NEBRASKA
Good Life. Great Resources.
DEPT. OF WATER, ENERGY, AND ENVIRONMENT

Jim Pillen, Governor

AIR QUALITY GENERAL CONSTRUCTION PERMIT

PERMIT NUMBER: GCP-CBPCL-2 Permit Name: Concrete Batch Plant (Controlled Loadout)

Project Description: Concrete batch plant limited to producing a maximum of 900,000 cubic yards per year.

Typical Standard Industrial Classification (SIC) Code: 3273, Ready-Mixed Concrete

Pursuant to Chapter 10 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of the proposed construction of air contaminant sources meeting the specific criteria of this general construction permit and the thirty (30) day period allowed for comments has elapsed. This general construction permit approves the construction of specific types of Truck and Central Mix Concrete Plants. This permit document and the associated application make up the complete permit for the specific source identified in the application.

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard. The permit holder, owner, and operator of the facility shall assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

The undersigned issues this permit on behalf of the Director under the authority of Nebraska Administrative Code Title 129 – Nebraska Air Quality Regulations as amended September 28, 2022.

November 3, 2025

Date

Reuel S. Anderson, Administrator
Permitting & Engineering Division

TABLE OF CONTENTS

ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources
BACT	Best Available Control Technology
bhp	Brake Horsepower
BMP	Best Management Practice
Btu	British Thermal Unit
bu	Bushel
CAA	Clean Air Act
CE	Control Equipment
CEM	Continuous Emissions Monitor
CEMS	Continuous Emissions Monitoring System
cf	Cubic feet
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	CO_2 equivalent
CP	Construction Permit
DGS	Distiller's Grains with Solubles
DDGS	Dry Distillers Grains with Solubles
dscf	Dry Standard Cubic Feet
dscfm	Dry Standard Cubic Feet per Minute
EMIS	Emergency Management Information System
EPA	Environmental Protection Agency
EQC	Environmental Quality Council
EP	Emission Point
ESP	Electrostatic Precipitator
EU	Emission Unit
FID	Facility Identification Number
FDCP	Fugitive Dust Control Plan
FGR	Flue Gas Recirculation
FIP	Federal Implementation Plan
FR	Federal Register
ft	Feet
FTIR	Fourier Transform Infrared
GHGs	Greenhouse Gases
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
hp	Horsepower
hr	Hour
lb	Pound
LDAR	Leak Detection and Repair
LNB	Low-NO_x Burner
MACT	Maximum Achievable Control Technology
Mgal	One Thousand gallons
MMBtu	One Million British Thermal Units
MMscf	One Million Standard Cubic Feet
MSDS	Material Safety Data Sheet
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NDWEE	Nebraska Department of Water, Energy, and Environment
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
PAL	Plant-wide Applicability Limit
Pb	Lead (chemical abbreviation)
PbR	Permit-by-Rule
PEMS	Parametric Emissions Monitoring System
PM	Particulate Matter
PM_{10}	Particulate Matter with and aerodynamic diameter equal to or less than 10 microns
$PM_{2.5}$	Particulate Matter with and aerodynamic diameter equal to or less than 2.5 microns
ppb	Parts per Billion
ppm	Parts per Million
ppmv	Parts per Million by volume
ppmvd	Parts per Million by volume, dry basis
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RVP	Reid Vapor Pressure
RATA	Relative Accuracy Test Audit
RMP	Risk Management Plan
RTO	Regenerative Thermal Oxidizer
scf	Standard Cubic Feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
TDS	Total Dissolved Solids
TO	Thermal Oxidizer
TO/HRSG	Thermal Oxidizer with Heat Recovery Steam Generator
tpy	Tons per year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate Matter
ULNB	Ultra Low-NO_x Burner
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VHAP	Volatile Hazardous Air Pollutant
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WDGS	Wet Distiller's Grains with Solubles

I. STANDARD CONDITIONS

The following Standard Conditions apply to this permit unless otherwise provided for in the Specific Conditions of this permit.

(A) Regulatory authority:

(1) Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those not currently delegated to Nebraska or not yet included in Title 129; and

(2) Title 129 as approved by EPA under 40 CFR Part 52, Subpart CC or 40 CFR Part 70, Appendix A as of the date of issuance of this permit (federally enforceable requirements); and Title 129 as amended September 28, 2022 (state only enforceable requirements).

