MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT

DOCKET #16-21

COMPANY: Stancills, Inc.

LOCATION: 499 Mountain Hill Road, Perryville, Maryland 21903

APPLICATION: One (1) 400 ton per hour asphalt paving materials mixing plant, one (1) 300 ton per hour crushing and screening plant, and one (1) hot oil heater.

ITEM	DESCRIPTION
1	Notice of Application and Opportunity to Request an Informational Meeting
2	Permit to Construct Application Forms – Forms 5, Form 5T, Forms 5EP, Form 6, Form 11, Form 44, process flow diagrams and evidence of zoning approval

DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

NOTICE OF APPLICATION AND
OPPORTUNITY TO REQUEST AN INFORMATIONAL MEETING

The Maryland Department of the Environment, Air and Radiation Administration (ARA) received a permit-to-construct application from Stancills, Inc. on July 15, 2021 for one (1) 400 ton per hour asphalt paving materials mixing plant, one (1) 300 ton per hour crushing and screening plant, and one (1) hot oil heater. The proposed installation will be located at 499 Mountain Hill Road, Perryville, Maryland 21903.

The application and other supporting documents are available for public inspection on the Department's website. Look for Docket #16-21 at the following link:

https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx

Pursuant to the Environment Article, Section 1-603, Annotated Code of Maryland, the Department will hold an informational meeting to discuss the application and the permit review process if the Department receives a written request for a meeting within 10 working days from the date of the second publication of this notice. All requests for an informational meeting should be emailed to Ms. Shannon Heafey at shannon.heafey@maryland.gov.

Further information may be obtained by calling Ms. Shannon Heafey at (410)-537-4433.

George S. Aburn, Jr., Director
Air and Radiation Administration

Stancills

PERMIT TO CONSTRUCT APPLICATION FOR AN AIR POLLUTION SOURCE

499 Mountain Hill Road
Perryville, Maryland

JULY 2021

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

TABLE OF CONTENTS

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

PERMIT APPLICATION NARRATIVE

Submitted by: STANCILLS INC.

Proposed Air Pollution Sources:
ASPHALT PAVING MATERIALS MIXING PLANT
and
CRUSHING AND SCREENING PLANT

Prepared by: Kathryn O'C. Gunkel, P.E.
WILDWOOD Environmental Engineering Consultants, Inc.

July 2021

1 INTRODUCTION

Stancills Inc. (STCL), a subsidiary company of Flanigan & Sons is proposing to install a new Asphalt Paving Materials mixing plant (APMMP) on the site of 499 Mountain Hill Road, Perryville, Cecil County, Maryland. This site is currently home to STCL's topsoil processing plant, which operates several screeners to prepare topsoil for sale.

STCL has included in this application package a Form 5 for a Crushing and Screening Plant (CSP). At this point in time, they have not decided if they will set up their own CSP or use contractors to bring in their portable CSPs as needed to maintain a consistent supply of reclaimed asphalt pavement (RAP) materials for the APM mixing plant operations and to process RAP for other road construction uses. The CSP may also process concrete from time to time. Regardless of whether they will set up their own CSP or bring in portable CSPs as needed, the site will need a permit allowing them to operate this type of air pollution source. Therefore, a generic system is being proposed with a crusher, screener, and stacking conveyor all powered by their own diesel-fired engines with a minimum of a Tier 4i rating. Since the CSPs brought to the site to process RAP/concrete are not likely to be the same equipment every time, STCL is requesting that the permit issued is a "Flexible" permit for the CSP.

2 AIR EMISSION SOURCES

2.1 Asphalt Paving Materials Mixing Plant.

The 400-ton-per-hour APM mixing plant will be fabricated by CWMF and equipped with a Vulcan dual-fuel burner rated at 120 MMBTUs per hour heat input. It will be a counter-flow drum mix plant with a knockout box at the inlet of the baghouse. The plant will be equipped to use Reclaimed Asphalt Pavement (RAP) materials in the mixes produced.

The Hot Oil Heater (HOH) system, with which every APM mixing plant is equipped, will have a heat input rating of 2-3 million BTUs per hour (MMBTUs/hr), according to CWMF. The emissions calculations are based on a maximum rating of 3 MMBTUs/hr.

The primary fuel which will be burned in both the APM mixing plant and the HOH system is natural gas. The back-up fuel will be No. 2 fuel oil and will only be burned in the event the local gas supplier exercises their right to curtail natural gas to its industrial customers. As per MDE"s requirements, the emissions calculations for this Permit-to-Construct application are based on No. 2 fuel oil, even though natural gas will always be used unless the supplier cuts off supply.

STCL is planning to install three storage silos for finished product. Silos are a vital part of the operation as they hold the APM as they are continuously produced. Multiple silos are set up provide storage for different types of mixes in order to meet the demands of different customers on the same operating day.

2.2 Crushing and Screening Plant.

As stated in the Introduction, STCL plans to use RAP materials in their mixes, as much as 40% by weight. From time to time, there may be an accumulation of waste concrete on the site from construction jobs. STCL wishes to be able to use the CSP when it is on-site to process the accumulated concrete, therefore, STCL is requesting that the permit allow them to process concrete materials through the CSP as well as RAP materials.

The "generic" CSP that STCL is proposing for the permit application is a crusher rated at 300 tons per hour powered by a Tier 4i, diesel-fired engine with a maximum rating of 525 brake-horsepower,. The double-deck screener rated up to 500 tons/hour will be powered by a Tier 4i, diesel-fired engine with a maximum rating of 200 brake-horsepower. The stacking conveyor will be powered by a Tier 4i, diesel-fired engine with a maximum rating of 99 brake-horsepower. There will be at least two built-in belt conveyors associated with the crusher and four built-in belt conveyors associated with the screener, plus the stacking conveyor which is a

separate piece of equipment. There may be a "connecting" conveyor between the crusher and the screener.

Oversized materials is either discharged to a surge pile or to a return conveyor, where oversized materials are "automatically" transferred back to the initial feed hopper to pass through the crusher again. Emissions were based on an auto return for the oversize as the worst-case scenario. It was assumed that 25% of the feed materials are oversized and processed through the process line a second time. So, the emissions estimate is based on steady-state operations where 100% of the feed materials are discharged from the process while 25% are caught up in the recycle loop, meaning 125% of the feed materials are processed through the crusher and screener. It was assumed that 100% of the output materials are discharged via the stacking conveyor connected to one of the built-in conveyors as a worst-case scenario because it includes an additional conveyor-to-conveyor transfer.

3 AIR POLLUTANT EMISSIONS ESTIMATES

3.1 Criteria Air Pollutants – Asphalt Paving Materials Mixing Plant.

AP-42 emission factors were used to estimate emissions for the gaseous Criteria Air Pollutants emitted by the APM mixing plant and the HOH,. Section 1.4 Natural Gas Combustion was used to estimate the emissions from the HOH. The emission rates for the APM mixing plant are based on Section 11.1 HMA Plants 6th Edition.

WEBFIRE (September 2016) was used to estimate emissions for stockpile activity with respect to the APM mixing plant. Stockpile activity occurs when aggregate materials are received, when they are transferred to the feed bins, when they are discharged from the feed bins onto conveyors, when they are transferred to the collecting conveyor, when they are transferred to the screener prior to charging the dryer drum with the aggregate materials. Where a $PM_{2.5}$ emission factor was not provided, the PM_{10} emission factor was used with the particle size multipliers found in AP-42 Section 13.2.4 Aggregate Handling and Storage Piles to estimate a $PM_{2.5}$ emission factor for the emission point. The particle size multipliers are found on page 13.2.4-4 and the dimensionless values for <10 µm (0.35) and <2.5 µm (0.053) were used. WEBFIRE was used instead of Equation 1 in Section 13.2.4 to eliminate the issue of selecting values for the average windspeed and moisture content required for the equation.

The aggregate materials and RAP materials will pass through a screener prior to entering the asphalt mixing process, so the WEBFIRE emission factor for Screening was used. The aggregate materials and RAP materials are transferred to conveyors several times between the feed bins and entry into the mixing process, so the WEBFIRE conveyor-to-conveyor

emission factor was used where materials are transferred to a conveyors. Where material transfers don't land on a conveyor, WEBFIRE's "Misc. Operations: Screen/Conveyor//Handling emission factor was used. Examples of this type of transfer would be haul vehicles dropping materials onto stockpiles, the front-end loader dropping materials into feed bins, etc.

The PM_{10} and $PM_{2.5}$ stack emission rates for the APM mixing plant were derived from the maximum allowable grain loading (0.04 grain/SCFD, the NSPS limit) and AP42 Table 11.1-4 Summary of Particle Size Distribution for Drum Mix Dryers. The exhaust gas flow was estimated based on the exhaust fan capacity, the exit gas temperature, and an expected exhaust gas moisture content of 25% by volume. Based on experience with stack test results, the moisture content of the exhaust gas in a drum mix APM mixing plant burning natural gas falls between 25% and 30% by volume when moisture content of the aggregate feed materials averages 4.5% to 5.5% by weight. The lowest number in the range was used as a worst-case scenario. AP42 Table 11.1-4 says [less than or equal to] 21% of the cumulative mass released by a fabric filter is $PM_{2.5}$ and [less than or equal to] 30% of the cumulative mass released by a fabric filter is PM_{10}.

3.2 Criteria Air Pollutants – Crushing & Screening Plant.

As with the APM mixing plant, WEBFIRE was used to estimate fugitive dust emissions from stockpile activity for the CSP. And, as with the APM mixing plant, where necessary, the emission factor for $PM_{2.5}$ was obtained using the dimensionless particle size multiplier from Section 13.2.4. The emission factor is described in WEBFIRE for "Misc. Operations: Screen/Conveyor/Handling". For the other emission points, Crusher, Screener, and Conveyor Transfer Points, the emission factors are identified specifically for these emission sources.

The emission points in the CSP were identified and categorized as "Material Transfers, Unloading", "Material Transfers, Conveyors", "Material Transfers, Other", "Material Transfers, Haul Vehicles", "Crusher", or "Screener" emissions. While some of the categories for the emission sources will use the same emission factor, the categorization system was used for compliance demonstration purposes.

The Crusher and Screener are generally set up in tandem with the materials passing through the Crusher first, then the Screener. Sometimes a "bridging" conveyor (transfers materials from the crusher's built-in conveyor to the screener) is used and sometimes there is no "bridging" conveyor. Since the set-up is not known at this time, a bridging conveyor was included in the emissions calculations for a worst-case scenario.

The emission factors for Tier 4i diesel-fired engines were used to estimate emissions for the engines. The values were obtained from www.DieselNet.com, Table 3. DieselNet's Table 3 does not include an emission factor for SO_X, although one is available in

AP42. However, the AP42 emission factor was published more than two decades ago, and today's diesel fuel used in off-road internal combustion engines has significantly lower sulfur. Currently, Ultra-Low Diesel Fuel has a maximum of 15 PPM Sulfur, by weight. The SO_X emissions for the engines in this application are based on the fuel-bound sulfur at 15 PPM with the assumption that 100% conversion to SO_2 occurs. The calculation is shown below:

DERIVATION OF SO_X EMISSION FACTOR FROM FUEL SULFUR CONTENT		
Ultra Low Diesel	15	ppm (lb S / 10^6 lbs Diesel fuel
Fuel Density	6.943	lb Diesel fuel/gal Diesel fuel
Sulfur content	104.145	lb S / 10^6 gal Diesel fuel
	0.1041	lb S / 10^3 gal Diesel fuel
	2	lbs SO2 generated from 1 lb Sulfur
SO_X Emission factor:	0.20829	lbs SO2 / 10^3 gal Diesel fuel

3.3 Criteria Air Pollutants – Major / Minor Source Status.

The U.S. EPA requires that air pollution sources be classified as minor (natural or synthetic) or major sources of Criteria Air Pollutants: Carbon Monoxide (CO), Oxides of Nitrogen (NOx), Oxides of Sulfur (SOx), Volatile Organic Compounds (VOC), Particulate Matter 10 µm or less in diameter (PM_{10}), and Lead. In the State of Maryland most of the counties in central Maryland have been designated as severe non-attainment zones for ozone, and therefore, the major source thresholds for NOx and VOC are significantly lower at 25 tons per year than are the major source thresholds for the other criteria air pollutants which are 100 tons per year.

STCL has chosen to apply for a permit to construct as a "Synthetic Minor" source, which means they are willing to accept permit limitations on production and/or operating hours so that the total estimated annual emissions fall below the major source thresholds for all the air pollution sources on this site combined. The emissions estimates in this application are based on a production limit of 800,000 tons Asphalt Paving Materials per year and a limit on operating hours for the Crushing & Screening plant engines of 1,800 hours.

3.4 Hazardous Air Pollutants – Major / Minor Source Status.

The U.S. EPA requires that sources be classified as minor (synthetic or natural) or major sources of Hazardous Air Pollutants (HAPs). In the case of HAPs, it is a two-fold threshold. The first threshold is for each individual HAP: 10 tons per year. The second threshold is for all HAPs combined: 25 tons per year. The production permit limit which STCL is choosing to accept for criteria pollutant Synthetic Minor source status will ensure that the APM mixing plant will operate as a synthetic minor source with respect to HAPs.

3.5 Toxic Air Pollutants – Applicability.

Sources of Toxic Air Pollutants (TAPs) must demonstrate compliance with the Maryland TAPs regulations. Fuel burning equipment, the HOH and engines, are exempt from the Toxics Air Pollutants (TAPs) regulations. The TAPs emissions analysis is based on the baghouse stack emissions using the AP-42 emission factors from Section 11.1. SCREEN3 was used to predict the ambient air concentrations (AACs) for the TAPs.

3.6 Compliance Demonstration: National Ambient Air Quality Standards (NAAQS).

The compliance demonstration for the NAAQS is based on the predicted ambient air concentrations (AACs) for CO, SOx, NOx, and PM_{10}. SCREEN3 dispersion modeling was used for the NAAQS compliance demonstration. The fugitive PM_{10} sources were modeled as volume sources.

Compliance was successfully demonstrated with the NAAQS. For the gaseous criteria air pollutants, the instantaneous emission rate was used for averaging periods less than or equal to 8 hours. For longer averaging periods the SCREEN3 1-hour result was adjusted using EPA's recommended scaling factors. The PM_{10} NAAQS compliance demonstration is based on a time-weighted average (TWA) emission rate averaged over a 24-hour period. The TWA emission rate is calculated by estimating the daily emissions rate for 16 hours/day for the APM mixing plant and 8 hours/day for the CSP and dividing the result by 24. SCREEN3 was run using the array feature for distances and the minimum distance input for each emission source was its distance to the property line to demonstrate compliance with the NAAQS and the maximum distance was 2 miles. In almost all cases, the predicted AAC for each emission source occurred at the property line. The SCREEN3 result for the baghouse stack showed the maximum predicted ambient air concentrations (AAC) occurring well beyond the property line.

There is a small overlap of emission calculations in that the fugitive dust emissions due to RAP movements are essentially double counted for that RAP that goes into the APM mixing plant. The front-end loader will move a bucket of RAP either to a RAP feed bin or put it into a haul vehicle to be taken off-site. These fugitive emissions caused by the loader were counted for the APM mixing plant and then they were counted for the CSP.

3.7 Compliance Demonstration: Toxic Air Pollutants.

The compliance demonstrations for TAPs is a comparison of the predicted AACs for the toxic air pollutants associated with the APM mixing plant to the Maryland TAPs Screening Levels. Predicting the AAC for each air pollutant requires air dispersion modeling. Maryland offers a couple of simple "screening" techniques for compliance demonstrations: a maximum allowable emission rate (AER) or using a screening dispersion model. If compliance

cannot be demonstrated using either the AER or the screening model, refined dispersion modeling will be required. After reviewing the emission rates and the AERs, it was found that several TAPs could not show compliance using the AER method. As a result, SCREEN3 dispersion modeling was completed for all the TAPs.

Compliance was successfully demonstrated with Maryland's TAPs screening levels for all TAPs that have been identified in the exhaust of an APM mixing plant using an instantaneous emission rate except for Formaldehyde. It was necessary to calculate a time-weighted average (TWA) emission rate, which USEPA allows, to demonstrate compliance with Formaldehyde's annual screening level. The annual emission rate was estimated to be 3,100 pounds per year and the TWA emission rate was determined by dividing the annual emission rate by 8,760 hours/year. With the TWA emission rate, compliance was demonstrated for Formaldehyde. The SCREEN3 results used in the TAPs screening analysis are the property line AACs, unless the maximum AAC fell beyond the property line, as is the case with the asphalt plant's stack.

3.8 Dispersion Modeling Assumptions.

SCREEN3 was used for both the NAAQS and the TAPs screening analyses. Dispersion modeling, whether screening or refined, depends on various inputs such as the exhaust gas flow rate, the exhaust gas temperature, the emission outlet configuration, etc. Where the generic CSP is concerned, the permit application preparer has considerable experience preparing permit applications for CSPs and used a compilation of data from other applications to estimate the necessary inputs for the dispersion modeling. The exhaust gas volumes for the engines, HOH, and MHRS were determined with combustion calculations.

3.8.1 Crushing and Screening Plant – Volume Sources.

The CSP operation includes a number of activities and emission points and is required to be modeled as a volume source. There are the crusher and screener themselves, material transfers by conveyors, and stockpile loading at the CSP. It has been assumed the RAP materials needed for the production of asphalt pavements will be taken directly from the RAP stockpile where the processed RAP materials have been placed and taken directly to the RAP feed bin system for loading into the process.

Three volume sources were set up for the CSP operations. One volume source was the combined Crusher and Screener including discharge to the temporary stockpile from the stacking conveyor. Two identical volume sources were "created" for the two stockpiles: the incoming "raw" materials brought onsite and the materials after being processed through the CSP, i.e., the "finished" product. The dimensions of the crusher and screener were obtained from OEM literature the application preparer has accumulated over the years.

3.8.2 Asphalt Paving Materials Mixing Plant – Volume Sources.

With regard to the APM mixing plant, the activities that contribute to fugitive dust emissions are unloading of virgin aggregates at the stockpiles, the front-end loader transferring virgin and RAP materials to the feed bins, materials (virgin & RAP) being dropped from the feed bins for transfer to the drum, and the feed materials passing through a screener prior to the last conveyor belt. Emission rates have been estimated for these activities, volume source configurations determined, and the results used to predict ambient air concentration for PM_{10} emissions.

The virgin aggregate bins are arranged in a straight line with as many as six bins joined together. They are elevated above the ground, with the top being approximately 10 feet above ground-level. The aggregate feed bins and the scalping screen were modeled as a separate sources since they are separated by a conveyor from which there are no emissions (except at the ends). The emission rate for the bins includes the loader's drop of materials into the bin, the drop of materials from the bin to the under-bin conveyor, and another drop from the under-bin conveyor to belt conveyor. The belt conveyor transfers the materials to a second belt conveyor, and the materials pass through an aggregate screener (the scalping screener), dropping onto the second belt conveyor. The second belt conveyor transfers the aggregate materials to a third, belt conveyor which feeds the materials to the drum dryer. The transfer of RAP materials into the process follows the same transfer process. In this case, all components of the RAP feed system were combined into one volume source because the configuration was more compact than that of the virgin aggregate feed system. A diagram for the APM mixing plant is provided in Appendix J.

SCREEN3 is, in of itself, a very conservative dispersion model as it uses very conservative weather parameters in its calculations. The screening analyses in this permit application have an added layer of conservatism in that it was assumed the highest predicted AAC for each emission source would "land" at the same receptor (spot) on the property line. The dispersion in ambient air of an emission is a function of wind direction and various weather parameters and, given the physical location of the various emission sources on the site, it would be impossible for each source's highest AAC to "land" at the same location.

4 PREMISES-WIDE EMISSIONS SUMMARY

A compilation of the criteria air pollutant emissions in provided in the following table for each emission source. These annual emissions are based on the following parameters:

Asphalt Plant: 800,000 tons per rolling 12-month period.
Crusher Plant: 1,800 hours per rolling 12-month period.

The emission factors for gaseous air pollutants from AP42 for the Asphalt Plant are all based on production, "per ton of APM". The emission factors used for the CSP, which are EPAs limits for Tier 4i engines, are based on engine size for one operating hour. To qualify as a synthetic minor source, as previously described, these will have to be the annual limits on production.

PRESMISES-WIDE SUMMARY OF CRITERIA AIR POLLUTANTS

PT	APM	APM Fugitives	HOH	CSP	Crusher Engine	Screener Engine	Stacker Engine	TOTAL
PM-10	4.4	5.0	0.102	0.104	0.016	0.006	0.003	**9.61**
PM-2.5	3.1	0.5	0.078	0.016	0.016	0.006	0.003	**3.68**
Condensable	7.8	--	0.123	--	--	--	--	**7.88**
SOx	4.4	--	0.204	--	0.039	0.0020	0.0010	**4.65**
NOx	22.0	--	1.891	--	0.313	0.119	0.059	**24.4**
CO	52.0	--	0.473	--	2.708	1.032	0.727	**56.9**
VOC	12.8	--	0.032	--	0.146	0.056	0.028	**13.1**
LEAD	6.0 E-3	--	1.2 E-4	--	--	--	--	**6.1 E-3**
CO2	1.3 E+4	--	2.1 E+3	--	4.3 E+3	1.7 E+3	8.2 E+2	**2.2 E+4**
N2O	--	--	2.5 E-2	--	--	--	--	**2.5 E-2**
CH4	4.8 E+0	--	2.0 E-2	--	--	--	--	**4.8 E+0**
HAPs	2.13		0.025		0.152			**2.30**
Highest HAP	1.24		0.023		0.462			**1.31**

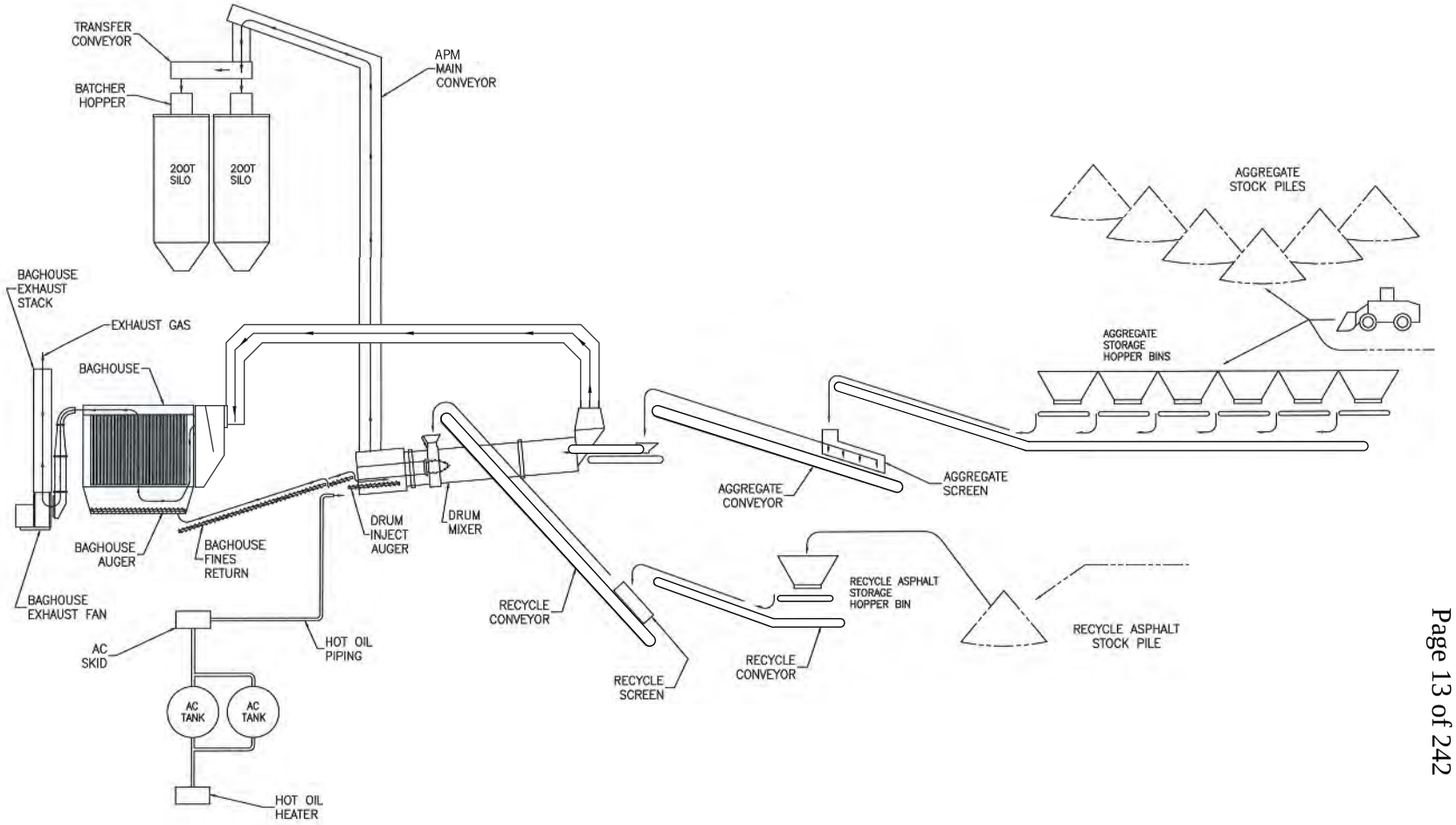
THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

APPENDIX A

A. Process Flow Diagram and Original Equipment Manufacturer's Literature and Guarantees

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

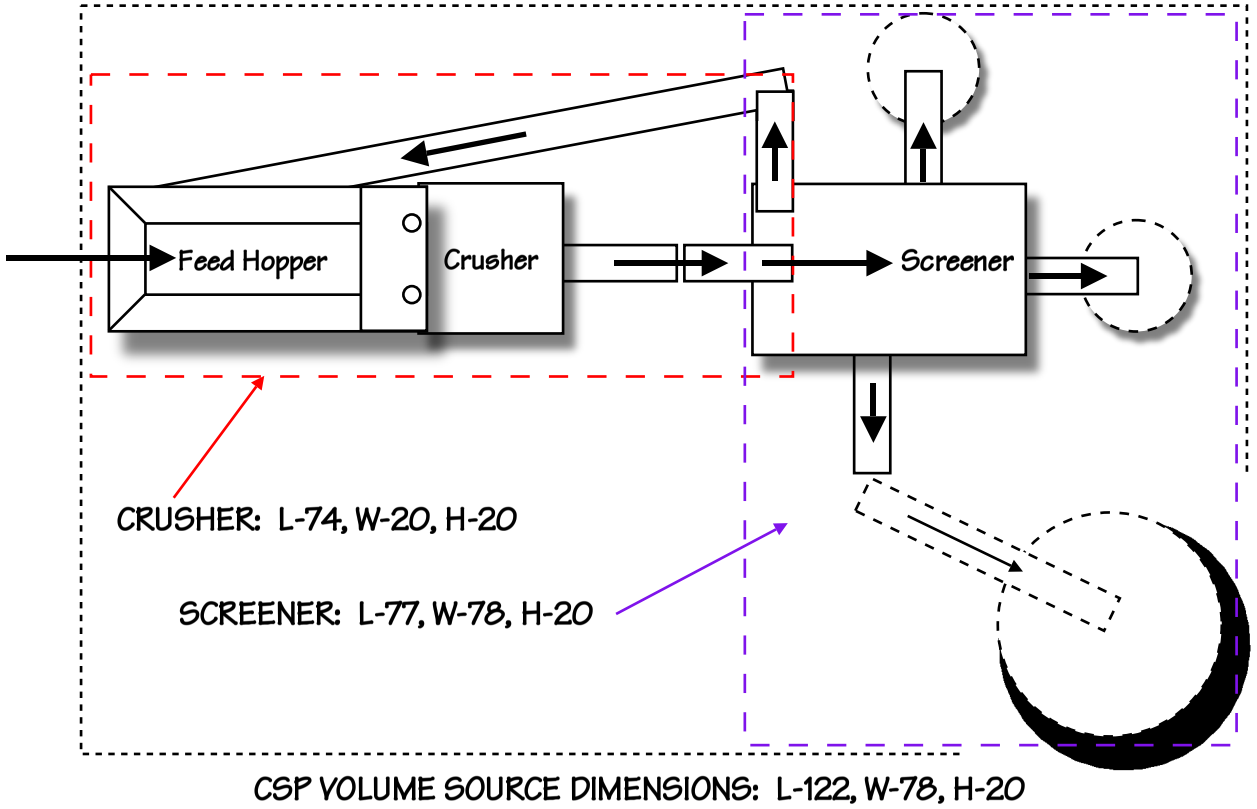
STANCILLS INC.



PROCESS FLOW DIAGRAM ASPHALT PAVING MATERIALS MIXING PLANT

499 Mountain Hill Rd. – Perryville, MD 21903

STANCILLS INC.



CSP VOLUME SOURCE DIMENSIONS: L-122, W-78, H-20

ALL DIMENSIONS ARE IN FEET.
NOT TO SCALE

BLOCK DIAGRAM & CSP VOLUME SOURCE DIMENSIONS

499 Mountain Hill Rd. – Perryville, MD 21903

Creation Date: 11/25/20
CWMF Proposal Number: 0003877
P. Flanigan & Sons, Inc.

SALES PROPOSAL
PREPARED EXCLUSIVELY FOR

BRIAN RUSSELL
P. FLANIGAN & SONS
2444 LOCH RAVEN ROAD
BALTIMORE, MD 21218

PROPOSAL NUMBER: 0003877
CWMF 400 TPH COUNTER-FLOW
DRUM-MIX PLANT EQUIPMENT

Presented By:

Travis Mick
VP/Sales Manager

November 30th, 2020

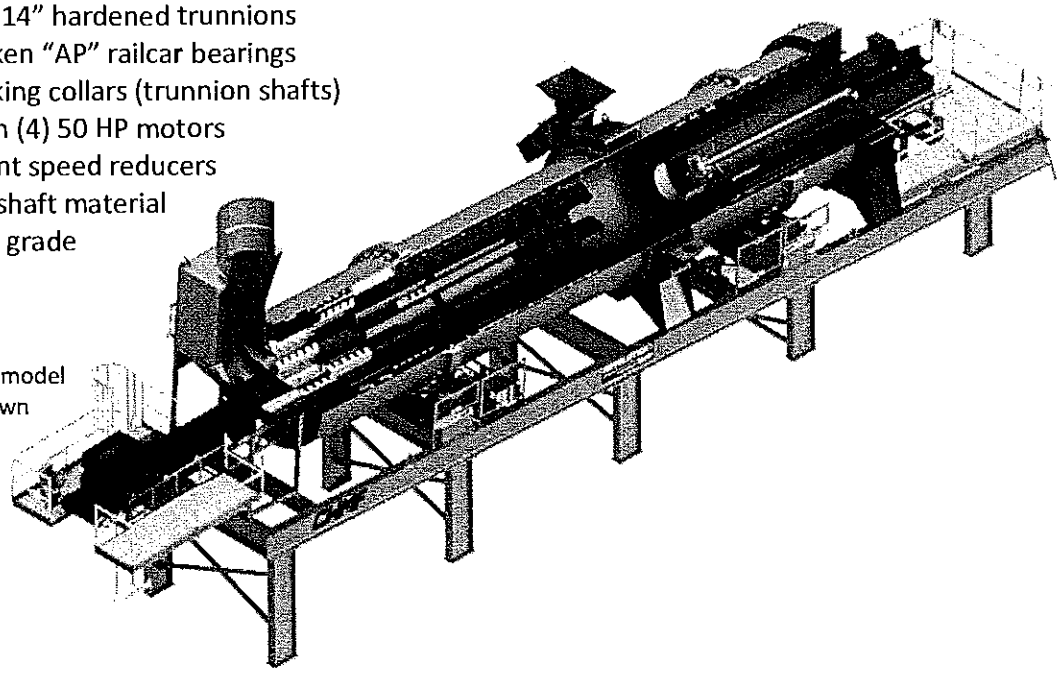
ASPHALT PLANT EQUIPMENT
701 Julep Road, Waite Park, MN 56387
320.251.1306 | cwmfcorp.com

1. Revolution-D 9'-6" x 50' Counter-Flow Drum:

The Revolution-D asphalt drum RDS-114-50 is rated at 400 TPH with the following parameters: Ambient material input temperature of 60° Fahrenheit, exit temperature of 300° Fahrenheit, assuming 5% virgin moisture, and 5% recycle moisture. The RDS-114-50 drum accommodates up to 45% RAP amounts with proper set-up and flighting configuration. A VFD is recommended when running high RAP percentages or multiple mix designs.

Drum performance is based on a standard surface mix, uniformly graded. Sizing calculations based on 1,000' altitude above sea level.

- 1/2" INX 50 drum shell
- 3/8" INX 50 support wraps under the tire
- 3/8" AR 225 flighting
- The Insulator™ combustion flights
- Hardox recycle collar w/clean-outs
- Recycle housing with Hardox calibration/reject chute (top)
- Hardox recycle housing clean-out/inspection doors (bottom)
- Dust return inlet on Recycle housing (fines & heavies)
- Uphill side T-Bar recycle collar flashing surface
- 4" thick x 12" wide drum tires
- Wedgelok™ tire suspension system
- Hardox chute fed inlet and calibration gate
- Inlet access and inspection doors
- Hardox Side Discharge housing
- Discharge housing w/access and clean-out doors
- Center pivot trunnion bases (single point adjustment)
- 20" diameter x 14" hardened trunnions
- 5 ½" x 10" Timken "AP" railcar bearings
- B-Loc shaft locking collars (trunnion shafts)
- Trunnion driven (4) 50 HP motors
- Falk Shaft mount speed reducers
- 4140 trunnion shaft material
- Support legs to grade



Slinger model shown

Vulcan RV120 Long Nose Burner

- To be supplied by Reliable Asphalt Products
- To be installed at CWMF facility

Ductwork:

- Drum to Primary section
- Primary to Baghouse section
- Slip flange connections at splices
- 66" Diameter
- Based on 30' C-C between drum and baghouse

Primary Collector:

- Square knockout design
- AR lined side air inlet area
- Deflector/impact plate at inlet
- Inspection door opposite air inlet
- Bottom discharge Trickle valve
- Heavy fines gravity feed to recycle collar
- Straddle drum design
- Top exhaust
- Support legs to drum frame

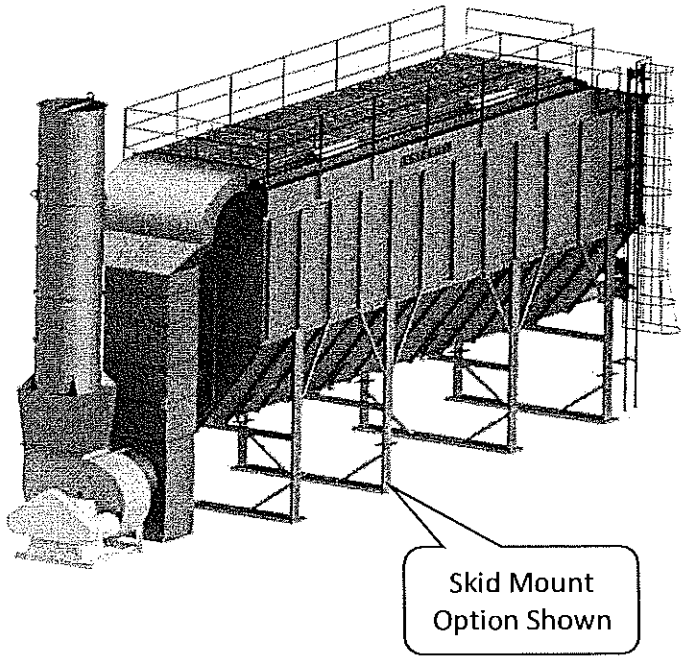
Options:

- **Drum Insulation package:**
  - Bare aluminum sheathing
  - 2" ceramic fiber
- **Drum Liner package:**
  - 3/8" bolt-in/weld-in liner
  - Inlet to recycle lined
- **Drum shell upgrade:**
  - 5/8" INX 50 drum shell
- **Drum wear package:**
  - Recycle collar wear bars
  - CCO laminated recycle buckets
  - Discharge paddle wear bars
- **3-sided walkway**
  - Maintenance access

- **Inlet chute liner:**
  - 1" weld-in ceramic tiles
- **Discharge chute liner:**
  - 1" weld-in ceramic tiles
- **Skid mount:**
  - Relocatable design
- **Slinger conveyor option:**
  - High speed belt fed material
  - Reversible belt calibration
- **Drum VFD Drive & Panel:**
  - Preprogrammed Variable Frequency Drive (VFD) for variable drum speed.
  - Control input/output to terminals for ease of field installation
  - Properly sized to accommodate (4) 50HP @ 6-8 RPM
  - Thermostatically cooled and pressurized
  - U.L. Listed

2. Dust-Eater 80,000 CFM Pulse-Jet Baghouse:

- 14 Oz. Nomex filtration bags
- (672) bags 6" Dia. X 169" lg.
- 8 ½" Bag spacing
- 14,771 sq. ft. of cloth
- 5.38 : 1 air to cloth ratio
- 542 Hi-Temp fan pkg.
- Fan rated @ 15" Static pressure
- (2) 125 HP TEFC fan motors
- Goyen manifold pulse valve
- Viton diaphragm seals
- Legs to grade
- Caged access ladder
- Top perimeter handrail
- Laser cut tube sheets
  - optimal bag fitment
- 66" diameter air inlet
- 7' x 10' x 12' inlet knockout box
  - Heavies dropout
- Inlet air diverter/equalizer
- Sidewall louvers
- Smooth internal wall surface
- 40' Stack height from grade
  - Test port equipped
- Hinged internal walkway
  - Ease of maintenance
- 14" fines discharge auger
  - 15HP motor
- Fine dropout @ each hanger
  - Multiple auger hook-up points
  - Access door at each hanger
- Assemble from exterior design
  - Top plenum, Bag chamber & Hopper sections
- Machine wiring (Compatible with most plant control systems)



Standard Baghouse Control features:

- **Main Pulse Control Panel**
  - NEMA 4 rated enclosure
  - 120VAC main disconnect w/safety lockout provisions
  - PLC pulse control panel, adjustable pulse duration and pulse time
  - 4-20ma output available for pressure drop across bags
  - Additional door mounted mini-Magnahelic for convenience
  - (2) type J thermocouples for inlet and outlet temperature signals
  - Zero speed sensor for dust return. No motion detected; alarm will sound

- **Pulse Solenoid Junction Boxes:**
  - NEMA 4 rated for harsh environment
  - Solenoid coils prewired to terminal strips
  - Pulse solenoid panels prewired for on-site connection to pulse panel

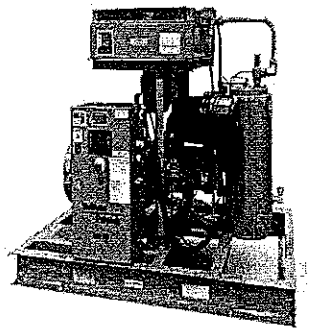
- **Support Documents:**
  - Complete electrical schematics
  - Recommended spare parts list upon request
  - Major component manufacturer manuals & spec sheets

Options:

- **Motor Control Panel:**
  - Mounted at baghouse
  - NEMA 4 rated for harsh environment
  - Safety / service disconnect, allows lock out
  - Motor circuits include breakers, starters, and overload motor protection
  - Electronic pulse plc, adjustable for pulse duration and time between pulses
  - Air Compressor breaker and low-pressure indication at control panel
  - Output for fire door solenoid
  - Differential pressure hose inlets
  - All wiring brought to terminal strips
  - Thermostatically cooled and pressurized to prevent contaminates
  - Exhaust Fan VFD Drive
    - High output VFD to vary speed of exhaust fan
    - Oversized amperage output
    - Engineered for dual motor applications

- **Insulation package:**
  - 2" insulation
  - Hopper & Center section

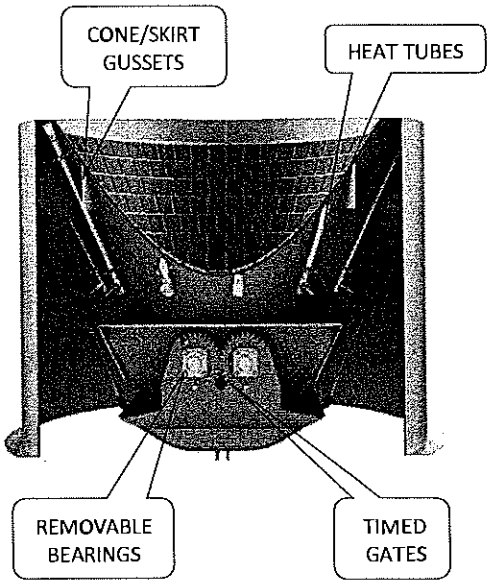
- **Interior paint package:**
  - Blasted, primed, and Hi-temp paint
- **Test Port Catwalk:**
  - Emissions test platform
- **Skid mount:**
  - Future relocation
  - Leg extensions to skids
- **14" x 30' Auger fines system:**
  - 15HP drive
  - Includes Stand
- **14" HDX Vane Feeder**
- **Compressor Package:**
  - 75HP, Sullivan-Pallatek
  - 340 CFM @ 125 PSI
  - 460V
  - Direct drive
  - Heavy duty filter
  - Auto/dual control
  - Inlet modulation control
  - Deluxe gauge panel
  - TEFC motor
  - 1-1/2" water trap

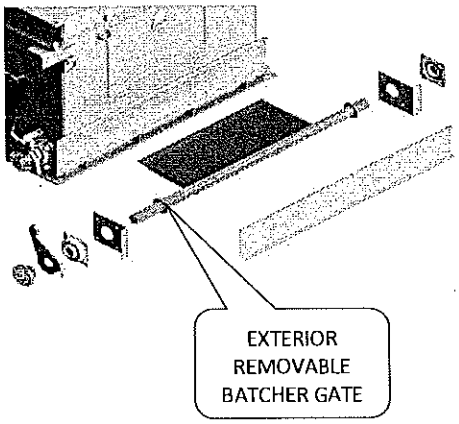


- **Compressor Skid/Tank package:**
  - Skid mount for compressor & storage tank

3. 2 - 200 Ton Hotmix Storage Silo

- Capacity rated @ 120lbs/cubic ft.
- 12' Diameter Can
- 1/4" A36 can material
- 3/8" A36 cone material
- 3/8" A36 cone skirt material
- Gusseted Cone to Skirt reinforcement
- True 6" Can insulation
  - Installed in (2) 3" layers
- Galvannealed exterior cladding
  - Baked-on color finish
- Timed main discharge clam gates
  - Consistent loadouts
  - Minimize segregation
- 3" Insulated base area
- 3" Insulated Safety & Main gates
- Pneumatic FRL (Filter, Regulator, Lubricator)
- Pneumatic solenoid valve assemblies
- Square top platform with 10" of insulation
- Top platform handrailing
- Hi-level indicator located on top platform
- 4" – 150# pipe flange in top platform
  - Acceptance of Radar level gauge
  - (supplied by customer)
- Bolt-on 4-ton rectangular batcher
  - Maintenance doors
  - Heavy duty splitter
  - High level indicator
  - Open/Close proof gate switches
  - *Patent Pending* exterior gate removal
    - Ease of maintenance.



