



Guide to Air Quality Permitting for Concrete Batch Plants

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The University of Texas at Austin
Environmental Clinic
School of Law

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Purpose and Acknowledgments

This Guide provides an overview, but is by no means a comprehensive description of concrete batch plant air permitting in Texas. As a result, while every effort has been made to make these materials as accurate as possible, these materials are not to be used as a substitute for the advice of an attorney. Persons reviewing this Guide should not act upon the information without seeking the advice of an attorney.

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THE UNIVERSITY OF TEXAS SCHOOL OF LAW

David Frederick, Adjunct Professor

Environmental Clinic
727 East Dean Keeton Street
Austin, Texas 78705
(512) 232-2574

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[Attachment A – TCEQ, Air Quality Standard Permit for Concrete Batch Plants, RG-056 \(Dec. 2000\)](#)

[Attachment B – TCEQ, Concrete Batch Plant Standard Permit Protectiveness Review \(Sept. 24, 2012\)](#)

[Attachment C – TCEQ, Amendments to the Concrete Batch Plants Air Quality Standard Permit \(2012\)](#)

[Attachment D – U.S. EPA, Emission Factors Documentation for AP-42 Section 11.12-Concrete Batching \(2006\)](#)

[Attachment E – TCEQ, General Permit for Stormwater Discharges from Concrete Batch Plants](#)

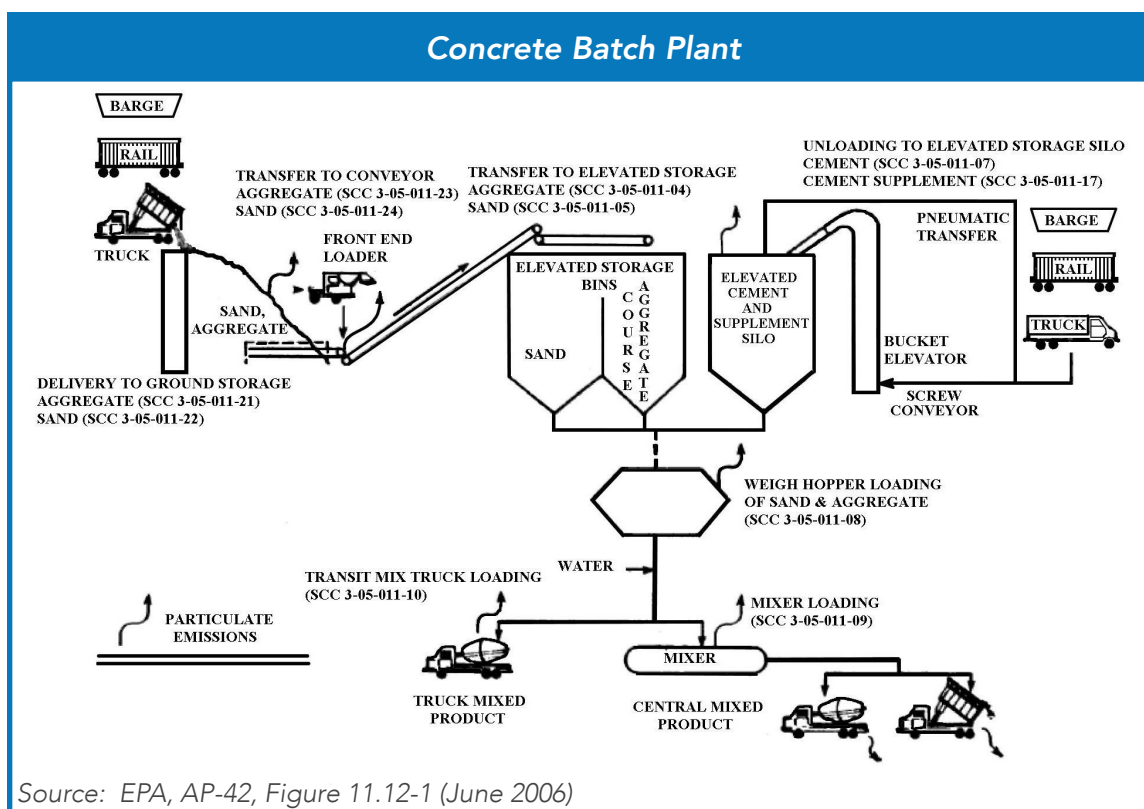
INTRODUCTION

Due to the ubiquity of concrete batch plants, many communities throughout Texas are suffering from the pollution caused by concrete batch plants. Neighbors report particulate emissions coating their homes and cars and causing respiratory problems. They also object to the diesel trucks that cut through their communities and emit toxic air pollutants while idling outside concrete batch plants waiting to load.

Most people do not know, however, how to engage in the permitting process to attempt to require better controls and reduced pollution at concrete batch plants. This guide is intended to provide an overview of the Texas air permitting process for concrete batch plants and the types of pollution controls that communities could seek through that process.

WHAT ARE CONCRETE BATCH PLANTS?

A typical concrete batch plant mixes water, cement, fine aggregate (e.g., sand) and coarse aggregate (e.g., gravel) and a small amount of supplemental materials in a very large drum to create concrete.¹ At most commercial-scale concrete plants, the cement is stored in silos and fed on a conveyor belt to a loading point where feeds of sand, gravel, and supplement join the cement feed. The feeds are dropped together through the drum into concrete trucks where they are combined with water. The concrete truck then drives to the construction site, further mixing the cement and water along the way. There are instances, usually at large construction sites, where the concrete is mixed on site in a central mix drum and then transferred to a transport truck.



The cement silos are generally the most noticeable part of a concrete batch plant. They will typically be very tall, maybe three stories or 40 feet. There will be several of them. At some concrete batch plants, there will be a silo that stores a supplemental mixture that is added to the concrete truck at the cement drop point. The drop occurs into a large funnel-shaped structure that is on stilts, so the concrete trucks can be driven beneath it for loading.