(B) The source shall allow the NDWEE, USEPA or an authorized representative, upon presentation of credentials (Neb. Rev. Statute §81-1504; Title 129, Chapter 6, Section 003.11) to:

(1) Enter upon the source's premises during reasonable hours where a source subject to this permit is located, emissions-related activity is conducted, or where records must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(2) Have access to and copy, during reasonable hours, any records that must be kept under the conditions of this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(3) Inspect during reasonable hours any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit, for the purpose of ensuring compliance with this permit or applicable requirements;

(4) Sample or monitor, during reasonable hours, substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.

(C) All requested permit amendments and revisions must adhere to the requirements of Title 129, Chapter 9.

(D) The following methods may be used to determine compliance with the terms and conditions in this permit (Title 129, Chapter 15, Section 005.08):

(1) Any compliance test method specified in the State Implementation Plan;

(2) Any test or monitoring method approved for the source in a permit issued pursuant to Title 129, Chapters 3, 4, or 13, Section 004;

(3) Any test or monitoring method provided for in Title 129; or

(4) Any other test, monitoring, or information-gathering method that produces information comparable to that produced by any method described in Condition I.(D)(1) through (3).

(E) Application for review of plans or advice furnished by the Director will not relieve the source of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations (Title 129, Chapter 1, Section 001.06).

(F) If and when the Director declares an air pollution episode as defined in Title 129, Chapter 2, Section 006.01, the source shall immediately take all required actions listed in Title 129, Appendix II, Paragraph 1.1, 1.2, and 1.3, respectively, until the Director declares the air pollution episode terminated (Title 129, Chapter 2, Section 006.03).

(G) Recordkeeping: To ensure compliance with this permit, records shall be maintained as outlined below. Records include: electronic and/or paper copies of all application materials, notifications, reports, test protocols, test results, and plans; and, electronic and/or original paper copies of all required monitoring results, measurements, inspections, and observations (Title 129, Chapter 15, Section 005.06; Neb. Rev. Stat. §81-1504):

(1) All records required by this permit shall be kept for a minimum of five (5) years and shall be clear and readily accessible to NDWEE representatives during an inspection, unless otherwise specified in this permit.

(2) Monthly calculations and records required throughout this permit shall be compiled no later than the fifteenth (15^{th}) day of each calendar month and shall include all records and calculations generated through the previous calendar month, unless otherwise specified in this permit.

(3) The source shall keep the following records for each malfunction, start-up and shutdown where emissions were, or may have been, in excess of an emission limitation or standard (Title 129, Chapter 11, Sections 002 and 005; Chapter 15, Sections 006.02, 006.04 and 006.05):

(a) The identity of the equipment.

(b) Reason for, or cause of, the malfunction, shutdown, or start-up.

(c) Duration of period of excess emissions.

(d) Date and time of the malfunction, shutdown, or start-up.

(e) Physical and chemical composition of pollutants whose emissions are affected by the action.

(f) Methods, operating data, and/or calculations used to determine these emissions.

(g) Quantification of emissions in the units of the applicable emission control regulation.

(h) All measures utilized to minimize the extent and duration of excess emissions during the malfunction, shutdown, and start-up.

(4) The source shall keep records of maintenance performed on components of permitted emission units that would affect or potentially affect the emission rate of that unit and on control and monitoring equipment associated with the permitted emission unit (Title 129, Chapter 15, Sections 005.06, 006.06B, and 006.06E).

(5) All records of opacity readings, instrument readings, visual equipment inspections, log book/sheet entries, and any other record of equipment performance shall identify the individual who entered the record, except for continuously generated electronic records.

(6) Operation and maintenance manuals, or equivalent documentation, detailing proper operation and maintenance of all permitted emission units, required control equipment and required monitoring equipment shall be kept for the life of the equipment

(H) All permitted emission units, associated emissions conveyances, required control equipment, and required monitoring equipment shall be properly installed, operated, and maintained (Title 129, Chapter 6, Sections 003.01 and 003.13; Chapter 15, Section 005.06; Neb. Rev. Stat. §81-1504 and §81-1506).

(1) All emissions from emission units using required controls shall be captured and routed through associated emission conveyances to the required control equipment, except for uncaptured emissions described in the permit application and any additional information submitted prior to permit issuance.

(2) All equipment must be maintained to minimize the amount of uncontrolled pollutants that are-released to the atmosphere. Proper equipment maintenance activities may include repair or replacement, and include, but are not limited to activities in response to the following:

(a) cracks, holes or gaps,

(b) broken, cracked, or otherwise damaged seals or gaskets, and

(c) broken, missing or open hatches, access covers, caps, or other closure devices.

