

**FACT SHEET DRAFT  
REISSUANCE OF A VPDES GENERAL PERMIT  
FOR CONCRETE PRODUCTS FACILITIES  
2023 Reissuance**

The Virginia State Water Control Board has under consideration the reissuance of a general VPDES permit for point source discharges for process water and stormwater from the concrete products facilities to surface waters.

Permit Number: VAG11  
Name of Permittee: Any owner of a qualifying concrete products facility in the Commonwealth of Virginia.  
Facility Location: Commonwealth of Virginia  
Receiving Stream: Surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in Board Regulations which prohibit such discharges. Discharge to surface waters may be through a municipal separate storm sewer system.

The Virginia State Water Control Board has under consideration the reissuance of the VPDES general permit from the concrete products industrial category. The category of discharges is appropriately controlled under a general permit. The category of discharges involves facilities with the same or similar types of operations and the facilities discharge the same or similar types of wastes. The draft general permit requires that all covered facilities meet standardized effluent limitations and monitoring requirements. This permit will be effective January 1, 2024 and will expire on December 31, 2028.

This document gives pertinent information concerning the legal basis, scientific rationale and justification for the issuance or reissuance of the VPDES permit listed below. This permit is a minor industrial permit. The discharge results from the operations of a concrete products facilities. The effluent limitations contained in this permit will maintain the Water Quality Standards in 9VAC25-260. This permit action consists of revisions to the permit, as needed, due to changes in applicable laws, regulations, guidance, and available technical information.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Allan Brockenbrough at:

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**Activities Covered by this General Permit and Process Descriptions**

This general permit will cover point source discharges of process wastewaters and stormwater runoff associated with the operation of concrete products facilities that fall under the industrial classification systems below. Coverage also includes discharges from temporary or portable ready-mixed plants erected on or near construction sites. This general permit does not exclude the coverage for a concrete product facility with a secondary industrial activity co-located on site as long as the secondary activity does not generate any point source discharges or the point source discharge is covered under a separate VPDES permit.

1. North American Industry Classification System (NAICS) Code 327331 – Concrete Block and Brick Manufacturing, (Executive Office of the President, Office of Management and Budget, United States, 2017) and Standard Industrial Classification (SIC) Code 3271 - Concrete Block and Brick (Office of Management and Budget (OMB) SIC Manual, 1987);
2. NAICS Code 327332 Concrete Pipe Manufacturing, NAICS Code 327390 Other Concrete Product Manufacturing, NAICS Code 327999 All Other Miscellaneous Nonmetallic Mineral Product Manufacturing (dry mix concrete manufacturing only) and SIC Code 3272 - Concrete Products, Except Block and Brick; or
3. NAICS Code 327320 Ready-Mix Concrete Manufacturing and SIC Code 3273 - Ready-Mixed Concrete, including both permanent and portable plants.

These facilities are collectively defined as "Concrete Products Facilities." The types of industrial activities are described below.

#### SIC 3273 - Ready-mix

Ready-mixed concrete is basically produced by two methods: dry batch mixing and central mixing. For dry batch mixing, the mix of cement and aggregate is weighed and transferred in a dry state to the truck along with a proportioned amount of water. The concrete is mixed in the truck on the way to the job. For central mixing, the concrete is prepared in a central mixer then transferred to a truck mixer or agitator for delivery.

In addition to cement, fly ash and aggregate, ready-mixed concrete typically contains admixtures and entrained air. Entrained air improves resistance to freezing and thawing. Admixtures may include calcium chloride, triethanolamine, calcium salt, lignosulfonic acid, vinosol, saponin, keratin, sulfonated hydrocarbon, fatty acid glyceride, vinyl acetate, and styrene copolymer of vinyl acetate as ingredients. These compounds may be added to obtain desired characteristics, such as slower or more rapid curing times.

Generally, there are two types of ready-mixed concrete plants: permanent (also known as stationary) and temporary which are usually portable. A permanent plant usually produces various types of concrete for numerous customers. The permanent plant may operate either as a dry batch mixing plant or central mixing plant. A large facility may even consist of both processes. Portable plants are used on large highway and airport paving jobs. These plants can operate using either dry batch mixing or central mixing. Portable plants have the same significant materials and industrial activities as permanent facilities. Therefore, portable plants are covered under this general permit.

The wastewater discharge from ready-mixed concrete plants includes truck washout, truck wash-off, central mixer washout, water from wet waste concrete, stormwater runoff.

Process wastewater is generated by the cleaning of trucks and equipment that come in contact with cement and "wet" concrete. Trucks are usually washed on the outside after they are loaded with fresh concrete, before leaving the plant. They are also washed inside and out at the end of the day. Washing down of areas where this cleaning takes place also generates process wastewater. Process wastewater can be generated from engine steam cleaning in the vehicle/equipment maintenance shop. Discharges of process wastewater may contain

some stormwater associated with industrial activity which has come in contact with raw material stockpiles, dried waste concrete, or vehicle parking or maintenance areas. The stormwater can be contaminated at the truck loading site and at the truck washing area.

Treatment or control of process wastewater and commingled stormwater usually consists of settling basins to reduce the solids content and acid addition to neutralize the high pH of the wastewater. Solids removal may be accomplished through a series of settling ponds or sloped slab separation basins. Mechanical clarification devices such as screw washers are used by some facilities to recover coarse aggregate and sand for reuse. The clarified wastewater may be completely or partially recycled and reused. When discharge is necessary, pH neutralization often is required prior to discharge. Mode of discharge can be batch or continuous.