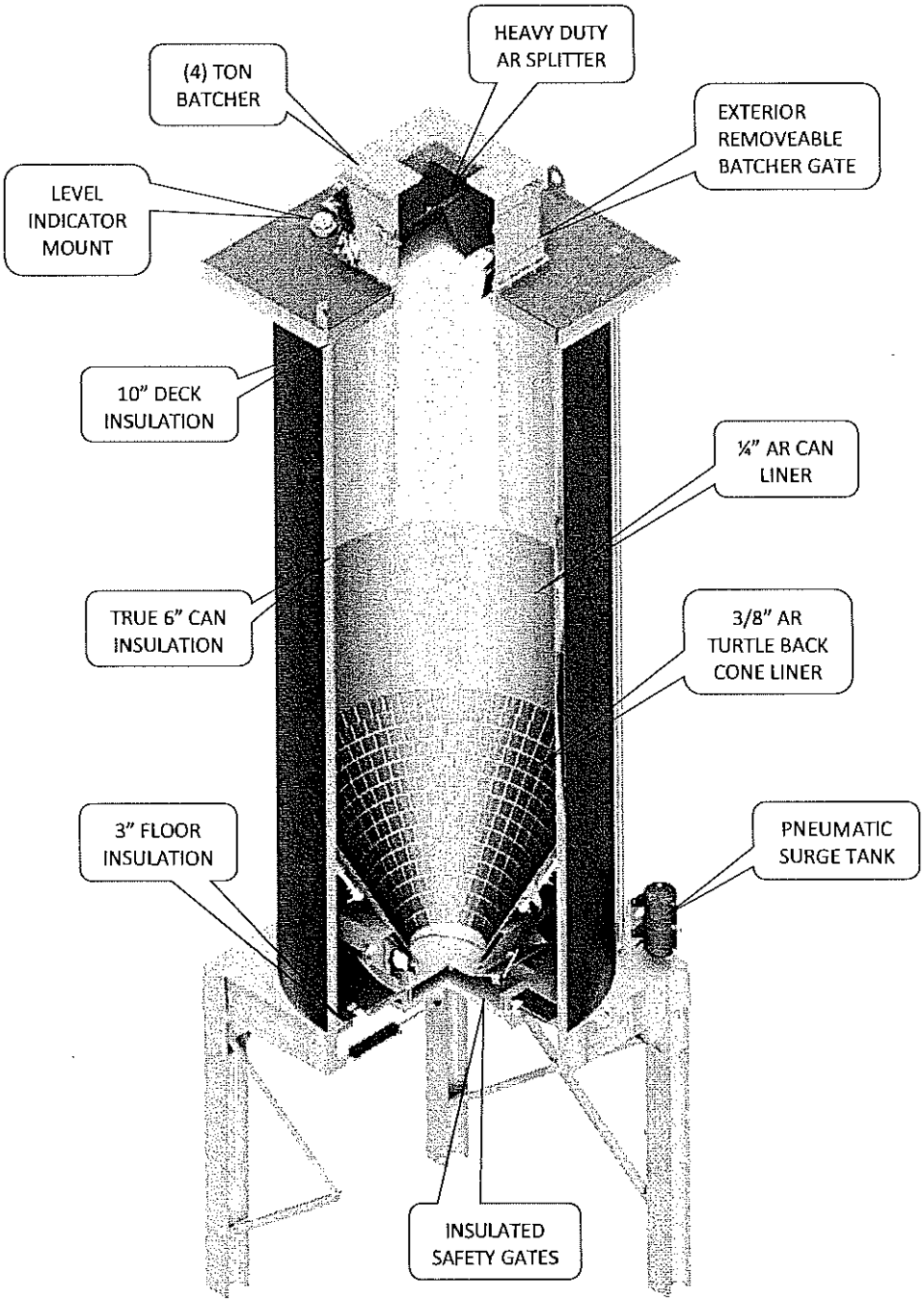


- Electric cone heat system
  - Wired in place and terminated at silo base junction box
- Batcher and Transfer wiring terminated in a junction box on top platform
  - When applicable & sold in conjunction with silo storage pkg.
- Electrical wiring for motors, bindicators, cone heat, etc.
  - Conduit run and terminated at silo base junction boxes
  - When applicable & sold in conjunction with silo storage pkg.
- Main & Safety gate wiring and pneumatics terminated at base junction box

CWMF

Hotmix Storage Silo

Features & Options

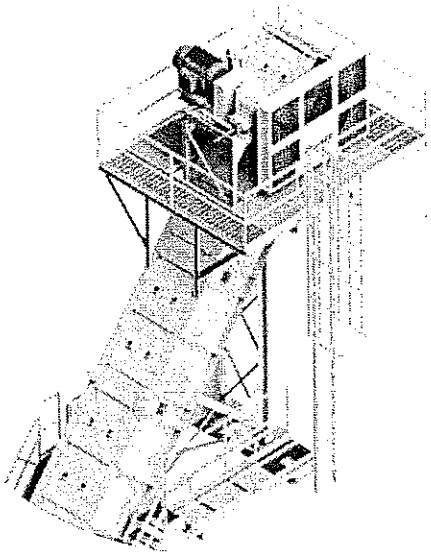


Options:

- **Silo Cone Liner:**
  - 3/8" AR400 Turtle-Back design
- **Silo Can Liner:**
  - 1/4" AR400, 8' Vertically lined
- **Batcher Liner Pkg.:**
  - AR400 liners
- **Hot-Oil cone heat deduction:**
  - Tap off customer heat source

4. 400 TPH Drag Slat Conveyor:

- 88'-0"C-C
- 92'-8" O.A.L.
- 48" deep x 36" wide body
- Body is fabricated from 3/8" Grd. 50 steel
- U-trough body design with built-in camber
- 12 Ga. Steel top covers
- Rexnord 9856 chain w/M2 attachment (single strand)
- A36 slats 3/4" x 8" x 33 ½"
- Electric heat, up to reject gate
- "L" shaped floor liners, Ni-Hard, Hi-Chrome
- Insulated floor
- Safety Stairway
- Rexnord Neptune planetary drive reducer
    - 100 HP drive motor
    - RX238 drive chain
    - Solid bore drive and driven sprockets
    - 6-7/16" bore, split-hub, segmented tooth head shaft sprocket
    - 4-15/16" Head shaft bearings
    - 4-15/16" bore, split hub tail shaft sprocket
    - 3-15/16" Tail shaft bearings
    - 2-11/16" idler shafts with barrel style idlers
- Hydraulic assist, hand pump, chain tensioner on head shaft
- Service catwalk around drive
- Zero speed switch
- Tension indicator idler
- Floor heat electrical wiring conduit run to junction box at base of slat
- Motor electrical wiring conduit run and terminated at slat base junction box
- Zero speed switch, Control wiring conduit run to junction box at slat base

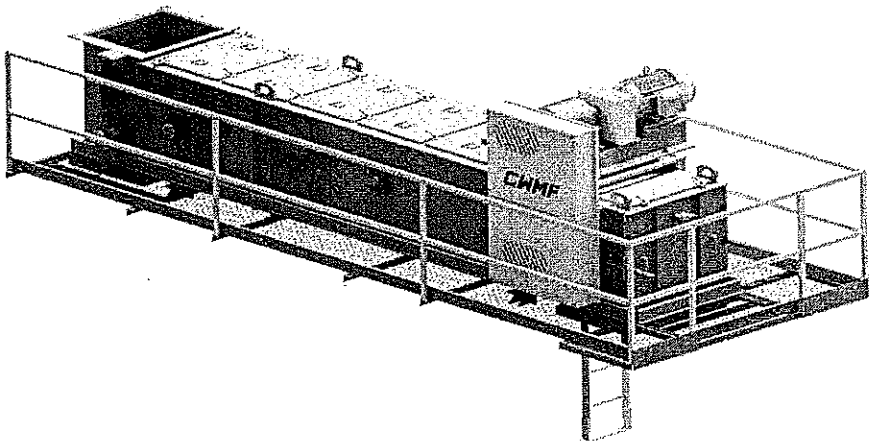


Options:

- **Safety Stairway:**
  - Second side stairway

5. 400 TPH Transfer Conveyor 14' -2 Way Diverter

- 3/8" Grd. 50 fabricated steel body
- 31" deep x 33" wide body
- 12 Ga. Steel top covers
- 3/8" on "3/8" CCO 2-way directional flop-gate
- Dual strand 3433 CHAIN - K44 attachment
- 3/4" x 5" x 29 ¾" A36 slat
- 9 tooth segmented head shaft sprocket
- 9 tooth split hub tail shaft sprocket
- "L" shaped floor liners, Hi-Chrome Ni-Hard,
- 3" Insulation floor panels
- Electric floor heat
- Rexnord Earth planetary drive reducer
- 40HP drive motors
- #160 roller drive chain
- Manual tensioner on head shaft
- Zero speed switches
- 6" x 8" air cylinders
- FRL (Filter, Regulator, Lubricator) pneumatic system
- Electrically actuated pneumatic valving
- Electrical Floor, Motor, and zero speed switch wiring terminated at junction box
- Supports/mounts supplied
- Blue smoke duct/vent (removable)



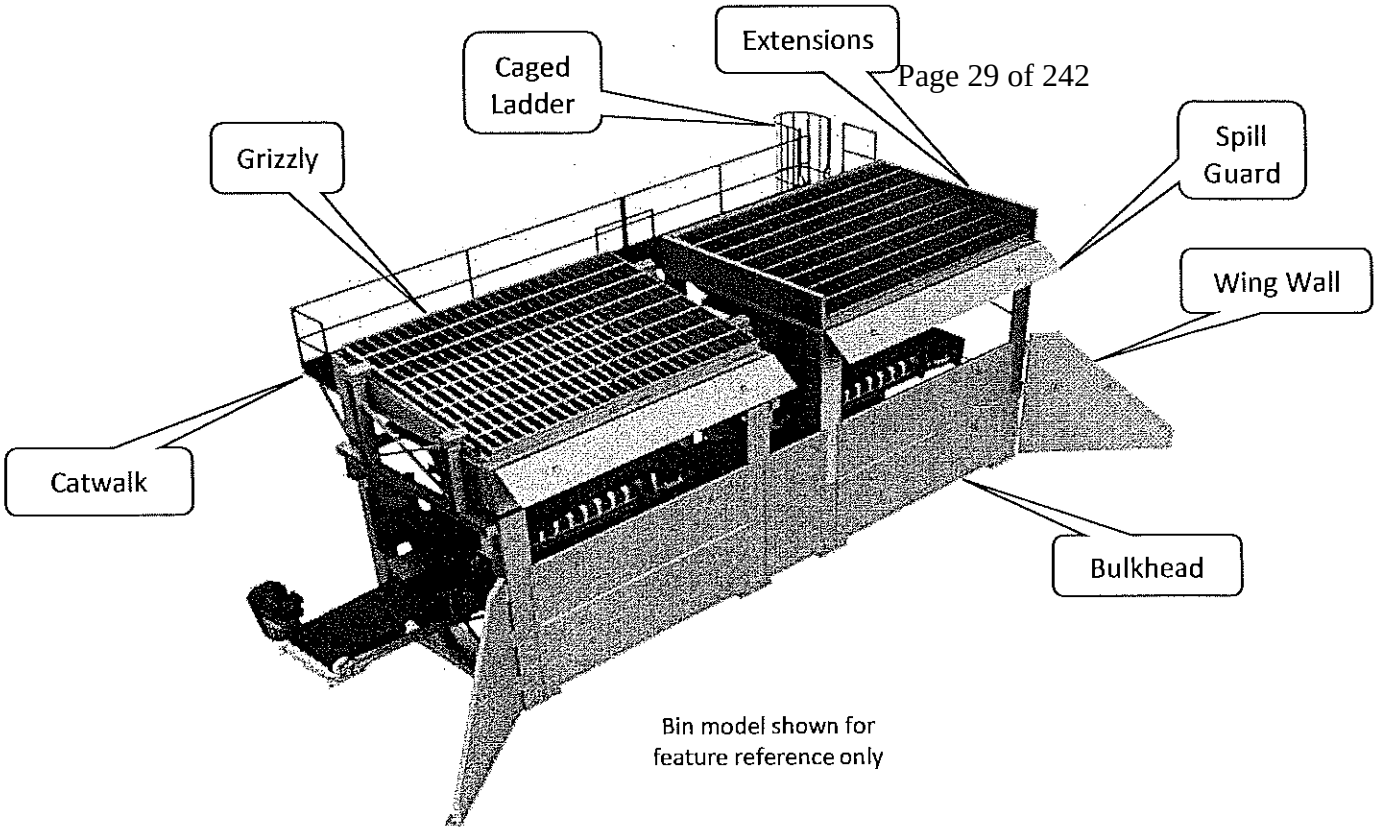
Options:

- **Rexnord 9856 chain upgrade:**
  - (1) M2 attachment / ft.
  - 3/4" x 8" x 29 ¾" A36 Slat
  - Single strand
  - 40" deep x 33" wide conveyor body
  - 10 tooth segmented head shaft sprocket
  - 10 tooth split hub tail shaft sprocket

- **Catwalk Platform:**
  - Safety ladder & Handrail
  - Wrap-around platform

6. **6-BIN Cold Feed System:**
    - 22-ton capacity based on 100 lbs/ft3
    - 10' x 14' top opening
        - 4" sq. tube reinforced perimeter
    - 60° bin walls
        - 1/4" A-36 bin walls
        - Structural channel reinforced
    - 3/8" formed support legs x 10' tall
    - 4" relief of bin throat
    - Adjustable flow gate
    - 12" Herringbone lagged head pulleys
    - 10" Chevron wing tail pulleys
    - Telescoping tube take-ups
    - Rubber disc return rollers
    - 2-7/16 drive shafts
    - 2-3/16 tail shafts
    - CEMA B idlers
    - 5HP TEFC motors
    - Shaft mount reducers
    - 2 PLY x 30" belting

7. **Collector Belt - 15' discharge height:**
    - 12" Herringbone lagged head pulley
    - 12" Chevron wing tail pulley
    - Telescoping tube take-up
    - Rubber disc return rollers
    - 2-15/16 drive shaft
    - 2-7/16 tail shaft
    - CEMA B idlers
    - 15HP TEFC motor
    - Shaft mount reducers 2 PLY x 36" belting
        - Field spliced by customer
    - Pre-Cleaner & Primary belt cleaner

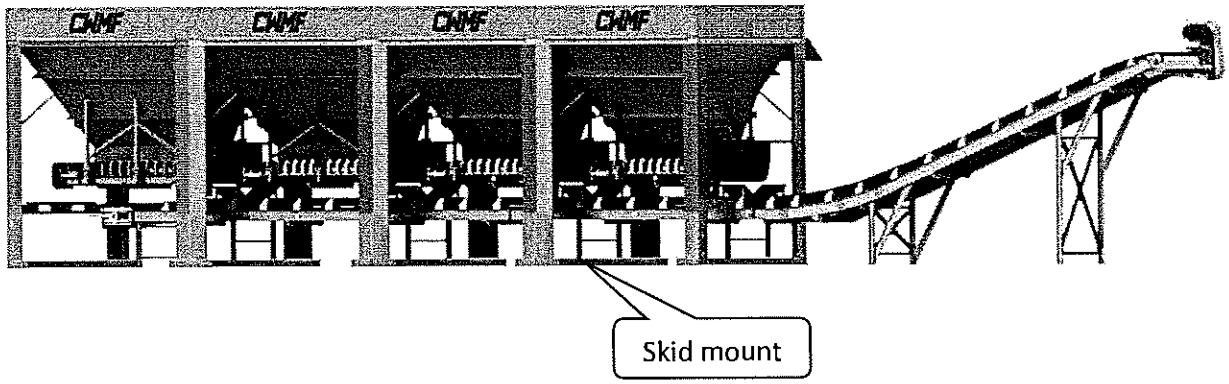


Bin model shown for feature reference only

Options:

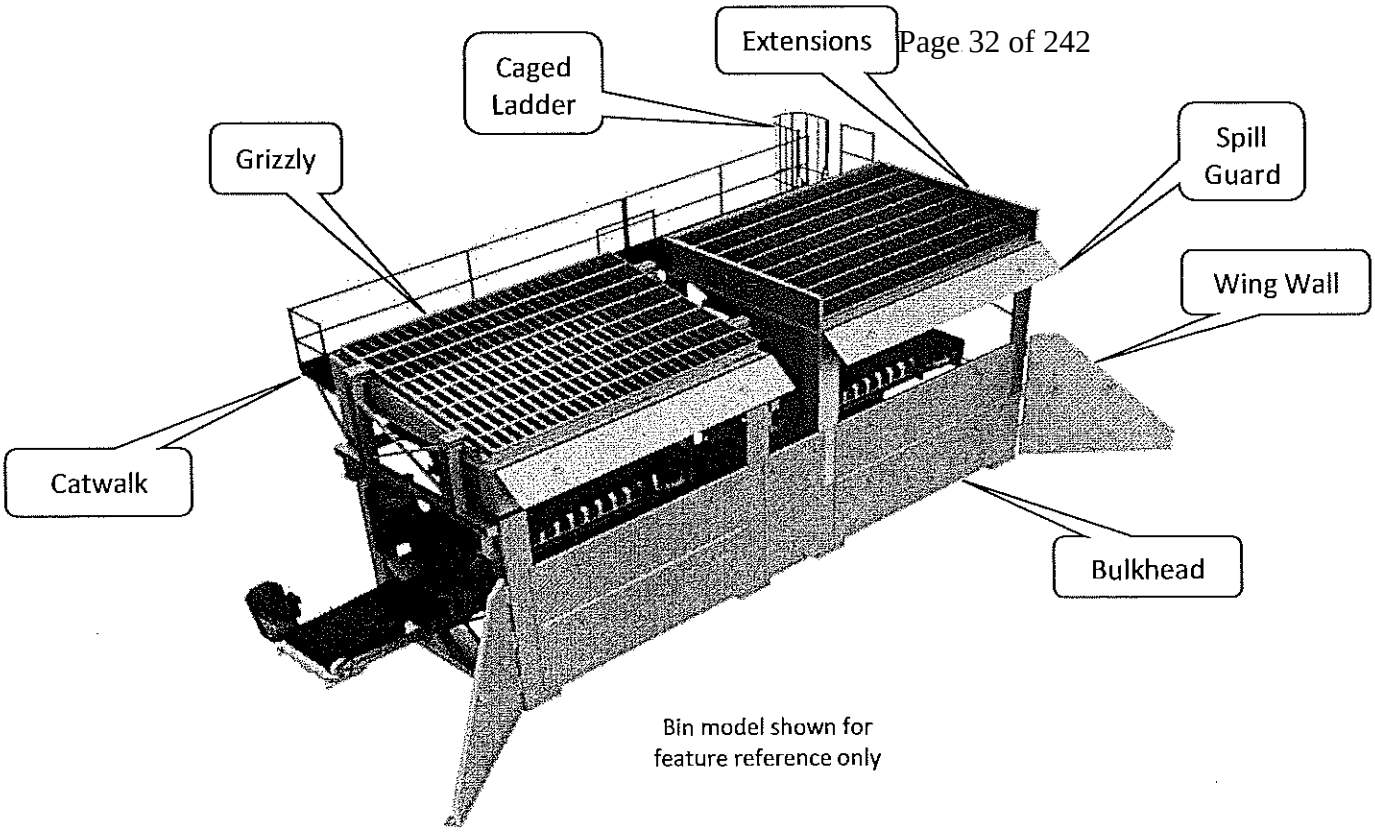
- **Troughed Feeders:**
  - Side flashing not required
- **Vulcanized feeder belts:**
- **Bulkheads** (Bang boards):
  - Bolt-on to bin legs (LH & RH orientation)
  - Approx. 9' from grade
- **Bulkhead Wing Walls:**
  - Bolt-on
- **2' Bin Extensions:**
  - Bolt-on
  - Load side spill shield included
- **Skid Mounted Leg Extensions:**
  - Relocatable
  - 4' tall
- **Inspection Catwalks:**

- **Caged Ladder** (per ladder): _____
- **Bin Liners:** _____
  - ½" UHMW material
  - Cut to fit the entire wall
  - Top bolted to hang in position
- **No-Flow Switch Assemblies** _____ _____
  - Mounted at bin throat
  - Includes limit switch
- **Tail Shaft Tachometers** _____ _____
- **Grizzly** (per bin price): _____
  - 6" x 12" rectangular openings
  - 6" channel perimeter frame
  - Mounted within 2' bin extensions
  - Can be set to load from either side
- **Electrical Bin Vibrator** (per bin price): _____ _____
  - 1-1/2HP Vibco electric bin vibrators
  - Rear wall flange mounted
- **Pneumatic Air Cannon** (per bin price): _____ _____
  - Rear bin wall location



8. **1-BIN RAP System:**
    - 22-ton capacity based on 100 lbs/ft3
    - 10' x 14' top opening
    - 4" sq. tube reinforced perimeter
    - 60° bin walls
    - 1/4" A-36 bin walls
    - Structural channel reinforced
    - 3/8" formed support legs x 10' tall
    - 4" relief of bin throat
    - Adjustable flow gate
    - 14" Herringbone lagged head pulleys
    - 12" Chevron wing tail pulleys
    - Telescoping tube take-ups
    - Rubber disc return rollers
    - 2-15/16 drive shafts
    - 2-7/16 tail shafts
    - CEMA B idlers
    - 7.5HP TEFC motors
    - Shaft mount reducer
    - 3 PLY x 36" belting

9. **Collectot Belt - 15' discharge height:**
    - 12" Herringbone lagged head pulley
    - 12" Chevron wing tail pulley
    - Telescoping tube take-up
    - Rubber disc return rollers
    - 2-15/16 drive shaft
    - 2-7/16 tail shaft
    - CEMA B idlers
    - 15HP TEFC motor
    - Shaft mount reducers 2 PLY x 36" belting
        - Field spliced by customer
    - Pre-Cleaner & Primary belt cleaner



Bin model shown for feature reference only

Options:

- **Troughed Feeders:**
  - Side flashing not required
- **Vulcanized feeder belts:**
- **Bulkheads** (Bang boards):
  - Bolt-on to bin legs (LH & RH orientation)
  - Approx. 9' from grade
- **Bulkhead Wing Walls:**
  - Bolt-on
- **2' Bin Extensions:**
  - Bolt-on
  - Load side spill shield included
- **Skid Mounted Leg Extensions:**
  - Relocatable
  - 4' tall

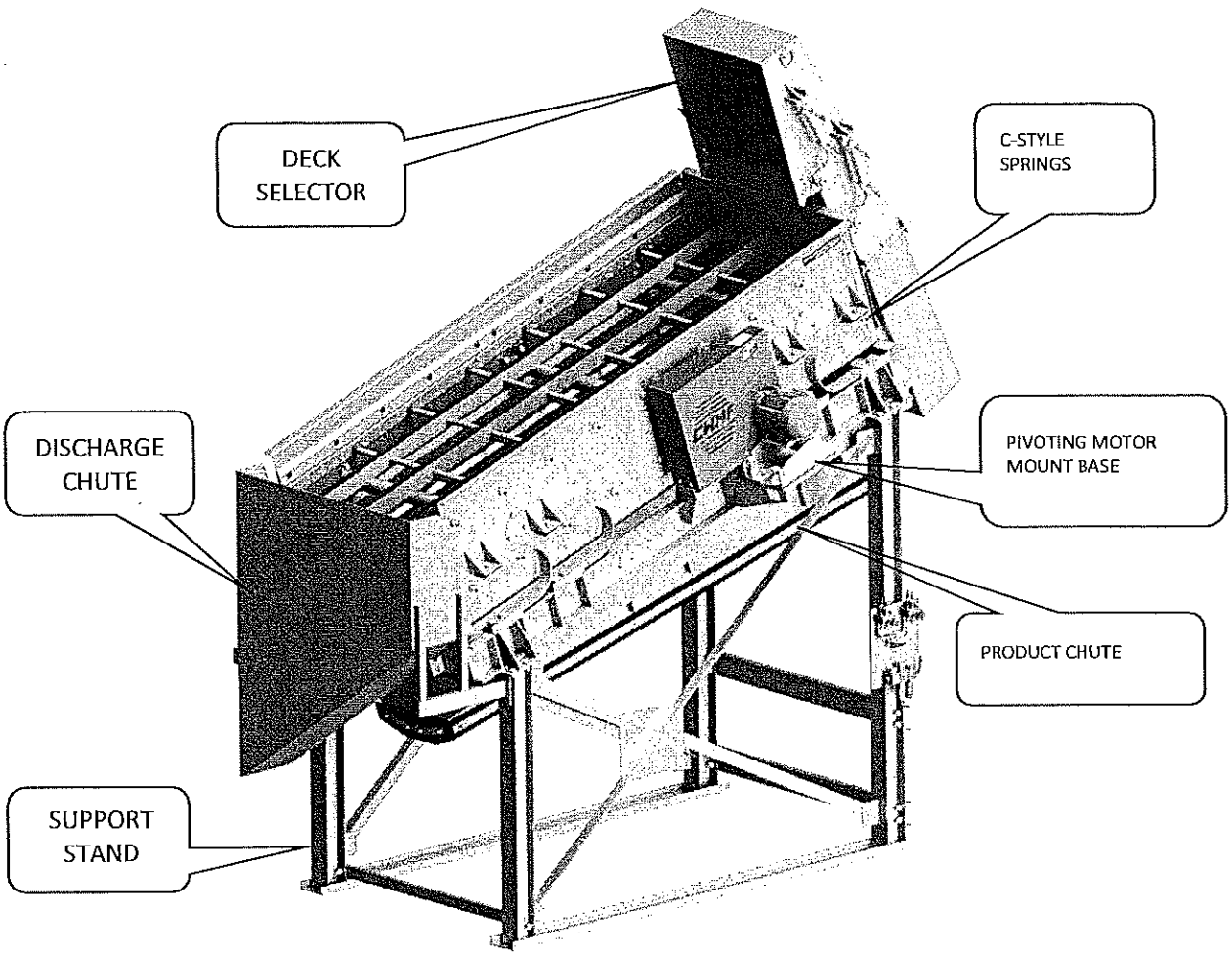
- **Inspection Catwalks:** _____
- **Caged Ladder** (per ladder): _____
- **Bin Liners:** _____
  - ½" UHMW material
  - Cut to fit the entire wall
  - Top bolted to hang in position
- **No-Flow Switch Assemblies** _____
  - Mounted at bin throat
  - Includes limit switch
- **Tail Shaft Tachometers** _____
- **Grizzly** (per bin price): _____
  - 6" x 12" rectangular openings
  - 6" channel perimeter frame
  - Mounted within 2' bin extensions
  - Can be set to load from either side
- **Electrical Bin Vibrator** (per bin price): _____
  - 1-1/2HP Vibco electric bin vibrators
  - Rear wall flange mounted
- **Pneumatic Air Cannon** (per bin price): _____
  - Rear bin wall location

10. 30" x 70' Virgin Scale Conveyor

- 3 x 3 x ¼ top chord angle
- 3 x 5 x ¼ bottom chord angle
- 2 x 2 x ¼ truss angles
- 15HP TEFC drive motor
- Falk shaft mount reducer
- Gravity take-up
- Wide slot take-up 18" travel
- Superior Xterra belt scraper
- 2-ply belting (mechanical splice)
- Wind guards around weigh scale
- Belt scale with scale integrator
- Support legs for conveyor

11. Tremor™ 5' X 12' Double Deck Screen Package:

- 1/4" A36 materials
- Huck riveted construction
- 1" deck crown
- Approximately 3/8" operating stroke
- Converging sidewalls to direct material towards conveyor belt
- 1/4" reinforcing bearing plates on interior and exterior
- Drive shaft protector/spreader bar
- 4-bolt flange 2-15/16"
- 10HP motor
- Pivot base motor mount
- Eccentric flywheel design
- Hoop style springs
- ½" formed base
- Optimal operating angle is 15° to 18°
- Screen cloth included
    - Opening to be specified A.T.O.
- Deck selector
    - Selection to either screen or bypass to belt
- Discharge chute
    - Designed to be Side or End discharge
- Support Stand
    - Skid mounted
    - Fabricated w/heavy duty beam & X-bracing
    - Includes product chute to belt

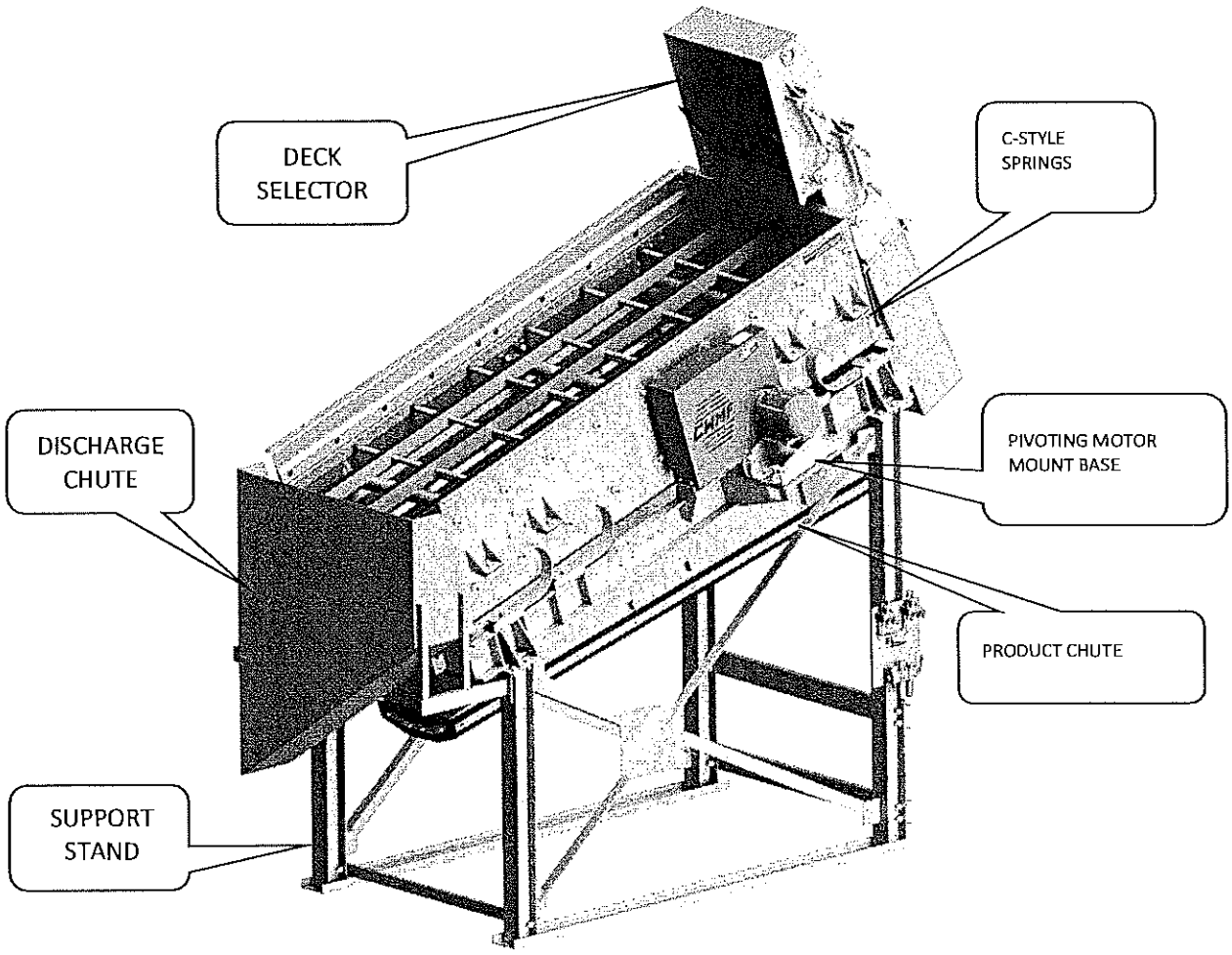

DECK SELECTOR
C-STYLE SPRINGS
DISCHARGE CHUTE
PIVOTING MOTOR MOUNT BASE
PRODUCT CHUTE
SUPPORT STAND

12. 30" x 70' Recycle Scale Conveyor

- 3 x 3 x ¼ top chord angle
- 3 x 5 x ¼ bottom chord angle
- 2 x 2 x ¼ truss angles
- 15HP TEFC drive motor
- Falk shaft mount reducer
- Gravity take-up
- Wide slot take-up 18" travel
- Superior Xterra belt scraper
- 2-ply belting (mechanical splice)
- Wind guards around weigh scale
- Belt scale with scale integrator
- Support legs for conveyor

13. 4' X 10' Double Deck Screen Package:

- 1/4" A36 materials
- Huck riveted construction
- 1" deck crown
- Approximately 3/8" operating stroke
- Converging sidewalls to direct material towards conveyor belt
- 1/4" reinforcing bearing plates on interior and exterior
- Drive shaft protector/spreader bar
- 4-bolt flange 2-15/16"
- 10HP motor
- Pivot base motor mount
- Eccentric flywheel design
- Hoop style springs
- ½" formed base
- Optimal operating angle is 15° to 18°
- Screen cloth included
    - Opening to be specified A.T.O.
- Deck selector
    - Selection to either screen or bypass to belt
- Discharge chute
    - Designed to be Side or End discharge
- Support Stand
    - Skid mounted
    - Fabricated w/heavy duty beam & X-bracing
    - Includes product chute to belt


DECK SELECTOR
C-STYLE SPRINGS
DISCHARGE CHUTE
PIVOTING MOTOR MOUNT BASE
PRODUCT CHUTE
SUPPORT STAND

****

PAGES 39-56 HAVE BEEN REMOVED TO REDUCE THE FILE SIZE FOR SENDING VIA EMAIL. THESE PAGES ARE THE VENDOR LITERATURE WHICH WAS INCLUDED IN THE HARD COPY SENT TO THE MDE ARA OFFICE.

****

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

APPENDIX B

B. ARA Form 5

for
the Asphalt Paving Materials Mixing Plant
and
the Crushing & Screening Plant

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us
Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ☑ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name

STANCILLS INC.

Mailing Address: 2444 LOCH RAVEN ROAD

Street Address

BALTIMORE | MD | 21218

City | State | Zip

Telephone Number: (410) 554-1077

Signature: Brian Russell

BRIAN RUSSELL | V.P. PLANT OPERATIONS | 7-15-2021

Print Name and Title | Date

DO NOT WRITE IN THIS BLOCK

2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)

Registration Class (7) | Equipment No. (8-11)

Data Year (12-13) | Application Date

1B. Equipment Location and Telephone Number (if different from above)

499 MOUNTAIN HILL ROAD

Street Number and Street Name

PERRYVILLE | MD | 21903 | (443) 871-6783

City/Town | State | Zip | Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
A	0222	0323	
15	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)

NEW CWMF Natural Gas-fired, counter-flow drum mix Asphalt Paving Materials Mixing plant rated at 400 tons/hr and equipped with a KNOCK-OUT BOX: "DUST EATER" followed by a BAGHOUSE, Model # , using up to 40% reclaimed asphalt pavement (RAP) materials.

5. Workmen's Compensation Coverage

4097121 (Binder/Policy Number) | 11/1/2021 (Expiration Date)

Company: HARTFORD MUTUAL INSURANCE CO.

NOTE: Before a Permit to Construct may be issued by the Department, the appicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time 1

6B. Number of Stack/Emission Points Associated with this Equipment 2

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us
Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ☑ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name

STANCILLS INC.

Mailing Address

2444 LOCH RAVEN ROAD
Street Address

BALTIMORE | MD | 21218
City | State | Zip

Telephone Number

(410) 554-1077

Signature

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2)	Premises No. (3-6)

Registration Class (7)	Equipment No. (8-11)

Data Year (12-13):

Application Date:

BRIAN RUSSELL | V.P. PLANT OPERATIONS
Print Name and Title | Date

1B. Equipment Location and Telephone Number (if different from above)

499 MOUNTAIN HILL ROAD
Street Number and Street Name

PERRYVILLE | MD | 21903 | (443) 871-6783
City/Town | State | Zip | Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status (15)	New Construction Begun (MM/YY) (16-19)	New Construction Completed (MM/YY) (20-23)	Existing Initial Operation (MM/YY) (20-23)
A	0222	0323	

4. Describe this Equipment: **Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)**

NEW CWMF Natural Gas-fired, counter-flow drum mix Asphalt Paving Materials Mixing plant rated at 400 tons/hr and equipped with a KNOCK-OUT BOX: "DUST EATER" followed by a BAGHOUSE, Model # , using up to 40% reclaimed asphalt pavement (RAP) materials.

5. Workmen's Compensation Coverage

4097121 | 11/1/2021
Binder/Policy Number | Expiration Date

Company: HARTFORD MUTUAL INSURANCE CO.

NOTE: Before a Permit to Construct may be issued by the Department, the appicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time 1

6B. Number of Stack/Emission Points Associated with this Equipment 2

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name _____ Title _____

Company _____

Mailing Address/Street _____

City/Town WAITE PARK, State N Telephone (32 251-1306

8. Major Activity, Product or Service of Company at this Location

MANUFACTURE OF ASPHALT PAVING MATERIALS.

The purpose of this PTC application is to obtain a permit-to-construct to allow for the installation of an Asphalt Paving Materials Mixing Plant.

9. Control Devices Associated with this Equipment

NONE	Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
						X		
24-0	24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other X (24-9) Describe KNOCK-OUT BOX: "DUST EATER"

10. Annual Fuel Consumption for this Equipment

OIL - 1000 GALLONS	SULFUR %	GRADE	NATURAL GAS - 1000 FT^3	LP GAS - 100 GALLONS	GRADE
			3120000		
26-31	32-33	34	35-41	42-45	

COAL - TONS	SULFUR %	ASH %	WOOD - TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS _____ (Specify Type) | 66-1 | ANNUAL AMOUNT CONSUMED _____ (Specify Units)

OTHER FUELS _____ (Specify Type) | 66-2 | ANNUAL AMOUNT CONSUMED _____ (Specify Units)

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE (for this equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per year
X				16	5	210
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
	19	27	27	27	
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Information- is Exhaust through Doors, Window, etc. Only? (Y/N) **N** (85)

If not, then

Height Above Ground (FT)	Inside Diameter at Top	Exit Temperature (^{O}F)	Exit Velocity (FT/SEC)
40	57	260	76
86-88	89-91	92-95	96-98

NOTE:

Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)

Is any of this data to be considered confidential? **N** (Y or N)

	NAME	CAS NO. (IF APPLICABLE)	INPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.	AGGREGATES		218	TONS	436,000	TONS
2.	RECLAIMED ASPHALT PAVEMENT (RAP)*		160	TONS	320,000	TONS
3.	ASPHALT CEMENT (AC)		22	TONS	44,000	TONS
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL	* listed at maximum RAP content, 40%		400	TONS	800,000	TONS

14. Output Materials (for this equipment)

Process/Product Stream

	NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.	ASPHALT PAVING MATERIALS (APM)		400	TONS	800,000	TONS
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL						

15. Waste Streams - Solid and Liquid

	NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL						

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
	70	352
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compunds	PM-10
832	205	70
117-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compunds	PM-10
		6
150-154	155-159	160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

TSP	SOX	NOX	CO	VOC	PM10
	2	2	2	2	2
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local **Date Rec'd. State** **Return to Local Jurisdiction**

Date _____ By _____

Reviewed by Local Jurisdiction

Date _____ By _____

Reviewed by State

Date _____ By _____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20.

Annual Operating Rate	Maximum Design Hourly Rate	Permit to Operate Month	Transaction Date (MM/DD/YR)
188-192	193-199	200-201	202-207

Staff Code	VOC Code	SIP Code	Regulation Code	Confidentiality
208-210	211 212	213 214	215-218	219

Point Description (220-238)

Action (239) A: Add C: Change

Form Number: 5
Rev. 9/27/2002
TTY Users 1-800-735-2258

Recycled Paper

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us
Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ☑ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name

STANCILLS INC.

Mailing Address

2444 LOCH RAVEN ROAD

Street Address

BALTIMORE	MD	21218
City	State	Zip

Telephone Number (410) 554-1077

Signature Brian Russell

BRIAN RUSSELL V.P. PLANT OPERATIONS 7-15-2021

Print Name and Title Date

DO NOT WRITE IN THIS BLOCK

2. REGISTRATION NUMBER

County No. (1-2) Premises No. (3-6)

Registration Class (7) Equipment No. (8-11)

Data Year (12-13) Application Date

1B. Equipment Location and Telephone Number (if different from above)

499 MOUNTAIN HILL ROAD

Street Number and Street Name

PERRYVILLE	MD	21903	(410) 554-1077
City/Town	State	Zip	Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
A	0222	0323	
15	16-19	20-23	20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)

300 ton/hour Crusher equipped with a 525 brakehorse-power, Tier 4i, diesel-fired engine, 2 conveyors, with water spray control, operating in tandem with a 500 ton/hour 2-deck Screener equipped with a 200 brakehorsepower, Tier 4i, diesel-fired engine, 4 conveyors, with water spray control, and one stacker conveyor equipped with a 99 brakehorspeower, Tier 4i, diesel-fired engine.

5. Workmen's Compensation Coverage 4097121 (Binder/Policy Number) 11/1/2021 (Expiration Date)

Company HARTFORD MUTUAL INSURANCE CO.

NOTE: Before a Permit to Construct may be issued by the Department, the appicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time 1

6B. Number of Stack/Emission Points Associated with this Equipment 3

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪www.mde.state.md.us
Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ☑ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name

STANCILLS INC.

Mailing Address

2444 LOCH RAVEN ROAD
Street Address

BALTIMORE | MD | 21218
City | State | Zip

Telephone Number

(410) 554-1077

Signature

BRIAN RUSSELL | V.P. PLANT OPERATIONS
Print Name and Title | Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

1B. Equipment Location and Telephone Number (if different from above)

499 MOUNTAIN HILL ROAD
Street Number and Street Name

PERRYVILLE | MD | 21903 | (410) 554-1077
City/Town | State | Zip | Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
A	0222	0323	
15	16-19	20-23	20-23

4. Describe this Equipment: **Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)**

300 ton/hour Crusher equipped with a 525 brakehorse-power, Tier 4i, diesel-fired engine, 2 conveyors, with water spray control, operating in tandem with a 500 ton/hour 2-deck Screener equipped with a 200 brakehorsepower, Tier 4i, diesel-fired engine, 4 conveyors, with water spray control, and one stacker conveyor equipped with a 99 brakehorspeower, Tier 4i, diesel-fired engine.

5. Workmen's Compensation Coverage 4097121 (Binder/Policy Number) | 11/1/2021 (Expiration Date)

Company HARTFORD MUTUAL INSURANCE CO.

NOTE: Before a Permit to Construct may be issued by the Department, the appicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time 1

6B. Number of Stack/Emission Points Associated with this Equipment 3

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name _____ Title _____

Company _____

Mailing Address/Street _____

City/Town _____ State _____ Telephone _____

8. Major Activity, Product or Service of Company at this Location

MANUFACTURE OF ASPHALT PAVING MATERIALS.

The purpose of this PTC application is to obtain a FLEXIBLE permit-to-construct and -operate to allow for the installation and operation of a Crushing & Screening plant for RAP and waste building materials such as concrete, block, brick, etc.

9. Control Devices Associated with this Equipment

NONE [ ] 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
[ ] 24-1	[ ] 24-2	[ ] 24-3	[ ] 24-4	[ ] 24-5	[ ] 24-6	[ ] 24-7	[ ] 24-8

Other [X] 24-9 Describe **WET SUPPRESSION SYSTEM WITH WATER SPRAY**

10. Annual Fuel Consumption for this Equipment

OIL - 1000 GALLONS	SULFUR %	GRADE	NATURAL GAS - 1000 FT^3	LP GAS - 100 GALLONS	GRADE
608	15 PPM	D			
26-31	32-33	34	35-41	42-45	

COAL - TONS	SULFUR %	ASH %	WOOD - TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS (Specify Type)		ANNUAL AMOUNT CONSUMED (Specify Units)	OTHER FUELS (Specify Type)		ANNUAL AMOUNT CONSUMED (Specify Units)
	66-1			66-2	

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE (for this equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per year
X				8	5	225
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation: **Max. operations --> 1800 hours/year**

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent	(Total Seasons= 100%)
	10	30	30	30	
76	77-78	79-80	81-82	83-84	

12. Equivalent Stack Information- is Exhaust through Doors, Window, etc. Only? (Y/N) Y

	Height Above Ground (FT)	Inside Diameter at Top	Exit Temperature (°F)	Exit Velocity (FT/SEC)
STACKER ENGINE	8	3	1002	92
If not, then				
CRUSHER ENGINE	8	3	1002	452
	86-88	89-91	92-95	96-98
SCREENER ENGINE	8	3	1002	180

NOTE:

Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)
Is any of this data to be considered confidential? N (Y or N)

	NAME	CAS NO. (IF APPLICABLE)	INPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.	WASTE CONCRETE		300	TONS	100,000	TONS
2.	ASPHALT PAVEMENT		300	TONS		
3.	OTHER CONSTRUCTION DEBRIS		300	TONS		
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL			300	TONS	100,000	TONS

The quantity of each material processed will vary from year to year, but the total materials processed will not exceed the total listed herein.

14. Output Materials (for this equipment)
Process/Product Stream

	NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.	RECLAIMED WASTE CONCRETE MATERIALS		300	TONS	100,000	TONS
2.	RECLAIMED ASPHALT PAVEMENT (RAP) MATERIALS		300	TONS		
3.	RECLAIMED CONSTRUCTION DEBRIS MATERIALS		300	TONS		
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL			300	TONS	100,000	TONS

15. Waste Streams - Solid and Liquid

	NAME	CAS NO. (IF APPLICABLE)	OUTPUT RATE PER HOUR	UNITS	PER YEAR	UNITS
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
TOTAL						

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
	1	5
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compunds	PM-10
40	3	1
117-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compunds	PM-10
		5
150-154	155-159	160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

TSP	SOX	NOX	CO	VOC	PM10
	4	4	4	4	2,4
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local **Date Rec'd. State** **Return to Local Jurisdiction**

Date _____ By _____

Reviewed by Local Jurisdiction

Date _____ By _____

Reviewed by State

Date _____ By _____

19. Inventory Date **Month/Year** (171-174) **Equipment Code** (175-177) **SCC Code** (178-185)

20.