(I) When the source makes physical or operational changes to an emissions unit or associated control equipment that may cause an increase in emissions that makes the original testing not representative of current operating conditions or emissions, the source shall submit a notification of the change. Such notification shall be received by NDWEE within fifteen (15) days after such change. The NDWEE may require performance testing based on review of the specific changes identified in the notification and the resulting potential impact on emissions from the unit(s) and/or performance of the control equipment (Title 129, Chapter 15, Section 005.01).

(1) This notification requirement applies to emissions units and/or control equipment that meet the following requirements, except as provided in Condition I.(I)(5):

(a) Emissions from the emissions unit and/or control equipment is subject to an emissions limit;

(b) A valid performance test has been conducted for the pollutant to which the emissions limit applies;

(c) Changes that may cause emissions to increase or invalidate prior testing include, but are not limited to, increasing the capacity of an emissions unit, changing the operational parameters of any control equipment outside of the range allowed for under this permit that makes the control equipment less efficient, changing the type of scrubber packing, or increasing the inlet pollutant loading of any control equipment.

(2) For emission units that have had a performance test conducted after January 1, 2012, the source shall make a one-time notification to the NDWEE within fifteen (15) days of when there is a 10% increase in daily production/throughput rate, over the tested rate recorded during the most recent valid performance test unless otherwise specified in this permit. If there are subsequent 10% increases over the rate most recently notified to the NDWEE, the source shall make a one-time notification to the NDWEE of each such subsequent increase. This will not apply to emissions that already have emission rates that are normalized to production and/or throughput rates.

(3) The notification shall include the date of the changes, a description of the changes made, and an evaluation of the expected impact on emissions from the emissions units and/or control equipment.

(4) The following definitions apply for purposes of Condition I.(I)(2) above:

(a) "rate" shall mean the production or throughput of an emissions unit in the same units of production or throughput as the "tested rate" as defined below; and,

(b) "tested rate" shall mean the production or throughput rate of an emissions unit as recorded in the most recent valid performance test and reported to the NDWEE in the source's written copy of the test results, or test report, documenting the maximum capacity of the unit(s). The tested rate shall be extrapolated to daily. Examples include, but are not limited to, tons per hour to tons per day or gallons per hour to gallons per day.

(5) The above notification requirements do not apply when compliance with the emission limitation is demonstrated through the use of a CEMS, PEMS or COMS.

(J) No person shall cause or allow emissions, from any source, which are of an opacity equal to or greater than twenty percent (20%), as evaluated by an EPA approved method, or recorded by a continuous opacity monitoring system operated and maintained pursuant to 40 CFR Part 60 Appendix B except as provided for in Chapter 15, Sections 001.05 or 001.06 (Title 129, Chapter 15, Section 001.04).

(K) Open fires are prohibited except as allowed by Title 129, Chapter 15, Section 002.

(L) Particulate Matter – General Requirements (Title 129, Chapter 15, Section 003):

(1) The source shall not cause or permit the handling, transporting or storage of any material in a manner which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.

(2) The source shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but are not limited to, paving or frequent cleaning of roads, driveways and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover.

(M) Testing:

(1) Performance testing if required by this permit or required by the NDWEE shall be completed as follows:

(a) The source shall provide the NDWEE a written notice at least thirty (30) days prior to testing to afford the NDWEE an opportunity to have an observer present. The NDWEE may, in writing, approve a notice of less than 30 days. If the testing is pursuant to an underlying requirement contained in a federal rule, the notice provisions of the underlying requirement apply (Title 129, Chapter 15, Section 005.03).

(b) The notification required by Condition I.(M)(1)(a) shall include the following (Title 129, Chapter 15, Section 005.03):

(i) Facility Name, Address and FID number.

(ii) Company Name, Address and Contact Person's name.

(iii) Test schedule including date and estimated start time of testing.

(iv) List all applicable regulatory requirements that testing is being conducted for (permit condition, MACT, NSPS, etc.).

(v) Types of pollutants to be sampled including applicable emission limits and demonstration requirements.

(vi) Test methods and documentation of any proposed variations from the specified procedures and reason for variance.

(c) Testing shall be conducted according to the methodologies found in Title 129, Chapter 15, Section 005.02, or other NDWEE approved methodologies (Title 129, Chapter 15, Section 005.02).