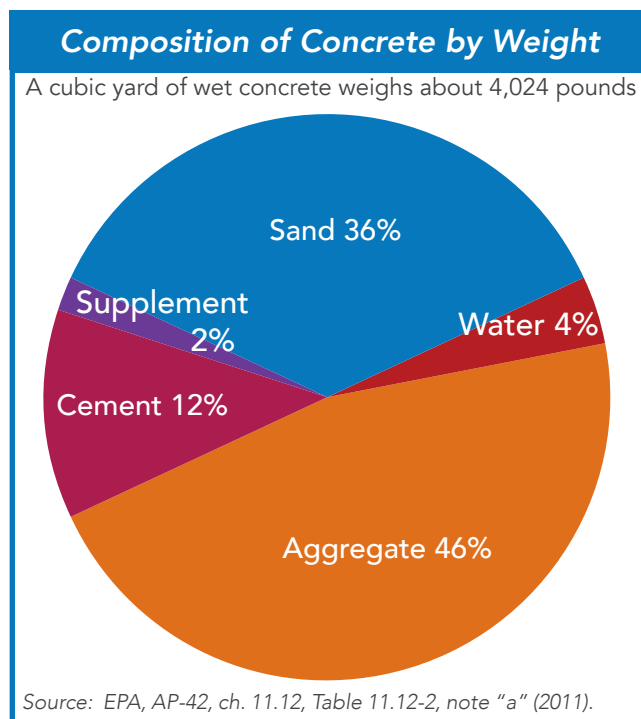
A concrete batch plant site will generally be at least an acre, and much larger sites are not uncommon. The site will have stockpiles of sand and gravel, and there will be conveyor belts that move these materials into position to be mixed with the cement. There will also be a driveway, often, a circular one, for the concrete trucks, and there will be some internal material haul roads.

There may be a railroad spur that brings in the raw materials, i.e., the sand, gravel, cement, and cement supplements. There will be a small building or two on the site for such things as office space and the storage of repair parts and cleaning materials. Owners and operators of large concrete batch plants sometimes also operate other facilities, such as asphalt plants or rock crushers, at the same site.²

Additives to the cement mixture may include materials such as fly ash, granulated blast-furnace slag, and silica fume, which are intended to make the concrete more economical, reduce permeability, or increase strength. They may also include chemical additives, which are usually liquid ingredients intended to entrain air, reduce the water required, retard or accelerate the setting rate, make the concrete more fluid, etc. The Texas Commission on Environmental Quality's (TCEQ's) standard permit prohibits the use of additives that release volatile organic compounds.

This is not an industry that has changed greatly in recent decades. The TCEQ's predecessor agency, the Texas Natural Resource Conservation Commission ("TNRCC"), determined in the late 1990s that most concrete batch plants produced between 100 and 300 yd³/hr of concrete.³ Various sources indicated to the agency staff that average production rates were in the lower half of that range, between 157 yd³/hr to 176 yd³/hr. Industry representatives participating in focus group meetings hosted by the agency indicated that a 200 yd³/hr production rate was a reasonable worst-case assumption for most plants in Texas, with the exception of a central-mix style plant, which could approach 300 yd³/hr. (Central-mix plants mix the cement and the water at the plant site in a fixed mixing machine; central-mix plants usually make large volumes of concrete for use very nearby.)

Batch plants are generally broken into two categories: permanent concrete batch plants and temporary concrete batch plants. TCEQ defines "temporary plants" as those that occupy a particular location for no more than 180 days or until a single construction project is completed. There are a few plants, usually permanent ones, that are treated as a third separate category. These are "specialty" concrete plants. Specialty concrete plants might make such things as precast concrete products, prefabricated building and road materials, cement blocks, concrete pipes, septic tanks, or statuary. The output of specialty plants is generally small, when compared to the output of permanent and temporary plants that mix concrete for off-site construction projects.



About Portland Cement

Portland cement is the binding ingredient in concrete. It was patented in England in 1824. The name suggested the strength of construction stone from the Isle of Portland.

Portland cement is a mixture of limestone, clay, iron ore, and small amounts of other minerals. These materials are ground into a slurry and heated to very high temperatures in a nearly horizontal rotary kiln, which might be very large (e.g., 12 feet in diameter and 500 feet long). The slurry is fed into the high end of the kiln. At the lower end is a roaring flame, perhaps 2700 degrees Fahrenheit. A number of gases are driven off by this firing process. The remaining material, called clinker, emerges at the low end as gray marbled balls. These are, themselves, ground to a fine dust with a small amount of gypsum and limestone.

Hazardous wastes are often used as fuel for the flame, and the overall process can create a number of pollutants, including mercury and toxic acid gases. The exhaust dusts from cement kilns were defined by Congress in 1980, pending further study, not to be hazardous wastes. 42 U.S.C. §6921(b)(3)(A)(iii), the "Bevill Amendment." Over the last 40 years, however, there has been continuing controversy as to the risk that these toxic pollutants adhere to and within the clinker. See, for example, Kleppinger, "Cement Clinker: An Environmental Sink for Residues from Hazardous Waste Treatment in Cement Kilns," 13 Waste Management 553-572 (1993).

"Basic Information: Air Emissions from the Portland Cement Industry," EPA, www3.epa.gov/airquality/cement/basic.html, and "How Cement is Made," Portland Cement Association, www.cement.org.

WHAT PROBLEMS DO CONCRETE BATCH PLANTS CREATE FOR NEIGHBORS?

Air Pollution Issues:

Neighbors most commonly complain about dust and particulate matter (PM) emissions from concrete batch plants.

PM emissions come primarily from the transfer of cement and additive materials to the silos, the transfer of sand and aggregate, truck loading, mixer loading, and sand and aggregate blowing from the piles.⁴ Roadways internal to the plant site are also big contributors to the overall level of dust associated with a plant. The PM is comprised mainly of cement and dust from the additives; there are metals associated with the PM.⁵ The impact of dust on neighbors is usually controlled by the continuous watering, i.e., misting, of plant roadways and other sources of dust. Dust may also be somewhat controlled by establishing a buffer zone between roadways and neighbors. Another protective measure is to erect a barrier between the roadways and the neighbors.