Annual Operating Rate	Maximum Design Hourly Rate	Permit to Operate Month	Transaction Date (MM/DD/YR)
188-192	193-199	200-201	202-207

Staff Code	VOC Code	SIP Code	Regulation Code	Confidentiality
208-210	211 212	213 214	215-218	219

Point Description (220-238)

Action (239) A: Add C: Change

Form Number: 5
Rev. 9/27/2002
TTY Users 1-800-735-2258

Recycled Paper

APPENDIX C

C. ARA Form 5EP

for
the Asphalt Paving Materials Mixing Plant,
the Hot Oil Heater, and
the Crushing & Screening Plant

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230
(410)537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: **STANCILLS INC.**

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
APMMP -- 001

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
ASPHALT PAVING MATERIALS MIXING PLANT with MAXAMizer HEAT RECOVERY SYSTEM

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	**C**	**Seasonal Variation** Check box if none:		Otherwise estimate seasonal variation:
Minutes per hour:	**60**	Winter Percent	**19**	
Hours per day:	**16**	Spring Percent	**27**	
Days per week:	**5**	Summer Percent	**27**	
Weeks per year:	**42**	Fall Percent	**27**	

4. Emission Point Information

Height above ground (ft):	**40**	Length and width dimensions at top of rectangular stack (ft):		Length:	Width:
Height above structures (ft):	**N/A**				
Exit temperature (ºF):	**300**	Inside diameter at top of round stack (ft):			**4.75**
Exit velocity (ft/min):	**4,515**	Distance from emission point to nearest property line (ft):			**275**
Exhaust gas volumetric flow rate (acfm):	**80,000**	Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device*** . If none check none:

- ☐ None
- ☑ Baghouse No. **1**
- ☐ Cyclone No. ____
- ☐ Elec. Precipitator (ESP) No. ____
- ☐ Dust Suppression System No. ____
- ☐ Venuri Scrubber No. ____
- ☐ Spray Tower/Packed Bed No. ____
- ☐ Carbon Adsorber No. ____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal oxidizer No. ____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. ____
- ☐ Nitrogen Oxides Reduction
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☑ Other No. **1**
  Specify: **KNOCKOUT BOX**

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	4.4	4.4	70.0	4.4
Particulate Matter (filterable as PM2.5)	3.1	3.1	49.0	3.1
Particulate Matter (condensables)	7.8	7.8	124.0	7.8
Volatile Organic Compounds (VOC)	12.8	12.8	205.0	12.8
Oxides of Sulfur (SOx)	4.4	4.4	70.0	4.4
Oxides of Nitrogen (NOx)	22.0	22.0	352.0	22.0
Carbon Monoxide (CO)	52.0	52.0	832.0	52.0
Lead (Pb)	6.00 E-3	6.00 E-3	9.60 E-2	6.00 E-3
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO2)	1.32 E+4	1.32 E+4	2.11 E+5	1.32 E+4
Methane (CH4)	4.8	4.8	77.0	4.8
Nitrous Oxide (N2O)	N/A	N/A	--	--
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO2e)	1.32 E+4	1.32 E+4	2.11 E+5	1.32 E+4
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	(lb/day)	(ton/yr)
FORMALDEHYDE (CAS 50000)	1.24 E+0	1.24 E+0	1.98 E+1	1.24 E+0
BENZO(A)PYRENE (CAS 50328)	3.92 E-6	3.92 E-6	6.27 E-5	3.92 E-6
DIBENZ(A,H)ANTHRACENE (CAS 53703)	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
3-METHYLCHOLANTHRENE* (CAS 56495, POM)	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
BENZO(A)ANTHRACENE (CAS 56553, POM)	8.40 E-5	8.40 E-5	1.34 E-3	8.40 E-5
7,12-DIMETHYLBENZ(A)ANTHRACENE* (CAS 57976, F	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
BENZENE (CAS 71432)	1.56 E-1	1.56 E-1	2.50 E+0	1.56 E-1
METHYLCHLOROFORM (CAS 71556)	1.92 E-2	1.92 E-2	3.07 E-1	1.92 E-2
ACENAPHTHENE (CAS 83329, POM)	5.60 E-4	5.60 E-4	8.96 E-3	5.60 E-4
PHENANTHRENE (CAS 85018, POM)	3.04 E-3	3.04 E-3	4.86 E-2	3.04 E-3
FLUORENE (CAS 86737, POM)	1.52 E-3	1.52 E-3	2.43 E-2	1.52 E-3
NAPHTHALENE (CAS 91203)	3.60 E-2	3.60 E-2	5.76 E-1	3.60 E-2
2-METHYLNAPHTHALENE (CAS 91576, POM)	2.96 E-2	2.96 E-2	4.74 E-1	2.96 E-2
ETHYLBENZENE (CAS 100414)	9.60 E-2	9.60 E-2	1.54 E+0	9.60 E-2
ACROLEIN (CAS 107028)	2.68 E-1	2.68 E-1	4.29 E+0	2.68 E-1
HEXANE (CAS 110543)	8.80 E-1	8.80 E-1	1.41 E+1	8.80 E-1
BENZO(G,H,I)PERYLENE (CAS 191242, POM)	1.60 E-5	1.60 E-5	2.56 E-4	1.60 E-5
BENZO(E)PYRENE (CAS 192972, POM)	4.40 E-5	4.40 E-5	7.04 E-4	4.40 E-5

***SEE CONTINUATION SHEET** for **FORM 5EP for APMMP -- 001.** The emission rates include the Heat Recovery System emissions.*

CONTINUATION for FORM 5EP for APMMP -- 001. The emission rates include the Heat Recovery System emissions.

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
INDENO(1,2,3-CD)PYRENE (CAS 193395, POM)	2.80 E-6	2.80 E-6	4.48 E-5	2.80 E-6
PERYLENE (CAS 198550, POM)	3.52 E-6	3.52 E-6	5.63 E-5	3.52 E-6
BENZO(B)FLUORANTHENE (CAS 205992, POM)	4.00 E-5	4.00 E-5	6.40 E-4	4.00 E-5
FLUORANTHENE (CAS 206440, POM)	2.44 E-4	2.44 E-4	3.90 E-3	2.44 E-4
BENZO(K)FLUORANTHENE (CAS 207089, POM)	1.64 E-5	1.64 E-5	2.62 E-4	1.64 E-5
ACENAPHTHYLENE (CAS 208968, POM)	3.44 E-3	3.44 E-3	5.50 E-2	3.44 E-3
CHRYSENE (CAS 218019, POM)	7.20 E-5	7.20 E-5	1.15 E-3	7.20 E-5
XYLENE (CAS 1330207)	8.00 E-2	8.00 E-2	1.28 E+0	8.00 E-2
LEAD (CAS 7439921)	2.48 E-4	2.48 E-4	3.97 E-3	2.48 E-4
MANGANESE (CAS 7439965)	3.08 E-3	3.08 E-3	4.93 E-2	3.08 E-3
MERCURY (CAS 7439976)	9.60 E-5	9.60 E-5	1.54 E-3	9.60 E-5
NICKEL (CAS 7440020)	2.52 E-2	2.52 E-2	4.03 E-1	2.52 E-2
ANTIMONY (CAS 7440360)	7.20 E-5	7.20 E-5	1.15 E-3	7.20 E-5
ARSENIC (CAS 7440382)	2.24 E-4	2.24 E-4	3.58 E-3	2.24 E-4
BERYLLIUM (CAS 7440417)	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
CADMIUM (CAS 7440439)	1.64 E-4	1.64 E-4	2.62 E-3	1.64 E-4
CHROMIUM (CAS 7440473)	2.20 E-3	2.20 E-3	3.52 E-2	2.20 E-3
CHROMIUM, VI (CAS 7440473)	1.80 E-4	1.80 E-4	2.88 E-3	1.80 E-4
COBALT (CAS 7440484)	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0

Total HAPs tons/year: 2.85

HAP with highest emission rate: 1.24

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230
(410)537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: **STANCILLS INC.**

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
HOH -- 002

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
HOT OIL HEATER FOR ASPHALT PAVING MATERIALS MIXING PLANT

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	**C**	**Seasonal Variation** Check box if none:		Otherwise estimate seasonal variation:
Minutes per hour:	**60**	Winter Percent	**19**	
Hours per day:	**24**	Spring Percent	**27**	
Days per week:	**5**	Summer Percent	**27**	
Weeks per year:	**42**	Fall Percent	**27**	

4. Emission Point Information

Height above ground (ft):	**10.00**	Length and width dimensions at top of rectangular stack (ft):		Length:	Width:
Height above structures (ft):	**N/A**				
Exit temperature (ºF):	**400**	Inside diameter at top of round stack (ft):			**1**
Exit velocity (ft/min):	**1,502**	Distance from emission point to nearest property line (ft):			**578**
Exhaust gas volumetric flow rate (acfm):	**1,180**	Building dimensions if emission point is located on building (ft)	Height	Length	Width

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device*** . If none check none:

- ☑ None
- ☐ Baghouse No. ____
- ☐ Cyclone No. ____
- ☐ Elec. Precipitator (ESP) No. ____
- ☐ Dust Suppression System No. ____
- ☐ Venuri Scrubber No. ____
- ☐ Spray Tower/Packed Bed No. ____
- ☐ Carbon Adsorber No. ____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal oxidizer No. ____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. ____
- ☐ Nitrogen Oxides Reduction
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☐ Other No. ____
  Specify:

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	2.33 E-02	2.33 E-02	5.59 E-01	1.02 E-01
Particulate Matter (filterable as PM2.5)	1.79 E-02	1.79 E-02	4.30 E-01	7.85 E-02
Particulate Matter (condensables)	2.81 E-02	2.81 E-02	6.73 E-01	1.23 E-01
Volatile Organic Compounds (VOC)	7.34 E-03	7.34 E-03	1.76 E-01	3.21 E-02
Oxides of Sulfur (SOx)	4.66 E-02	4.66 E-02	1.12 E+00	2.04 E-01
Oxides of Nitrogen (NOx)	4.32 E-01	4.32 E-01	1.04 E+01	1.89 E+00
Carbon Monoxide (CO)	1.08 E-01	1.08 E-01	2.59 E+00	4.73 E-01
Lead (Pb)	6.00 E-03	6.00 E-03	9.60 E-02	6.00 E-03
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO2)	4.81 E+02	4.81 E+02	1.16 E+04	2.11 E+03
Methane (CH4)	4.66 E-03	4.66 E-03	1.12 E-01	2.04 E-02
Nitrous Oxide (N2O)	5.61 E-03	5.61 E-03	1.35 E-01	2.46 E-02
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO2e)	4.81 E+02	4.81 E+02	1.16 E+04	2.11 E+03
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	(lb/day)	(ton/yr)
FORMALDEHYDE (CAS 50000)	2.14 E-4	2.14 E-4	5.14 E-3	9.75 E-4
BENZO(A)PYRENE (CAS 50328)	3.43 E-9	3.43 E-9	8.23 E-8	1.56 E-8
DIBENZ(A,H)ANTHRACENE (CAS 53703)	3.43 E-9	3.43 E-9	8.23 E-8	1.56 E-8
3-METHYLCHOLANTHRENE* (CAS 56495, POM)	5.14 E-9	5.14 E-9	1.23 E-7	2.34 E-8
BENZO(A)ANTHRACENE (CAS 56553, POM)	5.14 E-9	5.14 E-9	1.23 E-7	2.34 E-8
7,12-DIMETHYLBENZ(A)ANTHRACENE* (CAS 57976, F	4.57 E-8	4.57 E-8	1.10 E-6	2.08 E-7
BENZENE (CAS 71432)	6.00 E-6	6.00 E-6	1.44 E-4	2.73 E-5
ACENAPHTHENE (CAS 83329, POM)	5.14 E-9	5.14 E-9	1.23 E-7	2.34 E-8
PHENANTHRENE (CAS 85018, POM)	4.86 E-8	4.86 E-8	1.17 E-6	2.21 E-7
FLUORENE (CAS 86737, POM)	8.00 E-9	8.00 E-9	1.92 E-7	3.64 E-8
NAPHTHALENE (CAS 91203)	1.74 E-6	1.74 E-6	4.18 E-5	7.93 E-6
2-METHYLNAPHTHALENE (CAS 91576, POM)	6.86 E-8	6.86 E-8	1.65 E-6	3.12 E-7
TOLUENE (CAS 108883)	9.71 E-6	9.71 E-6	2.33 E-4	4.42 E-5
HEXANE (CAS 110543)	5.14 E-3	5.14 E-3	1.23 E-1	2.34 E-2
ANTHRACENE (CAS 120127, POM)	6.86 E-9	6.86 E-9	1.65 E-7	3.12 E-8
PYRENE (CAS 129000, POM)	1.43 E-8	1.43 E-8	3.43 E-7	6.50 E-8
BENZO(G,H,I)PERYLENE (CAS 191242, POM)	3.43 E-9	3.43 E-9	8.23 E-8	1.56 E-8

SEE CONTINUATION SHEET for FORM 5EP for HOH -- 002

CONTINUATION for FORM 5EP for HOH -- 002

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
INDENO(1,2,3-CD)PYRENE (CAS 193395, POM)	5.14 E-9	5.14 E-9	1.23 E-7	4.68 E-5
BENZO(B)FLUORANTHENE (CAS 205992, POM)	5.14 E-9	5.14 E-9	1.23 E-7	4.68 E-5
FLUORANTHENE (CAS 206440, POM)	8.57 E-9	8.57 E-9	2.06 E-7	7.80 E-5
BENZO(K)FLUORANTHENE (CAS 207089, POM)	5.14 E-9	5.14 E-9	1.23 E-7	4.68 E-5
ACENAPHTHYLENE (CAS 208968, POM)	5.14 E-9	5.14 E-9	1.23 E-7	4.68 E-5
CHRYSENE (CAS 218019, POM)	5.14 E-9	5.14 E-9	1.23 E-7	4.68 E-5
LEAD (CAS 7439921)	1.43 E-6	1.43 E-6	3.43 E-5	1.30 E-2
MANGANESE (CAS 7439965)	1.09 E-6	1.09 E-6	2.61 E-5	9.88 E-3
MERCURY (CAS 7439976)	7.43 E-7	7.43 E-7	1.78 E-5	6.76 E-3
NICKEL (CAS 7440020)	6.00 E-6	6.00 E-6	1.44 E-4	5.46 E-2
ARSENIC (CAS 7440382)	5.71 E-7	5.71 E-7	1.37 E-5	5.20 E-3
BERYLLIUM (CAS 7440417)	3.43 E-8	3.43 E-8	8.23 E-7	3.12 E-4
CADMIUM (CAS 7440439)	3.14 E-6	3.14 E-6	7.54 E-5	2.86 E-2
CHROMIUM (CAS 7440473)	4.00 E-6	4.00 E-6	9.60 E-5	3.64 E-2
COBALT (CAS 7440484)	2.40 E-7	2.40 E-7	5.76 E-6	2.18 E-3

Total HAPs tons/year: 0.18

HAP with highest emission rate: 0.05

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration ● Air Quality Permits Program
1800 Washington Boulevard ● Baltimore, Maryland 21230
(410)537-3225 ● 1-800-633-6101● www.mde.maryland.gov

FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: **STANCILLS INC.**

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
CSP -- 003

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
CRUSHING & SCREENING PLANT WITH STACK CONVEYOR AND 3 ENGINES

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	**C**	**Seasonal Variation** Check box if none:		Otherwise estimate seasonal variation:
Minutes per hour:	**60**	Winter Percent	**10**	
Hours per day:	**8**	Spring Percent	**30**	
Days per week:	**5**	Summer Percent	**30**	
Weeks per year:	**45**	Fall Percent	**30**	

4. Emission Point Information

Height above ... (ft) ... Width:

Height above ...

Exit tempera ...

Exit velocity ...

Exhaust gas rate (acfm): ... Width

THREE ENGINES ARE ASSOCIATED WITH THE CRUSHING & SCREENING PLANT

Engine	HT above ground (feet)	Exit Temp (ºF)	Exit Velocity (ft/min)	Exhaust Velocity (acfm)	Diameter (feet)	Distance Property Line (feet)
Crusher	8	1002	7.5	1330	0.25	185
Screener	8	1002	3.0	530	0.25	185
Stacker	4	1002	0.5	270	0.25	185

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. ***A Form 6 is also required for each control device*** . If none check none:

- ☐ None
- ☐ Baghouse No. ____
- ☐ Cyclone No. ____
- ☐ Elec. Precipitator (ESP) No. ____
- ☐ Dust Suppression System No. ____
- ☐ Venuri Scrubber No. ____
- ☐ Spray Tower/Packed Bed No. ____
- ☐ Carbon Adsorber No. ____
  - ☐ Cartridge/Canister
  - ☐ Regenerative
- ☐ Thermal oxidizer No. ____
  - ☐ Regenerative
- ☐ Catalytic Oxidizer No. ____
- ☐ Nitrogen Oxides Reduction
  - ☐ Selective ☐ Non-Selective
  - ☐ Catalytic ☐ Non-Catalytic
- ☑ Other No. **1**
  Specify: **WET SUPPRESSION SYSTEM WITH WATER**

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	2.72 E-02	2.72 E-02	2.18 E-01	2.45 E-02
Particulate Matter (filterable as PM2.5)	2.72 E-02	2.72 E-02	2.18 E-01	2.45 E-02
Particulate Matter (condensables)	N/A	N/A		
Volatile Organic Compounds (VOC)	2.54 E-01	2.54 E-01	2.03 E+00	2.29 E-01
Oxides of Sulfur (SOx)	5.81 E-02	5.81 E-02	4.65 E-01	4.25 E-02
Oxides of Nitrogen (NOx)	5.45 E-01	5.45 E-01	4.36 E+00	4.90 E-01
Carbon Monoxide (CO)	4.96 E+00	4.96 E+00	3.97 E+01	4.47 E+00
Lead (Pb)	6.00 E-03	6.00 E-03	9.60 E-02	6.00 E-03
Greenhouse Gases (GHG)	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	(lb/day)	(ton/yr)
Carbon Dioxide (CO2)	9.48 E+2	9.48 E+2	7.58 E+3	6.82 E+3
Methane (CH4)	N/A	N/A		
Nitrous Oxide (N2O)	N/A	N/A		
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF6)				
Total GHG (as CO2e)	9.48 E+2	9.48 E+2	7.58 E+3	6.82 E+3
List individual federal Hazardous Air Pollutants (HAP) below:	**At Design Capacity (lb/hr)**	**At Projected Operations**		
		(lb/hr)	(lb/day)	(ton/yr)
FORMALDEHYDE (CAS 50000)	6.41 E-3	6.41 E-3	5.13 E-2	4.62 E-2
BENZO(A)PYRENE (CAS 50328)	1.02 E-6	1.02 E-6	8.17 E-6	7.36 E-6
DIBENZ(A,H)ANTHRACENE (CAS 53703)	3.17 E-6	3.17 E-6	2.53 E-5	2.28 E-5
3-METHYLCHOLANTHRENE* (CAS 56495, POM)	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
BENZO(A)ANTHRACENE (CAS 56553, POM)	9.12 E-6	9.12 E-6	7.30 E-5	6.57 E-5
7,12-DIMETHYLBENZ(A)ANTHRACENE* (CAS 57976, F	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
BENZENE (CAS 71432)	5.07 E-3	5.07 E-3	4.05 E-2	3.65 E-2
METHYLCHLOROFORM (CAS 71556)	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
ACETALDEHYDE (CAS 75070)	4.17 E-3	4.17 E-3	3.33 E-2	3.00 E-2
ACENAPHTHENE (CAS 83329, POM)	7.71 E-6	7.71 E-6	6.17 E-5	5.56 E-5
PHENANTHRENE (CAS 85018, POM)	1.60 E-4	1.60 E-4	1.28 E-3	1.15 E-3
FLUORENE (CAS 86737, POM)	1.59 E-4	1.59 E-4	1.27 E-3	1.14 E-3
NAPHTHALENE (CAS 91203)	4.61 E-4	4.61 E-4	3.68 E-3	3.32 E-3
2-METHYLNAPHTHALENE (CAS 91576, POM)	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
ETHYLBENZENE (CAS 100414)	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
1,3-BUTADIENE (CAS 106990)	2.12 E-4	2.12 E-4	1.70 E-3	1.53 E-3
ACROLEIN (CAS 107028)	5.02 E-4	5.02 E-4	4.02 E-3	3.62 E-3
TOLUENE (CAS 108883)	2.22 E-3	2.22 E-3	1.78 E-2	1.60 E-2

SEE CONTINUATION SHEET for FORM 5EP for CSP -- 003

CONTINUATION for FORM 5EP for CSP -- 003

List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
ANTHRACENE (CAS 120127, POM)	1.02 E-5	1.02 E-5	8.12 E-5	7.32 E-5
PYRENE (CAS 129000, POM)	2.60 E-5	2.60 E-5	2.08 E-4	1.87 E-4
BENZO(G,H,I)PERYLENE (CAS 191242, POM)	2.66 E-6	2.66 E-6	2.12 E-5	1.91 E-5
INDENO(1,2,3-CD)PYRENE (CAS 193395, POM)	2.04 E-6	2.04 E-6	1.63 E-5	1.47 E-5
BENZO(B)FLUORANTHENE (CAS 205992, POM)	5.38 E-7	5.38 E-7	4.31 E-6	3.88 E-6
FLUORANTHENE (CAS 206440, POM)	4.13 E-5	4.13 E-5	3.31 E-4	2.98 E-4
BENZO(K)FLUORANTHENE (CAS 207089, POM)	8.42 E-7	8.42 E-7	6.73 E-6	6.06 E-6
ACENAPHTHYLENE (CAS 208968, POM)	2.75 E-5	2.75 E-5	2.20 E-4	1.98 E-4
CHRYSENE (CAS 218019, POM)	1.92 E-6	1.92 E-6	1.53 E-5	1.38 E-5
XYLENE (CAS 1330207)	1.55 E-3	1.55 E-3	1.24 E-2	1.12 E-2

Total HAPs tons/year: 0.15

HAP with highest emission rate: 0.05

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

APPENDIX D

D. ARA Form 5T

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Step 3: Best Available Control Technology for Toxics Requirement (T-BACT, COMAR 26.11.15.05)

In the following table, list all TAP emission reduction options considered when determining T-BACT for the proposed installation. The options should be listed in order beginning with the most effective control strategy to the least effective strategy. Attach supporting documentation as necessary.

Target Pollutants	Emission Control Option	% Emission Reduction	Costs		T-BACT Option Selected? (yes/no)
			Capital	Annual Operating	
THE TAPs LISTED IN THIS APPLICATION OCCUR AS A RESULT OF COMBUSTION OF NATURAL GAS. TAPs FROM COMBUSTION WILL BE MINIMIZED BY KEEPING THE BURNERS PROPERLY MAINTAINED.					

(attach additional sheets as necessary)

Step 4: Demonstrating Compliance with the Ambient Impact Requirement (COMAR 26.11.15.06)

Each TAP not exempt in Step 2 must be individually evaluated to determine that the emissions of the TAP will not adversely impact public health. The evaluation consists of a series of increasingly non-conservative (and increasingly rigorous) tests. Once a TAP passes a test in the evaluation, no further analysis is required for that TAP. "Demonstrating Compliance with the Ambient Impact Requirement under the Toxic Air Pollutant (TAP) Regulations (COMAR 26.11.15.06)" provides guidance on conducting the evaluation. Summarize your results in the following table. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels (µg/m^3)			Premises Wide Total TAP Emissions		Allowable Emissions Rate (AER) per COMAR 26.11.16.02A		Off-site Concentrations per Screening Analysis (µg/m^3)			Compliance Method Used?
		1-hour	8-hour	Annual	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	AER or Screen
FORMALDEHYDE	50-00-0	0.00 E+0	2.03 E+1	8.00 E-2	1.24 E+00	2.48 E+03			0.00 E+00	9.64 E-01	2.52 E-02	SCREEN
BENZO(A)PYRENE	50-32-8	0.00 E+0	0.00 E+0	0.00 E+0	3.92 E-06	7.84 E-03			0.00 E+00	0.00 E+00	3.48 E-07	SCREEN
3-METHYLCHOLANTHRENE*	56-49-5	0.00 E+0	2.00 E+1	5.75 E-2	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
BENZO(A)ANTHRACENE	56-55-3	0.00 E+0	0.00 E+0	0.00 E+0	8.40 E-05	1.68 E-01			0.00 E+00	0.00 E+00	7.46 E-06	SCREEN
7,12-DIMETHYLBENZ(A)ANTH	57-97-6	0.00 E+0	4.76 E+0	0.00 E+0	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
BENZENE	71-43-2	7.99 E+1	1.60 E+1	0.00 E+0	1.56 E-01	3.12 E+02			1.73 E-01	1.21 E-01	1.39 E-02	SCREEN
METHYLCHLOROFORM	71-55-6	2.46 E+4	1.91 E+4	0.00 E+0	1.92 E-02	3.84 E+01			2.13 E-02	1.49 E-02	0.00 E+00	SCREEN

If compliance with the ambient impact requirement cannot be met using the allowable emissions rate method or the screening analysis method, refined dispersion modeling techniques may be required. Please consult with the Department's Air Quality Permit Program prior to conducting dispersion modeling methods to demonstrate compliance.

CONTINUATION OF FORM 5T, PAGE 1

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels (µg/m^3)			Premises Wide Total TAP Emissions		Allowable Emissions Rate (AER) per COMAR 26.11.16.02A		Off-site Concentrations per Screening Analysis (µg/m^3)			Compliance Method Used?
		1-hour	8-hour	Annual	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	AER or Screen
METHANE	74-82-8	6.56 E+3	0.00 E+0	0.00 E+0	4.80 E+00	9.60 E+03			5.33 E+00	0.00 E+00	0.00 E+00	SCREEN
ETHANE	74-84-0	0.00 E+0	1.23 E+4	0.00 E+0	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
ETHYLENE	74-85-1	0.00 E+0	2.29 E+3	0.00 E+0	2.80 E+00	5.60 E+03			0.00 E+00	2.18 E+00	0.00 E+00	SCREEN
PROPANE	74-98-6	0.00 E+0	1.80 E+4	0.00 E+0	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
ACENAPHTHENE	83-32-9	0.00 E+0	2.00 E+1	0.00 E+0	5.60 E-04	1.12 E+00			0.00 E+00	4.35 E-04	0.00 E+00	SCREEN
PHENANTHRENE	85-01-8	0.00 E+0	9.80 E+0	0.00 E+0	3.04 E-03	6.08 E+00			0.00 E+00	2.36 E-03	0.00 E+00	SCREEN
FLUORENE	86-73-7	0.00 E+0	2.00 E+1	0.00 E+0	1.52 E-03	3.04 E+00			0.00 E+00	1.18 E-03	0.00 E+00	SCREEN
NAPHTHALENE	91-20-3	7.86 E+2	5.24 E+2	0.00 E+0	3.60 E-02	7.20 E+01			4.00 E-02	2.80 E-02	0.00 E+00	SCREEN
2-METHYLNAPHTHALENE	91-57-6	0.00 E+0	2.91 E+1	0.00 E+0	2.96 E-02	5.92 E+01			0.00 E+00	2.30 E-02	0.00 E+00	SCREEN
ETHYLBENZENE	100-41-4	0.00 E+0	8.68 E+2	0.00 E+0	9.60 E-02	1.92 E+02			0.00 E+00	7.46 E-02	0.00 E+00	SCREEN
BUTANE	106-97-8	0.00 E+0	2.38 E+4	5.75 E-1	2.68 E-01	5.36 E+02			0.00 E+00	2.08 E-01	0.00 E+00	SCREEN
TOLUENE	108-88-3	0.00 E+0	7.54 E+2	0.00 E+0	6.00 E-02	1.20 E+02			0.00 E+00	4.66 E-02	0.00 E+00	SCREEN
N-PENTANE	109-66-0	0.00 E+0	1.77 E+4	0.00 E+0	8.40 E-02	1.68 E+02			0.00 E+00	6.53 E-02	0.00 E+00	SCREEN
HEXANE	110-54-3	0.00 E+0	1.76 E+3	0.00 E+0	3.68 E-01	7.36 E+02			0.00 E+00	2.86 E-01	0.00 E+00	SCREEN
ANTHRACENE	120-12-7	0.00 E+0	2.00 E+1	0.00 E+0	8.80 E-05	1.76 E-01			0.00 E+00	6.84 E-05	0.00 E+00	SCREEN
PYRENE	129-00-0	0.00 E+0	2.00 E+1	0.00 E+0	2.16 E-04	4.32 E-01			0.00 E+00	1.68 E-04	0.00 E+00	SCREEN
HEPTANE	142-82-5	2.05 E+4	1.64 E+4	0.00 E+0	3.76 E+00	7.52 E+03			4.18 E+00	2.92 E+00	0.00 E+00	SCREEN
BENZO(G,H,I)PERYLENE	191-24-2	0.00 E+0	2.00 E+1	0.00 E+0	1.60 E-05	3.20 E-02			0.00 E+00	1.24 E-05	0.00 E+00	SCREEN
BENZO(E)PYRENE	192-97-2	0.00 E+0	2.00 E+1	0.00 E+0	4.40 E-05	8.80 E-02			0.00 E+00	3.42 E-05	0.00 E+00	SCREEN
INDENO(1,2,3-CD)PYRENE	193-39-5	0.00 E+0	0.00 E+0	4.17 E-2	2.80 E-06	5.60 E-03			0.00 E+00	0.00 E+00	2.49 E-07	SCREEN
PERYLENE	198-55-0	0.00 E+0	2.00 E+1	0.00 E+0	3.52 E-06	7.04 E-03			0.00 E+00	2.74 E-06	0.00 E+00	SCREEN
BENZO(B)FLUORANTHENE	205-99-2	0.00 E+0	0.00 E+0	0.00 E+0	4.00 E-05	8.00 E-02			0.00 E+00	0.00 E+00	3.55 E-06	SCREEN
FLUORANTHENE	206-44-0	0.00 E+0	8.20 E+1	0.00 E+0	2.44 E-04	4.88 E-01			0.00 E+00	1.90 E-04	0.00 E+00	SCREEN
BENZO(K)FLUORANTHENE	207-08-9	0.00 E+0	0.00 E+0	2.33 E-3	1.64 E-05	3.28 E-02			0.00 E+00	0.00 E+00	1.46 E-06	SCREEN
ACENAPHTHYLENE	208-96-8	0.00 E+0	2.46 E+1	0.00 E+0	3.44 E-03	6.88 E+00			0.00 E+00	2.67 E-03	0.00 E+00	SCREEN
2-METHYL-1-PENTENE	763-29-1	0.00 E+0	1.15 E+4	0.00 E+0	1.60 E+00	3.20 E+03			0.00 E+00	1.24 E+00	0.00 E+00	SCREEN
XYLENE	1330-20-7	6.51 E+3	4.34 E+3	0.00 E+0	8.00 E-02	1.60 E+02			8.89 E-02	6.22 E-02	0.00 E+00	SCREEN
LEAD	7439-92-1	0.00 E+0	5.00 E-1	0.00 E+0	2.48 E-04	4.96 E-01			0.00 E+00	1.93 E-04	0.00 E+00	SCREEN
MANGANESE	7439-96-5	0.00 E+0	2.00 E+0	0.00 E+0	3.08 E-03	6.16 E+00			0.00 E+00	2.39 E-03	0.00 E+00	SCREEN
MERCURY	7439-97-6	3.00 E-1	1.00 E-1	0.00 E+0	9.60 E-05	1.92 E-01			1.07 E-04	7.46 E-05	0.00 E+00	SCREEN
MOLYBDENUM	7439-98-7	0.00 E+0	5.00 E+0	0.00 E+0	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
NICKEL	7440-02-0	0.00 E+0	1.00 E+0	0.00 E+0	2.52 E-02	5.04 E+01			0.00 E+00	1.96 E-02	2.24 E-03	SCREEN
SILVER	7440-22-4	0.00 E+0	1.00 E-1	#REF!	1.92 E-04	3.84 E-01			0.00 E+00	1.49 E-04	0.00 E+00	SCREEN
THALLIUM	7440-28-0	0.00 E+0	2.00 E-1	0.00 E+0	1.64 E-06	3.28 E-03			0.00 E+00	1.28 E-06	0.00 E+00	SCREEN
ANTIMONY	7440-36-0	0.00 E+0	5.00 E+0	8.00 E-2	7.20 E-05	1.44 E-01			0.00 E+00	5.60 E-05	0.00 E+00	SCREEN

CONTINUATION OF FORM 5T, PAGE 1 **Continuation Page 2 of 2**

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels (µg/m^3)			Premises Wide Total TAP Emissions		Allowable Emissions Rate (AER) per COMAR 26.11.16.02A		Off-site Concentrations per Screening Analysis (µg/m^3)			Compliance Method Used?
		1-hour	8-hour	Annual	(lb/hr)	(lb/yr)	(lb/hr)	(lb/yr)	1-hour	8-hour	Annual	AER or Screen
ARSENIC	7440-38-2	0.00 E+0	1.00 E-1	7.00 E+0	2.24 E-04	4.48 E-01			0.00 E+00	1.74 E-04	1.99 E-05	SCREEN
BARIUM	7440-39-3	0.00 E+0	5.00 E+0	0.00 E+0	2.32 E-03	4.64 E+00			0.00 E+00	1.80 E-03	0.00 E+00	SCREEN
BERYLLIUM	7440-41-7	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
CADMIUM	7440-43-9	0.00 E+0	2.00 E-2	0.00 E+0	1.64 E-04	3.28 E-01			0.00 E+00	1.28 E-04	1.46 E-05	SCREEN
CHROMIUM	7440-47-3	0.00 E+0	5.00 E+0	0.00 E+0	2.20 E-03	4.40 E+00			0.00 E+00	1.71 E-03	0.00 E+00	SCREEN
CHROMIUM, VI	7440-47-3	0.00 E+0	1.00 E-1	0.00 E+0	1.80 E-04	3.60 E-01			0.00 E+00	1.40 E-04	0.00 E+00	SCREEN
COBALT	7440-48-4	0.00 E+0	2.00 E-1	0.00 E+0	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
COPPER	7440-50-8	0.00 E+0	2.00 E+0	0.00 E+0	1.24 E-03	2.48 E+00			0.00 E+00	9.64 E-04	0.00 E+00	SCREEN
VANADIUM	7440-62-2	0.00 E+0	5.00 E-1	0.00 E+0	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
ZINC	7440-66-6	1.00 E+3	5.00 E+1	0.00 E+0	2.44 E-02	4.88 E+01			2.71 E-02	1.90 E-02	0.00 E+00	SCREEN
PHOSPHORUS	7723-14-0	0.00 E+0	1.01 E+0	0.00 E+0	1.12 E-02	2.24 E+01			0.00 E+00	8.71 E-03	0.00 E+00	SCREEN
SELENIUM	7782-49-2	0.00 E+0	2.00 E+0	0.00 E+0	1.40 E-04	2.80 E-01			0.00 E+00	1.09 E-04	0.00 E+00	SCREEN
N2O (CONTROLLED)	10024-97-2	0.00 E+0	9.00 E+2	0.00 E+0	0.00 E+00	0.00 E+00			0.00 E+00	0.00 E+00	0.00 E+00	SCREEN
CRYSTALLINE SILICA	1317-95-9	0.00 E+0	2.50 E-1	0.00 E+0	1.03 E-04	1.08 E+00	0.003		0.00 E+00	3.28 E-02	0.00 E+00	SCREEN

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

APPENDIX E

E. ARA Form 6

for
the Baghouse

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard ■ Baltimore, Maryland 21230
(410) 537-3230 ■ 1-800-633-6101 ■ www.mde.state.md.us
Air and Radiation Management Administration ■ Air Quality Permits Program

Application for Permit to Construct
Gas Cleaning or Emission Control Equipment

1. Owner of Installation	Telephone No.	Date of Application
STANCILLS INC.	(410) 554-1077	

2. Mailing Address	City	Zip Code	County
2444 LOCH RAVEN ROAD	BALTIMORE	21218	BALTIMORE

3. Equipment Location	City/Town or P.O.	County
499 MOUNTAIN HILL ROAD	PERRYVILLE	CECIL

4. Signature of Owner or Operator	Title	Print or Type Name
Brian Russell	V.P. PLANT OPERATIONS	BRIAN RUSSELL

5. Application Type: Alteration [ ] New Construction [X]

6. Date Construction is to Start:	Completion Date (Estimate):
1-Feb-22	31-Mar-23

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone [ ] Multiple Cyclone [ ] Afterurner [ ] Baghouse [X] Electrostatic Precipitator [ ]

Scrubber [ ] _____ (type) Other [X] INTEGRATED KNOCKOUT BOX (type)

8. Gas Cleaning Equipment Manufacturer	Model No.	Collection Efficiency (Design Criteria)
CWMF		99.90%

9. Type of Equipment which Control Equipment is to Service:
ASPHALT PAVING MATERIALS MIXING PLANT

10. Stack Test to be Conducted:
Yes [ ] No [ ] TO BE DETERMINED (TBD) (Stack Test to be Conducted By) TBD (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard ■ Baltimore, Maryland 21230
(410) 537-3230 ■ 1-800-633-6101 ■ www.mde.state.md.us
Air and Radiation Management Administration ■ Air Quality Permits Program

Application for Permit to Construct
Gas Cleaning or Emission Control Equipment

1. Owner of Installation	Telephone No.	Date of Application
STANCILLS INC.	(410) 554-1077	

2. Mailing Address	City	Zip Code	County
2444 LOCH RAVEN ROAD	BALTIMORE	21218	

3. Equipment Location	City/Town or P.O.	County
499 MOUNTAIN HILL ROAD	PERRYVILLE	CECIL

4. Signature of Owner or Operator	Title	Print or Type Name
	V.P. PLANT OPERATIONS	BRIAN RUSSELL

5. Application Type: Alteration [ ] New Construction [X]

6. Date Construction is to Start:	Completion Date (Estimate):
1-Feb-22	1-Mar-23

7. Type of Gas Cleaning or Emission Control Equipment:

Simple Cyclone [ ] Multiple Cyclone [ ] Afterurner [ ] Baghouse [X] Electrostatic Precipitator [ ]

Scrubber [ ] _____ (type) Other [X] STAND-ALONE KNOCKOUT BOX (type)

8. Gas Cleaning Equipment Manufacturer	Model No.	Collection Efficiency (Design Criteria)
CWMF		99.90%

9. Type of Equipment which Control Equipment is to Service:

ASPHALT PAVING MATERIALS MIXING PLANT

10. Stack Test to be Conducted:

Yes [ ] No [ ] TO BE DETERMINED (TBD) (Stack Test to be Conducted By) TBD (Date)

11. Cost of Equipment _____

Estimated Erection Cost _____

12. The Following Shall Be Design Criteria:

	INLET		OUTLET	
Gas Flow Rate	75,789	ACFM*	80,000	ACFM*
Gas Temperature	260	^{O}F	300	^{O}F
Gas Pressure	N/A	INCHES W.G.	N/A	INCHES W.G.
PRESSURE DROP	2 TO 6 IN. WG			
Dust Loading	30	GRAINS/ACFD**	0.028	GRAINS/ACFD**
Moisture Content	25.0	%	25.0	%
Wet Bulb Temperature		^{O}F		^{O}F
OR				
Liquid Flow Rate (Wet Scrubber)		GALLONS/MINUTE		

(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)

* = ACTUAL CUBIC FEET PER MINUTE ** = ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

Size of Dust Particles Entering Cleaning Unit	% of Total Dust	% to be Collected
0 TO 10 MICRONS	29.5	99.05
10 TO 44 MICRONS	27	99.95
LARGER THAN 44 MICRONS	43.5	100

12. The Following Shall Be Design Criteria:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature _____ ^{O}F

Capacity of Afterburner _____ BTU/HR.

Diameter (or area) of Afterburner Throat _____

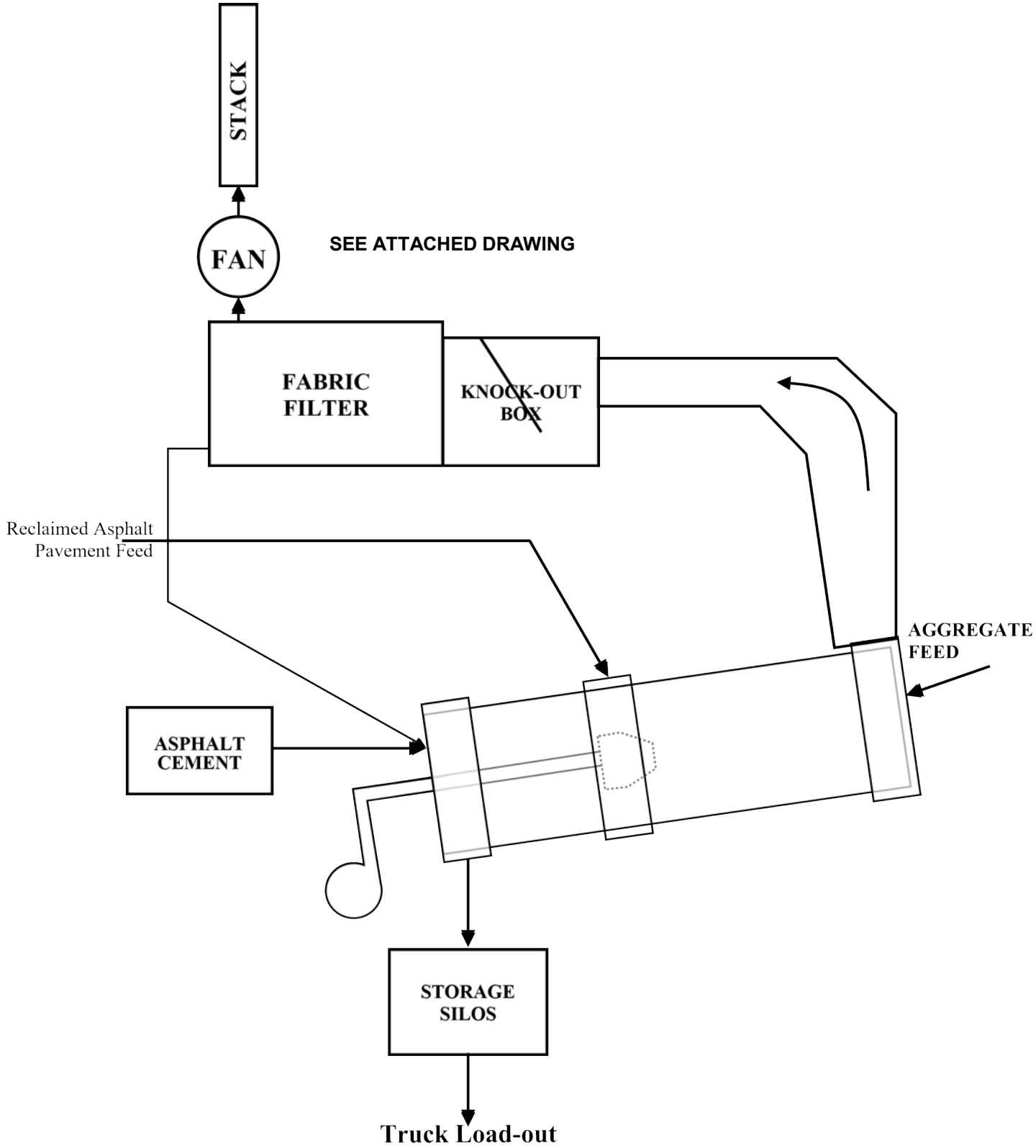
Combustion Chamber _____ (diameter) _____ (length) Operating Temperature at Afterburner _____ ^{O}F

Retention Time of Gases _____

Form number: 6
Revision date: 0/2000
TTY Users 1-800-735-2258

Recycled Paper

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.



Date Received: **Local** _____ **State** _____

Acknowledgement Date:
By _____

Reviewed by:
Local _____
State _____

Returned to Local:
Date _____
By _____

Application Returned to Applicant:
Date _____
By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT: | | | | | | |

PREMISES NUMBER: | | | | | | | |

Emission Calculations Revised by _____ **Date** _____

Form number: 6
Revision date: 0/2000
TTY Users 1-800-735-2258

APPENDIX F

F. ARA Form 11

for
the Hot Oil Heater

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us

Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR FUEL BURNING EQUIPMENT

Permit to Construct ☒ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name

STANCILLS INC.

Mailing Address/Street

2444 LOCH RAVEN ROAD

City: BALTIMORE State: MD Zip Code: 21218

Telephone Number: 410.554.1077

Print Name/Title

BRIAN RUSSELL, VICE PRESIDENT PLANT OPERATIONS

Signature: Brian Russell Date: 7-15-2021

DO NOT WRITE IN THIS BOX

2. Registration Number

County No. (1-2) | Premises No. (3-6)

Registration Class (7) | Equipment No. (6-11)

Data Year (12-13) | Application Date

1B. Equipment Location (if different from above give Street Number and Name, City, State, Zip and Telephone Number):

499 MOUNTAIN HILL ROAD
PERRYVILLE, MD 21903 410.241.3079

Premises Name (if different from above):

3. Status

A= New Equipment B= Modification to Existing Equipment C= Existing Equipment	Status (15)	New Construction Began (MM/YY) (16-19)	New Construction Completed (MM/YY) (20-23)	Existing Initial Operation (MM/YY) (20-23)
	A	0222	0323	

4. Describe this Equipment (Make, Model, Features, Manufacturer, etc.):

THERMAL FLUID HEAT EXCHANGER (HOT OIL HEATER) RATED @ 3 MMBTUs/HOUR HEAT INPUT, BURNING NATURAL GAS.

5. Workmen's Compensation Coverage: Binder/Policy Number: 4097121

Company Name: HARTFORD INSURANCE CO. Expiration Date 01 NOVEMBER 2021

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6. Number of Pieces of Identical Equipment to be Registered/Permitted at this Time: 1

7. Person Installing this Equipment (if different from above give Name/Title, Company Name, Mailing Address and Telephone Number): CWMF
701 JULEP RD., WAITE PARK, MN 56387
320.251.1306 TRAVIS MICK, VP/SALES MANAGER

8. Major Activity, Product or Service of Company at this Location:

TOPSOIL PROCESSING AND SALES
PRODUCTION OF ASPHALT PAVING MIXES

9. Control Devices Associated with this Equipment

None	Simple/Multiple Cyclones	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Bag-house
						X
24-0	24-1	24-2	24-3	24-4	24-5	24-6

Thermal/Catalytic Afterburner	Dry Scrubber	Other	Describe
		X	KNOCK-OUT BOX
24-7	24-8	24-9	

Form number: 11
Revision date: 09/27/2002
TTY Users 1-800-735-2258

Recycled Paper

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Blvd ▪ Baltimore, Maryland 21230
(410) 537-3230 ▪ 1-800-633-6101 ▪ www.mde.state.md.us

Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR FUEL BURNING EQUIPMENT

Permit to Construct ☒ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name

STANCILLS INC.