(d) Performance tests shall be performed under those representative (normal) conditions that: represent the range of combined process and control measure conditions under which the facility expects to operate (regardless of the frequency of the conditions); and are likely to most challenge the emissions control measures of the facility with regard to meeting the applicable emission standards, but without creating an unsafe condition. (Title 129, Chapter 15, Section 005).

(e) Performance tests shall be conducted for a minimum of three (3) one-hour runs unless another run-time is specified by the applicable Subpart or as deemed appropriate by the NDWEE.

(f) The source shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit.

(g) A certified written copy of the test results, signed by the person conducting the test, shall be provided to the NDWEE within sixty (60) days of completion of the test, unless a different time period is specified in the underlying requirements of an applicable federal rule, and will, at a minimum, contain the following items (Title 129, Chapter 15, Section 005.02G):

(i) A description of:

1. The operating parameters for the emissions unit during testing. Examples include, but are not limited to, production rates, process throughputs, firing rates of combustion equipment, or fuel usage; and,

2. The operating parameters for the control equipment during testing. Examples include, but are not limited to, baghouse fan speeds, scrubber liquid flow rates, or pressure drop across the control device.

(ii) Copies of all data sheets from the test run(s).

(iii) A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation.

(iv) A final conclusion section describing the outcome of the testing.

II. GENERAL CONSTRUCTION PERMIT CONDITIONS

The following General Conditions apply to this permit unless otherwise provided for in the Specific Conditions of this permit.

(A) The source shall provide the following notifications to the NDWEE:

(1) The date construction, reconstruction, or modification commenced as defined in Chapter 1. Notification shall be received by NDWEE no later than thirty (30) days after such date and include a summary description of the event associated with the commencement of construction. The source may use either of the following to determine that construction commenced (Title 129, Chapter 3, Section 003.02):

(a) Initiating physical on-site construction activities of a permanent nature that meet the definition of "begin actual construction" or

(b) Entering into binding agreements or contractual obligations. If this option is used, the notice shall also include a brief summary of each binding agreement or contractual obligation entered into, the date of the agreement or contract, and why the agreement or contract cannot be cancelled or modified without substantial loss to the source.

(2) Notification of the date on which the source or modification first becomes operational, shall be received by the NDWEE within fifteen (15) days after such date (Title 129, Chapter 6, Section 002.01A).

(3) Any emissions due to malfunctions, unplanned shutdowns, and ensuing start-ups that are, or may be, in excess of applicable emission limits shall be reported to the NDWEE in accordance with Title 129, Chapter 15, Section 006.05.

(B) Approval to construct, reconstruct, and/or modify the source will become invalid if a continuous program of construction is not commenced within 18 months after the date of issuance of the construction permit except upon a showing by the source that the complexity of the construction, reconstruction and/or modification requires additional time, or if construction, reconstruction or modification is discontinued for a period of 18 months or more, or if construction, reconstruction and/or modification is not completed within a reasonable period of time (Title 129, Chapter 3, Section 003.02).

(C) This permit is not transferable to another location, unless otherwise specified in this permit (Title 129, Chapter 3).

(D) Holding of this permit does not relieve the source from the responsibility to comply with all applicable portions of the Nebraska Air Quality Regulations and any other requirements under local, State, or Federal law. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act, and is grounds for enforcement action or permit revocation (Title 129, Chapter 3, Section 001).

(E) Any source who failed to submit any relevant facts or who submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. If the permittee wishes to make changes at the source that will result in change(s) to values, specifications, and/or locations of emission points that were indicated in the permit application (or other supplemental information provided by the permittee and reviewed by the NDWEE in issuance of this permit), the source must notify the NDWEE before the change(s) can be made. In addition, the source must notify the NDWEE if any modification which may result in an adverse change to the air quality impacts predicted by atmospheric dispersion modeling (such

as changes in stack parameters or increases in emission rates, potential emissions, or actual emissions). The permittee shall provide all necessary information to verify that there are no substantive changes affecting the basis upon which this permit was issued. Information may include, but not be limited to, additional engineering, modeling, and ambient air quality studies (Title 129, Chapter 3, Sections 002.02B, 002.03B, and 002.03C).

(F) When requested by the NDWEE, the permittee shall submit completed emission inventory forms for the preceding year to the NDWEE by March 31 of each year (Title 129, Chapter 11).

(G) If required, performance tests shall be conducted in accordance with Standard Condition I.(M) within sixty (60) days after first reaching the maximum capacity, but not more than 180 days after the start-up of operations of each unit, unless otherwise specified by the NDWEE (Title 129, Chapter 15, Section 005.07).