Based on observations and experience, the TNRCC found that the height of a dust plume will be about twice the height of the vehicle generating the road dust. To achieve approximately 50% control of the dust plume, the height of a barrier was thought to be at the height of the plume center line. Based on the modeling, the agency found this height to be about 12 feet.

(TCEQ Regulatory Guidance RG-056, December 2000, p. 9 of 49)

Air pollutants - including carbon monoxide, nitrogen oxides, volatile organic compounds, particulate matter, nickel and formaldehyde - can also be generated by on-site internal combustion engines.⁶ Most concrete batch plants that have engines use diesel compression ignition internal combustion engines up to 1,000 horsepower.⁷

Finally, while not part of the concrete plant itself, the trucks that access the facility are often diesel-fueled and frequently idle outside the facility waiting to load for long stretches of time. Emissions from

idling concrete haul trucks are not included in the TCEQ's potential to emit calculations for concrete batch plants.

Particulate emissions are a complex mixture of extremely small particles and liquid droplets. Once inhaled, these particles can affect the heart and lungs and cause serious health effects, including increased risk of heart attacks, aggravation of asthma, and decreases in lung function.⁸ The smaller particles, 2.5 micrometers and less in diameter, are the most harmful ones, since they are inhaled more deeply in the lungs than are larger particles.

TCEQ estimated that a 300 yd³/hr plant that was limited to 6,000 yd³/day and did not generate its own electricity (i.e., did not run a diesel generator) would emit an average of about 4 pounds of total particulate matter per hour during a 24-hour period. Please see the further explanation in the endnote⁹ to understand that in any one hour that rate could be higher. If the plant does not generate its own power, TCEQ estimates about 0.24 pounds per hour (6% of total emissions) will be PM_{2.5}. If the plant does generate its own power, TCEQ assumes all the particulate emissions from the generator are PM_{2.5}. With on-site power production, PM_{2.5} emissions rise to about 1.13 pounds/hour, 4.7 times as much as in the "no power generation" scenario.

Both EPA and TCEQ have Potential to Emit Calculators for Concrete Batch Plants that can be used to help estimate a facility's emissions.

https://www.epa.gov/sites/...06/concrete_batch_plants_pte_calculator070214_0.xlsx and <https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss-calc-cbp.xlsx>.

Non-Air Pollutant Concerns:

TCEQ will likely state that the first two of these concerns are outside of its jurisdiction. They are, however, issues that can be addressed in a settlement.

Noise: Noise is sometimes a problem for concrete plant neighbors. Large concrete trucks, those with the roughly cone-shaped mixing barrels on their backs, often arrive before dawn to pick up loads of concrete to take to construction sites, and the idling of these early-morning arrivals and their reverse warning sounds can be noisy, in addition to spreading diesel fumes throughout the neighborhood.

Traffic: The traffic of the trucks, depending on the roadway layout near the plant, can be a problem for the neighborhood, particularly when the trucks travel through or idle near residential areas.

Polluted wastewater runoff: The site stockpiles and dusty roads can contribute sediment to rain that falls on them, causing muddy runoff to the nearby neighborhood, if the runoff is not well-controlled by the plant.

HOW ARE CONCRETE BATCH PLANTS REGULATED?

This guide addresses only air quality permitting in any detail. However, other permitting programs also affect the operation of a concrete batch plant and may provide avenues for the local citizens to lessen the impact of a plant.

Storm water and waste water

A concrete batch plant that discharges storm water associated with the plants' operation, rather than retaining the water on-site, will need a storm water permit. A permit is needed if the storm water has come in contact with the stockpiles, infrastructure, or equipment at the plant.¹⁰ In addition, if the plant discharges conventional waste water, for example, water that was used to wash down trucks or clean equipment, it will likely need a separate waste water discharge permit from TCEQ. If a plant's discharges are to a storm sewer, the terms of the city's municipal separate storm sewer system, i.e., "MS4," permit may also regulate the discharges.

There is a TCEQ general storm water permit that covers storm water discharges associated with a concrete batch plant. (A “general permit” is like a “standard permit” but is an authorization under the Clean Water Act rather than under the Clean Air Act.) The current general permit for concrete batch plants is Attachment E to this guide. As you will see from the coverage limitations on pages 6 and 7 of the permit, the general permit may be unavailable for operations near the Edwards Aquifer recharge zone or if the discharges might affect an endangered or threatened species. There are several other instances where storm water discharges may not be covered by the general permit. In the event a concrete batch plant does not qualify for or does not want to commit to the terms of coverage as described in the general permit, an individual Texas Pollution Discharge Elimination System (“TPDES”) permit will usually be needed. A Storm Water Pollution Prevention Plan (“SWPPP”) is required in order to secure coverage under the general permit and, as a practical matter, under an individual NPDES permit. These plans are not automatically submitted to the TCEQ for review, so they are often prepared poorly or not at all. A plan that conforms to the agency’s SWPPP regulations can greatly improve the facility’s storm water practices, if it is enforced.

Land use regulation

In addition to other pollution permitting requirements, a concrete batch plant may be subject to local zoning or land use requirements. While temporary batch plants may have fewer restrictions, permanent batch plants located in a city will generally be limited to certain areas, unless the plant obtains some sort of special use exception or change in zoning. The city land use proceedings may provide the best opportunity for neighbors to actually stop the siting of a new concrete batch plant in their area.

HOW ARE AIR EMISSIONS AUTHORIZED?

Concrete batch plants cannot begin construction of air pollution emitting facilities until the air pollution emissions are authorized by the TCEQ. There are two permitting vehicles for authorizing air pollution from a concrete batch plant: an individual New Source Review (NSR) permit and a Standard Permit. With a New Source Review Permit, the permit terms are written for the specific facility seeking authorization. A Standard Permit is a generic permit that applies to a certain type of industry or operation. Any facility that meets the terms of the standard permit can claim coverage and operate pursuant to its limits. There are two versions of the standard permit.