Mailing Address/Street

2444 LOCH RAVEN ROAD

City: BALTIMORE State: MD Zip Code: 21218

Telephone Number: 410.554.1077

Print Name/Title

BRIAN RUSSELL, VICE PRESIDENT PLANT OPERATIONS

Signature: Date:

DO NOT WRITE IN THIS BOX

2. Registration Number

County No. (1-2) | Premises No. (3-6)

Registration Class (7) | Equipment No. (6-11)

Data Year (12-13)

Application Date

1B. Equipment Location (if different from above give Street Number and Name, City, State, Zip and Telephone Number):

499 MOUNTAIN HILL ROAD
PERRYVILLE, MD 21903 410.241.3079

Premises Name (if different from above):

3. Status

A= New Equipment
B= Modification to Existing Equipment
C= Existing Equipment

Status (15)	New Construction Began (MM/YY) (16-19)	New Construction Completed (MM/YY) (20-23)	Existing Initial Operation (MM/YY) (20-23)
A	0222	0323	

4. Describe this Equipment (Make, Model, Features, Manufacturer, etc.):

THERMAL FLUID HEAT EXCHANGER (HOT OIL HEATER) RATED @ 3 MMBTUs/HOUR HEAT INPUT, BURNING NATURAL GAS.

5. Workmen's Compensation Coverage: Binder/Policy Number: **4097121**

Company Name: **HARTFORD INSURANCE CO.** Expiration Date **01 NOVEMBER 2021**

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6. Number of Pieces of Identical Equipment to be Registered/Permitted at this Time: **1**

7. Person Installing this Equipment (if different from above give Name/Title, Company Name, Mailing Address and Telephone Number):

CWMF
701 JULEP RD., WAITE PARK, MN 56387
320.251.1306 **TRAVIS MICK, VP/SALES MANAGER**

8. Major Activity, Product or Service of Company at this Location:

TOPSOIL PROCESSING AND SALES
PRODUCTION OF ASPHALT PAVING MIXES

9. Control Devices Associated with this Equipment

None (24-0)	Simple/Multiple Cyclones (24-1)	Spray/Adsorb Tower (24-2)	Venturi Scrubber (24-3)	Carbon Adsorber (24-4)	Electrostatic Precipitator (24-5)	Bag-house (24-6)
☐	☐	☐	☐	☐	☐	☒

Thermal/Catalytic Afterburner (24-7)	Dry Scrubber (24-8)	Other (24-9)	Describe
☐	☐	☒	**KNOCK-OUT BOX**

10. Annual Fuel Consumption for this Equipment Only

OIL-1000 GALLONS	SULFUR %	GRADE	NATURAL GAS-1000 FT^3	LP GAS-100 GALLONS	GRADE
			26		
26-31	32-33	34	35-41	42-45	

COAL- TONS	SULFUR %	ASH%	WOOD-TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS _____ (Specify Type) [ ] 66-1 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

OTHER FUEL _____ (Specify Type) [ ] 66-2 ANNUAL AMOUNT CONSUMED _____ (Specify Units of Measure)

1= Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this equipment)

Comfort/Space Heating Only [ ] 67-1

Process Heat Only [X] 67-2

Percent Process Heat [ ] 68-69

Oil Burner Type [ ] 70 (1=Pressure Gun 2=Air Atomizer 3=Steam Atomizer 4=Rotary Cup)

Coal Burner Type [ ] 71 (1=Cyclone 2=Stoker 3=Pulverized 4=Hand Fired)

Days Per Week [7] 72

Days Per Year [3 6 5] 73-75

SEASONAL VARIATION IN OPERATION (PERCENT):

None [X] 76 Winter [ ] 77-78 Spring [ ] 79-80 Summer [ ] 81-82 Fall [ ] 83-84

12. Exhaust Stack Information

Height Above Ground (ft)	Inside Diameter at Top (inches)	Exit Temperature (°F)	Exit Velocity (ft/sec)
10	12	478	75
86-88	89-91	92-95	96-98

13. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
1	1	10
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compounds	PM-10
3	0	1
117-122	123-128	129-134

14. Method Used to Determine Emissions (1=Estimate, 2=AP42, 3=Stack Test, 4=Other Emission Factor)

TSP	SOx	NOx	CO	VOC	PM10
2	2	2	2	2	2
165	166	167	168	169	170

15. What is the Maximum Rated Heat Input of this Unit (Million Btu/hr)? 3

Air and Radiation Management Administration Use Only

16. Date Rec'd Local_____ Date Rec'd State_____

Return to Local Jurisdiction Date _____ By _____

Rev'd by Local Jurisdiction: Date _____ By _____ Rev'd by State: Date_____ By _____

Acknowledgement Sent by State: Date _____ By _____

17. Inventory Date (MM/YY)	SCC Code	18. Annual Operating Rate	Maximum Design Hourly Rate
171-174	178-185	186-192	193-199

Permit to Operate Month	Transaction Date	Staff Code	VOC	SIP Code
200-201	202-207	208-210	211 212	213 214

Regulation Code [ ] 215-218 Confidentiality [ ] 219

Point Description [ ] 220-238 Action [ ] 239 (A: Add C: Change)

APPENDIX G

G. ARA Form 44

for
the Crushing & Screening Plant ENGINES

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration / Air Quality Permits Program
1800 Washington Boulevard, STE 720 Baltimore, Maryland 21230-1720
(410) 537-3230 • 1-800-633-6101 • www.mde.state.md.us

Mail application to
MDE/ARMA
1800 Washington Blvd, Suite 720
Baltimore, MD 21203-1720

Don't forget to:
✓ *Sign the application*
✓ *Include vendor literature*

Air Quality Permit to Construct & Registration Application for

INTERNAL COMBUSTION ENGINES

(Electrical Power Generators, Power Equipment, Fire Protection Pumps)

1) Applicability

You must check off one of the following items to use this application form

- ☐ Electrical power generation (off grid, base load, peak, load shaving, etc.)
  - Use MDE Form 42 for emergency use only generators
- ☒ Power equipment (hydraulic, mechanical, etc.)
- ☐ Fire protection pump

For electrical power generators only, *you must check off one of the following items to use this application form*

- ☐ I have a CPCN Exemption from the Public Service Commission for this generator (contact the Public Service Commission at 410.767.8131)
- ☐ This generatore was installed before October 1, 2001 and I do not need a CPCN Exemption

2) Business/Institution/Facility where the engine will be located ☐ Check if this is a federal facility

Name: STANCILLS INC. Phone: (410) 554-1077

Street Address: 499 MOUNTAIN HILL ROAD

City: PERRYVILLE State: MD Zip Code: 21903 County: CECIL

3) Owner/Operator of the engine (if different than above)

Name: STANCILLS INC. Phone: (410) 241-3079

Mailing Address: 2444 LOCH RAVEN ROAD

City: BALTIMORE State: MD Zip Code: 21218

4) Installer ☐ Check if installer is applying for permit. If checked, complete the following:

Name: Phone:

Mailing Address:

City: State: Zip Code:

5) Engine Information

Installation Date	Engine Manufacturer & Model	Horsepower	Manufacture Date	Fuel Type
TBD	ENGINE 1	525	Tier 4i	DIESEL
TBD	ENGINE 2	200	Tier 4i	DIESEL
TBD	ENGINE 3	99	Tier 4i	DIESEL

6) Operating Information

Intended use desription: (Examples, "a portable generator at a construction site" or "peak shaving with the emergency generator", etc.)

ENGINE 1 WILL POWER A 300-TON-PER-HOUR CRUSHER, ENGINE 2 WILL POWER A 500-TON-PER-HOUR DOUBLE-DECK SCREENER AND ENGINE 3 WILL POWER A STACKING CONVEYOR.

Hours per day	Hours per year
8	1,800

7) Required Attachments

(Check that they are attached)

☐ Vendor literature EQUIPMENT HAS NOT YET BEEN SELECTED BUT WILL NOT EXCEED SPECS IN THIS APPLICATION.

☐ CPCN Exemption from the Public Service Commission

- Electrical generators only
- Not needed for generators installed before October 1, 2001

8) Workers Compensation (Environmental article §1-202)

Workers insurance policy or binder number: HARTFORD MUTUAL INSURANCE CO., BINDER #4097121, EXPIRING 11/01/2021

☐ Check if self employed or otherwise exempt from this requirement

" I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS REQUEST FOR COVERAGE IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

Owners Signature	Printed Name and Title	Date
	BRIAN RUSSELL, V.P. PLANT OPERATIONS	

LEAVE BLANK, MDE use only

☐ Permit

☐ Registration (Less than 1,000 brake horsepower & installed prior to 11/24/03)

Permit/Registration Number: _____ - _____ - _____ - _____

AI: _____

	SOx	NOx	CO	VOC	PM	PM-10
Emissons Stack						
Fugitive						

5) Engine Information

TBD	ENGINE 1	525	Tier 4i	DIESEL
TBD	ENGINE 2	200	Tier 4i	DIESEL
TBD	ENGINE 3	99	Tier 4i	DIESEL
Installation Date	Engine Manufacturer & Model	Horsepower	Manufacture Date	Fuel Type

6) Operating Information

Intended use desription: (Examples, "a portable generator at a construction site" or "peak shaving with the emergency generator", etc.)

ENGINE 1 WILL POWER A 300-TON-PER-HOUR CRUSHER, ENGINE 2 WILL POWER A 500-TON-PER-HOUR DOUBLE-DECK SCREENER AND ENGINE 3 WILL POWER A STACKING CONVEYOR.

8	1,800
Hours per day	Hours per year

7) Required Attachments

(Check that they are attached)

☐ Vendor literature EQUIPMENT HAS NOT YET BEEN SELECTED BUT WILL NOT EXCEED

☐ CPCN Exemption from the Public Service Commission SPECS IN THIS APPLICATION.

- Electrical generators only
- Not needed for generators installed before October 1, 2001

8) Workers Compensation (Environmental article §1-202)

Workers insurance policy or binder number: HARTFORD MUTUAL INSURANCE CO., BINDER #4097121, EXPIRING 11/01/2021

☐ Check if self employed or otherwise exempt from this requirement

" I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS REQUEST FOR COVERAGE IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

Owners Signature	BRIAN RUSSELL, V.P. PLANT OPERATIONS	7-15-2021
	Printed Name and Title	Date

LEAVE BLANK, MDE use only

☐ Permit

☐ Registration (Less than 1,000 brake horsepower & installed prior to 11/24/03)

Permit/Registration Number: _____ - _____ - _____ - _____

AI: _____

	SOx	NOx	CO	VOC	PM	PM-10
Emissons Stack						
Fugitive						

APPENDIX H

H. Emission Estimates for Criteria Air Pollutants

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

EMISSION ESTIMATES FOR POINT SOURCES.

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

STANCILLS INC. -- PERRYVILLE

APPLICATION FOR PERMIT TO CONSTRUCT

CRITERIA POLLUTANTS for ASPHALT PAVING MATERIALS MIXING PLANT

Operating Parameter	Quantity	Unit	POTENTIAL TO EMIT PERMIT LIMIT
Design Production Capacity	400	tons APM/hour	
Permit Limit Tons/year	800,000	tons APM/year	
Aggregate Content	54.5	%	**For 800,000 tons/yr production: VOC emissions of 12.8 tons/yr, NOx emissions of 22.0 tons/yr, and CO emissions of 52.0 tons/yr**
RAP Content	40	%	
Asphalt Content	5.5	%	
Fuel Consumption, estimate	300	CF/ton APM	
Operating Schedule	16	hours/day	
	210	days/year	

POLLUTANT	Emission Factor Source	Emission Factor (lb/ton APM)	Design Capacity (lb/hr)	DAILY* Emission Rate (lbs/day)	Restricted PTE (tons/yr)
PM10, stack	Emis. Conc. Limit	0.0109	4.36	70	4.4
PM2.5, stack	Emis. Conc. Limit	0.0076	3.05	49	3.1
Condensable PM	AP-42, Tbl 11.1-3	0.0194	7.76	124	7.8
Oxides of Sulfur	AP-42, Tbl 11.1-7	0.011	4.40	70	4.4
Oxides of Nitrogen	AP-42, Tbl 11.1-7	0.055	22.00	352	22.0
Carbon Monoxide	AP-42, Tbl 11.1-7	0.13	52.00	832	52.0
VOC (Total)	AP-42, Tbl 11.1-8	0.032	12.80	205	12.8
Lead	AP-42, Tbl 11.1-11	1.50 E-05	6.0 E-3	9.6 E-2	6.0 E-3
Carbon Dioxide (CO2)	AP-42, Tbl 11.1-7	3.30 E+01	1.3 E+4	2.1 E+5	1.3 E+4
Nitrous Oxide (N2O)	N/A	N/A	--	--	--
Methane (CH4)	AP-42, Tbl 11.1-8	1.20 E-02	4.80	77	4.8

	Burner Rating	Annual Fuel Consumption
Fuel Consumption	**120 MMBTUs/hr**	**286 MMCF / yr**

FUGITIVE DUST EMISSION	Emission Factor Sources	Emission Factor (lb/ton APM)	Design Capacity (lb/hr)	Daily Emission Rate (lbs/day)	Restricted PTE (tons/year)
PM_{10}	WEBFIRE	0.00098	0.3919	6.30	0.39
$PM_{2.5}$		0.00012	0.0465	0.70	0.05

METHOD FOR Determining PM_{10} & $PM_{2.5}$ Stack Emission Factor & Emission Rate

Exhaust fan capacity	80,000		
Exhaust Gas Moisture	25.0%	Estimated moisture content	
Exhaust fan temperature	300	°F	Absolute Temp (°R): 760
Standard Temperature	77	°F	Absolute Temp (°R): 537
Exhaust Gas Flow rate[1]	42,395	DSCFM	
MDE limit, grain/SCFD	0.04		
lb PM per hour[2]	14.54		

	PM10	PM25	
Fraction of Baghouse catch	30%	21%	AP-42, Table 11.1-4, % in Fabric Filter emission
Emission Rate	4.362	3.053	lb / hour
Emission Factor[3]	**0.0109**	**0.0076**	**lb / ton APM**

[1] multiplied ACFM by (1-ExGas Moist) then by Abs StdTemp, divide by Abs ExFanTemp. [2] multiplied DSCFM by MDE emission concentration limit with appropriate units conversion. [3] divided hourly rate by design rate tons/hour.

ANNUAL FUEL CONSUMPTION ESTIMATE

Burner rating:	120	MMBTUs / hour	120.0	MMBTUs / HR
Maximum Production Cap.	400	tons / hour		
Annual Average Production	80%	of maximum rated Production Capacity		
	320	tons / hour		
Permit Limit for Production	800,000	tons / year		
Operating Hours	2,500	hours / year		
Natural Gas HHV	1,050	MMBTUs / MMCF	139	MMBTUs / MGAL
Fuel Firing Rate, Hourly	0.1143	MMCF / hour	0.8633	MGAL / HR
Annual Fuel Consumption	286	MMCF / year	2,158	MGAL / YR

STANCILLS INC. -- PERRYVILLE

APPLICATION FOR PERMIT TO CONSTRUCT

CRITERIA POLLUTANTS for HOT OIL HEATER

Operating Parameter	Quantity	Unit		Quantity	Unit
	NATURAL GAS			NO. 2 FUEL OIL	
Burner Heat Input	3	MMBTUs/hr		3	MMBTUs/hr
Fuel Type	Natural Gas			#2 Fuel	
Fuel Heating Value	1050	MMBTUs/MMCF		139000	BTUs/gal
Fuel Consumption	0.00286	MMCF/hour		139	MMBTUs/MGAL
Daily Operations	24	hours/day		0.021583	MGAL/hr
Annual Operations	365	days/year			
	26 MMCF/yr			**190 MGAL/YR**	

POLLUTANT	Emission Factor Source	Emission Factor (lb/MGAL)	Design Capacity (lb/hr)	DAILY* Emission Rate (lbs/day)	Restricted PTE (tons/yr)
PM10, stack	AP-42, Tbl 1.4-2	1.08	0.0233	0.56	0.10
PM2.5, stack	assume same as PM10	0.83	0.0179	0.43	0.08
Condensable PM	AP-42, Tbl	1.3	0.0281	0.67	0.12
Oxides of Sulfur	AP-42, Tbl 1.4-2	2.16	0.0466	1.12	0.20
Oxides of Nitrogen	AP-42, Tbl 1.4-1	20	0.4317	10.36	1.89
Carbon Monoxide	AP-42, Tbl 1.4-1	5	0.1079	2.59	0.47
VOC (Total)	AP-42, Tbl 1.4-2	0.34	0.0073	0.18	0.03
Lead	AP-42, Tbl 1.4-2	1.25 E-03	2.70 E-5	6.48 E-4	1.18 E-4
Carbon Dioxide (CO2)	AP-42, Tbl 1.4-2	2.23 E+04	4.81 E+02	1.16 E+4	2.11 E+3
Nitrous Oxide (N2O)	AP-42, Tbl 1.4-2	2.60 E-01	5.61 E-03	1.35 E-1	2.46 E-2
Methane (CH4)	AP-42, Tbl 1.4-2	2.16 E-01	4.66 E-03	1.12 E-1	2.04 E-2

Exhaust Gas Flow Rate Calculation

Combustion Calculations	14,950	DSCF / MCF (calculated)
	15,490	WSCF / MCF (calculated)
Exhaust Gas Flow	738	WSCFM
Exhaust Gas Temp.	400	oF
Standard Temperature	77	oF
Exhaust Gas flow at Stack	1,180	ACFM
Stack Diameter	12	inches
Discharge distance fr ground	10.00	feet

Exit Velocity	927	FPM
	15	FPS

STANCILLS INC. -- PERRYVILLE

APPLICATION FOR PERMIT TO CONSTRUCT

CRITERIA POLLUTANTS for CRUSHER ENGINE

Operating Parameter	ENGINE 1	
Original Eqpt Mftr (OEM)	TBD	
Engine Size, bHp	525	
Tier Rating	4i	**608 MGal/yr**
Daily Hours	8	*for all engines combined*
Annual Days	225	
Annual Hours	1800	
Emission Factor Source	Tier 4i Emission Limits for PM, NOx, VOC, CO	
Emission Factor Source	AP-42, Section 3.3 for CO2	

POLLUTANT	Crusher Engine (g/hp-hr)	Emission Rate (lb/hr)	DAILY Emission Rate (lbs/day)	Restricted PTE (tons/yr)
PM10, stack	0.015	0.017	0.139	0.016
PM2.5, stack	0.015	0.017	0.139	0.016
Condensable	N/A	--	--	--
NOx/NMHC		--	--	--
Oxides of Nitrogen	0.3	0.347	2.778	0.313
VOC (Total)	0.14	0.162	1.296	0.146
Carbon Monoxide	2.6	3.01	24.07	2.71
	lb/MGAL			
SOx	0.208	5.5 E-2	4.4 E-1	3.9 E-2
	lb/bhp			
CO2	1.150	6.0 E+2	4.8 E+3	4.3 E+3

FUEL CONSUMPTION

FUEL USAGE, GAL/HR	26.3 gal/hour	210 gal/day	379 MGal/yr

Exhaust Gas Flow Data

Combustion Flue Gas	1,424	DSCF / gal (calculated)
	1,471	WSCF / gal (calculated)
Exhaust Gas Flow	644.6	WSCFM
Exhaust Gas Temp.	1,002	oF
Standard Temperature	77	oF
Exhaust Gas flow at Stack	1,750	ACFM
Stack Diameter	3	inches
Discharge distance fr ground	8.00	feet

Exit Velocity	594.2	FPS
	181.1	MPS
STACK AREA	0.04909	SF
	9.9	FPM

STANCILLS INC. -- PERRYVILLE

APPLICATION FOR PERMIT TO CONSTRUCT

CRITERIA POLLUTANTS for SCREENER ENGINE

Operating Parameter	ENGINE 2
Original Eqpt Mftr (OEM)	TBD
Engine Size, bHp	200
Tier Rating	4i
Daily Hours	8
Annual Days	225
Annual Hours	1800
Emission Factor Source	Tier 4i Emission Limits for PM, NOx, VOC, CO
Emission Factor Source	AP-42, Section 3.3 for CO2

POLLUTANT	Screen Engine (g/hp-hr)	Emission Rate (lb/hr)	DAILY Emission Rate (lbs/day)	Restricted PTE (tons/yr)
PM10, stack	0.015	0.007	0.053	0.006
PM2.5, stack	0.015	0.007	0.053	0.006
Condensable	N/A	--	--	--
NOx/NMHC		--	--	--
Oxides of Nitrogen	0.3	0.132	1.058	0.119
VOC (Total)	0.14	0.062	0.494	0.056
Carbon Monoxide	2.6	1.15	9.17	1.032
	lb/MGAL			
SOx (calculated)	0.208	2.2 E-3	1.7 E-2	2.0 E-3
	lb/bhp			
CO2	1.150	2.3 E+2	1.8 E+3	1.7 E+3

FUEL CONSUMPTION

FUEL USAGE, GAL/HR	10.5 gal/hour	84 gal/day	151 MGal/yr

Exhaust Gas Flow Data

Combustion Flue Gas	1,424	DSCF / gal (calculated)
	1,471	WSCF / gal (calculated)
Exhaust Gas Flow	257.4	WSCFM
Exhaust Gas Temp.	1,002	oF
Standard Temperature	77	oF
Exhaust Gas flow at Stack	700	ACFM
Stack Diameter	3	inches
Discharge distance fr ground	8.00	feet

Exit Velocity	237.7	FPS
	72.4	MPS
STACK AREA	0.04909	SF
	4.0	FPM

STANCILLS INC. -- PERRYVILLE

APPLICATION FOR PERMIT TO CONSTRUCT

CRITERIA POLLUTANTS for STACKER ENGINE

Operating Parameter	ENGINE 3
Original Eqpt Mftr (OEM)	TBD
Engine Size, bHp	99
Tier Rating	4i
Daily Hours	8
Annual Days	225
Annual Hours	1800
Emission Factor Source	Tier 4i Emission Limits for PM, NOx, VOC, CO
Emission Factor Source	AP-42, Section 3.3 for CO2

POLLUTANT	Stacker Engine (g/hp-hr)	Emission Rate (lb/hr)	DAILY Emission Rate (lbs/day)	Restricted PTE (tons/yr)
PM10, stack	0.015	0.003	0.026	0.003
PM2.5, stack	0.015	0.003	0.026	0.003
Condensable	N/A	--	--	--
NOx/NMHC		--	--	--
Oxides of Nitrogen	0.3	0.065	0.524	0.059
VOC (Total)	0.14	0.031	0.244	0.028
Carbon Monoxide	3.7	0.808	6.460	0.727
	lb/MGAL			
SOx	0.208	1.1 E-3	9.0 E-3	1.0 E-3
	lb/bhp			
CO2	1.150	1.1 E+2	9.1 E+2	8.2 E+2

FUEL CONSUMPTION

FUEL USAGE, GAL/HR	5.4 gal/hour	43 gal/day	78 MGal/yr

Exhaust Gas Flow Data

Combustion Flue Gas	1,424	DSCF / gal (calculated)
	1,471	WSCF / gal (calculated)
Exhaust Gas Flow	132.4	WSCFM
Exhaust Gas Temp.	1,002	oF
Standard Temperature	77	oF
Exhaust Gas flow at Stack	360	ACFM
Stack Diameter	3	inches
Discharge distance fr ground	4.00	feet

Exit Velocity	122.2	FPS
	37.3	MPS
STACK AREA	0.04909	SF
	0.6	FPM

EMISSION ESTIMATES FOR FUGITIVE SOURCES.

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

STANCILLS INC. -- PERRYVILLE
APPLICATION FOR PERMIT TO CONSTRUCT

DETERMINATION OF FUGITIVE PARTICULATE EMISSION FACTORS

Annual Production	800,000	tons APM produced per 12 months
Asphalt Cement added	4.0%	by weight, wet basis
Annual Aggregate/RAP consumption, dry	768,000	tons, @ 4% asphalt cement added to APM mixes
Maximum RAP content in APM	40.0%	by weight
RAP Consumption, dry	320,000	tons RAP (dry) used at 40% maximum RAP content
Annual Aggregate/RAP consumption, wet	808,421	tons, wet (5% moisture removed)
Annual RAP Consumption, wet	336,842	tons, wet, @ 5% moisture, dry basis.
Annual Virgin Aggregate consumption, wet	471,579	tons, wet, @ 5% moisture, dry basis.
Wet Aggregate/RAP to APM ratio	1.011	tons wet Aggregate/RAP per ton APM produced
Wet Aggregate/RAP Feed Rate	404	tons wet Aggregate/RAP per hour fed to plant
QUANTITY of Virgin Aggregate Stockpiles	7	stockpiles

FUGITIVE EMISSIONS DUE TO AGGREGATE / RAP HANDLING IN THE APM MIXING PROCESS -- PLANT FEED

TYPES OF MATERIAL HANDLING FUGITIVE EMISSIONS AND QUANTITY OF EACH TYPE:

Material Drops per ton of Aggregate / RAP used:		Aggregate	RAP
drop when materials transferred to stockpile	1		
drop when materials dropped into feed hoppers	1	0.583	0.417
Transfers to Conveyors			
TX from feed hopper to under-bin conveyor	1	0.583	0.417
TX from under-bin conveyor to Aggregate Conveyor 1	1	0.583	
TX from under-bin conveyor to Recycle Conveyor 1			0.417
TX from Aggregate Screen to Aggregate Conveyor 2	1	0.583	
TX from Recycle Screen to Recycle Conveyor 2			0.417
TX from Aggregate Conveyor 2 to Plant Feed Conveyor (Agg only)	1	0.583	
		2.915	1.668
Screening Emissions			
Aggregate Screen	0.583		
Recycle Screen	0.417		

The decimal numbers represent the fraction in the feed materials (not including the liquid asphalt added) for each type of feed material.

EMISSION FACTOR --> MATERIAL DROPS

From WEBFIRE, Sept. 2016	**PM10**	**PM2.5**	
Misc. Operations: Conveyor/Handling	0.000046	0.000013	lb / ton wet aggregate/RAP per Drop/Load

EMISSION FACTOR --> SCREENING

From WEBFIRE, Sept. 2016	**PM10**	**PM2.5**

Page 113 of 242
Stancills Inc. PTC Appln

Screening (controlled)	0.00074	0.00005	lb / ton wet aggregate/RAP per Screen

EMISSION FACTOR --> TRANSFER TO CONVEYOR

From WEBFIRE, Sept. 2016	**PM10**	**PM2.5**	
Misc. Operations: Conveyor/Handling	0.000046	0.000013	lb / ton wet aggregate/RAP per Conveyor

Emission Point	Quantity	PM10 lb/ton per -- movement	PM2.5 lb/ton per -- movement	PM10 lb/ton	PM2.5 lb/ton	PM10 lb/hour	PM2.5 lb/hour
Truck unloading to stockpiles (AGG)	1	4.60 E-5	1.30 E-5	4.60 E-5	1.30 E-5	1.86 E-2	5.25 E-3
Front-end loader to AGG Feed bins	0.583	4.60 E-5	1.30 E-5	2.68 E-5	7.58 E-6	1.08 E-2	3.06 E-3
AGG Feed bins drop to under-conveyor	0.583	4.60 E-5	1.30 E-5	2.68 E-5	7.58 E-6	1.08 E-2	3.06 E-3
AGG Feed bin under-conveyor to main conveyor	0.583	4.60 E-5	1.30 E-5	2.68 E-5	7.58 E-6	1.08 E-2	3.06 E-3
AGG Screener	0.583	7.40 E-4	5.00 E-5	4.31 E-4	2.92 E-5	1.74 E-1	1.18 E-2
AGG Screener Tx to process feed conveyor	0.583	4.60 E-5	1.30 E-5	2.68 E-5	7.58 E-6	1.08 E-2	3.06 E-3
Front-end loader to RAP feed bin	0.417	4.60 E-5	1.30 E-5	1.92 E-5	5.42 E-6	7.75 E-3	2.19 E-3
RAP Feed bins drop to under-conveyor	0.417	4.60 E-5	1.30 E-5	1.92 E-5	5.42 E-6	7.75 E-3	2.19 E-3
RAP Feed bin under-conveyor to main conveyor	0.417	4.60 E-5	1.30 E-5	1.92 E-5	5.42 E-6	7.75 E-3	2.19 E-3
RAP Screener	0.417	7.40 E-4	5.00 E-5	3.09 E-4	2.09 E-5	1.25 E-1	8.42 E-3
RAP Screener Tx to process feed conveyor	0.417	4.60 E-5	1.30 E-5	1.92 E-5	5.42 E-6	7.75 E-3	2.19 E-3
Hourly Emission Rate for APMMP Fugitive Dust						3.92 E-1	4.65 E-2

EMISSION RATES ORGANIZED FOR PM10 COMPLIANCE DEMONSTRATION

	PM_{10}				$PM_{2.5}$		
For Dispersion Modeling Volumes	**lb/hour**	**lb/day**	**TWA lb/hr**	**lb/year**	**lb/hour**	**lb/day**	**TWA lb/hr**
Truck unloading to stockpiles (AGG)	0.0186	0.297	0.0124	36.80	0.0053	0.084	0.0035
Front-end loader to AGG feed bins AGG feed bin conveyor transfers	0.0325	0.5201	0.0217	110.4	0.0092	0.1470	0.0061
Aggregate Screener AGG Screener TX to conveyor	0.1851	2.9621	0.1234	665.6	0.0148	0.2374	0.0099
Front-end loader to RAP feed bin RAP feed bin conveyor transfers RAP Screener RAP Screener TX to conveyor	0.1557	2.4906	0.1038	739.2	0.0172	0.2749	0.0115

The production of APM uses several different sizes of virgin aggregates and different percentages of RAP throughout the course of one operating day. It is impossible to identify the number of trucks that will unload at each individual stockpile or the number of times the loader will load an individual feed bin during the course of the day. Therefore, for the purposes of the NAAQS PM-10 compliance demonstration, the time-weighted average emission rate shown above for the Truck Unloading to Stockpiles and for the Front-end loader to AGG feed bins was divided by the number of stockpiles and feed bins, respectively.

Individual Stockpiles, quantity: 7, assumed even usage	0.00177	TWA lb/hr per Aggregate Stockpile

Page 114 of 242
Stancills Inc. PTC Appln

PARTICULATE EMISSIONS ESTIMATE FOR CRUSHING & SCREENING PLANT

Description	Fraction of Excavator Max. Feed Rate	Material Transfers, Unloading	Material Transfers, Other	Material Transfers, Haul Vehicles	Material Transfers, Conveyors	Crusher	Screener	Material Transfers, Unloading	Material Transfers, Other	Material Transfers, Haul Vehicles	Material Transfers, Conveyors	Crusher	Screener**
CRUSHING & SCREENING @ Steady State operations													
Feed Material unloading to Feed Stockpile	100%	1						1	0	0	0	0	0
Feed Material transfer to Initial Feed Hopper	100%		1					0	1	0	0	0	0
CRUSHER receives material & processes it	100%					1		0	0	0	0	1	0
CRUSHER discharges to belt conveyor	100%				1			0	0	0	1	0	0
Belt conveyor transfers to belt conveyor	100%				1			0	0	0	1	0	0
SCREENER receives material & processes it	100%						1	0	0	0	0	0	1
SCREENER discharges to Product Conveyors	100%				1			0	0	0	1	0	0
Product Conveyor transfers to Stacker **	100%				1			0	0	0	1	0	0
Stacker transfers to Temporary Stockpile	100%		1					0	1	0	0	0	0
Temporary Stockpile Materials transferred to Stockpile 8	100%		1					0	1	0	0	0	0
Stockpile 8 Materials loaded into haul vehicles	100%			1				0	0	1	0	0	0
RECYCLE LOOP @ Steady State operations													
SCREENER Top deck discharges to transfer chute	25%		1					0	0.25	0	0	0	0
Transfer chute transfers to belt conveyor	25%				1			0	0	0	0.25	0	0
Belt conveyor tranfsers to Feed Hopper	25%		1					0	0.25	0	0	0	0
CRUSHER receives Oversize & processes it	25%					1		0	0	0	0	0.25	0
CRUSHER discharges Oversize to belt conveyor	25%				1			0	0	0	0.25	0	0
Belt Conveyor to belt conveyor	25%				1			0	0	0	0.25	0	0
SCREENER receives Oversize & processes it	25%						1	0	0	0	0	0	0.25
Total Emission Points per Emission Type								**1.00**	**3.50**	**1.00**	**4.75**	**1.25**	**1.25**

* In the Emission Point column: "R" = Recycle loop for the CSP.

PM_{10} Emission Factors		4.6E-05	4.6E-05	4.6E-05	4.6E-05	5.4E-04	7.4E-04	
PM_{10} Emission Rate -- lb/hour	Excavator Rate: 300 tons/hour	0.014	0.048	0.014	0.066	0.203	0.278	**0.621 lb/hour**
PM_{10} Emission Rate -- lb/day	Daily Hours: 8 hours/day	0.110	0.386	0.110	0.524	1.620	2.220	**4.972 lb/day**
PM_{10} Emission Rate -- ton/year	Annual tons: 100,000 tons/yr	0.002	0.008	0.002	0.011	0.034	0.046	**0.104 ton/yr**

$PM_{2.5}$ Emission Factors		1.3E-05	1.3E-05	1.3E-05	1.3E-05	1.0E-04	5.0E-05	
$PM_{2.5}$ Emission Rate -- lb/hour	Excavator Rate: 300 tons/hour	0.004	0.014	0.004	0.019	0.038	0.019	**0.096 lb/hour**
$PM_{2.5}$ Emission Rate -- lb/day	Daily Hours: 8 hours/day	0.031	0.109	0.031	0.148	0.300	0.150	**0.770 lb/day**
$PM_{2.5}$ Emission Rate -- ton/year	Annual tons: 100,000 tons/yr	0.001	0.002	0.001	0.003	0.006	0.003	**0.016 ton/yr**

Unloading Emission Rate (SP9)	0.0138	lb / hour, PM10
CSP Emission Rate	0.5939	lb / hour, PM10
Stockpile Loading Emission Rate (SP8)	0.0138	lb / hour, PM10

Page 115 of 242
Stancills Inc. PTC Appln

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

EMISSION ESTIMATES FOR HAZARDOUS AIR POLLUTANTS.

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

HAZARDOUS AIR POLLUTANTS

POLLUTANT NAME	CASRN	APM MIXING PLANT EMISSION FACTORS & RATE FOR 800,000 TONS APM/YEAR			
		lb/ton	lb/hour	lb/day	lb/year
Formaldehyde	50-00-0	3.10 E-03	1.24 E+0	1.98 E+1	2.48 E+3
Benzo(a)Pyrene	50-32-8	9.80 E-09	3.92 E-6	6.27 E-5	7.84 E-3
Dibenz(a,h)Anthracene	53-70-3		0.00 E+0	0.00 E+0	0.00 E+0
3-Methylcholanthrene*	56-49-5		0.00 E+0	0.00 E+0	0.00 E+0
Benzo(a)Anthracene	56-55-3	2.10 E-07	8.40 E-5	1.34 E-3	1.68 E-1
7,12-Dimethylbenz(a)Anthracene*	57-97-6		0.00 E+0	0.00 E+0	0.00 E+0
Benzene	71-43-2	3.90 E-04	1.56 E-1	2.50 E+0	3.12 E+2
Methylchloroform	71-55-6	4.80 E-05	1.92 E-2	3.07 E-1	3.84 E+1
Acetaldehyde	75-07-0		0.00 E+0	0.00 E+0	0.00 E+0
Acenaphthene	83-32-9	1.40 E-06	5.60 E-4	8.96 E-3	1.12 E+0
Phenanthrene	85-01-8	7.60 E-06	3.04 E-3	4.86 E-2	6.08 E+0
Fluorene	86-73-7	3.80 E-06	1.52 E-3	2.43 E-2	3.04 E+0
Naphthalene	91-20-3	9.00 E-05	3.60 E-2	5.76 E-1	7.20 E+1
2-Methylnaphthalene	91-57-6	7.40 E-05	2.96 E-2	4.74 E-1	5.92 E+1
Ethylbenzene	100-41-4	2.40 E-04	9.60 E-2	1.54 E+0	1.92 E+2
1,3-Butadiene	106-99-0		0.00 E+0	0.00 E+0	0.00 E+0
Acrolein	107-02-8		0.00 E+0	0.00 E+0	0.00 E+0
Toluene	108-88-3	1.50 E-04	6.00 E-2	9.60 E-1	1.20 E+2
Hexane	110-54-3	9.20 E-04	3.68 E-1	5.89 E+0	7.36 E+2
Anthracene	120-12-7	2.20 E-07	8.80 E-5	1.41 E-3	1.76 E-1
Pyrene	129-00-0	5.40 E-07	2.16 E-4	3.46 E-3	4.32 E-1
Benzo(g,h,i)Perylene	191-24-2	4.00 E-08	1.60 E-5	2.56 E-4	3.20 E-2
Benzo(e)Pyrene	192-97-2	1.10 E-07	4.40 E-5	7.04 E-4	8.80 E-2
Indeno(1,2,3-cd)Pyrene	193-39-5	7.00 E-09	2.80 E-6	4.48 E-5	5.60 E-3
Perylene	198-55-0	8.80 E-09	3.52 E-6	5.63 E-5	7.04 E-3
Benzo(b)Fluoranthene	205-99-2	1.00 E-07	4.00 E-5	6.40 E-4	8.00 E-2
Fluoranthene	206-44-0	6.10 E-07	2.44 E-4	3.90 E-3	4.88 E-1
Benzo(k)Fluoranthene	207-08-9	4.10 E-08	1.64 E-5	2.62 E-4	3.28 E-2
Acenaphthylene	208-96-8	8.60 E-06	3.44 E-3	5.50 E-2	6.88 E+0
Chrysene	218-01-9	1.80 E-07	7.20 E-5	1.15 E-3	1.44 E-1
Xylene	1330-20-7	2.00 E-04	8.00 E-2	1.28 E+0	1.60 E+2
Lead	7439-92-1	6.20 E-07	2.48 E-4	3.97 E-3	4.96 E-1
Manganese	7439-96-5	7.70 E-06	3.08 E-3	4.93 E-2	6.16 E+0
Mercury	7439-97-6	2.40 E-07	9.60 E-5	1.54 E-3	1.92 E-1
Nickel	7440-02-0	6.30 E-05	2.52 E-2	4.03 E-1	5.04 E+1
Antimony	7440-36-0	1.80 E-07	7.20 E-5	1.15 E-3	1.44 E-1
Arsenic	7440-38-2	5.60 E-07	2.24 E-4	3.58 E-3	4.48 E-1
Beryllium	7440-41-7		0.00 E+0	0.00 E+0	0.00 E+0
Cadmium	7440-43-9	4.10 E-07	1.64 E-4	2.62 E-3	3.28 E-1
Chromium	7440-47-3	5.50 E-06	2.20 E-3	3.52 E-2	4.40 E+0
Chromium, VI	7440-47-3	4.50 E-07	1.80 E-4	2.88 E-3	3.60 E-1
Cobalt	7440-48-4		0.00 E+0	0.00 E+0	0.00 E+0

HAZARDOUS AIR POLLUTANTS -- con'd

POLLUTANT NAME	CASRN	HOT OIL HEATER EMISSIONS			
		lb/MMCF	lb/hour	lb/day	lb/year
Formaldehyde	50-00-0	7.50 E-2	2.14 E-4	5.14 E-3	1.95 E+0
Benzo(a)Pyrene	50-32-8	1.20 E-6	3.43 E-9	8.23 E-8	3.12 E-5
Dibenz(a,h)Anthracene	53-70-3	1.20 E-6	3.43 E-9	8.23 E-8	3.12 E-5
3-Methylcholanthrene*	56-49-5	1.80 E-6	5.14 E-9	1.23 E-7	4.68 E-5
Benzo(a)Anthracene	56-55-3	1.80 E-6	5.14 E-9	1.23 E-7	4.68 E-5
7,12-Dimethylbenz(a)Anthracene*	57-97-6	1.60 E-5	4.57 E-8	1.10 E-6	4.16 E-4
Benzene	71-43-2	2.10 E-3	6.00 E-6	1.44 E-4	5.46 E-2
Methylchloroform	71-55-6	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
Acetaldehyde	75-07-0	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
Acenaphthene	83-32-9	1.80 E-6	5.14 E-9	1.23 E-7	4.68 E-5
Phenanthrene	85-01-8	1.70 E-5	4.86 E-8	1.17 E-6	4.42 E-4
Fluorene	86-73-7	2.80 E-6	8.00 E-9	1.92 E-7	7.28 E-5
Naphthalene	91-20-3	6.10 E-4	1.74 E-6	4.18 E-5	1.59 E-2
2-Methylnaphthalene	91-57-6	2.40 E-5	6.86 E-8	1.65 E-6	6.24 E-4
Ethylbenzene	100-41-4	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
1,3-Butadiene	106-99-0	0.00 E+0	0.00 E+0	0.00 E+0	
Acrolein	107-02-8	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
Toluene	108-88-3	3.40 E-3	9.71 E-6	2.33 E-4	8.84 E-2
Hexane	110-54-3	1.80 E+0	5.14 E-3	1.23 E-1	4.68 E+1
Anthracene	120-12-7	2.40 E-6	6.86 E-9	1.65 E-7	6.24 E-5
Pyrene	129-00-0	5.00 E-6	1.43 E-8	3.43 E-7	1.30 E-4
Benzo(g,h,i)Perylene	191-24-2	1.20 E-6	3.43 E-9	8.23 E-8	3.12 E-5
Benzo(e)Pyrene	192-97-2	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
Indeno(1,2,3-cd)Pyrene	193-39-5	1.80 E-6	5.14 E-9	1.23 E-7	4.68 E-5
Perylene	198-55-0	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
Benzo(b)Fluoranthene	205-99-2	1.80 E-6	5.14 E-9	1.23 E-7	4.68 E-5
Fluoranthene	206-44-0	3.00 E-6	8.57 E-9	2.06 E-7	7.80 E-5
Benzo(k)Fluoranthene	207-08-9	1.80 E-6	5.14 E-9	1.23 E-7	4.68 E-5
Acenaphthylene	208-96-8	1.80 E-6	5.14 E-9	1.23 E-7	4.68 E-5
Chrysene	218-01-9	1.80 E-6	5.14 E-9	1.23 E-7	4.68 E-5
Xylene	1330-20-7	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
Lead	7439-92-1	5.00 E-4	1.43 E-6	3.43 E-5	1.30 E-2
Manganese	7439-96-5	3.80 E-4	1.09 E-6	2.61 E-5	9.88 E-3
Mercury	7439-97-6	2.60 E-4	7.43 E-7	1.78 E-5	6.76 E-3
Nickel	7440-02-0	2.10 E-3	6.00 E-6	1.44 E-4	5.46 E-2
Antimony	7440-36-0	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
Arsenic	7440-38-2	2.00 E-4	5.71 E-7	1.37 E-5	5.20 E-3
Beryllium	7440-41-7	1.20 E-5	3.43 E-8	8.23 E-7	3.12 E-4
Cadmium	7440-43-9	1.10 E-3	3.14 E-6	7.54 E-5	2.86 E-2
Chromium	7440-47-3	1.40 E-3	4.00 E-6	9.60 E-5	3.64 E-2
Chromium, VI	7440-47-3	0.00 E+0	0.00 E+0	0.00 E+0	0.00 E+0
Cobalt	7440-48-4	8.40 E-5	2.40 E-7	5.76 E-6	2.18 E-3

HAZARDOUS AIR POLLUTANTS -- con'd

POLLUTANT NAME	CASRN	ENGINE EMISSIONS: CRUSHER, SCREENER, & STACKER 42.2 GPH (all engines), 128,700 BTUs / gal HHV Diesel fuel			
		lb/MMBTU	lb/hour	lb/day	lb/year
Formaldehyde	50-00-0	1.18 E-3	6.41 E-3	5.13 E-2	9.23 E+1
Benzo(a)Pyrene	50-32-8	1.88 E-7	1.02 E-6	8.17 E-6	1.47 E-2
Dibenz(a,h)Anthracene	53-70-3	5.83 E-7	3.17 E-6	2.53 E-5	4.56 E-2
3-Methylcholanthrene*	56-49-5		0.00 E+0	0.00 E+0	
Benzo(a)Anthracene	56-55-3	1.68 E-6	9.12 E-6	7.30 E-5	1.31 E-1
7,12-Dimethylbenz(a)Anthracene*	57-97-6		0.00 E+0	0.00 E+0	
Benzene	71-43-2	9.33 E-4	5.07 E-3	4.05 E-2	7.30 E+1
Methylchloroform	71-55-6		0.00 E+0	0.00 E+0	
Acetaldehyde	75-07-0	7.67 E-4	4.17 E-3	3.33 E-2	6.00 E+1
Acenaphthene	83-32-9	1.42 E-6	7.71 E-6	6.17 E-5	1.11 E-1
Phenanthrene	85-01-8	2.94 E-5	1.60 E-4	1.28 E-3	2.30 E+0
Fluorene	86-73-7	2.92 E-5	1.59 E-4	1.27 E-3	2.28 E+0
Naphthalene	91-20-3	8.48 E-5	4.61 E-4	3.68 E-3	6.64 E+0
2-Methylnaphthalene	91-57-6		0.00 E+0	0.00 E+0	
Ethylbenzene	100-41-4		0.00 E+0	0.00 E+0	
1,3-Butadiene	106-99-0	3.91 E-5	2.12 E-4	1.70 E-3	3.06 E+0
Acrolein	107-02-8	9.25 E-5	5.02 E-4	4.02 E-3	7.24 E+0
Toluene	108-88-3	4.09 E-4	2.22 E-3	1.78 E-2	3.20 E+1
Hexane	110-54-3		0.00 E+0	0.00 E+0	
Anthracene	120-12-7	1.87 E-6	1.02 E-5	8.12 E-5	1.46 E-1
Pyrene	129-00-0	4.78 E-6	2.60 E-5	2.08 E-4	3.74 E-1
Benzo(g,h,i)Perylene	191-24-2	4.89 E-7	2.66 E-6	2.12 E-5	3.83 E-2
Benzo(e)Pyrene	192-97-2		0.00 E+0	0.00 E+0	
Indeno(1,2,3-cd)Pyrene	193-39-5	3.75 E-7	2.04 E-6	1.63 E-5	2.93 E-2
Perylene	198-55-0		0.00 E+0	0.00 E+0	
Benzo(b)Fluoranthene	205-99-2	9.91 E-8	5.38 E-7	4.31 E-6	7.75 E-3
Fluoranthene	206-44-0	7.61 E-6	4.13 E-5	3.31 E-4	5.95 E-1
Benzo(k)Fluoranthene	207-08-9	1.55 E-7	8.42 E-7	6.73 E-6	1.21 E-2
Acenaphthylene	208-96-8	5.06 E-6	2.75 E-5	2.20 E-4	3.96 E-1
Chrysene	218-01-9	3.53 E-7	1.92 E-6	1.53 E-5	2.76 E-2
Xylene	1330-20-7	2.85 E-4	1.55 E-3	1.24 E-2	2.23 E+1
Lead	7439-92-1		0.00 E+0	0.00 E+0	
Manganese	7439-96-5		0.00 E+0	0.00 E+0	
Mercury	7439-97-6		0.00 E+0	0.00 E+0	
Nickel	7440-02-0		0.00 E+0	0.00 E+0	
Antimony	7440-36-0		0.00 E+0	0.00 E+0	
Arsenic	7440-38-2		0.00 E+0	0.00 E+0	
Beryllium	7440-41-7		0.00 E+0	0.00 E+0	
Cadmium	7440-43-9		0.00 E+0	0.00 E+0	
Chromium	7440-47-3		0.00 E+0	0.00 E+0	
Chromium, VI	7440-47-3		0.00 E+0	0.00 E+0	
Cobalt	7440-48-4		0.00 E+0	0.00 E+0	

HAZARDOUS AIR POLLUTANTS -- con'd

POLLUTANT NAME	CASRN	*Not a major source for HAPs.* HAZARDOUS AIR POLLUTANTS (HAPs)			
		lbs/year	ton/year	HAP?	POM?
Formaldehyde	--	2574	1.287	y	
Benzo(a)Pyrene	50-32-8	0.0	0.000	y	
Dibenz(a,h)Anthracene	53-70-3	0.0	0.000	y	
3-Methylcholanthrene*	56-49-5	0.0	0.000	y	y
Benzo(a)Anthracene	56-55-3	0.3	0.000	y	y
7,12-Dimethylbenz(a)Anthracene*	57-97-6	0.0	0.000	y	y
Benzene	71-43-2	385.1	0.193	y	
Methylchloroform	71-55-6	38.4	0.019	y	
Acetaldehyde	75-07-0	60.0	0.030	y	
Acenaphthene	83-32-9	1.2	0.001	y	y
Phenanthrene	85-01-8	8.4	0.004	y	y
Fluorene	86-73-7	5.3	0.003	y	y
Naphthalene	91-20-3	78.7	0.039	y	
2-Methylnaphthalene	91-57-6	59.2	0.030	y	y
Ethylbenzene	100-41-4	192.0	0.096	y	
1,3-Butadiene	106-99-0	3.1	0.002	y	
Acrolein	107-02-8	7.2	0.004	y	
Toluene	108-88-3	152.1	0.076	y	
Hexane	110-54-3	782.8	0.391	y	
Anthracene	120-12-7	0.3	0.000	y	y
Pyrene	129-00-0	0.8	0.000	y	y
Benzo(g,h,i)Perylene	191-24-2	0.1	0.000	y	y
Benzo(e)Pyrene	192-97-2	0.1	0.000	y	y
Indeno(1,2,3-cd)Pyrene	193-39-5	0.0	0.000	y	y
Perylene	198-55-0	0.0	0.000	y	y
Benzo(b)Fluoranthene	205-99-2	0.1	0.000	y	y
Fluoranthene	206-44-0	1.1	0.001	y	y
Benzo(k)Fluoranthene	207-08-9	0.0	0.000	y	y
Acenaphthylene	208-96-8	7.3	0.004	y	y
Chrysene	218-01-9	0.2	0.000	y	y
Xylene	1330-20-7	182.3	0.091	y	
Lead	7439-92-1	0.5	0.000	y	
Manganese	7439-96-5	6.2	0.003	y	
Mercury	7439-97-6	0.2	0.000	y	
Nickel	7440-02-0	50.5	0.025	y	
Antimony	7440-36-0	0.1	0.000	y	
Arsenic	7440-38-2	0.5	0.000	y	
Beryllium	7440-41-7	0.0	0.000	y	
Cadmium	7440-43-9	0.4	0.000	y	
Chromium	7440-47-3	4.4	0.002	y	
Chromium, VI	7440-47-3	0.4	0.000	y	
Cobalt	7440-48-4	0.0	0.000	y	
TOTAL HAPs (tons/year):		**2.3**			
TOTAL POM HAPs (tons/year):		**0.042**			
Highest annual emission rate for a single HAP: 1.29 tons/year.					