Stormwater associated with industrial activity may be discharged from ready-mixed concrete plants. This stormwater may have come in contact with or been exposed to raw material (sand, gravel or stone) stockpiles, dried waste concrete, or vehicle parking or maintenance areas. Fugitive dust is prevalent on the grounds at concrete plants. Shrouds and vacuum recovery units are used to minimize dust releases at concrete mixing and truck loading locations. Cement and aggregate unloading from railroad cars, trucks or barges is another potential source of contamination for stormwater. No treatment is normally employed prior to such discharge. Some facilities store the stormwater in a retention pond and operate the basin in a "no-discharge" mode. The water collected in the retention pond either evaporates, infiltrates, or is used as process water on site.

#### SIC 3272 - Concrete Products, Except Block and Brick

Concrete Products, Except Block and Brick include concrete pipe, precast concrete products, and prestressed concrete products.

Concrete Pipe. Concrete pipe products include culvert pipe (reinforced and non-reinforced), storm sewer pipe (reinforced and non-reinforced), sanitary sewer pipe (reinforced and non-reinforced), pressure pipe (reinforced, prestressed, pretensioned and other pressure pipe), irrigation pipe and drain (tile), and other concrete pipe (e.g., manholes and conduits).

Concrete pipe is generally produced by three methods: (1) the vertical packerhead (tamping) method; (2) the vertical cast method; and (3) the spin casting production method. The vertical packerhead method uses a machine called a packerhead to compact and vibrate a moist concrete mix into a steel form. The method is used to produce pipe up to five feet in diameter. The vertical cast method is used to produce reinforced pipe. Due to labor cost and time, this method is generally limited to production of reinforced pipe over five feet in diameter. A wet concrete mix from a central mixer is transported by buckets and poured into a vertical steel form containing a reinforcing cage. The steel forms are stripped from the pipe after the concrete sets. The spin casting production method is used to produce reinforced pipe up to four feet in diameter. The form containing a reinforcing cage is placed horizontally and rotated at a high rate, while concrete is added by a reciprocating nozzle. The spinning action densifies the concrete on the inside of the form and dewater it. The inner surface of the pipe is finished by a mechanical roller. Reinforced concrete pressure pipe, produced by spin casting, uses a hydraulically tested sheet steel cylinder form that remains as part of the finished pipe.

All concrete pipe is cured at ambient conditions or spray cured, until it reaches a certain green strength, at which time it is cured by low pressure steam either in a kiln or in a chamber

constructed around the pipe. For pipe produced by the packerhead method, the forms are usually removed before steam curing, while for the vertical cast and spin casting methods the forms usually remain on the pipe during curing. In all cases except reinforced concrete pressure pipe, a form release oil is used. In the production of reinforced concrete pressure pipe additional processes include hydraulic testing of the cylinder, wrapping the cured pipe with high strength steel wire, and coating the steel wire wrap with concrete grout. There is no wastewater from atmospheric curing. Wastewater from steam curing and spray curing contains suspended solids, oil and grease and has a high pH.

Precast Concrete Products. Precast concrete products include roof and floor units (slabs and tile; joints and beams); architectural wall panels; pilings, posts and poles; cast stone (products for architectural purposes); prefabricated building systems; other precast construction prod.; burial vaults and boxes; silo staves; septic tanks; dry-mixed concrete materials (e.g., Sakrete); other precast (e.g., laundry tubs).

Simple precast concrete products are produced by pouring the concrete from a mixer into steel forms, and allowing the product to cure, either at ambient conditions, with low pressure steam, or with a water spray. Curing takes place in two steps, first with the form on then off. The second curing step usually takes place at ambient conditions. Reinforced concrete products contain steel structural members to provide increased strength.

Precast architectural wall panels are generally finished to produce a decorative surface of exposed aggregate. For the most common production method, a retarder is spread in the form bottom, reinforcing steel is placed in the form, and the concrete mix is cast. When the concrete has set and the form is removed, the surface is washed with a weak acid solution, sandblasted, or washed with high pressure water to clean away the unset surface cement and expose the coarse aggregate. The panel is then cured completely in a storage yard.

Prestressed Concrete Products. Prestressed concrete products are chiefly used as structural and architectural components and include single tees, double tees, and channels; piling, bearing piles, and sheet piles; bridge beams; solid and hollow cored slabs and panels; other prestressed products (e.g., arches); joist, girders, and beams (other than bridge beams).

Prestressed concrete products are produced in similar fashion as precast reinforced concrete products with the substitution of steel cables under tension instead of steel rods for reinforcement. Prestressed concrete products may be either pretensioned or post-tensioned. The wastewater discharge from Concrete Products, Except Block and Brick facilities includes transport bucket and central mixer washout, form wash-off, condensate from steam curing, spray curing wastewater, surface finishing water, spin cast wash-water, pre-wetting of imbedded pressure pipe, stormwater, boiler blowdown, and miscellaneous equipment wash-off. Pollutants in the wastewater discharge include suspended solids, oil and grease, and high pH.

#### SIC 3271 - Concrete Block and Brick

Concrete block and brick are classified into the following products: structural block produced with lightweight aggregate such as cinder, expanded shale, pumice or other materials; structural block produced with heavyweight aggregate such as sand, gravel, crushed stone or other materials; decorative block - such as screen block, split block, slump block and shadowal block; and concrete brick.

