19*		
					PM2.5					0.09	0.19	*0.09*	*0.19*		
New/Modified	Yes	BAGGER	SDOOR1	Stucco bagger	PM					0.00003	0.00006	*0.0001*	*0.0001*	Material Handling: Packaging/Bagging	
					PM10					0.00001	0.00002	*0.0001*	*0.0001*		
					PM2.5					0.000003	0.00001	*0.0001*	*0.0001*		
New/Modified	Yes	MIX2, MIX3	BGH2	Acrylic Finish Mixer	VOC					6.04	3.86	*6.04*	*3.86*	Mixer	
New/Modified	Yes	MIXLOAD1, MIXLOAD2	BGH2	Acrylic Finish Mixer liquid loading	VOC					0.32	0.3	*0.32*	*0.3*	Material Handling: Product Handling	
New/Modified	Yes	AFLOAD	BGH2	Acrylic Finish Packaging	VOC					1.822	5.788	*1.822*	*5.788*	Material Handling: Packaging/Bagging	
New/Modified	Yes	AST1	ASTV1	Latex Silo 1	VOC					5.13	0.09	*5.13*	*0.09*	Other	Storage tank: fixed roof with capacity > 25 Mgal
New/Modified	Yes	AST2	ASTV2	Latex Silo 2	VOC					5.13	0.09	*5.13*	*0.09*	Other	Storage tank: fixed roof with capacity > 25 Mgal
New/Modified	Yes	AST3	ASTV3	Latex Silo 3	VOC					5.13	0.09	*5.13*	*0.09*	Other	Storage tank: fixed roof with capacity > 25 Mgal
New/Modified	Yes	LLOAD1	ASTV1	Latex Silo 1 loading	VOC					5.13		*5.13*	0	Other	Loading: tank
New/Modified	Yes	LLOAD2	ASTV2	Latex Silo 2 loading	VOC					5.13		*5.13*	0	Other	Loading: tank
New/Modified	Yes	LLOAD3	ASTV3	Latex Silo 3 loading	VOC					5.13		*5.13*	0	Other	Loading: tank
New/Modified	Yes	MIX2, MIX3	BGH2	Acrylic Finish Mixer	HAPs					0.000007	0.0000045	*0.0001*	*0.0001*	Mixer	
New/Modified	Yes	MIXLOAD1, MIXLOAD2	BGH2	Acrylic Finish Mixer liquid loading	HAPs					0.0000006	0.0000006	*0.0001*	*0.0001*	Material Handling: Product Handling	
New/Modified	Yes	AFLOAD	BGH2	Acrylic Finish Packaging	HAPs					0.0000036	0.00001	*0.0001*	*0.0001*	Material Handling: Packaging/Bagging	
New/Modified	Yes	SILO6	SBH6	Sand Silo	PM					0.02	0.05	*0.02*	*0.05*	Storage: Silo	
					PM10					0.02	0.05	*0.02*	*0.05*		
					PM2.5					0.003	0.01	*0.003*	*0.01*		
New/Modified	Yes	SILO7	SBH7	Calcium Carbonate Silo	PM					0.02	0.05	*0.02*	*0.05*	Storage: Silo	
					PM10					0.02	0.05	*0.02*	*0.05*		
					PM2.5					0.02	0.05	*0.02*	*0.05*		
												0	0		
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Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

Emission Point Discharge Parameters												
EPN	Included in EMEW?	UTM Coordinates Zone	East (Meters)	North (Meters)	Building Height (ft)	Height Above Ground (ft)	Stack Exit Diameter (ft)	Velocity (FPS)	Temperature (°F)	Fugitives - Length (ft)	Fugitives - Width (ft)	Fugitives - Axis Degrees
SBH1	Yes											
SBH2	Yes											
SBH3	Yes											
SBH4	Yes											
SBH5	Yes											
BGH1	Yes											
BGH2	Yes											
SDOOR1	Yes											
ASTV1	Yes											
ASTV2	Yes											
ASTV3	Yes											
SBH6	Yes											
SBH7	Yes											

Texas Commission on Environmental Quality
Form PI-1 General Application
Public Notice

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

I. Public Notice Applicability	
A. Application Type	
Is this an application for an initial permit?	Yes
B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)	

Pollutant			Proposed Long-Term (tpy)			
VOC			10.22			
PM			0.68			
PM_{10}			0.68			
$PM_{2.5}$			0.44			
NO_x			0.00			
CO			0.00			
SO_2			0.00			
Pb			0.00			
HAPs			0.0000151			

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

C. Is public notice required for this project as represented in this workbook? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
D. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	Yes

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Joe
Last Name:	McClaran
Title:	COO
Company Name:	Facades XI, LLC

Mailing Address:	15262 Capital Port
Address Line 2:	
City:	San Antonio
State:	TX
ZIP Code:	78249
Telephone Number:	210-867-6991
Fax Number:	
Email Address:	joe@facadesxi.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Ms.
First Name:	Amelia
Last Name:	Hudson
Title:	Division Manager - Compliance
Company Name:	Raba Kistner, Inc.
Mailing Address:	19111 North Dallas Parkway
Address Line 2:	Suite 115
City:	Dallas
State:	TX
ZIP Code:	75287
Telephone Number:	972-385-8069
Fax Number:	972-385-8165
Email Address:	ahudson@rkci.com

B. Public place

Place a copy of the full application (including all of this workbook and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	https://facadesxi.com/FacadesXI-NSR-Application.pdf
Physical Address:	
Address Line 2:	
City:	
ZIP Code:	
County:	
Has the public place granted authorization to place the application for public viewing and copying?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program?	Spanish

III. Small Business Classification	
Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.	
Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	Yes
Is the site a major source under 30 TAC Chapter 122, Federal Operating Permit Program?	No
Are the site emissions of any individual air contaminant greater than or equal to 50 tpy?	No
Are the site emissions of all air contaminants combined greater than or equal to 75 tpy?	No
Small business classification:	**Yes**

Texas Commission on Environmental Quality
Form PI-1 General Application
Federal Applicability

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

I. County Classification	
Does the project require retrospective review?	No
County (completed for you from your response on the General sheet)	Bexar
This project will be located in an area that is in marginal nonattainment for ozone as of Sept. 23, 2019. Select from the drop-down list to the right if you would like the project to be reviewed under a different classification.	
Determination:	**This project will be located in a county with a Marginal Ozone nonattainment classification. Complete the nonattainment section below and provide an analysis with the application.**

II. PSD and GHG PSD Applicability Summary			
Is netting required for the PSD analysis for this project?			**No**
Pollutant	**Project Increase**	**Threshold**	**PSD Review Required?**
CO	0	100	No
NO_x	0	40	No
PM	0.64	25	No
PM_{10}	0.64	15	No
$PM_{2.5}$	0.42	10	No
SO_2	0	40	No
Pb	0	0.6	No
H_2S	0	10	No
TRS	0	10	No
Reduced sulfur compounds (including H_2S)	0	10	No
H_2SO_4	0	7	No
Fluoride (excluding HF)	0	3	No
CO2e	0	75,000	No

III. Nonattainment Applicability Summary			
Is netting required for the nonattainment analysis for this project?			**No**
Pollutant	**Project Increase**	**Threshold**	**NA Review Required?**

Ozone (as VOC)	7.53	40	No
Ozone (as NO_x)	0	40	No

IV. Offset Summary (for Nonattainment Permits)			
Pollutant	**Offset Ratio**	**Offset Quantity Required (tpy)**	**Where is the offset coming from?**

Texas Commission on Environmental Quality
Form PI-1 General Application
Fees

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

I. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option. Then skip sections II and III.	No
Select Application Type	Minor Application

II. Direct Costs - Non-Renewal	
Type of Cost	**Amount**
Process and control equipment not previously owned by the applicant and not currently authorized under this chapter.	$1,023,738.00
Auxiliary equipment, including exhaust hoods, ducting, fans, pumps, piping, conveyors, stacks, storage tanks, waste disposal facilities, and air pollution control equipment specifically needed to meet permit and regulation requirements.	$110,000.00
Freight charges.	$5,262.00
Site preparation, including demolition, construction of fences, outdoor lighting, road, and parking areas.	$8,500.00
Installation, including foundations, erection of supporting structures, enclosures or weather protection, insulation and painting, utilities and connections, process integration, and process control equipment.	$275,000.00
Auxiliary buildings, including materials storage, employee facilities, and changes to existing structures.	$27,500.00
Ambient air monitoring network.	$0.00
Sub-Total:	$1,450,000.00

III. Indirect Costs - Non-Renewal	
Type of Cost	**Amount**
Final engineering design and supervision, and administrative overhead.	$42,000.00
Construction expense, including construction liaison, securing local building permits, insurance, temporary construction facilities, and construction clean-up.	$378,000.00
Contractor's fee and overhead.	$0.00
Sub-Total:	$420,000.00

IV. Calculations - Non-Renewal
For GHG permits: A single PSD fee (calculated on the capital cost of the project per 30 TAC § 116.163) will be required for all of the associated permitting actions for a GHG PSD project. Other NSR permit fees related to the project that have already been remitted to the TCEQ can be subtracted when determining the appropriate fee to submit with the GHG PSD application. Identify these other fees in the GHG PSD permit application.

In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Estimated Capital Cost	Minor Application Fee	
Less than $300,000	$900 (minimum fee)	
$300,000 - $7,500,000	N/A	
$300,000 - $25,000,000	0.30% of capital cost	
Greater than $7,500,000	N/A	
Greater than $25,000,000	$75,000 (maximum fee)	

Your estimated capital cost:	**$1,870,000.00**	x 0.30% =
Permit Application Fee:		**$5,610.00**

VI. Total Fees

Note: fees can be paid together with one payment or as two separate payments.	
Non-Renewal Fee	$5,610.00
Total	$5,610.00

VII. Payment Information

A. Payment One (required)	
Was the fee paid online?	No
Enter the fee amount:	$ 5,610.00
Enter the check, money order, ePay Voucher, or other transaction number:	2551
Enter the Company name as it appears on the check:	Facades XI LLC

C. Total Paid	**$5,610.00**

VIII. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	No

Texas Commission on Environmental Quality
Form PI-1 General Application
Impacts

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes	Additional Notes (optional)
VOC	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	
PM	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
PM10	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
PM2.5	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).	
HAPs	No	MERA analysis, steps 0-2 only or using screening tables	Attach a detailed description of which MERA step was met for each species in the project. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.	

Texas Commission on Environmental Quality
Form PI-1 General Application
BACT

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

Plant Type	Current Tier I BACT	Confirm	Additional Notes

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	SILO1	Storage: Silo	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 99% reduction or outlet grain loading of 0.01 gr/dscf (combined front and back half), typically achieved with fabric filters. Specify if different. Maximum opacity of 5%. (1% from asphalt mineral handling.) No visible emissions shall leave the property from the silo loading. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent.	Yes	The silo dust house has filters with a control efficiency of 99.99%.
			MSS	Best management practices (minimizing spills, cleaning spills promptly, and using low volatility cleaning materials) during maintenance. No additional controls required for startup and shutdown operations if normally required controls are employed. No bypassing of controls. Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Yes	
New/Modified	SILO2	Storage: Silo	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 99% reduction or outlet grain loading of 0.01 gr/dscf (combined front and back half), typically achieved with fabric filters. Specify if different. Maximum opacity of 5%. (1% from asphalt mineral handling.) No visible emissions shall leave the property from the silo loading. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent.	Yes	The silo dust house has filters with a control efficiency of 99.99%.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	Best management practices (minimizing spills, cleaning spills promptly, and using low volatility cleaning materials) during maintenance. No additional controls required for startup and shutdown operations if normally required controls are employed. No bypassing of controls. Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Yes	
New/Modified	SILO3	Storage: Silo	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 99% reduction or outlet grain loading of 0.01 gr/dscf (combined front and back half), typically achieved with fabric filters. Specify if different. Maximum opacity of 5%. (1% from asphalt mineral handling.) No visible emissions shall leave the property from the silo loading. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent.	Yes	The silo dust house has filters with a control efficiency of 99.99%.
			MSS	Best management practices (minimizing spills, cleaning spills promptly, and using low volatility cleaning materials) during maintenance. No additional controls required for startup and shutdown operations if normally required controls are employed. No bypassing of controls. Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Yes	
New/Modified	SILO4	Storage: Silo	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 99% reduction or outlet grain loading of 0.01 gr/dscf (combined front and back half), typically achieved with fabric filters. Specify if different. Maximum opacity of 5%. (1% from asphalt mineral handling.) No visible emissions shall leave the property from the silo loading. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent.	Yes	The silo dust house has filters with a control efficiency of 99.99%.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	Best management practices (minimizing spills, cleaning spills promptly, and using low volatility cleaning materials) during maintenance. No additional controls required for startup and shutdown operations if normally required controls are employed. No bypassing of controls. Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Yes	
New/Modified	SILO5	Storage: Silo	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 99% reduction or outlet grain loading of 0.01 gr/dscf (combined front and back half), typically achieved with fabric filters. Specify if different. Maximum opacity of 5%. (1% from asphalt mineral handling.) No visible emissions shall leave the property from the silo loading. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent.	Yes	The silo dust house has filters with a control efficiency of 99.99%.
			MSS	Best management practices (minimizing spills, cleaning spills promptly, and using low volatility cleaning materials) during maintenance. No additional controls required for startup and shutdown operations if normally required controls are employed. No bypassing of controls. Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Yes	
New/Modified	HOP1, HOP2, MIX1, BAGGER	Control: Bag Filter/Baghouse	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Opacity shall not exceed 5% and/or no visible emissions from each stack or vent. 99% reduction or outlet grain loading of 0.01 gr/dscf.	Yes	The baghouse has filters with a control efficiency of 99.99%.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Yes	
New/Modified	MIXDROP1, MIXDROP2	Control: Bag Filter/Baghouse	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Opacity shall not exceed 5% and/or no visible emissions from each stack or vent. 99% reduction or outlet grain loading of 0.01 gr/dscf.	Yes	The baghouse has filters with a control efficiency of 99.99%.
			MSS	Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Yes	
New/Modified	BAGGER	Material Handling: Packaging/Bagging	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	The bagger has a suction shroud with 100% capture efficiency. Those PM emissions are then routed to BGH1.
			MSS	Best management practices (conducting system maintenance in a manner which minimizes emissions) employed during handling system maintenance. No bypassing of controls.	Yes	
New/Modified	MIX2, MIX3	Mixer	VOC	No established BACT. Specify controls.	Yes	Fully enclosed. Emissions routed to baghouse with 99.99% filter efficiency.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	See Additional Notes:	Yes	Best management practices employed during loading, including spill/leak cleanup. Controls will not be bypassed.
New/Modified	MIXLOAD1, MIXLOAD2	Material Handling: Product Handling	VOC	See Additional Notes:	Yes	Fully enclosed. Emissions routed to baghouse with 99.99% filter efficiency.
			MSS	Best management practices (conducting system maintenance in a manner which minimizes emissions) employed during handling system maintenance. No bypassing of controls.	Yes	Best management practices employed during loading, including spill/leak cleanup. Controls will not be bypassed.
New/Modified	AFLOAD	Material Handling: Packaging/Bagging	VOC	Good housekeeping for spills and best management practices. See applicable 30 TAC §115 and/or 40 CFR Part 63 requirements. Packaging operations shall have a local capture/collection system in use during container filling. 100% capture of emissions to minimize fugitive emissions. Collecting and venting of emissions to an add-on device may be required if the VOC and exempt solvent emissions at the site are ≥ 60 tpy. Efficiency of thermal control device is 98% or greater. Specify if this is applicable and efficiency.	Yes	The automatic drum fill station will be fully enclosed with a plexi-glass or other synthetic enclosure, with openings only for egress/regress of pails on the conveyor. The dust collector (BGH2) will be connected to the top of the hood enclosure and provide sufficient airflow to achieve a minimum face velocity of 100ft/min at each of the two openings. Achieving 100ft/min face velocity at each opening ensures 100% collection of any pail loading emissions in accordance with BACT.
			MSS	Best management practices (conducting system maintenance in a manner which minimizes emissions) employed during handling system maintenance. No bypassing of controls.	Yes	
New/Modified	AST1	Storage tank: fixed roof with capacity > 25 Mgal	VOC	See additional notes:	Yes	The tank will be filled via submerged fill. The tank will be white, aluminum, or similar light color to comply with Tier I BACT.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	See additional notes:		If ever drained, liqiud will be transferred to one of the other latex tanks. If there is any remaining liquid in the tank, and the tank is ventilated, the vapor will be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia.
New/Modified	AST2	Storage tank: fixed roof with capacity > 25 Mgal	VOC	See additional notes:		The tank will be filled via submerged fill. The tank will be white, aluminum, or similar light color to comply with Tier I BACT.
			MSS	See additional notes:		If ever drained, liqiud will be transferred to one of the other latex tanks. If there is any remaining liquid in the tank, and the tank is ventilated, the vapor will be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia.
New/Modified	AST3	Storage tank: fixed roof with capacity > 25 Mgal	VOC	See additional notes:		The tank will be filled via submerged fill. The tank will be white, aluminum, or similar light color to comply with Tier I BACT.
			MSS	See additional notes:		If ever drained, liqiud will be transferred to one of the other latex tanks. If there is any remaining liquid in the tank, and the tank is ventilated, the vapor will be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02.
New/Modified	LLOAD1	Loading: tank	VOC	See additional notes:		Vapor pressure is <0.5 psia and the tank will be filled via submerged fill.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	See additional notes:		Best management practices employed during loading, including spill/leak cleanup.
New/Modified	LLOAD2	Loading: tank	VOC	See additional notes:		Vapor pressure is <0.5 psia and the tank will be filled via submerged fill.
			MSS	See additional notes:		Best management practices employed during loading, including spill/leak cleanup.
New/Modified	LLOAD3	Loading: tank	VOC	See additional notes:		Vapor pressure is <0.5 psia and the tank will be filled via submerged fill.
			MSS	See additional notes:		Best management practices employed during loading, including spill/leak cleanup.
New/Modified	SILO6	Storage: Silo	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 99% reduction or outlet grain loading of 0.01 gr/dscf (combined front and back half), typically achieved with fabric filters. Specify if different. Maximum opacity of 5%. (1% from asphalt mineral handling.) No visible emissions shall leave the property from the silo loading. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent.	Yes	The silo dust house has filters with a control efficiency of 99.99%.

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
			MSS	Best management practices (minimizing spills, cleaning spills promptly, and using low volatility cleaning materials) during maintenance. No additional controls required for startup and shutdown operations if normally required controls are employed. No bypassing of controls. Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.		
New/Modified	SILO7	Storage: Silo	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 99% reduction or outlet grain loading of 0.01 gr/dscf (combined front and back half), typically achieved with fabric filters. Specify if different. Maximum opacity of 5%. (1% from asphalt mineral handling.) No visible emissions shall leave the property from the silo loading. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent.	Yes	The silo dust house has filters with a control efficiency of 99.99%.
			MSS	Best management practices (minimizing spills, cleaning spills promptly, and using low volatility cleaning materials) during maintenance. No additional controls required for startup and shutdown operations if normally required controls are employed. No bypassing of controls. Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation. Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.		

Texas Commission on Environmental Quality
Form PI-1 General Application
Monitoring

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring:
SILO1	Storage: Silo	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	EPA Method 22		
SILO2	Storage: Silo	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	EPA Method 22		
SILO3	Storage: Silo	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	EPA Method 22		
SILO4	Storage: Silo	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	EPA Method 22		
SILO5	Storage: Silo	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	EPA Method 22		
HOP1, HOP2, MIX	Control: Bag Filter/Baghouse	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Pressure drop monitoring and/or quarterly visible emissions and/or opacity observations.	Yes	EPA Method 22		
MIXDROP1, MIXD	Control: Bag Filter/Baghouse	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Pressure drop monitoring and/or quarterly visible emissions and/or opacity observations.	Yes	EPA Method 22		

BAGGER	Material Handling: Packaging/Bagging	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly observations for visible fugitive emissions and/or opacity observations Recordkeeping of materials processed	Yes	EPA Method 22 The facility will maintain records of stucco produced, and records of portland cement, lime, silica, and fly ash processed.		
MIX2, MIX3	Mixer	VOC	See Additional Notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		
MIXLOAD1, MIXL	Material Handling: Product Handling	VOC	See Additional Notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		
AFLOAD	Material Handling: Packaging/Bagging	VOC	See Additional Notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		
AST1	Storage tank: fixed roof with capacity > 25 Mgal	VOC	See additional notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		
AST2	Storage tank: fixed roof with capacity > 25 Mgal	VOC	See additional notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		
AST3	Storage tank: fixed roof with capacity > 25 Mgal	VOC	See additional notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		
LLOAD1	Loading: tank	VOC	See additional notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		

LLOAD2	Loading: tank	VOC	See additional notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		
LLOAD3	Loading: tank	VOC	See additional notes:	Yes	The facility will maintain records of raw ingredients processed and SDSs.		
SILO6	Storage: Silo	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	EPA Method 22		
SILO7	Storage: Silo	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. See Additional Notes:	Yes	EPA Method 22		

Texas Commission on Environmental Quality
Form PI-1 General Application
Materials

Date: 07/07/2020
Permit #: _____
Company: Facades XI, LLC

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	STEERS	07/08/2020
Hard copy of the General sheet with original (ink) signature	STEERS	07/08/2020
Professional Engineer Seal	Not applicable	
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form	STEERS	07/08/2020
Area map	STEERS	07/08/2020
Plot plan	STEERS	07/08/2020
Process description	STEERS	07/08/2020
Process flow diagram	STEERS	07/08/2020
List of MSS activities	STEERS	07/08/2020
State regulatory requirements discussion	STEERS	07/08/2020
C. Federal Applicability		
Summary and project emission increase determination - Tables 1F and 2F	Not applicable	
Netting analysis (if required) - Tables 3F and 4F as needed		
D. Technical Information		
BACT discussion, if additional details are attached	STEERS	07/08/2020
Monitoring information, if additional details are attached	Not applicable	
Material Balance (if applicable)		
Calculations	STEERS	07/08/2020
E. Impacts Analysis		
Qualitative impacts analysis	Not applicable	
MERA analysis	STEERS	07/08/2020
Electronic Modeling Evaluation Workbook: SCREEN3	STEERS	07/08/2020
Electronic Modeling Evaluation Workbook: NonSCREEN3	Not applicable	
PSD modeling protocol	Not applicable	
F. Additional Attachments		
Equipment specifications	STEERS	07/08/2020

1. It is typically seen that the capture of a hose connection or “elephant trunk” style collection system is dependent on a number of factors which include the distance at which the hose is placed from the process. Given this, please provide a description of the collection system including the placement and distance of the hose, which demonstrate that all emissions are exhausted through the proposed media.

   The enclosure for the acrylic finish pail loading equipment/process will be 60” wide by 96” tall by 72” long. Pail ingress and egress openings will be on each end of the enclosure, and will be 2’ by 2’. A single collection point will be placed affixed on the top of the enclosure, immediately above the centerline of the conveyor, and in the center of the enclosure lengthwise. As a result, the distance from the collection point hose to the openings on each end of the enclosure will be 36”. The collection point will be exhausted to the acrylic finish baghouse (EPN: BGH2).

2. Attached is a spreadsheet that can be used to verify the face velocity (taken from the Coatings Workbook available on the TCEQ website). Please provide face velocity calculations which demonstrate that all emissions from the mixing and loading processes are exhausted through the proposed emission points.

   The attached spreadsheet documents the face velocity at each opening in the acrylic finish pail loading enclosure. There will be one opening on each end of the enclosure, and each will by 2’ by 2’. The flow rate for the acrylic finish baghouse (EPN: BGH2) will maintain a minimum of 1,500 CFM while the pail loading equipment is in operation, to ensure a minimum face velocity of 100 ft/min at each opening.

3. In addition to the vendor data already provided on baghouse fabric filters, please submit vendor information on the mixers used in the process, including the covers that will be used and submerged fill pipe.

   The attached vendor data is for the two acrylic finish mixers. The mixers are dual-shaft with pressurized gasket seal lids. There will be six (6) ball valves on the top of each mixer lid for the connection of hoses for the pneumatic transfer of materials to the mixers (MIXDROP1-MIXDROP2, MIXLOAD1-MIXLOAD2). There will also be a 9” opening on the top of each mixer lid for the connection point to the dust collection system (EPN: BGH2), for 100% capture of fugitive emissions (PM and VOC species) from the loading/fill process into the mixers.

   The pail loading machine will have four nozzle heads placed 12” apart. The nozzles will lower into each pail and the pail will be completely filled as the nozzle remains stationary. As a result, the pails will be filled via splash loading until the last 2-4” of the pail, during which the nozzle will be submerged as the pail is filled. The four filling stations will be within the enclosure routed to BGH2, for 100% capture of fugitive emissions from this process. Pails will then be transported via conveyor to the adjacent lid placing station, which is fully automated.

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Acknowledgement:	Select from the drop down:
I acknowledge that I am submitting an authorized TCEQ Electronic Modeling Evaluation Workbook and any necessary attachments. Except for inputting the requested data, I have not changed the TCEQ Electronic Modeling Evaluation Workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree

Administrative Information:	
Data Type:	**Facility Information:**
Project Number (6 Digits):	
Permit Number:	
Regulated Entity ID (9 Digits):	102783693
Facility Name:	Facades XI
Facility Address:	15262 Capital Port, San Antonio, TX 78249
Facility County (select one):	Bexar
Company Name:	Facades XI, LLC
Company Contact Name:	Joe McClaran
Company Contact Number:	210-867-6991
Company Contact Email:	joe@facadesxi.com
Modeling Contact Name:	Amelia Hudson
Modeling Company Name, as applicable:	Raba Kistner, Inc.
Modeling Contact Number:	972-385-8069
Modeling Contact Email:	ahudson@rkci.com
New/Existing Site (select one):	New Site
Modeling Date (MM/DD/YYYY):	6/30/2020
UTM Zone (select one):	14

Sheet Instructions: Indicate in the Table of Contents which sections are applicable and included for this modeling demonstration. Select "X" from the drop down if the item below is included in the workbook. Note: This workbook is only for SCREEN3 analyses. Please use the separate Electronic Modeling Evaluation Workbook (EMEW) for the following air dispersion models: AERSCREEN, ISC/ISCPrime, and/or AERMOD.

Table of Contents

18	NAAQS/State Property Line (SPL) Modeling Results	X
19	Unit Impact Multipliers	X
20	Health Effects Modeling Results	X
21	Modeling File Names	X
22	Speciated Chemicals	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

General

Included Attachments Instructions: The following are attachments that must be included with any modeling analysis. If providing the plot plan and area map with the permit application, ensure there is also a copy with the EMEW. The copy can be electronic.	**Select an X from the dropdown menu if included:**
Plot Plan:	
Instructions: Mark all that apply in the attached plot plan. For larger properties or dense source areas, provide multiple zoomed in plot plans that are legible.	
Property/Fence Lines all visible and marked.	X
North arrow included.	X
Clearly marked scale.	X
All sources and buildings are clearly labeled.	X
Area Map:	
Instructions: Mark all that apply in the attached area map.	
Annotate schools within 3,000ft of source's nearest property line.	X
All property lines are included.	X
Non-industrial receptors are identified.	X
Additional Attachments (as applicable): *Note: These are just a few examples of attachments that may need to be included. There may be others depending on the scope of the modeling analysis.*	**Select an X from the dropdown menu if included:**
Single Property Line Designation	
Include Agreement, Order, and map defining each petitioner.	Choose an item
Post Processing using Unit Impact Multipliers (UIMs)	
Include documentation on any calculations used with the UIMs (i.e., Step 3 of the MERA).	Choose an item
Modeling Techniques	
Provide documentation on modeling techniques indicated in the workbook.	Choose an item
Other Attachments *Provide a list in the box below of additional attachments being provided that are not listed above:*	
	Choose an item

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

I. Project Information
A. Project Overview: In the box below, give a brief Project Overview. To type or insert text in box, double click in the box below. *Please limit your response to 2000 characters.*
The site manufactures stucco and acyrlic finish. For stucco production, the site receives raw materials (Portland cement, sand/silica, fly ash, lime) to five silos. Materials from the silos are transferred via auger to the weigh hopper, then to the stucco mixer to mix the raw materials to a uniform consistency, then to the discharge hopper and bagger which fills 80-lb bags of the final stucco product. Raw materials for the acrylic finish process are delivered to the site in drums, totes, and bags, with the exception of the liquid acrylic latex/resin that is delivered to three 4,000-gallon tanks, sand that is delivered pneumatically to a 250-bbl silo, and calcium carbonate that is deliver pneumatically to a 250-bbl silo. Raw materials are transferred via hose or by hand to the two dual-shaft acrylic finish mixers, which mix the acrylic finish solid and liquid materials to a uniform consistency. The final acrylic finish product is dispersed from the mixers into 5-gallon buckets.