APPENDIX I

I. NAAQS Compliance Demonstration

STANCILLS INC. -- PERRYVILLE
NAAQS SCREENING ANALYSIS AT PROPERTY LINE*
APPLICATION FOR PERMIT TO CONSTRUCT

SO2, 1-HOUR AVERAGING PERIOD

EMISSIONS SOURCE	Emission Rate		SCREEN3 Result	Predicted Ambient Air Concentration	
	lb/hr	g/sec	ug/m^3 per g/sec	ug/m^3	PPB
Baghouse Stack	4.4	0.55439	8.815	4.89	
Hot Oil Heater	0.0466	0.00587	0.0	0.00	
CSP ENGINES					
Crusher Engine	0.052	0.00656	337.5	2.21	
Screener Engine	0.0022	0.00028	865.7	0.24	
Stacker Engine	0.0011	0.00014	3,825	0.54	
		PREMISES-WIDE TOTAL		**7.88**	**2.96**
		Background concentration			**4.8**
		Est'd AAC, ug/m3			**7.8**
		NAAQS			**75**

SO2, 24-HOUR AVERAGING PERIOD

EMISSIONS SOURCE	Emission Rate		SCREEN3 Result	Predicted Ambient Air Concentration	
	lb/hr	g/sec	ug/m^3 per g/sec	ug/m^3	PPB
Baghouse Stack	4.4	0.55439	3.526	1.955	
Hot Oil Heater	0.0466	0.00587	0.0	0.000	
CSP ENGINES					
Crusher Engine	0.052	0.00656	135.0	0.886	
Screener Engine	0.0022	0.00028	346.3	0.095	
Stacker Engine	0.0011	0.00014	1,530	0.217	
		PREMISES-WIDE TOTAL		**3.153**	**1.19**
		Background concentration			**4.80**
		Est'd AAC, ug/m3			**5.99**
		NAAQS			**140**

STANCILLS INC. -- PERRYVILLE
NAAQS SCREENING ANALYSIS AT PROPERTY LINE*
APPLICATION FOR PERMIT TO CONSTRUCT

NOx, 1-HOUR AVERAGING PERIOD

EMISSIONS SOURCE	Emission Rate		SCREEN3 Result	Predicted Ambient Air Concentration	
	lb/hr	g/sec	ug/m^3 per g/sec	ug/m^3	PPB
Baghouse Stack	22.0	2.77195	8.815	24.4	
Hot Oil Heater	0.43	0.05439	0.0	0.0	
CSP ENGINES					
Crusher Engine	0.3472	0.04375	337.5	14.8	
Screener Engine	0.1323	0.01667	865.7	14.4	
Stacker Engine	0.0655	0.00825	3,825	31.6	
		PREMISES-WIDE TOTAL		**85.2**	**34.15**
		Background concentration			**33.0**
		Est'd AAC, ug/m3			**67.2**
		NAAQS			**100**

NOx, ANNUAL AVERAGING PERIOD

EMISSIONS SOURCE	Emission Rate		SCREEN3 Result	d Ambient Air Concentration	
	lb/hr	g/sec	ug/m^3 per g/sec	ug/m^3	PPM
Baghouse Stack	22.0	2.7720	0.705	1.95	
Hot Oil Heater	0.43	0.0544	0.00	0.00	
CSP ENGINES					
Crusher Engine	0.347	0.0438	27.00	1.18	
Screener Engine	0.1323	0.0167	69.26	1.15	
Stacker Engine	0.0655	0.0083	306.0	2.5	
		PREMISES-WIDE TOTAL		**6.81**	**2.7**
		Background concentration			**6.22**
		Est'd AAC, ug/m3			**9.0**
		NAAQS			**53**

STANCILLS INC. -- PERRYVILLE
NAAQS SCREENING ANALYSIS AT PROPERTY LINE*
APPLICATION FOR PERMIT TO CONSTRUCT

CO, 1-HOUR AVERAGING PERIOD

EMISSIONS SOURCE	Emission Rate		SCREEN3 Result	Predicted Ambient Air Concentration	
	lb/hr	g/sec	ug/m^3 per g/sec	ug/m^3	PPM
Baghouse Stack	52.0	6.5519	8.815	57.8	
Hot Oil Heater	0.11	0.0136	0.0	0.0	
CSP ENGINES					
Crusher Engine	2.866	0.3611	337.5	121.9	
Screener Engine	1.1464	0.1444	865.7	125.0	
Stacker Engine	0.8076	0.1018	3,825	389.2	
		PREMISES-WIDE TOTAL		**693.9**	**0.5959**
		Background concentration			**1.2**
		Est'd AAC, ug/m3			**1.8**
		NAAQS			**35**

CO, 8-HOUR AVERAGING PERIOD

EMISSIONS SOURCE	Emission Rate		SCREEN3 Result	Predicted Ambient Air Concentration	
	lb/hr	g/sec	ug/m^3 per g/sec	ug/m^3	PPM
Baghouse Stack	52.0	6.5519	6.171	40.4	
Hot Oil Heater	0.11	0.0136	0.0	0.0	
CSP ENGINES					
Crusher Engine	2.866	0.3611	236.3	85.3	
Screener Engine	1.1464	0.1444	606.0	87.5	
Stacker Engine	0.8076	0.1018	2,678	272.4	
		PREMISES-WIDE TOTAL		**485.7**	**0.4171**
		Background concentration			**0.8**
		Est'd AAC, ug/m3			**1.2171**
		NAAQS			**9**

STANCILLS INC. -- PERRYVILLE
NAAQS SCREENING ANALYSIS AT PROPERTY LINE*
APPLICATION FOR PERMIT TO CONSTRUCT

PM_{10}, 24-HOUR* AVERAGING PERIOD

EMISSIONS SOURCE	Emission Rate		SCREEN3 Result	Predicted Ambient Air Concentration	
	lb/hr	g/sec	ug/m^3 per g/sec	ug/m^3	
Baghouse Stack	2.9	0.36749	3.526	1.30	
Unload @ AGG pile 1	0.0018	0.00022	738.0	0.16	
Unload @ AGG pile 2	0.0018	0.00022	760.8	0.17	
Unload @ AGG pile 3	0.0018	0.00022	832.0	0.19	
Unload @ AGG pile 4	0.0018	0.00022	958.8	0.21	
Unload @ AGG pile 5	0.0018	0.00022	1028	0.23	
Unload @ AGG pile 6	0.0018	0.00022	1088	0.24	
Unload @ AGG pile 7	0.0018	0.00022	1164	0.26	
AGG Screener & Drum Feed	0.1234	0.01555	1,110	17.27	
RAP Feed Bin System	0.1038	0.01308	2,983	39.01	
Hot Oil Heater	0.0233	0.00294	0.0	0.00	
Crushing & Screening Plant	0.2072	0.02610	856	22.4	
Unload to Stockpile 9 (CSP)	0.0046	0.00058	768	0.45	
Transfer to Stockpile 8 (CSP)	0.0046	0.00058	746	0.43	
CSP ENGINES					
Crusher Engine	0.0058	0.00073	135.0	0.10	
Screener Engine	0.0022	0.00028	346.3	0.10	
Stacker Engine	0.0011	0.00014	1,530	0.21	
		PREMISES-WIDE TOTAL		**82.7**	
		Background concentration		**21.0**	
		Est'd AAC, ug/m3		**103.7**	
		NAAQS		**150**	

* Time weighted average emission rate was used

STANCILLS INC. -- PERRYVILLE
NAAQS SCREENING ANALYSIS AT PROPERTY LINE*
APPLICATION FOR PERMIT TO CONSTRUCT

UNITS CONVERSION METHODOLGY

mg/m3 = PPM / 10^6 x MW / MolarVolume x 10^3 ml/l x 10^3 l/m^3
mg/m3 = PPB / 10^9 x MW / MolarVolume x 10^3 ml/l x 10^3 l/m^3

Molar Volume = (0.08206)*(273.15+20)	24.055889	ml/mol	Constant
	2.4056E-05	m^3/mol	41.56986258

MOLECULAR WEIGHTS:

Sulfur Dioxide	63.9988	mg/mol
Carbon Monoxide	28.01	mg/mol
Nitrogen Dioxide	59.9988	mg/mol

Sulfur Dioxide, 1-hour	75	ppb	199.5	ug/m^3
Carbon Monoxide, 1-hour	35	ppm	40753.0	ug/m^3
Carbon Monoxide, 8-hour	9	ppm	10479.3	ug/m^3
Nitrogen Dioxide, 1-hour	100	ppb	249.4	ug/m^3
Nitrogen Dioxide, Annual	53	ppb	132.2	ug/m^3

ug/m3 = PPM / 10^6 x MW / MolarVolume x 10^3 ml/l x 10^3 l/m^3*10^3
ug/m3 = PPM / 10^9 x MW / MolarVolume x 10^3 ml/l x 10^3 l/m^3*10^3

To convert from PPM to AAC: PPM# * MW# * ConversionConstant

to convert from AAC to PPM: AAC#/MW#/ConversionConstant

APPENDIX J

J. Toxics Air Pollutant Compliance Demonstration

TOXIC AIR POLLUTANTS SCREENING ANALYSIS FOR BAGHOUSE STACK

POLLUTANT NAME	CASRN	APM MIXING PLANT EMISSION FACTOR & RATE		BAGHOUSE STACK EMISSION RATE		SCREEN3 result: 8.815			SCREEN3 result: 6.1705			SCREEN3 result: 0.7052		
						1-Hour Averaging Period			8-Hour Averaging Period			Annual Averaging Period		
		lb/ton	lb/hour	lb/hr	g/sec	1-hour AAC (µg/m3)	Screening Lvl (SL) µg/m3	AAC vs SL	8-hour AAC (µg/m3)	Screening Lvl (SL) µg/m3	AAC vs SL	1-year AAC (µg/m3)	Screening Lvl (SL) µg/m3	AAC vs SL
Formaldehyde	50-00-0	3.10 E-03	1.24 E+00	1.24 E+0	1.56 E-1	0.00 E+0			9.64 E-1	20.3	4.75%			
Formaldehyde TWA_ER*	50-00-0		2.83 E-01	2.83 E-1	3.57 E-2							2.52 E-2	0.08	31.44%
Benzo(a)Pyrene	50-32-8	9.80 E-09	3.92 E-06	3.92 E-6	4.94 E-7	0.00 E+0			0.00 E+0			3.48 E-7	0.00478	0.01%
3-Methylcholanthrene*	56-49-5			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0	20	0.00%	0.00 E+0		
Benzo(a)Anthracene	56-55-3	2.10 E-07	8.40 E-05	8.40 E-5	1.06 E-5	0.00 E+0			0.00 E+0			7.46 E-6	0.0575	0.01%
7,12-Dimethylbenz(a)Anthracene*	57-97-6			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0	4.76	0.00%	0.00 E+0		
Benzene	71-43-2	3.90 E-04	1.56 E-01	1.56 E-1	1.97 E-2	1.73 E-1	79.87	0.22%	1.21 E-1	15.97	0.76%	1.39 E-2	1.21	1.15%
Methylchloroform	71-55-6	4.80 E-05	1.92 E-02	1.92 E-2	2.42 E-3	2.13 E-2	24555.83	0.00%	1.49 E-2	19098.98	0.00%	0.00 E+0		
Methane	74-82-8	1.20 E-02	4.80 E+00	4.80 E+0	6.05 E-1	5.33 E+0	6560.33	0.08%	0.00 E+0			0.00 E+0		
Ethane	74-84-0			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0	12303	0.00%	0.00 E+0		
Ethylene	74-85-1	7.00 E-03	2.80 E+00	2.80 E+0	3.53 E-1	0.00 E+0			2.18 E+0	2294.48	0.09%	0.00 E+0		
Propane	74-98-6			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0	18033	0.00%	0.00 E+0		
Acenaphthene	83-32-9	1.40 E-06	5.60 E-04	5.60 E-4	7.06 E-5	0.00 E+0			4.35 E-4	20	0.00%	0.00 E+0		
Phenanthrene	85-01-8	7.60 E-06	3.04 E-03	3.04 E-3	3.83 E-4	0.00 E+0			2.36 E-3	9.8	0.02%	0.00 E+0		
Fluorene	86-73-7	3.80 E-06	1.52 E-03	1.52 E-3	1.92 E-4	0.00 E+0			1.18 E-3	20	0.01%	0.00 E+0		
Naphthalene	91-20-3	9.00 E-05	3.60 E-02	3.60 E-2	4.54 E-3	4.00 E-2	786.44	0.01%	2.80 E-2	524.29	0.01%	0.00 E+0		
2-Methylnaphthalene	91-57-6	7.40 E-05	2.96 E-02	2.96 E-2	3.73 E-3	0.00 E+0			2.30 E-2	29.08	0.08%	0.00 E+0		
Ethylbenzene	100-41-4	2.40 E-04	9.60 E-02	9.60 E-2	1.21 E-2	0.00 E+0			7.46 E-2	868.38	0.01%	0.00 E+0		
Butane	106-97-8	6.70 E-04	2.68 E-01	2.68 E-1	3.38 E-2	0.00 E+0			2.08 E-1	23770.96	0.00%	0.00 E+0		
Toluene	108-88-3	1.50 E-04	6.00 E-02	6.00 E-2	7.56 E-3	0.00 E+0			4.66 E-2	753.62	0.01%	0.00 E+0		
N-Pentane	109-66-0	2.10 E-04	8.40 E-02	8.40 E-2	1.06 E-2	0.00 E+0			6.53 E-2	17705.52	0.00%	0.00 E+0		
Hexane	110-54-3	9.20 E-04	3.68 E-01	3.68 E-1	4.64 E-2	0.00 E+0			2.86 E-1	1762.37	0.02%	0.00 E+0		
Anthracene	120-12-7	2.20 E-07	8.80 E-05	8.80 E-5	1.11 E-5	0.00 E+0			6.84 E-5	20	0.00%	0.00 E+0		
Pyrene	129-00-0	5.40 E-07	2.16 E-04	2.16 E-4	2.72 E-5	0.00 E+0			1.68 E-4	20	0.00%	0.00 E+0		
Heptane	142-82-5	9.40 E-03	3.76 E+00	3.76 E+0	4.74 E-1	4.18 E+0	20490.8	0.02%	2.92 E+0	16392.64	0.02%	0.00 E+0		
Benzo(g,h,i)Perylene	191-24-2	4.00 E-08	1.60 E-05	1.60 E-5	2.02 E-6	0.00 E+0			1.24 E-5	20	0.00%	0.00 E+0		
Benzo(e)Pyrene	192-97-2	1.10 E-07	4.40 E-05	4.40 E-5	5.54 E-6	0.00 E+0			3.42 E-5	20	0.00%	0.00 E+0		
Indeno(1,2,3-cd)Pyrene	193-39-5	7.00 E-09	2.80 E-06	2.80 E-6	3.53 E-7	0.00 E+0			0.00 E+0			2.49 E-7	0.0575	0.00%
Perylene	198-55-0	8.80 E-09	3.52 E-06	3.52 E-6	4.44 E-7	0.00 E+0			2.74 E-6	20	0.00%	0.00 E+0		
Benzo(b)Fluoranthene	205-99-2	1.00 E-07	4.00 E-05	4.00 E-5	5.04 E-6	0.00 E+0			0.00 E+0			3.55 E-6	0.0575	0.01%
Fluoranthene	206-44-0	6.10 E-07	2.44 E-04	2.44 E-4	3.07 E-5	0.00 E+0			1.90 E-4	82	0.00%	0.00 E+0		
Benzo(k)Fluoranthene	207-08-9	4.10 E-08	1.64 E-05	1.64 E-5	2.07 E-6	0.00 E+0			0.00 E+0			1.46 E-6	0.575	0.00%
Acenaphthylene	208-96-8	8.60 E-06	3.44 E-03	3.44 E-3	4.33 E-4	0.00 E+0			2.67 E-3	24.64	0.01%	0.00 E+0		
2-Methyl-1-Pentene	763-29-1	4.00 E-03	1.60 E+00	1.60 E+0	2.02 E-1	0.00 E+0			1.24 E+0	11500	0.01%	0.00 E+0		
Xylene	1330-20-7	2.00 E-04	8.00 E-02	8.00 E-2	1.01 E-2	8.89 E-2	6512.88	0.00%	6.22 E-2	4341.92	0.00%	0.00 E+0		
Lead	7439-92-1	6.20 E-07	2.48 E-04	2.48 E-4	3.12 E-5	0.00 E+0			1.93 E-4	0.5	0.04%	0.00 E+0		
Manganese	7439-96-5	7.70 E-06	3.08 E-03	3.08 E-3	3.88 E-4	0.00 E+0			2.39 E-3	2	0.12%	0.00 E+0		
Mercury	7439-97-6	2.40 E-07	9.60 E-05	9.60 E-5	1.21 E-5	1.07 E-4	0.3	0.04%	7.46 E-5	0.1	0.07%	0.00 E+0		
Molybdenum	7439-98-7			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0	5	0.00%	0.00 E+0		
Nickel	7440-02-0	6.30 E-05	2.52 E-02	2.52 E-2	3.18 E-3	0.00 E+0			1.96 E-2	1	1.96%	2.24 E-3	0.0417	5.37%
Silver	7440-22-4	4.80 E-07	1.92 E-04	1.92 E-4	2.42 E-5	0.00 E+0			1.49 E-4	0.1	0.15%	0.00 E+0		
Thallium	7440-28-0	4.10 E-09	1.64 E-06	1.64 E-6	2.07 E-7	0.00 E+0			1.28 E-6	0.2	0.00%	0.00 E+0		
Antimony	7440-36-0	1.80 E-07	7.20 E-05	7.20 E-5	9.07 E-6	0.00 E+0			5.60 E-5	5	0.00%	0.00 E+0		
Arsenic	7440-38-2	5.60 E-07	2.24 E-04	2.24 E-4	2.82 E-5	0.00 E+0			1.74 E-4	0.1	0.17%	1.99 E-5	0.00233	0.85%
Barium	7440-39-3	5.80 E-06	2.32 E-03	2.32 E-3	2.92 E-4	0.00 E+0			1.80 E-3	5	0.04%	0.00 E+0		
Beryllium	7440-41-7			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0			0.00 E+0	0.0005	0.00%
Cadmium	7440-43-9	4.10 E-07	1.64 E-04	1.64 E-4	2.07 E-5	0.00 E+0			1.28 E-4	0.02	0.64%	1.46 E-5	0.00556	0.26%
Chromium	7440-47-3	5.50 E-06	2.20 E-03	2.20 E-3	2.77 E-4	0.00 E+0			1.71 E-3	5	0.03%	0.00 E+0		
Chromium, Vi	7440-47-3	4.50 E-07	1.80 E-04	1.80 E-4	2.27 E-5	0.00 E+0			1.40 E-4	0.1	0.14%	0.00 E+0		

Page 130 of 242

POLLUTANT NAME	CASRN	APM MIXING PLANT EMISSION FACTOR & RATE		BAGHOUSE STACK EMISSION RATE		SCREEN3 result: 8.815			SCREEN3 result: 6.1705			SCREEN3 result: 0.7052		
						1-Hour Averaging Period			8-Hour Averaging Period			Annual Averaging Period		
		lb/ton	lb/hour	lb/hr	g/sec	1-hour AAC (µg/m3)	Screening Lvl (SL) µg/m3	AAC vs SL	8-hour AAC (µg/m3)	Screening Lvl (SL) µg/m3	AAC vs SL	1-year AAC (µg/m3)	Screening Lvl (SL) µg/m3	AAC vs SL
Cobalt	7440-48-4			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0	0.2	0.00%	0.00 E+0		
Copper	7440-50-8	3.10 E-06	1.24 E-03	1.24 E-3	1.56 E-4	0.00 E+0			9.64 E-4	2	0.05%	0.00 E+0		
Vanadium	7440-62-2			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0	0.5	0.00%	0.00 E+0		
Zinc	7440-66-6	6.10 E-05	2.44 E-02	2.44 E-2	3.07 E-3	2.71 E-2	1000	0.00%	1.90 E-2	50	0.04%	0.00 E+0		
Phosphorus	7723-14-0	2.80 E-05	1.12 E-02	1.12 E-2	1.41 E-3	0.00 E+0			8.71 E-3	1.01	0.86%	0.00 E+0		
Selenium	7782-49-2	3.50 E-07	1.40 E-04	1.40 E-4	1.76 E-5	0.00 E+0			1.09 E-4	2	0.01%	0.00 E+0		
N2O (Controlled)	10024-97-2			0.00 E+0	0.00 E+0	0.00 E+0			0.00 E+0	900	0.00%	0.00 E+0		
* The time-weighted average Formaldehyde emission rate (EF x Annual_Production / 8,760 hrs/year) was used to demonstrate compliance with the Annual Screening Level.								0.22%			4.75%			31.44%

Page 131 of 242

Crystalline Silica, 8-HOUR* AVERAGING PERIOD

EMISSIONS SOURCE	CS Emission Rate (CSER)		SCREEN3 Result	Predicted Ambient Air Concentration	CS Emission Rate
	lb/hr	g/sec	ug/m^3 per g/sec	ug/m^3	lb/year
Baghouse Stack	4.4E-04	5.5 E-5	6.17	3.39 E-4	8.7 E-1
Truck Unloading at AGG Stockpile 1	2.7 E-7	3.3 E-8	1,292	4.32 E-5	5.3 E-4
Truck Unloading at AGG Stockpile 2	2.7 E-7	3.3 E-8	1,331	4.45 E-5	5.3 E-4
Truck Unloading at AGG Stockpile 3	2.7 E-7	3.3 E-8	1,456	4.87 E-5	5.3 E-4
Truck Unloading at AGG Stockpile 4	2.7 E-7	3.3 E-8	1,678	5.61 E-5	5.3 E-4
Truck Unloading at AGG Stockpile 5	2.7 E-7	3.3 E-8	1,799	6.02 E-5	5.3 E-4
Truck Unloading at AGG Stockpile 6	2.7 E-7	3.3 E-8	1,905	6.37 E-5	5.3 E-4
Truck Unloading at AGG Stockpile 7	2.7 E-7	3.3 E-8	2,037	6.81 E-5	5.3 E-4
AGG Feed Bin System	3.3 E-6	4.1 E-7	4,100	1.68 E-3	6.5 E-3
AGG Screener & Conveyors	1.9 E-5	2.3 E-6	1,943	4.53 E-3	3.7 E-2
RAP Feed System	1.6 E-5	2.0 E-6	5,221	1.02 E-2	3.1 E-2
Crushing & Screening Plant	5.9 E-5	7.5 E-6	1,689	1.26 E-2	1.2 E-1
Vehicle Unloading CSP Mtls to SP9	1.4 E-6	1.7 E-7	707.7	1.23 E-4	2.8 E-3
Transfering Processed CSP Mtls to SP8	1.4 E-6	1.7 E-7	16559	2.88 E-3	2.8 E-3
Total Crystalline Silica Emis. Rate	1.0 E-4	**Predicted AAC, ug/m3**		**0.0328**	1.1 E+00
		Screening Level		**0.2500**	

Crystalline Silica (lb/year) = CSER (lb/hour) ÷ APM Design Rate (tons/hour) × APM Annual Production Rate (tons/year)

Page 132 of 242

APPENDIX K

K. SCREEN3 Modeling Results

Dimensions of and Distance to Property Line for Emission Sources

EMISSION SOURCE	Distance to Property Line		Diameter/Length			Height		
	feet	meters	feet	meters	÷ 4.3	feet	meters	÷ 2.15
Baghouse Stack	275	83.8	4.75	1.4478		40	12.19	
Hot Oil Heater	258	78.6	1.00	0.3048		10	3.05	
Crusher Engine	197	60.0	0.25	0.0762		8	2.44	
Screener Engine	145	44.2	0.25	0.0762		8	2.44	
Stacker Engine	158	48.2	0.25	0.0762		4	1.22	
Crushing & Screening	176	53.6	122	37.2	8.648	20	6.10	2.835
RAP Feed Bin System	363	110.6	71	21.6	5.033	10	3.05	1.418
AGG Feed Bin System	400	121.9	89	27.1	6.309	10	3.05	1.418
AGG Screener/Drum Feed	418	127.4	66	20.1	4.678	15	4.57	2.127
Agg Unload @ Stockpile 1	1166	355.4	50	15.2	3.544	20	6.10	2.835
Agg Unload @ Stockpile 2	1131	344.7	50	15.2	3.544	20	6.10	2.835
Agg Unload @ Stockpile 3	1029	313.6	50	15.2	3.544	20	6.10	2.835
Agg Unload @ Stockpile 4	874	266.4	50	15.2	3.544	20	6.10	2.835
Agg Unload @ Stockpile 5	800	243.8	50	15.2	3.544	20	6.10	2.835
Agg Unload @ Stockpile 6	740	225.6	50	15.2	3.544	20	6.10	2.835
Agg Unload @ Stockpile 7	670	204.2	50	15.2	3.544	20	6.10	2.835
Transfer to Stockpile 8 (CSP)	206	62.8	75	22.9	5.316	30	9.14	4.253
Unload to Stockpile 9 (CSP)	146	44.5	75	22.9	5.316	30	9.14	4.253

POINT SOURCES: SCREEN3 INPUT DATA, OUTPUT RESULTS, AND SCALED RESULTS

Emission Source --->>	Baghouse Stack*		Hot Oil Heater		Crusher Engine		Screener Engine		Stacker Engine	
STACK DIMENSIONS	**feet**	**meters**	**feet**	**meters**	**feet**	**meters**	**feet**	**meters**	**feet**	**meters**
Stack Height	40	12.192	10.00	3.048	8.00	2.4384	8.00	2.4384	4.00	1.2192
Stack Diameter	4.75	1.4478	1	0.3048	0.25	0.0762	0.25	0.0762	0.25	0.0762
TEMPERATURES	**F**	**K**	**F**	**K**	**F**	**K**	**F**	**K**	**F**	**K**
Stack Exit Temperature	300	422	400	478	1,002	812	1,002	812	1,002	812
Ambient Temperature	77	298	77	298	77	298	77	298	77	298
EXHAUST GAS VELOCITY	**ACFM**		**ACFM**		**ACFM**		**ACFM**		**ACFM**	
Rectangular Stack	80,000		1,180		1,750		700		360	
SCREEN3 Result, 1-hour avg	**8.82**	ug/m^3	**0**	ug/m^3	**337.5**	ug/m^3	**866**	ug/m^3	**3825**	ug/m^3
Adjusted to 8-hour averaging	6.17		0		236.3		606		2678	
Adjusted to 24-hour averaging	3.53		0		135.0		346.3		1530	
Adjusted to Annual averaging	0.71		0.0		27.00		69.3		306.0	
	feet	meters	feet	meters	feet	meters	feet	meters	feet	meters
Distance to Property Line	275.0	83.8	258.0	78.6	197.0	60.0	145.0	44.2	158.0	48.2
Distance to Max AAC	1,499	457	0	0	678	207	517	157	183.7	56.0

VOLUME SOURCES: SCREEN3 INPUT DATA, OUTPUT RESULTS, AND SCALED RESULTS

Emission Source --->>	RAP Feed Bin System		Unload @ AGG Stockpiles		AGG Feed Bin System		AGG Screener/Drum Feed		Unload @ CSP Stockpile9	
FUGITIVE PM10 Process Emission Sources for Asphalt Paving Materials Plant	Dimensions: L3m x W14m x H5m; Initial Lateral: 0.7 m; Initial Vertical: 2.33 m; Release Ht: 5 m		Dimensions: L15m x W15m x H6m; Initial Lateral: 3.49 m; Initial Vertical: 2.79 m; Release Ht: 6 m		Dimensions: L27m x W4m x H3m; Initial Lateral: 6.28 m; Initial Vertical: 1.4 m; Release Ht: 3 m		Dimensions: L20m x W4m x H5m; Initial Lateral: 4.65 m; Initial Vertical: 2.33 m; Release Ht: 5 m		Dimensions: L23m x W23m x H9m; Initial Lateral: 5.35 m; Initial Vertical: 4.19 m; Release Ht: 9 m	
SCREEN3 Result, 1-hour avg	**7458**	ug/m^3	**2910**	ug/m^3	**5857**	ug/m^3	**2776**	ug/m^3	**1921**	ug/m^3
Adjusted to 8-hour averaging	5221		2037		4100		1943		1345	
Adjusted to 24-hour averaging	0		1164		2343		1110		768	
Adjusted to Annual averaging	0		232.80		469		222		154	
	feet	meters	feet	meters	feet	meters	feet	meters	feet	meters
Distance to Property Line	363.0	110.6	670.0	204.22	400.0	121.9	418.0	127.4	146.0	44.50
Distance to Max AAC	364.2	111.0	121.4	37.0	400.3	122.0	416.7	127.0	147.6	45.00

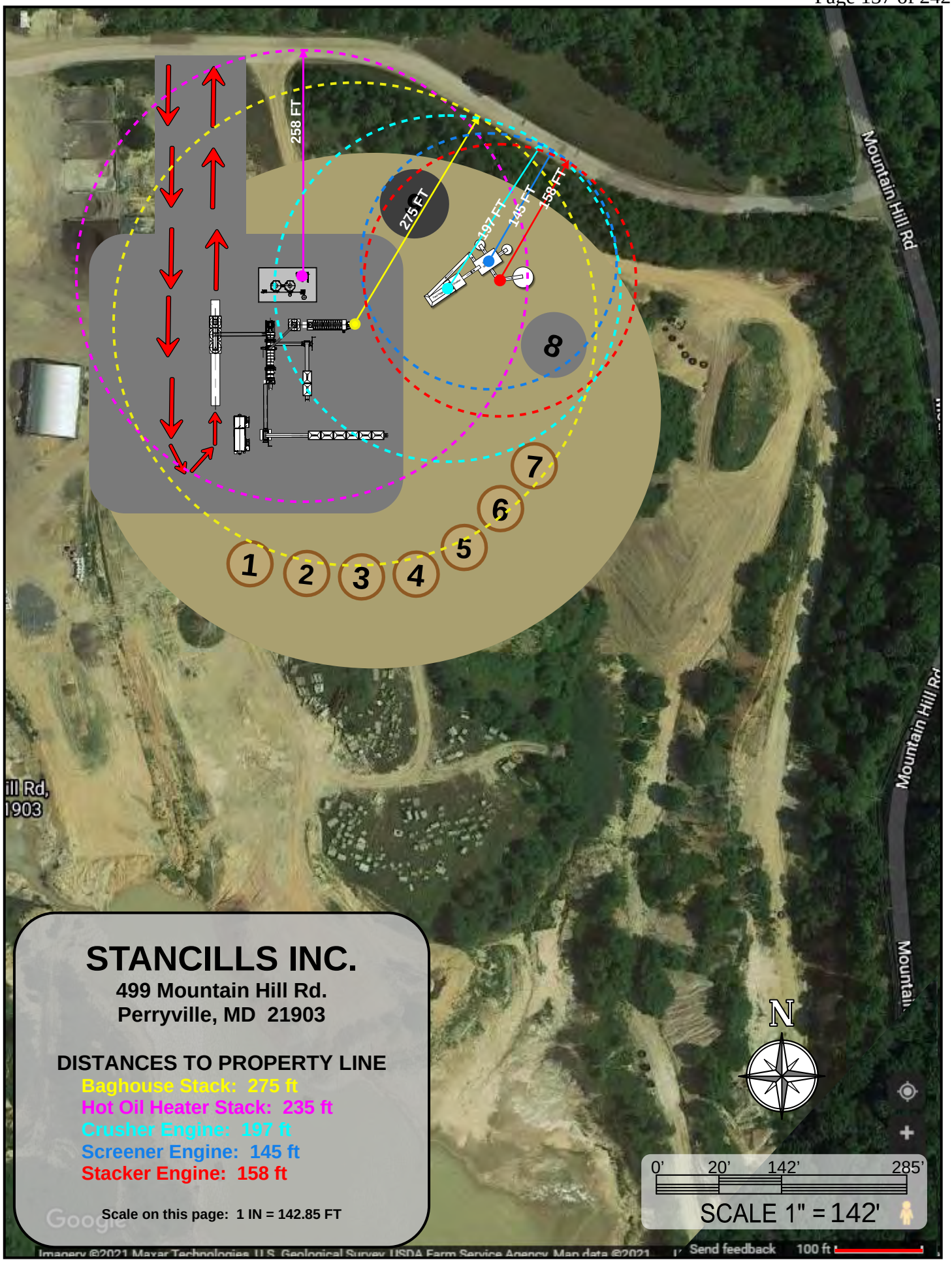
STOCKPILES: Ambient Air Concentrations & Distances to Property Line				
#	Stockpile	1-hr AAC	8-hr AAC	24-hr AAC
VIRGIN AGGREGATE STOCKPILES				
1	355.4	1845.0	1291.5	738.0
2	344.7	1902.0	1331.4	760.8
3	313.6	2080.0	1456.0	832.0
4	266.4	2397.0	1677.9	958.8
5	243.8	2570.0	1799.0	1028.0
6	225.6	2721.0	1904.7	1088.4
7	204.2	2910.0	2037.0	1164.0
CSP STOCKPILES (AS DELIVERED #9 & PROCESSED #8)				
8	62.8	1866.0	1306.2	746.4
9	44.5	1921.0	1344.7	768.4

Emission Source --->>	Crushing & Screening		Processed Mtls to Pile 8	
CRUSHING & SCREENING PLANT	Dimensions: L37m x W24m x H6m; Initial Lateral: 8.6 m; Initial Vertical: 2.79 m; Release Ht: 6 m		Dimensions: L23m x W23m x H9m; Initial Lateral: 5.35 m; Initial Vertical: 4.19 m; Release Ht: 9 m	
SCREEN3 Result, 1-hour avg	**2141**	ug/m^3	**1866**	ug/m^3
Adjusted to 8-hour averaging	1499		1306	
Adjusted to 24-hour averaging	856		746	
Adjusted to Annual averaging	171.3		149	
	feet	meters	feet	meters
Distance to Property Line	176.0	53.64	206.0	62.79
Distance to Max AAC	177.2	54.00	206.7	63.00

SCREEN3 INPUT PARAMETERS	
Receptor Height:	0 meters from ground
Rural/Urban Option:	RURAL
Downwash considered (Y/N):	No
Complex Terrain above stack height (Y/N):	No
Simple Terrain above stack height (Y/N):	No
Meteorology Choice:	Full

Scaling Factors for averaging period

1-hour to 8-hour	0.7
1-hour to 24-hour	0.4
1-hour to Annual	0.08
1-hour to 3-hour	0.9



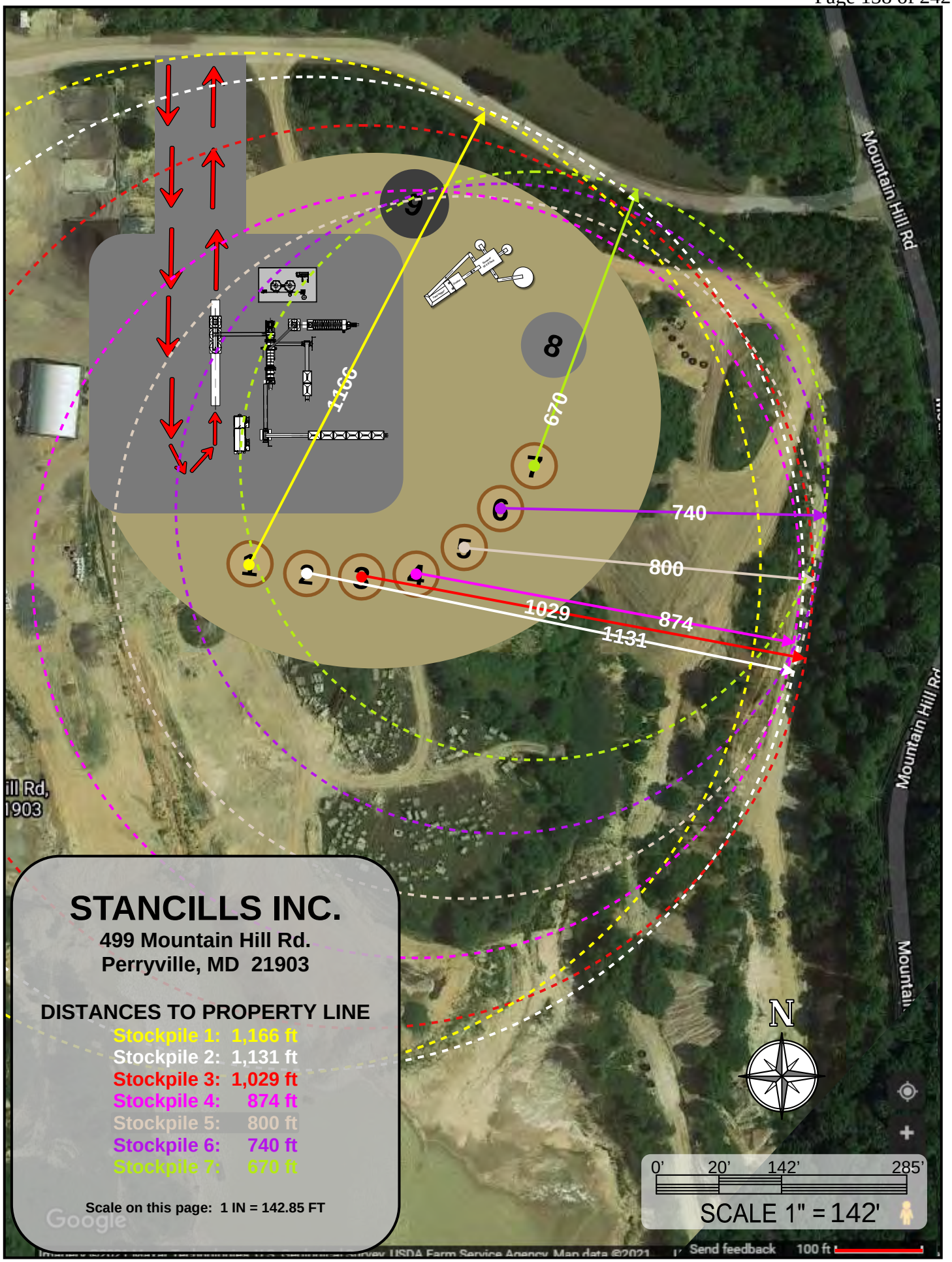
STANCILLS INC.