The manufacturing process for concrete block and brick consists of mixing, forming, and curing. Typically, the aggregate, cement and water are weighed and mixed in batches of about four cubic yards in a rotary mixer. The concrete mix used for production of block and brick contains less water than ready-mixed concrete. The type of aggregate being used will determine if a lightweight or heavyweight product is produced. Color may be added to the mix to produce decorative block. The mixed concrete is fed into an automatic block molding machine, where the moist mix is rammed, pressed or vibrated into the desired shape. Following forming, the material is stacked onto iron framework cars and allowed to cure. To produce a structural high-strength block within a reasonable time period, the block must be cured under moist conditions. The three basic methods of curing are: (1) atmospheric; (2) low pressure steam; and (3) autoclave or high-pressure steam.

Atmospheric curing produces a lower strength block than the other two methods of curing. Atmospheric curing uses ambient heat and humidity, and heat of hydration to cure the block, and also includes curing within enclosures at ambient conditions. Curing usually takes place for about four hours. There are no additional wastewaters produced from this curing process. In the low-pressure steam method, the loaded curing cars are placed into a chamber or kiln where low pressure steam less than 150 psi is injected from perforated pipes for approximately 8-10 hours, depending on mix conditions, user specifications, and ambient temperature. Wastewater from this curing method consists primarily of steam condensate, which contains some suspended solids, dissolved solids, COD, oil and grease and a high pH. The low-pressure steam is generated by a boiler which requires periodic blowdown.

The autoclave or high-pressure steam curing method produces a higher strength block with less shrinkage in less time than the low-pressure steam curing method. For this method the curing cars are loaded in a large horizontal, cylindrically shaped autoclave where high pressure steam (greater than 150 psi) is injected or convected. After a curing cycle of about 8 hours the steam is released to the atmosphere and the blocks are removed and stored. An alternative method of steam production uses a hot oil convection method, where water is placed in a trough within the autoclave and hot oil heats the water into steam. Following curing, the autoclave is allowed to cool and a portion of the steam condenses back into the trough. Periodically the trough water is discharged because the alkalinity, due to the pickup of calcium oxide, makes the water corrosive to the steel racks of the curing cars. Wastewater discharges from the autoclave curing process can include boiler blowdown, autoclave blowdown condensate, and autoclave purge. Pollutants include suspended solids, COD, oil and grease, and high pH, resulting from autoclave blowdown condensate and in the convection process, autoclave purge.

The primary source of wastewater from concrete block and brick facilities is equipment wash-off, including delivery trucks, conveyor belts, transport buckets, central mixers and forms. Generally, only suspended solids are a problem in this wastewater and can be handled with simple settling. Other potential sources of wastewater include accidental spill wash-down and stormwater runoff. Spill wash-down and stormwater runoff can be handled with other washwaters.

### **General Permit Coverage and Registration**

The general permit has a term of 5 years. Every authorization under this general permit will expire at the same time (December 31, 2028). All existing permittees will receive renewed coverage on

the same date (January 1, 2024), provided a complete registration statement has been filed 60 days prior to the general permit's prior expiration date (December 31, 2023).

The registration asks the question if a stormwater pollution prevention plan (SWPPP) has been prepared. The registration statement instructs the new applicants to have a SWPPP before commencement of discharge and existing permittees to update and implement revisions to the SWPPP within 60 days of coverage. The registration also asks for representative/substantially identical outfall information to be submitted with the registration. One of the questions to support representative outfalls asks for monitoring data, if available. The permittees that discharge to an MS4 are required to submit notification to the MS4. A copy of a letter or email to the MS4 will suffice. The registration also asks for State Corporation Commission entity identification number. Also, portable concrete plants must submit a closure plan with the registration in order to be approved for coverage. The items needed in a closure plan include treatment, removal and final disposition of residual wastewater, contaminated stormwater held at the facility and solids, fate of structures, a removal plan for all exposed industrial materials and description of the stabilization of land in which they were stored or placed.

All persons desiring to be covered by this general permit must register with the Department by filing a registration statement and applicable fees (\$600). The registration statement shall be submitted and a notification of coverage issued prior to any discharges or other activities for which this permit is required.

Concrete Products facilities that are discharging process wastewater or stormwater associated with industrial activity to surface waters on the effective date of this general permit and which have not been issued an individual VPDES permit, are required to submit the registration statement 60 days prior to expiration. Existing operations with individual VPDES permits that wish to seek coverage under the proposed general permit would have to file a registration statement at least 240 days prior to the expiration date of the individual VPDES permit. This gives staff some time to decide whether they can have coverage and if not, the permittee can still meet the 180 day before expiration VPDES application requirement. For all new concrete products facilities that will have discharges of process wastewater or stormwater associated with industrial activity and that will begin activities after the effective date of this permit, the registration statement shall be filed at least 60 days prior to the commencement of operation of the concrete plant unless a different date is approved by the department.

Any permittee conducting an activity covered by an individual permit, which could be covered by this general permit, may request that the individual permit be terminated and register for coverage under this general permit. Antibacksliding will be considered prior to granting the coverage under this general permit. Any owner or operator not wishing to be covered or limited by this general permit may make application for an individual VPDES permit, in accordance with VPDES procedures. This general permit will not apply to any new or increased discharge that will result in significant effects to the receiving waters. The determination is made in accordance with the State Water Control Board's Antidegradation Policy contained in the Virginia Water Quality Standards, 9VAC25-260-30.