II. Air Dispersion Modeling Preliminary Information			
Instructions: Fill in the information below based on your modeling setup. The selections chosen in this sheet will carry throughout the sheet and workbook. Based on selections below, only portions of the sheet and workbook will be available. Therefore, it is vital the sheet and workbook are filled out in order, do NOT skip around. For larger text boxes, double click to type or insert text.			
A. Building Downwash			
Yes	Is downwash applicable? *(Select "Yes" or "No")*		
B. Type of Analyses: (Select "X" in all that apply)			
X	Minor NSR NAAQS		State Property Line
X	Health Effects		

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

C. Constituents Evaluating: (Select "X" in all that apply)

NAAQS: List all pollutants that require a modeling review. *(Select "X" in all that apply)*

	SO_2	X	PM_{10}
	CO	X	$PM_{2.5}$
	Pb		NO_2

Health Effects: Fill in the Speciated Emissions sheet with all applicable pollutants, CAS numbers, and ESLs.

D. Dispersion Options: *Select "X" in the box to select an option. Note: if selecting both options, be sure to explain the reasoning for this in the box below.*

	Urban
X	Rural

Provide justification on the dispersion option selected above in the following box:

The rural dispersion option was used as it is the most conservative option.

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Model Options

E. Meteorological Data:

Select Meteorological Dataset Modeled:	Full Meteorological Data

F. Receptor Grid:

Describe the receptor grid being modeled in the following text box:

The SCREEN3 automated distance array option was used.

G. Terrain:

Select the terrain option being modeled:	Flat

For justification on terrain selection, fill in the box below:

The flat terrain option was selected based on actual terrain at the site.

H. Modeling Techniques: *Briefly describe any modeling techniques used for the SCREEN3 analyses. Provide additional attachments, if needed, to support the analyses.*

A generic emission rate of 1 lb/hr was used to model each EPN. Modeled emissions rates were scaled/converted using UIM, which represented the maximum 1-hr concentration. The 24-hr GLCmax was calculated using a conversion factor of 0.4, and the annual GLCmax was calculated using a conversion factor of 0.08.

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Building Downwash

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Facility:

Modeled Building ID	Length (m)	Width (m)	Maximum Height (m)	Tank Justification	Additional Information
Building A	45.72	38.1	12.192	N/A	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Point Source Parameters

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Facility:

EPN	Model ID	Modeling Scenario	Source Description	Point Source Justification	Easting: X [m]	Northing: Y [m]	Stack Height [m]	Stack Diameter [m]	Exit Velocity [m/s]	Exit Temperature (K)
SBH1	SBH1 Run	Routine	Silo dust collector	vertical stack	540389.66	3273128.20	11.16	0.277	12.470	293.706
SBH2	SBH2 Run	Routine	Silo dust collector	vertical stack	540393.92	3273129.87	11.16	0.277	12.470	293.706
SBH3	SBH3 Run	Routine	Silo dust collector	vertical stack	540398.17	3273131.88	11.16	0.277	12.470	293.706
SBH4	SBH4 Run	Routine	Silo dust collector	vertical stack	540402.53	3273133.45	11.16	0.277	12.470	293.706
SBH5	SBH5 Run	Routine	Silo dust collector	vertical stack	540406.68	3273135.46	11.16	0.277	12.470	293.706
BGH1	BGH1 Run	Routine	Stucco mixer tower baghouse	vertical stack	540394.65	3273143.39	12.50	0.152	38.808	293.706
BGH2	BGH2 Run	Routine	Acrylic finish process baghouse	vertical stack	540372.22	3273157.72	10.97	0.152	129.361	293.706
ASTV1	ASTV1 Run	Routine	Latex 1 silo vent	vertical AST vent	540400.02	3273155.93	3.05	0.152	0.000	293.706
ASTV2	ASTV2 Run	Routine	Latex 2 silo vent	vertical AST vent	540401.27	3273158.15	3.05	0.152	0.000	293.706
ASTV3	ASTV3 Run	Routine	Latex 3 silo vent	vertical AST vent	540403.80	3273157.50	3.05	0.152	0.000	293.706
SBH6	SBH6 Run	Routine	Silo dust collector	vertical stack	540409.87	3273136.91	11.16	0.277	12.470	293.706
SBH7	SBH7 Run	Routine	Silo dust collector	vertical stack	540412.48	3273137.92	11.16	0.277	12.470	293.706

Texas Commission on Environmental Quality
Electronic Modeling Evaluation Workbook for SCREEN3
Volume Source Calculations

Date: 7/8/2020
Permit #: ________
Company Name: Facades XI, LLC

Facility:

EPN	Model ID	Footprint of Source Length (m)	Footprint of Source Width (m)	Length of Side (making it a square) SQRT(L * W)	Type of Volume Source (sigma y) *Pick from drop-down*	**Sigma Y** (m)	Vertical Span Min Release (m)	Vertical Span Max Release (m)	Vertical Dimension (m)	Type of Volume Source (sigma z) *Pick from drop-down*	Release Height (middle point of vertical span) (m)	Building Name (if on/adjacent to a building) *Pick from drop-down*	Adjacent Building Height, if applicable (m)	**Sigma Z** (m)
SDOOR1	SDOOR1 Run	3.66	0.15	0.75	Single Volume Source	0.17	0.00	4.27	4.27	Surface-Based Source	2.13			1.98
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
				0.00		Incomplete			0.00		0.00			Incomplete
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				0.00		Incomplete			0.00		0.00			Incomplete

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Volume Source Parameters

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Facility:

EPN	Model ID	Modeled Release Height [m]	Modeled Length X [m]	Lateral Dimension SigmaY [m]	Vertical Dimension SigmaZ [m]	Modeling Scenario	Easting: X [m]	Northing: Y [m]	Source Description	Volume Source Size Justification
SDOOR1	SDOOR1 Run	2.13	0.75	0.17	1.98	Routine	540384.00	3273141.03	fugitives from stucco process	Representative of fugitives from overhead bay door

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Point + Flare Emissions

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Averaging Time	Standard Type	Review Context	Intermittent Source?	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use	Downwash Structure Considered	Distance to Ambient Air (m)
SBH1	SBH1 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
SBH2	SBH2 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
SBH3	SBH3 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
SBH4	SBH4 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
SBH5	SBH5 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
BGH1	BGH1 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
BGH2	BGH2 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
ASTV1	ASTV1 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
ASTV2	ASTV2 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
ASTV3	ASTV3 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
SBH6	SBH6 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00
SBH7	SBH7 Run	Routine	Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	Building A	0.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Volume Source Emissions

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Facility:

EPN	Model ID	Modeling Scenario	Pollutant	Averaging time	Standard Type	Review Context	Intermittent	Modeled Emission Rate [lb/hr]	Basis of Emission Rate	Scalars or Factors Used?	Scalar/Factor in Use	Distance to Ambient Air (m)
	SDOOR1 Run 1		Generic	1-hr			No	1.00	Generic modeling at 1 lb/hr	Yes	0.4 conversion factor for 24-hr; 0.08 conversion factor for annual	10.00

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Speciated Emissions

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Speciated Emissions by Model ID

CAS #	Chemical Species	Other Species	Short-Term ESL (µg/m³)	Long-Term ESL (µg/m³)	
14808-60-7	Other (Please specify):	silica, crystalline forms (PM)	14	0	
14808-60-7	Other (Please specify):	silica, crystalline forms (PM4)	0	0.27	
1336-21-6	ammonium hydroxide		180	92	
2634-33-5	1,2-benzisothiazolin-3-one		350	35	
65997-15-1	Portland cement		50	5	
2682-20-4	2-methyl-4-isothiazolin-3-one		170	17	
57-55-6	propylene glycol		1800	18	
64742-65-0	distillates (petroleum) solvent-dewaxed heavy paraffinic		1000	100	
N/A	Other (Please specify):	surfactant, generic, not otherwise specified (Vapor)	600	60	
119-61-9	benzophenone		5	0.5	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Combined Emissions

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

EPN	Model ID	Modeling scenario	Pollutant	Modeled Averaging Time	Standard Type	Review Context	Intermittent	Source Type	Modeled Emission Rate [lb/hr]	Downwash Structure Considered
SBH1	SBH1 Run	Routine	Generic	1-hr	NAAQS	Minor Full NAAQS	No	Point	1.00	Building A
SBH2	SBH2 Run	Routine	Generic	1-hr	NAAQS	Minor Full NAAQS	No	Point	1.00	Building A
SBH3	SBH3 Run	Routine	Generic	1-hr	NAAQS	Minor Full NAAQS	No	Point	1.00	Building A
SBH4	SBH4 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
SBH5	SBH5 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
BGH1	BGH1 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
BGH2	BGH2 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
ASTV1	ASTV1 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
ASTV2	ASTV2 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
ASTV3	ASTV3 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
SBH6	SBH6 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
SBH7	SBH7 Run	Routine	Generic	1-hr			No	Point	1.00	Building A
0	SDOOR1 Run 1	0	Generic	1-hr			No		1.00	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Modeling Scenarios

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Modeling Scenario	Scenario Description:
Routine	A generic emission rate of 1 lb/hr was used to model each EPN. Modeled emission rates were scaled/converted using UIM for PM10, PM2.5, and species. Emission rates were scaled for 24-hr standards using a conversion factor of 0.4. Emission rates were scaled for annual standards using an annual conversion factor of 0.08.

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Monitor Calculations

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Pollutant:	**$PM_{2.5}$**			
AQS ID:	480290032		**Street Address and City:**	6655 Bluebird Lane
Link to Data Source:	https://www.epa.gov/outdoor-air-quality-data		**County:**	Bexar
Select metric for short term averaging time below:	**1st Year Concentration ($\mu g/m^3$)**	**2nd Year Concentration ($\mu g/m^3$)**	**3rd Year (most recent) Concentration ($\mu g/m^3$)**	**Calculated Background Concentration ($\mu g/m^3$)**
24-hr 98 percentile	25.10000	17.60000	17.10000	20
Annual Average	8.59000	7.72000	8.26000	8.2

Pollutant:	**NO_2**			
AQS ID:			**Street Address and City:**	
Link to Data Source:			**County:**	
Select metric for short term averaging time below:	**1st Year Concentration ($\mu g/m^3$)**	**2nd Year Concentration ($\mu g/m^3$)**	**3rd Year (most recent) Concentration ($\mu g/m^3$)**	**Calculated Background Concentration ($\mu g/m^3$)**
Choose an item				0
Annual Average				0

Pollutant:	**SO_2**			
AQS ID:			**Address:**	
Link to Data Source:			**County:**	
Select metric for short term averaging time below:	**1st Year Concentration ($\mu g/m^3$)**	**2nd Year Concentration ($\mu g/m^3$)**	**3rd Year (most recent) Concentration ($\mu g/m^3$)**	**Calculated Background Concentration ($\mu g/m^3$)**
Choose an item				0
Choose an item				0
Choose an item				0

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Monitor Calculations

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Annual Average				0

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Monitor Calculations

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Pollutant:	**PM_{10}**			
AQS ID:	481410038		**Address:**	7501 Mimosa Avenue
Link to Data Source:	https://www.epa.gov/outdoor-air-quality-data		**County:**	El Paso
Select metric for short term averaging time below:	**1st Year Concentration ($\mu g/m^3$)**	**2nd Year Concentration ($\mu g/m^3$)**	**3rd Year (most recent) Concentration ($\mu g/m^3$)**	**Calculated Background Concentration ($\mu g/m^3$)**
H1H 24-hr Avg	27.83000	29.33000	26.14000	29

Pollutant:	**CO**			
AQS ID:			**Address:**	
Link to Data Source:			**County:**	
Select metric for short term averaging time below:	**1st Year Concentration ($\mu g/m^3$)**	**2nd Year Concentration ($\mu g/m^3$)**	**3rd Year (most recent) Concentration ($\mu g/m^3$)**	**Calculated Background Concentration ($\mu g/m^3$)**
Choose an item				0
Choose an item				0

Pollutant:	**Pb**		
AQS ID:		**Address:**	
Link to Data Source:		**County:**	
Select metric for short term averaging time below:	**Concentration ($\mu g/m^3$) from 38 Month Sample Period**	**Calculated Background Concentration ($\mu g/m^3$)**	
Choose an item		0	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Background Justification

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Pollutant:	**$PM_{2.5}$**
AQS ID:	480290032
County:	Bexar
Distance to Project Site (km):	8.9

Monitor Justification Data

Category:	10 Kilometer $PM_{2.5}$ Emissions Comparison	Types of Nearby Sources	County $PM_{2.5}$ Emissions Comparison	County Population Comparison	Land Use Comparison	Regional Considerations
Project:		Concrete manufacturing, 3 large quarries, industrial manufacturing, major roadways			mixed residential, commercial, industrial	
Monitor:		Conrete manufacturing, 3 large quarries, industrial manufacturing, major roadways			mixed residential, commercial, industrial	
Data Source:	https://www.epa.gov/outdoor-air-quality-data					

Additional Information

How are off-property sources accounted for?	The monitor was used in lieu of explicitly modeling off-property sources considering the quantity of emissions near the monitor compared to the quantity of emissions near the project site. No adjacent sites to the project site.
Monitoring data set year(s)/Additional Justification:	2017-2019

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Background Justification

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Pollutant:	**NO_2**
AQS ID:	
County:	
Distance to Project Site (km):	

Monitor Justification Data						
Category:	**10 Kilometer NO_2 Emissions Comparison**	**Types of Nearby Sources**	**County NO_2 Emissions Comparison**	**County Population Comparison**	**Land Use Comparison**	**Regional Considerations**
Project:						
Monitor:						
Data Source:						

Additional Information	
How are off-property sources accounted for?	
Monitoring data set year(s)/Additional Justification:	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Background Justification

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Pollutant:	SO_2
AQS ID:	
County:	
Distance to Project Site (km):	

Monitor Justification Data						
Category:	**10 Kilometer SO_2 Emissions Comparison**	**Types of Nearby Sources**	**County SO_2 Emissions Comparison**	**County Population Comparison**	**Land Use Comparison**	**Regional Considerations**
Project:						
Monitor:						
Data Source:						

Additional Information	
How are off-property sources accounted for?	
Monitoring data set year(s)/Additional Justification:	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Background Justification

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Pollutant:	**PM_{10}**
AQS ID:	481410038
County:	El Paso
Distance to Project Site (km):	19.9

Monitor Justification Data

Category:	10 Kilometer PM_{10} Emissions Comparison	Types of Nearby Sources	County PM_{10} Emissions Comparison	County Population Comparison	Land Use Comparison	Regional Considerations
Project:		Concrete manufacturing, 3 large quarries, industrial manufacturing, major roadways	884.86 TPY (based on 2018 EI for Bexar County)	2.004 million	mixed residential, commercial, industrial	
Monitor:		Heavy industrial manufacturing, major roadways, airport	306.24 (based on 2018 EI for El Paso County)	839,238	mixed residential, commercial, industrial	PM non-attainment
Data Source:	https://www.epa.gov/outdoor-air-quality-data		2018 EI report	US Census Bureau		

Additional Information

How are off-property sources accounted for?	The monitor was used in lieu of explicitly modeling off-property sources considering the quantity of emissions near the monitor compared to the quantity of emissions near the project site. No adjacent sites to the project site.
Monitoring data set year(s)/Additional Justification:	2017-2019 El Paso County was selected as the background monitor for PM10 as it is non-attainment for PM10 and represents a conservative worst-case for modeling.

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Background Justification

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Pollutant:	**CO**
AQS ID:	
County:	
Distance to Project Site (km):	

Monitor Justification Data						
Category:	**10 Kilometer CO Emissions Comparison**	**Types of Nearby Sources**	**County CO Emissions Comparison**	**County Population Comparison**	**Land Use Comparison**	**Regional Considerations**
Project:						
Monitor:						
Data Source:						

Additional Information	
How are off-property sources accounted for?	
Monitoring data set year(s)/Additional Justification:	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Background Justification

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Pollutant:	**Pb**
AQS ID:	
County:	
Distance to Project Site (km):	

Monitor Justification Data						
Category:	**10 Kilometer Pb Emissions Comparison**	**Types of Nearby Sources**	**County Pb Emissions Comparison**	**County Population Comparison**	**Land Use Comparison**	**Regional Considerations**
Project:						
Monitor:						
Data Source:						

Additional Information	
How are off-property sources accounted for?	
Monitoring data set year(s)/Additional Justification:	

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Secondary Formation of PM2.5

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Facility:

Modeled Emission Rates for Precursors (MERPs) Demonstration Tool for Calculating Secondary $PM_{2.5}$ Impacts

Precursor	Project Increases (tpy)	Source Selection	Selection of Variables		MERP Value		Total Secondary Value ($\mu g/m^3$)	
			Emission Rate (tpy)	Height (m)	24-hr	Annual	24-hr $PM_{2.5}$	Annual $PM_{2.5}$
Nitrogen Oxide (NO_x)	0							
Sulfur Dioxide (SO_2)	0							

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Secondary Formation of PM2.5

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

MERPs Demonstration Justification
A. Provide justification for selection of worst-case MERP and/or site-specific source here. *Please limit your response to 2000 characters.*
N/A
B. If a site-specific source is selected, provide justification for the selected emission rate variable(s) here. *Please limit your response to 2000 characters.*
N/A
C. If a site specific MERP value is selected, provide justification for the selected height variable(s) here. *Please limit your response to 2000 characters.*

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Table 3. Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr		7.8*
SO_2	3-hr		25
SO_2	24-hr		5
SO_2	Annual		1
PM_{10}	24-hr	35.61000	5
NO_2	1-hr		7.5**
NO_2	Annual		1
CO	1-hr		2000
CO	8-hr		500

Additional information for the De Minimis values listed above can be found at:
* https://www.tceq.texas.gov/assets/public/permitting/air/memos/appwso2.pdf
** https://www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Table 4. $PM_{2.5}$ Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m^3)	Secondary $PM_{2.5}$ Contribution (µg/m^3)	Total Conc. = Secondary $PM_{2.5}$ + GLCmax (µg/m^3)	De Minimis (µg/m^3)
$PM_{2.5}$	24-hr	14.17000	0	14.17000	1.2*
$PM_{2.5}$	Annual	2.83000	0	2.83000	0.2*

Additional information for the De Minimis values listed above can be found at:
* https://www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Table 5. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + GLCmax] (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr		0	0	196
SO_2	3-hr		0	0	1300
SO_2	24-hr		0	0	365
SO_2	Annual		0	0	80
PM_{10}	24-hr	35.61000	29.00	64.61000	150
Pb	3-mo		0	0	0.15
NO_2	1-hr		0	0	188
NO_2	Annual		0	0	100
CO	1-hr		0	0	40000
CO	8-hr		0	0	10000

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

NAAQS-SPL Modeling Results

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Table 6. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Secondary $PM_{2.5}$ Contribution (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + Secondary + GLCmax] (µg/m^3)	Standard (µg/m^3)
$PM_{2.5}$	24-hr	14.17000	0	20	34.17000	35
$PM_{2.5}$	Annual	2.83000	0	8.2	11.03000	12

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Unit Impact Multipliers

Date: 7/8/2020
Permit #: ________
Company Name: Facades XI, LLC

Facility:

EPN	Model ID	Modeling Scenario	1-hr GLCmax ($\mu g/m^3$ per lb/hr)	3-hr GLCmax ($\mu g/m^3$ per lb/hr)	8-hr GLCmax ($\mu g/m^3$ per lb/hr)	24-hr GLCmax ($\mu g/m^3$ per lb/hr)	Annual GLCmax ($\mu g/m^3$ per lb/hr)
SBH1	SBH1 Run	Routine	521.32	469.188	364.924	208.528	41.7056
SBH2	SBH2 Run	Routine	521.32	469.188	364.924	208.528	41.7056
SBH3	SBH3 Run	Routine	521.32	469.188	364.924	208.528	41.7056
SBH4	SBH4 Run	Routine	521.32	469.188	364.924	208.528	41.7056
SBH5	SBH5 Run	Routine	521.32	469.188	364.924	208.528	41.7056
BGH1	BGH1 Run	Routine	176.02	158.418	123.214	70.408	14.0816
BGH2	BGH2 Run	Routine	25.98	23.382	18.186	10.392	2.0784
ASTV1	ASTV1 Run	Routine	210.8	189.72	147.56	84.32	16.864
ASTV2	ASTV2 Run	Routine	210.8	189.72	147.56	84.32	16.864
ASTV3	ASTV3 Run	Routine	210.8	189.72	147.56	84.32	16.864
SBH6	SBH6 Run	Routine	521.32	469.188	364.924	208.528	41.7056
SBH7	SBH7 Run	Routine	521.32	469.188	364.924	208.528	41.7056
	SDOOR1 Run 1			0	0	0	0
				0	0	0	0
				0	0	0	0
				0	0	0	0
				0	0	0	0
				0	0	0	0
				0	0	0	0
				0	0	0	0
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				0	0	0	0
				0	0	0	0
				0	0	0	0
				0	0	0	0
				0	0	0	0
				0	0	0	0

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Health Effect Modeling Results

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Facility:

Modeled Health Effect Results (MERA Guidance):				Step 3	Step 4: Production		Step 4: MSS		Step 5: MSS Only	Step 6	Step 7: Site Wide	
Chemical Species	CAS Number	Averaging Time	ESL [µg/m^3]	10% ESL Step 3 Modeled GLCmax [µg/m^3]	25 % ESL Step 4 Production GLCmax since most recent site wide modeling [µg/m^3]	10% ESL Step 4 Production Project Only GLCmax [µg/m^3]	50% ESL Step 4 MSS GLCmax since most recent site wide modeling [µg/m^3]	25% ESL Step 4 MSS Project Only GLCmax [µg/m^3]	Full ESL Step 5 GLCmax [µg/m^3]	Was Step 6 relied on to fall out of the MERA?	Site Wide GLCmax [µg/m^3]	Site Wide GLCni [µg/m^3]
silica, crystalline forms (PM)	14808-60-7	1-hr	14	24.61	24.61	24.61	N/A	N/A	N/A	No (Proceed with Step 7)	24.61	22.13
silica, crystalline forms (PM4)	14808-60-7	Annual	0.27	1.97	1.97	1.97	N/A	N/A	N/A	No (Proceed with Step 7)	1.97	1.77
ammonium hydroxide	1336-21-6	1-hr	180	25.94	25.94	25.94	N/A	N/A	N/A	Yes (Verify with Permit Reviewer)		
ammonium hydroxide	1336-21-6	Annual	92	2.08								
1,2-benzisothiazolin-3-one	2634-33-5	1-hr	350	3.94								
1,2-benzisothiazolin-3-one	2634-33-5	Annual	35	0.32								
Portland cement	65997-15-1	1-hr	50	30.94	30.94	30.94	N/A	N/A	N/A	Yes (Verify with Permit Reviewer)		
Portland cement	65997-15-1	Annual	5	2.48	2.48	2.48	N/A	N/A	N/A	Yes (Verify with Permit Reviewer)		
2-methyl-4-isothiazolin-3-one	2682-20-4	1-hr	170	4.31								
2-methyl-4-isothiazolin-3-one	2682-20-4	Annual	17	0.34								
propylene glycol	57-55-6	1-hr	1800	4.16								
propylene glycol	57-55-6	Annual	18	0.33								
surfactant, generic, not otherwise specified (Vapor)	N/A	1-hr	600	5.24								
surfactant, generic, not otherwise specified (Vapor)	N/A	Annual	60	0.42								
distillates (petroleum) solvent-dewaxed heavy paraffinic	64742-65-0	1-hr	1000	69.64								
distillates (petroleum) solvent-dewaxed heavy paraffinic	64742-65-0	Annual	100	5.57								
benzophenone	119-61-9	1-hr	5	26.02	26.02	26.02	N/A	N/A	N/A	No (Proceed with Step 7)	26.02	20.18
benzophenone	119-61-9	Annual	0.5	2.08	2.08	2.08	N/A	N/A	N/A	No (Proceed with Step 7)	2.08	1.61

Texas Commission on Environmental Quality

Electronic Modeling Evaluation Workbook for SCREEN3

Modeling File Names

Date: 7/8/2020
Permit #: _____
Company Name: Facades XI, LLC

Facility:

Model File Base Name	Pollutant	Averaging Time	File Extensions	Additional File Description
SBH1-SBH5 Final Run	generic	1-hr	*.out	
SBH6-SBH7 Final Run	generic	1-hr	*.out	
BGH1 Final Run	generic	1-hr	*.out	
BGH2 Final Run	generic	1-hr	*.out	
ASTV1-ASTV3 Final Run	generic	1-hr	*.out	
SDOOR1 Final Run	generic	1-hr	*.out	
ADOOR1 Final Run	generic	1-hr	*.out	

TCEQ Core Data Form

TCEQ Use Only

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN		RN **102783693**

SECTION II: Customer Information

4. General Customer Information | 5. Effective Date for Customer Information Updates (mm/dd/yyyy)

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* | *If new Customer, enter previous Customer below:*

Facades XI, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0803394251	32071654795		

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☒ Other: LLC

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following:*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:

15262 Capital Port							
City	San Antonio	State	TX	ZIP	78249	ZIP + 4	1302

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*
	joe@facadesxi.com

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(210) 867-6991		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*

☐ New Regulated Entity ☒ Update to Regulated Entity Name ☒ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Facades XI

23. Street Address of the Regulated Entity: *(No PO Boxes)*	15262 Capital Port							
	City	San Antonio	State	TX	ZIP	78249	ZIP + 4	1302
24. County	Bexar							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:								
26. Nearest City					State		Nearest ZIP Code	

27. Latitude (N) In Decimal:	29.587669			28. Longitude (W) In Decimal:	-98.582832			
Degrees	Minutes	Seconds		Degrees	Minutes	Seconds		

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
3299		32799	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Manufacturing of bagged stucco and acrylic finish

34. Mailing Address:	15262 Capital Port							
	City	San Antonio	State	TX	ZIP	78249	ZIP + 4	1302

35. E-Mail Address:	joe@facadesxi.com

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
(210) 867-6991		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☒ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Amelia Hudson	41. Title:	Division Manager - Compliance

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(972) 385-8069		(972) 385-8165	ahudson@rkci.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Facades XI, LLC	Job Title:	COO
Name *(In Print)* :	Joe McClaran	Phone:	(210) 867-6991
Signature:	Joe McClaran	Date:	6-30-2020

6 EMISSIONS CALCULATIONS

This section provides a detailed explanation of emission calculations for each emission source identified in the process flow diagram (see Section 4). The estimated emissions of regulated pollutants include particulate matter (PM), particulate matter of less than 10 microns (PM_{10}), particulate matter of less than 2.5 microns ($PM_{2.5}$), volatile organic compounds (VOCs), and Hazardous Air Pollutants (HAPs). The emission sources from the site for which authorization is being requested are:

EPN	FIN(s)	Description
SBH1	SILO1	Cement silo 1 baghouse
SBH2	SILO2	Cement silo 2 baghouse
SBH3	SILO3	Silica silo baghouse
SBH4	SILO4	Lime silo baghouse
SBH5	SILO5	Fly ash silo baghouse
BGH1	HOP1, HOP2, MIX1, BAGGER	Stucco mixer tower baghouse
BGH2	MIXDROP1, MIXDROP2, MIX2, MIX3, MIXLOAD1, MIXLOAD2, AFLOAD	Acrylic finish baghouse
SDOOR1	BAGGER	Stucco building door fugitives
SBH6	SILO6	Sand silo baghouse
SBH7	SILO7	Calcium carbonate silo baghouse
ASTV1	AST1, LLOAD1	Latex silo 1 vent
ASTV2	AST2, LLOAD2	Latex silo 2 vent
ASTV3	AST3, LLOAD3	Latex silo 3 vent

Emissions from each of the aforementioned sources have been quantified using anticipated material usage data in conjunction with engineering emissions estimates, such as factors from AP-42, Compilation of Air Pollutant Emissions Factors. This section supplements the detailed emissions calculations and subsequent speciations included in Section 6 of this application.