499 Mountain Hill Rd.
Perryville, MD 21903

DISTANCES TO PROPERTY LINE

- Baghouse Stack: 275 ft
- Hot Oil Heater Stack: 235 ft
- Crusher Engine: 197 ft
- Screener Engine: 145 ft
- Stacker Engine: 158 ft

Scale on this page: 1 IN = 142.85 FT



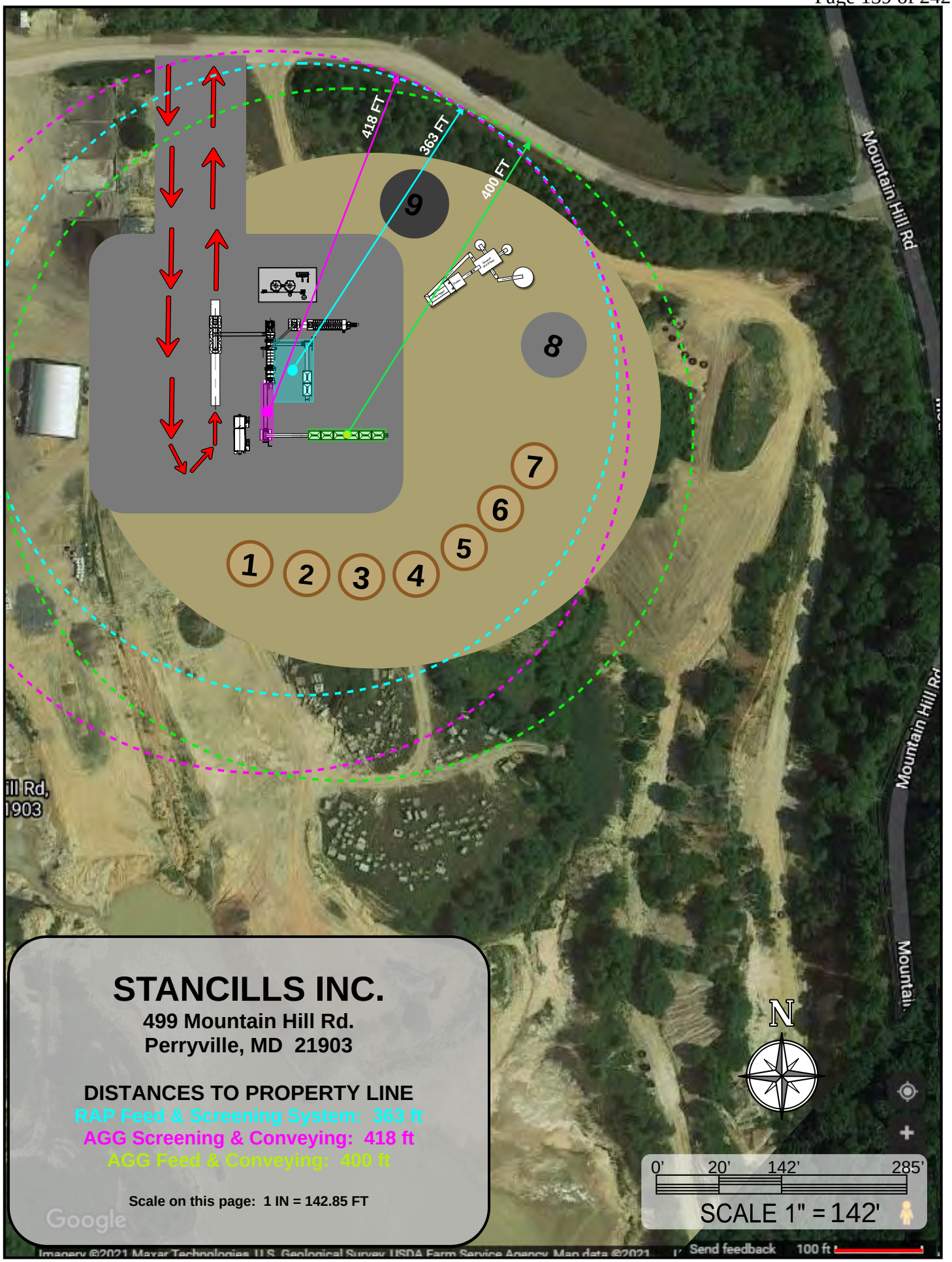
STANCILLS INC.

499 Mountain Hill Rd.
Perryville, MD 21903

DISTANCES TO PROPERTY LINE

Stockpile 1:	1,166 ft
Stockpile 2:	1,131 ft
Stockpile 3:	1,029 ft
Stockpile 4:	874 ft
Stockpile 5:	800 ft
Stockpile 6:	740 ft
Stockpile 7:	670 ft

Scale on this page: 1 IN = 142.85 FT



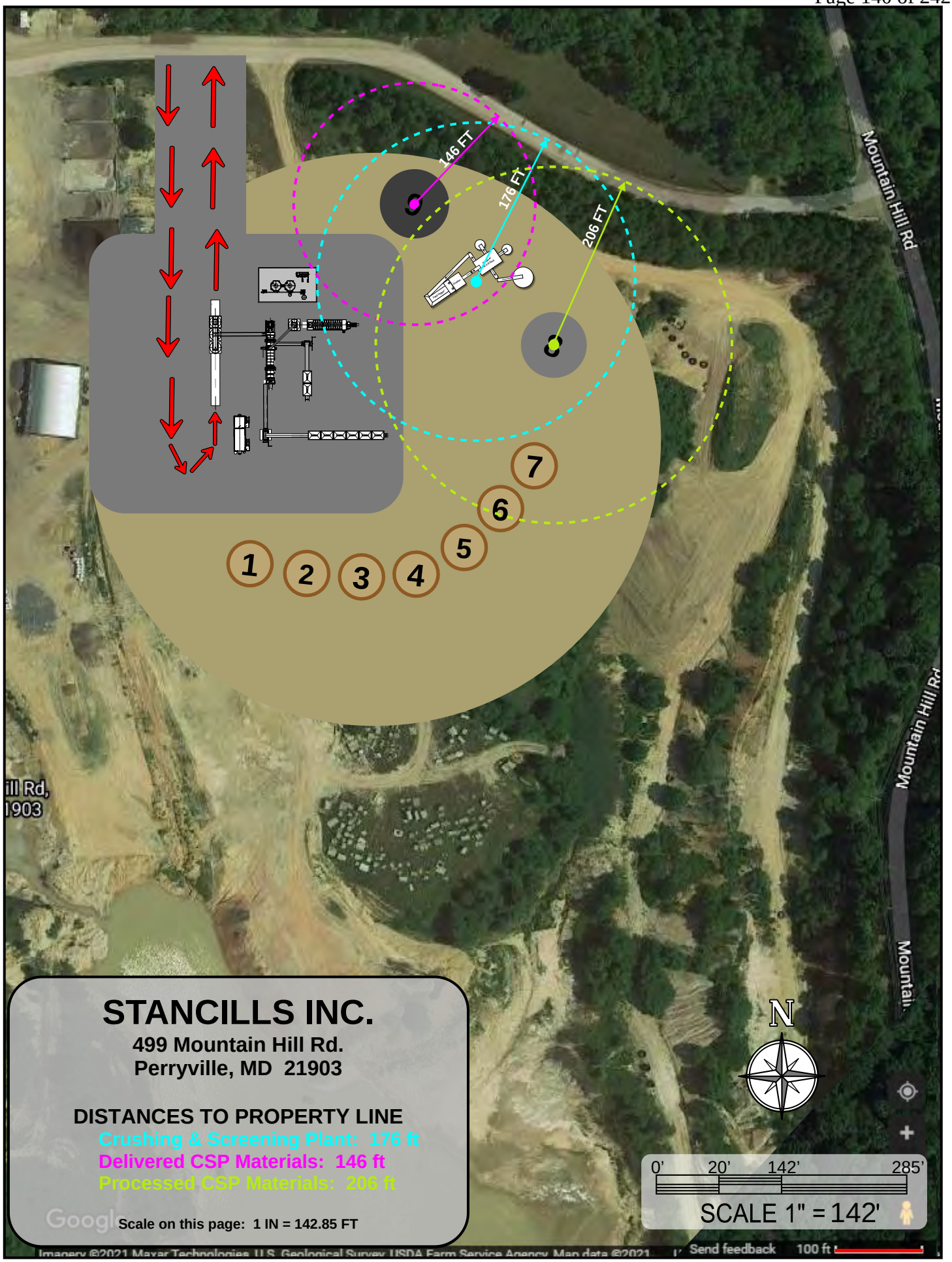
STANCILLS INC.

499 Mountain Hill Rd.
Perryville, MD 21903

DISTANCES TO PROPERTY LINE

RAP Feed & Screening System: 363 ft
AGG Screening & Conveying: 418 ft
AGG Feed & Conveying: 400 ft

Scale on this page: 1 IN = 142.85 FT



STANCILLS INC.

499 Mountain Hill Rd.
Perryville, MD 21903

DISTANCES TO PROPERTY LINE

Crushing & Screening Plant: 176 ft
Delivered CSP Materials: 146 ft
Processed CSP Materials: 206 ft

Scale on this page: 1 IN = 142.85 FT

7/2/2021
13:30:10

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

STANCILL S INC. --- CRUSHING & SCREENING PLANT

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = VOLUME
EMISSION RATE (G/S) = 1.00000
SOURCE HEIGHT (M) = 6.0960
INIT. LATERAL DIMEN (M) = 8.6563
INIT. VERTICAL DIMEN (M) = 2.8346
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
54.	2413.	4	1.0	1.0	320.0	6.10	12.62	5.06	NO
100.	2325.	6	1.0	1.0	10000.0	6.10	12.13	4.49	NO
200.	2040.	6	1.0	1.0	10000.0	6.10	15.52	5.99	NO
300.	1628.	6	1.0	1.0	10000.0	6.10	18.83	7.39	NO
400.	1294.	6	1.0	1.0	10000.0	6.10	22.09	8.73	NO
500.	1045.	6	1.0	1.0	10000.0	6.10	25.29	10.00	NO
600.	877.5	6	1.0	1.0	10000.0	6.10	28.46	10.90	NO
700.	740.2	6	1.0	1.0	10000.0	6.10	31.60	11.95	NO
800.	633.9	6	1.0	1.0	10000.0	6.10	34.70	12.96	NO
900.	549.8	6	1.0	1.0	10000.0	6.10	37.77	13.93	NO
1000.	488.2	6	1.0	1.0	10000.0	6.10	40.81	14.65	NO
1100.	433.7	6	1.0	1.0	10000.0	6.10	43.83	15.50	NO
1200.	388.5	6	1.0	1.0	10000.0	6.10	46.83	16.31	NO
1300.	350.6	6	1.0	1.0	10000.0	6.10	49.81	17.11	NO
1400.	318.3	6	1.0	1.0	10000.0	6.10	52.77	17.88	NO
1500.	290.6	6	1.0	1.0	10000.0	6.10	55.71	18.64	NO
1600.	266.7	6	1.0	1.0	10000.0	6.10	58.63	19.37	NO
1700.	245.8	6	1.0	1.0	10000.0	6.10	61.54	20.09	NO
1800.	227.5	6	1.0	1.0	10000.0	6.10	64.43	20.80	NO
1900.	211.3	6	1.0	1.0	10000.0	6.10	67.31	21.49	NO
2000.	199.2	6	1.0	1.0	10000.0	6.10	70.17	21.91	NO
2100.	186.9	6	1.0	1.0	10000.0	6.10	73.03	22.49	NO

2200.	175.8	6	1.0	1.0	10000.0	6.10	75.86	23.05	NO
2300.	165.8	6	1.0	1.0	10000.0	6.10	78.69	23.60	NO
2400.	156.7	6	1.0	1.0	10000.0	6.10	81.50	24.15	NO
2500.	148.4	6	1.0	1.0	10000.0	6.10	84.31	24.68	NO
2600.	140.8	6	1.0	1.0	10000.0	6.10	87.10	25.20	NO
2700.	133.9	6	1.0	1.0	10000.0	6.10	89.88	25.72	NO
2800.	127.5	6	1.0	1.0	10000.0	6.10	92.65	26.22	NO
2900.	121.6	6	1.0	1.0	10000.0	6.10	95.41	26.72	NO
3000.	116.8	6	1.0	1.0	10000.0	6.10	98.16	27.07	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 54. M:

54.	2413.	4	1.0	1.0	320.0	6.10	12.62	5.06	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	2413.	54.	0.

7/2/2021

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

STANCILL S INC. --- BAGHOUSE STACK

BAGHOUSE STACK

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.00000
STACK HEIGHT (M) = 12.1920
STK INSIDE DIAM (M) = 1.4478
STK EXIT VELOCITY (M/S)= 22.9338
STK GAS EXIT TEMP (K) = 422.0389
AMBIENT AIR TEMP (K) = 298.1500
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

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

BUOY. FLUX = 34.595 M**4/S**3; MOM. FLUX = 194.711 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
86.	0.1683	5	1.0	1.1	10000.0	107.38	27.60	27.26	NO
100.	0.1822	5	1.0	1.1	10000.0	107.38	27.88	27.42	NO
200.	1.579	3	10.0	10.2	3200.0	42.15	24.14	14.89	NO
300.	6.352	4	20.0	20.6	6400.0	25.91	22.84	12.52	NO
400.	8.550	4	20.0	20.6	6400.0	25.91	29.71	15.77	NO
500.	8.731	4	20.0	20.6	6400.0	25.91	36.39	18.78	NO
600.	8.122	4	20.0	20.6	6400.0	25.91	42.93	21.63	NO
700.	7.304	4	15.0	15.5	4800.0	31.92	49.51	24.69	NO
800.	6.824	4	15.0	15.5	4800.0	31.92	55.86	27.37	NO
900.	6.354	4	10.0	10.3	3200.0	41.86	62.46	30.66	NO
1000.	6.122	4	10.0	10.3	3200.0	41.86	68.65	33.19	NO
1100.	5.785	4	10.0	10.3	3200.0	41.86	74.79	35.16	NO
1200.	5.447	4	10.0	10.3	3200.0	41.86	80.88	37.07	NO
1300.	5.148	4	8.0	8.2	2560.0	49.28	87.17	39.45	NO
1400.	4.924	4	8.0	8.2	2560.0	49.28	93.16	41.24	NO

```
 1500.   4.700      4   8.0   8.2  2560.0   49.28   99.11   43.00   NO
 1600.   4.481      4   8.0   8.2  2560.0   49.28  105.03   44.71   NO
 1700.   4.270      4   8.0   8.2  2560.0   49.28  110.91   46.39   NO
 1800.   4.069      4   8.0   8.2  2560.0   49.28  116.77   48.04   NO
 1900.   3.878      4   8.0   8.2  2560.0   49.28  122.59   49.67   NO
 2000.   3.707      2   1.0   1.0   320.0  313.60  298.49  249.17   NO
 2100.   3.664      2   1.0   1.0   320.0  313.60  310.62  261.28   NO
 2200.   3.603      2   1.0   1.0   320.0  313.60  322.71  273.50   NO
 2300.   3.662      5   2.0   2.1 10000.0   87.74  110.75   42.21   NO
 2400.   3.763      5   1.5   1.6 10000.0   95.34  115.36   44.11   NO
 2500.   3.856      5   1.5   1.6 10000.0   95.34  119.52   44.85   NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    86. M:
  457.   8.815      4   20.0  20.6  6400.0   25.91   33.62   17.56   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     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
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   86.   0.1683       5    1.0    1.1 10000.0  107.38   27.60   27.26   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

 *** INVERSION BREAK-UP FUMIGATION CALC. ***
 CONC (UG/M**3)   =    9.413
 DIST TO MAX (M)  =  3684.69

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

 CALCULATION        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
---------------   -----------   ---------   -------
SIMPLE TERRAIN       8.815         457.        0.

**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

7/2/2021
13:19:27

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

STANCILL S INC. --- HOT OIL HEATER

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.00000
STACK HEIGHT (M) = 3.0480
STK INSIDE DIAM (M) = 0.3048
STK EXIT VELOCITY (M/S)= 7.7612
STK GAS EXIT TEMP (K) = 477.5944
AMBIENT AIR TEMP (K) = 298.1500
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

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

BUOY. FLUX = 0.664 M**4/S**3; MOM. FLUX = 0.873 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
72.	769.0	4	8.0	8.0	2560.0	4.70	6.04	3.52	NO
100.	697.4	4	4.5	4.5	1440.0	6.55	8.26	4.76	NO
200.	531.6	4	2.0	2.0	640.0	10.93	15.73	8.79	NO
300.	413.1	4	1.5	1.5	480.0	13.56	22.81	12.46	NO
400.	333.9	4	1.0	1.0	320.0	18.81	29.80	15.92	NO
500.	281.8	4	1.0	1.0	320.0	18.81	36.43	18.84	NO
600.	234.6	4	1.0	1.0	320.0	18.81	42.95	21.68	NO
700.	196.0	4	1.0	1.0	320.0	18.81	49.39	24.45	NO
800.	165.4	4	1.0	1.0	320.0	18.81	55.76	27.16	NO
900.	161.4	6	1.0	1.0	10000.0	24.69	31.39	14.38	NO
1000.	163.6	6	1.0	1.0	10000.0	24.69	34.44	15.26	NO
1100.	162.2	6	1.0	1.0	10000.0	24.69	37.48	16.06	NO
1200.	159.3	6	1.0	1.0	10000.0	24.69	40.49	16.83	NO
1300.	155.4	6	1.0	1.0	10000.0	24.69	43.48	17.59	NO
1400.	150.9	6	1.0	1.0	10000.0	24.69	46.46	18.34	NO
1500.	146.0	6	1.0	1.0	10000.0	24.69	49.42	19.06	NO
1600.	141.0	6	1.0	1.0	10000.0	24.69	52.36	19.77	NO

```
 1700.   135.9      6    1.0    1.0 10000.0   24.69   55.29   20.47   NO
 1800.   130.8      6    1.0    1.0 10000.0   24.69   58.20   21.16   NO
 1900.   125.9      6    1.0    1.0 10000.0   24.69   61.09   21.83   NO
 2000.   121.1      6    1.0    1.0 10000.0   24.69   63.97   22.49   NO
 2100.   116.4      6    1.0    1.0 10000.0   24.69   66.84   23.06   NO
 2200.   111.9      6    1.0    1.0 10000.0   24.69   69.70   23.61   NO
 2300.   107.7      6    1.0    1.0 10000.0   24.69   72.54   24.14   NO
 2400.   103.7      6    1.0    1.0 10000.0   24.69   75.37   24.67   NO
 2500.   99.95      6    1.0    1.0 10000.0   24.69   78.19   25.20   NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    72. M:
   72.   769.0      4    8.0    8.0  2560.0    4.70    6.04    3.52    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     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
------- ---------- ---- ----- ----- ------ ------ ------ ------ ------ -----
   72.   769.0      4    8.0    8.0  2560.0    4.70    6.04    3.52    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       MAX CONC    DIST TO   TERRAIN
  PROCEDURE       (UG/M**3)    MAX (M)    HT (M)
--------------   -----------   ---------   -------
SIMPLE TERRAIN      769.0          72.       0.

**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

7/2/2021
13:24:02

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

STANCILL S INC. --- CRUSHER ENGINE

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.00000
STACK HEIGHT (M) = 2.4384
STK INSIDE DIAM (M) = 0.0762
STK EXIT VELOCITY (M/S)= 181.1038
STK GAS EXIT TEMP (K) = 812.0000
AMBIENT AIR TEMP (K) = 298.1500
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

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

BUOY. FLUX = 1.631 M**4/S**3; MOM. FLUX = 17.482 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
48.	305.9	3	10.0	10.0	3200.0	6.58	6.31	3.86	NO
100.	312.9	4	10.0	10.0	3200.0	6.58	8.29	4.80	NO
200.	219.1	4	5.0	5.0	1600.0	10.72	15.74	8.82	NO
300.	166.1	4	3.5	3.5	1120.0	14.27	22.86	12.56	NO
400.	133.2	4	3.0	3.0	960.0	16.24	29.72	15.77	NO
500.	111.5	4	2.5	2.5	800.0	19.00	36.45	18.90	NO
600.	96.50	4	2.0	2.0	640.0	23.14	43.12	22.02	NO
700.	83.84	4	2.0	2.0	640.0	23.14	49.54	24.75	NO
800.	75.91	4	1.5	1.5	480.0	30.04	56.13	27.92	NO
900.	79.04	6	1.0	1.0	10000.0	31.64	31.89	15.43	NO
1000.	84.41	6	1.0	1.0	10000.0	31.64	34.90	16.26	NO
1100.	87.49	6	1.0	1.0	10000.0	31.64	37.89	17.01	NO
1200.	89.47	6	1.0	1.0	10000.0	31.64	40.88	17.74	NO
1300.	90.54	6	1.0	1.0	10000.0	31.64	43.84	18.46	NO
1400.	90.87	6	1.0	1.0	10000.0	31.64	46.80	19.17	NO
1500.	90.62	6	1.0	1.0	10000.0	31.64	49.74	19.87	NO
1600.	89.90	6	1.0	1.0	10000.0	31.64	52.66	20.55	NO

```
 1700.   88.82      6    1.0    1.0 10000.0   31.64   55.57   21.22    NO
 1800.   87.47      6    1.0    1.0 10000.0   31.64   58.47   21.89    NO
 1900.   85.92      6    1.0    1.0 10000.0   31.64   61.35   22.54    NO
 2000.   84.22      6    1.0    1.0 10000.0   31.64   64.22   23.18    NO
 2100.   82.19      6    1.0    1.0 10000.0   31.64   67.08   23.73    NO
 2200.   80.15      6    1.0    1.0 10000.0   31.64   69.92   24.26    NO
 2300.   78.14      6    1.0    1.0 10000.0   31.64   72.76   24.79    NO
 2400.   76.15      6    1.0    1.0 10000.0   31.64   75.58   25.30    NO
 2500.   74.20      6    1.0    1.0 10000.0   31.64   78.39   25.81    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    48. M:
   63.   337.5       4    20.0   20.0  6400.0    4.51    5.44    3.18    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     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
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   48.    305.9       3    10.0   10.0  3200.0    6.58    6.31    3.86    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        MAX CONC    DIST TO   TERRAIN
  PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
---------------   -----------   ---------   -------
SIMPLE TERRAIN       337.5          63.        0.

**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

7/2/2021
13:25:39

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

STANCILL S INC. --- SCREENER ENGINE

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.00000
STACK HEIGHT (M) = 2.4384
STK INSIDE DIAM (M) = 0.0762
STK EXIT VELOCITY (M/S)= 72.4503
STK GAS EXIT TEMP (K) = 812.0389
AMBIENT AIR TEMP (K) = 298.1500
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

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

BUOY. FLUX = 0.653 M**4/S**3; MOM. FLUX = 2.798 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
48.	865.7	3	5.0	5.0	1600.0	5.75	6.33	3.88	NO
100.	787.6	4	4.5	4.5	1440.0	6.12	8.27	4.77	NO
200.	547.8	4	2.0	2.0	640.0	10.72	15.74	8.82	NO
300.	415.7	4	1.5	1.5	480.0	13.48	22.83	12.50	NO
400.	329.4	4	1.0	1.0	320.0	19.00	29.83	15.99	NO
500.	278.7	4	1.0	1.0	320.0	19.00	36.45	18.90	NO
600.	232.5	4	1.0	1.0	320.0	19.00	42.98	21.73	NO
700.	194.6	4	1.0	1.0	320.0	19.00	49.42	24.50	NO
800.	171.4	6	1.0	1.0	10000.0	23.96	28.31	13.46	NO
900.	175.7	6	1.0	1.0	10000.0	23.96	31.38	14.36	NO
1000.	176.4	6	1.0	1.0	10000.0	23.96	34.44	15.25	NO
1100.	173.7	6	1.0	1.0	10000.0	23.96	37.47	16.04	NO
1200.	169.5	6	1.0	1.0	10000.0	23.96	40.48	16.82	NO
1300.	164.5	6	1.0	1.0	10000.0	23.96	43.48	17.58	NO
1400.	159.1	6	1.0	1.0	10000.0	23.96	46.46	18.32	NO
1500.	153.3	6	1.0	1.0	10000.0	23.96	49.41	19.05	NO
1600.	147.5	6	1.0	1.0	10000.0	23.96	52.36	19.76	NO

```
 1700.   141.8      6    1.0    1.0 10000.0   23.96   55.28   20.46   NO
 1800.   136.2      6    1.0    1.0 10000.0   23.96   58.19   21.15   NO
 1900.   130.7      6    1.0    1.0 10000.0   23.96   61.09   21.82   NO
 2000.   125.4      6    1.0    1.0 10000.0   23.96   63.97   22.48   NO
 2100.   120.4      6    1.0    1.0 10000.0   23.96   66.84   23.05   NO
 2200.   115.6      6    1.0    1.0 10000.0   23.96   69.70   23.60   NO
 2300.   111.1      6    1.0    1.0 10000.0   23.96   72.54   24.14   NO
 2400.   106.8      6    1.0    1.0 10000.0   23.96   75.37   24.67   NO
 2500.   102.8      6    1.0    1.0 10000.0   23.96   78.19   25.19   NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    48. M:
   48.   865.7      3    5.0    5.0  1600.0    5.75    6.33    3.88    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     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
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
   48.   865.7      3    5.0    5.0  1600.0    5.75    6.33    3.88    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       MAX CONC    DIST TO   TERRAIN
  PROCEDURE       (UG/M**3)    MAX (M)    HT (M)
---------------   -----------   ---------   -------
SIMPLE TERRAIN      865.7          48.       0.

**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

7/2/2021
13:27:37

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

STANCILL S INC. --- STACKER ENGINE

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.000000
STACK HEIGHT (M) = 1.2192
STK INSIDE DIAM (M) = 0.0762
STK EXIT VELOCITY (M/S)= 27.9420
STK GAS EXIT TEMP (K) = 812.0000
AMBIENT AIR TEMP (K) = 298.0000
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = URBAN
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

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

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 270.00000 (ACFM)

BUOY. FLUX = 0.252 M**4/S**3; MOM. FLUX = 0.416 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
30.	3825.	4	2.0	2.0	640.0	5.03	4.89	4.32	NO
100.	1178.	4	1.0	1.0	320.0	8.83	15.84	13.97	NO
200.	517.9	6	1.0	1.0	10000.0	16.88	21.64	14.73	NO
300.	351.6	6	1.0	1.0	10000.0	16.88	31.50	20.43	NO
400.	242.9	6	1.0	1.0	10000.0	16.88	41.10	25.69	NO
500.	177.4	6	1.0	1.0	10000.0	16.88	50.41	30.57	NO
600.	135.9	6	1.0	1.0	10000.0	16.88	59.44	35.11	NO
700.	108.1	6	1.0	1.0	10000.0	16.88	68.21	39.37	NO
800.	88.66	6	1.0	1.0	10000.0	16.88	76.72	43.38	NO
900.	74.44	6	1.0	1.0	10000.0	16.88	85.01	47.18	NO
1000.	63.71	6	1.0	1.0	10000.0	16.88	93.07	50.79	NO
1100.	55.39	6	1.0	1.0	10000.0	16.88	100.93	54.24	NO
1200.	48.79	6	1.0	1.0	10000.0	16.88	108.60	57.55	NO
1300.	43.45	6	1.0	1.0	10000.0	16.88	116.07	60.72	NO
1400.	39.06	6	1.0	1.0	10000.0	16.88	123.38	63.77	NO

1500.	35.40	6	1.0	1.0	10000.0	16.88	130.52	66.71	NO
1600.	32.31	6	1.0	1.0	10000.0	16.88	137.51	69.56	NO
1700.	29.67	6	1.0	1.0	10000.0	16.88	144.34	72.32	NO
1800.	27.40	6	1.0	1.0	10000.0	16.88	151.04	75.00	NO
1900.	25.42	6	1.0	1.0	10000.0	16.88	157.60	77.60	NO
2000.	23.69	6	1.0	1.0	10000.0	16.88	164.04	80.13	NO
2100.	22.16	6	1.0	1.0	10000.0	16.88	170.35	82.59	NO
2200.	20.80	6	1.0	1.0	10000.0	16.88	176.55	84.99	NO
2300.	19.59	6	1.0	1.0	10000.0	16.88	182.64	87.34	NO
2400.	18.50	6	1.0	1.0	10000.0	16.88	188.62	89.63	NO
2500.	17.51	6	1.0	1.0	10000.0	16.88	194.51	91.88	NO
2600.	16.62	6	1.0	1.0	10000.0	16.88	200.29	94.07	NO
2700.	15.81	6	1.0	1.0	10000.0	16.88	205.98	96.22	NO
2800.	15.08	6	1.0	1.0	10000.0	16.88	211.58	98.33	NO
2900.	14.40	6	1.0	1.0	10000.0	16.88	217.10	100.40	NO
3000.	13.78	6	1.0	1.0	10000.0	16.88	222.53	102.43	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 30. M:

30.	3825.	4	2.0	2.0	640.0	5.03	4.89	4.32	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. 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
56.	2375.	4	1.0	1.0	320.0	8.83	9.12	8.07	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	3825.	30.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

7/2/2021
15:38:19

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

STANCILL S INC.-- RAP FEED BIN SYSTEM

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = VOLUME
EMISSION RATE (G/S) = 1.00000
SOURCE HEIGHT (M) = 5.0000
INIT. LATERAL DIMEN (M) = 0.7000
INIT. VERTICAL DIMEN (M) = 2.3300
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
34.	0.1239E+05	6	1.0	1.0	10000.0	5.00	2.07	2.95	NO
100.	7942.	6	1.0	1.0	10000.0	5.00	4.62	4.05	NO
200.	4627.	6	1.0	1.0	10000.0	5.00	8.25	5.59	NO
300.	2999.	6	1.0	1.0	10000.0	5.00	11.74	7.01	NO
400.	2104.	6	1.0	1.0	10000.0	5.00	15.13	8.36	NO
500.	1563.	6	1.0	1.0	10000.0	5.00	18.45	9.65	NO
600.	1211.	6	1.0	1.0	10000.0	5.00	21.71	10.90	NO
700.	996.2	6	1.0	1.0	10000.0	5.00	24.92	11.70	NO
800.	824.6	6	1.0	1.0	10000.0	5.00	28.10	12.72	NO
900.	696.1	6	1.0	1.0	10000.0	5.00	31.23	13.70	NO
1000.	603.6	6	1.0	1.0	10000.0	5.00	34.34	14.47	NO
1100.	526.7	6	1.0	1.0	10000.0	5.00	37.41	15.32	NO
1200.	464.6	6	1.0	1.0	10000.0	5.00	40.46	16.14	NO
1300.	413.7	6	1.0	1.0	10000.0	5.00	43.48	16.94	NO
1400.	371.4	6	1.0	1.0	10000.0	5.00	46.49	17.72	NO
1500.	335.8	6	1.0	1.0	10000.0	5.00	49.47	18.48	NO
1600.	305.4	6	1.0	1.0	10000.0	5.00	52.43	19.22	NO
1700.	279.4	6	1.0	1.0	10000.0	5.00	55.37	19.94	NO
1800.	256.8	6	1.0	1.0	10000.0	5.00	58.30	20.65	NO
1900.	237.1	6	1.0	1.0	10000.0	5.00	61.20	21.35	NO
2000.	221.6	6	1.0	1.0	10000.0	5.00	64.10	21.82	NO
2100.	206.9	6	1.0	1.0	10000.0	5.00	66.98	22.40	NO

```
 2200.   193.8      6    1.0    1.0 10000.0   5.00   69.84   22.97   NO
 2300.   182.0      6    1.0    1.0 10000.0   5.00   72.70   23.52   NO
 2400.   171.4      6    1.0    1.0 10000.0   5.00   75.53   24.07   NO
 2500.   161.7      6    1.0    1.0 10000.0   5.00   78.36   24.60   NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    34. M:
   34.  0.1239E+05   6    1.0    1.0 10000.0   5.00    2.07    2.95   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     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
------- ---------- ---- ----- ----- ------ ------ ------ ------ ------ -----
   111.    7458.      6    1.0    1.0 10000.0   5.00    5.01    4.22   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       MAX CONC    DIST TO   TERRAIN
  PROCEDURE       (UG/M**3)    MAX (M)    HT (M)
--------------   -----------   ---------   -------
SIMPLE TERRAIN     0.1239E+05      34.        0.

************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
************************************************
```

7/2/2021
13:35:46

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

STANCILL S INC. -- AGGREGATE FEED BINS

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = VOLUME
EMISSION RATE (G/S) = 1.00000
SOURCE HEIGHT (M) = 3.0000
INIT. LATERAL DIMEN (M) = 6.2800
INIT. VERTICAL DIMEN (M) = 1.4000
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
37.	7556.	5	1.0	1.0	10000.0	3.00	8.36	2.63	NO
100.	6491.	6	1.0	1.0	10000.0	3.00	9.83	3.30	NO
200.	4064.	6	1.0	1.0	10000.0	3.00	13.27	4.89	NO
300.	2693.	6	1.0	1.0	10000.0	3.00	16.63	6.36	NO
400.	1915.	6	1.0	1.0	10000.0	3.00	19.92	7.74	NO
500.	1436.	6	1.0	1.0	10000.0	3.00	23.16	9.06	NO
600.	1121.	6	1.0	1.0	10000.0	3.00	26.35	10.32	NO
700.	921.6	6	1.0	1.0	10000.0	3.00	29.51	11.30	NO
800.	768.0	6	1.0	1.0	10000.0	3.00	32.63	12.33	NO
900.	652.1	6	1.0	1.0	10000.0	3.00	35.72	13.32	NO
1000.	565.8	6	1.0	1.0	10000.0	3.00	38.78	14.18	NO
1100.	496.0	6	1.0	1.0	10000.0	3.00	41.82	15.04	NO
1200.	439.3	6	1.0	1.0	10000.0	3.00	44.83	15.87	NO
1300.	392.6	6	1.0	1.0	10000.0	3.00	47.83	16.68	NO
1400.	353.5	6	1.0	1.0	10000.0	3.00	50.80	17.47	NO
1500.	320.5	6	1.0	1.0	10000.0	3.00	53.75	18.23	NO
1600.	292.2	6	1.0	1.0	10000.0	3.00	56.69	18.98	NO
1700.	267.9	6	1.0	1.0	10000.0	3.00	59.60	19.71	NO
1800.	246.7	6	1.0	1.0	10000.0	3.00	62.51	20.42	NO
1900.	228.2	6	1.0	1.0	10000.0	3.00	65.39	21.12	NO
2000.	212.8	6	1.0	1.0	10000.0	3.00	68.27	21.71	NO
2100.	199.0	6	1.0	1.0	10000.0	3.00	71.13	22.29	NO

```
 2200.   186.7      6    1.0    1.0 10000.0    3.00   73.97   22.85    NO
 2300.   175.6      6    1.0    1.0 10000.0    3.00   76.81   23.41    NO
 2400.   165.5      6    1.0    1.0 10000.0    3.00   79.63   23.96    NO
 2500.   156.5      6    1.0    1.0 10000.0    3.00   82.44   24.49    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    37. M:
   37.   7556.      5    1.0    1.0 10000.0    3.00    8.36    2.63    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     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
------- ---------- ---- ----- ----- ------ ------ ------ ------ ------ -----
   122.   5857.      6    1.0    1.0 10000.0    3.00   10.59    3.68    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       MAX CONC    DIST TO   TERRAIN
  PROCEDURE       (UG/M**3)    MAX (M)    HT (M)
--------------   -----------   ---------   -------
SIMPLE TERRAIN      7556.          37.       0.

**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

7/2/2021

15:39:43

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

STANCILL S INC. -- AGGREGATE SCREENER / DRUM FEED

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = VOLUME
EMISSION RATE (G/S) = 1.00000
SOURCE HEIGHT (M) = 5.0000
INIT. LATERAL DIMEN (M) = 7.9100
INIT. VERTICAL DIMEN (M) = 5.5800
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
39.	4008.	6	1.0	1.0	10000.0	5.00	9.28	6.14	NO
100.	3087.	6	1.0	1.0	10000.0	5.00	11.41	7.01	NO
200.	2151.	6	1.0	1.0	10000.0	5.00	14.81	8.36	NO
300.	1591.	6	1.0	1.0	10000.0	5.00	18.13	9.65	NO
400.	1229.	6	1.0	1.0	10000.0	5.00	21.40	10.89	NO
500.	1017.	6	1.0	1.0	10000.0	5.00	24.62	11.59	NO
600.	839.7	6	1.0	1.0	10000.0	5.00	27.80	12.61	NO
700.	707.6	6	1.0	1.0	10000.0	5.00	30.94	13.59	NO
800.	616.7	6	1.0	1.0	10000.0	5.00	34.04	14.26	NO
900.	537.2	6	1.0	1.0	10000.0	5.00	37.12	15.11	NO
1000.	473.2	6	1.0	1.0	10000.0	5.00	40.17	15.94	NO
1100.	420.8	6	1.0	1.0	10000.0	5.00	43.20	16.75	NO
1200.	377.4	6	1.0	1.0	10000.0	5.00	46.20	17.53	NO
1300.	340.8	6	1.0	1.0	10000.0	5.00	49.18	18.29	NO
1400.	309.8	6	1.0	1.0	10000.0	5.00	52.15	19.04	NO
1500.	283.1	6	1.0	1.0	10000.0	5.00	55.09	19.77	NO
1600.	260.0	6	1.0	1.0	10000.0	5.00	58.02	20.48	NO
1700.	239.9	6	1.0	1.0	10000.0	5.00	60.93	21.18	NO
1800.	226.8	6	1.0	1.0	10000.0	5.00	63.82	21.40	NO
1900.	211.2	6	1.0	1.0	10000.0	5.00	66.70	22.02	NO
2000.	197.6	6	1.0	1.0	10000.0	5.00	69.57	22.59	NO
2100.	185.4	6	1.0	1.0	10000.0	5.00	72.42	23.15	NO

```
 2200.   174.5      6    1.0    1.0 10000.0    5.00   75.26   23.70    NO
 2300.   164.6      6    1.0    1.0 10000.0    5.00   78.09   24.25    NO
 2400.   155.6      6    1.0    1.0 10000.0    5.00   80.91   24.78    NO
 2500.   147.4      6    1.0    1.0 10000.0    5.00   83.71   25.30    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    39. M:
   39.   4008.      6    1.0    1.0 10000.0    5.00    9.28    6.14    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     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
------- ---------- ---- ----- ----- ------ ------ ------ ------ -----
   127.   2776.      6    1.0    1.0 10000.0    5.00   12.35    7.38    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       MAX CONC    DIST TO   TERRAIN
  PROCEDURE       (UG/M**3)    MAX (M)    HT (M)
--------------   -----------  ---------  -------
SIMPLE TERRAIN      4008.         39.       0.

**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

7/2/2021

13:44:12

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

STANCILL S INC. -- UNLOADING @ AGG STOCKPILES

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = VOLUME
EMISSION RATE (G/S) = 1.00000
SOURCE HEIGHT (M) = 6.0960
INIT. LATERAL DIMEN (M) = 3.5448
INIT. VERTICAL DIMEN (M) = 2.8346
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
204.	2910.	6	1.0	1.0	10000.0	6.10	10.88	6.05	NO
300.	2165.	6	1.0	1.0	10000.0	6.10	14.15	7.39	NO
400.	1634.	6	1.0	1.0	10000.0	6.10	17.49	8.73	NO
500.	1272.	6	1.0	1.0	10000.0	6.10	20.77	10.00	NO
600.	1041.	6	1.0	1.0	10000.0	6.10	24.00	10.90	NO
700.	860.4	6	1.0	1.0	10000.0	6.10	27.18	11.95	NO
800.	725.2	6	1.0	1.0	10000.0	6.10	30.33	12.96	NO
900.	621.0	6	1.0	1.0	10000.0	6.10	33.44	13.93	NO
1000.	545.5	6	1.0	1.0	10000.0	6.10	36.52	14.65	NO
1100.	480.4	6	1.0	1.0	10000.0	6.10	39.58	15.50	NO
1200.	427.1	6	1.0	1.0	10000.0	6.10	42.61	16.31	NO
1300.	382.8	6	1.0	1.0	10000.0	6.10	45.62	17.11	NO
1400.	345.6	6	1.0	1.0	10000.0	6.10	48.60	17.88	NO
1500.	314.0	6	1.0	1.0	10000.0	6.10	51.57	18.64	NO
1600.	286.8	6	1.0	1.0	10000.0	6.10	54.52	19.37	NO
1700.	263.3	6	1.0	1.0	10000.0	6.10	57.45	20.09	NO
1800.	242.9	6	1.0	1.0	10000.0	6.10	60.36	20.80	NO
1900.	224.9	6	1.0	1.0	10000.0	6.10	63.26	21.49	NO
2000.	211.3	6	1.0	1.0	10000.0	6.10	66.14	21.91	NO
2100.	197.7	6	1.0	1.0	10000.0	6.10	69.01	22.49	NO
2200.	185.5	6	1.0	1.0	10000.0	6.10	71.87	23.05	NO
2300.	174.6	6	1.0	1.0	10000.0	6.10	74.71	23.60	NO

2400.	164.7	6	1.0	1.0	10000.0	6.10	77.54	24.15	NO
2500.	155.7	6	1.0	1.0	10000.0	6.10	80.36	24.68	NO
2600.	147.5	6	1.0	1.0	10000.0	6.10	83.17	25.20	NO
2700.	140.0	6	1.0	1.0	10000.0	6.10	85.96	25.72	NO
2800.	133.1	6	1.0	1.0	10000.0	6.10	88.75	26.22	NO
2900.	126.8	6	1.0	1.0	10000.0	6.10	91.53	26.72	NO
3000.	121.6	6	1.0	1.0	10000.0	6.10	94.29	27.07	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 204. M:

204.	2910.	6	1.0	1.0	10000.0	6.10	10.88	6.05	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
226.	2721.	6	1.0	1.0	10000.0	6.10	11.62	6.36	NO
244.	2570.	6	1.0	1.0	10000.0	6.10	12.25	6.62	NO
266.	2397.	6	1.0	1.0	10000.0	6.10	13.01	6.93	NO
314.	2080.	6	1.0	1.0	10000.0	6.10	14.61	7.58	NO
345.	1902.	6	1.0	1.0	10000.0	6.10	15.65	8.00	NO
355.	1845.	6	1.0	1.0	10000.0	6.10	16.01	8.14	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	2910.	204.	0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
****

07/09/21
04:53:19

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

CSP Stockpiles 75 ft diameter (SP8 & SP9)

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = VOLUME
EMISSION RATE (G/S) = 1.00000
SOURCE HEIGHT (M) = 9.1400
INIT. LATERAL DIMEN (M) = 5.3160
INIT. VERTICAL DIMEN (M) = 4.2530
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
45.	1921.	4	1.0	1.0	320.0	9.14	8.71	6.03	NO
100.	1768.	6	1.0	1.0	10000.0	9.14	8.90	5.77	NO
200.	1595.	6	1.0	1.0	10000.0	9.14	12.37	7.19	NO
300.	1335.	6	1.0	1.0	10000.0	9.14	15.75	8.53	NO
400.	1103.	6	1.0	1.0	10000.0	9.14	19.05	9.81	NO
500.	927.3	6	1.0	1.0	10000.0	9.14	22.31	10.64	NO
600.	785.1	6	1.0	1.0	10000.0	9.14	25.51	11.73	NO
700.	673.3	6	1.0	1.0	10000.0	9.14	28.68	12.75	NO
800.	584.1	6	1.0	1.0	10000.0	9.14	31.81	13.73	NO
900.	517.4	6	1.0	1.0	10000.0	9.14	34.91	14.41	NO
1000.	459.0	6	1.0	1.0	10000.0	9.14	37.98	15.27	NO
1100.	410.4	6	1.0	1.0	10000.0	9.14	41.02	16.09	NO
1200.	369.6	6	1.0	1.0	10000.0	9.14	44.04	16.89	NO
1300.	335.0	6	1.0	1.0	10000.0	9.14	47.04	17.67	NO
1400.	305.4	6	1.0	1.0	10000.0	9.14	50.01	18.43	NO
1500.	279.8	6	1.0	1.0	10000.0	9.14	52.97	19.17	NO
1600.	257.5	6	1.0	1.0	10000.0	9.14	55.91	19.90	NO
1700.	238.0	6	1.0	1.0	10000.0	9.14	58.83	20.61	NO
1800.	220.7	6	1.0	1.0	10000.0	9.14	61.74	21.30	NO
1900.	208.2	6	1.0	1.0	10000.0	9.14	64.63	21.63	NO
2000.	195.0	6	1.0	1.0	10000.0	9.14	67.51	22.22	NO
2100.	183.2	6	1.0	1.0	10000.0	9.14	70.37	22.79	NO

2200.	172.5	6	1.0	1.0	10000.0	9.14	73.22	23.35	NO
2300.	162.8	6	1.0	1.0	10000.0	9.14	76.06	23.89	NO
2400.	154.0	6	1.0	1.0	10000.0	9.14	78.88	24.43	NO
2500.	146.0	6	1.0	1.0	10000.0	9.14	81.69	24.96	NO
2600.	138.6	6	1.0	1.0	10000.0	9.14	84.50	25.48	NO
2700.	131.9	6	1.0	1.0	10000.0	9.14	87.29	25.99	NO
2800.	125.7	6	1.0	1.0	10000.0	9.14	90.07	26.49	NO
2900.	120.9	6	1.0	1.0	10000.0	9.14	92.84	26.76	NO
3000.	115.7	6	1.0	1.0	10000.0	9.14	95.60	27.21	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 45. M:

45.	1921.	4	1.0	1.0	320.0	9.14	8.71	6.03	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
63.	1866.	4	1.0	1.0	320.0	9.14	10.08	6.73	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	1921.	45.	0.

APPENDIX L

L. Fugitive Dust Control Plan

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

FUGITIVE DUST CONTROL PLANT

Purpose: *This plan provides a dust control program to ensure proper operation and maintenance of an Asphalt Paving Materials Mixing Plant (APMMP) and a Crushing & Screening Plant (CSP) equipment owned and operated by **Stancills Inc.**, at 499 Mountain Hill Rd., Perryville, Maryland. This plan also provides possible dust control measures for the site on which the equipment is located and is associated with the equipment operations.*

ASPHALT PAVING MATERIALS MIXING PLANT

- Particulate control equipment will be kept in good working order.
- Accumulated dust in the baghouse will be cleaned from the baghouse on a continuous basis and returned to the process.
- The bag cleaning system, a pulse-jet air system, will be operated at regular intervals to remove the dust from the bags, but at sufficient intervals as to allow for an appropriate dust cake to build up on the bags for maximum removal of the dust from the exhaust gas.
- Baghouse Inspections: The bags will be checked with a fluorescent tracing powder which is visible under a black light at least once per year, typically shortly after the start-up of the paving season. In addition, a black-light leak check will be made as needed during the operating season within 24 hours of when visible emissions are observed at the stack.
    - If bag replacement is required as a result of this inspection, the bags will be replaced prior to operating the equipment again.
        - Extra bags for the baghouse will be available on site at all times.
    - In the event, other parts are required to repair the baghouse, they will be ordered as soon as possible and installed within 24 hours of arriving at the plant.
- Spillage and residual materials from the process will be picked up daily and returned to the raw materials stockpiles for reuse.