All facilities that the Department believes are eligible for coverage under this general permit will be authorized to discharge under the terms and conditions of the permit after a complete registration statement is submitted, the applicable permit fee is paid and the Department sends a copy of the general permit to the applicant. If this general permit is inappropriate, the applicant

will be so notified and the requirement that an individual permit or alternate general permit is needed will remain in effect.

### Part I A - Effluent Limitations, Monitoring Requirements and Their Basis

The parameters to be limited in process wastewater discharges are pH, total suspended solids (TSS) and total petroleum hydrocarbons (TPH). These parameters were chosen based on the evaluation of 1992-1996 DMR data for the issuance of the first general 'ready-mix' permit in 1998. TPH, is a pollutant of concern when vehicle or equipment degreasing wastewater are commingled with the process wastewater. Specific rationale for all parameters and when they apply is discussed below.

#### 1. Discharge of process wastewater which may contain input from the vehicle/equipment maintenance activities and may be commingled stormwater runoff:

<u>Parameter</u>	<u>Limitation</u>	<u>Frequency<sup>(3)</sup></u>
Flow	No limit, estimate and report average and maximum values	
Total Suspended Solids	30 mg/l avg, 60 mg/l max.	
pH	6.0 minimum, 9.0 maximum <sup>(1)</sup>	
Total Petroleum Hydrocarbons <sup>(2)</sup>	15 mg/l maximum	

(1) Where the Water Quality Standards (9 VAC 25-260) establish alternate standards for pH in the waters receiving the discharge, those standards shall be the maximum and minimum effluent limitations.

(2) Total Petroleum Hydrocarbons limits are only to be placed in the permit when vehicle degreasing occurs on site. Vehicle degreasing or equipment degreasing has been clearly defined to mean the washing or steam cleaning of engines or other drive components of a vehicle or equipment in which the purpose is to degrease and clean petroleum products. It does not mean washing sediment or concrete off trucks. Total Petroleum Hydrocarbons shall be analyzed using the EPA SW-846 Methods 8015B (1996), 8015C (2000 or 2007), 8015D (2003) for diesel range organics or 40 CFR 136.

A QL of 5.0 mg/L has been established for TPH. The QLs are consistent with the VPDES individual and general permit program QLs.

(3) All grab samples are collected quarterly.

#### TSS

Although there are no water quality standards or federal effluent guidelines for total suspended solids for the industrial category covered by the general permit, the Department has decided that such limits are necessary for the protection of the receiving waters. The total suspended solids limitations are established at levels which, based on the Department's experience with individual VPDES permits, are achievable with conventional treatment technology and which will prevent the build-up of solids on the bottoms of receiving waters.

The pH limitation is based upon Virginia's Water Quality Standards (9VAC25-260). Where alternate standards for pH are established in the Water Quality Standards, those standards may be used. Because the facility may discharge into the receiving water at zero low flow conditions, the limitation of the water quality standard on the effluent is appropriate.

#### TPH

Due to the concern that process wastewater generated from engine steam cleaning during vehicle or equipment degreasing will carry petroleum-based pollutants (diesel range organics), this

general permit proposes a TPH limitation of 15 mg/l for a discharge with such input. The TPH maximum limitation is based on the ability of simple oil/water separator equipment. Historically, oil and grease (O&G) limits have been placed in the VPDES permits for many facilities that handle petroleum products or where contamination by petroleum products is of concern. The O&G limits now are expressed as Total Petroleum Hydrocarbons (TPH) instead since there is little reason to expect fatty matter from plant and animal sources. Based on the recommendation provided by Guidance Memo # 96-002, a one to one ratio between O&G and TPH is assumed. The TPH testing protocols were updated during the 2003 general permit issuance, in 2008 and 2013.

All limits should be considered as two significant digits for compliance purposes as per special condition Part I.B.15.b.(4) and in accordance with Guidance Memo No. 06-2016 Significant Figures for Discharge Monitoring Reports.

## **2. Discharge of stormwater which does not combine with other process:**

<u>Parameter</u>	<u>Benchmark Monitoring</u>
Flow	No limit, estimate volume (MG) discharged during entire monitored storm event
Total Suspended Solids	100 mg/l
Total pH	6.0 – 9.0 standard units

The permit states that should the benchmark monitoring for TSS exceed 100 mg/l maximum or the pH fall outside of the range of 6.0-9.0 standard units, the permittee shall evaluate the overall effectiveness of the SWPPP in controlling the discharge of pollutants to receiving waters. Benchmark concentration values are not effluent limitations. Exceedance of a benchmark concentration does not constitute a violation of this permit and does not indicate that violation of a water quality standard has occurred; however, it does signal that modifications to the SWPPP are necessary, unless justification is provided in the routine facility inspection (Part II D e). The SWPPP does not have to be modified if justification is provided. For example, if all appropriate BMPs are in place and maintained correctly, that would be sufficient justification to indicate that the exceedance was an anomaly and additional modification of the SWPP is unnecessary.

Monitoring is required once per calendar year by grab sample, collected during the first thirty minutes of the discharge. If during the first thirty minutes it was impracticable, then a grab sample shall be taken during the first three hours of discharge. This industry has had annual monitoring since the first concrete products general permit in 1998. Annual sampling was determined to be representative given the specific monitoring parameters (within 15 minutes of storm event, 72-hours since the last storm event) and supported by quarterly visual monitoring and site inspections.