6.1 STUCCO MANUFACTURING

Particulate Matter – PM, PM_{10}, and $PM_{2.5}$ emissions from the silo baghouses (EPNS: SBH1-SBH5) and stucco mixer tower baghouse (EPN: BGH1) were calculated conservatively using the outlet grain loading method. The outlet grain loading method assumes a maximum "inlet grain load" to estimate worst-case scenario emissions from the air outlet of the integral baghouse filters.

> **PM/PM_{10} emissions (lb/hr)** = (Air Flow in scfm) x (Outlet Grain Loading of Filter in gr/dscf) x (60 minutes/hr)
>
> **PM/PM_{10} emissions (tpy)** = (Emissions lb/hr) x (Annual Operating Hours) / (2,000 lb/ton)

Emissions of $PM_{2.5}$ from the silo baghouses were calculated based on the fraction (%) of $PM_{2.5}$ emissions compared to PM_{10} emissions utilizing data incorporated into accepted AP-42 documents. For the Portland cement silos (EPN: SBH1-SBH2), the *Analysis of the ASTM Round-Robin Test on Particle Size Distribution of Portland Cement: Phase I*, National Institute of Standards and Technology (NIST) May 2002 document was

utilized to speciate material less than 2.5 microns within the total particulate matter estimated. The NIST analysis utilized particle size distribution (PSD) data from 21 different Portland cement studies, which analyzed representative fractions of different particle sizes. Excluding data determined to be outliers, the maximum percentage of PM < 3 µm (emissions at < 2.5 µm were not specifically evaluated) was 21.2%. As a result, only 21.2% of the Portland cement PM_{10} and total PM emissions quantified for (EPNs: SBH1-SBH2) using the outlet grain loading method were speciated as $PM_{2.5}$ emissions.

For the silica, lime, and fly ash silo baghouses (SBH3-SBH5), emissions of $PM_{2.5}$ were calculated based on the methodology within AP-42 Chapter 11.12, relating to Concrete Batching, AP-42 Chapter 13.2.4, relating to Aggregate Handling and Storage Piles, and the *Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Dust Emission Factors*, Midwest Research Institute, November 2006. Chapter 11.12 provides emissions factors for supplemental loading/unloading of materials in relation to concrete batching, which includes fly ash, silica, and lime. The emissions factors within Chapter 11.12 were utilized to estimate PM_{10} and total PM emissions from EPNs: SBH3, SBH4, and SBH5. However, Chapter 11.12 does not include any emissions factors for $PM_{2.5}$ emissions. As a result, further analysis was conducted to determine the basis of the Chapter 11.12 emission factors for PM_{10}. Further review of Chapter 11.12 provides that all PM_{10} emissions factors are based on the fraction of PM_{10} of total PM. As a result, the fraction of the PM_{10} particle size multiplier relative to $PM_{2.5}$ referenced within Chapter 13.2.4 was utilized to speciate quantified emissions of PM_{10} further into $PM_{2.5}$ fraction. The result is an emissions rate for the applicable source that reflects estimated $PM_{2.5}$ particulate emissions as a fraction of PM_{10} emissions. An example of this methodology is illustrated in the following equation.

$PM_{2.5}$ emissions (lb/hr) = (PM_{10} emissions lb/hr) x (0.053/0.35)

Where 0.053 = particle size multiplier for < 2.5 µm, and
Where 0.35 = particle size multiplier for < 10 µm

Utilizing this method results in $PM_{2.5}$ emissions from the silica, lime, and fly ash silo baghouses are represented as a fraction (%) of $PM_{2.5}$ particles compared to total PM_{10} emissions.

Emissions from the weigh hopper (FIN: HOP1), discharge hopper (FIN: HOP2), and mixer (FIN: MIX1) are routed via direct pipe hose to BGH1, resulting in no fugitive emissions from these processes. As a result, additional calculations beyond the aforementioned outlet grain loading method were not required. The stucco bagging equipment (FIN: BAGGER) is equipped with a suction shroud with 70% capture efficiency which routes emissions to BGH1. Emissions of particulate matter not captured by the suction shroud were calculated using the drop point emission factor from AP-42, Chapter 11, Section 11.19.2, using the following equation.

PM/PM_{10}/$PM_{2.5}$ emissions (lb/hr) = (Hourly Throughput in tons) x (Emission Factor lb/ton) x (1 - Collection Efficiency %)

PM/PM_{10}/$PM_{2.5}$ emissions (tpy) = (Annual Throughput in tons) x (Emission Factor lb/ton) x (1 - Collection Efficiency %) / (2,000 lb/ton)

6.2 ACRYLIC FINISH MANUFACTURING

Particulate Matter – PM, PM_{10}, and $PM_{2.5}$ emissions from the acrylic finish baghouse (EPN: BGH2), sand silo baghouse (EPN: SBH6), and calcium carbonate silo baghouse (EPN: SBH7) were calculated using the aforementioned outlet grain loading method.

> **$PM/PM_{10}/PM_{2.5}$ emissions (lb/hr)** = (Air Flow in acfm) x (Outlet Grain Loading of Filter in gr/dscf) x (60 minutes/hr)
>
> **$PM/PM_{10}/PM_{2.5}$ emissions (tpy)** = (Emissions lb/hr) x (Annual Operating Hours) / (2,000 lb/ton)

The aforementioned methodology used to calculate $PM_{2.5}$ for EPN SBH3-SBH5 was also utilized to calculate $PM_{2.5}$ emissions from the sand silo baghouse (EPN: SBH6), and are represented as a fraction (%) of $PM_{2.5}$ particles compared to total PM_{10} emissions.

The transfer point where solid materials are manually loaded into the mixers (FIN: MIXDROP1, MIXDROP2) is fully enclosed, which achieves a 100% capture efficiency. The captured emissions are routed to the aforementioned BGH2.

VOC Emissions – Short-term emissions for the loading of each liquid component of the acrylic finish into the mixers (FIN: MIXLOAD1, MIXLOAD2) were calculated using the equation from *Estimating Short Term Emission Rates from Fixed Roof Tanks – APDG 6250*, below.

$$L_{MAX} = \frac{M_V \times P_{VA}}{R \times T} \times FR_M$$

Hourly emissions were calculated based on the hourly throughput for each raw material, conservatively assuming a maximum of one batch of acrylic finish is produced per hour and a maximum of seven batches per day, 365 days per year. In the absence of material specific data, surrogate true vapor pressures (TVP) and molecular weights (MW) were utilized as conservative representations where actual TVPs and MWs were not available. For the acrylic latex (Rhoplex EI-2000), ethyl acrylate was utilized for both the TVP (0.057 psia) and MW (100.12). Ethyl acrylate is a common acrylate monomer used to form acrylic polymers. Acrylic polymers make up 47% by weight of the acrylic latex component. For all other components without calculated or vendor-provided TVPs or MWs, the conservative surrogates methyl alcohol and diphenyl ketone were utilized, respectively. These surrogates are conservative as the acrylic coating contains only small quantities of heavier hydrocarbons as opposed to the higher vapor pressure hydrocarbons utilized as surrogates.

Annual emissions from loading into the mixers were calculated using annual throughput, split evenly between the two mixers, using the loading loss equation from AP-42, Chapter 5, Section 5.2-4.

$$L_L = \frac{12.46 \times S \times P \times M}{T}$$

The loading loss equation is referenced in the Emission Inventory Improvement Program (EIIP) document *Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities*, February 2005, as the appropriate method for estimating emissions from loading materials into mixers.

Blending and mixing VOC emissions from the acrylic finish mixers (FIN: MIX2, MIX3) were calculated using Equation 8.4-22 from *Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities*, February 2005.

$$\boldsymbol{E_x} = \frac{M_x \times K_x \times A \times P_x \times 3600 \times H}{R \times T} \times B$$

Where

E_x	=	emissions of VOC specie (lb/yr)
M_x	=	molecular weight of VOC specie (lb/lb-mole)
K_x	=	gas-phase mass transfer coefficient for VOC specie (ft/sec)
A	=	surface area of mixer tank (ft^2)
P_x	=	partial pressure of chemical at temperature T (psia)
3600	=	3600 sec/hr
HR	=	batch time (hr/batch)
R	=	universal gas constant at 1 atmosphere of pressure
T	=	temperature (°Rankine)
B	=	number of batches per year (batches/yr)

In the absence of material specific data, surrogate true vapor pressures (TVP) and molecular weights (MW) were utilized as conservative representations where actual TVPs and MWs were not available. For all chemicals without calculated or vendor-provided TVPs or MWs, the conservative surrogates methyl alcohol and diphenyl ketone were utilized, respectively. The partial vapor pressure of each chemical (P_x) was calculated using Equation 8.4-3 from *Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities*, February 2005.

$$\boldsymbol{P_x} = \frac{m_x}{VP_x}$$

Where

m_x	=	liquid mole fraction of the VOC specie (mole/mole), based on the percentage fraction of each component in a weighted batch of acrylic finish.
VP_x	=	true vapor pressue of VOC specie (psia)

Hourly and annual VOC emissions from the mixing operation were calculated based on the hourly and annual throughputs of the acrylic coating product produced, assuming a maximum of one batch of acrylic coating produced per hour and a maximum of seven batches per day, 365 days per year.

To calculate short-term VOC emissions from the packaging of the finished acrylic finish product into pails (FIN: AFLOAD), the equation from *Estimating Short Term Emission Rates from Fixed Roof Tanks – APDG 6250*, was used.

$$\mathbf{L_{MAX}} = \frac{M_V \times P_{VA}}{R \times T} \times FR_M$$

To calculate the TVP and MW of the acrylic finish mixture, the weighted TVP and MW of each acrylic finish component was calculated based on the percentage fraction of each component in a weighted batch of

acrylic finish. The percent of each component within the acrylic coating mix specifications was then utilized to establish a weighted average to determine the total TVP and MW of the acrylic coating as a product. Hourly VOC emissions were calculated based on an hourly loading rate of 187.5 pails per hour, with each pail holding 5 gallons of acrylic finish mixture.

Annual emissions from acrylic finish packaging were calculated using the loading loss equation from AP-42, Chapter 5, Section 5.2-4, as described above. Annual VOC emissions were calculated based on a loading rate of 2,250 pails loaded per 12 hour day, for 365 days per year.

Breathing and working annual emissions from the three (3) latex silos (FIN: AST1-AST3) were estimated using TankESP FX Version 5.1.0. Similar to the aforementioned mix tank loading, ethyl acrylate was used as a surrogate when establishing the TVP and MW of the acrylic latex tank emissions. The annual throughput for each AST was based on the total amount of acrylic latex estimated to be loaded per year in each tank. Because TankESP may not quantify worst-case hourly losses during tank filling events, the equation from *Estimating Short Term Emission Rates from Fixed Roof Tanks – APDG 6250* was used to calculate worst-case hourly VOC emissions from both working and breaking, and tank loading. The maximum hourly throughput was based on the maximum capacity of each AST (4,000-gallons).

TABLE 1 - EMISSIONS SUMMARY

FIN / EPN / Description	VOCs		NOx		CO		PM		PM10		PM2.5		SO2		HAPs	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
SILO1 / SBH1 / Cement Silo 1							0.02	0.05	0.02	0.05	0.004	0.01				
SILO2 / SBH2 / Cement Silo 2							0.02	0.05	0.02	0.05	0.004	0.01				
SILO3 / SBH3 / Silica Silo							0.02	0.05	0.02	0.05	0.003	0.01				
SILO4 / SBH4 / Lime Silo							0.02	0.05	0.02	0.05	0.003	0.01				
SILO5 / SBH5 / Fly Ash Silo							0.02	0.05	0.02	0.05	0.003	0.01				
HOP1, HOP2, MIX1, BAGGER / BGH1 / Stucco Mixer Tower Baghouse							0.06	0.14	0.06	0.14	0.06	0.14				
BAGGER / SDOOR1 / Bagger Fugitives							0.00003	0.00006	0.00001	0.00002	0.000003	0.00001				
SILO6 / SBH6 / Sand Silo							0.02	0.05	0.02	0.05	0.003	0.01				
SILO7 / SBH7 / Calcium Carbonate Silo							0.02	0.05	0.02	0.05	0.021	0.05				
MIXDROP1, MIXDROP2, MIX2, MIX3, MIXLOAD1, MIXLOAD2, AFLOAD / BGH2 / Acrylic Finish Process Baghouse	8.19	9.95					0.09	0.19	0.09	0.19	0.09	0.19			1.14E-05	1.67E-05
AST1, LLOAD1 / ASTV1 / Latex Tank 1	5.13	0.09														
AST2, LLOAD2 / ASTV2 / Latex Tank 2	5.13	0.09														
AST3, LLOAD3 / ASTV3 / Latex Tank 3	5.13	0.09														
TOTALS:	23.57	**10.21**		**0.00**		**0.00**	0.29	**0.64**	0.29	**0.64**	0.19	**0.42**		**0.00**	**1.14E-05**	**1.67E-05**

Prepared by:
Raba Kistner, Inc.
1011 W. Lewis St.
Conroe, TX 77301

TABLE 2

Particulate Matter Emissions[1] - SBH1-SBH7 and BGH1-BGH2										
	EPN:	SBH1	SBH2	SBH3	SBH4	SBH5	BGH1	BGH2	SBH6	SBH7
	Description:	Cement Silo 1 Baghouse	Cement Silo 2 Baghouse	Silica Silo Baghouse	Lime Silo Baghouse	Fly Ash Silo Baghouse	Mixer Tower Baghouse	Acrylic Finish Process Baghouse	Sand Silo Baghouse 1	Calcium Carbonate Silo Baghouse
	FIN(s):	SILO1	SILO2	SILO3	SILO4	SILO5	HOP1, HOP2, MIX1, BAGGER	MIXDROP1, MIXDROP2	SILO6	SILO7
Actual air flow through the baghouse [acfm (ft^3/min)]		1600	1600	1600	1600	1600	1500	5000	1600	1600
Outlet grain loading of the filter[2,3,4] (gr/dscf)		0.0015	0.0015	0.0015	0.0015	0.0015	0.005	0.002	0.0015	0.0015
Operating hours for the filter[5] (hrs/yr)		4380	4380	4380	4380	4380	4380	4380	4380	4380
PM emissions (lb/hr)		0.02	0.02	0.02	0.02	0.02	0.06	0.09	0.02	0.02
PM emissions (ton/yr)		0.05	0.05	0.05	0.05	0.05	0.14	0.19	0.05	0.05
PM10 emissions (lb/hr)		0.02	0.02	0.02	0.02	0.02	0.06	0.09	0.02	0.02
PM10 emissions (ton/yr)		0.05	0.05	0.05	0.05	0.05	0.14	0.19	0.05	0.05
PM2.5 emissions (lb/hr)[6]		0.004	0.004	0.003	0.003	0.003	0.06	0.09	0.003	0.02
PM2.5 emissions (ton/yr)[6]		0.01	0.01	0.01	0.01	0.01	0.14	0.19	0.01	0.05

Notes:

1. Emissions are calculated using the outlet grain loading method.

2. Each silo is controlled by a Belgrade 330 Pulse Jet dust house with fabric filters and has a 99.99% collection efficiency.

3. The stucco mixer tower is controlled by a CAMCORP Model 4FSBH45x16 dust collector with a 99.99% collection efficiency.

4. The acyrlic finish mixer is controlled by a CAMCORP Model 10TR10x100 dust collector with a 99.99% collection efficiency.

5. Operating hours are conservatively assumed to be 12 hrs/day, 7 days/week.

6. PM2.5 emissions of Portland Cement (SBH1-SBH5) are assumed to be no more than 21.2% of PM10 emissions, per Table 3 in *Analysis of the ASTM Round-Robin Test on Particle Size Distribution of Portland Cement: Phase I* , National Institute of Standards and Technology (NIST), May 2002.
PM2.5 emissions of silica/sand, lime, and fly ash were calculated based on AP-42 Chapters 11.12 and 13.2.4. Chapter 13.2.4 includes PM emission particle size multipliers for fugitive dust emission sources. The PM2.5 particle size multiplier of 0.053 is based on the *Background Document for Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Dust Emission Factors* , November 2006, which evaluated different fugitive dust sources to determine the appropriate PM2.5/PM10 ratio for fine fractions of dust. Following the same methodology used to establish emission factors for AP-42 Chapters 11.12 and 13.2.4, to determine the total PM2.5 emissions the following equation was used:
PM2.5 = PM10 emissions * (0.053/0.35)
Where 0.053 equals the particle size multiplier for PM <2.5 µm, and 0.35 equals the particle size multiplier for PM <10 µm from Chapter 13.2.4. This represents the fraction (%) of PM2.5 in PM10.
PM2.5 emissions from BGH1, BGH2, and SBH7 were conservatively assumed to be equivalent to PM10 emissions.

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TABLE 3

Drop Point Emissions[1]

	EPN:	SDOOR1	ADOOR1	ADOOR1
	FIN:	BAGGER	MIXDROP1	MIXDROP2
Transfer Point Identification		Stucco bagger fugivites	Transfer of dry materials to MIX2	Transfer of dry materials to MIX3
Hourly throughput[2] (ton/hr)		6.56	1.01	1.01
Annual throughput[3] (ton/yr)		28733	1290	1290
Emission Factor, PM (lb/ton)		0.00014	0.00014	0.00014
Emission Factor, PM10 (lb/ton)		0.000046	0.000046	0.000046
Emission Factor, PM2.5 (lb/ton)		0.000013	0.000013	0.000013
Control Factor[4,5]		0.03	0	0
PM emissions (lb/hr)		2.76E-05	0	0
PM10 emissions (lb/hr)		9.05E-06	0	0
PM2.5 emissions (lb/hr)		2.56E-06	0	0
PM emissions (ton/yr)		6.03E-05	0	0
PM10 emissions (ton/yr)		1.98E-05	0	0
PM2.5 emissions (ton/yr)		5.60E-06	0	0

NOTES:

1. Drop point emission factors are extracted from AP-42 Chapter 11, Section 11.19.2, Table 11.19.2-2, August 2004.
2. Hourly throughput for the bagger is based production rate of approximately 164 bags of stucco per hour (80 lb/bag). Hourly throuhgput for each acrylic finish mixer is based on production rate of 1 batch maximum per hour. Each batch (2700 lb) is composed of 75% dry materials.
3. Annual throughput for the bagger is based on operating hours of 12 hr/day, 7 days/week. Annual throughput for each acrylic finish mixer is based on a production rate of 7 batches maximum per day, 7 days/week, divided evenly between the two mixers.
4. A combined control efficiency for the stucco bagger was used. The suction shroud around the bagger provides an assumed 70% capture efficiency, and the operation is located indoors which provides a 90% control efficiency.
5. The transfer of dry materials into the mixers is done pneumatically so emissions are 100% captured and routed to BGH2.

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TABLE 4

Loading Emission Calculations[1] - MIXLOAD1 (Fugitives from Loading Liquid Components to MIX2)

Component Added to Mixer	R Ideal Gas Constant	P_{VA} True Vapor Pressure[2] (psia)	M_V Molecular Weight[2] (lb/lb-mole)	T Temperature (degees Rankine)	FR_M Hourly Throughput[3] (gal/hr)	Annual Throughput[4] (gal/yr)	S Saturation Factor	Loading Loss (lb VOC/1000 gal)	L_{MAX} Uncontrolled VOC Emissions (lb/hr)	L_L Uncontrolled VOC Emissions (tpy)
Rhoplex EI-2000 (acrylic latex)	80.273	*0.57*	*100.12*	539.67	61.36	78392.05	1.45	1.91	0.08	0.07
Acticide MBS (bactericide)	80.273	0.33	*182.22*	539.67	2.49	3179.32	1.45	2.04	0.004	0.003
Polyphase 663 (biocide)	80.273	*2.45*	*182.22*	539.67	3.38	4312.91	1.45	14.95	0.03	0.03
Propylene glycol	80.273	0.002	76.1	539.67	0.96	1222.36	1.45	0.01	4.19E-06	0.000004
Supersperse 95 (dispersant)	80.273	0.05	*182.22*	539.67	2.06	2636.37	1.45	0.28	0.0004	0.0004
Tamol 850 (dispersing agent)	80.273	0.33	*182.22*	539.67	1.08	1377.77	1.45	2.01	0.001	0.001
Foammaster NXZ (defoamer)	80.273	*2.45*	*182.22*	539.67	4.27	5450.52	1.45	14.95	0.04	0.04
Triton N-57 (surfactant)	80.273	0.0002	440	539.67	1.89	2420.53	1.45	0.003	3.72E-06	0.000003
						TOTAL		**TOTAL:**	**0.16**	**0.15**

Loading Emission Calculations[1] - MIXLOAD2 (Fugitives from Loading Liquid Components to MIX3)

Component Added to Mixer	R Ideal Gas Constant	P_{VA} True Vapor Pressure[2] (psia)	M_V Molecular Weight[2] (lb/lb-mole)	T Temperature (degees Rankine)	FR_M Hourly Throughput[3] (gal/hr)	Annual Throughput[4] (gal/yr)	S Saturation Factor	Loading Loss (lb VOC/1000 gal)	L_{MAX} Uncontrolled VOC Emissions (lb/hr)	Uncontrolled VOC Emissions (tpy)
Rhoplex EI-2000 (acrylic latex)	80.273	*0.57*	*100.12*	539.67	61.36	78392.05	1.45	1.91	0.08	0.07
Acticide MBS (bactericide)	80.273	0.33	*182.22*	539.67	2.49	3179.32	1.45	2.04	0.004	0.003
Polyphase 663 (biocide)	80.273	*2.45*	*182.22*	539.67	3.38	4312.91	1.45	14.95	0.03	0.03
Propylene glycol	80.273	0.002	76.1	539.67	0.96	1222.36	1.45	0.01	4.19E-06	0.000004
Supersperse 95 (dispersant)	80.273	0.05	*182.22*	539.67	2.06	2636.37	1.45	0.28	0.0004	0.0004
Tamol 850 (dispersing agent)	80.273	0.33	*182.22*	539.67	1.08	1377.77	1.45	2.01	0.001	0.001
Foammaster NXZ (defoamer)	80.273	*2.45*	*182.22*	539.67	4.27	5450.52	1.45	14.95	0.04	0.04
Triton N-57 (surfactant)	80.273	0.0002	440	539.67	1.89	2420.53	1.45	0.00	3.72E-06	0.000003
						TOTAL		**TOTAL:**	**0.16**	**0.15**

Notes:

1. Hourly emissions are calculated using equation $L_{MAX} = (M_V * P_{VA}/R*T)*FR_M$ from "Estimating Short Term Emission Rates from Fixed Roof Tanks" - APDG 6250, February 2020.
Annual emissions are calculated using equation $L_L = 12.46*SPM/T$ from AP-42, Chapter 5, Section 5.2-4.

2. True Vapor Pressure (TVP) and Molecular Weight (MW) listed in italics are conservative estimates using surrogates. Ethyl acrylate was used as surrogate TVP and MW for the acrylic latex, as it is a common acrylate monomer used to form acrylic polymers. All other components in italics represent the surrogate TVP of methyl alcohol (2.45) and surrogate MW of diphenyl ketone (182.22).

3. Hourly throughput for each component was calculated based on a maximum of one batch of acrylic finish produced per hour, and using the following equation:
Gallons/batch = (Lb/batch) x density (gallons/lb)

4. Annual throughput assumes a maximum of 7 batches of acrylic finish produced per day, for a maximum of 365 days/yr, divided evenly between the two mixers.

5. Mixers are fully enclosed during filling and mixing operations, so emissions are 100% captured and routed to BGH2.

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Table A - Partial Vapor Pressure Calculations

VOC Specie	VP_x True Vapor Pressure[2] (psia)	M_x Molecular Weight[2] (lb/lb-mole)	% of Acrylic Finish Batch[3]	z_x Liquid Mass Fraction (lb/lb)	m_x Liquid Mole Fraction (mole/mole)	P_x Partial Vapor Pressure[1] (psia)
Aqua ammonia	7.00	35.04	0.04	0.0004	0.194	1.36
Diphenyl ketone	0.019	182.22	0.04	0.0004	0.037	0.00072
1,2-Benzisothiazolin-3(2H)-one	*2.45*	151.19	0.0212	0.000212	0.024	0.058
2-methylisothiazol-3(2H)-one	*2.45*	115.16	0.0212	0.000212	0.031	0.077
Propylene glycol	0.14	76.1	0.3	0.003	0.670	0.1
Non-ionic surfactants	*2.45*	*182.22*	0.03	0.0003	0.028	0.069
2,2'-iminodiethanol	0.00019	105.14	0.006	0.00006	0.004	0.00000068
Formaldehyde*	0.019	30.03	0.0002	0.000002	0.000	0.0000081
distillates (petroleum), solvent-dewaxed heavy paraffinic	*2.45*	130	0.96	0.0096	0.464	1.14
4-Nonylphenol branched, ethoxylated	*2.45*	220.35	0.582	0.00582	0.166	0.41
Dinonylphenyl polyoxyethylene	*2.45*	390.64	0.012	0.00012	0.002	0.0047

Notes:
1. P_x is calculated for each VOC component using equation 8.4-3 from *Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities* (Feb 2005). $P_x = m_x * VP_x$
Where $m_x = (z_x/M_x) / \sum(z_x/M_x)$
2. True Vapor Pressure (TVP) and Molecular Weight (MW) listed in italics are conservative estimates using surrogates.
Acrylic latex = TVP and MW of ethyl acrylate.
All other components = TVP of methyl alcohol (2.45) and surrogate MW of diphenyl ketone (182.22).
3. Each specie percentage was calculated as a percentage of its ingredient, as a percentage of the acrylic finish batch. Example: aqua ammonia is 0.2% of the Rhoplex by volume, and Rhoplex is 20% of the acrylic finish by volume.

Table B - K_x Calculation[1]

VOC Specie	Constant	$U^{0.78}$	$(18/M_x)^{1/3}$	K_x
Aqua ammonia	0.00438	0.166	0.801	0.001
Diphenyl ketone	0.00438	0.166	0.462	0.0003
1,2-Benzisothiazolin-3(2H)-one	0.00438	0.166	0.492	0.0004
2-methylisothiazol-3(2H)-one	0.00438	0.166	0.539	0.0004
Propylene glycol	0.00438	0.166	0.618	0.0004
Non-ionic surfactants	0.00438	0.166	0.462	0.0003
2,2'-iminodiethanol	0.00438	0.166	0.555	0.0004
Formaldehyde*	0.00438	0.166	0.843	0.001
distillates (petroleum), solvent-dewaxed heavy paraffinic	0.00438	0.166	0.517	0.0004
4-Nonylphenol branched, ethoxylated	0.00438	0.166	0.434	0.0003
Dinonylphenyl polyoxyethylene	0.00438	0.166	0.359	0.0003

Notes:
1. K_x was calculated using a 0.1 mile/hr wind speed (U) in Equation (8.4-21) from *Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities* (Feb 2005).