Neither the individual NSR permit nor either of the standard permits for concrete batch plants supersedes other TCEQ regulatory requirements or requirements of the Texas or federal Clean Air Act.¹¹ Therefore, theoretically, the holder of an authorization to operate under the TCEQ standard permit may not do so in such a manner as to cause a nuisance. Nuisance operations are prohibited by TCEQ regulation.¹²

Individual NSR Permit

Any size concrete batch plant may decide to seek to authorize its emissions pursuant to an individual NSR permit, but it is the only avenue for large-capacity plants, i.e., plants with greater than 300 yd³/hr production or 6000 yd³/day production at one site. In 2012, TCEQ reported that an average of three to four concrete batch plants apply for a conventional NSR permit in any one year.¹³ TCEQ data indicate that, at the end of 2017, 249 of 796 permitted concrete batch plants held individual permits.¹⁴

To obtain an individual NSR permit, Texas statutes require that the facility demonstrate: (1) it will use at least the best available control technology, considering the technical practicability and economic reasonableness of reducing or eliminating the emissions resulting from the facility; and (2) there are no indications the emissions from the facility will contravene the intent of the Texas Clean Air Act, including protection of the public’s health and physical property.¹⁵

In addition, TCEQ's regulations require that an individual NSR permit application:

- Demonstrate protection of public health and welfare, including compliance with all TCEQ regulations and the intent of the Texas Clean Air Act, including protection of the health and property of the public;
- For any facility within 3,000 feet of an elementary, junior high/middle, or senior high school, consider any possible adverse short-term or long-term side effects that an air contaminant or nuisance odor from the facility may have on the individuals attending the school(s);
- Include provisions for measuring the emission of significant air contaminants as determined by the executive director;
- Assure the facility will achieve Best Available Control Technology levels of emissions control;
- Demonstrate compliance with any additional, applicable federal requirements, including: New Source Performance Standards, National Emission Standard for Hazardous Air Pollutants, Hazardous Air Pollutant requirements, Prevention of Significant Deterioration or Nonattainment New Source Review requirements;
- Show that the proposed facility will achieve the performance specified in the permit application;
- Comply with any air dispersion modeling requirements imposed by the TCEQ executive director; and
- Obtain allowances to operate if the facility is subject to a Mass Emissions Cap and Trade Program.¹⁶

The terms of the individual NSR permit may be crafted to address the particular needs of and risks posed by the plant. Many terms in an individual NSR permit for a plant will mirror those in permits for other plants, but there is no real standardization of terms.

Standard Permits

The second and most-used permitting vehicle is a "standard permit," of which there are two types: (1) the Standard Permit for Concrete Batch Plants and (2) the Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls.¹⁷

Standard Permit for Concrete Batch Plants: Texas Health and Safety Code § 382.05195, allows TCEQ to promulgate permits for categories of facilities and to apply the same air emission controls to all plants that are within the defined category. TCEQ can only issue standard permits for "the types of facilities will not make a significant contribution of air contaminants to the atmosphere" and may not authorize "major" facilities through standard permits.¹⁸ There are few legislative requirements for these standard permits, only that the permits be enforceable, be ones the Commission can adequately monitor for compliance, and that the permits require the permitted facilities to use Best Available Control Technology ("BACT").¹⁹

TCEQ's predecessor agency issued its first standard permit for concrete batch plants in 2000. That permit, now a TCEQ permit, is occasionally amended, most recently in 2012. As of 2012, TCEQ estimated that the average rate of application for coverage under its standard permit was 94 plants/year.²⁰ The Standard Permit for Concrete Batch Plants covers three types of facilities: (1) permanent concrete batch plants, (2) temporary concrete batch plants, and (3) specialty concrete batch plants. The standard permit is available for any concrete batch plant located at a site producing less than 300 yd³/hr. The permit has separate requirements for permanent and temporary and specialty plants.

"Temporary" plants are defined to be plants that occupy a particular location for not more than 180 days or until a single project was completed.

The general test of the protectiveness of the standard permits

TCEQ performs “protectiveness reviews” that nominally test whether the terms of proposed and amended standard permits are, in fact, protective of human health and the environment. At its most basic, a protectiveness review models emissions from a plant operating with whatever pollution controls the standard permit requires and disburses the emissions to the property line or off-site sources using a computer-simulation of air flows. There are obviously a number of judgment calls to be made in the course of a protectiveness review: What are the uncontrolled emission rates, how efficient are the pollution control technologies, what are the background meteorological conditions at the “universal” site, etc.?

The 2000 standard permit for concrete batch plants was evaluated using the then-preferred EPA air dispersion model (ISCST3) to estimate the off-site air quality impacts. The restrictions of that permit were applied to hypothetical plants, and the agency modeled five years of atmospheric conditions it felt would be representative of atmospheric conditions anywhere in the state. The agency made a number of what it considered to be conservative or worst-case assumptions for model variables and concrete plant layouts. These are described in some detail in a regulatory guide published by the agency, RG-056, Air Quality Standard Permit for Concrete Batch Plants (December 2000), which is Attachment 1 to this guide.

The Texas-law “property line standard” for PM was the one by which the “protectiveness” of the 2000 standard permit had been measured. The property line standard, however, was considered by industry representatives to be more stringent than required by federal law, and before TCEQ conducted an additional protectiveness review in 2012, TCEQ repealed the property line standard. The 2012 amendments to the standard permit measured protectiveness against EPA’s National Ambient Air Quality Standards.