Guidance on the conduct of stormwater sampling is provided by the EPA in the document titled [Industrial Stormwater Monitoring and Sampling /Guide](#), EPA832-B-09-003.

Samples taken in compliance with the monitoring requirements specified in Part II A (Stormwater Management) shall be taken at the outfall location(s) identified in the approved registration statement. In the cases where discharges to surface waters are through the municipal separate storm sewer systems, samples should be taken at the point where the discharge enters the municipal separate storm sewer system.



The monitoring requirements for stormwater are consistent with the monitoring requirements of the original stormwater general permits (1994) which were based on EPA's Baseline Industrial Activity Storm Water General Permit (1992). Historically, oil and grease (O&G) limits have been placed in the VPDES permits for many facilities that handle petroleum products or where contamination by petroleum products is of concern. The O&G monitoring requirement from 1998 - 2008 was expressed as Total Petroleum Hydrocarbons (TPH) instead of O&G since there is little reason to expect fatty matter from plant and animal sources. Based on the recommendation provided by Guidance Memo # 96-002, a one-to-one ratio between O&G and TPH was assumed. In 2013, the TPH limit was removed from stormwater monitoring. Total petroleum hydrocarbons are not suggested for monitoring in this type of industrial stormwater by the EPA per the NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), 2015. Also, levels consistently have remained undetectable or very low over the years. In 2003, in order to maintain consistency with the EPA NPDES MSGP, total recoverable iron was added and chemical oxygen demand deleted from the parameter list for stormwater discharges. In 2013, the total recoverable iron limit was removed from stormwater monitoring primarily because iron is naturally high in soils in Virginia and expected to be high in stormwater. Also, there is no feasible alternative to remove iron in stormwater when it is naturally occurring (except to the amount the existing technology removes solids and solids are limited under the permit). DEQ has collected iron data from stormwater since 1998 and has no reason to continue to monitor. The DEQ does not think that total iron is an appropriate benchmark for Virginia. Other surrounding states (Maryland and North Carolina) do not use iron as a benchmark. The 2021 EPA NPDES MSGP no longer includes iron as a benchmark for this industrial sector (sector E). TSS is a more appropriate benchmark to determine SWPPP success.

Quarterly visual monitoring was added in 2003. Specific storm event data is required to be submitted with the DMR.

### **Part I B - Special Conditions**

1. Restriction of floating solids, visible foam, solids deposition or oil sheen.

This condition is required to implement the Water Quality Standards (9VAC25-260-20). Restriction of oil sheen is to ensure that the petroleum products that are on the site do not appear in the stream. Accidental spills of petroleum products are cleaned up immediately so as not to enter surface waters as per special condition #3. If vehicle degreasing is occurring on the site then those process water discharges have total petroleum hydrocarbon limits. This addition is just an added measure of protection and something the inspector can look for to ensure proper BMPs, clean up measures or treatment is occurring.

Restriction of solids deposition in surface water in the vicinity of the outfall as a result of the industrial activity. This requirement is due to concerns from staff of concrete and raw product residue entering the stream at some operations. Improved housekeeping on site should maintain this requirement.

2. Materials handling/storage

Raw materials and products are to be stored and handled so that any untreated discharge of pollutants to surface waters is prevented. This includes leftover wet concrete that is returned to the site. This wet concrete should be disposed of in an area that will collect any water or stormwater that will be in contact with the wet concrete.

3. Vehicles and equipment maintenance

Vehicles and equipment used in the industrial activity are to be operated and maintained in a manner that prevents pollution of surface or ground waters. This special condition addresses best management practices for activities associated with vehicle maintenance that take place at a typical concrete products facility.

#### 4. Restrictions of washing activities

All washdown and washout of trucks, mixers, transport buckets, forms or other equipment is restricted to the designated washdown and washout areas. Wastewater generated in this area is to be recycled or collected and treated to meet the limits in Part I A prior to discharge. The storage of raw materials and washing of trucks and other equipment are necessary aspects of concrete products facilities. These activities are allowed by the general permit as long as they are handled in a way that provides for treatment of any wastewater prior to discharge. This special condition is consistent with EPA's MSGP for "concrete products facilities" for industrial stormwater and applies to all equipment that is washed out of product (not just trucks).

#### 5. Restrictions of waste concrete reclamation

Waste concrete is wet concrete that returns to the plant is either reclaimed at the truck washing facility or it is unloaded on the plant site for drying and later reclamation for off-site fill or road base. The general permit restricts this practice to a designated area and prohibits any untreated discharge from it to surface waters. Until this concrete is dry, this wet waste concrete should be in a designated area that drains to the settling basins, the wet concrete is completely contained and cannot reach the receiving stream (even during normal (not 25-year-24 hour storm event) rain events) or the facility operates in a 'no-discharge' mode (see special condition 11 below). The same requirement applies to the dredged solids from the settling basins.

#### 6. Recycle and Reuse

Wastewater should be reused or recycled whenever feasible. This is not a requirement and is a general suggestion seen in other general permits. The industry can reuse settled wastewater for dust suppression.

#### 7. Prohibition of sewage discharge

The discharge of sewage is not permitted under the draft general permit. The limits of the permit do not address pollutants of concern in sewage.