CRUSHING AND SCREENING PLANT

- The wet suppression system will be operated when the C&S plant is running as needed to control fugitive dust emissions.
- Wet suppression system operations will be monitored as follows:
    - The water spray nozzles will be visually observed, at least daily, to determine that they are spraying in the correct pattern and direction during operations.
        - When spray nozzles are found to be misaligned or not functioning properly, they shall be cleaned, re-aligned, and/or replaced within 24 hours of observation.
    - On a monthly basis, the water flow system will be inspected to ensure that water is flowing to the spray nozzles properly. Corrective action will be effected within 24 hours of determining water flow is inadequate.

- The unpaved travel surfaces for the front-end loaders servicing the C&S plant will be watered as needed to control fugitive dust from the surfaces.

SITE MAINTENANCE

- Dust on the unpaved areas where vehicular traffic travel will be controlled by application of water as needed to control fugitive dust.
- The speed of vehicles on the site will be limited to 15 miles per hour (MPH). Signs will be posted to advise drivers of the speed limitation.
- Dust from stockpiles: stockpiles are built while aggregate is delivered to the site. During this phase, dust blowing from the piles will be controlled with water, as needed.

SITE ROADWAYS

- All roadways on which the vehicular traffic hauling APM will be paved.
- The paved roadways will be watered as needed during the operating season when there is dust accumulation.
- All trucks entering the site to deliver aggregates not supplied by the sand and gravel operation will be required to have the loads covered.
- Complaints by neighbors of spillage, excessive speed, etc. can be reported to ***Stancills Inc.*** and the problem will be corrected as appropriate.

OTHER ACTIVITIES

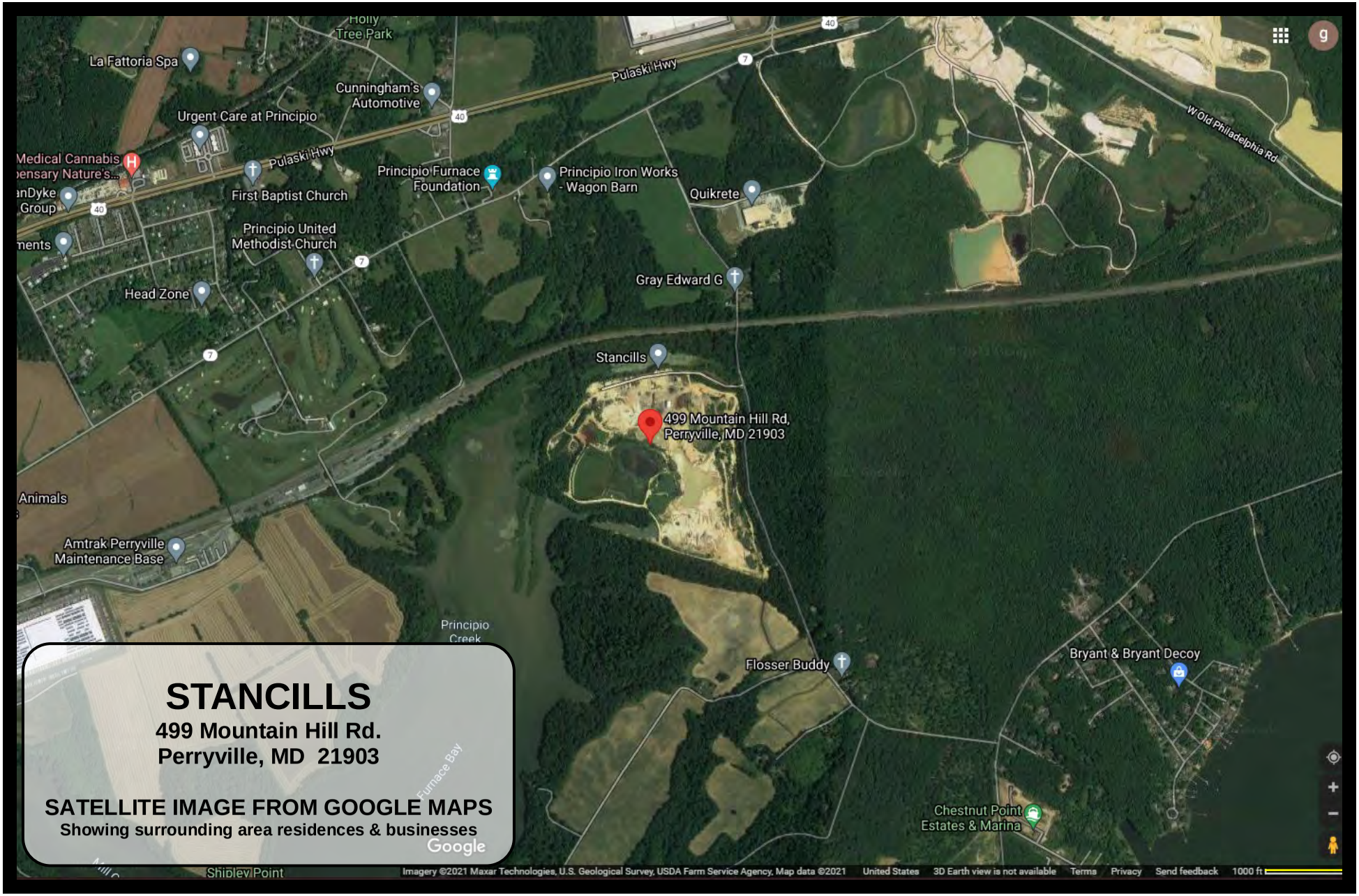
- The front-end loader operators will be directed to avoid overfilling the bucket of the loader and the feed hoppers to prevent spillage, and to minimize the drop height of the material when loading the feed hoppers.
- The stockpiles will not be worked any more than necessary to keep the materials contained within their defined area. The stockpile height will be kept to the minimum necessary, depending on the quantity required to be on site and available area for the base of the stockpile.

RECORDKEEPING

- Records of baghouse inspections and maintenance, repairs to equipment, bag replacements, dust control actions taken on the site (for roadways and stockpiles), will be maintained and available for review. The records will indicate the date and time, and what action was taken.
- Records of the C&S plant inspections and maintenance, repairs to equipment, nozzle replacements, and dust control actions taken around the C&S plant will be maintained and available for review. The records will indicate the date and time, and what action was taken.

APPENDIX M

M. Satellite Photo of Site and Site Plan Excerpt



STANCILLS

499 Mountain Hill Rd.
Perryville, MD 21903

SATELLITE IMAGE FROM GOOGLE MAPS
Showing surrounding area residences & businesses

1000 ft → 0.586 in **SCALE this page: 1,706 ft per inch**

STANCILLS

499 Mountain Hill Rd.
Perryville, MD 21903

SATELLITE IMAGE FROM GOOGLE MAPS
With approximate property boundaries
With approximate plant layout superimposed

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

APPENDIX N

N. Background Data for NAAQS Compliance Demonstration

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

Monitor Values Report

Geographic Area: Maryland
Pollutant: CO
Year: 2019
Exceptional Events: Included (if any)

Obs	First Max 8hr	Second Max 8hr	Days 8hr Max >STD	First Max 1hr	Second Max 1hr	Days 1hr Max >STD	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8165	2.1	2	0	2.9	2.7	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
7375	0.2	0.2	0	0.4	0.3	0	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
8391	0.7	0.7	0	1.9	1.3	0	None	1	240270006	Interstate 95 South Welocme Center	North Laurel	Howard	MD	03
6818	1	0.9	0	1.3	1.1	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03

EPA Air Quality Standards: 35 PPM, 1-hour averaging period
9 PPM, 8-hour averaging period

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 13, 2021

Monitor Values Report

Geographic Area: Maryland
Pollutant: NO2
Year: 2019
Exceptional Events: Included (if any)
Note: The * indicates the mean does not satisfy minimum data completeness criteria.

Obs	First Max 1hr	Second Max 1hr	98th Percentile	Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8675	46	45	41	14.07	None	4	240050009	4380 Old Court Rd	Lochearn	Baltimore	MD	03
8641	58	52	41	9.02	None	4	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
2475	9	9	7	1.94*	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
4086	12	11	10	2.68*	None	4	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
8477	47	43	38	16.41	None	1	240270006	Interstate 95 South Welocme Center	North Laurel	Howard	MD	03
6988	41	40	37	5.44	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1338	41	31	32	10.50*	None	4	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
7245	57	52	49	11.91	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

EPA Air Quality Standards: 100 PPB, 1-hour averaging period
53 PPM, Annual averaging period

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 13, 2021

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM10
Year: 2019
Exceptional Events: Included (if any)

Required Days	Valid Days	First Max	Second Max	Days >STD	Est Days >STD	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
61	58	34	27	0	0	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
61	60	34	26	0	0	None	2	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
121	119	34	20	0	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
61	60	53	34	0	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

EPA Air Quality Standards: 150 ug/m3, 24-hour averaging period

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2019
Exceptional Events: Included (if any)
Note: The * indicates the mean does not satisfy minimum data completeness criteria.

Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
29	26.3	24.2	14.8	13.4	26	8.3	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
351	26.5	24.1	23	22.9	20	7.4	None	3	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
59	44.3	31.4	20.8	19.6	31	8.2	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
355	26.8	26.5	26.3	20.2	18	6.4	None	3	240150003	Fair Hill Natural Resource Mgmt Area, 4493 Telegraph Road	Not in a City	Cecil	MD	03
354	15.9	15.4	14.9	14.7	14	5.9	None	3	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a City	Dorchester	MD	03
356	14.3	12.6	12	11.7	12	5.6	None	3	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
353	32.8	29.8	27.4	26	19	7	None	3	240251001	Edgewood Chemical Biological Center (Apg), Waehli Road	Edgewood	Harford	MD	03
356	25.2	24.7	24	21	17	7.4	None	3	240270006	Interstate 95 South Welocme Center	North Laurel	Howard	MD	03
351	25.7	20.3	16.5	16.2	15	5.9	None	3	240290002	Millington Wildlife Management Area, Massey - Maryland Line Road (Route 330)	Not in a City	Kent	MD	03
356	28.9	24.5	23.6	22.8	18	6.1	None	3	240313001	Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane	Not in a City	Montgomery	MD	03
121	31.6	21.6	15	14.7	15	6.8	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
31	31.7	21.4	12.5	12.3	32	6.9	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
357	29.3	22.3	21.7	19.6	15	7.2	None	3	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
355	31.7	28.9	26.7	26.5	24	6.9	None	3	240430009	Md Correctional Institution 18530 Roxbury Road	Not in a City	Washington	MD	03

EPA Air Quality Standards: 100 PPB, 1 hour averaging period

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 13, 2021

Monitor Values Report

Geographic Area: Maryland
Pollutant: PM2.5
Year: 2019
Exceptional Events: Included (if any)
Note: The * indicates the mean does not satisfy minimum data completeness criteria.

Obs	First Max	Second Max	Third Max	Fourth Max	98th Percentile	Weighted Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
120	39.3	29	20	19.8	20	8.3	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03
342	36.8	34.4	33.2	30.9	20	8.5	None	3	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

EPA Air Quality Standards: 35 ug/m3, 24-hour averaging period
12.0 ug/m3, Annual averaging period

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 13, 2021

Monitor Values Report

Geographic Area: Maryland
Pollutant: SO2
Year: 2019
Exceptional Events: Included (if any)
Note: The * indicates the mean does not satisfy minimum data completeness criteria.

Obs 1hr	First Max 1hr	Second Max 1hr	99th Percentile	Obs 24hr	First Max 24hr	Second Max 24hr	Days >STD	Annual Mean	Exc Events	Monitor Number	Site ID	Address	City	County	State	EPA Region
8663	145.5	113.8	72	363	24.8	20	0	1.16	None	1	240018881	Rock St. Sw	Westernport	Allegany	MD	03
8693	189	158.6	144	365	24.4	21.7	0	1.82	None	1	240018882	Horse Rock Road	Westernport	Allegany	MD	03
7053	32.6	31.3	25	295	7.5	6.8	0	1.33*	None	4	240032002	8515 Jenkins Rd Riviera Beach Md	Riviera Beach	Anne Arundel	MD	03
8283	22.5	12.2	11	351	3.8	3	0	0.66	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8132	2.9	2.4	2	345	0.9	0.9	0	0.21	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a City	Dorchester	MD	03
7165	8.5	4.7	4	299	1.8	1.1	0	0.30*	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
8564	12.5	6.2	4	359	2	1	0	0.12	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03

EPA Air Quality Standards: 75 PPB, 1-hour averaging period
140 PPB, 24-hour averaging period

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 13, 2021

APPENDIX O

O. Proof of Workman's Compensation Insurance

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 5/4/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER HMS Insurance Associates, Inc. 20 Wight Ave Suite 300 Hunt Valley MD 21030	**CONTACT NAME:** Chelsea Durastanti **PHONE (A/C, No, Ext):** 443-632-3353 **FAX (A/C, No):** 443-632-3484 **E-MAIL ADDRESS:** cdurastanti@hmsia.com
	INSURER(S) AFFORDING COVERAGE / **NAIC #** **INSURER A :** Harford Mutual Insurance Co — 14141
INSURED STANINC-01 Stancills, Inc. 499 Mountain Hill Road Perryville MD 21903	**INSURER B :** **INSURER C :** **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 697821024 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [X] PRO-JECT [X] LOC OTHER:			9198309	11/1/2020	11/1/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
A	**AUTOMOBILE LIABILITY** X ANY AUTO OWNED AUTOS ONLY / SCHEDULED AUTOS X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY			6077476	11/1/2020	11/1/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$ 1,000,000 $ $ $ $
A	X **UMBRELLA LIAB** X OCCUR **EXCESS LIAB** CLAIMS-MADE DED X RETENTION $ 10,000			7990223	11/1/2020	11/1/2021	EACH OCCURRENCE AGGREGATE $	$ $ 3,000,000 $
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: N **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		4097121	11/1/2020	11/1/2021	X PER STATUTE / OTH-ER: MD E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	MD $ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

Evidence

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

APPENDIX P

P. Zoning Confirmation

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

Office of the County Executive

Danielle Hornberger
County Executive

Dan Schneckenburger
Director of Administration

Office: 410.996.5202
Fax: 800.863.0947

Department of Land Use & Development Services

Stephen O'Connor, AICP, Acting Director
Office: 410.996.5220
Fax: 800.430.3829

Stephen O'Connor, AICP, Chief
Office: 410.996.5220
Fax: 800.430.3829

County Information
410.996.5200
410.658.4041

CECIL COUNTY, MARYLAND

Division of Planning and Zoning
200 Chesapeake Boulevard, Suite 2300, Elkton, MD 21921

February 23, 2021

Brian Russell
Vice President Plant Operations
Stancill's
499 Mountain Hill Road
Perryville, MD 21911

RE: Tax Map 35, Parcel 121 – 499 Mountain Hill Road

Dear Mr. Russell:

Thank you for your recent inquiry on the above referenced property. Specifically, you wish to ascertain if an asphalt paving material mixing plant and crushing and screening plant is a permitted use for this property. The above referenced property is in the Mineral Extraction A (MEA) zoning district, where the use can be permitted, so long as the following conditions listed in section 146 of the zoning ordinance are followed:

1. Operation structures shall not be erected, and storage of materials shall not take place within two hundred (200) feet of any property line.

2. A buffer yard meeting the E standard in Appendix B shall be provided between the operation structures and any right-of-way of any road.

A major site plan will also need to be submitted to the Planning and Zoning Division and approved, prior to approving any building permit application. You may review the zoning ordinance provisions online here: https://www.ccgov.org/home/showpublisheddocument?id=1288.

Should you have any further questions, please call, or email me at 410-996-5220 or blightner@ccgov.org.

Sincerely,

Bryan Lightner, CFM
Zoning Administrator

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

APPENDIX Q

Q. Safety Data Sheets

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

ASPHALT PAVEMENT MIX

SAFETY DATA SHEET

OSHA HCS (29 CFR 1910.1200)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product identifier — **Asphalt Pavement Mix**

Chemical Name	Mixture
CAS No.	Mixture
Trade Name(s)	Petroleum Asphalt / Road Paving Asphalt / Hot Mix Asphalt / Blacktop / Bitumen / Warm Mix Asphalt

Relevant identified uses of the substance or mixture and uses advised against

Identified Use(s)	Road Paving Asphalt
Uses Advised Against	None.

Details of the supplier of the safety data sheet

Company Identification	P. Flanigan & Sons Inc 2444 Loch Raven Rd. Baltimore, MD 21218
Telephone	410.467.5900 410.467.3127

Emergency telephone number

Emergency Phone No.	Not classified as dangerous for supply/use. Please contact the supplier above during normal business hours.

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA HCS (29 CFR 1910.1200) / GHS Classification	Not classified as dangerous for supply/use.

Label elements

Hazard Symbol	None
Signal Word(s)	None
Hazard Statement(s)	None
Precautionary Statement(s)	None

Other hazards

Contact with hot ASPHALT PAVING MATERIALS causes skin burns.

May cause eye irritation.

Fumes may cause upper respiratory irritation (nose & throat).

Skin contact may increase susceptibility to sunburn.

Poisonous hydrogen sulfide gas can accumulate in the head-space of containers of certain asphalt products.

Mechanical disruption (e.g., milling, cutting, chipping) of cured asphalt pavement may release crystalline silica dust from the aggregate.

Additional Information

Avoid breathing dust/fume/gas/mist/vapors/spray.

As necessary, Wear protective gloves/protective clothing/eye protection/face protection.

Wash hands and exposed skin after use.

ASPHALT PAVEMENT MIX

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition/information on ingredients	% wt.	CAS No.
Aggregate (crushed stone, sand, gravel, slag)	70 - 97	Various
Petroleum asphalt / bitumen^	3 – 7	8052-42-4
Reclaimed Asphalt Pavement (RAP)	0 – 25	Mixture
Reclaimed Asphalt Shingles (RAS)	0 – 10	Mixture
Polymers and Natural Rubbers	< 0.5	Various
Process oils (inherent in refined petroleum asphalt	< 0.1	Various
Anti-strip or other amine-based additives	< 0.1	Various
Warm-mix additives	< 0.1	Various

^Contains: <0.05% of 3 - 7 ring Polycyclic Aromatic Hydrocarbons (PAHs).

Other Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below. Please see Section 8 of SDS for more details.

- Contains: <0.1% airborne crystalline silica (inherent in aggregate) and <0.1% hydrogen sulfide.
- Hydrogen sulfide gas can accumulate in the head space of containers of certain asphalt products.
- Heated product releases asphalt fume.

Additional Information **None**

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Inhalation	Not normally required. Move person to fresh air. Apply artificial respiration if necessary. If symptoms persist, obtain medical attention.
Skin Contact	Causes burns. Immediately cool skin where asphalt binder has contacted or adhered to skin. Allow asphalt binder which remains on the skin to fall off naturally...DO NOT REMOVE. If problems persist or coverage is extensive, get medical attention.
Eye Contact	Flush eyes with water for at least 15 minutes while holding eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention.
Ingestion	Not normally required. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
Most important symptoms and effects, both acute and delayed	None known
Indication of any immediate medical attention and special treatment needed	None known

ASPHALT PAVEMENT MIX

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

-Suitable Extinguishing Media	Extinguish with carbon dioxide, dry chemical, foam or water spray.
-Unsuitable Extinguishing Media	None anticipated.
Special hazards arising from the substance or mixture	Combustion causes toxic fumes. Combustion products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides.
Advice for fire-fighters	A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Avoid contact with skin and eyes.
Environmental precautions	Not normally required.
Methods and material for containment and cleaning up	Allow product to cool/solidify and pick up as a solid.
Reference to other sections	None.
Additional Information	None.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities

-Storage temperature	Store at temperatures not exceeding the product's flash point.
-Incompatible materials	Strong oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

SUBSTANCE	CAS No.	(8hr TWA) PEL (OSHA)*	(8hr TWA) TLV (ACGIH)	(STEL) PEL (OSHA)*	(STEL) TLV (ACGIH)	Note:
Asphalt fume	-----	-----	0.5 mg/m3 (I)	-----	-----	See below
Crystalline Silica (respirable particulate)	-----	10 mg/m3 %SiO_2 + 2	0.025 mg/m3^	-----	-----	See below
Hydrogen Sulfide	7783-06-4	-----	1 ppm	20 ppm ceiling	5 ppm	50 ppm peak

(I) Inhalable benzene-soluble fraction; ^Suspected Human Carcinogen; *Refer to OSHA 29 CFR 1910.1000 & 29 CFR 1926.55; 8hr TWA = 8 hour time-weighted average; STEL = Short Term Exposure Limit.

Recommended monitoring method	NIOSH 5042 (Asphalt Fume), NIOSH 7500 (Crystalline Silica), Electrochemical sensor (hydrogen sulfide).

Exposure controls

Appropriate engineering controls	Use only outdoors or in a well-ventilated area.

ASPHALT PAVEMENT MIX

Personal protection equipment

Eye/face protection 	The following to be used as necessary: Safety Glasses
Skin protection (Hand protection/ Other) 	The following to be used as necessary: Leather or thick textile gloves.
Respiratory protection 	In case of inadequate ventilation wear respiratory protection. Use NIOSH approved respiratory protection. Air-purifying respirator with combination organic vapor cartridge / particulate filter may be sufficient. Check with protective equipment manufacturer's data.
Thermal hazards	Use gloves with insulation for thermal protection, when needed.
Environmental Exposure Controls	Do not discharge waste and/or cleaning water via public sewer system. Ensure waste is collected and contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Solid
Color.	Dark brown / Black
Odor	Asphalt / Bitumen
Odor Threshold (ppm)	Not available.
pH (Value)	Not available.
Melting Point (°C) / Freezing Point (°C)	Not available.
Boiling point/boiling range (°C):	> 371 (>700 ºF)
Flash Point (°C)	> 232 (> 450 ºF)
Evaporation Rate	Not available.
Flammability (solid, gas)	Not applicable.
Explosive Limit Ranges	Not applicable.
Vapor pressure (Pascal)	Not determined.
Vapor Density (Air=1)	Not determined.
Density (g/ml)	2.2 - 2.7
Solubility (Water)	Negligible
Solubility (Other)	Not known
Partition Coefficient (n-Octanol/water)	Not available.
Auto Ignition Point (°C)	Not available.
Decomposition Temperature (°C)	Not available.
Kinematic Viscosity (cSt) @ 40°C	Not available
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

Other information Not available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity Stable under normal conditions.

Chemical stability Stable.

ASPHALT PAVEMENT MIX

Possibility of hazardous reactions	May react violently with: Strong oxidizing agents
Conditions to avoid	Incompatible materials
Incompatible materials	Oxidizers
Hazardous decomposition product(s)	Combustion causes toxic fumes. Combustion products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes: Inhalation, Skin Contact, Eye Contact

Information on toxicological effects

Acute toxicity	LD50 (rat): >5000 mg/kg bw LD50 (dermal): >2000 mg/kg bw LC50 (inhalation, fume): >94.4 mg/m3
Irritation/Corrosivity	May cause irritation to skin, eyes and respiratory system.
Sensitization	Not to be expected
Repeated dose toxicity	NOAEL(rat): 28 mg/m3 LOAEL (rat): 149 mg/m3
Carcinogenicity	Not to be expected at typical road paving temperatures.

NTP	IARC	ACGIH	OSHA
No	Yes*	No	No

Mutagenicity	Not to be expected.
Reproductive toxicity	Not to be expected.
Other information	* IARC (2013, volume 103) identifies that "occupational exposures to straight-run bitumens and their emissions during road paving are possibly carcinogenic to humans (Group 2B)." However, classification as a carcinogen under OSHA 29 CFR 1910.1200 is not warranted given the absence of positive cancer findings in human epidemiological studies and in cancer studies with laboratory animals when exposed dermally or by inhalation to asphalt products or fume condensates that are typical of road paving applications. IARC (2013, volume 103) also identifies that "occupational exposures to oxidized bitumens and their emissions during roofing are probably carcinogenic to humans (Group 2A)." Roofing shingles, which are considered an article under OSHA 29 CFR 1910.1200, are sometimes recycled into road paving asphalt mix. Emissions from oxidized bitumen, e.g., from shingles, at road paving temperatures are not expected to be qualitatively different than emissions from straight-run bitumens, and therefore would not warrant a carcinogen classification under OSHA 29 CFR 1910.1200.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Short term	LL50 (48 hour): >1000 mg/l (Fish) LL50 (48 hour): >1000 mg/L (Aquatic Invertebrates) EL50 (48 hour): >1000 mg/L (Aquatic Plants)
Long Term	No data
Persistence and degradability	The product is poorly biodegradable
Bioaccumulative potential	The product has low potential for bioaccumulation
Mobility in soil	The product has low mobility in soil
Results of PBT and vPvB assessment	Not classified as PBT or vPvB
Other adverse effects	None known

ASPHALT PAVEMENT MIX

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Disposal should be in accordance with local, state or national regulations. Consult an accredited waste disposal contractor or the local authority for advice.
Additional Information	None known

SECTION 14: TRANSPORT INFORMATION

Ground or Water Domestic Voyage (DOT)	Not regulated when transported below 240°C (464 °F)

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

TSCA (Toxic Substance Control Act) - Inventory Status	All components listed or polymer exempt
RCRA Hazardous Waste Number (40 CFR 261.33)	None
US RCRA Hazard Class	Not applicable

Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4)

Chemical Name	CAS No.	Typical %wt.	RQ (Pounds)
None	--	--	--

SARA 311/312 - Hazard Categories

☒None ☐Fire ☐Sudden Release ☐Reactivity ☐Immediate (acute) ☐Chronic (delayed)

SARA 313 – Toxic Chemicals (40 CFR 372)

Chemical Name	CAS No.	Typical %wt.
None	--	--

SARA 302 - Extremely Hazardous Substances(40 CFR 355)

Chemical Name	CAS No.	Typical %wt.	TPQ (Pounds)
None	--	--	--

SECTION 16: OTHER INFORMATION

Additional Information

The following sections contain revisions or new statements: 1-16

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. The manufacturer gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. The manufacturer accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.

SAFETY DATA SHEET

Effective Date: 3/01/2017
Replaces: 6/01/2015

Recycled Asphalt Product (RAP)

1. Identification

Product name:
Recycled Asphalt Product

Other means of identification/Synonyms/Common Names:
Re-crushed Asphaltic Concrete, Recycled Base (Crushed Misc. Base), Rap Cap Agg.

Recommended use:
Recycled Asphalt Product is used as a construction material.

Recommended restrictions:
None Known

Manufacturer/Contact info:
Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

General Phone Number:
1.866.401.5424

Emergency Phone Number:
1.866.401.5424 (3E Company, 24hours/day, 7 Days/week)

Website:
www.vulcanmaterials.com

2. Hazard(s) Identification

Physical hazards:
Not Classified

Health hazards:
Carcinogenicity-Category 1A
Specific target organ toxicity, repeated exposure- Category 2

Signal word:

Danger

Hazard Statement:
May Cause Cancer (Inhalation).
Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Precautionary statement:

Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.

Response

- If exposed or concerned get medical advice/attention.

Disposal

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

Supplemental information:
Recycled Asphalt Product contains a naturally occurring mineral complex with varying quantities of quartz (crystalline silica). Respirable Crystalline Silica (RCS) may cause cancer. Recycled Asphalt Product may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC, NTP; ACGIH states that it is a suspected cause of cancer.

3. Composition/information on ingredients

Chemical name	CAS number	%
Aggregate (crushed stone, sand, gravel, slag)	Mixture	60-90
Quartz (crystalline silica)	14808-60-7	>1
Asphalt Cement Reclaimed product may contain contaminants such as heavy metals, hydrocarbons and various asphalt additives.	8052-42-4	10-40

4. First-aid measures

Inhalation:

Remove person to fresh air. If lung irritation persists or later develops, contact a physician. If not breathing, initiate rescue breathing, give oxygen by trained personnel and get immediate medical attention. Do not attempt to rescue victim from confined spaces without adequate protective equipment.

Eyes:

Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Contact a physician if irritation persists or later develops.

Skin:

Not expected to be a significant exposure route. Clean exposed skin with soap or mild detergent and large amounts of water until all material is removed from the skin. Do not use solvents or thinners to remove material from skin.

Ingestion:

If swallowed, do not induce vomiting. Drink a large volume of water and get immediate medical attention. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration.

Most important symptoms/effects, acute and delayed:

Dust particles can scratch and irritate the skin with redness, an itching or burning sensation, swelling of the skin and/or rash. Dust may irritate the eyes, skin, and respiratory tract. Breathing respirable crystalline silica-containing dust for prolonged periods in the workplace can cause lung damage and a lung disease called silicosis. Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure.. Unconsciousness and asphyxiation may occur in poorly ventilated or confined spaces. **Note:** Since this product is not sold heated, exposure to asphalt emissions (fumes, vapors, or mists) are expected to be minimal. Potential for exposure increases if product comes in contact with heated surfaces or is heated.

Indication of immediate medical attention and special treatment needed:

Not all individuals with silicosis will exhibit symptoms of the disease. However, silicosis can be progressive and symptoms can appear even years after exposures have ceased. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).

5. Fire-fighting measures

Suitable extinguishing media:

Agents approved for Class B hazards (e.g., dry chemical, carbon dioxide, halogenated agents, foam, and steam) and water fog.

Unsuitable extinguishing media:

Avoid use of straight-stream water. Adding water to hot asphalt presents an explosion hazard.

Specific hazards arising from the chemical:

Do not heat above flash point. Fumes/vapors can explode when concentrated in an enclosed environment and supplied with an ignition source. Never weld or use a cutting torch or open flame on a full, partially full or empty bin, hopper, or other container that holds or has held asphaltic material unless precautions are taken to prevent explosion. WARNING: Hydrogen sulfide (H_2S) and other hazardous gases/vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels, and can create an explosive, toxic, or oxygen deficient atmosphere. H_2S gas is extremely flammable and can explode if an ignition source is provided. See Section 11 for health effects of H_2S gas.

Special protective equipment and precautions for firefighters:
Avoid breathing irritating and potentially toxic fumes, including hydrogen sulfide gas. Firefighters should wear NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Fire-fighting equipment/instructions:
Adding water to hot asphalt presents an explosion hazard.

Specific methods:
Use water spray to keep fire-exposed containers cool.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
Ventilate area and avoid inhalation by using appropriate precautions outlined in this SDS (see Section 8). Prevent materials from entering streams, drainages, or sewers. Spills entering surface waters or sewers entering/leading to surface waters must be reported to the National Response Center 1-800-424-8802. Based on volume and use, components of this product may be subject to reporting requirements of Title III of SARA, 1986, and 40 CFR 372.
For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week).

Environmental precautions:
Contain spilled material with sand, aggregate fines, or other inert adsorbent. Collect adsorbed product and clean up materials in appropriate container for proper disposal. Notify proper authorities.

Methods and materials for containment and cleaning up:
Contact the asphalt plant to determine feasibility of recycling material. Dispose of waste materials in accordance with applicable federal, state and local laws and regulations.

7. Handling and storage

Precautions for safe handling:
Follow personal protection and protective controls set forth in Section 8 of this SDS when handling this product. If personnel must enter a tank or other confined space that contained this material, follow the OSHA Confined Space Entry Program as specified in 29 CFR 1910.146. Do not store near food, beverages or smoking materials. Respirable crystalline silica-containing dust may be generated when recycled asphalt product is subjected to mechanical forces, such as demolition work, surface treatment (sanding, grooving, chiseling, etc.), and/or recycling of pavement.
Do not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition as they may explode and cause injury or death. Tripping accidents have occurred because of asphalt buildup on bottoms of shoes and boots; buildup should be removed regularly to prevent such accidents. Do not use solvents or thinners to clean footwear.

Conditions for safe storage, including any incompatibilities:
Store away from all ignition sources and open flames in accordance with applicable laws and regulations.
When petroleum asphalt products are heated, potentially irritating emissions (fumes, mists, and vapors) may be released.

8. Exposure controls/personal protection

Legend:
NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Particulates not otherwise classified	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)	10 mg/m^3 (inhalable fraction) 3 mg/m^3 (respirable fraction)	NE
Respirable dust containing silica	10 mg/m^3 ÷ (% silica + 2)	Use Respirable Silica TLV	Use Respirable Silica TLV
Total dust containing silica	MSHA: 30 mg/m^3 ÷ (% silica + 3)	NE	NE

Legend:
NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Respirable Crystalline Silica (quartz)	OSHA: 0.05 mg/m^3 (PEL) OSHA: 0.025 mg/m^3 (Action Level) MSHA: Use Respirable Dust containing Silica PEL (above)	0.025 mg/m^3	0.05 mg/m^3
Respirable Tridymite and Cristobalite (other forms of crystalline silica)	OSHA: Use respirable crystalline silica PEL MSHA: 1/2 of respirable dust containing silica PEL	0.025 mg/m^3	0.05 mg/m^3

Exposure Guidelines:
Total dust containing silica, respirable silica-containing dust and respirable crystalline silica (quartz) levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

Engineering Controls:
Activities with dried/hardened product that generate dust require the use of general ventilation, local exhaust and/or wet suppression methods to maintain exposures below appropriate exposure limits.

Eye Protection:
Safety glasses with side shields should be worn as minimum protection at ambient temperatures. Contact lens should not be worn when eye contact with product is possible.

Skin Protection (Protective Gloves/Clothing):
Avoid skin contact with material by wearing impervious gloves and protective clothing. With product at ambient temperatures, use disposable nitrile, neoprene or butyl rubber material.

Respiratory Protection:
Not expected to be necessary under normal use and working conditions. All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. For air-contaminant concentrations which exceed or are likely to exceed applicable exposure limits, use a NIOSH-approved, contaminant-specific, air purifying respirator. If such conditions are sufficiently high that the air-purifying respirator is inadequate, or if oxygen adequate to sustain life is not present, use a positive-pressure, self-contained breathing apparatus. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica-containing dust levels that exceed or are likely to exceed an 8-hour time-weighted average (TWA) of 0.25 mg/m^3, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica-containing dust levels exceed or are likely to exceed an 8-hour TWA of 1.25 mg/m^3 an air-purifying, full-face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

9. Physical and chemical properties

Appearance:
Angular particles, light salt and pepper colored ranging in size from 1 ½ inch down to 200 mesh.

Odor: Petroleum odor.	**PH:** Not applicable	**Decomposition temperature:** Not applicable
Melting point/freezing point: Not applicable	**Initial boiling point and boiling range:** Not applicable	**Flash point: Product NA** **Asphalt** :> 500°F (min). COC
Evaporation rate: Not applicable	**Flammability:** Not applicable	**Upper/lower flammability or explosive limits:** Not applicable
Vapor pressure: Not applicable	**Vapor density:** >1	**Solubility:** Negligible

Partition coefficient: n-octanol/water.	Autoignition temperature:	Specific Gravity (H_2O = 1):
Not applicable	Not applicable	1.0-1.1 @ 60° F

10. Stability and reactivity

Reactivity:
Not reactive under normal use.

Chemical stability:
Stable under normal temperatures and pressures.

Possibility of hazardous reactions:
None under normal use.

Conditions to avoid (e.g., static discharge, shock or vibration):
Keep away from direct flame/ignition sources. Contact with incompatible materials should be avoided (see below). See Sections 5, 6 and 7 for additional information.

Incompatible materials:
Strong oxidizers may react with hydrocarbons. Contact with fluorine may cause burning or explosion. Adding water to hot asphalt presents an explosion hazard.

Hazardous decomposition products:
Carbon monoxide and other compounds (such as amines, ammonia, nitrogen dioxide, sulfur dioxide, ozone, hydrogen sulfide, and various hydrocarbons) may be released by thermal decomposition. Hazardous vapors can collect in enclosed vessels or areas if not properly ventilated. If hydrogen sulfide is present, the flammable limits range from 4.3 to 45.5% by volume and its presence may promote the formation of pyrophoric (spontaneously igniting) iron compounds (See 29 CFR 1910.146). Respirable crystalline silica-containing dust may be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F). Both tridymite and cristobalite are other forms of crystalline silica.

11. Toxicological information

Primary Routes of Exposure:
Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical, toxicological characteristics
Inhalation:
Breathing silica containing dust for prolonged periods in the workplace can cause lung damage and lung disease called silicosis. Several scientific organizations have classified crystalline silica as causing lung cancer in humans. Silicosis and lung cancer can result in permanent injury or death.

Eye Contact:
May scratch the eye causing tearing, redness and a stinging sensation.

Skin Contact:
Repeated or prolonged exposure may result in absorption of component petroleum distillates.

Ingestion:
Asphalt has a low toxicity when ingested; however, chewing and swallowing asphalt may cause gastrointestinal effects. Gastric masses (Bezoars) and stomach (pyloric) obstructions have been reported in individuals who have chewed and swallowed asphalt.

Medical Conditions Aggravated by Exposure:
Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and/or lung.

Delayed and immediate effects and also chronic effects from short- and long-term exposure:
If the product is subjected to mechanical forces (such as demolition or asphalt recycling work), crystalline silica-containing dust particles may be generated. Prolonged overexposure to respirable dusts in excess of allowable exposure limits can cause inflammation of the lungs leading to possible fibrotic changes, a medical condition known as pneumoconiosis.
Prolonged and repeated overexposure to high levels of respirable crystalline silica-containing dust may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of overexposure; a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of prolonged and repeated overexposure. In early stages of silicosis, not all individuals will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased.

Repeated overexposures to very high levels of respirable crystalline silica for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain.
Respirable dust containing newly broken crystalline silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older crystalline silica particles of similar size. Respirable crystalline silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures to respirable dust containing newly broken particles of respirable crystalline silica.
There are reports in the literature suggesting that excessive respirable crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Carcinogenicity:

If the product is subjected to mechanical forces (such as demolition or asphalt recycling work), crystalline silica-containing dust particles may be generated. Epidemiology studies on the association between respirable crystalline silica exposure and lung cancer have had both positive and negative results. There is some speculation that the source, type, and level of exposure of respirable crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increases with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.
In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). In 2012, an IARC Working Group re-affirmed that inhalation of crystalline silica was a known human carcinogen. The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to respirable crystalline silica.
Repeated breathing of asphalt emissions has not resulted in a carcinogenic response in laboratory animal testing. Although epidemiological studies on asphalt workers have suggested a possible link between asphalt fumes and certain types of cancer, confounding factors such as smoking and concomitant exposure to other agents in the workplace may have influenced the results of these studies. Asphalt is not listed as a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA). IARC states that there is sufficient evidence that extracts (asphalts dissolved in hydrocarbon solvents) are carcinogenic to laboratory animals and recently the agency determined that occupational exposures to oxidized asphalt and their emissions during roofing applications are “probably carcinogenic to humans “(Group 2A). They also determined that occupation exposures to hard asphalts and their emissions during mastic asphalt work and occupational exposures to straight-run asphalts and their emissions during paving operations are “possibly carcinogenic to humans” (Group 2B).

Additional information on toxicological-effects:

Acute toxicity: Not classified

No specific data on product. Based on components, not expected to be classified for acute toxicity.

Asphalt:
Acute Oral, rat: LD50 >5000 mg/kg
Acute Dermal, rat: LD50 >2000 mg/kg

Skin corrosion/irritation: Not Classified

Serious eye damage/eye irritation: Not Classified

Respiratory sensitization: Not Classified

Germ cell Mutagenicity: Not Classified

Carcinogenicity: May cause cancer (Inhalation)

Reproductive toxicity: Not Classified

Specific target organ toxicity - single exposure: Not Classified

Specific target organ- toxicity – repeated exposure: Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Aspiration toxicity: Not Classified (not applicable- solid material)

12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):
No specific data on this product.

Persistence and degradability:
Expected to be resistant to biodegradation.

Bioaccumulative potential.
Significant migration into the environment and bioaccumulation are unlikely.

Mobility in soil.
Not determined

Other adverse effects.
Not determined

13. Disposal considerations

Safe handling and disposal of waste:
Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Prevent from entering drainage, sewer systems, and unintended bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

14. Transport information

UN Number:
Not regulated.

UN Proper shipping name:
Not regulated.

Transport Hazard class:
Not applicable.

Packing group, if applicable:
Not applicable.

Marine pollutant (Yes/No):
Not applicable.

15. Regulatory information

Toxic Substances Control Act (TSCA):
The components in this product are listed on the TSCA Inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):
Releases of this material to water may be reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act. (See Section 6)

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III:
Section 302 extremely hazardous substances: None
Section 311/312 hazard categories: Delayed Health
Section 313 reportable ingredients at or above de minimus concentrations: None

California Proposition 65:
This product contains a chemical (crystalline silica, bitumen, various aromatic hydrocarbons) known to the State of California to cause cancer and birth defects or other reproductive harm.

State Regulatory Lists:
Each state may promulgate standards more stringent than the federal government. This section cannot encompass an

inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

16. Other information

Disclaimer

NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

Vulcan Materials Company and its subsidiaries and affiliates ("Vulcan") believe the information contained herein is accurate; however, Vulcan makes no guarantees with respect to such accuracy and assumes no liability whatsoever in connection with the use of any information contained herein by any party. The provision of the information contained herein is not intended to be, and should not be construed as, legal advice or as ensuring compliance with any federal, state, or local laws, rules or regulations. Any party using any information contained herein should review all applicable laws, rules and regulations prior to use.

Issue date:
3/01/2017

Revision date:
3/01/2017

Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

SAFETY DATA SHEET

Effective Date: 3/01/2017
Replaces: 6/01/2015

Traprock

1. Identification

Product name:
Traprock

Other means of identification/Synonyms/Common Names:
Concrete Aggregate, Coverstone, Flexible Base, Manufactured Sand, Mill Sand, Rockwool Aggregate, Trap Mix Aggregate

Recommended use:
Traprock is used as a construction material.

Recommended restrictions:
None Known

Manufacturer/Contact info:
Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

General Phone Number:
1.866.401.5424

Emergency Phone Number:
1.866.401.5424 (3E Company, 24hours/day, 7 Days/week)

Website:
www.vulcanmaterials.com

2. Hazard(s) Identification

Physical hazards:
Not Classified

Health hazards:
Carcinogenicity-Category 1A
Specific target organ toxicity, repeated exposure- Category 2

Signal word:

Danger

Hazard statement:
May Cause Cancer (Inhalation).
Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Precautionary statement:

Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.

Response

- If exposed or concerned get medical advice/attention.

Disposal

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

Supplemental information:
Respirable Crystalline Silica (RCS) may cause cancer. Traprock may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC, NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may

also be present or formed under certain industrial processes.

3. Composition/information on ingredients

Chemical name	CAS number	%
Traprock	None	100
Quartz (crystalline silica)	14808-60-7	<1

4. First-aid measures

Inhalation:
Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or if breathing is difficult.

Eyes:
Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Contact a physician if irritation persists or later develops.

Skin:
Wash affected areas thoroughly with mild soap and fresh water. Contact a physician if irritation persists.

Ingestion:
If person is conscious do not induce vomiting. Give large quantity of water and get medical attention. Never attempt to make an unconscious person drink.

Most important symptoms/effects, acute and delayed:
Dust may irritate the eyes, skin, and respiratory tract. Breathing respirable crystalline silica-containing dust for prolonged periods in the workplace can cause lung damage and a lung disease called silicosis. Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure.

Indication of immediate medical attention and special treatment needed:
Not all individuals with silicosis will exhibit symptoms of the disease. However, silicosis can be progressive and symptoms can appear even years after exposures have ceased. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.
For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).

5. Fire-fighting measures

Suitable extinguishing media:
This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media:
None known.

Specific hazards arising from the chemical:
Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS).

Special protective equipment and precautions for firefighters:
Use protective equipment appropriate for surrounding materials.

Fire-fighting equipment/instructions:
No unusual fire or explosion hazards noted. Not a combustible dust.

Specific methods:
The presence of this material in a fire does not hinder the use of any standard extinguishing medium. Use extinguishing medium for surrounding fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
Persons involved in cleanup processes should first observe precautions (as appropriate) identified in Section 8 of this SDS. **For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week)**.

Environmental precautions:
Prevent from entering into sewers or drainage systems where it can harden and clog flow.

Methods and materials for containment and cleaning up:
Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing

dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary.

7. Handling and storage

Precautions for safe handling:

Respirable crystalline silica-containing dust may be generated during processing, handling, and storage. Use personal protection and controls identified in Section 8 of this SDS as appropriate.

Conditions for safe storage, including any incompatibilities:

Do not store near food, beverages, or smoking materials.

8. Exposure controls/personal protection

Legend:

NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Particulates not otherwise classified	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)	10 mg/m^3 (inhalable fraction) 3 mg/m^3 (respirable fraction)	NE
Respirable dust containing silica	10 mg/m^3 ÷ (% silica + 2)	Use Respirable Silica TLV	Use Respirable Silica REL
Total dust containing silica	MSHA: 30 mg/m^3 ÷ (% silica + 3)	NE	NE
Respirable Crystalline Silica (quartz)	OSHA: 0.05 mg/m^3 (PEL) OSHA: 0.025 mg/m^3 (Action Level) MSHA: Use Respirable Dust containing Silica PEL (above)	0.025 mg/m^3	0.05 mg/m^3
Respirable Tridymite and Cristobalite (other forms of crystalline silica)	OSHA: Use respirable crystalline silica PEL MSHA: 1/2 of respirable dust containing silica PEL	0.025 mg/m^3	0.05 mg/m^3

Exposure Guidelines:

Total dust containing silica, respirable silica-containing dust and respirable crystalline silica (quartz) levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

Engineering Controls:

Activities that generate dust require the use of general ventilation, local exhaust and/or wet suppression methods to maintain exposures below allowable exposure limits.