The TCEQ standard permit is quite complicated. The following are only the highlights of the permit.²¹

- TCEQ’s application notice requirements, found at 30 Tex. Admin. Code Chapter 39, generally apply to applications for standard permit coverage, but there is a very complicated exception for certain portable concrete batch plants associated with “public works projects.”²² Chapter 39 does not require mailed notice to neighbors of the to-be-permitted plant.
- A TCEQ approval of a registration under the standard permit is required before beginning construction or operation. There are some technical forms associated with applying for the registration, but air quality modeling is explicitly not required to support the application.
- The “site” of a plant includes contiguous or adjacent properties under common control, and a plant includes all the stockpiles and silos and conveyor belts, i.e., all the support equipment.
- Both the permanent and temporary plants are limited to 300 cubic yards of concrete production per hour at a site and to 6,000 cubic yards of production per day at a site. Specialty plants may not produce more than 30 cubic yards of concrete per hour at a site.
- The principal difference in the treatment of the permanent and temporary facilities is that temporary plants may only be on site for 180 days. A temporary plant serving only one construction project may remain on site longer than that. Roads at a permanent facility must be paved with “a cohesive hard surface” to control dust, whereas temporary and specialty plant roads may be watered or covered with such materials as roofing shingles or tire chips to suppress dust. The permit exempts temporary plants closely associated with public works projects from several of requirements that apply to other temporary plants.
- Operators are required to maintain their records on site for a rolling two-year period. Those records are, therefore, available to TCEQ and local government inspectors,²³ but most records are not filed with TCEQ (so, are not readily available to citizens).

- Silos and weigh hoppers (i.e., the hoppers where the concrete components are weighed) are required to have particulate-matter-control systems with fabric or cartridge filters or must be vented to a central baghouse. These filters are to be 99.5% efficient at removing PM_{2.5}. A filter that catches PM_{2.5} will catch the larger particles, too.
- Materials conveyor belts have to be covered.
- Concrete haul trucks must be loaded within a 3-sided shroud or curtain.
- Stockpiles have to be sprayed with water or chemicals to suppress dust.
- Multiple standard-permit concrete batch plants may be operated at one site, but the limits on hourly and daily production apply to the entire site. This “at a site” limitation is important as it somewhat limits a proliferation of plants in one area. Similarly, if there are rock crushers, concrete crushers, or asphalt plants on site, there are some restrictions on batch plant operation and location.
- The default rule is that silos, stockpiles, equipment and vehicles (except entering and leaving the site) must be kept 50 feet from the property line. In the alternative, the operator may rely on 12-foot-high barriers and three-walled stockpile bunkers. The exhaust vent for the weigh hopper shroud has to be 100 feet from the property line.

Compliance monitoring is a weakness of the concrete batch plant standard permit. The standard for dust emissions is “no visible emissions.” That standard applies at the property line, and it applies to the fabric or cartridge filter systems on site. But, the determination that the standard is met is made using EPA method 22,²⁴ which is basically that no more than 30 seconds of dusty air are observed in any 6-minute period (for the legislative “enhanced controls” permit, 5-minute period). The operator is required to perform this test only once a quarter, under what are supposed to be normal operating conditions.

The “reportable quantity” for PM, the air contaminant that is most commonly of interest at a concrete batch plant, is 100 pounds per 24 hours.²⁵ If an accident, such as a ripped baghouse or shroud at the truck-loading drop, results in PM emissions that are less than the reportable quantity, those emissions do not have to be reported at all.²⁶ The permittee simply has to create a report within two weeks of the emissions event, which is then kept on site.²⁷

Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls

There is a second type of concrete batch plant standard permit that was created by the legislature in 2003.²⁸ More precisely, the legislature told TCEQ to issue a standard permit for concrete batch plants with “enhanced” pollution controls defined by the legislature.

The terms of the two standard permits are similar, but there are differences. The enhanced controls standard permit is only available for permanent concrete batch plants that produce 300 or fewer cubic yards of concrete per hour at a site.²⁹ Unlike the other standard permit, the enhanced controls permit allows more than 6,000 cubic yards of production per day at a site. While both standard permits include a “no visible emissions” standard, the enhanced controls standard is measured over a 5-minute, as opposed to a 6-minute, period. The enhanced controls standard permit does not include restrictions related to the co-location of rock crushers, concrete crushers, or asphalt plants on site. The enhanced control permit’s record-keeping requirements are much-reduced, as compared to those of operators under the other standard permit. The enhanced controls standard permit also has its own public notice requirements, which include newspaper notice but do not require mailed notice or any posted (sign) notice. On the other hand and unlike the situation with the other standard permit, the enhanced controls standard permit requires a mandatory non-evidentiary public meeting before a registration for the permit may be authorized.

WHAT ARE THE OPPORTUNITIES FOR COMMUNITY INVOLVEMENT?

At the outset, there are two types of non-legislative opportunities for citizens to participate in the air permitting for concrete batch plants.

At the time a registration is sought: First, if a plant operator is seeking an individual permit, members of the public may participate in the permitting proceedings by filing comments, requesting a public meeting, and requesting a contested case hearing. Similarly, when an operator comes forward to seek coverage under the TCEQ-drafted standard permit, anyone may comment as to whether the operator qualifies for coverage under the standard permit, and an “affected person” may pursue a contested case hearing on that point and on the protectiveness of the standard permit, given the facts of the particular situation at hand. The “affected person” definition is limited, as discussed below. If the operator is seeking coverage under the enhanced controls standard permit, the rights of public participation are more limited. There is only a comment opportunity with no right to a hearing.

At the time the standard permit is being amended: Second, members of the public may participate in the periodic amendment of the TCEQ’s standard permit. Historically, the interests of neighbors of concrete batch plants have not been well-represented in the various proceedings to draft or amend the TCEQ standard permit. During the 2012 amendment cycle, six representatives of the concrete and aggregates industries filed written comments on the proposed permit. No non-industry representative filed a comment.³⁰ In early 2003, when the permit was previously amended, one industry representative filed a written comment, and Harris County commented that a concrete batch plant being relocated to support a public works project should give notice to any local pollution control agency that had jurisdiction of the site.³¹ In 2000, when the permit was initially drafted, eight industry representatives filed written comments, whereas only one non-industry representative filed comments.³²

Public Notice of an application

There is no written notice of air quality permit proceedings to neighbors of a proposed concrete batch plant, regardless of air quality permit the operator seeks. Of course, if a neighbor happens to be on a mailing list for all permit applications in a county, that neighbor should receive notice of a concrete batch plant proceeding. If an operator is seeking coverage under an individual NSR permit or under the Standard Permit for Concrete Batch Plants, there is both newspaper and sign-posting notice. The sign-posting notice is not required for the Air Quality Standard Permit for Concrete Batch Plants with Enhanced Controls.