TABLE 5

Blending/Mixing Emissions[1] - MIX2, MIX3 (Acrylic Finish Mixer Fugitives)

VOC Specie	B Hourly Throughput (batches/hr)	B Annual Throughput[2] (batches/yr)	M_x Molecular Weight (lb/lb-mole)	K_x[4] Gas-Phase Mass Transfer (ft/sec)	A Surface Area (ft^2)	T Ambient Temp (°R)	P_x[5] Vapor Pressure (psia)	R Universal Gas Constant (psia-ft^3/R°-lb-mole)	H Batch Time (hr/batch)	Uncontrolled VOC Emissions Per Mixer (lb/hr)	Uncontrolled VOC Emissions Per Mixer (lbs/yr)	Uncontrolled VOC Emissions Per Mixer (tpy)
Aqua ammonia	1	1277.5	35.040	0.001	38.48	539.67	1.359	10.73	1.00	**0.66**	847.32	**0.42**
Diphenyl ketone	1	1277.5	182.220	0.0003	38.48	539.67	0.00072	10.73	1.00	**1.06E-03**	1.35	**6.75E-04**
1,2-Benzisothiazolin-3(2H)-one	1	1277.5	151.190	0.0004	38.48	539.67	0.058	10.73	1.00	**0.076**	96.55	**0.048**
2-methylisothiazol-3(2H)-one	1	1277.5	115.160	0.0004	38.48	539.67	0.077	10.73	1.00	**0.083**	105.72	**0.053**
Propylene glycol	1	1277.5	76.100	0.0004	38.48	539.67	0.1	10.73	1.00	**0.08**	98.14	**0.05**
Non-ionic surfactants	1	1277.5	182.220	0.0003	38.48	539.67	0.069	10.73	1.00	**0.100**	128.38	**0.064**
2,2'-iminodiethanol	1	1277.5	105.140	0.0004	38.48	539.67	0.00000068	10.73	1.00	**6.92E-07**	8.84E-04	**4.42E-07**
Formaldehyde*	1	1277.5	30.030	0.001	38.48	539.67	0.0000081	10.73	1.00	**3.56E-06**	4.55E-03	**2.28E-06**
distillates (petroleum), solvent-dewaxed heavy paraffinic	1	1277.5	130.000	0.0004	38.48	539.67	1.14	10.73	1.00	**1.33**	1698.91	**0.85**
4-Nonylphenol branched, ethoxylated	1	1277.5	220.350	0.0003	38.48	539.67	0.41	10.73	1.00	**0.68**	863.84	**0.43**
Dinonylphenyl polyoxyethylene	1	1277.5	390.640	0.0003	38.48	539.67	0.0047	10.73	1.00	**0.0115**	14.72	**0.0074**
									TOTAL (lb/hr) = (per mixer)	**3.02**	**Total (tpy) =** (per mixer)	**1.93**

Notes:

1. VOC emissions were calculated using equation 8.4-22 from *Methods for Estimating Air Emissions from Paint, Ink, and Other Coating Manufacturing Facilities* (Feb 2005).

$$E_x = \frac{M_x \times K_x \times A \times P_x \times 3600 \times H}{R \times T} \times B$$

2. Annual throughput assumes a maximum of 7 batches of acrylic finish produced per day, for a maximum of 365 days/yr, divided evenly between the two mixers.

3. Mixers are fully enclosed during filling and mixing operations, so emissions are 100% captured and routed to BGH2.

TABLE 6

Hourly Loading Emission Calculations[1] - AFLOAD (Acrylic Finish Packaging)		
R =	80.273	Ideal gas constant (psia * gal)/(lbmol * R)
P_{VA} =	0.708	True vapor pressure of liquid loaded (psia)[2]
M_V =	122.182	Molecular Weight of Vapors (lb/lb-mole)[2]
T =	554.67	Temperature of bulk liquid loaded (in degrees Rankine)
FR_M =	937.5	Gallons Loaded per Hour[3]
Control	0	Efficiency of any Control Device (e.g. a VRU)
L_{MAX} VOC lb/hr =	1.822	

Annual Loading Emission Calculations[4] - AFLOAD (Acrylic Finish Packaging)		
S =	1.45	Saturation Factor (splash loading, dedicated normal service)
P =	0.708	True vapor pressure of liquid loaded (psia)[2]
M =	122.182	Molecular Weight of Vapors (lb/lb-mole)[2]
T =	554.67	Temperature of bulk liquid loaded (in degrees Rankine)
Annual Loading Rate[5]	4106250	Gallons Loaded per Year
Control	0	Efficiency of any Control Device (e.g. a VRU)
L_L =	2.818888633	Loading Loss (in pounds of VOC released per 1000 gallons of liquid loaded)
L_L VOC ton/yr =	5.788	

Notes:

1. Emissions are calculated using equation $L_{MAX} = (M_V * P_{VA}/R*T)*FR_M$ from "Estimating Short Term Emission Rates from Fixed Roof Tanks" - APDG 6250, February 2020.
2. See Table A below for supporting calculations.
3. Hourly loading rate assumes 187.5 pails loaded/hour. Each 65 lb pail holds 5 gallons.
4. Emissions are calculated using equation $L_L = 12.46*SPM/T$ from AP-42, Chapter 5, Section 5.2-4.
5. Annual loading rate assumes 187.5 pails loaded/hour, 2250 pails loaded/12 hour day, and maximum operating days of 365 days/yr. Each 65 lb pail holds 5 gallons.
6. Packaging operations are fully enclosed, so emissions are 100% captured and routed to BGH2.

Table A - Weighted TVP and MW

Component Added to Mixer	True Vapor Pressure[1] (psia)	Molecular Weight[1] (lb/lb-mole)	% of Liquid Portion of Batch[2]	Weighted TVP	Weighted MW
Rhoplex EI-2000 (acrylic latex)	*0.57*	*100.12*	80	0.456	80.10
Busan 1024 (bactericide)	0.33	*182.22*	3.2	0.011	5.83
Polyphase 663 (biocide)	*2.45*	*182.22*	4.8	0.118	8.75
Propylene glycol	0.002	76.1	1.2	2.99E-05	0.91
Supersperse 95 (dispersant)	0.05	*182.22*	2.4	0.001	4.37
Tamol 850 (dispersing agent)	0.33	*182.22*	1.6	0.005	2.92
Foammaster NXZ (defoamer)	*2.45*	*182.22*	4.8	0.118	8.75
Triton N-57 (surfactant)	0.0002	440	2.4	4.64E-06	10.56
				0.708	**122.182**

Notes:

1. True Vapor Pressure (TVP) and Molecular Weight (MW) listed in italics are conservative estimates using surrogates.
Acrylic latex = TVP and MW of ethyl acrylate.
All other components = TVP of methyl alcohol (2.45) and surrogate MW of diphenyl ketone (182.22).
2. The total batch is only 25% liquid components. Each component percentage of the liquid portion of the batch was calculated as the percentage of 25%.

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TABLE 7a

VOC Working and Breathing Emissions[1] - AST1-AST3 (Latex Tanks)

TankESP FX VERSION 5.1.0 SOFTWARE [FOR ESTIMATING WORKING AND BREATHING LOSSES FROM STORAGE TANKS]								
Tank Identifier (EPN)	Throughput[2] (gallons/year)	Turnovers per year	Mixture/Component	Basis for VP Calculations[3]	Vapor MW[3]	VOC Control Efficiency %	VOC Emissions[4] (lb/hr)	VOC Emissions (tpy)
AST1	52,258.27	13.06	Latex	Ethyl acrylate (100%)	100.12	0	5.13	0.09
AST2	52,258.27	13.06	Latex	Ethyl acrylate (100%)	100.12	0	5.13	0.09
AST3	52,258.27	13.06	Latex	Ethyl acrylate (100%)	100.12	0	5.13	0.09
						TOTAL	15.38	0.26

Notes:
1. Emissions are estimated using TankESP FX Version 5.1.0.
2. Throughput is based on amount used in production of acrylic finish during the year, divided evenly between the three ASTs: 2,555 batches per year and each batch is 540 lb (61.36 gal) latex.
3. True Vapor Pressure (TVP) and Molecular Weight (MW) for the latex are conservative estimates using the surrogate ethyl acrylate.
4. Short-term emissions were calculated using the equation $L_{MAX} = (M_V * P_{VA}/R*T)*FR_M$ from "Estimating Short Term Emission Rates from Fixed Roof Tanks" - APDG 6250, February 2020. (See Table 7b)

TABLE 7b

Hourly Loading Emission Calculations[1] - LLOAD1-LLOAD3 (Loading to Latex Tanks)

R =	80.273	Ideal gas constant (psia * gal)/(lbmol * R)
P_{VA} =	0.570	True vapor pressure of liquid loaded (psia)[2]
M_V =	100.120	Molecular Weight of Vapors (lb/lb-mole)[2]
T =	554.67	Temperature of bulk liquid loaded (in degrees Rankine)
FR_M =	4000	Gallons Loaded per Hour[3]
Control	0	Efficiency of any Control Device (e.g. a VRU)
L_{MAX} VOC lb/hr =	5.13	VOC lb/hr per silo

Notes:
1. Emissions are calculated using the equation from "Estimating Short Term Emission Rates from Fixed Roof Tanks" APDG 6250.
2. True Vapor Pressure (TVP) and Molecular Weight (MW) for the latex are conservative estimates using the surrogate ethyl acrylate.
3. Hourly loading rate is based on the capacity of the silo.

TABLE 7c - Acrylic Latex Speciation

Specie	% of latex	EPN(s)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Aqua ammonia	0.2	AST1	0.03	0.001
		AST2	0.03	0.001
		AST3	0.03	0.001
		LLOAD1	0.01	
		LLOAD2	0.01	
		LLOAD3	0.01	
Diphenyl ketone	0.2	AST1	0.03	0.001
		AST2	0.03	0.001
		AST3	0.03	0.001
		LLOAD1	0.01	
		LLOAD2	0.01	
		LLOAD3	0.01	

1. Emission rate = (VOC emissions from EPN) x (% of specie)
2. All other acrylic latex species are not emitted (PM).

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TABLE 8 - Stucco Speciation

FIN: BAGGER

Specie	% of Stucco	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Portland cement	88.32	SDOOR1	8.00E-06	1.75E-05
Gypsum (calcium sulfate)	4.6	SDOOR1	4.16E-07	9.12E-07
Crystalline silica, quartz	2.856	SDOOR1	2.59E-07	5.66E-07
Limestone	4.6	SDOOR1	4.16E-07	9.12E-07
Fly ash combustion residue	4.5	SDOOR1	4.07E-07	8.92E-07
Calcium oxide	1.5	SDOOR1	1.36E-07	2.97E-07
Potassium oxide	0.25	SDOOR1	2.26E-08	4.96E-08
Phosphorus pentoxide	0.1	SDOOR1	9.05E-09	1.98E-08
Calcium hydroxide	0.5	SDOOR1	4.53E-08	9.91E-08
Magnesium hydroxide	0.35	SDOOR1	3.17E-08	6.94E-08

FIN: SILO1-SILO2

Specie	% of Portland Cement	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Portland cement	96	SBH1-SBH2	0.04	0.09
Gypsum (calcium sulfate)	5	SBH1-SBH2	0.002	0.005
Crystalline silica, quartz	0.05	SBH1-SBH2	0.00002	0.00005
Limestone	5	SBH1-SBH2	0.002	0.005

FIN: SILO3

Specie	% of Silica	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Crystalline silica, quartz	100	SBH3	0.02	0.05

FIN: SILO4

Specie	% of Lime	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Calcium hydroxide	50	SBH4	0.01	0.02
Magnesium hydroxide	35	SBH4	0.007	0.02
Crystalline silica, quartz	1	SBH4	0.0002	0.0005

FIN: SILO5

Specie	% of Fly Ash	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Fly ash combustion residue	90	SBH5	0.02	0.04
Crystalline silica, quartz	16	SBH5	0.003	0.007
Calcium oxide	30	SBH5	0.006	0.01
Potassium oxide	5	SBH5	0.001	0.002
Phosphorus pentoxide	2	SBH5	0.000	0.001

FIN: BGH1

Specie	% of Stucco	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Portland cement	88.32	BGH1	5.68E-02	1.24E-01
Gypsum (calcium sulfate)	4.6	BGH1	2.96E-03	6.48E-03
Crystalline silica, quartz	2.856	BGH1	1.84E-03	4.02E-03
Limestone	4.6	BGH1	2.96E-03	6.48E-03
Fly ash combustion residue	4.5	BGH1	2.89E-03	6.34E-03
Calcium oxide	1.5	BGH1	9.64E-04	2.11E-03
Potassium oxide	0.25	BGH1	1.61E-04	3.52E-04
Phosphorus pentoxide	0.1	BGH1	6.43E-05	1.41E-04
Calcium hydroxide	0.5	BGH1	3.21E-04	7.04E-04
Magnesium hydroxide	0.35	BGH1	2.25E-04	4.93E-04

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TABLE 9 - Acrylic Finish Speciation

FINs: MIXDROP1, MIXDROP2

Specie	Specie Type	% of Acrylic Finish	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Magnesium aluminum silicate	P	0.495	BGH2	4.24E-04	9.29E-04
Magnesium oxide	P	0.025	BGH2	2.14E-05	4.69E-05
Silica, crystalline (quartz)	P	44.8	BGH2	3.84E-02	3.84E-02
Titanium dioxide	P	5	BGH2	4.29E-03	4.29E-03
Ethylhydroxyethyl cellulose	P	0.8	BGH2	6.86E-04	6.86E-04

FIN: SILO6

Specie	Specie Type	%	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Crystalline silica, quartz	P	100	SBH6	0.02	0.05

FIN: SILO7

Specie	Specie Type	%	EPN(S)	Emissions Rate (lb/hr)[1]	Emissions Rate (tpy)[1]
Calcium carbonate	P	100	SBH7	0.02	0.05

Notes:
1. Emission rate = (PM10 emissions from FIN/EPN) x (% of specie)

FINs: MIXLOAD1, MIXLOAD2

Specie	Specie Type	% of Acrylic Finish	EPN(S)	Emissions Rate (lb/hr)[2]	Emissions Rate (tpy)[2]
Acrylic polymer	P	9.4	BGH2	NE	NE
Aqua ammonia	V	0.04	BGH2	1.32E-04	1.22E-04
Diphenyl ketone	V	0.04	BGH2	1.32E-04	1.22E-04
1,2-Benzisothiazolin-3(2H)-one	V	0.0212	BGH2	7.00E-05	6.48E-05
2-methylisothiazol-3(2H)-one	V	0.0212	BGH2	7.00E-05	6.48E-05
Methyl 2-benzimidazolecarbamate	P	0.108	BGH2	NE	NE
3-iodo-2-propynyl butyl carbamate	P	0.036	BGH2	NE	NE
Diuron [3-(3,4-dichlorphenyl)-1,1-dimethylurea]	P	0.18	BGH2	NE	NE
Kaolin	P	0.12	BGH2	NE	NE
Propylene glycol	V	0.3	BGH2	9.90E-04	9.17E-04
Non-ionic surfactants	V	0.03	BGH2	9.90E-05	9.17E-05
2,2'-iminodiethanol	V	0.006	BGH2	1.98E-05	1.83E-05
Sodium Salt of Polymeric Carboxylic Acid	P	0.124	BGH2	NE	NE
Formaldehyde*	V	0.0002	BGH2	6.60E-07	6.11E-07
distillates (petroleum), solvent-dewaxed heavy paraffinic	V	0.96	BGH2	3.17E-03	2.93E-03
Aluminum, hydroxybis(octadecanoato-.kappa.O)-	P	0.06	BGH2	NE	NE
4-Nonylphenol branched, ethoxylated	V	0.582	BGH2	1.92E-03	1.78E-03
Poly(ethylene oxide)	P	0.018	BGH2	NE	NE
Dinonylphenyl polyoxyethylene	V	0.012	BGH2	3.96E-05	3.67E-05

FINs: MIX2, MIX3

Specie	Specie Type		EPN(S)	Emissions Rate (lb/hr)[2]	Emissions Rate (tpy)[2]
Acrylic polymer	P		BGH2	NE	NE
Aqua ammonia	V		BGH2	1.33E+00	8.47E-01
Diphenyl ketone	V		BGH2	2.12E-03	1.35E-03
1,2-Benzisothiazolin-3(2H)-one	V		BGH2	1.51E-01	9.65E-02
2-methylisothiazol-3(2H)-one	V		BGH2	1.66E-01	1.06E-01
Methyl 2-benzimidazolecarbamate	P		BGH2	NE	NE
3-iodo-2-propynyl butyl carbamate	P		BGH2	NE	NE
Diuron [3-(3,4-dichlorphenyl)-1,1-dimethylurea]	P		BGH2	NE	NE
Kaolin	P		BGH2	NE	NE
Propylene glycol	V		BGH2	1.54E-01	9.81E-02
Non-ionic surfactants	V		BGH2	2.01E-01	1.28E-01
2,2'-iminodiethanol	V		BGH2	1.38E-06	8.84E-07
Sodium Salt of Polymeric Carboxylic Acid	P		BGH2	NE	NE
Formaldehyde*	V		BGH2	7.13E-06	4.55E-06
distillates (petroleum), solvent-dewaxed heavy paraffinic	V		BGH2	2.66E+00	1.70E+00
Aluminum, hydroxybis(octadecanoato-.kappa.O)-	P		BGH2	NE	NE
4-Nonylphenol branched, ethoxylated	V		BGH2	1.35E+00	8.64E-01
Poly(ethylene oxide)	P		BGH2	NE	NE
Dinonylphenyl polyoxyethylene	V		BGH2	2.30E-02	1.47E-02

FIN: AFLOAD

Specie	Specie Type	% of Acrylic Finish	EPN(S)	Emissions Rate (lb/hr)[2]	Emissions Rate (tpy)[2]
Acrylic polymer	P	9.4	BGH2	NE	NE
Aqua ammonia	V	0.04	BGH2	7.29E-04	2.32E-03
Diphenyl ketone	V	0.04	BGH2	7.29E-04	2.32E-03
1,2-Benzisothiazolin-3(2H)-one	V	0.0212	BGH2	3.86E-04	1.23E-03
2-methylisothiazol-3(2H)-one	V	0.0212	BGH2	3.86E-04	1.23E-03
Methyl 2-benzimidazolecarbamate	P	0.108	BGH2	NE	NE
3-iodo-2-propynyl butyl carbamate	P	0.036	BGH2	NE	NE
Diuron [3-(3,4-dichlorphenyl)-1,1-dimethylurea]	P	0.18	BGH2	NE	NE
Kaolin	P	0.12	BGH2	NE	NE
Propylene glycol	V	0.3	BGH2	5.47E-03	1.74E-02
Non-ionic surfactants	V	0.03	BGH2	5.47E-04	1.74E-03
2,2'-iminodiethanol	V	0.006	BGH2	1.09E-04	3.47E-04
Sodium Salt of Polymeric Carboxylic Acid	P	0.124	BGH2	NE	NE
Formaldehyde*	V	0.0002	BGH2	3.64E-06	1.16E-05
distillates (petroleum), solvent-dewaxed heavy paraffinic	V	0.96	BGH2	1.75E-02	5.56E-02
Aluminum, hydroxybis(octadecanoato-.kappa.O)-	P	0.06	BGH2	NE	NE
4-Nonylphenol branched, ethoxylated	V	0.582	BGH2	1.06E-02	3.37E-02
Poly(ethylene oxide)	P	0.018	BGH2	NE	NE
Dinonylphenyl polyoxyethylene	V	0.012	BGH2	2.19E-04	6.95E-04

Notes:
2. Emission rate = (VOC emissions from FIN/EPN) x (% of specie)
3. V = VOC; P = particulate
4. NE = not emitted
5. * = HAP

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7 AIR DISPERSION MODELING

All on-site emission sources were modeled using the EPA's SCREEN3 model, Version 13043. Below is a summary table listing all emission sources discussed in this section.

Table 7.0

EPN	FIN(s)	Description
SBH1	SILO1	Cement silo 1 baghouse
SBH2	SILO2	Cement silo 2 baghouse
SBH3	SILO3	Silica silo baghouse
SBH4	SILO4	Lime silo baghouse
SBH5	SILO5	Fly ash silo baghouse
SBH6	SILO6	Sand silo baghouse
SBH7	SILO7	Calcium carbonate silo baghouse
BGH1	HOP1, HOP2, MIX1, BAGGER	Stucco mixer tower baghouse
BGH2	MIXDROP1, MIXDROP2, MIX2, MIX3, MIXLOAD1, MIXLOAD2, AFLOAD	Acrylic finish baghouse
SDOOR1	BAGGER	Stucco building door fugitives
ASTV1	AST1	Latex silo 1 vent
ASTV2	AST2	Latex silo 2 vent
ASTV3	AST3	Latex silo 3 vent

The following guidance documents were used to complete the modeling analysis.

- TCEQ: *Modeling and Effects Review Applicability (MERA)*, APDG 5874, March 2018
- TCEQ: *Air Quality Modeling Guidelines*, APDG 6232, November 2019

7.1 Pollutants Evaluated

Modeling was completed to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) for PM_{10} and $PM_{2.5}$, as well as Effects Screening Levels (ESLs) for speciated emissions. Table 7.1 summarizes each EPN modeled and the applicable analyses completed.

Table 7.1

Emission Source			NAAQS Analysis Criteria Pollutant(s)	ESL Analysis
EPN	Description	Source Type		
SBH1	Silo 1 baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate species
SBH2	Silo 2 baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate species
SBH3	Silo 3 baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate species
SBH4	Silo 4 baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate species

SBH5	Silo 5 baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate species
SBH6	Silo 6 baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate species
SBH7	Silo 7 baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate species
BGH1	Stucco mixer tower baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate species
BGH2	Acrylic finish baghouse	Point	PM_{10}, $PM_{2.5}$	Individual particulate and VOC species
ASTV1	Latex silo 1	Point	-	Individual VOC species
ASTV2	Latex silo 2	Point	-	Individual VOC species
ASTV3	Latex silo 3	Point	-	Individual VOC species
SDOOR1	Stucco bagging fugitives	Volume	PM_{10}, $PM_{2.5}$	Individual particulate species

7.2 Source Parameters

The SCREEN3 modeling for the project was performed using unit impact model (UIM) runs. The modeling emission rate was set at 1 lb/hr, then scaled following the modeling for each source using the UIM to determine the maximum 1-hr ground level concentration (GLC_{max}). The following table presents the parameters of each modeled source.

Table 7.2.a – Point Sources Modeled

EPN	Source Type	Unit Emission Rate (lb/hr)	Point Source Emission Parameters				Downwash Parameters			Distance to Property Line (m)
			Stack Height (m)	Stack Diameter (m)	Velocity (m/s)	Temp. (°K)	Building Height (m)	Minimum Length (m)	Minimum Width (m)	
SBH1	Point	1	11.1557	0.2777	12.4703	293.7056	12.192	45.72	38.1	21
SBH2	Point	1	11.1557	0.2777	12.4703	293.7056	12.192	45.72	38.1	21
SBH3	Point	1	11.1557	0.2777	12.4703	293.7056	12.192	45.72	38.1	21
SBH4	Point	1	11.1557	0.2777	12.4703	293.7056	12.192	45.72	38.1	21
SBH5	Point	1	11.1557	0.2777	12.4703	293.7056	12.192	45.72	38.1	21
SBH6	Point	1	11.1557	0.2777	12.4703	293.7056	12.192	45.72	38.1	21
SBH7	Point	1	11.1557	0.2777	12.4703	293.7056	12.192	45.72	38.1	21
BGH1	Point	1	12.4968	0.1524	38.8084	293.7056	12.192	45.72	38.1	32
BGH2	Point	1	12.4968	0.1524	129.3611	293.7056	12.192	45.72	38.1	29
ASTV1	Point	1	3.0480	0.1524	0.0002	293.7056	12.192	45.72	38.1	42
ASTV2	Point	1	3.0480	0.1524	0.0002	293.7056	12.192	45.72	38.1	42
ASTV3	Point	1	3.0480	0.1524	0.0002	293.7056	12.192	45.72	38.1	42

Table 7.2.b – Volume Sources Modeled

EPN	Source Type	Unit Emission Rate (lb/hr)	Release Height (m)	Horizontal Dimension (m)	Vertical Dimension (m)
SDOOR1	Volume	1	2.1336	0.17	1.9812

7.3 Model Parameters

The SCREEN3 model, Version 13043, was used to predict maximum concentrations from the emissions sources to determine compliance with TCEQ and EPA standards.

Each point source was modeled at full meteorological conditions in order to determine the worst-case stability class where the one-hour maximum concentration will occur.

An emission rate of one (1) lb/hr (0.126 g/s) was used to predict a maximum ground level concentration (GLC_{max}) for each source. Each unit impact modeled by SCREEN3 was then multiplied by the emission rate of each source to determine the predicted hourly and annual GLC_{max} for the source. The GLC_{max} was then compared to applicable TCEQ/EPA standards (NAAQS) and guidelines (ESLs).

7.3.1 Selection of Dispersion Coefficients

The rural dispersion coefficient was utilized as it is the more conservative option and the surrounding land use is mixed commercial and residential. The terrain in the vicinity of the site is relatively flat therefore no terrain was included in the modeling.

Building downwash effects were considered for all distance intervals from 100-50,000 m, using the Schulman-Scire (SS) downwash algorithm. The respective portion of the building in which each emission source is located within or adjacent to was utilized to determine downwash effects.

Table 7.3.1

Building Name	EPN(S)	Height (m)	Width (m)	Length (m)
Stucco Building	SBH1-SBH5, BGH1, SDOOR1	12.192	45.72	38.1
Acrylic Finish Building	SBH6-SBH7, BGH2, ASTV1-ASTV3	12.192	45.72	38.1

7.3.2 Flat Discrete Receptors

SCREEN3 auto-distances for flat receptors were utilized for modeling purposes. These were 1 m (minimum) to 50,000 m (maximum). Flag pole receptors were not used in the model.

7.4 SCREEN3 Results

The SCREEN3 results indicated the modeled GLC_{max} results for each emission source as listed in Table 7.4. The maximum GLCs were used as Unit Impact Multipliers (UIMs) for the NAAQS analysis of PM_{10} and $PM_{2.5}$, and the ESL analyses of speciated components.

Table 7.4

EPN	Description	UIM ($\mu g/m^3$)/lb
SBH1	Silo 1 baghouse	521.32
SBH2	Silo 2 baghouse	521.32
SBH3	Silo 3 baghouse	521.32
SBH4	Silo 4 baghouse	521.32
SBH5	Silo 5 baghouse	521.32
SBH6	Silo 6 baghouse	521.32
SBH7	Silo 7 baghouse	521.32
BGH1	Stucco Mixer Tower Baghouse	176.02
BGH2	Acrylic Finish Baghouse	25.98
ASTV1	Latex silo 1	210.8
ASTV2	Latex silo 2	210.8
ASTV3	Latex silo 3	210.8
SDOOR1	Stucco building fugitives	44,543.7

7.5 NAAQS ANALYSIS

The first part of the modeling analysis was performed to determine compliance with the NAAQS for PM_{10} and $PM_{2.5}$. These pollutants were analyzed for the applicable emission sources (EPNs: SBH1-SBH7, BGH1, BGH2, and SDOOR1).

Cumulative modeled PM_{10} emissions were summed with short-term background PM_{10} emissions, and a conversion factor of 0.4 was used to determine the 24-hour averaging period for comparison to the 24-hour NAAQS PM_{10} standard. The methodology required in Appendix D of the TCEQ *Air Quality Modeling Guidelines (APDG 6232)* was utilized to account for ambient background concentrations, as no monitor in Bexar County meeting three years' "complete" PM_{10} data exists. First, a search for PM_{10} monitors in adjacent counties was conducted, of which none with comparable adjacency to light industrial areas were identified. Subsequently, El Paso County was selected as the county most representative of the greater San Antonio area. Both El Paso and Bexar counties are heavily populated, have comparable land use within a 10-km region around the project site and the both monitoring station locations consist of primarily urban land with mixed commercial, industrial, and residential uses. Furthermore, El Paso County is also a nonattainment county for PM_{10}, making the background used a conservative representation of expected ambient PM_{10} concentrations in Bexar County. The data recorded for the 2017-2019 calendar years was used, where each recorded year met the "complete" criteria requirements. Following quantification of background concentration, the modeled GLC_{max} for cumulative PM_{10} emissions, summed with the background concentration, was compared to the 24-hour Primary Standard of 150 $\mu g/m^3$.