#### 8. Operation and maintenance (O&M) manual requirement

The permittee is required to develop and implement an O&M Manual which includes procedures and practices for the mitigation of pollutant discharges and for the protection of state waters from the facility's operations. This will document procedures for plant personnel so that the other special conditions can be met. It specifies operations and maintenance practices for process wastewater treatment units and chemical and material storage areas, methods for estimating process wastewater flow, process wastewater solids management and disposal procedures, temporary and long-term facility closure plans, testing requirements and procedures, recordkeeping and reporting requirements and duties and roles of responsible officials. Facilities shall develop or review and update, as appropriate the O&M manual within 180 days of coverage and review annually thereafter. In 2013, the O&M special condition was reformatted, review periods made annual and specific items required for closure plans were added. These specific items include (i) treatment, removal, and final disposition of residual wastewater, contaminated stormwater held at the facility, and solids; (ii) fate of structures; (iii) a removal plan for all exposed industrial materials; and (iv) description of the stabilization of

land in which they were stored or placed. For the 2019 permit, the O&M manual was amended to allow O&M requirements inapplicable to process wastewater units to be included in the SWPPP. This was in response to public comment for facilities that only have stormwater discharges.

#### 9. Notification of municipal separate storm sewer system

If the facility discharges through a municipal separate storm sewer system (MS4) to surface waters, the permittee must notify the owner of the storm sewer of the presence of the discharge and provide a copy of such notice to DEQ at the time of registration.

#### 10. Freeboard requirement

The purpose of this special condition is to prevent overflow. A minimum freeboard of one foot for the basins and lagoons is required to be maintained except during a 72-hour transition period after a measurable rainfall event. The transition period will provide sufficient flexibility for proper operation and maintenance of the facility. During the transition period, no discharge from the basins and lagoons shall occur unless it is in accordance with this permit. Within 72 hours after a measurable rainfall event, the freeboard must return to the minimum freeboard of one foot. Where basins are operated in a series mode of operation, the one foot freeboard requirement for the upper basins may be waived provided the final basin will maintain the freeboard requirements of this special condition. This reflects existing practice and design of these basins. It is deemed reasonable and protective since the additional treatment provided by series basins is preferred. A description of how the permittee will manage the facility to adhere to one foot of freeboard is included in the O&M manual. The daily inspection requirement is only required if the one-foot freeboard is not restored by the end of the 72-hour transition period. The continuous daily log requirement was removed in 2019 in response to public comment.

#### 11. Requirement for "no discharge" mode operation

In the cases where either the process wastewater which may be commingled with stormwater runoff, or the stormwater associated with industrial activity are retained in a treatment/storage system which operates in a "no-discharge" mode, this general permit prohibits any discharge of pollutants to surface waters from such system except in the case of a storm event which is greater than a 25-year, 24-hour storm event. This special condition only applies to those operations which the permittee had designated as "no-discharge" in the accepted registration statement. If a discharge does occur, the permittee is required to report an unusual or extraordinary discharge per Part III H (Conditions applicable to all permits). This reporting reminder was added in the 2019 reissuance and is the same reporting required in the non-metallic mineral mining general permit (9VAC25-190) for "no-discharge" facilities. The recognition of "no discharge" facilities was included in this permit because prior to the VPDES discharge general permit in 1993, many facilities were covered under a VPA "no discharge" certificate. These facilities often still have stormwater discharges.

#### 12. Notification levels

The permittee is required to report the discharge of any toxic pollutant from any activity that has occurred or will occur when that discharge, either on routine or non-routine basis, will exceed the highest of the listed notification levels. This condition is required by the VPDES Permit Regulation (9VAC25-31-200 A).

#### 13. Liner requirements for the settling basins

In order to comply with the statutory mandate (State Water Control Law §62.1-44.15:5.2), House Bill 972 passed by the 1998 Session of the General Assembly and effective July 1, 1998, all settling basins, used for treatment and control of process wastewater and commingled stormwater that were constructed on or after February 2, 1998, are required to be lined with concrete or any other impermeable materials prior to commencing operation. The law also states that the general permit may include a requirement that settling basins built before February 2, 1998 may include the same requirement. Regardless of date of construction, all settling basins used for treatment and control of process wastewater or process wastewater commingled with stormwater that are expanded or dewatered for major structural repairs shall be lined with concrete or any other impermeable materials. Major structural repairs include e.g. construction activities that disturb the bottom or sides of the basin.

Concrete is the liner material of choice (as opposed to clay, for example) because settling basins are routinely shoveled out with heavy equipment. This requirement is not intended for basins constructed as best management practices for stormwater.

#### 14. Reuse of treated (settled) wastewater for dust control or spraying stockpiles

Reuse of settled wastewater for dust suppression or spraying stockpiles is allowed and must be carried out as a best management practice and not a wastewater disposal method. This condition is to ensure that reuse of treated wastewater on site for these purposes is managed properly so that none of the water enters surface waters without being treated first. Much of the reused wastewater is adsorbed and evaporated but some may enter the treatment system. Dust suppression must not be carried out in a rain event that results in a discharge from the site as that is unnecessary and more likely to result in a discharge of the untreated water.

#### 15. Compliance reporting

In accordance with Guidance Memo#00-2001, Amendment #3 and Guidance Memo 06-2016 (Significant Figures for Discharge Monitoring Reports, this special condition identifies the quantification levels for TPH and prescribes data handling protocols for the purposes of compliance reporting. In accordance with Guidance Memo 06-2016, the condition ensures that the permittee reports discharge monitoring in two significant digits. The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the test method. This is the definition of QL used in all permits.