Comments and hearing requests

For an application for an individual NSR concrete batch plant permit, the comment and hearing request rights are the same as they are for any other individual air quality permit. (Note: S.B. 1045 from 2017 created a single-notice system for any individual air permit application for which a draft permit is prepared within 15 days of the initial filing of the application.) The public-notice (i.e., publication and sign posting) and hearing-request requirements for a registration under the non-enhanced controls standard permit are a bit different from the usual requirements.

Because of 2016 rule amendments to these requirements, initiated by the Texas Aggregates and Concrete Association, there is only one notice to the public and, hence, one comment period associated with applications to register a facility under the TCEQ standard permit. This notice is a consolidated notice of both (1) the receipt of application and intent to receive coverage under the permit and (2) the notice of application and preliminary decision by the agency. The consolidated notice is posted at the site and published after the administrative and technical reviews of the registration application

have been completed and the draft permit issued. The consolidated notice establishes a single, 30-day notice period during which comments and requests for a public meeting or contested case hearing can be submitted.³³ (So, note that public meetings, which are not mandatory in order to secure coverage under the TCEQ standard permit, nonetheless may be requested.)

Prior to the amendments, the comment period during which a person had to raise any issue that might be tried in a contested case hearing was only 15 days following the application filing, so the post-amendment rule, which lengthens the comment period to at least 30 days and arises after the application is technically complete and the draft permit issued, can be characterized as an improvement in public participation. The 30-day period begins on the last date of newspaper publication, and the comment period is automatically extended to the close of any public meeting. As required by 30 Tex. Admin. Code § 55.201, issues that might be tried in a contested hearing must be raised in a requestor's timely submitted comments.

For the Enhanced Controls standard permit, there is no contested-case hearing opportunity for anyone opposing an application. There is a required public meeting. The TCEQ has a 35-day time period, following the public meeting, in which to grant or deny the application.

Limitation on "affected person"

While the legislature generally provided limited direction to TCEQ regarding the terms of a standard permit that TCEQ issues, it did limit the opportunities for public participation by limiting the universe of potential "affected persons." In 1985, the legislature provided for a "standard exemption" from permitting for facilities that TCEQ "found upon investigation ... will not make a significant contribution of air contaminants to the atmosphere."³⁴ (Authorization by standard exemption is no longer allowed.) Then, in the same bill, the legislature imposed a limit on the range of people who might be considered "affected persons" and, thus, potential contested case opponents for a standard-exemption concrete batch plant. The limitation stated that the person must reside in a permanent residence within ¼ mile of the proposed plant.³⁵ In 1999, the legislature added "standard permits" to the set of TCEQ authorizations for which only persons residing within 440 yards (i.e., a quarter mile) might be found to be affected.³⁶ So, the universe of persons potentially affected by a TCEQ standard permit concrete batch plant is, by law, a limited one.

Limitation on evidence that is admissible

TCEQ's first standard permit for concrete batch plants was issued in September 2000³⁷ in response to the legislature's 1999 grant to the agency of authority to develop standard permits.³⁸ TCEQ's action was preceded by a set of studies that attempted to determine the protectiveness of three "standard exemptions" that, prior to 2000, largely provided the regulatory mechanisms for obtaining authorization to operate a concrete batch plant.

The 1999 legislature also passed a second bill, SB 1298,³⁹ that directly affected concrete batch plant authorizations. Prior to 2000, citizens had started using air dispersion modeling to challenge the granting of concrete batch plant standard exemptions (rule-like authorizations that were then available for certain polluting activities but were less formally developed than is a rule). Would-be operators of concrete batch plants complained that they were being pulled into contested case hearings by affected persons who claimed atmospheric dispersion modeling of plant air emissions showed harmful off-site impacts.

The second 1999 legislative act prohibited the use of atmospheric dispersion modeling in contested case hearings arising from applications for concrete batch plant approval under a standard exemption if atmospheric dispersion modeling had been employed in developing the exemption. TCEQ, "in order to give full effect to the intent of SB 1298," has also barred atmospheric dispersion modeling in contested cases arising from applications for coverage under the newly-created concrete batch plant standard permit.⁴⁰ TCEQ took the legislative act applicable to standard exemptions and applied it to the roughly corresponding and newly-created standard permit.

WHAT POSSIBLE BENEFITS MIGHT BE SECURED FOR CLIENTS BY CHALLENGING A CONCRETE BATCH PLANT AIR PERMIT?

Most would-be operators of concrete batch plants opt to get authorization under the non-enhanced controls standard permit. If the operator has chosen an appropriately zoned location, citizens living or working nearby do not have strong leverage by which to protect their neighborhoods. Obviously, neighbors should check the operator's application to TCEQ to confirm that the proposed operation, as described, qualifies for the permit. If the application for a storm water permit has been filed, it is a good idea to check that (particularly the SWPPP) too.

If talking to a would-be operator in order to secure concessions in exchange for withdrawing or refraining from a protest of the facility, below are some "asks" one might consider. Keep in mind that the would-be operator is likely to be more receptive to incurring expenses that do not "front load" the project (i.e., expenses that may be incurred over time as production at the site generates cash flow). Any commitments agreed to by the would-be operator need to be memorialized in special conditions of an individual permit or in a side agreement in the event the permit is a standard permit. One must pay attention to the enforceability of a side agreement; consider how it will be enforced three or six years from now, should today's involved citizens move, for example.