Table 7.5.1 – PM10 Results

Averaging Period	Cumulative GLC_{max} ($\mu g/m^3$)	Short-Term Background Concentration ($\mu g/m^3$)	Modeled + Background Concentration ($\mu g/m^3$)	NAAQS Limit ($\mu g/m^3$)
24-Hr	35.61	27.77	**63.373**	150

The total PM_{10} modeled emissions (modeled + background) are the product of the short-term cumulative emission rates, the cumulative maximum SCREEN3 modeled concentration, the short-term background concentration at the 7501 Mimosa Avenue monitor, and the 24-hour averaging factor of 0.4. The 24-hour modeled emissions of 63.373 $\mu g/m^3$ are less than the PM_{10} Primary Standard of 150 $\mu g/m^3$; therefore, compliance with the PM_{10} NAAQS has been demonstrated.

Similarly, cumulative modeled $PM_{2.5}$ emissions were summed with short and long-term background $PM_{2.5}$ emissions. A conversion factor of 0.4 was used to determine the 24-hour averaging period, and a conversion factor of 0.08 was used to determine the annual averaging period. The background monitor for $PM_{2.5}$ reflected the San Antonio monitor AQS 48-029-0032, located at 6655 Bluebird Lane. The monitor met the "complete" criteria in accordance with TCEQ/EPA requirements. Data for 2017-2019 were used. The modeled GLC_{max} for cumulative $PM_{2.5}$ emissions, plus background concentrations, was compared to the 24-hour Primary Standard of 35 $\mu g/m^3$ and to the Annual Primary Standard of 12 $\mu g/m^3$.

Table 7.5.2 – PM2.5 Results

Averaging Period	Cumulative GLC_{max} ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Modeled + Background Concentration ($\mu g/m^3$)	NAAQS Limit ($\mu g/m^3$)
24-Hr	14.17	19.93	**34.103**	35
Annual	2.83	8.19	**11.026**	12

The total $PM_{2.5}$ modeled emissions (modeled + background) are the product of the short-term cumulative emission rates, the cumulative maximum SCREEN3 modeled concentration, the short-term background concentration at the 6655 Bluebird Lane monitor, and the 24-hour averaging factor of 0.4. The same methodology is applied to determine the long-term modeled emissions, but a 0.08 averaging factor is instead used. The 24-hour modeled emissions of 34.103 $\mu g/m^3$ are less than the $PM_{2.5}$ 24-hour Primary Standard of 35 $\mu g/m^3$ and the annual modeled emissions of 11.026 $\mu g/m^3$ are less than the $PM_{2.5}$ Annual Primary Standard of 12 $\mu g/m^3$; therefore, compliance with the $PM_{2.5}$ NAAQS has been demonstrated.

7.6 ESL Analysis

The second modeling "impacts" analysis was performed to determine off-site impacts of the proposed emissions, by comparing modeled concentrations of individual species to the TCEQ's published ESLs. The speciated pollutants represent individual compounds present in materials used on site, and were quantified for each applicable emission sources (EPNs: SBH1-SBH7, BGH1, BGH2, ASTV1-ASTV3, and SDOOR1).

The impacts are determined by comparing the site-wide GLC_{max} for each specie to the ESLs. The TCEQ's Modeling Effects and Review Applicability (MERA) evaluation was performed for each specie, to determine the short and long-term impacts of the proposed emissions. First, all individual VOC and PM species within the materials used and manufactured on-site were identified. Once identified, the percentage of each specie within each raw material and product was used was used to calculate speciated emissions rates. The short-term (lb/hr) and long-term (tpy) emission were calculated for each specie, according to the percent concentrations of each specie from each applicable EPN. The cumulative emissions of each specie from all sources on site were used to compare to the proposed emissions to the

short-term ESL for each specie. Step 2 of the MERA evaluation was used to exclude species from further analysis based on de minimis status. After de minimis species were excluded, emissions from nine (9) species not meeting the de minimis criteria were further evaluated by comparing the GLC_{max} of each specie to the respective short and long-term ESLs. For those species, the cumulative emission rates were multiplied by the UIM for each respective EPN to determine the GLC_{max} for each specie. Each short-term GLC_{max} was compared to the specie's short-term ESL. To determine the long-term GLC_{max}, each short-term GLC_{max} was multiplied by an annual averaging conversion factor of 0.08, then compared to each specie's long-term ESL. The short and long-term GLC_{max} as compared to short and long-term ESLs are summarized in Table 7.6 below.

Table 7.6

Specie	Short-Term GLC_{max} ($\mu g/m^3$)	Short-Term ESL ($\mu g/m^3$)	Long-Term GLC_{max} ($\mu g/m^3$)	Long-Term ESL ($\mu g/m^3$)
Silica, crystalline (quartz)	24.61	14	1.97	0.27
Diphenyl ketone	26.02	5	2.08	0.5
Aqua ammonia	25.94	180	2.08	92
1,2-Benzisothiazolin-3(2H)-one	3.94	350	0.32	35
2-methylisothiazol-3(2H)-one	4.31	170	0.34	17
Propylene glycol	4.16	1800	0.33	18
Non-ionic surfactants	5.24	600	0.42	60
Distillates (petroleum), solvent-dewaxed heavy paraffinic	69.64	1000	5.57	100
Portland cement	30.94	50	2.48	5

Based on the ESL analysis, silica and diphenyl ketone were the only species not excluded as a result of the MERA Step 6. Silica and diphenyl ketone each exceeded the short-term and/or long-term ESLs, necessitating further analysis pursuant to MERA guidance.

Subsequently, impacts for silica and diphenyl ketone were further evaluated in accordance with the Toxicology Effects Evaluation Procedure in Appendix D of the MERA guidance. The maximum ground level concentrations at the nearest non-industrial receptor (GLC_{ni}) for each EPN emitting silica and diphenyl ketone was modeled to determine the maximum off-property ground-level concentration at the nearest non-industrial receptor. Because all previous UIMs utilized in prior models represented maximum modeled concentrations, including those modeled on-site, a new UIM was determined for each emissions point emitting applicable species by measuring the distance from each respective emissions point to the nearest non-industrial receptor. These measurements were then incorporated into the applicable EPN Screen3 model, by utilizing the measurement as a Flat Discrete receptor and modeled at 1lb/hr. The Flat Discrete option within Screen3 allows for a concentration at a specific distance from the emissions point to be identified in lieu of the default intervals. The modeled concentrations at the Flat Discrete receptor distances yielded a new UIM ($\mu g/m^3$)/lb/hr which can be utilized to determine the GLC_{ni}. The cumulative GLC_{ni} for each specie was determined by calculating the product of the lb/hr of each specie emitted from

all sources at the site and each applicable EPN's UIM. The calculated GLC_{ni}, which represents the modeled concentration of the specie from all sources at the site at the nearest non-industrial receptor, was then compared to each specie's short and long-term ESLs, as summarized in Table 7.7.

Table 7.7

Specie	Short-Term GLC_{ni} ($\mu g/m^3$)	Short-Term ESL ($\mu g/m^3$)	Long-Term GLC_{ni} ($\mu g/m^3$)	Long-Term ESL ($\mu g/m^3$)
Silica, crystalline (quartz)	22.13	14	1.77	0.27
Diphenyl ketone	20.18	5	1.61	0.5

7.7 Conclusions

As demonstrated by the air quality modeling analysis, the site will not cause or contribute to any violations of any NAAQS.

The GLC_{max} for diphenyl ketone has been estimated to exceed the short-term ESL by approximately 5 times, and the long-term ESL by 4 times. Further evaluation of the GLC_{ni} estimated the exceedance of the short-term ESL by 4 times, and the long-term ESL by 3 times. Given that the total volatile organic compound emissions estimates were quantified using conservative surrogates prior to the subsequent speciation of diphenyl ketone, the ESL exceedance may primarily be attributed to the gross overestimation of VOC emissions. When the overestimation of emissions is combined with the conservatism of the Screen modeling utilized, the results are an exceedance of the ESL which is not necessarily a representation of conditions actually anticipated to occur off-site.

Lastly, while both the Short-Term and Long-Term ESL's have been exceeded for silica, the site is proposing to utilize best available control technologies (BACT) and has demonstrated compliance with all NAAQS property line standards for particulate matter. Given the conservative nature of the Screen modeling utilized, no adverse impacts are anticipated.

In conclusion, adverse health or welfare impacts generated by the proposed site are not anticipated based on the conservative nature of the Screen model utilized and the proposed construction of BACT used to control emissions from the processes.

TABLE 10a - SCREEN3 Analysis Model Inputs - Point Sources

FIN / Source	EPN	Source Type	Emission Rate (lbs/hr)	Latitude (°N)	Longitude (°W)	Stack Release Height (ft)	Stack Inside Diameter (ft)	Stack Flow Rate (acfm)	Stack Exit Velocity (ft/s)	Stack Exit Temperature (°F)	Dispersion Coefficient Urban/Rural Option	Building Height (ft)	Building Width (ft)	Building Length (ft)
SILO1 / Silo 1	SBH1	Point	1.0	29.587294	-98.582944	36.6	0.911	1,600	40.91	69	Rural	40	150	125
SILO2 / Silo 2	SBH2	Point	1.0	29.587309	-98.582900	36.6	0.911	1,600	40.91	69	Rural	40	150	125
SILO3 / Silo 3	SBH3	Point	1.0	29.587327	-98.582856	36.6	0.911	1,600	40.91	69	Rural	40	150	125
SILO4 / Silo 4	SBH4	Point	1.0	29.587341	-98.582811	36.6	0.911	1,600	40.91	69	Rural	40	150	125
SILO5 / Silo 5	SBH5	Point	1.0	29.587359	-98.582768	36.6	0.911	1,600	40.91	69	Rural	40	150	125
HOP1 / Weigh hopper HOP2 / Discharge hopper MIX1 / Stucco mixer BAGGER / Stucco bagger	BGH1	Point	1.0	29.587431	-98.582892	41	0.5	1,500	127.32	69	Rural	40	150	125
MIXDROP1, MIXDROP2, MIXLOAD1, MIXLOAD2, MIX2, MIX3, AFLOAD / Transfer of materials to acrylic finish mixer, mixing, packaging	BGH2	Point	1.0	29.587561	-98.583123	41	0.5	5,000	424.41	69	Rural	40	150	125
SILO6 / Silo 6	SBH6	Point	1.0	29.587372	-98.582735	36.6	0.911	1,600	40.91	69	Rural	40	150	125
SILO7 / Silo 7	SBH7	Point	1.0	29.587381	-98.582708	36.6	0.911	1,600	40.91	69	Rural	40	150	125
AST1 / Latex Tank 1 LLOAD1 / Latex Tank 1 loading	ASTV1	Point	1.0	29.587544	-98.582836	10	0.5	0.01	0.0008	69	Rural	40	150	125
AST2 / Latex Tank 2 LLOAD2 / Latex Tank 2 loading	ASTV2	Point	1.0	29.587564	-98.582823	10	0.5	0.01	0.0008	69	Rural	40	150	125
AST3 / Latex Tank 3 LLOAD3 / Latex Tank 3 loading	ASTV3	Point	1.0	29.587558	-98.582797	10	0.5	0.01	0.0008	69	Rural	40	150	125

TABLE 10b - SCREEN3 Analysis Model Inputs - Volume Sources

Source	EPN	Source Type	Emission Rate (lbs/hr)	Release Height (ft)	Horizontal[1] Dimension SigmaY (ft)	Vertical[1] Dimension SigmaZ (ft)	Dispersion Coefficient Urban/ Rural Option
BAGGER / Bagger Fugitives	SDOOR1	Volume	1.0	7.0	0.56	6.50	Rural

Notes:
1. Horizonal (SigmaY) and Vertical (SigmaZ) Dimension for volume source modeling were calculated per the Industrial Source Complex User Guide for Dispersion Models - Volume II. Dimensions are based on the nearest overhead bay door where fugitives exit the buildling. Each bay door measures 12 ft wide x 14 ft tall x 0.5 ft depth.

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TABLE 11 - MERA - Step 2 Analysis

CAS Number	Specie	EPN(s)	Cumulative Emission Increase[1,2] (lb/hr)	Short-term ESL ($\mu g/m^3$)	De Minimis Level	MERA Analysis Complete?[3]
1327-43-1	Magnesium aluminum silicate	BGH2	0.0004	40	≤ 0.04	YES
1309-48-4	Magnesium oxide	BGH2	0.00002	40	≤ 0.04	YES
14808-60-7	Silica, crystalline (quartz)	SBH1-SBH5, BGH1, SDOOR1, BGH2, SBH6	0.085	14	≤ 0.04	NO
13463-67-7	Titanium dioxide	BGH2	0.004	50	≤ 0.04	YES
9004-58-4	Ethylhydroxyethyl cellulose	BGH2	0.0007	N/A - Must meet NAAQS	N/A	N/A
	Acrylic polymer	BGH2, ASTV1-ASTV3	NE	N/A - Must meet NAAQS	N/A	N/A
1336-21-6	Aqua ammonia	BGH2, ASTV1-ASTV3	1.450	180	≤ 0.04	NO
119-61-9	Diphenyl ketone	BGH2, ASTV1-ASTV3	0.126	5	≤ 0.04	YES
2634-33-5	1,2-Benzisothiazolin-3(2H)-one	BGH2	0.152	350	≤ 0.04	NO
2682-20-4	2-methylisothiazol-3(2H)-one	BGH2	0.166	170	≤ 0.04	NO
10605-21-7	Methyl 2-benzimidazolecarbamate	BGH2	NE	N/A - Must meet NAAQS	N/A	N/A
55406-53-6	3-iodo-2-propynyl butyl carbamate	BGH2	NE	1.2	≤ 0.04	YES
330-54-1	Diuron [3-(3,4-dichlorphenyl)-1,1-dimethylurea]	BGH2	NE	N/A - Must meet NAAQS	N/A	N/A
1332-58-7	Kaolin	BGH2	NE	50	≤ 0.04	YES
57-55-6	Propylene glycol	BGH2	0.160	1800	≤ 0.1	NO
	Non-ionic surfactants	BGH2	0.202	PM N/A - Must meet NAAQS	N/A	N/A
				Vapor 600	≤ 0.1	NO
111-42-2	2,2'-iminodiethanol	BGH2	0.0001	51	≤ 0.04	YES
9003-04-7	Sodium Salt of Polymeric Carboxylic Acid	BGH2	NE	PM N/A - Must meet NAAQS	N/A	N/A
				Vapor 500	≤ 0.1	YES
50-00-0	Formaldehyde	BGH2	0.00001	15	≤ 0.04	YES
64742-65-0	distillates (petroleum), solvent-dewaxed heavy paraffinic	BGH2	2.680	1000	≤ 0.1	NO
300-92-5	Aluminum, hydroxybis(octadecanoato-.kappa.O)-	BGH2	NE	50	≤ 0.04	YES
68412-54-4	4-Nonylphenol branched, ethoxylated	BGH2	1.365	N/A - Must meet NAAQS	N/A	N/A
25322-68-3	Poly(ethylene oxide)	BGH2	NE	PM N/A - Must meet NAAQS	N/A	N/A
				Vapor 1000	≤ 0.1	YES
9014-93-1	Dinonylphenyl polyoxyethylene	BGH2	0.0233	600	≤ 0.1	YES
65997-15-1	Portland cement	SBH1-SBH2, BGH1, SDOOR1	0.10	50	≤ 0.04	NO
7778-18-9	Gypsum (calcium sulfate)	SBH1-SBH2, BGH1, SDOOR1	0.005	N/A - Must meet NAAQS	N/A	N/A
1317-65-3	Limestone	SBH1-SBH2, BGH1, SDOOR1	0.005	N/A - Must meet NAAQS	N/A	N/A
68131-74-8	Fly ash combustion residue	SBH5, BGH1, SDOOR1	0.02	20	≤ 0.04	YES
1305-78-8	Calcium oxide	SBH5, BGH1, SDOOR1	0.01	20	≤ 0.04	YES
12136-45-7	Potassium oxide	SBH5, BGH1, SDOOR1	0.001	N/A - Must meet NAAQS	N/A	N/A
1314-56-3	Phosphorus pentoxide	SBH5, BGH1, SDOOR1	0.0005	20	≤ 0.04	YES
1305-62-0	Calcium hydroxide	SBH4, BGH1, SDOOR1	0.01	N/A - Must meet NAAQS	N/A	N/A
1309-42-8	Magnesium hydroxide	SBH4, BGH1, SDOOR1	0.01	40	≤ 0.04	YES
1317-65-3	Calcium carbonate	SBH7	0.02	N/A - Must meet NAAQS	N/A	N/A

Notes:
1. Cumulative emissions (lb/hr) represent the sum of emissions of each specie from all emission sources.
2. NE = not emitted
3. If a specie could not be excluded during Step 2 of the MERA analysis, full modeling was completed.

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TABLE 12a - Scaled/Converted Results from SCREEN3 Model

PM10

EPN	UIM[1] ($\mu g/m^3$)/(lb)	Emissions Rate (lb/hr)	GLC Max ($\mu g/m^3$)/(lb/hr)
SBH1	521.32	0.021	**10.72**
SBH2	521.32	0.021	**10.72**
SBH3	521.32	0.021	**10.72**
SBH4	521.32	0.021	**10.72**
SBH5	521.32	0.021	**10.72**
BGH1	176.02	0.064	**11.32**
BGH2	25.98	0.086	**2.23**
SBH6	521.32	0.021	**10.72**
SBH7	521.32	0.021	**10.72**
SDOOR1	44,543.7	9.05E-06	**0.40**
		TOTAL	**89.02**

Notes:

1. UIM (Unit Impact Multiplier) equates to the maximum 1-hr concentration modeled by SCREEN3 in $\mu g/m^3$.

PM2.5

EPN	UIM[1] ($\mu g/m^3$)/(lb)	Emissions Rate (lb/hr)	GLC Max ($\mu g/m^3$)/(lb/hr)
SBH1	521.32	0.004	**2.27**
SBH2	521.32	0.004	**2.27**
SBH3	521.32	0.003	**1.62**
SBH4	521.32	0.003	**1.62**
SBH5	521.32	0.003	**1.62**
BGH1	176.02	0.064	**11.32**
BGH2	25.98	0.086	**2.23**
SBH6	521.32	0.003	**1.62**
SBH7	521.32	0.021	**10.72**
SDOOR1	44,543.7	2.56E-06	**0.11**
		TOTAL	**35.42**

Notes:

1. UIM (Unit Impact Multiplier) equates to the maximum 1-hr concentration modeled by SCREEN3 in $\mu g/m^3$.

SPECIATED EMISSIONS

Species	EPN(s)	UIM[1] ($\mu g/m^3$)/(lb)	Cumulative Emissions Rate (lb/hr)	GLCmax ($\mu g/m^3$)/(lb/hr)
Silica, crystalline (quartz)	SBH1-SBH5	521.32	0.024	**12.56**
	SBH6	521.32	0.021	**10.72**
	BGH1	176.02	0.002	**0.32**
	SDOOR1	44,543.7	2.59E-07	**0.012**
	BGH2	25.98	0.038	**1.00**
			TOTAL	**24.61**
Diphenyl ketone	BGH2	25.98	2.98E-03	**0.08**
	ASTV1-ASTV3	210.8	0.12	**25.94**
			TOTAL	**26.02**
Aqua ammonia	BGH2	25.98	1.33	**34.49**
	ASTV1-ASTV3	210.8	0.12	**25.94**
			TOTAL	**25.94**
1,2-Benzisothiazolin-3(2H)-one	BGH2	25.98	0.152	**3.94**
			TOTAL	**3.94**
2-methylisothiazol-3(2H)-one	BGH2	25.98	0.1660	**4.31**
			TOTAL	**4.31**
Propylene glycol	BGH2	25.98	0.1601	**4.16**
			TOTAL	**4.16**
Non-ionic surfactants	BGH2	25.98	0.2016	**5.24**
			TOTAL	**5.24**
Distillates (petroleum), solvent-dewaxed heavy paraffinic	BGH2	25.98	2.6804	**69.64**
			TOTAL	**69.64**
Portland cement	SBH1-SBH2	521.32	0.039	**20.59**
	BGH1	176.02	0.057	**9.99**
	SDOOR1	44,543.7	0.00001	**0.36**
			TOTAL	**30.94**

Notes:

1. UIM (Unit Impact Multiplier) equates to the maximum 1-hr concentration modeled by SCREEN3 in $\mu g/m^3$.

Table 12b - SPECIATED EMISSIONS (TOXICOLOGY EFFECTS EVALUATION)

Species	EPN(s)	**UIM[1]** ($\mu g/m^3$)/(lb)	**Cumulative Emissions Rate** (lb/hr)	**GLCni** ($\mu g/m^3$)/(lb/hr)	**Distance to Property Boundary** (m)	**Distance to NI Receptor** (m)
Silica, crystalline (quartz)	SBH1-SBH5	502.60	0.024	**12.11**	21	**41**
	SBH6	419.9	0.021	**8.64**	21	**63.2**
	BGH1	167.90	0.002	**0.31**	32	**52**
	SDOOR1	5,533.0	2.59E-07	**0.001**	21	**42**
	BGH2	27.95	0.038	**1.073**	29	**64.5**
			TOTAL	**22.13**		
Diphenyl ketone	BGH2	24.02	2.98E-03	**0.07**	29	**64.5**
	ASTV1-ASTV3	163.4	0.12	**20.11**	42	**64**
			TOTAL	**20.18**		

Notes:

1. UIM (Unit Impact Multiplier) equates to the 1-hr concentration modeled by SCREEN3 in $\mu g/m^3$ at the nearest non-industrial receptor.

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TABLE 13a - PM10 Background NAAQS Monitor Values

				24-Hr Average				
County	**City**	**Address**	**Monitor ID**	**2019**	**2018**	**2017**	**3-Year Avg.**	
El Paso	El Paso	7501 Mimosa Avenue	48-141-0038	26.14	29.33	27.83	27.77	**µg/m^3**

1. There was no PM10 monitor in the greater San Antonio area that met the "complete" critera in accordance with TCEQ/EPA requirements. A PM10 monitor in El Paso, El Paso County was selected as representative of background concentrations in Bexar County based on similar urban land use and major emission sources. The monitor data met the "complete" criteria in accordance with TCEQ/EPA requirements.
2. Monitor Data Extracted From USEPA air quality data page: https://www.epa.gov/outdoor-air-quality-data

TABLE 13b - PM2.5 Background NAAQS Monitor Values

				24-Hr 98th Percentile				Annual Mean				
County	**City**	**Address**	**Monitor ID**	**2019**	**2018**	**2017**	**3-Year Avg.**	**2019**	**2018**	**2017**	**3-Year Avg.**	
Bexar	San Antonio	6655 Bluebird Lane	48-029-0032	17.10	17.60	25.10	19.93	8.26	7.72	8.59	8.19	**µg/m^3**

1. The nearest PM2.5 monitor was selected for the completion of the background concentration exercise. All monitor data utilized met the "complete" critera in accordance with TCEQ/EPA requirements.
2. Monitor Data Extracted From USEPA air quality data page: https://www.epa.gov/outdoor-air-quality-data

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July 2020

TABLE 14a - PM10 NAAQS Assessment Summary

PM10 Modeled Concentrations (µg/m^3)/(lb/hr)	89.02
Short Term Background (µg/m^3)	27.77

Averaging Period Adjustments

Averaging Period	Averaging Period Conversion Factor[1]	Modeled (µg/m^3)	Modeled + Background (µg/m^3)	NAAQS Limit[2] (µg/m^3)
24-hr	0.40	35.61	**63.373**	**150**

1. Conversion factors are from EPA Screening Procedures for Estimating the Air Quality Impact of Stationary Sources - Revised, EPA 454/R-92-019, page 4-16.

2. The NAAQS for PM10 is a 24-hr average limit of 150 µg/m^3.

TABLE 14b - PM2.5 NAAQS Assessment Summary

PM2.5 Modeled Concentrations (µg/m^3)/(lb/hr)	35.42
Short Term Background (µg/m^3)	19.93
Long Term Background (µg/m^3)	8.19

Averaging Period Adjustments

Averaging Period	Averaging Period Conversion Factor[1]	Modeled (µg/m^3)	Modeled + Background (µg/m^3)	NAAQS Limit[2] (µg/m^3)
24-hr	0.40	14.17	**34.103**	**35**
Annual	0.08	2.83	**11.026**	**12**

1. Conversion factors are from EPA Screening Procedures for Estimating the Air Quality Impact of Stationary Sources - Revised, EPA 454/R-92-019, page 4-16.

2. The NAAQS for PM2.5 are:

24-hr (short term) limit of 35 µg/m^3.

Annual (long-term) limit of 12 µg/m^3 (primary) and 15 µg/m^3 (secondary).

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TABLE 15a - ESL Assessment Summary based on GLCmax

CAS Number	Pollutant	Short Term GLCmax[1] µg/m^3	Short Term ESL[2] µg/m^3	Long Term GLCmax[3] µg/m^3	Long Term ESL[2] µg/m^3
14808-60-7	Silica, crystalline (quartz)	24.61	14	1.97	0.27
119-61-9	Diphenyl ketone	26.02	5	2.08	0.5
1336-21-6	Aqua ammonia	25.94	180	2.08	92
2634-33-5	1,2-Benzisothiazolin-3(2H)-one	3.94	350	0.32	35
2682-20-4	2-methylisothiazol-3(2H)-one	4.31	170	0.34	17
57-55-6	Propylene glycol	4.16	1800	0.33	18
	Non-ionic surfactants	5.24	600	0.42	60
64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic	69.64	1000	5.57	100
65997-15-1	Portland cement	30.94	50	2.48	5

1. The GLC Max for each pollutant represents the sum of each GLC Max from all EPNs emitting said pollutant. The GLC Max is based on a UIM that equates to the maximum 1-hr concentration modeled by SCREEN3 in µg/m3.
2. 1-Hr and Annual ESLs are from the TAMIS012 - Tox ESL-Summary Report, Effective Date: 05/12/2020.
3. An annual averaging conversion factor of 0.08 was used.
4. Silcia PM10 is used for comparison to PM4.

TABLE 15b - ESL Assessment Summary Based on GLCni (Toxicology Effects Evaluation)

CAS Number	Pollutant	Short Term GLCni[1] µg/m^3	Short Term ESL µg/m^3	Long Term GLCni µg/m^3	Long Term ESL µg/m^3
14808-60-7	Silica, crystalline (quartz)	22.13	14	1.77	0.27
119-61-9	Diphenyl ketone	20.18	5	1.61	0.5

1. Short and long term GLCni were re-evaluated using UIMs representative of the 1-hr concentration modeled by SCREEN3 at the nearest off-property non-industrial receptor.