Eye Protection:

Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated.

Skin Protection (Protective Gloves/Clothing):

Use gloves to provide hand protection from abrasion. In dusty conditions, use long sleeve shirts. Wash work clothes after each use.

Respiratory Protection:

All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica-containing dust levels that exceed or are likely to exceed an 8-hour time-weighted average (TWA) of 0.25 mg/m^3, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica-containing dust levels exceed or are likely to exceed an 8-hour TWA of 1.25 mg/m^3 an air-

purifying, full-face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

9. Physical and chemical properties

Appearance:
Angular particles ranging in size from sand to boulders.

Odor: No odor.	**PH:** Not applicable	**Decomposition temperature:** Not applicable
Melting point/freezing point: Not applicable	**Initial boiling point and boiling range:** Not applicable	**Flash point:** Non-combustible
Evaporation rate: Not applicable	**Flammability:** Not applicable	**Upper/lower flammability or explosive limits:** Not applicable
Vapor pressure: Not applicable	**Relative density:** Not applicable	**Solubility:** **0**
Partition coefficient: n-octanol/water. Not applicable	**Autoignition temperature:** Not applicable	**Specific Gravity (H2O = 1):** 3.0 - 3.4

10. Stability and reactivity

Reactivity:
Not reactive under normal use.

Chemical stability:
Stable under normal temperatures and pressures.

Possibility of hazardous reactions:
None under normal use.

Conditions to avoid (e.g., static discharge, shock or vibration):
Contact with incompatible materials should be avoided (see below). See Sections 5 and 7 for additional information.

Incompatible materials:
Silica ignites on contact with fluorine and is incompatible with acids, aluminum, ammonium salts and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.

Hazardous decomposition products:
Respirable crystalline silica-containing dust may be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F). Both tridymite and cristobalite are other forms of crystalline silica.

11. Toxicological information

Primary Routes of Exposure:
Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical, toxicological characteristics
Inhalation:
Dusts may irritate the nose, throat and respiratory tract by mechanical abrasion. Coughing sneezing and shortness of breath may occur.
Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Eye Contact:
Dust particles can scratch the eye causing tearing, redness, a stinging or burning feeling, or swelling of the eyes with blurred vision.

Skin Contact:
Dust particles can scratch and irritate the skin with redness, an itching or burning feeling, swelling of the skin, and/or rash.

Ingestion:
Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation including nausea, vomiting, diarrhea, and blockage.

Medical Conditions Aggravated by Exposure:
Irritated or broken skin increases chance of contact dermatitis. Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). Smoking tobacco will impair the ability of the lungs to clear themselves of dust.

Delayed and immediate effects and also chronic effects from short- and long-term exposure:
Prolonged overexposure to respirable dusts in excess of allowable exposure limits can cause inflammation of the lungs leading to possible fibrotic changes, a medical condition known as pneumoconiosis.
Prolonged and repeated overexposure to high levels of respirable crystalline silica-containing dust may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of overexposure; a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of prolonged and repeated overexposure. In early stages of silicosis, not all individuals will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased.
Repeated overexposures to very high levels of respirable crystalline silica for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain.
Respirable dust containing newly broken crystalline silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older crystalline silica particles of similar size. Respirable crystalline silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures to respirable dust containing newly broken particles of respirable crystalline silica.
There are reports in the literature suggesting that excessive respirable crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Carcinogenicity:
Epidemiology studies on the association between respirable crystalline silica exposure and lung cancer have had both positive and negative results. There is some speculation that the source, type, and level of exposure of respirable crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increases with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.
In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). In 2012, an IARC Working Group re-affirmed that inhalation of crystalline silica was a known human carcinogen. The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to respirable crystalline silica.

Additional information on toxicological-effects:
Acute toxicity: Not classified

Skin corrosion/irritation: Not classified

Serious eye damage/eye irritation: Not classified

Respiratory sensitization: Not classified.

Skin sensitization: Not classified.

Germ cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Reproductive toxicity: Not classified

Specific target organ toxicity - single exposure: Not classified

Specific target organ- toxicity – repeated exposure: Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Aspiration toxicity: Not classified (not applicable- solid material)

12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):
Not determined

Persistence and degradability:
Not determined

Bioaccumulative potential.
Not determined

Mobility in soil.
Not determined

Other adverse effects.
Not determined

13. Disposal considerations

Safe handling and disposal of waste:
Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Prevent from entering drainage, sewer systems, and unintended bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

14. Transport information

UN Number:
Not regulated.

UN Proper shipping name:
Not regulated.

Transport Hazard class:
Not applicable.

Packing group, if applicable:
Not applicable.

Marine pollutant (Yes/No):
Not applicable.

15. Regulatory information

Toxic Substances Control Act (TSCA):
The components in this product are listed on the TSCA Inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):
Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act.

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III:
Section 302 extremely hazardous substances: None
Section 311/312 hazard categories: Delayed Health
Section 313 reportable ingredients at or above de minimus concentrations: None

California Proposition 65:
This product contains a chemical (crystalline silica) known to the State of California to cause cancer.

State Regulatory Lists:
Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

16. Other information

Disclaimer

NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

Vulcan Materials Company and its subsidiaries and affiliates ("Vulcan") believe the information contained herein is accurate; however, Vulcan makes no guarantees with respect to such accuracy and assumes no liability whatsoever in connection with the use of any information contained herein by any party. The provision of the information contained herein is not intended to be, and should not be construed as, legal advice or as ensuring compliance with any federal, state, or local laws, rules or regulations. Any party using any information contained herein should review all applicable laws, rules and regulations prior to use.

Issue date:
3/01/2017

Revision date:
3/01/2017

Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

SAFETY DATA SHEET

Effective Date: 3/01/2017
Replaces: 6/01/2015

Granite

1. Identification

Product name:
Granite

Other means of identification/Synonyms/Common Names:
Aggregate, Manufactured Sand, Fine Filler

Recommended use:
Granite is used as a construction material.

Recommended restrictions:
None Known

Manufacturer/Contact info:
Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

General Phone Number:
1.866.401.5424

Emergency Phone Number:
1.866.401.5424 (3E Company, 24hours/day, 7 Days/week)

Website:
www.vulcanmaterials.com

2. Hazard(s) Identification

Physical hazards:
Not Classified

Health hazards:
Carcinogenicity-Category 1A
Specific target organ toxicity, repeated exposure- Category 2

Signal word:

Danger

Hazard statement:
May Cause Cancer (Inhalation).
Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Precautionary statement:

Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.

Response

- If exposed or concerned get medical advice/attention.

Disposal

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

Supplemental information:
Respirable Crystalline Silica (RCS) may cause cancer. Granite is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). Granite may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to

IARC, NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

3. Composition/information on ingredients

Chemical name	CAS number	%
Granite	None	100
Quartz (crystalline silica)	14808-60-7	>1

4. First-aid measures

Inhalation:
Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or if breathing is difficult.

Eyes:
Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Contact a physician if irritation persists or later develops.

Skin:
Wash affected areas thoroughly with mild soap and fresh water. Contact a physician if irritation persists.

Ingestion:
If person is conscious do not induce vomiting. Give large quantity of water and get medical attention. Never attempt to make an unconscious person drink.

Most important symptoms/effects, acute and delayed:
Dust may irritate the eyes, skin, and respiratory tract. Breathing respirable crystalline silica-containing dust for prolonged periods in the workplace can cause lung damage and a lung disease called silicosis. Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure.

Indication of immediate medical attention and special treatment needed:
Not all individuals with silicosis will exhibit symptoms of the disease. However, silicosis can be progressive and symptoms can appear even years after exposures have ceased. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.
For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).

5. Fire-fighting measures

Suitable extinguishing media:
This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media:
None known.

Specific hazards arising from the chemical:
Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS).

Special protective equipment and precautions for firefighters:
Use protective equipment appropriate for surrounding materials.

Fire-fighting equipment/instructions:
No unusual fire or explosion hazards noted. Not a combustible dust.

Specific methods:
The presence of this material in a fire does not hinder the use of any standard extinguishing medium. Use extinguishing medium for surrounding fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
Persons involved in cleanup processes should first observe precautions (as appropriate) identified in Section 8 of this SDS. **For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week)**.

Environmental precautions:
Prevent from entering into sewers or drainage systems where it can harden and clog flow.

Methods and materials for containment and cleaning up:
Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary.

7. Handling and storage

Precautions for safe handling:
Respirable crystalline silica-containing dust may be generated during processing, handling, and storage. Use personal protection and controls identified in Section 8 of this SDS as appropriate.

Conditions for safe storage, including any incompatibilities:
Do not store near food, beverages, or smoking materials.

8. Exposure controls/personal protection

Legend:
NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Particulates not otherwise classified	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)	10 mg/m^3 (inhalable fraction) 3 mg/m^3 (respirable fraction)	NE
Respirable dust containing silica	10 mg/m^3 ÷ (% silica + 2)	Use Respirable Silica TLV	Use Respirable Silica REL
Total dust containing silica	MSHA: 30 mg/m^3 ÷ (% silica + 3)	NE	NE
Respirable Crystalline Silica (quartz)	OSHA: 0.05 mg/m^3 (PEL) OSHA: 0.025 mg/m^3 (Action Level) MSHA: Use Respirable Dust containing Silica PEL (above)	0.025 mg/m^3	0.05 mg/m^3
Respirable Tridymite and Cristobalite (other forms of crystalline silica)	OSHA: Use respirable crystalline silica PEL MSHA: 1/2 of respirable dust containing silica PEL	0.025 mg/m^3	0.05 mg/m^3

Exposure Guidelines:
Total dust containing silica, respirable silica-containing dust and respirable crystalline silica (quartz) levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

Engineering Controls:
Activities that generate dust require the use of general ventilation, local exhaust and/or wet suppression methods to maintain exposures below allowable exposure limits.

Eye Protection:
Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated.

Skin Protection (Protective Gloves/Clothing):
Use gloves to provide hand protection from abrasion. In dusty conditions, use long sleeve shirts. Wash work clothes after each use.

Respiratory Protection:
All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica-containing dust levels that exceed or are likely to exceed an 8-hour time-

weighted average (TWA) of 0.25 mg/m^3, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica-containing dust levels exceed or are likely to exceed an 8-hour TWA of 1.25 mg/m^3 an air-purifying, full-face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

9. Physical and chemical properties

Appearance:
Angular particles, light salt-and-pepper colored, ranging in size from pebbled to boulders.

Odor: No odor.	**PH:** Not applicable	**Decomposition temperature:** Not applicable
Melting point/freezing point: Not applicable	**Initial boiling point and boiling range:** Not applicable	**Flash point:** Non-combustible
Evaporation rate: Not applicable	**Flammability:** Not applicable	**Upper/lower flammability or explosive limits:** Not applicable
Vapor pressure: Not applicable	**Relative density:** Not applicable	**Solubility:** **0**
Partition coefficient: n-octanol/water. Not applicable	**Autoignition temperature:** Not applicable	**Specific Gravity (H2O = 1):** 2.6 - 2.81

10. Stability and reactivity

Reactivity:
Not reactive under normal use.

Chemical stability:
Stable under normal temperatures and pressures.

Possibility of hazardous reactions:
None under normal use.

Conditions to avoid (e.g., static discharge, shock or vibration):
Contact with incompatible materials should be avoided (see below). See Sections 5 and 7 for additional information.

Incompatible materials:
Silica ignites on contact with fluorine and is incompatible with acids, aluminum, ammonium salts and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.

Hazardous decomposition products:
Respirable crystalline silica-containing dust may be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F). Both tridymite and cristobalite are other forms of crystalline silica.

11. Toxicological information

Primary Routes of Exposure:
Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical, toxicological characteristics
Inhalation:
Dusts may irritate the nose, throat and respiratory tract by mechanical abrasion. Coughing sneezing and shortness of breath may occur.
Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Eye Contact:
Dust particles can scratch the eye causing tearing, redness, a stinging or burning feeling, or swelling of the eyes with blurred vision.

Skin Contact:
Dust particles can scratch and irritate the skin with redness, an itching or burning feeling, swelling of the skin, and/or

rash.

Ingestion:

Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation including nausea, vomiting, diarrhea, and blockage.

Medical Conditions Aggravated by Exposure:

Irritated or broken skin increases chance of contact dermatitis. Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). Smoking tobacco will impair the ability of the lungs to clear themselves of dust.

Delayed and immediate effects and also chronic effects from short- and long-term exposure:

Prolonged overexposure to respirable dusts in excess of allowable exposure limits can cause inflammation of the lungs leading to possible fibrotic changes, a medical condition known as pneumoconiosis.

Prolonged and repeated overexposure to high levels of respirable crystalline silica-containing dust may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of overexposure; a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of prolonged and repeated overexposure. In early stages of silicosis, not all individuals will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased.

Repeated overexposures to very high levels of respirable crystalline silica for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain.

Respirable dust containing newly broken crystalline silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older crystalline silica particles of similar size. Respirable crystalline silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures to respirable dust containing newly broken particles of respirable crystalline silica.

There are reports in the literature suggesting that excessive respirable crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Carcinogenicity:

Epidemiology studies on the association between respirable crystalline silica exposure and lung cancer have had both positive and negative results. There is some speculation that the source, type, and level of exposure of respirable crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increases with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.

In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). In 2012, an IARC Working Group re-affirmed that inhalation of crystalline silica was a known human carcinogen. The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to respirable crystalline silica.

Additional information on toxicological-effects:

Acute toxicity: Not classified

Skin corrosion/irritation: Not classified

Serious eye damage/eye irritation: Not classified

Respiratory sensitization: Not classified.

Skin sensitization: Not classified.

Germ cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Reproductive toxicity: Not classified

Specific target organ toxicity - single exposure: Not classified

Specific target organ- toxicity – repeated exposure: Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Aspiration toxicity: Not classified (not applicable- solid material)

12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):
Not determined

Persistence and degradability:
Not determined

Bioaccumulative potential.
Not determined

Mobility in soil.
Not determined

Other adverse effects.
Not determined

13. Disposal considerations

Safe handling and disposal of waste:
Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Prevent from entering drainage, sewer systems, and unintended bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

14. Transport information

UN Number:
Not regulated.

UN Proper shipping name:
Not regulated.

Transport Hazard class:
Not applicable.

Packing group, if applicable:
Not applicable.

Marine pollutant (Yes/No):
Not applicable.

15. Regulatory information

Toxic Substances Control Act (TSCA):
The components in this product are listed on the TSCA Inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):
Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act.

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III:
Section 302 extremely hazardous substances: None
Section 311/312 hazard categories: Delayed Health

Section 313 reportable ingredients at or above de minimus concentrations: None

California Proposition 65:

This product contains a chemical (crystalline silica) known to the State of California to cause cancer.

State Regulatory Lists:

Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

16. Other information

Disclaimer

NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

Vulcan Materials Company and its subsidiaries and affiliates ("Vulcan") believe the information contained herein is accurate; however, Vulcan makes no guarantees with respect to such accuracy and assumes no liability whatsoever in connection with the use of any information contained herein by any party. The provision of the information contained herein is not intended to be, and should not be construed as, legal advice or as ensuring compliance with any federal, state, or local laws, rules or regulations. Any party using any information contained herein should review all applicable laws, rules and regulations prior to use.

Issue date:

3/01/2017

Revision date:

3/01/2017

Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

SAFETY DATA SHEET

Effective Date: 3/01/2017
Replaces: 6/01/2015

Limestone

1. Identification

Product name:
Limestone

Other means of identification/Synonyms/Common Names:
Aggregate, Aglime, Barn Lime, Coverstone, Flexible Base, Fluxing Agent, Manufactured Sand, Mineral Filler, Screenings

Recommended use:
Limestone is used as a construction material.

Recommended restrictions:
None Known

Manufacturer/Contact info:
Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

General Phone Number:
1.866.401.5424

Emergency Phone Number:
1.866.401.5424 (3E Company, 24hours/day, 7 Days/week)

Website:
www.vulcanmaterials.com

2. Hazard(s) Identification

Physical hazards:
Not Classified

Health hazards:
Carcinogenicity-Category 1A
Specific target organ toxicity, repeated exposure- Category 2

Signal word:

Danger

Hazard statement:
May Cause Cancer (Inhalation).
Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Precautionary statement:

Prevention

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.

Response

- If exposed or concerned get medical advice/attention.

Disposal

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

Supplemental information:
Respirable Crystalline Silica (RCS) may cause cancer. Limestone is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). Limestone may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to

IARC, NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

3. Composition/information on ingredients

Chemical name	CAS number	%
Limestone	1317-65-3	100
Quartz (crystalline silica)	14808-60-7	>1

4. First-aid measures

Inhalation:
Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or if breathing is difficult.

Eyes:
Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Contact a physician if irritation persists or later develops.

Skin:
Wash affected areas thoroughly with mild soap and fresh water. Contact a physician if irritation persists.

Ingestion:
If person is conscious do not induce vomiting. Give large quantity of water and get medical attention. Never attempt to make an unconscious person drink.

Most important symptoms/effects, acute and delayed:
Dust may irritate the eyes, skin, and respiratory tract. Breathing respirable crystalline silica-containing dust for prolonged periods in the workplace can cause lung damage and a lung disease called silicosis. Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure.

Indication of immediate medical attention and special treatment needed:
Not all individuals with silicosis will exhibit symptoms of the disease. However, silicosis can be progressive and symptoms can appear even years after exposures have ceased. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.
For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).

5. Fire-fighting measures

Suitable extinguishing media:
This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media:
None known.

Specific hazards arising from the chemical:
Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS).

Special protective equipment and precautions for firefighters:
Use protective equipment appropriate for surrounding materials.

Fire-fighting equipment/instructions:
No unusual fire or explosion hazards noted. Not a combustible dust.

Specific methods:
The presence of this material in a fire does not hinder the use of any standard extinguishing medium. Use extinguishing medium for surrounding fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
Persons involved in cleanup processes should first observe precautions (as appropriate) identified in Section 8 of this SDS. **For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week)**.

Environmental precautions:
Prevent from entering into sewers or drainage systems where it can harden and clog flow.

Methods and materials for containment and cleaning up:
Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary.

7. Handling and storage

Precautions for safe handling:
Respirable crystalline silica-containing dust may be generated during processing, handling, and storage. Use personal protection and controls identified in Section 8 of this SDS as appropriate.

Conditions for safe storage, including any incompatibilities:
Do not store near food, beverages, or smoking materials.

8. Exposure controls/personal protection

Legend:
NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Limestone (Calcium Carbonate)	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)	10 mg/m^3 (total dust as calcium carbonate)	15 mg/m^3 (total dust) 5 mg/m^3(respirable fraction)
Respirable dust containing silica	10 mg/m^3÷ (% silica + 2)	Use Respirable Silica TLV	Use Respirable Silica REL
Total dust containing silica	MSHA: 30 mg/m^3 ÷ (% silica + 3)	NE	NE
Respirable Crystalline Silica (quartz)	OSHA: 0.05 mg/m^3 (PEL) OSHA: 0.025 mg/m^3 (Action Level) MSHA: Use Respirable Dust containing Silica PEL (above)	0.025 mg/m^3	0.05 mg/m^3
Respirable Tridymite and Cristobalite (other forms of crystalline silica)	OSHA: Use respirable crystalline silica PEL MSHA: 1/2 of respirable dust containing silica PEL	0.025 mg/m^3	0.05 mg/m^3

Exposure Guidelines:
Total dust containing silica, respirable silica-containing dust and respirable crystalline silica (quartz) levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

Engineering Controls:
Activities that generate dust require the use of general ventilation, local exhaust and/or wet suppression methods to maintain exposures below allowable exposure limits.

Eye Protection:
Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated.

Skin Protection (Protective Gloves/Clothing):
Use gloves to provide hand protection from abrasion. In dusty conditions, use long sleeve shirts. Wash work clothes after each use.

Respiratory Protection:
All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed

allowable exposure limits For respirable silica-containing dust levels that exceed or are likely to exceed an 8-hour time - weighted average (TWA) of 0.25 mg/m^3, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica-containing dust levels exceed or are likely to exceed an 8-hour TWA of 1.25 mg/m^3 an air-purifying, full-face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

9. Physical and chemical properties

Appearance:
Angular gray, white and tan particles ranging in size from powder to boulders.

Odor: No odor.	**PH:** Not applicable	**Decomposition temperature:** Not applicable
Melting point/freezing point: Not applicable	**Initial boiling point and boiling range:** Not applicable	**Flash point:** Non-combustible
Evaporation rate: Not applicable	**Flammability:** Not applicable	**Upper/lower flammability or explosive limits:** Not applicable
Vapor pressure: Not applicable	**Relative density:** Not applicable	**Solubility:** **0**
Partition coefficient: n-octanol/water. Not applicable	**Autoignition temperature:** Not applicable	**Specific Gravity (H2O = 1):** 2.4 - 2.85

10. Stability and reactivity

Reactivity:
Not reactive under normal use.

Chemical stability:
Stable under normal temperatures and pressures.

Possibility of hazardous reactions:
None under normal use.

Conditions to avoid (e.g., static discharge, shock or vibration):
Contact with incompatible materials should be avoided (see below). See Sections 5 and 7 for additional information.

Incompatible materials:
Silica ignites on contact with fluorine and is incompatible with acids, aluminum, ammonium salts and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.

Hazardous decomposition products:
Respirable crystalline silica-containing dust may be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F). Both tridymite and cristobalite are other forms of crystalline silica.

11. Toxicological information

Primary Routes of Exposure:
Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical, toxicological characteristics
Inhalation:
Dusts may irritate the nose, throat and respiratory tract by mechanical abrasion. Coughing sneezing and shortness of breath may occur.
Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Eye Contact:
Dust particles can scratch the eye causing tearing, redness, a stinging or burning feeling, or swelling of the eyes with blurred vision.

Skin Contact:
Dust particles can scratch and irritate the skin with redness, an itching or burning feeling, swelling of the skin, and/or rash.

Ingestion:
Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation including nausea, vomiting, diarrhea, and blockage.

Medical Conditions Aggravated by Exposure:
Irritated or broken skin increases chance of contact dermatitis. Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). Smoking tobacco will impair the ability of the lungs to clear themselves of dust.

Delayed and immediate effects and also chronic effects from short- and long-term exposure:
Prolonged overexposure to respirable dusts in excess of allowable exposure limits can cause inflammation of the lungs leading to possible fibrotic changes, a medical condition known as pneumoconiosis.
Prolonged and repeated overexposure to high levels of respirable crystalline silica-containing dust may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of overexposure; a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of prolonged and repeated overexposure. In early stages of silicosis, not all individuals will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased.
Repeated overexposures to very high levels of respirable crystalline silica for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain.
Respirable dust containing newly broken crystalline silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older crystalline silica particles of similar size. Respirable crystalline silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures to respirable dust containing newly broken particles of respirable crystalline silica.
There are reports in the literature suggesting that excessive respirable crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Carcinogenicity:
Epidemiology studies on the association between respirable crystalline silica exposure and lung cancer have had both positive and negative results. There is some speculation that the source, type, and level of exposure of respirable crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increases with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.
In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). In 2012, an IARC Working Group re-affirmed that inhalation of crystalline silica was a known human carcinogen. The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to respirable crystalline silica.

Additional information on toxicological-effects:
Acute toxicity: Not classified
No specific data on product. Limestone (calcium carbonate CAS# 471-34-1) has oral LD50 (rats) = 6450 mg/kg.)
Skin corrosion/irritation: Not classified

Serious eye damage/eye irritation: Not classified

Respiratory sensitization: Not classified.

Skin sensitization: Not classified.

Germ cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Reproductive toxicity: Not classified

Specific target organ toxicity - single exposure: Not classified

Specific target organ- toxicity – repeated exposure: Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Aspiration toxicity: Not classified (not applicable- solid material)

12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):
Not determined

Persistence and degradability:
Not determined

Bioaccumulative potential:
Not determined

Mobility in soil:
Not determined

Other adverse effects:
Not determined

13. Disposal considerations

Safe handling and disposal of waste:
Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Prevent from entering drainage, sewer systems, and unintended bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

14. Transport information

UN Number:
Not regulated.

UN Proper shipping name:
Not regulated.

Transport Hazard class:
Not applicable.

Packing group, if applicable:
Not applicable.

Marine pollutant (Yes/No):
Not applicable.

15. Regulatory information

Toxic Substances Control Act (TSCA):
The components in this product are listed on the TSCA Inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):
Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act.

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III:
Section 302 extremely hazardous substances: None
Section 311/312 hazard categories: Delayed Health
Section 313 reportable ingredients at or above de minimus concentrations: None

California Proposition 65:
This product contains a chemical (crystalline silica) known to the State of California to cause cancer.

State Regulatory Lists:
Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

16. Other information

Disclaimer

NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

Vulcan Materials Company and its subsidiaries and affiliates ("Vulcan") believe the information contained herein is accurate; however, Vulcan makes no guarantees with respect to such accuracy and assumes no liability whatsoever in connection with the use of any information contained herein by any party. The provision of the information contained herein is not intended to be, and should not be construed as, legal advice or as ensuring compliance with any federal, state, or local laws, rules or regulations. Any party using any information contained herein should review all applicable laws, rules and regulations prior to use.

Issue date:
3/01/2017

Revision date:
3/01/2017

Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

Safety Data Sheet

PG 64-22

SECTION 1. IDENTIFICATION

Product Identifier	PG 64-22
Other Means of Identification	BAL6422
Other Identification	Asphalt / Bitumen
Recommended Use	This product is primarily used for paving applications. However, there are a number of other industrial applications.
Restrictions on Use	None known.
Manufacturer	Bitumar USA, Inc., 6000 Pennington Avenue, Baltimore, Maryland, 21226, (410) 354-9550, www.bitumar.com
Emergency Phone No.	Canutec (Canada), (613) 993-6666; Cel. *666 (canada), 24/7 ChemTrec (US), (800) 424-9300, 24/7
Date of Preparation	mai 13, 2015

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Carcinogenicity - Category 2

GHS Label Elements

Warning

Suspected of causing cancer.

Other Hazards

Hazard Not Otherwise Classified (HNOC): Contact with hot material can cause thermal burns.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Asphalt (Bitumen) fumes	8052-42-4	100	
Hydrogen sulfide	7783-06-4		

Notes

Sulphur and its derivatives are intrinsic to base asphalt. During storage or transit of hot asphalt, hydrogen sulphide may be generated.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. Get medical advice/attention if you feel unwell or are concerned.

Skin Contact

For hot asphalt splash, cool affected body part with water immersion or shower. Do not attempt removal of asphalt but split longitudinally if asphalt covers limb circumferentially to avoid tourniquet effect. No attempt should be made to remove firmly adhering bitumen from the skin.
Once the bitumen has cooled, it will do no further harm. As healing takes place, the bitumen plaque will detach itself, usually after a few days.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water by allowing the water to flow over the bridge of the nose to the eyes for at least 20 minutes. Seek medical attention.

Ingestion

DO NOT induce vomiting because of danger of aspirating liquid into lungs. Seek medical attention.

Most Important Symptoms and Effects, Acute and Delayed

Symptoms may not appear immediately. Fume may cause respiratory irritation; Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness and nose and throat pain. Fume May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hot liquid product may cause serious thermal burns on direct contact.

Immediate Medical Attention and Special Treatment

Special Instructions

No attempt should be made to remove firmly adhering bitumen from the skin. If solvent treatment is used, it should be followed by washing with soap and water, then the application of a proprietary refatting agent or skin cleansing cream. Only medically approved solvents may be used to remove bitumen from burns, as other solvents could cause further skin damage.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use water to keep non-leaking, fire-exposed containers cool.
SMALL FIRE: use DRY chemicals, foam, water spray or CO2.
LARGE FIRE: use water spray, fog or foam.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Chemical

Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), smoke and irritating fumes as products of incomplete combustion.

Special Protective Equipment and Precautions for Fire-fighters

For small outdoor fires, portable fire extinguishers may be used, and self contained breathing apparatus (SCBA) may not be required. For all indoor fires and any significant outdoor fires, SCBA is required. Respiratory and eye protection are required for fire fighting personnel.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Do not Touch or walk through spilled material. Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Stop or reduce leak if safe to do so. Contain hot liquid by dyking and allow to cool and solidify. Break up and recover, see section 13 for disposal consideration.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Asphalt may be transported hot. Avoid skin contact. Avoid eye contact. Avoid inhalation of product vapours or fumes. Ensure all equipment is grounded/bonded. During storage, transit and cooling of asphalt, hydrogen sulphide (H2S) may accumulate in enclosed spaces such as tank cars. Open tank car hatches with caution. Maintain same precautions when gauging and sampling. Empty containers may contain product residue. Do not reuse containers without commercial cleaning and/or reconditioning. Personnel who handle this material should practice good personal hygiene during and after handling to help prevent accidental ingestion of this product. Wear proper personal protective equipment.

Conditions for Safe Storage

To maintain pumping ability, asphalt is kept heated to a suitable temperature; normally well above room temperature but below the flash point. Store in dry, well-ventilated area. Clear roof vents periodically to prevent accumulation of asphalt deposits from vapour accumulation. Store away from incompatible and reactive materials (see section 10). Ensure the storage containers are grounded/bonded.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Asphalt (Bitumen) fumes	0.5 mg/m3 (as benzene-soluble aerosol) A4					
Hydrogen sulfide	1 ppm	5 ppm				

Appropriate Engineering Controls

For normal application, special ventilation is not necessary. If user's operations generate vapours or fumes, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are close to work-station.

Individual Protection Measures

Eye/Face Protection

As a minimum, safety glasses with side shields should be worn when handling this material.

Skin Protection

Wear Protective clothing with full length sleeves and pants should be worn.

Respiratory Protection

A minimum of NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister with a dust, fume of mist filter (R, or P series) may be allowable under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. A NIOSH-approved positive-pressure, air-supplied respirator or self-contained breathing apparatus may be required under certain circumstances where airborne concentrations are expected to exceed exposure limits.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Brown - black Viscous semi-solid.
Odour	Asphalt
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	Not available (freezing)
Initial Boiling Point/Range	> 470 ºC (878 ºF)

Flash Point	> 230 ºC (446 ºF) (open cup)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Nil at 37.8°C (100°F)
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	> 1
Solubility	Insoluble in water; Insoluble in alcohol, acids and alkalis. Soluble in oil turpentine, petroleum, carbon disulphide, chloroform, ether, and acetone
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	> 370 ºC (698 ºF)
Decomposition Temperature	Not available
Viscosity	150 - 2500 centipoises (dynamic)

Other Information

Physical State	Solid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Stable under normal temperature conditions and recommended use.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. Incompatible materials.

Incompatible Materials

Oxidizing agents (e.g. peroxides), fluorine.

Hazardous Decomposition Products

Carbon Oxides (COx), sulfur Oxides (SOx), nitrogen oxides (NOx), hydrogen sulfide, hydrocarbons.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Eye contact; skin contact; inhalation; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Asphalt (Bitumen) fumes	Not available	Not available	Not available
Hydrogen sulfide	444 ppm (rat) (4-hour exposure)		

Skin Corrosion/Irritation

Prolonged or repeated contact with skin may cause dermatitis or warty skin growths (keratosis). Contact with hot material can cause thermal burns.

Serious Eye Damage/Irritation

Vapours or fumes from the hot asphalt can cause irritation of the surface of the eyes as well as limbal pigmentation of the cornea. Contact with hot material can cause thermal burns.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

No information was located.

Skin Absorption

No information was located.

Ingestion

No information was located.

Aspiration Hazard

May cause lung damage if aspirated based on physical properties (e.g. kinematic viscosity) and chemical family (hydrocarbon).

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

Respiratory and/or Skin Sensitization

This product is not expected to be a skin or a respiratory tract sensitizer, based on the available data and the known hazards of the components.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Asphalt (Bitumen) fumes	Group 2B	A4	Not Listed	Carcinogen

Group 2B – Possibly carcinogenic to humans.

Other Information

Contains:
HYDROGEN SULFIDE : Chronic health effects due to repeated exposures to low levels of H2S have not been established. High level (700 ppm) acute exposure can result in sudden death. High concentrations will lead to cardiopulmonary arrest due to nervous system toxicity and pulmonary edema. Lower levels (150 ppm) may overwhelm sense of smell, eliminating warning of exposure. Symptoms of over exposure to H2S include headache, fatigue, insomnia, irritability, and gastrointestinal problems. Repeated exposures to approximately 25 ppm will irritate mucosa membranes and the respiratory system and have been implicated in some eye damage.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Not Available.

Persistence and Degradability

Not Available.

Bioaccumulative Potential

Not Available.

Mobility in Soil

Not Available.

Other Adverse Effects

Not Available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of waste at an appropriate treatment & disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	UN3257	Elevated temperature liquid (Bitumen (Asphalt))	9	III

Special Precautions for User: Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Emergency Response Guide No.: 130

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL or are not required to be listed.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

SECTION 16. OTHER INFORMATION

NFPA Rating: Health - 1 Flammability - 1 Instability - 0

SDS Prepared By: R&D and Technical group

Phone No.: 514-645-4561

Date of Preparation: mai 13, 2015

Disclaimer: Bitumar Inc. customarily reviews and updates SDS within 90 days of new data availability in accordance with Canadian Hazardous Products Act. If you would like to verify if the MSDS you have is the most current, or you require any further information, please contact:
www.bitumar.com
Ontario/Central/Quebec & Eastern Canada, telephone: 514-645-4561; fax: 514-645-6978.
For the USA: 410-354-9550. Fax: 410-354-9552.
For other Product Safety Information: (514) 645-4561

To the best of our knowledge, the information contained herein is accurate. However, neither BITUMAR Inc. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist

Safety Data Sheet

PG 76-22

SECTION 1. IDENTIFICATION

Product Identifier	PG 76-22
Other Means of Identification	BAL7622
Other Identification	Asphalt / Bitumen
Recommended Use	This product is primarily used for paving applications. However, there are a number of other industrial applications.
Restrictions on Use	None known.
Manufacturer	Bitumar USA, Inc., 6000 Pennington Avenue, Baltimore, Maryland, 21226, (410) 354-9550, www.bitumar.com
Emergency Phone No.	Canutec (Canada), (613) 993-6666; Cel. *666 (canada), 24/7 ChemTrec (US), (800) 424-9300, 24/7
Date of Preparation	mai 26, 2015

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Carcinogenicity - Category 2

GHS Label Elements

Warning
Suspected of causing cancer.

Other Hazards

Hazard Not Otherwise Classified (HNOC): Contact with hot material can cause thermal burns.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Asphalt (Bitumen) fumes	8052-42-4	90-100	
Styrene-butadiene copolymers	9003-55-8	1-9	
Hydrogen sulfide	7783-06-4		

Notes

Sulphur and its derivatives are intrinsic to base asphalt. During storage or transit of hot asphalt, hydrogen sulphide may be generated.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. Get medical advice/attention if you feel unwell or are concerned.

Skin Contact

For hot asphalt splash, cool affected body part with water immersion or shower. Do not attempt removal of asphalt but split longitudinally if asphalt covers limb circumferentially to avoid tourniquet effect. No attempt should be made to remove firmly adhering bitumen from the skin.
Once the bitumen has cooled, it will do no further harm. As healing takes place, the bitumen plaque will detach itself, usually after a few days.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water by allowing the water to flow over the bridge of the nose to the eyes for at least 20 minutes. Seek medical attention.

Ingestion

DO NOT induce vomiting because of danger of aspirating liquid into lungs. Seek medical attention.

Most Important Symptoms and Effects, Acute and Delayed

Symptoms may not appear immediately. Fume may cause respiratory irritation; Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness and nose and throat pain. Fume May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hot liquid product may cause serious thermal burns on direct contact.

Immediate Medical Attention and Special Treatment

Special Instructions

No attempt should be made to remove firmly adhering bitumen from the skin. If solvent treatment is used, it should be followed by washing with soap and water, then the application of a proprietary refatting agent or skin cleansing cream. Only medically approved solvents may be used to remove bitumen from burns, as other solvents could cause further skin damage.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use water to keep non-leaking, fire-exposed containers cool.
SMALL FIRE: use DRY chemicals, foam, water spray or CO2.
LARGE FIRE: use water spray, fog or foam.

Unsuitable Extinguishing Media

None known.

Specific Hazards Arising from the Chemical

Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), smoke and irritating fumes as products of incomplete combustion.

Special Protective Equipment and Precautions for Fire-fighters

For small outdoor fires, portable fire extinguishers may be used, and self contained breathing apparatus (SCBA) may not be required. For all indoor fires and any significant outdoor fires, SCBA is required. Respiratory and eye protection are required for fire fighting personnel.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Do not Touch or walk through spilled material. Use the personal protective equipment recommended in Section 8 of this safety data sheet.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Stop or reduce leak if safe to do so. Contain hot liquid by dyking and allow to cool and solidify. Break up and recover, see section 13 for disposal consideration.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Asphalt may be transported hot. Avoid skin contact. Avoid eye contact. Avoid inhalation of product vapours or fumes. Ensure all equipment is grounded/bonded. During storage, transit and cooling of asphalt, hydrogen sulphide (H2S) may accumulate in enclosed spaces such as tank cars. Open tank car hatches with caution. Maintain same precautions when gauging and sampling. Empty containers may contain product residue. Do not reuse containers without commercial cleaning and/or reconditioning. Personnel who handle this material should practice good personal hygiene during and after handling to help prevent accidental ingestion of this product. Wear proper personal protective equipment.

Conditions for Safe Storage

To maintain pumping ability, asphalt is kept heated to a suitable temperature; normally well above room temperature but below the flash point. Store in dry, well-ventilated area. Clear roof vents periodically to prevent accumulation of asphalt deposits from vapour accumulation. Store away from incompatible and reactive materials (see section 10). Ensure the storage containers are grounded/bonded.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Asphalt (Bitumen) fumes	0.5 mg/m3 (as benzene-soluble aerosol) A4					
Hydrogen sulfide	1 ppm	5 ppm				
Styrene-butadiene copolymers	10 mg/m3					

Appropriate Engineering Controls

For normal application, special ventilation is not necessary. If user's operations generate vapours or fumes, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are close to work-station.

Individual Protection Measures

Eye/Face Protection

As a minimum, safety glasses with side shields should be worn when handling this material.

Skin Protection

Wear Protective clothing with full length sleeves and pants should be worn.

Respiratory Protection

A minimum of NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister with a dust, fume of mist filter (R, or P series) may be allowable under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. A NIOSH-approved positive-pressure, air-supplied respirator or self-contained breathing apparatus may be required under certain circumstances where airborne concentrations are expected to exceed exposure limits.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Brown - black Viscous semi-solid.
Odour	Asphalt
Odour Threshold	Not available
pH	Not available
Melting Point/Freezing Point	Not available (freezing)

Initial Boiling Point/Range	> 470 ºC (878 ºF)
Flash Point	> 230 ºC (446 ºF) (open cup)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	Nil at 37.8°C (100°F)
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	> 1
Solubility	Insoluble in water; Insoluble in alcohol, acids and alkalis. Soluble in oil turpentine, petroleum, carbon disulphide, chloroform, ether, and acetone
Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	> 370 ºC (698 ºF)
Decomposition Temperature	Not available
Viscosity	150 - 2500 centipoises (dynamic)

Other Information

Physical State	Solid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Stable under normal temperature conditions and recommended use.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. Incompatible materials.

Incompatible Materials

Oxidizing agents (e.g. peroxides), fluorine.

Hazardous Decomposition Products

Carbon Oxides (COx), sulfur Oxides (SOx), nitrogen oxides (NOx), hydrogen sulfide, hydrocarbons.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Eye contact; skin contact; inhalation; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Asphalt (Bitumen) fumes	Not available	Not available	Not available
Hydrogen sulfide	444 ppm (rat) (4-hour exposure)		

Skin Corrosion/Irritation

Prolonged or repeated contact with skin may cause dermatitis or warty skin growths (keratosis). Contact with hot material can cause thermal burns.

Serious Eye Damage/Irritation

Vapours or fumes from the hot asphalt can cause irritation of the surface of the eyes as well as limbal pigmentation of the cornea. Contact with hot material can cause thermal burns.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

No information was located.

Skin Absorption

No information was located.

Ingestion

No information was located.

Aspiration Hazard

May cause lung damage if aspirated based on physical properties (e.g. kinematic viscosity) and chemical family (hydrocarbon).

STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

Respiratory and/or Skin Sensitization

This product is not expected to be a skin or a respiratory tract sensitizer, based on the available data and the known hazards of the components.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Asphalt (Bitumen) fumes	Group 2B	A4	Not Listed	Carcinogen

Group 2B – Possibly carcinogenic to humans.

Other Information

Contains:
HYDROGEN SULFIDE : Chronic health effects due to repeated exposures to low levels of H2S have not been established. High level (700 ppm) acute exposure can result in sudden death. High concentrations will lead to cardiopulmonary arrest due to nervous system toxicity and pulmonary edema. Lower levels (150 ppm) may overwhelm sense of smell, eliminating warning of exposure. Symptoms of over exposure to H2S include headache, fatigue, insomnia, irritability, and gastrointestinal problems. Repeated exposures to approximately 25 ppm will irritate mucosa membranes and the respiratory system and have been implicated in some eye damage.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Not Available.

Persistence and Degradability

Not Available.

Bioaccumulative Potential

Not Available.

Mobility in Soil

Not Available.

Other Adverse Effects

Not Available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of waste at an appropriate treatment & disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
US DOT	UN3257	Elevated temperature liquid (Bitumen (Asphalt))	9	III

Special Precautions for User: Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Emergency Response Guide No.: 130

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL or are not required to be listed.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.

SECTION 16. OTHER INFORMATION

NFPA Rating: Health - 1 Flammability - 1 Instability - 0

SDS Prepared By: R&D and Technical group

Phone No.: 514-645-4561

Date of Preparation: mai 26, 2015

Disclaimer: Bitumar Inc. customarily reviews and updates SDS within 90 days of new data availability in accordance with Canadian Hazardous Products Act. If you would like to verify if the MSDS you have is the most current, or you require any further information, please contact:
www.bitumar.com
Ontario/Central/Quebec & Eastern Canada, telephone: 514-645-4561; fax: 514-645-6978.
For the USA: 410-354-9550. Fax: 410-354-9552.
For other Product Safety Information: (514) 645-4561

To the best of our knowledge, the information contained herein is accurate. However, neither BITUMAR Inc. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist

APPENDIX R

R. Equipment List for Stancills' Topsoil Operations

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

TOPSOIL PLANT EQUIPMENT LIST

SCREENERS			
	SCREENER 1	**SCREENER 2**	**SCREENER 3**
OEM	Sandvik Screen	Sandvik Screen	Terex Crusher
Owner ID	#225	#227	#581
SCREEN rated TPH	440	660	320
Qty of Decks	2	2	1
Model #	QA 335	QA 441	Trakpactor 320
Serial #	QA33500020	QA441-1002	PIPTP320VOMD97542
Quantity Conveyors	3	3	1
Deck Dimensions	13 x 5	20 x 5	
Fines Conveyor Width	47 in.	47 in.	39 in.
Engine OEM	Cat	Cat	Scania
Engine Model #	C4.4	C4.4	DC9
Engine Serial #		44623689	
Tier Rating	3	3	4
Engine Rated Bhp			
Engine Fuel Rate, gal/hr			
Engine Mftr Year	2017	2017	2013
Length Screener (ft)	50' 2"	62'	47' 1"
Width Screener (ft)	53' 7"	61' 5"	8' 5"
Height Screener (ft)	19' 4"	22' 1"	12' 8"
STACKERS			
STACKER_1 OEM	Edge		
Model #	TS65		
Serial #	17T56540414		
Engine OEM	Cat		
Engine Model #	C2.2		
Engine Serial #			
Tier Rating	4		
Engine Rated Bhp	50		
Engine Fuel Rate, gal/hr	5.2		
Engine Mftr Year	2017		
Length Stacker (ft)	60' 8"		

THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT

SUPPLEMENT A to
DOCKET #16-21

COMPANY: Stancills, Inc.

LOCATION: 499 Mountain Hill Road, Perryville, Maryland 21903

APPLICATION: To install one (1) 400-ton per hour asphalt paving materials mixing plant, one (1) 300-ton per hour crushing and screening plant, and one (1) hot oil heater.

ITEM	DESCRIPTION
1	Notice of Application and Informational Meeting

DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

NOTICE OF APPLICATION AND INFORMATIONAL MEETING

The Maryland Department of the Environment, Air and Radiation Administration (ARA) received a permit-to-construct application from Stancills, Inc. on July 15, 2021, for one (1) 400-ton per hour asphalt paving materials mixing plant, one (1) 300-ton per hour crushing and screening plant, and one (1) hot oil heater. The proposed installation will be located at 499 Mountain Hill Road, Perryville, Maryland 21903.

An Informational Meeting will be held on October 20, 2021, at 6:30 PM at the Cecil County Administration Building, Elk Room, 200 Chesapeake Blvd., Elkton, Maryland 21921.

Pursuant to the Environment Article, Section 1-603, Annotated Code of Maryland, the Informational Meeting has been scheduled so that citizens can discuss the application and the permit review process with the applicant and the Department.

The application and other supporting documents are available for public inspection on the Department's website. Look for Docket #16-21 at the following link:

https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx

The Department will provide an interpreter for deaf and hearing-impaired persons provided that a request is made for such service at least ten (10) days prior to the meeting.

Further information may be obtained by calling Ms. Shannon Heafey by email at shannon.heafey@maryland.gov or by phone at 410-537-4433.

George S. Aburn, Jr., Director
Air and Radiation Administration