1. Contact Person. Get the name and phone number of a contact person or persons to whom to raise complaints, should any arise. Get a commitment that the phone will be answered by a person during plant operating hours or that the call will relay to a staff person who will find an appropriate person.
2. Dust control. The general permit requires dust control, but it is vague about the details. Get details tied down. For example, the permit does not require any particular schedule of water sprays to control dust or of the particular circumstances that trigger the need to spray; it requires recordkeeping of water spraying, but it does not specify what the records have to contain. It does not require the records be made available to anyone other than state and local government inspectors. Some of these short-comings might be negotiated away by neighbors.

There may be instances where paved internal haul roads and staging areas are not required by the permit but where the benefits to the local residents sufficiently outweigh the costs to the operator, so pavement is worth negotiating for. It is also possible that a wider buffer zone around stockpiles, hoppers, and staging areas would make a difference. Either the height or construction of barrier perimeter fencing could also be negotiated.

3. Dust measurement. This is difficult. The permit standards for measurement of particulate emissions are not strong. In a perfect world, there would be periodic up-wind and down-wind (of the plant) measurements of dust during normal operating conditions, so that the fact of dust emissions and the amount of dust emissions could be quantified. That is a heavy ask. However, it might be possible to negotiate one or two continuous emissions monitoring systems (CEMS) at selected sites in or near the facility that, if nothing else, would alert the operator of the need to spray that area. (CEMS are basically light sources, like lasers, that measure the attenuation of light in a volume of air through which a beam is directed. They can be calibrated to a "visible emissions" or other opacity standard, but the size of the particles and the presence of water vapor makes a difference. So, calibrating a CEMS is not simple.) Most would-be operators will strongly resist any automated dust measurement efforts; there is little or no industry history of this, and there would be both initial and operating expenses associated with automated measurement.

4. Get copies of upset reports. Get copies of reports submitted to TCEQ regarding pollution events at the facility. Get the reports contemporaneously with their submission to TCEQ. Possibly, one could get notice of un-permitted emissions that do not rise to the level of a “reportable quantity” release.
5. PM_{2.5}. Diesel engine emissions are the overwhelming source of these emissions from a concrete batch plant site. PM_{2.5} emissions are more dangerous, if less near-term bothersome, than are visible dust emissions. (2.5 microns is about 1/30th the width of a typical human hair or about 1/10,000 of an inch.) So, try to get the would-be operator to use electric-drive equipment powered from the utility grid or some non-hydrocarbon source.
6. Hours of operation. Ask for known and more limited than 24x7 hours of operation. Also, define what “operation” means. Perhaps, plant maintenance, for example, could occur outside of “operational” hours. If haul truck idling or even arrival at the site at 5 a.m. is likely, negotiate to forbid that.
7. Lighting. Find out what the plan is for lighting the site and see if you can secure guaranties of down-cast lighting and/or a time of night when almost all lights are dimmed or turned off.
8. Truck traffic. The would-be operator has little control over the routes a concrete truck driver uses to reach and depart from the site. However, signs on site reminding the drivers that people live nearby and urging drivers to avoid shortcuts through the neighborhood may do some good, as may admonitions about speed and not stacking trucks outside the site gates on neighborhood roads.
9. Dispersion modeling. Air dispersion modeling is not legally required in order for the would-be operator to get coverage under the standard permit. Air dispersion modeling can be expensive, because if done well, data has to be collected concerning sources of emissions in addition to the sources on the would-be operator’s site. Unfortunately, and in addition to any other criticisms one might have of TCEQ’s assumptions when it developed its standard permit, the standard permit does not address the scenario in which there are multiple nearby concrete batch plants that are not owned or controlled by the same operator. Cumulative impacts are not effectively address by the standard permit.

So, if the site is in a heavily industrial area or is among other nearby concrete batch plants, one could cause the would-be operator to undertake some air dispersion modeling, possibly providing arguments for altering hours of operation or to support enhanced dust (or NO_x) controls. If nothing else, such modeling might provide evidence to take to TCEQ to convince the agency its standard permit needs adjustment in some scenarios. (If the applicant is seeking an individual permit, rather than coverage under a standard permit, air dispersion modeling that considers off-site sources will not be required by the agency in most cases; agency-approved screening techniques that are based on the size of the plant seeking the permit will usually mean that off-site pollution sources need not be considered.)

CONCLUSION

Concrete batch plants create environmental hazards and nuisance conditions in many low-income communities. Participating in the permitting or siting processes for these plants can halt construction of a plant or lead to better pollution limits and other community benefits. While the air permitting process for concrete batch plants is complicated, this guide can assist communities in navigating that process to improve conditions in their neighborhoods.