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08/31/20
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```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

SBH1-SBH5 Final Run

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =     0.126000
   STACK HEIGHT (M)       =      11.1557
   STK INSIDE DIAM (M)    =       0.2770
   STK EXIT VELOCITY (M/S)=      12.4704
   STK GAS EXIT TEMP (K)  =     293.7056
   AMBIENT AIR TEMP (K)   =     293.1500
   RECEPTOR HEIGHT (M)    =       0.0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =      12.1920
   MIN HORIZ BLDG DIM (M) =      38.1000
   MAX HORIZ BLDG DIM (M) =      45.7200

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.004 M**4/S**3;  MOM. FLUX =    2.977 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	NA
100.	335.9	6	1.0	1.1	10000.0	12.79	4.07	8.21	SS
200.	220.3	6	1.0	1.1	10000.0	12.79	7.73	10.38	SS
300.	157.0	6	1.0	1.1	10000.0	12.79	11.23	11.35	SS
400.	122.2	6	1.0	1.1	10000.0	12.79	14.64	12.38	SS
500.	99.48	6	1.0	1.1	10000.0	12.79	17.97	13.37	SS
600.	83.61	6	1.0	1.1	10000.0	12.79	21.24	14.07	SS
700.	71.65	6	1.0	1.1	10000.0	12.79	24.46	14.93	SS
800.	62.37	6	1.0	1.1	10000.0	12.79	27.63	15.77	SS
900.	54.97	6	1.0	1.1	10000.0	12.79	30.78	16.58	SS
1000.	48.93	6	1.0	1.1	10000.0	12.79	33.88	17.36	SS
1100.	43.94	6	1.0	1.1	10000.0	12.79	36.96	18.13	SS

1200.	39.74	6	1.0	1.1	10000.0	12.79	40.01	18.88	SS
1300.	36.17	6	1.0	1.1	10000.0	12.79	43.04	19.61	SS
1400.	33.10	6	1.0	1.1	10000.0	12.79	46.05	20.33	SS
1500.	30.44	6	1.0	1.1	10000.0	12.79	49.03	21.03	SS
1600.	28.72	6	1.0	1.1	10000.0	12.79	51.99	21.02	SS
1700.	26.63	6	1.0	1.1	10000.0	12.79	54.94	21.69	SS
1800.	24.84	6	1.0	1.1	10000.0	12.79	57.87	22.28	SS
1900.	23.25	6	1.0	1.1	10000.0	12.79	60.78	22.85	SS
2000.	21.83	6	1.0	1.1	10000.0	12.79	63.68	23.40	SS
2100.	20.54	6	1.0	1.1	10000.0	12.79	66.56	23.95	SS
2200.	19.38	6	1.0	1.1	10000.0	12.79	69.42	24.49	SS
2300.	18.33	6	1.0	1.1	10000.0	12.79	72.28	25.01	SS
2400.	17.37	6	1.0	1.1	10000.0	12.79	75.12	25.53	SS
2500.	16.49	6	1.0	1.1	10000.0	12.79	77.95	26.04	SS
2600.	15.69	6	1.0	1.1	10000.0	12.79	80.76	26.54	SS
2700.	15.21	6	1.0	1.1	10000.0	12.79	83.57	26.43	SS
2800.	14.51	6	1.0	1.1	10000.0	12.79	86.37	26.92	SS
2900.	13.89	6	1.0	1.1	10000.0	12.79	89.15	27.34	SS
3000.	13.31	6	1.0	1.1	10000.0	12.79	91.92	27.75	SS
3500.	10.97	6	1.0	1.1	10000.0	12.79	105.65	29.70	SS
4000.	9.263	6	1.0	1.1	10000.0	12.79	119.17	31.50	SS
4500.	7.971	6	1.0	1.1	10000.0	12.79	132.50	33.20	SS
5000.	6.963	6	1.0	1.1	10000.0	12.79	145.67	34.80	SS
5500.	6.158	6	1.0	1.1	10000.0	12.79	158.69	36.32	SS
6000.	5.502	6	1.0	1.1	10000.0	12.79	171.58	37.77	SS
6500.	4.960	6	1.0	1.1	10000.0	12.79	184.34	39.16	SS
7000.	4.532	6	1.0	1.1	10000.0	12.79	196.99	40.22	SS
7500.	4.153	6	1.0	1.1	10000.0	12.79	209.54	41.37	SS
8000.	3.827	6	1.0	1.1	10000.0	12.79	221.98	42.48	SS
8500.	3.544	6	1.0	1.1	10000.0	12.79	234.34	43.55	SS
9000.	3.296	6	1.0	1.1	10000.0	12.79	246.61	44.59	SS
9500.	3.077	6	1.0	1.1	10000.0	12.79	258.79	45.59	SS
10000.	2.883	6	1.0	1.1	10000.0	12.79	270.90	46.56	SS
15000.	1.724	6	1.0	1.1	10000.0	12.79	388.43	54.88	SS
20000.	1.223	6	1.0	1.1	10000.0	12.79	500.95	60.29	SS
25000.	0.9366	6	1.0	1.1	10000.0	12.79	609.75	64.86	SS
30000.	0.7536	6	1.0	1.1	10000.0	12.79	715.59	68.84	SS
40000.	0.5429	6	1.0	1.1	10000.0	12.79	920.22	74.49	SS
50000.	0.4212	6	1.0	1.1	10000.0	12.79	1117.42	79.19	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

37.	521.3	6	1.5	1.6	10000.0	11.52	1.66	6.69	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****

```
*** SCREEN DISCRETE DISTANCES ***
********************************

*** TERRAIN HEIGHT OF  0.0 M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    41.    502.6        6     1.5    1.6 10000.0   11.52    1.78    6.85    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
**************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)     =    39.74        CONC (UG/M**3)     =    42.58
  CRIT WS @10M (M/S) =     7.42        CRIT WS @10M (M/S) =     8.31
  CRIT WS @ HS (M/S) =     7.58        CRIT WS @ HS (M/S) =     8.49
  DILUTION WS (M/S)  =     3.79        DILUTION WS (M/S)  =     4.25
  CAVITY HT (M)      =    12.53        CAVITY HT (M)      =    12.34
  CAVITY LENGTH (M)  =    41.30        CAVITY LENGTH (M)  =    37.43
  ALONGWIND DIM (M)  =    38.10        ALONGWIND DIM (M)  =    45.72

**************************************
      END OF CAVITY CALCULATIONS
**************************************


 *** INVERSION BREAK-UP FUMIGATION CALC. ***
  CONC (UG/M**3)   =    0.000
  DIST TO MAX (M)  =   100.00

DIST TO MAX IS < 2000. M.  CONC SET = 0.0

     **************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     **************************************

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
```

SIMPLE TERRAIN	521.3	37.	0.
BLDG. CAVITY-1	39.74	41.	-- (DIST = CAVITY LENGTH)
BLDG. CAVITY-2	42.58	37.	-- (DIST = CAVITY LENGTH)

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```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

SBH6-SBH7 Final Run

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =     0.126000
   STACK HEIGHT (M)       =      11.1557
   STK INSIDE DIAM (M)    =       0.2770
   STK EXIT VELOCITY (M/S)=      12.4704
   STK GAS EXIT TEMP (K)  =     293.7056
   AMBIENT AIR TEMP (K)   =     293.1500
   RECEPTOR HEIGHT (M)    =       0.0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =      12.1920
   MIN HORIZ BLDG DIM (M) =      38.1000
   MAX HORIZ BLDG DIM (M) =      45.7200

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.004 M**4/S**3;  MOM. FLUX =    2.977 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
     1.    0.000        0     0.0    0.0     0.0    0.00    0.00    0.00    NA
   100.    335.9        6     1.0    1.1 10000.0   12.79    4.07    8.21    SS
   200.    220.3        6     1.0    1.1 10000.0   12.79    7.73   10.38    SS
   300.    157.0        6     1.0    1.1 10000.0   12.79   11.23   11.35    SS
   400.    122.2        6     1.0    1.1 10000.0   12.79   14.64   12.38    SS
   500.    99.48        6     1.0    1.1 10000.0   12.79   17.97   13.37    SS
   600.    83.61        6     1.0    1.1 10000.0   12.79   21.24   14.07    SS
   700.    71.65        6     1.0    1.1 10000.0   12.79   24.46   14.93    SS
   800.    62.37        6     1.0    1.1 10000.0   12.79   27.63   15.77    SS
   900.    54.97        6     1.0    1.1 10000.0   12.79   30.78   16.58    SS
  1000.    48.93        6     1.0    1.1 10000.0   12.79   33.88   17.36    SS
  1100.    43.94        6     1.0    1.1 10000.0   12.79   36.96   18.13    SS
```

1200.	39.74	6	1.0	1.1	10000.0	12.79	40.01	18.88	SS
1300.	36.17	6	1.0	1.1	10000.0	12.79	43.04	19.61	SS
1400.	33.10	6	1.0	1.1	10000.0	12.79	46.05	20.33	SS
1500.	30.44	6	1.0	1.1	10000.0	12.79	49.03	21.03	SS
1600.	28.72	6	1.0	1.1	10000.0	12.79	51.99	21.02	SS
1700.	26.63	6	1.0	1.1	10000.0	12.79	54.94	21.69	SS
1800.	24.84	6	1.0	1.1	10000.0	12.79	57.87	22.28	SS
1900.	23.25	6	1.0	1.1	10000.0	12.79	60.78	22.85	SS
2000.	21.83	6	1.0	1.1	10000.0	12.79	63.68	23.40	SS
2100.	20.54	6	1.0	1.1	10000.0	12.79	66.56	23.95	SS
2200.	19.38	6	1.0	1.1	10000.0	12.79	69.42	24.49	SS
2300.	18.33	6	1.0	1.1	10000.0	12.79	72.28	25.01	SS
2400.	17.37	6	1.0	1.1	10000.0	12.79	75.12	25.53	SS
2500.	16.49	6	1.0	1.1	10000.0	12.79	77.95	26.04	SS
2600.	15.69	6	1.0	1.1	10000.0	12.79	80.76	26.54	SS
2700.	15.21	6	1.0	1.1	10000.0	12.79	83.57	26.43	SS
2800.	14.51	6	1.0	1.1	10000.0	12.79	86.37	26.92	SS
2900.	13.89	6	1.0	1.1	10000.0	12.79	89.15	27.34	SS
3000.	13.31	6	1.0	1.1	10000.0	12.79	91.92	27.75	SS
3500.	10.97	6	1.0	1.1	10000.0	12.79	105.65	29.70	SS
4000.	9.263	6	1.0	1.1	10000.0	12.79	119.17	31.50	SS
4500.	7.971	6	1.0	1.1	10000.0	12.79	132.50	33.20	SS
5000.	6.963	6	1.0	1.1	10000.0	12.79	145.67	34.80	SS
5500.	6.158	6	1.0	1.1	10000.0	12.79	158.69	36.32	SS
6000.	5.502	6	1.0	1.1	10000.0	12.79	171.58	37.77	SS
6500.	4.960	6	1.0	1.1	10000.0	12.79	184.34	39.16	SS
7000.	4.532	6	1.0	1.1	10000.0	12.79	196.99	40.22	SS
7500.	4.153	6	1.0	1.1	10000.0	12.79	209.54	41.37	SS
8000.	3.827	6	1.0	1.1	10000.0	12.79	221.98	42.48	SS
8500.	3.544	6	1.0	1.1	10000.0	12.79	234.34	43.55	SS
9000.	3.296	6	1.0	1.1	10000.0	12.79	246.61	44.59	SS
9500.	3.077	6	1.0	1.1	10000.0	12.79	258.79	45.59	SS
10000.	2.883	6	1.0	1.1	10000.0	12.79	270.90	46.56	SS
15000.	1.724	6	1.0	1.1	10000.0	12.79	388.43	54.88	SS
20000.	1.223	6	1.0	1.1	10000.0	12.79	500.95	60.29	SS
25000.	0.9366	6	1.0	1.1	10000.0	12.79	609.75	64.86	SS
30000.	0.7536	6	1.0	1.1	10000.0	12.79	715.59	68.84	SS
40000.	0.5429	6	1.0	1.1	10000.0	12.79	920.22	74.49	SS
50000.	0.4212	6	1.0	1.1	10000.0	12.79	1117.42	79.19	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

37.	521.3	6	1.5	1.6	10000.0	11.52	1.66	6.69	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

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*** SCREEN DISCRETE DISTANCES ***
*********************************

*** TERRAIN HEIGHT OF  0.0 M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    63.    419.9        6     1.5    1.6 10000.0   11.52    2.66    8.00    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
**************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)     =    39.74        CONC (UG/M**3)     =    42.58
  CRIT WS @10M (M/S) =     7.42        CRIT WS @10M (M/S) =     8.31
  CRIT WS @ HS (M/S) =     7.58        CRIT WS @ HS (M/S) =     8.49
  DILUTION WS (M/S)  =     3.79        DILUTION WS (M/S)  =     4.25
  CAVITY HT (M)      =    12.53        CAVITY HT (M)      =    12.34
  CAVITY LENGTH (M)  =    41.30        CAVITY LENGTH (M)  =    37.43
  ALONGWIND DIM (M)  =    38.10        ALONGWIND DIM (M)  =    45.72

**************************************
      END OF CAVITY CALCULATIONS
**************************************


 *** INVERSION BREAK-UP FUMIGATION CALC. ***
  CONC (UG/M**3)   =    0.000
  DIST TO MAX (M)  =   100.00

DIST TO MAX IS < 2000. M.  CONC SET = 0.0

     **************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     **************************************

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
```

SIMPLE TERRAIN	521.3	37.	0.
BLDG. CAVITY-1	39.74	41.	-- (DIST = CAVITY LENGTH)
BLDG. CAVITY-2	42.58	37.	-- (DIST = CAVITY LENGTH)

08/31/20
19:43:06

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 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

BGH1 Final Run

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =     0.126000
   STACK HEIGHT (M)       =      12.4968
   STK INSIDE DIAM (M)    =       0.1524
   STK EXIT VELOCITY (M/S)=      38.8072
   STK GAS EXIT TEMP (K)  =     293.7056
   AMBIENT AIR TEMP (K)   =     293.1500
   RECEPTOR HEIGHT (M)    =       0.0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =      12.1920
   MIN HORIZ BLDG DIM (M) =      38.1000
   MAX HORIZ BLDG DIM (M) =      45.7200

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.004 M**4/S**3;  MOM. FLUX =    8.728 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	NA
100.	149.9	6	2.0	2.3	10000.0	13.34	4.07	8.51	SS
200.	98.69	6	2.0	2.3	10000.0	13.34	7.73	10.71	SS
300.	72.46	6	1.5	1.7	10000.0	14.95	11.23	10.45	SS
400.	59.67	6	1.5	1.7	10000.0	14.95	14.64	11.31	SS
500.	51.24	6	1.5	1.7	10000.0	14.95	17.97	12.34	SS
600.	44.57	6	1.5	1.7	10000.0	14.95	21.24	13.33	SS
700.	39.08	6	1.5	1.7	10000.0	14.95	24.46	14.01	SS
800.	34.74	6	1.5	1.7	10000.0	14.95	27.63	14.88	SS
900.	31.11	6	1.5	1.7	10000.0	14.95	30.78	15.71	SS
1000.	28.06	6	1.5	1.7	10000.0	14.95	33.88	16.53	SS
1100.	25.46	6	1.5	1.7	10000.0	14.95	36.96	17.31	SS

1200.	23.26	6	1.0	1.1	10000.0	21.33	40.01	16.46	SS
1300.	22.25	6	1.0	1.1	10000.0	21.33	43.04	17.25	SS
1400.	21.22	6	1.0	1.1	10000.0	21.33	46.05	18.02	SS
1500.	20.21	6	1.0	1.1	10000.0	21.33	49.03	18.77	SS
1600.	19.24	6	1.0	1.1	10000.0	21.33	51.99	19.51	SS
1700.	18.31	6	1.0	1.1	10000.0	21.33	54.94	20.22	SS
1800.	17.43	6	1.0	1.1	10000.0	21.33	57.87	20.93	SS
1900.	16.60	6	1.0	1.1	10000.0	21.33	60.78	21.62	SS
2000.	15.84	6	1.0	1.1	10000.0	21.33	63.68	21.82	SS
2100.	15.12	6	1.0	1.1	10000.0	21.33	66.56	22.40	SS
2200.	14.46	6	1.0	1.1	10000.0	21.33	69.42	22.97	SS
2300.	13.83	6	1.0	1.1	10000.0	21.33	72.28	23.52	SS
2400.	13.25	6	1.0	1.1	10000.0	21.33	75.12	24.07	SS
2500.	12.71	6	1.0	1.1	10000.0	21.33	77.95	24.60	SS
2600.	12.19	6	1.0	1.1	10000.0	21.33	80.76	25.12	SS
2700.	11.71	6	1.0	1.1	10000.0	21.33	83.57	25.64	SS
2800.	11.26	6	1.0	1.1	10000.0	21.33	86.37	26.15	SS
2900.	10.84	6	1.0	1.1	10000.0	21.33	89.15	26.65	SS
3000.	10.47	6	1.0	1.1	10000.0	21.33	91.92	26.98	SS
3500.	8.838	6	1.0	1.1	10000.0	21.33	105.65	28.98	SS
4000.	7.601	6	1.0	1.1	10000.0	21.33	119.17	30.84	SS
4500.	6.634	6	1.0	1.1	10000.0	21.33	132.50	32.57	SS
5000.	5.862	6	1.0	1.1	10000.0	21.33	145.67	34.21	SS
5500.	5.234	6	1.0	1.1	10000.0	21.33	158.69	35.76	SS
6000.	4.713	6	1.0	1.1	10000.0	21.33	171.58	37.23	SS
6500.	4.277	6	1.0	1.1	10000.0	21.33	184.34	38.64	SS
7000.	3.906	6	1.0	1.1	10000.0	21.33	196.99	40.00	SS
7500.	3.597	6	1.0	1.1	10000.0	21.33	209.54	41.16	SS
8000.	3.328	6	1.0	1.1	10000.0	21.33	221.98	42.28	SS
8500.	3.094	6	1.0	1.1	10000.0	21.33	234.34	43.36	SS
9000.	2.887	6	1.0	1.1	10000.0	21.33	246.61	44.40	SS
9500.	2.704	6	1.0	1.1	10000.0	21.33	258.79	45.41	SS
10000.	2.540	6	1.0	1.1	10000.0	21.33	270.90	46.38	SS
15000.	1.543	6	1.0	1.1	10000.0	21.33	388.43	54.88	SS
20000.	1.103	6	1.0	1.1	10000.0	21.33	500.95	60.29	SS
25000.	0.8499	6	1.0	1.1	10000.0	21.33	609.75	64.86	SS
30000.	0.6865	6	1.0	1.1	10000.0	21.33	715.59	68.84	SS
40000.	0.4968	6	1.0	1.1	10000.0	21.33	920.22	74.49	SS
50000.	0.3867	6	1.0	1.1	10000.0	21.33	1117.42	79.19	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

37.	176.0	6	3.0	3.4	10000.0	12.69	1.66	6.67	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

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*** SCREEN DISCRETE DISTANCES ***
*********************************

*** TERRAIN HEIGHT OF  0.0 M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    52.    167.9        6     2.5    2.8 10000.0   12.87    2.22    6.98    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
**************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)     =    0.000        CONC (UG/M**3)     =    0.000
  CRIT WS @10M (M/S) =    99.99        CRIT WS @10M (M/S) =    99.99
  CRIT WS @ HS (M/S) =    99.99        CRIT WS @ HS (M/S) =    99.99
  DILUTION WS (M/S)  =    99.99        DILUTION WS (M/S)  =    99.99
  CAVITY HT (M)      =    12.53        CAVITY HT (M)      =    12.34
  CAVITY LENGTH (M)  =    41.30        CAVITY LENGTH (M)  =    37.43
  ALONGWIND DIM (M)  =    38.10        ALONGWIND DIM (M)  =    45.72

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S.  CONC SET = 0.0

**************************************
      END OF CAVITY CALCULATIONS
**************************************


 *** INVERSION BREAK-UP FUMIGATION CALC. ***
  CONC (UG/M**3)   =    0.000
  DIST TO MAX (M)  =    96.29

DIST TO MAX IS < 2000. M.  CONC SET = 0.0

     ************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ************************************
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CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	176.0	37.	0.

08/31/20
19:46:51

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 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

BGH2 Final Run

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =     0.126000
   STACK HEIGHT (M)       =      12.4968
   STK INSIDE DIAM (M)    =       0.1524
   STK EXIT VELOCITY (M/S)=     129.6113
   STK GAS EXIT TEMP (K)  =     293.7056
   AMBIENT AIR TEMP (K)   =     293.1500
   RECEPTOR HEIGHT (M)    =       0.0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =      12.1920
   MIN HORIZ BLDG DIM (M) =      38.1000
   MAX HORIZ BLDG DIM (M) =      45.7200

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.014 M**4/S**3;  MOM. FLUX =   97.358 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC             U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
     1.   0.1049E-14    6     1.0    1.1 10000.0   32.90    3.57    3.57    NO
   100.    22.40        4     8.0    8.3  2560.0   13.10    8.20    8.87    SS
   200.    18.32        5     5.0    5.4 10000.0   15.39   11.63    9.58    SS
   300.    15.73        5     5.0    5.4 10000.0   15.39   16.89   11.64    SS
   400.    13.06        5     5.0    5.4 10000.0   15.39   22.01   13.59    SS
   500.    12.14        6     4.0    4.5 10000.0   17.85   17.97   11.06    SS
   600.    11.63        6     4.0    4.5 10000.0   17.85   21.24   12.10    SS
   700.    10.94        6     4.0    4.5 10000.0   17.85   24.46   13.10    SS
   800.    10.07        6     4.0    4.5 10000.0   17.85   27.63   13.79    SS
   900.    9.374        6     4.0    4.5 10000.0   17.85   30.78   14.67    SS
  1000.    9.473        5     1.0    1.1 10000.0   35.23   51.35   22.58    NO
  1100.    9.347        5     1.0    1.1 10000.0   35.23   55.94   23.87    NO
```

1200.	9.128	5	1.0	1.1	10000.0	35.23	60.50	25.12	NO
1300.	8.853	5	1.0	1.1	10000.0	35.23	65.02	26.33	NO
1400.	8.545	5	1.0	1.1	10000.0	35.23	69.52	27.52	NO
1500.	8.400	6	1.0	1.1	10000.0	32.90	49.38	18.95	NO
1600.	8.507	6	1.0	1.1	10000.0	32.90	52.32	19.67	NO
1700.	8.552	6	1.0	1.1	10000.0	32.90	55.25	20.37	NO
1800.	8.547	6	1.0	1.1	10000.0	32.90	58.16	21.06	NO
1900.	8.501	6	1.0	1.1	10000.0	32.90	61.06	21.73	NO
2000.	8.423	6	1.0	1.1	10000.0	32.90	63.94	22.40	NO
2100.	8.285	6	1.0	1.1	10000.0	32.90	66.81	22.96	NO
2200.	8.138	6	1.0	1.1	10000.0	32.90	69.67	23.51	NO
2300.	7.983	6	1.0	1.1	10000.0	32.90	72.51	24.06	NO
2400.	7.824	6	1.0	1.1	10000.0	32.90	75.34	24.59	NO
2500.	7.662	6	1.0	1.1	10000.0	32.90	78.17	25.11	NO
2600.	7.499	6	1.0	1.1	10000.0	32.90	80.97	25.62	NO
2700.	7.336	6	1.0	1.1	10000.0	32.90	83.77	26.13	NO
2800.	7.175	6	1.0	1.1	10000.0	32.90	86.56	26.63	NO
2900.	7.015	6	1.0	1.1	10000.0	32.90	89.34	27.12	NO
3000.	6.858	6	1.0	1.1	10000.0	32.90	92.11	27.60	NO
3500.	6.106	6	1.0	1.1	10000.0	32.90	105.81	29.56	NO
4000.	5.469	6	1.0	1.1	10000.0	32.90	119.31	31.38	NO
4500.	4.931	6	1.0	1.1	10000.0	32.90	132.63	33.09	NO
5000.	4.474	6	1.0	1.1	10000.0	32.90	145.79	34.70	NO
5500.	4.083	6	1.0	1.1	10000.0	32.90	158.80	36.23	NO
6000.	3.746	6	1.0	1.1	10000.0	32.90	171.68	37.69	NO
6500.	3.454	6	1.0	1.1	10000.0	32.90	184.43	39.08	NO
7000.	3.198	6	1.0	1.1	10000.0	32.90	197.08	40.42	NO
7500.	2.977	6	1.0	1.1	10000.0	32.90	209.62	41.57	NO
8000.	2.781	6	1.0	1.1	10000.0	32.90	222.06	42.68	NO
8500.	2.608	6	1.0	1.1	10000.0	32.90	234.41	43.75	NO
9000.	2.452	6	1.0	1.1	10000.0	32.90	246.68	44.78	NO
9500.	2.313	6	1.0	1.1	10000.0	32.90	258.86	45.78	NO
10000.	2.186	6	1.0	1.1	10000.0	32.90	270.97	46.75	NO
15000.	1.385	6	1.0	1.1	10000.0	32.90	388.47	55.19	NO
20000.	1.009	6	1.0	1.1	10000.0	32.90	500.98	60.58	NO
25000.	0.7865	6	1.0	1.1	10000.0	32.90	609.78	65.12	NO
30000.	0.6407	6	1.0	1.1	10000.0	32.90	715.61	69.08	NO
40000.	0.4683	6	1.0	1.1	10000.0	32.90	920.24	74.72	NO
50000.	0.3670	6	1.0	1.1	10000.0	32.90	1117.44	79.41	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

37.	25.98	4	10.0	10.3	3200.0	12.77	3.34	6.49	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

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```
*** SCREEN DISCRETE DISTANCES ***
*********************************

*** TERRAIN HEIGHT OF  0.0 M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    64.    24.02        4    10.0   10.3  3200.0   12.77    5.46    7.83    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
**************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)     =    0.000        CONC (UG/M**3)     =    0.000
  CRIT WS @10M (M/S) =    99.99        CRIT WS @10M (M/S) =    99.99
  CRIT WS @ HS (M/S) =    99.99        CRIT WS @ HS (M/S) =    99.99
  DILUTION WS (M/S)  =    99.99        DILUTION WS (M/S)  =    99.99
  CAVITY HT (M)      =    12.53        CAVITY HT (M)      =    12.34
  CAVITY LENGTH (M)  =    41.30        CAVITY LENGTH (M)  =    37.43
  ALONGWIND DIM (M)  =    38.10        ALONGWIND DIM (M)  =    45.72

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S.  CONC SET = 0.0

**************************************
      END OF CAVITY CALCULATIONS
**************************************


 *** INVERSION BREAK-UP FUMIGATION CALC. ***
  CONC (UG/M**3)   =    0.000
  DIST TO MAX (M)  =   324.38

DIST TO MAX IS < 2000. M.  CONC SET = 0.0

     ************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ************************************
```

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	25.98	37.	0.