#### 16. TMDL Requirements

EPA does not want DEQ to authorize general permits that are not in conformance with any applicable TMDL. This was a requirement added to the regulation in section 50 'Authorization to Discharge.' Staff thought it important to repeat as a special condition in the permit itself as follows:

*“Owners of facilities that are a source of the specified pollutant of concern to waters where a TMDL has been approved prior to the term of this permit shall implement measures and controls that are consistent with the assumptions and requirements of the TMDL. The department shall provide written notification to the owner that a facility is subject to the TMDL requirements. If the TMDL establishes a numeric wasteload allocation that applies to discharges from the facility, the owner shall perform monitoring in accordance with Part I A and implement measures necessary to meet that allocation. At permit reissuance, the permittee shall submit a demonstration with the registration statement to show the wasteload allocation is being met.”*

For most TMDLs, the general permits are considered in aggregate and are not given individual waste load allocations. Currently, the concrete facilities with wasteload allocations are for sediment and already have TSS monitoring in the permit.

17. Adding and deleting outfalls.

This is a special condition that allows for adding or deleting outfalls. The permittee must update the O&M manual and the SWPPP within 60 days of the change. This happens occasionally due to construction or changing processes at the plant and staff wanted a clear way to allow this in the permit through a permit authorized change. This is based on the DEQ 2019 industrial stormwater general permit in 9VAC25-151-70 B 12.

18. Terminations

This special condition describes how terminations of a general permit will be implemented because permittees need to know this is an option available to them. This is based on termination procedures in the VPDES Permit Regulation 9VAC25-31 Part V.

19. Temporary facility closures

This is a special condition was added that describes how temporary facility closures at inactive and unstaffed sites will be implemented. Inactive site waivers are recognized in EPAs 2021 MSGP. In 2019, this special condition was amended to require an annual routine facility inspection to correspond with requirements in the EPA MSGP. The special condition was also clarified to state the stormwater management requirements that are waived at an inactive stie (effluent, benchmark and visual monitoring and routine facility inspections (except for once per year)).

20. Water Quality Standards

This is a general requirement that *"The discharges authorized by this permit shall be controlled as necessary to meet applicable water quality standards."* This matches similar language in other general permits.

21. Responsibilities Other Laws

This is a special condition that reminds the permittee that they must still comply with other laws. *"Approval for coverage under this general permit does not relieve any owner of the responsibility to comply with any other federal, state or local statute, ordinance or regulation."* This requirement is part of the regulation at section 50 C and staff thought it should be repeated in the permit to remind the permittee of the responsibility.

## Part II Stormwater Management

This section is generally based on the 2019 VPDES Industrial Stormwater General Permit (ISW GP) and the 2021 EPA's Multi-Sector General Permit (MSGP). There are a few differences based on TAC consensus.

### Part II A Monitoring requirements

This provides instructions for quarterly visual monitoring, benchmark monitoring, monitoring instructions and corrective actions.

Visual examination of these areas will provide a useful and inexpensive means for permittees to evaluate the effectiveness of their stormwater pollution prevention plans and make any necessary modifications in housekeeping to address the results of the visual monitoring.

Benchmark monitoring is a means by which to measure the concentration of a pollutant in a stormwater discharge. Analytical results are quantitative and therefore can be used to compare results from year to year and to quantify the improvement in stormwater quality attributable to the stormwater pollution prevention plan, or to identify a pollutant that is not being successfully controlled by the plan. The results of the benchmark monitoring are not intended to be used to evaluate actual or potential exceedances of instream water quality criteria.

Monitoring Instructions are typical for stormwater sampling. An interval from the previous storm event of 72-hours is required to allow the industrial site to operate normally, have industrial pollutants be deposited on surfaces and give the stormwater controls opportunity to act properly. The 3-hour collection event is in order to capture the “first flush” of pollutants coming off the site in order to identify if the stormwater controls are working properly to capture the industrial pollutants that may have been deposited on impervious surfaces.

Corrective actions is included in the permit for actions the permittee must take if benchmark monitoring concentration values are exceeded, if inspections turn up a deficiency at the facility and modifications to the stormwater control measures are necessary to meet the permit requirements or any other process, observation, or event result in a determination that modifications to the stormwater control measures are necessary to meet the permit requirements or applicable water quality standards. The corrective action section stipulates time limits for implementing actions to remedy deficiencies. These time frames are not grace periods within which an operator is relieved of any liability for a permit violation. If the original inadequacy constitutes a permit violation, then that violation is not deferred by the time frame the permit has allotted for corrective action. The time limits are those that DEQ considers reasonable for making the necessary repairs or modifications and are included specifically so that inadequacies are not allowed to persist indefinitely. Failure to take the necessary corrective action within the stipulated time limit could constitute an additional and independent permit violation.

#### Part II B Representative Outfalls – substantially identical outfalls

Representative outfalls are decided and approved with the registration statement and will be identified on e-DMR.

#### Part II C Releases of hazardous substances or oil in excess of reportable quantities

The permit prohibits discharges of oil and-hazardous substances from spills. The discharge of hazardous substances or oil from a facility must be eliminated or minimized in accordance with the stormwater pollution prevention plan developed for the facility. If there is a discharge of a material in excess of a reportable quantity established under 40 CFR Parts 110, 117, or 302 the permittee must make a report to DEQ within 24 hours. The permittee must also notify the MS4 operator if the release enters an MS4. The pollution prevention plan for the facility must be reviewed and revised as necessary to prevent a reoccurrence of the spill. This does not relieve the permittee from any reporting to federal or state authorities required under 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 or § 62.1-44.34:19 of the Code of Virginia.