Endnotes

- 1 The additional chemicals are used to control properties like setting time and plasticity.
- 2 Amendments to the Concrete Batch Plants Air Quality Standard Permit, TCEQ (2012), p. 3 (Attachment C).
- 3 TCEQ, Air Quality Standard Permit for Concrete Batch Plants, RG-056 (December 2000), p. 31 of 49 (Attachment A).
- 4 U.S. EPA, Background Document: General Air Quality Permit for New or Modified True Minor Source Concrete Batch Plants at p. 2.
- 5 U.S. EPA, Background Document: General Air Quality Permit for New or Modified True Minor Source Concrete Batch Plants (July 2, 2014), p.1.
- 6 U.S. EPA, AP-42, Sec. 3.4, Tables 34.-1 through 3.4-4 (October 1996).
- 7 TCEQ, Amendments to the Concrete Batch Plants Air Quality Standard Permit: Summary Document, p. 7, available at <https://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/Mechanical/cbpsp-finalpreamble.pdf>.
- 8 <https://www.epa.gov/pm-pollution>.
- 9 TCEQ's most recent "protectiveness review" for the concrete batch plant standard permit is summarized in two documents. The first is a staff memo that sets out most of the details entitled Concrete Batch Plant Standard Permit Protectiveness Review, by Robert Opiela and dated September 24, 2012, which is Attachment B to this Guide. That memo provides the emission rates that were assumed for the various emission sources at a plant that were modeled. Maximum possible particulate emissions/hour were reduced by 17% (i.e., 4/24), because the averaging time for emissions was calculated based on a 24-hour day, while a maximum rate of 300 cubic yards/hour assumes a plant will operate only 20 hours/day, so that it may remain within the 6,000 cubic yards/day limit. The Opiela memo is summarized in more polished form at pages 8-11 of 29 in TCEQ's Amendments to the Concrete Batch Plants Air Quality Standard Permit (2012), which is Attachment C to this guide. The latter indicates that, using the Opiela memo's emissions rates, total particulate emissions from the plant are either 4.07 pounds/hour or 3.84 pounds/hour over a 24-hour period.
- 10 The technical test is whether the runoff has contacted industrial activities, and runoff from some structures on site, such as an office building, are not "associated" with the plant, unless they become commingled with runoff that is associated with the plant.
- 11 30 Tex. Admin. Code § 116.615(1).
- 12 30 Tex. Admin. Code § 101.4. "A nuisance is a condition that substantially interferes with the use and enjoyment of land by causing unreasonable discomfort or annoyance to persons of ordinary sensibilities. *Barnes v. Mathis*, 353 S.W.3d 760, 763 (Tex. 2011) (emphasis added). Nuisance actions have a two-year statute of limitations, measured from the time a person knew or should have known the condition would substantially interfere with the use of the land. But, the limitations period does not begin simultaneously with the construction of what turns out to be a nuisance-causing project. *Schneider Nat. Carriers, Inc. v. Bates*, 147 S.W.3d 264 (Tex. 2004) ("a landowner has the right to wait and see what the result will be when the improvements are subjected to an actual test"). *Gilbert Wheeler, Inc. v. Enbridge Pipelines (E. Texas), L.P.*, 449 S.W.3d 474 (Tex. 2014), is a more recent case that also discusses when the limitations period begins to run.
- 13 TCEQ, Amendments to the Concrete Batch Plants Air Quality Standard Permit (2012).
- 14 The 2017 data were produced as a spreadsheet by TCEQ in response to a Public Information Act Request. The data are doubtless generally accurate. However, interpretation of the spreadsheet entries required that some judgments be made regarding the permit applicable to any individual facility.
- 15 Tex. Health & Safety Code § 382.0518(b).
- 16 30 Tex. Admin. Code § 116.111.

17 Prior to 2012, there were concrete batch plants that could be authorized by rule, but new
or modified plants may no longer receive authorizations under the permit-by-rule regi-
men.

18 Tex. Health & Safety Code § 382.05195(i)(2)(a).

19 Tex. Health & Safety Code § 382.05195(a). This section references § 382.0518(a) for the
BACT requirement. BACT is not defined in state Statute, but it is defined in federal stat-
ute. The federal statutory definition, 42 U.S.C. § 7479(3), is that BACT is an emission lim-
itation, e.g., “X ppm,” achievable by various methods and control technologies. TCEQ,
until 2010, defined the term in regulation at 30 TAC § 116.10(3) in a circular fashion, as
“BACT with consideration given to the technical practicability and economic reasonable-
ness of reducing or eliminating emission from the facility.” In 2010, the regulation was
changed to be “an air pollution control method” that is technically practical and eco-
nomically reasonable. 30 TAC § 116.10(1). So, the State definition is of a control method,
such as a scrubber, rather than of a level of emissions achieved by use of a scrubber.

20 “Amendments to the Concrete Batch Plants ...”

21 Att. C, pp. 19-29, is the 2012 and currently-effective concrete batch plant standard permit,
also available at: [https://www.tceq.texas.gov/assets/public/permitting/air/NewSourceRe-
view/Mechanical/cbpsp_only.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/Mechanical/cbpsp_only.pdf)

22 See, 30 Tex. Admin. Code § 116.178.

23 Tex. Health & Safety Code § 382.111.

24 Method 22 is described in more detail in 40 CFR, Pt. 60, Appx. A-7.

25 30 Tex. Admin. Code §§ 101.1(88) and (89)(A)(ii).

26 30 Tex. Admin. Code § 101.201

27 30 Tex. Admin. Code §§ 101.210(b) and (b)(2).

28 Acts 2003, 78th Leg., ch. 361, § 3, codified at Tex. Health & Safety Code §§ 382.05198 and
382.05199. See, [https://www.tceq.texas.gov/assets/public/permitting/air/NewSourceRe-
view/Mechanical/cbp_ec_reqs.pdf](https://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/Mechanical/cbp_ec_reqs.pdf).

29 The site-based limitation is one added by the agency. The legislature’s statute included
only a 300 yd³ per hour per plant limitation.

30 Amendments to the Concrete Batch Plants Air Quality Standard Permit, TCEQ (2012), p.
12.

31 TCEQ RG-056 (July 2003), p. 2. This is Attachment 2 to this guide.

32 TCEQ RG-056 (2000), p. 21.

33 30 Tex. Admin. Code § 55.152.

34 Acts 1985, 69th Leg., Ch. 637, § 26. This was derived from SB 725. It amended § 3.27 of
art. 4477-5, which was at the time the Texas Clean Air Act.

35 Acts 1985, 69th Leg., Ch. 637, § 26.

36 Acts 1999, 76th Leg., Ch. 406, § 7. This was derived from SB 766. The limitation is today at
Tex. Health & Safety Code § 382.058(c).

37 TCEQ Regulatory Guidance RG-056, December 2000, p. 1 of 49. (In an apparent typo-
graphical error, the page is marked as 1 of 58, but subsequent pages are marked, 2, 3, 4,
etc. of 49.)

38 Acts 1999, 76th Leg., Ch. 406, § 5, codified at Tex. Health & Safety Code § 382.05195.

39 Acts 1999, 76th Leg., Ch. 391, § 1, codified at Tex. Health & Safety Code § 382.058(d).

40 TCEQ, Air Quality Standard Permit for Concrete Batch Plants, RG-056, p. 1 of 49.