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```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

ASTV1-ASTV3 Final Run

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE            =        POINT
   EMISSION RATE (G/S)    =     0.126000
   STACK HEIGHT (M)       =       3.0480
   STK INSIDE DIAM (M)    =       0.1524
   STK EXIT VELOCITY (M/S)=       0.0002
   STK GAS EXIT TEMP (K)  =     293.7056
   AMBIENT AIR TEMP (K)   =     293.1500
   RECEPTOR HEIGHT (M)    =       0.0000
   URBAN/RURAL OPTION     =        RURAL
   BUILDING HEIGHT (M)    =      12.1920
   MIN HORIZ BLDG DIM (M) =      38.1000
   MAX HORIZ BLDG DIM (M) =      45.7200

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.000 M**4/S**3;  MOM. FLUX =    0.000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	NA
100.	121.6	2	1.0	1.0	320.0	3.05	25.08	12.78	SS
200.	87.47	6	1.0	1.0	10000.0	3.05	29.39	15.29	SS
300.	75.18	6	1.0	1.0	10000.0	3.05	32.52	16.12	SS
400.	65.51	6	1.0	1.0	10000.0	3.05	35.61	16.92	SS
500.	57.75	6	1.0	1.0	10000.0	3.05	38.67	17.69	SS
600.	51.40	6	1.0	1.0	10000.0	3.05	41.71	18.45	SS
700.	46.14	6	1.0	1.0	10000.0	3.05	44.72	19.19	SS
800.	41.71	6	1.0	1.0	10000.0	3.05	47.72	19.92	SS
900.	37.94	6	1.0	1.0	10000.0	3.05	50.69	20.63	SS
1000.	34.70	6	1.0	1.0	10000.0	3.05	53.64	21.32	SS
1100.	32.92	6	1.0	1.0	10000.0	3.05	56.58	21.31	SS

1200.	30.42	6	1.0	1.0	10000.0	3.05	59.50	21.95	SS
1300.	28.28	6	1.0	1.0	10000.0	3.05	62.40	22.52	SS
1400.	26.38	6	1.0	1.0	10000.0	3.05	65.29	23.09	SS
1500.	24.69	6	1.0	1.0	10000.0	3.05	68.16	23.64	SS
1600.	23.17	6	1.0	1.0	10000.0	3.05	71.02	24.18	SS
1700.	21.80	6	1.0	1.0	10000.0	3.05	73.87	24.71	SS
1800.	20.57	6	1.0	1.0	10000.0	3.05	76.70	25.24	SS
1900.	19.45	6	1.0	1.0	10000.0	3.05	79.52	25.75	SS
2000.	18.43	6	1.0	1.0	10000.0	3.05	82.33	26.25	SS
2100.	17.50	6	1.0	1.0	10000.0	3.05	85.13	26.75	SS
2200.	17.17	6	1.0	1.0	10000.0	3.05	87.92	26.40	SS
2300.	16.34	6	1.0	1.0	10000.0	3.05	90.70	26.89	SS
2400.	15.61	6	1.0	1.0	10000.0	3.05	93.47	27.32	SS
2500.	14.94	6	1.0	1.0	10000.0	3.05	96.23	27.73	SS
2600.	14.32	6	1.0	1.0	10000.0	3.05	98.98	28.13	SS
2700.	13.74	6	1.0	1.0	10000.0	3.05	101.72	28.52	SS
2800.	13.21	6	1.0	1.0	10000.0	3.05	104.45	28.91	SS
2900.	12.70	6	1.0	1.0	10000.0	3.05	107.17	29.30	SS
3000.	12.24	6	1.0	1.0	10000.0	3.05	109.89	29.67	SS
3500.	10.28	6	1.0	1.0	10000.0	3.05	123.34	31.48	SS
4000.	8.810	6	1.0	1.0	10000.0	3.05	136.62	33.18	SS
4500.	7.671	6	1.0	1.0	10000.0	3.05	149.75	34.78	SS
5000.	6.765	6	1.0	1.0	10000.0	3.05	162.72	36.30	SS
5500.	6.031	6	1.0	1.0	10000.0	3.05	175.57	37.76	SS
6000.	5.425	6	1.0	1.0	10000.0	3.05	188.30	39.15	SS
6500.	4.977	6	1.0	1.0	10000.0	3.05	200.92	40.00	SS
7000.	4.553	6	1.0	1.0	10000.0	3.05	213.43	41.16	SS
7500.	4.190	6	1.0	1.0	10000.0	3.05	225.85	42.28	SS
8000.	3.874	6	1.0	1.0	10000.0	3.05	238.17	43.36	SS
8500.	3.599	6	1.0	1.0	10000.0	3.05	250.42	44.40	SS
9000.	3.357	6	1.0	1.0	10000.0	3.05	262.58	45.40	SS
9500.	3.142	6	1.0	1.0	10000.0	3.05	274.66	46.38	SS
10000.	2.950	6	1.0	1.0	10000.0	3.05	286.68	47.33	SS
15000.	1.803	6	1.0	1.0	10000.0	3.05	403.44	55.05	SS
20000.	1.286	6	1.0	1.0	10000.0	3.05	515.41	60.43	SS
25000.	0.9885	6	1.0	1.0	10000.0	3.05	623.79	64.97	SS
30000.	0.7982	6	1.0	1.0	10000.0	3.05	729.28	68.84	SS
40000.	0.5764	6	1.0	1.0	10000.0	3.05	933.37	74.49	SS
50000.	0.4478	6	1.0	1.0	10000.0	3.05	1130.14	79.19	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

37.	210.8	1	1.0	1.0	320.0	3.05	20.93	8.63	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

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 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 13043 ***

SDOOR1 Rev Run

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE               =       VOLUME
   EMISSION RATE (G/S)       =     0.126000
   SOURCE HEIGHT (M)         =       2.1336
   INIT. LATERAL DIMEN (M)   =       0.1707
   INIT. VERTICAL DIMEN (M)  =       1.9812
   RECEPTOR HEIGHT (M)       =       0.0000
   URBAN/RURAL OPTION        =        RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.000 M**4/S**3;  MOM. FLUX =    0.000 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***
```

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	
100.	2155.	6	1.0	1.0	10000.0	2.13	4.19	3.79	NO
200.	887.5	6	1.0	1.0	10000.0	2.13	7.84	5.32	NO
300.	497.7	6	1.0	1.0	10000.0	2.13	11.34	6.76	NO
400.	323.6	6	1.0	1.0	10000.0	2.13	14.74	8.12	NO
500.	229.6	6	1.0	1.0	10000.0	2.13	18.07	9.42	NO
600.	172.6	6	1.0	1.0	10000.0	2.13	21.34	10.68	NO
700.	139.1	6	1.0	1.0	10000.0	2.13	24.56	11.54	NO
800.	113.5	6	1.0	1.0	10000.0	2.13	27.73	12.56	NO
900.	94.71	6	1.0	1.0	10000.0	2.13	30.87	13.55	NO
1000.	81.33	6	1.0	1.0	10000.0	2.13	33.98	14.35	NO
1100.	70.48	6	1.0	1.0	10000.0	2.13	37.06	15.21	NO
1200.	61.82	6	1.0	1.0	10000.0	2.13	40.11	16.03	NO
1300.	54.79	6	1.0	1.0	10000.0	2.13	43.14	16.83	NO
1400.	48.99	6	1.0	1.0	10000.0	2.13	46.14	17.61	NO
1500.	44.13	6	1.0	1.0	10000.0	2.13	49.12	18.38	NO
1600.	40.03	6	1.0	1.0	10000.0	2.13	52.09	19.12	NO

1700.	36.51	6	1.0	1.0	10000.0	2.13	55.03	19.84	NO
1800.	33.48	6	1.0	1.0	10000.0	2.13	57.96	20.56	NO
1900.	30.85	6	1.0	1.0	10000.0	2.13	60.87	21.25	NO
2000.	28.75	6	1.0	1.0	10000.0	2.13	63.77	21.77	NO
2100.	26.80	6	1.0	1.0	10000.0	2.13	66.65	22.35	NO
2200.	25.06	6	1.0	1.0	10000.0	2.13	69.51	22.92	NO
2300.	23.51	6	1.0	1.0	10000.0	2.13	72.37	23.48	NO
2400.	22.11	6	1.0	1.0	10000.0	2.13	75.21	24.02	NO
2500.	20.85	6	1.0	1.0	10000.0	2.13	78.04	24.56	NO
2600.	19.71	6	1.0	1.0	10000.0	2.13	80.85	25.08	NO
2700.	18.66	6	1.0	1.0	10000.0	2.13	83.66	25.60	NO
2800.	17.71	6	1.0	1.0	10000.0	2.13	86.45	26.11	NO
2900.	16.84	6	1.0	1.0	10000.0	2.13	89.24	26.61	NO
3000.	16.08	6	1.0	1.0	10000.0	2.13	92.01	27.02	NO
3500.	13.03	6	1.0	1.0	10000.0	2.13	105.74	29.02	NO
4000.	10.87	6	1.0	1.0	10000.0	2.13	119.25	30.88	NO
4500.	9.257	6	1.0	1.0	10000.0	2.13	132.59	32.61	NO
5000.	8.021	6	1.0	1.0	10000.0	2.13	145.75	34.24	NO
5500.	7.045	6	1.0	1.0	10000.0	2.13	158.77	35.79	NO
6000.	6.260	6	1.0	1.0	10000.0	2.13	171.66	37.26	NO
6500.	5.615	6	1.0	1.0	10000.0	2.13	184.42	38.67	NO
7000.	5.079	6	1.0	1.0	10000.0	2.13	197.07	40.01	NO
7500.	4.641	6	1.0	1.0	10000.0	2.13	209.62	41.17	NO
8000.	4.265	6	1.0	1.0	10000.0	2.13	222.06	42.29	NO
8500.	3.940	6	1.0	1.0	10000.0	2.13	234.42	43.37	NO
9000.	3.657	6	1.0	1.0	10000.0	2.13	246.68	44.41	NO
9500.	3.408	6	1.0	1.0	10000.0	2.13	258.87	45.42	NO
10000.	3.187	6	1.0	1.0	10000.0	2.13	270.98	46.39	NO
15000.	1.880	6	1.0	1.0	10000.0	2.13	388.50	54.88	NO
20000.	1.327	6	1.0	1.0	10000.0	2.13	501.02	60.29	NO
25000.	1.014	6	1.0	1.0	10000.0	2.13	609.82	64.86	NO
30000.	0.8138	6	1.0	1.0	10000.0	2.13	715.65	68.84	NO
40000.	0.5848	6	1.0	1.0	10000.0	2.13	920.29	74.49	NO
50000.	0.4530	6	1.0	1.0	10000.0	2.13	1117.48	79.19	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

2.	0.4454E+05	6	1.0	1.0	10000.0	2.13	0.30	2.04	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SCREEN DISCRETE DISTANCES ***
****

*** TERRAIN HEIGHT OF 0.0 M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
21.	0.1039E+05	6	1.0	1.0	10000.0	2.13	1.08	2.39	NO
42.	5533.	6	1.0	1.0	10000.0	2.13	1.94	2.77	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.4454E+05	2.	0.

```
*** SCREEN DISCRETE DISTANCES ***
*********************************

*** TERRAIN HEIGHT OF  0.0 M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
    64.    163.4        1     1.0    1.0   320.0    3.05   22.67   10.37    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BRODE, 1988)
**************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)     =    150.7        CONC (UG/M**3)     =    180.8
  CRIT WS @10M (M/S) =     1.00        CRIT WS @10M (M/S) =     1.00
  CRIT WS @ HS (M/S) =     1.00        CRIT WS @ HS (M/S) =     1.00
  DILUTION WS (M/S)  =     1.00        DILUTION WS (M/S)  =     1.00
  CAVITY HT (M)      =    12.53        CAVITY HT (M)      =    12.34
  CAVITY LENGTH (M)  =    41.30        CAVITY LENGTH (M)  =    37.43
  ALONGWIND DIM (M)  =    38.10        ALONGWIND DIM (M)  =    45.72

**************************************
      END OF CAVITY CALCULATIONS
**************************************


     ************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ************************************

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
--------------    -----------   ---------   -------
SIMPLE TERRAIN       210.8          37.        0.

BLDG. CAVITY-1       150.7          41.       --  (DIST = CAVITY LENGTH)