#### Part II D Stormwater Pollution Prevention Plans (SWPPP)

The SWPPP is basically a set of best management practices used to eliminate or reduce pollutants in stormwater from reaching surface waters.

1. Deadlines. For an existing facility, revisions to the SWPPP shall be done within 60 days of

coverage under the permit or ownership change. For a new discharge, the plan shall be prepared 60 days prior to commencing operations and implementing the SWPPP prior to a stormwater discharge. A later date may be established by the department.

2. Contents of the SWPPP. The SWPPP contains the pollution prevention team, site description (including a map), summary of potential pollutants sources (including activities, pollutants, spills and leaks and sampling data), stormwater controls (including control measure considerations, good housekeeping, preventive maintenance, spill prevention and response procedures, eliminating and minimizing exposure implementation, employee training, sediment and erosion control and management of runoff) and routine facility inspections.

Pollution prevention team is the first step in the process of developing and implementing a stormwater pollution prevention plan. A qualified team of individuals needs to be responsible for developing the plan and assisting the facility or plant manager in its implementation.

Site descriptions and a site map assists permittees in identifying issues and setting priorities for the selection, design and implementation of measures taken to control stormwater pollution and in identifying potential changes in materials, materials management practices, or site features over time. It is also important for training and executing proper inspections.

Summary of potential pollutant sources is a good narrative method to see the risk potential that sources of pollution pose to stormwater quality.

Good housekeeping is important because it involves using practical and cost-effective methods to identify ways to maintain a clean and orderly facility and keep contaminants out of surface waters and storm sewers.

Preventative maintenance involves continuous maintenance of stormwater management devices and other equipment and systems to avoid breakdowns so stormwater pollution prevention is likely to be continuous and effective at all times.

Spill prevention and response procedures can be used to eliminate unexpected stormwater pollution when implemented properly and timely. For a spill prevention and response program to be effective, employees should clearly understand the proper procedures and requirements and have the equipment necessary to respond to spills.

Eliminating and minimizing exposure is important in situations where it is feasible to protect industrial materials by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, or run-off. These practices may eliminate stormwater pollution entirely at the site.

Employee training is important because employees should clearly understand the proper procedures and requirements and have the equipment necessary to implement a successful stormwater management program.

Sediment and erosion controls are important for areas that, due to topography, activities, soils, cover materials, or other factors have a high potential for significant soil erosion. The plan must identify measures that will be implemented to limit erosion in these areas. Also flow velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel if flows create erosive conditions.

Management of runoff is important to direct the flow of stormwater away from areas of exposed industrial materials or pollutant sources. Permittees must divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff. Such practices can also divert polluted runoff to natural areas or locations where other kinds of treatment occurs. Examples to do this are use of vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet detention/retention basins.

Routine facility inspections are to ensure that control measures (e.g., BMPs) are operating and properly maintained on a regular basis and to actively observe the effectiveness of control measures during rain events.

#### Part II E Maintenance

The permittee must maintain all control measures identified in the plan in effective operating condition. The maintenance procedures and a schedule for maintenance and back up practices shall be included. If the facility site inspections identify BMPs that are not operating effectively, the permittee must perform maintenance before the next anticipated storm event, or as necessary to maintain the continued effectiveness of stormwater controls.

#### Part II F Nonstormwater discharges

Discharges of certain sources of non-stormwater are allowable discharges under this permit. All other non-stormwater discharges are not authorized and must be either eliminated or covered under a separate VPDES permit. Discharges from the site must be evaluated for unauthorized discharges annually. The evaluation documentation includes date, description of the evaluation criteria, list of outfalls or onsite drainage points observed, results of any actions taken to eliminate unauthorized discharges. The list of allowable nonstormwater discharges is also in this subsection.

#### Part II G Signature and SWPPP review and Part II H Maintaining an Updated SWPPP

Signature requirements are a standard permit condition pursuant to 9VAC25-31-110 and 40 CFR 122.22 and to ensure the decision makers are aware of SWPPP modifications. Reviews and a schedule and are necessary to keep the SWPPP updated in a timely fashion.

### **Part III Conditions Applicable to All Permits**

This section contains language from the permit regulation at 9VAC25-31-190 for conditions applicable to all permits. Differences are described below.

Part III B - Records retention is 3 years from permit expiration or termination rather than from the date of sampling. This makes more sense for documents like SWPPPs.

Part III C - Reporting monitoring results is amended to provided discharge monitoring electronic reporting requirements to comply with 9VAC25-31-1020. There shall be at least three months' notice provided between the notification from the department and the date after which such forms and reports must be submitted electronically.

Part III M – Duty to reapply is changed to 60 days before expiration to match the registration statement requirements in 9VAC25-193-60.



Part III Y – Transfer of permits allows for transfer of permits within 30 days of the transfer of the title instead of 30 days prior to the transfer. Permittees are rarely able to notify the department 30 days prior to a transfer and this is a reasonable allowance for general permits.

Throughout Part III, references to “revoke and reissue” and “modification” have been removed because these permit actions do not apply to general permit coverage. Also references to “permit” and “applications” are replaced with “permit coverage” and “registrations.”