BLDG. CAVITY-2       180.8          37.       --  (DIST = CAVITY LENGTH)
```

8 DISCUSSION OF CONFORMANCE WITH STATE REGULATORY REQUIREMENTS

This section addresses how the site will comply with the applicable air regulations of 30 TAC Chapters 101, 111, 112, 113, 115, and 117.

30 TAC CHAPTER 116, SUBCHAPTER B - NEW SOURCE REVIEW PERMITS

§116.111(a)(1) - Completed Form PI-1
Facades XI is submitting a completed Form PI-1 Workbook signed by an authorized representative. Additional support information specified in the Form PI-1 is provided.

§115.111(a)(2)(A) - Protection of Public Health and Welfare
Emissions from the site will comply with all rules and regulations of the TCEQ and with the intent of the TCAA, including protection of the health and property of the public. The site is not located within 3,000 feet of any elementary, junior high/middle, or senior high school.

§116.111(a)(2)(B) - Measurement of Emissions
The site will have provisions for measuring the emission for significant air contaminants as determined by the TCEQ.

§116.111(a)(2)(C) - Best Available Control Technology
The site will utilize Best Available Control Technology (BACT), with consideration given to the technical practicability and economic reasonableness of reducing or eliminating emissions from the site.

§116.111(a)(2)(D) - New Source Performance Standards
The site's operations as described in this application are not subject to any New Source Performance Standards (NSPS) listed in 40 CFR Part 60.

§116.111(a)(2)(E) - National Emissions Standards for Hazardous Air Pollutants
The site operations as described in this application are not subject to any National Emissions for Hazardous Air Pollutants (NESHAP) listed in 40 CFR Part 61.

§116.111(a)(2)(F) - NESHAP for Source Categories
The site's operations as described in this application do not constitute a major source and therefore are not subject to the Maximum Available Control Technology (MACT) standards listed in 40 CFR Part 63.

§116.111(a)(2)(G) - Performance Demonstration
Information is being submitted with this application that provides the technical basis to claim that the site will achieve the performance specified in this application. The site will operate in accordance with representations made in this application.

§116.111(a)(2)(H) - Non-attainment Review
The site is located in Bexar County, an ozone marginal non-attainment county, but the site is not a major source of emissions and therefore is not subject to non-attainment review.

§116. 11 1(a)(2)(I) - Prevention of Significant Deterioration

The site is a minor source of emissions as defined under 40 CFR §51.166(b) and therefore is not subject to Prevention of Significant Deterioration (PSD) review.

§115.111(a)(2)(J) - Air Dispersion Modeling
A SCREEN3 air dispersion modeling analysis was performed to predict the off-property concentration of criteria pollutants and individual air contaminants from the site.

§115.111(a)(2)(K) - Hazardous Air Pollutants
The site is not a major source of hazardous air pollutants (HAP) and therefore is not subject to any MACT standards as listed in 40 CFR Part 53.

§116.111(a)(2)(L)- Mass Emissions Cap and Trade Allowances
The site is not subject to mass emissions cap and trade allowances. The site is located in the Bexar County ozone non-attainment area, but the site is not a source of NOx emissions and hence does not trigger the Mass Emissions Cap and Trade Program.

CHAPTER 101- GENERAL AIR QUALITY RULES

§101.2(a) - Multiple Air Contaminant Sources
An air quality analysis was performed using SCREEN3. Relevant determinations made from this analysis, including a comparison of the predicted emission concentrations from the site to the TCEQ Effective Screen Levels and TCEQ Regulation Standards, are provided in Section 7 of this application.

§101.2(b) - Multiple Air Contaminant Properties
The site does not intend to petition the TCEQ to have its property designated as a single property with any other property for the purposes of demonstrating compliance with TCEQ regulations and the control of air emissions.

§101.3 - Circumvention
The site will operate the facility according to the representations made in this application.

§101.4 - Nuisance
The air pollution control measures and operational procedures employed by the site will be adequate to ensure no nuisance conditions associated with the operations covered by this application. lf compliance with 30 TAC §101.4 so requires, the site will amend the permit to control nuisance-causing emissions either through process controls or additional emission controls.

§101.5 - Traffic Hazard
The air pollution control measures and operational procedures employed by the site will be adequate to ensure no traffic hazards associated with the operations covered by this application.

§101.8 - Sampling
Upon request by the TCEQ, the site will conduct sampling of air contaminants and report testing results promptly to the TCEQ.

§101.9 - Sampling Ports

If sampling is requested by the TCEQ, the site will install sampling ports and facilities, including safe and easy access to these facilities.

§101.10 - Emissions Inventory Requirements
If the site meets the applicability requirements of §101.10(a), the site will provide the TCEQ with emissions inventories as requested. Currently the site does not trigger Emission Inventory (EI) requirements on an actual or potential to emit basis as defined in 30 TAC §101.10(a).

§101.13 - Use and Effect of Rules
No response required.

§101.14 - Sampling Procedures and Terminology
If sampling is requested by the TCEQ, the site will use those procedures for sampling and measuring air contaminants and the methods of expressing the findings, which are commonly accepted and used in the field of air pollution control.

§101.18 - §101.19 - Remedies Cumulative & Severability
No response required.

§101.20 - Compliance with Environmental Protection Agency Standards
Compliance with EPA standards is discussed in Section 9.

§101.21 - The National Primary and Secondary Ambient Air Quality Standards
The site will comply with the National Ambient Air Quality Standards (NAAQS) as demonstrated in the air dispersion modeling.

§101.23 - Alternate Emission Reduction Policy
The site is not requesting an alternate emissions control plan for this facility.

§101.24 - Inspection Fees
The site will comply with the requirements of §101.24, as appropriate.

§101.25 - Surcharge on Fuel Oil in Specified Boilers
There are no industrial or utility boilers at the site as described in this permit application; therefore, the requirements of §101.26 do not apply.

§101.27 - Emissions Fees
The site will comply with the requirements of §101.27, as appropriate.

§101.28 - Stringency Determinations for Federal Operating Permits
The site is not subject to the Federal Operating Permits Program under 30 TAC Chapter 122; therefore, a stringency determination will not be requested.

§101.201- Emissions Event Reporting and Recordkeeping Requirements
The site will promptly notify the TCEQ of any emissions event and maintain notifications and records of emissions as required by §101.201.

§101.211- Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements
Emissions from the site that are associated with maintenance, startup and shutdown related to the operations described in this application are authorized under this NSR. Any MSS activity that is expected to cause an unauthorized emission in excess of the reportable quantity (RQ) will be reported as required in the rule.

§101.221 - Operational Requirements
The site will properly operate and maintain all emission capture and abatement equipment in good working order during site operations.

§101.222 - Demonstrations
The site will attempt to minimize emission events from the site and otherwise comply with the requirements on §101.222.

§101.223 - Actions to Reduce Excessive Emissions
Upon receipt of a determination by the TCEQ that the site has had one or more excessive emissions events, the site will take action to reduce emissions and either file a corrective action plan (CAP) or obtain authorization for such events.

CHAPTER 111- CONTROL OF AIR POLLUTION FROM VISIBLE EMISSIONS AND PARTICULATE MATTER

Section Number	Reference	Applicability	Compliance Demonstration
§111.111- §111.113	Visible Emissions	Yes	Visible emissions will not exceed 2O% as averaged over a six-minute period.
§111.121- §111.129	Incineration	No	No waste incineration is associated with this application.
§111.131- §111.139	Abrasive Blasting of Water Storage Tanks Performed by Portable Operations	No	No operations involving abrasive blasting of water storage tanks are associated with this application.
§111.141- §111.149	Materials Handling, Construction, Roads, Streets, Alleys, and Parking Lots	No	No materials handling, construction or demolition operations will take place in the areas described.
§111.151- §111.153	Emission Limits on Non-agricultural Processes	Yes	The particulate emissions from the site meet the allowable emissions limits of §111.151, as shown in the emission calculations; §111.153 does not apply.
§111.171- §111.175	Emission Limits on Agricultural Processes	No	No agricultural processes are associated with this application.
§111.181- §111.183	Exemptions for Portable or Transient Operations	No	The site has no portable or transient operations engaged in Public Works projects.

§111.201- §111.221	Outdoor Burning	No	No outdoor burning is associated with this application.

§111.111 - Requirements for Specified Sources
The site will comply with the requirements of §111.111(a)(1). There are no steam generators, catalyst regenerators, gas stream containing condensed water vapor, gas flares, motor vehicles, railroad locomotives or ships associated with this application, therefore §111.111(a)(2) - 111.111(a)(6) do not apply. The site will comply with the requirements of §111.111(a)(7) and §111.111(a)(8). No response is required for §111.111(b). The site is not located in the City of El Paso, therefore the requirements of §111.111(c) do not apply.

§111.151 - Allowable Emission Limits
Particulate matter stack emission rates from the site will be within the limits specified under §111.151(b) and Table 1 and the standard effective stack heights as determined from Table 2 are greater than the effective stack heights calculated under §111.151(c), therefore particulate matter standards will not be exceeded.

CHAPTER 112 - CONTROL OF AIR POLLUTION FROM SULFUR COMPOUNDS

There are no operations associated with this application which produce hydrogen sulfide, sulfuric acid, or total reduced sulfur; therefore, the requirements of §112.1 – 112.59 do not apply.

CHAPTER 113 - CONTROL OF AIR POLLUTION FROM TOXIC MATERIALS

The operations to be covered by this application are not subject to any NESHAP under 40 CFR Part 61 or MACT standard under 40 CFR Part 63.

CHAPTER 114 - CONTROL OF AIR POTLUTION FROM MOTOR VEHICLES

There are no motor vehicles associated with this permit application.

CHAPTER 115 - CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS

The site is located in Bexar County, which is in a covered attainment county as defined in §115.10. Therefore, the site will comply with applicable provisions of these rules as described on the following table.

Subchapter	Division	Reference	Applicability	Compliance Demonstration
Subchapter B	Division 1	Storage of VOCs	Yes	The site is exempt from Division 1 of Subchapter B because VOC storage tanks are storing a VOC with a true vapor pressure less than 1.5 psia.
	Division 2	Vent Gas Control	No	
	Division 3	Water Separation	No	
	Division 4	Industrial Wastewater	No	
	Division 5	Municipal Solid Waste Landfills	No	
	Division 6	Batch Processes	No	
Subchapter C	Division 1	Loading and Unloading of VOCs	No	N/A
	Division 2	Filling of Gasoline Storage Vessels for Motor Vehicle Fuel Dispensing Facilities	No	
	Division 3	Control of VOC Leaks from Transport Vessels	No	
	Division 4	Control of Vehicle Refueling Emissions at Motor Vehicle Fuel Dispensing Facilities	No	
	Division 5	Control of Reid Vapor Pressure of Gasoline	No	
Subchapter D	Division 1	Process Unit Turnaround and Vacuum-producing Systems in Petroleum Refineries	No	N/A
	Division 2	Fugitive Emission Control in Petroleum Refineries in Gregg, Nueces, and Victoria Counties	No	
	Division 3	Fugitive Emission Control in Petroleum Refining, Natural Gas/Gasoline Processing, and Petrochemical Processes in Ozone Nonattainment Area	No	
Subchapter E	Division 1	Degreasing Processes	No	N/A
	Division 2	Surface Coating Processes	No	
	Division 3	Flexographic and Rotogravure Printing	No	
	Division 4	Offset Lithographic Printing	No	
	Division 5	Control Requirements for Surface Coating Processes	No	
	Division 6	Industrial Cleaning Solvents	No	
	Division 7	Miscellaneous Industrial Adhesives	No	

Subchapter	Division	Reference	Applicability	Compliance Demonstration
Subchapter F	Division 1	Cutback Asphalt	No	N/A
	Division 2	Pharmaceutical Manufacturing Facilities	No	
	Division 3	Degassing of Storage Tanks, Transport Vessels, and Marine Vessels	No	
	Division 4	Petroleum Dry Cleaning Systems	No	
Subchapter G	Division 1	Automotive Windshield Washer Fluid	No	N/A
Subchapter H	Division 1	Vent Gas Control	No	N/A
	Division 2	Cooling Tower Heat Exchange Systems	No	
	Division 3	Fugitive Emissions	No	
Subchapter J	Division 1	Alternate Means of Control	No	N/A
	Division 2	Early Reductions	No	
	Division 3	Compliance and Control Plan Requirements	No	
	Division 4	Emissions Trading	No	

CHAPTER 117 - CONTROL OF AIR POLLUTION FROM NITROGEN COMPOUNDS

The site is located in Bexar County, and does not operate any of the regulated sources listed in Chapter 117; therefore, Chapter 117 does not apply.

CHAPTER 118 - CONTROL OF AIR POLLUTION EPISODES

lf the TCEQ determines that a Level 1 air pollution episode exists for Bexar County, the site will determine existing emissions levels for contaminants involved in the episode, implement reasonably available methods to reduce emissions, and prepare to curtail all affected emissions sources in anticipation of a Level 2 episode in accordance with §118.2(a). Bexar County is not a designated county under §118.5; therefore, no emission reduction plan is required.

CHAPTER 122 - FEDERAL OPERATING PERMITS

The site is not a major source of any air pollutant and is not required to obtain a FOP and is not subject to the acid rain provisions of the Federal Clean Air Act Amendments; therefore, Chapter 122 does not apply.

9 DISCUSSION OF CONFORMANCE WITH FEDERAL REGULATORY REQUIREMENTS

BACT - Applicability and Compliance

Pursuant to EPA and TCEQ Prevention of Significant Deterioration (PSD) regulations, a review and analysis of Best Available Control Technology (BACT) is required for each new or modified emissions source.

EPN / FIN	Emission Source	Tier I BACT	Compliance with BACT
EPNs: SBH1-SBH7 FINs: SILO1-SILO7	Cement silos 1 & 2, Silica silo, Lime silo, Fly ash silo, Sand silo, Calcium carbonate silo	99% reduction or outlet grain loading of 0.01 gr/dscf (combined front and back half), typically achieved with fabric filters.	Each silo is equipped with a baghouse and fabric filters with an outlet grain loading of 0.0015 gr/dscf (99.99%).
		Maximum opacity of 5%.	Opacity from the silo baghouses will not exceed 5%.
		No visible emissions shall leave the property from the silo loading. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent.	No visible emissions will leave the property during silo loading. Silos will be loaded pneumatically through a closed system and emissions are routed to each silo's baghouse.
		Best management practices (minimizing spills, cleaning spills promptly, and using low volatility cleaning materials) during maintenance.	Spills during silo loading will be cleaned immediately via sweeping.
		Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation.	Fabric filters will be in good condition and cleaned as recommended by the manufacturer.
		Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Filters will be replaced as needed. Spent filters will be stored in a closed drum or other container for disposal.

EPN / FIN	Emission Source	Tier I BACT	Compliance with BACT
EPN: BGH1 FINs: HOP1, HOP2, MIX1, BAGGER	Mixer tower baghouse	99% reduction or outlet grain loading of 0.01 gr/dscf.	The baghouse is equipped with fabric filters with an outlet grain loading of 0.005 gr/dscf (99.99%).
		Maximum opacity of 5%.	Opacity of the baghouse will not exceed 5%.
		No visible emissions shall leave the property from the baghouse.	No visible emissions will leave the property.
		Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation.	Fabric filters will be in good condition and cleaned as recommended by the manufacturer.
		Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Filters will be replaced as needed. Spent filters will be stored in a closed drum or other container for disposal.
FIN: BAGGER	Stucco bagger	Best management practices (conducting system maintenance in a manner which minimizes emissions) employed during handling system maintenance.	System maintenance will be performed when operations are shut down to minimize emissions.
		No bypassing of controls.	The site will not bypass emission controls.
		Suction shroud should be in good repair with minimum flow rate.	Particulate matter is captured by a collection/suction system that captures an estimated 70% of fugitive emissions and routes them to BGH1. The system will be maintained in good repair with a minimum flow rate.

EPN / FIN	Emission Source	Tier I BACT	Compliance with BACT
EPN: BGH2 FINs: MIXDROP1, MIXDROP2, MIX2, MIX3, MIXLOAD1, MIXLOAD2	Acrylic finish process baghouse	99% reduction or outlet grain loading of 0.01 gr/dscf.	The baghouse is equipped with fabric filters with an outlet grain loading of 0.002 gr/dscf (99.99%).
		Maximum opacity of 5%.	Opacity of the baghouse will not exceed 5%.
		No visible emissions shall leave the property from the baghouse.	No visible emissions will leave the property.
		Fabric filters should be in good repair with an acceptable pressure drop prior to the start of operation.	Fabric filters will be in good condition and cleaned as recommended by the manufacturer.
		Removal of spent filters in such a manner to minimize PM emissions and placing the spent filters in sealable bags or other sealable containers prior to removal from the site. Bags or containers shall be kept closed at all times except when adding spent filters.	Filters will be replaced as needed. Spent filters will be stored in a closed drum or other container for disposal.
EPN: BGH2 FIN: AFLOAD	Acrylic finish packaging	Packaging operations shall have a local capture/collection system in use during container filling which will achieve 100% capture of emissions to minimize fugitive emissions.	The automatic fill station will be fully enclosed with a plexi-glass or other synthetic enclosure, with openings only for egress/regress of pails on the conveyor. The dust collector (BGH2) will be connected to the top of the hood enclosure and provide sufficient airflow to achieve a minimum face velocity of 100 ft/min at each of the two openings. Achieving 100 ft/min face velocity at each opening ensures 100% collection of any pail loading emissions in accordance with BACT.
		Good housekeeping and best management practices. See applicable 40 CFR Part 63 requirements.	System maintenance will be performed when operations are shut down to minimize emissions. No splash loading. The site will not bypass emission controls.

FINs: AST1-AST3; LLOAD1-LLOAD3 EPNs: ASTV1-ASTV3	Acrylic latex silos & loading	The fixed roof tank(s) must be submerged filled. If the tank is drained, liquid must be sent to a covered vessel and if the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia.	The acrylic latex silos are filled via submerged fill. If ever drained, the site will comply with BACT requirements.

Prevention of Significant Deterioration - Applicability and Compliance

Under EPA and TCEQ rules, sites located in areas that are designated in attainment of National Ambient Air Quality Standards (NAAQS) for a criteria pollutant are potentially regulated under the Prevention of Significant Deterioration (PSD) program if they are considered major sources (>250 tpy per regulated pollutant for an un-named source). Bexar County is currently classified as an attainment or unclassified area for all criteria pollutants except for ozone, for which it is classified as marginal nonattainment. However, the site is not a major source and is therefore not subject to PSD.

Nonattainment New Source Review – Applicability and Compliance

The Nonattainment New Source Review (NNSR) program authorizes major sources in areas that do not attain federal NAAQS. NNSR also requires analysis of the Lowest Achievable Emission Rate (LAER) technology to reduce emissions from the source, as well as emissions offset credits. The major source threshold for ozone NNSR in Bexar County is 100 tpy for VOCs or NO_x. The site is not a major source and is therefore not subject to NNSR.

New Source Performance Standards - Applicability and Compliance

The New Source Performance Standards (NSPS) in 40 CFR 60 require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. NSPS Subpart OOO applies to Nonmetallic Mineral Processing Plants, and includes the following affected facilities at such plants: crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, and enclosed truck or railcar loading station. However, plants without crushers or grinding mills above ground are exempt from the subpart. The site is not subject to Subpart OOO or any other NSPS subpart.

National Emission Standards for Hazardous Air Pollutants - Applicability and Compliance

National Emission Standards for Hazardous Air Pollutants (NESHAPs) are emission standards for HAPs and are applicable to major and area sources of HAPs. A HAP major source is defined as having potential emissions in excess of 25 tpy for total HAPs, and/or potential emissions in excess of 10 tpy for an individual

HAP. An area source is a stationary source that is not a major source. NESHAPs apply to those industrial source categories outlined in the subparts of 40 CFR 61 and 40 CFR 63. 40 CFR 63 Subpart CCCCCCC applies to Paints and Allied Products Manufacturing. The site is exempt from the subpart because it does not process, use, or generate materials containing the HAPs benzene, methylene chloride, or compounds of cadmium, chromium, lead, and/or nickel. The site is not subject to any of the subparts of 40 CFR 61.

10 APPENDICES

10.1 Fee Submittal
10.2 Equipment Specifications
10.3 TankESP Report

10.1 - FEE SUBMITTAL

Texas Commission on Environmental Quality
Form APD-APS Air Permitting Surcharge Payment

I. Contact Information	
Company or Other Legal Customer Name: Facades XI, LLC	
Customer Reference Number (CN): CN605791425	
Regulated Entity Number (RN): RN102783693	
Company Official or Technical Contact Information: (☉ Mr. ○ Mrs. ○ Ms. ○ Other:_____)	
Name: Joe McClaran	
Title: COO	
Mailing Address: 15262 Capital Port	
City: San Antonio	
State: TX	
ZIP Code: 78249	
Telephone Number: 210-867-6991	
E-mail Address: joe@facadesxi.com	
II. Project Information	
Facility Name: Facades XI	
Permit Number:	
Project Number:	
III. Surcharge Payment	
Project Type: NSR case-by-case permit	
Fee Amount: $ 10,000	
Check, Money Order, Transaction Number, and/or ePay Voucher Number: *(below)*	
2551	
Paid Online:	☐ YES ☒ NO
Company Name on Check: Facades XI, LLC	

10.2 – EQUIPMENT SPECIFICATIONS

BELGRADE STEEL TANK CO., INC.

PO Box 220
405 Lowery Avenue
Belgrade, MN 56312
Phone 320-254-8246
Fax 320-254-3458

330 PULSE JET DUST HOUSE

Collector Specifications

Total Filtration Area	330 Sq. Ft.
Air to Cloth Ratio (ACFM/Sq.')	4.8
Pressure Drop	6"
Air Capacity	1600
Outlet Area (Sq.')	.83
Cleaning Method	Pulse Jet
Inlet Dust Concentration at 15 Gr./Cu.'	25,000
Outlet Emissions (Gr./Min)	2.50
Outlet Dust Loading (Gr./Cu.')	.0015
Air Consumption	8 CFM
Solenoids	3 w/ Timer Board

Filter Cartridge Specifications

Dimensions	(6) 10.09" OD x 5.75" ID x 30" Height
Top End Cap	G60 Galvanized—Open with 11.000" Flange
Bottom End Cap	G60 Galvanized—Closed
Gasket	5/8" Height x 10" ID Neoprene
Outer Retainer	Retainer Bands
Inner Core	Galvanized Expanded Metal, 72% Open
Filter Area	55 Square Feet
Fiber	100% Spun Bond Polyester
Material Weight	8 oz / Square Yard
Permeability	24 C.F.M.
Mullen Burst Dry	388 PSI
Temperature Limit	275 Degrees Fahrenheit
Efficiency	99.99%

Operation Recommendations: Supply unit with 100 PSI air pressure and 110 volt power. Turn on unit when the filling cycle begins and continue to operate unit 5-10 minutes after filling cycle is complete.

FABRIC FILTERS

Point Number (from flow diagram)	Manufacturer & Model No. (if available)
	Belgrade Steel Tank Co. - 330 sq ft Pulse Jet
Name of Abatement Device	**Type of Particulate Controlled**
330 Pulse Jet Dust House	Cement Dust

GAS STREAM CHARACTERISTICS

Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	**Average Expected**		**Inlet**	**Outlet**
1600	1600	Ambient	N/A	0.0015

Pressure Drop	Water Vapor Content of	Fan Requirements	
(in H2O)	**Effluent Stream (lb water/lb dry air)**	**(hp)**	**(cubic ft/min)**
6"	Ambient	N/A	N/A

PARTICULATE DISTRIBUTION

(by weight)

Micron Range	Inlet	Outlet
0.0 - 0.5	0%	99.98%
0.5 - 1.0	3%	0.02%
1.0 - 5.0	17%	0.00%
5.0 - 10.0	18%	0.00%
10.0 - 20.0	21%	0.00%
over 20.0	41%	0.00%

FILTER CHARACTERISTICS

Filtering Velocity (acfm/sq ft of cloth)	Cartridge Diameter (inches)	Cartridge Length (inches)	Number of Cartridges	Number of Compartments in Dusthouse
4.8	10"	26"	6	1

Cartridge rows will be:	Walkways will be provided between banks of cartridges:
On Radius	No

Filtering Material: 100% Spun Bond Polyester / 8 oz.

Describe Cartridge Cleaning Method and Cycle: Bursts of compressed air pass through the inside of the cartridge during and after the filling process.

Facades PBR

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Application: Dust Collection
Product: Sand/Cement
Product Loading: Unknown
Air Volume: 1,500 ACFM

Operating Temperature: Ambient (Assumed)
Air to Media Ratio: 3.2 to 1
Can Velocity: 154 FPM
Interstitial Velocity: 227 FPM

Item	Qty	Description
1.01	(1)	CAMCORP Model 4SFBH45x16 Pulse-Jet Top Loading Poly-El Dust Collector complete as follows:

- Welded Carbon Steel Heavy Duty Construction Reinforced for -20” W.C.:
  - # 12 Gauge Carbon Steel Housing and Hopper.
  - 3/16” Plate Carbon Steel Tubesheet.
  - 3”x1/4” Exterior Re-enforcement.
  - **Dimension: 37.7” Sq. x 86” H**
- External Seam Welds Continuous, Internal Seams Stitch Welded.
- Finish: Sherwin Williams Epoxy Primer and Urethane Top Coat.
- (16) 6" Dia. x 1 m. Lg., 54 Pleat, Bottom Removal, 100% Spun Bond Polyester, Poly-El Filter Elements providing a Total Filter Area of 474 Sq. Ft.
- Reverse/Pulse Cleaning System Consisting of:
  - 4" Compressed Air Header.
  - (4) 3/4” Diameter Diaphragm Valves.
  - (4) 1/8" Diameter Solenoid Valves Mounted in a NEMA 4 Enclosure.
  - Factory Installed Tubing between Solenoid and Diaphragm Valves.
  - NOTE: 10–15 CFM of 90–100 PSIG Compressed Air Required.
- Solid State Sequential Timer Board Assembly Mounted in a NEMA 4 Encl.
  - NOTE: 95–265 V, 50/60 Hz, 1 Ph Power Required.
- Differential Pressure Gauge, Kit consisting of:
  - Dwyer Magnehelic Gauge and Mounting Bracket.
  - 50 Ft. 1/4" Dia. Tubing, and Necessary Fittings.
- Clean Air Plenum with Flanged Exhaust.
- Dirty Air Housing with Quick Opening, Hinged and Clamped Door for Access to Bottom Removal Filter Elements.
- Pyramidal Hopper with 60° Side Slope, Radial Inlet with Baffle, Bolted Access Port, and Flanged Hopper Discharge.
- Mounting Support Gussets

Total Price, Item 1.01, F.O.B. Point of Manufacture ---------- $ 6,657.00

Facades PBR

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Item	Qty	Description
1.02	(1)	***Chicago*** Centrifugal Fan complete as follows: • Model: Design 38 Pressure Blower, Size 182, Arrangement 4V. • Duty: 1,500 CFM, -13" SP. • 5-Hp, 3,600 RPM, 3/60/230-460, Premium Efficiency TEFC Motor • Cast Aluminum Construction • Direct Drive • Flanged Inlet • Slide Gate Outlet Damper

Total Price, Item 1.02, F.O.B. Point of Manufacture----------$ 2,098.00

CAMCORP
A MEMBER OF THE SCHEUCH GROUP

EMISSION STATEMENT – Spun Bond Polyester

CAMCORP Inc. warrants that the equipment manufactured by it and delivered hereunder will be free to defects in material and workmanship for a period of eighteen (18) months from the date of shipment by CAMCORP or twelve (12) months from commencement of use of the equipment, whichever comes first (the "Warranty Period"). Purchaser shall be obligated to promptly report any failure of the Equipment to conform to this warranty in writing to CAMCORP within the Warranty Period, whereupon CAMCORP shall, at its option, correct such nonconformity by suitable repair to such Equipment, or furnish a replacement part F.O.B. point of shipment, provided Purchaser has stored, installed, maintained and operated such Equipment in accordance with good industry practices and has complied with specific recommendations or instruction of CAMCORP.

CAMCORP Inc. warrants the performance of its new Spun Bond Polyester Pleated Elements, when operated per the design parameters referenced in the original proposal and in accordance with the manufacturers operations manuals will achieve 99.99% efficiency on 0.5 micron and larger by weight and will emit no more than 0.005 gr/dscf.

The guarantee is subject to the following conditions:

- The equipment will be installed, operated and maintained according to generally accepted and approved Engineering and construction Standards and in accordance with Vendor's written instructions.
- CAMCORP Inc. must be provided a full copy of all tests, including raw data calculations.
- At all times prior to and during testing, all operating conditions as specified in this specification will be strictly adhered to.
- Tests to determine compliance with Vendor's particulate guarantee(s) obligations shall be performed in accordance with EPA (Environmental Protection Agency) Test Method No. 5. A qualified independent test company shall preform testing. The test shall be conducted within 60 days of start-up, but not to exceed 120 days from start-up, and normal operating conditions are achieved.
- If the expected 0.005 gr/dscf is not attained on the first test, CAMCORP Inc. will be given a maximum of 60 days with which to bring the equipment into conformity. Buyer is responsible for all initial testing fees, charges, and expenses.
- Owner will provide, on request, applicable maintenance and operation records of actual operating conditions.
- If failure of the media occurs, an independent testing laboratory shall determine the cause of such failure. The test data will be utilized to determine the recommended course of corrective actions. The testing laboratory selection shall be subject to CAMCORP Inc. approval.
- CAMCORP Inc. will not be responsible for incidental or consequential damages.

Craig Kauffman
CAMCORP Inc.
Product Development/Sales

Baghouse Quote Request

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Application: Dust Collection
Product: Ti02, CaCo, Sand
Product Loading: Unknown
Air Volume: 5,000 ACFM

Operating Temperature: 100°F°F
Air to Media Ratio: 3.1 to 1
Can Velocity: 92 FPM
Interstitial Velocity: 144 FPM

Item	Qty	Description

1.01 (1) CAMCORP Model 10TR10x100 Pulse-Jet Top Loading Baghouse Dust Collector complete as follows:

- Welded Carbon Steel Heavy Duty Construction Reinforced for -20” W.C.:
  - # 12 Gauge Carbon Steel Housing and Hopper.
  - 3/16” Plate Carbon Steel Tubesheet.
  - 3”x2”x1/4” Exterior Re-enforcement.
- External Seam Welds Continuous, Internal Seams Stitch Welded.
- Exterior Finish: Sherwin Williams Epoxy Primer and Urethane Top Coat.
  - Interior Product Contact Surfaces Sandblasted to SSPC-SP6 Surface Prep and Finished With Industrial Epoxy
- (100) 6" Dia. x 6" Lg., Filter Bags, 16 oz. Singed Polyester Felt with PTFE Membrane Snap Band No-Tool Design, providing a Total Filter Area of 1,600 Sq. Ft.
- (100) Heavy Duty # 11 Ga. Galvanized Steel (12) Wire Bag Support Cages with Integral Venturis.
- Reverse/Pulse Cleaning System Consisting of:
  - 5" Compressed Air Header Pipe.
  - (10) 1” Diameter Diaphragm Valves.
  - (10) 1/8" Diameter Solenoid Valves Mounted in a NEMA 4 Enclosure.
  - Factory Installed Tubing between Solenoid and Diaphragm Valves.
  - NOTE: 16–20 CFM of 90–100 PSIG Compressed Air Required.
- Solid State Sequential Timer Board Assembly Mounted in a NEMA 4 Encl.
  - NOTE: 95–265 V, 50/60 Hz, 1 Ph Power Required.
- Differential Pressure Gauge, Kit consisting of:
  - Dwyer Magnehelic Gauge and Mounting Bracket.
  - 30 Ft. 1/4" Dia. Tubing, and Necessary Fittings.
- Clean Air Plenum with Quick Opening, Clamped and Lift-Off Doors for Access to (No Tool Removal) Filter Bags & Cages.
- Dirty Air Housing.
- Pyramidal Hopper with 70° Side Slope, Radial Inlet with AR Baffle, Bolted Access Port, and Flanged Hopper Discharge.
- Solimar Pads in Sidewall of Hopper.:
- Structural Supports providing 48” clearance below Airlock Discharge (Airlock by Others).
- Ladder, Cage & Plenum Roof Railing.

Total Price, Item 1.01, F.O.B. Point of Manufacture ---------- $ 53,498.00

Baghouse Quote Request

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Item	Qty	Description
1.02	(1)	***NYB*** Centrifugal Fan complete as follows:

- Model: Series 20 General Industrial, Size 26, Arrangement 9E.
- Duty: 5,000 CFM, -12.0" SP, 14.5-Bhp @ 96° F & 701 ft. elev.
- 20-Hp, 1,800 RPM, 230-460/3/60 Hz. TEFC Motor
- V- Belt Drive
- Cleanout Door
- Drain & Plug
- Flanged Inlet & Outlet
- Belt/Shat/Bearing Guards.
- Integral Outlet Damper

Total Price, Item 1.02, F.O.B. Point of Manufacture----------$ 9,354.00

EMISSION STATEMENT – PTFE Membrane

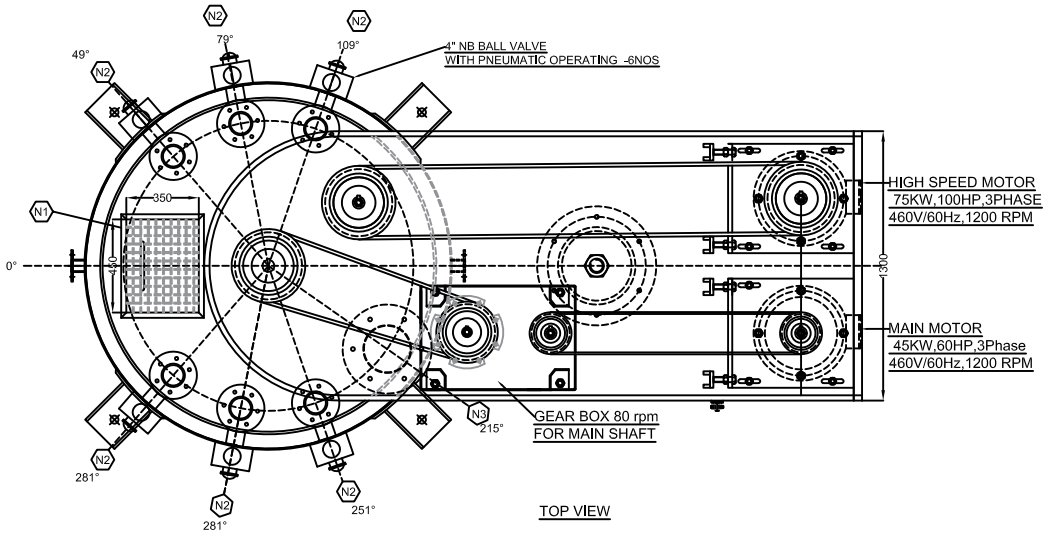
CAMCORP Inc. warrants that the equipment manufactured by it and delivered hereunder will be free to defects in material and workmanship for a period of eighteen (18) months from the date of shipment by CAMCORP or twelve (12) months from commencement of use of the equipment, whichever comes first (the "Warranty Period"). Purchaser shall be obligated to promptly report any failure of the Equipment to conform to this warranty in writing to CAMCORP within the Warranty Period, whereupon CAMCORP shall, at its option, correct such nonconformity by suitable repair to such Equipment, or furnish a replacement part F.O.B. point of shipment, provided Purchaser has stored, installed, maintained and operated such Equipment in accordance with good industry practices and has complied with specific recommendations or instruction of CAMCORP.

CAMCORP Inc. expects the performance of its new PTFE Membrane / 16-oz. Polyester Bags, when operated per the design parameters referenced in the original proposal and in accordance with the manufacturers operations manuals, to emit no more than 0.002 gr / dscf of air based on dry dust particle sizes of 0.5 microns and larger and will maintain a differential pressure ranging from 0.2" to 6.0" w.c.

The guarantee is subject to the following conditions:

- The equipment will be installed, operated and maintained according to generally accepted and approved Engineering and construction Standards and in accordance with Vendor's written instructions.
- CAMCORP Inc. must be provided a full copy of all tests, including raw data calculations.
- At all times prior to and during testing, all operating conditions as specified in this specification will be strictly adhered to.
- Tests to determine compliance with Vendor's particulate guarantee(s) obligations shall be performed in accordance with EPA (Environmental Protection Agency) Test Method No. 5. A qualified independent test company shall preform testing. The test shall be conducted within 60 days of start-up, but not to exceed 120 days from start-up, and normal operating conditions are achieved.
- If the expected 0.002 gr/dscf is not attained on the first test, CAMCORP Inc. will be given a maximum of 60 days with which to bring the equipment into conformity. Buyer is responsible for all initial testing fees, charges, and expenses.
- Owner will provide, on request, applicable maintenance and operation records of actual operating conditions.
- If failure of the media occurs, an independent testing laboratory shall determine the cause of such failure. The test data will be utilized to determine the recommended course of corrective actions. The testing laboratory selection shall be subject to CAMCORP Inc. approval.
- CAMCORP Inc. will not be responsible for incidental or consequential damages.

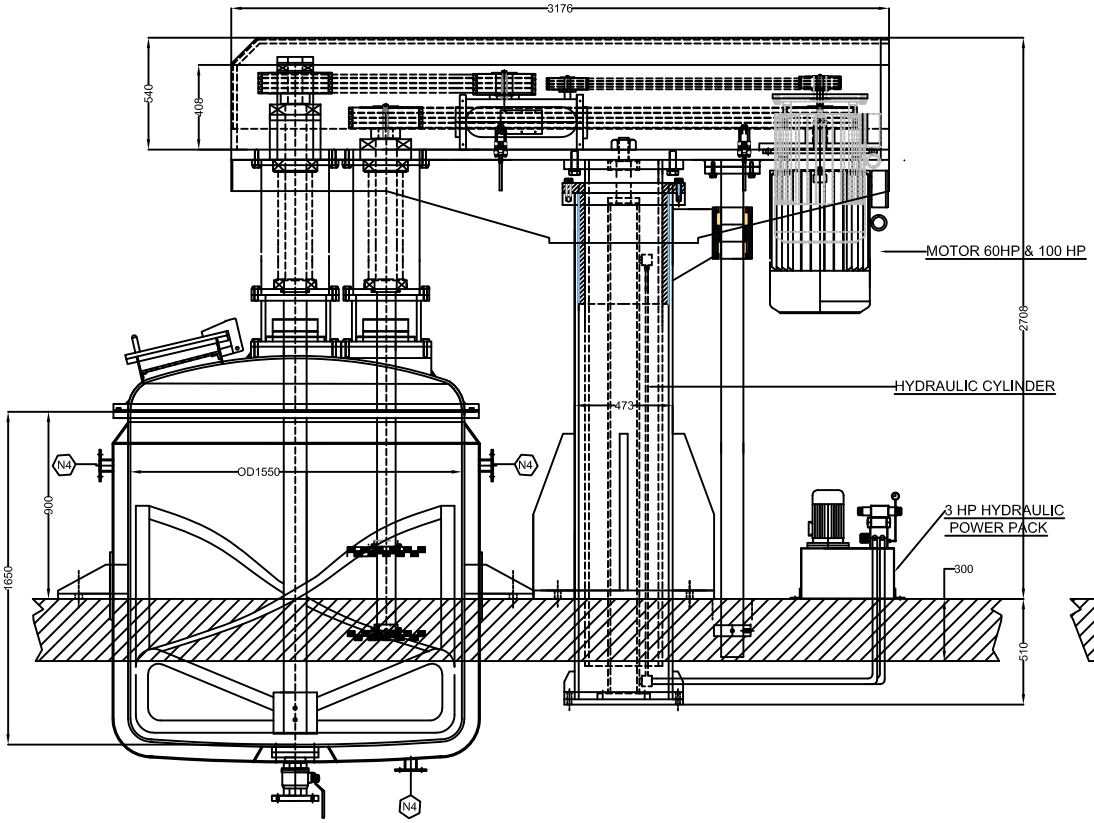
Craig Kauffman
CAMCORP Inc.
Product Development/Sales



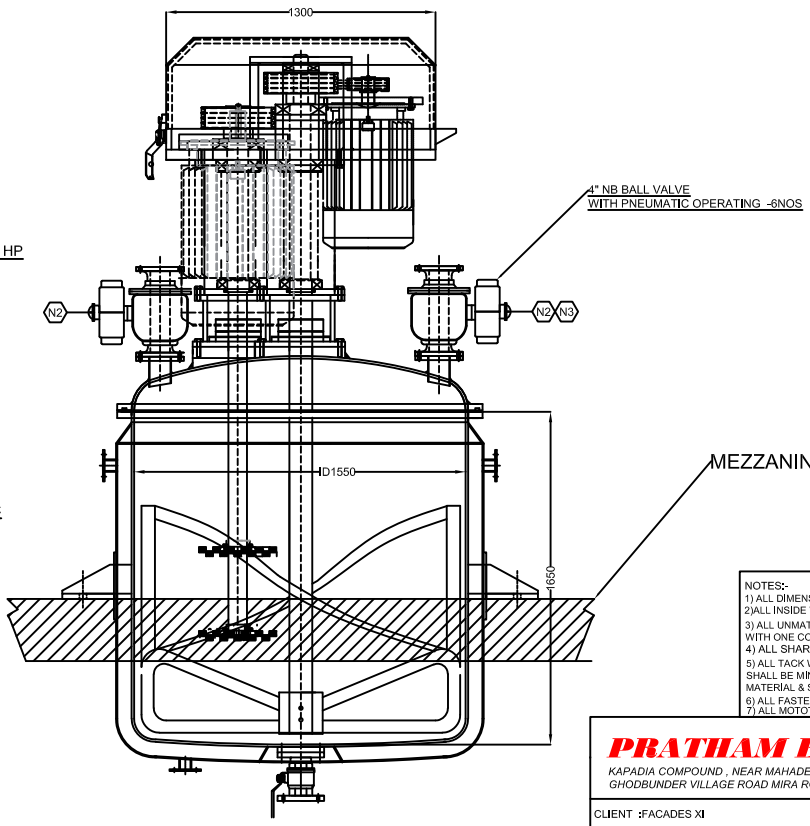
TOP VIEW

N4	NOZZLE	2"NB	SCH.40S	ASA-150#	'SORF'	4
N3	NOZZLE	9"NB	SCH.40S	ASA-150#	'SORF'	1
N2	NOZZLE	4"NB	SCH.40S	ASA-150#	'SORF'	6
N1	INLET	450X350	-			
NO.	DESCRIPTION	N.B.	SCH.	RATT.	TYPE	QTY.
		PIPE		FLANGE		

NOZZLE SCHEDULE



FRONT VIEW



SIDE VIEW

NOTES:-
1) ALL DIMENSIONS ARE MM UNLESS OTHERWISE NOTED.
2) ALL INSIDE WELD TO BE GROUND SMOOTH
3) ALL UNMATCHED CARBON STEEL SURFACE TO BE PAINTED WITH ONE COAT RED OXIDE & TWO COAT OF FINISH PAINT.
4) ALL SHARP CORNERS SHALL BE ROUNDED
5) ALL TACK WELDS SIZE WHILE SETUPS ARE BEING MADE SHALL BE MINIMUM THREE TIMES THE THK OF THE PLATE MATERIAL & SPACED ADEQUATELY
6) ALL FASTENERS TO BE HIGH TENSILE TO GR. 8.8
7) ALL MOTOT

PRATHAM ENGINEERING

KAPADIA COMPOUND , NEAR MAHADEV MANDIR FOUNTAIN CIRCLE GHODBUNDER VILLAGE ROAD MIRA ROAD (E) DIST-THANE -401107.

CLIENT :FACADES XI

MACHINE QTY.O1	TITLE:-TSM 3K LTR.	DATE 19/08/2020
DESIGNED BY MR.MANOJ	CHECKED BY MR. ASHOK SHASTRI	NOTE:- SCALE 1:1
ALL DIMENSION ARE MM		

10.3 – TANKESP REPORT

TANKs 4.09D Report Display for 2019 Annual

Site: Façades XI,

Equations for this site: After 2019 AP-42 revisions H/D ratio: Default 0.5

Tank ID	Stock Name	Report End Date	Report Start Date	Tank Type	Site Name	Met. Data City	Met. Data State	Avg. Ambient Temp. (degF)	Min. Ambient Temp. (degF)	Max. Ambient Temp. (degF)	Atmospheric Pressure (psia)	Standing loss (w/out control) (lbs)	Working loss (w/out control) (lbs)	Avg. Liquid Surface Temp. (degF)	Min. Liquid Surface Temp. (degF)	Max. Liquid Surface Temp. (degF)	Bulk Liquid Temperature (degF)	Avg. TVP (psia)	Min. TVP (psia)	Max. TVP (psia)	Diameter (ft)	Height (ft)	Tank Diameter (ft)	Tank Height (ft)	Max. Liquid Level (ft)	Min. Liquid Level (ft)	Throughput (gal)
AST1	Ethyl acrylate	1/1/2020	1/1/2019	FRT (no floating roof)	Façades XI	San Antonio	TX	69.71	59.595233	79.824767	14.271936	87.746529	87.52167	76.149125	67.874306	84.423944	72.55079	0.72511769	0.56725745	0.91856301	8	10	8	10	9	1	52258.269
AST2	Ethyl acrylate	1/1/2020	1/1/2019	FRT (no floating roof)	Façades XI	San Antonio	TX	69.71	59.595233	79.824767	14.271936	87.746529	87.52167	76.149125	67.874306	84.423944	72.55079	0.72511769	0.56725745	0.91856301	8	10	8	10	9	1	52258.269
AST3	Ethyl acrylate	1/1/2020	1/1/2019	FRT (no floating roof)	Façades XI	San Antonio	TX	69.71	59.595233	79.824767	14.271936	87.746529	87.52167	76.149125	67.874306	84.423944	72.55079	0.72511769	0.56725745	0.91856301	8	10	8	10	9	1	52258.269