(H) If applicable, the following conditions apply to the verification of NAAQS modeling analysis (Title 129, Chapter 2):

(1) The stack dimensions of the emission points identified in the air dispersion modeling analysis shall be constructed such that the reliability of the air dispersion modeling analysis associated with the permit application is maintained. A site survey or similar documentation containing the as-built stack dimensions, shall be maintained on-site and kept for the life of the source. If the as-built stack dimensions do not meet the criteria used in air dispersion modeling analysis, the permittee shall notify the NDWEE prior to start-up of any emission unit associated with a stack not meeting the above criteria and, if requested by NDWEE, submit a revised air dispersion modeling analysis to NDWEE to ensure that the source will not interfere with the attainment or maintenance of the ambient air quality standards in Title 129 Chapter 2.

(2) The source shall sufficiently restrict public access to the source at the ambient air boundary relied upon in the air dispersion modeling analysis for the NAAQS compliance demonstration. A site survey, or similar documentation containing the locations of the boundary vertices, shall be maintained on-site and kept for the life of the source. If the boundary dimensions do not comply with the boundary information in the air dispersion model (plus or minus 25 meters), the permittee shall notify the NDWEE prior to start-up of any emission unit and, if requested, submit a revised air dispersion modeling analysis to the NDWEE to ensure that the source will not interfere with the attainment or maintenance of the ambient air quality standards in Title 129 Chapter 2.

III.(A) Specific Conditions for Concrete Production

(1) Permitted Emission Points: The source is permitted to construct the emission units identified in the following table at the capacity and using only the fuel types listed. Emission units shall be controlled by the required control equipment as indicated:

Emission Unit ID# and Description	Required Control Equipment	Combustion Capacity	Fuel Type
EU-1: Truck Dump onto Aggregate Storage Pile	-	-	-
EU-2: Truck Dump onto Sand Storage Pile	-	-	-
EU-3: Aggregate Transfer to Plant	-	-	-
EU-4: Sand Transfer to Plant	-	-	-
EU-5: Aggregate Transfer Conveyor(s)	-	-	-
EU-6: Sand Transfer Conveyor(s)	-	-	-
EU-7: Cement Storage Silo Loading	Dust Collection System	-	-
EU-8: Cement Supplement Storage Silo Loading	Dust Collection System	-	-
EU-9: Weigh Hopper Loading	-	-	-
EU-10: Concrete Truck Loading	Dust Collection System	-	-
EU-11: External Combustion Sources (Boiler[s],Water Heater[s], Heater[s], etc.)	-	≤ 10 MMBtu/hr Combined	Natural Gas, LPG, and/or Diesel
FS-1a: Aggregate Storage Pile(s)	-	-	-
FS-1b Sand Storage Pile(s)	-	-	-

(2) Emission Limitations and Testing Requirements:

(a) The emissions limitations of Chapter 15, Sections 001.01 and 001.04 apply to the emission points associated with EU-1 through EU-10

(b) The emissions limitations of Chapter 15, Sections 001.02 and 001.04 apply to the emission points associated with EU-11.

(c) The emissions limitations of Chapter 15, Section 003.01 apply to the emission points associated with FS-1a and FS-1b.

(3) Operational and Monitoring Requirements and Limitations:

(a) Cement and cement supplement used for concrete production may not exceed 360,000 tons per any period of twelve (12) consecutive calendar months. At no time during the first eleven (11) months following coverage by this permit shall cement and cement supplement used for concrete production exceed 360,000 tons . (Chapters 3 and 15)

(b) Concrete production capacity shall not exceed 2,500 cubic yards per hour, based upon nameplate or design values. (Chapter 15)

(c) Concrete production shall not exceed 900,000 cubic yards of concrete per any period of twelve (12) consecutive calendar months. At no time during the first eleven (11) months following coverage by this permit shall concrete production exceed 900,000 cubic yards. (Chapter 3)

(d) Cement and cement supplements shall be stored in enclosed silos which are only loaded using pneumatic transport. (Chapter 3)

(e) Pneumatic loading of cement and cement supplement storage silos must be controlled by a dust collection system, such as a baghouse or fabric filter, which is appropriate for the specific plant design. (Chapter 3)

(f) External combustion equipment shall be limited to: (Chapter 3)

(i) Combusting only natural gas, LPG, or diesel.

(ii) Having a maximum combined heat input capacity of 10 MMBtu/hr.

(g) Loading of dry materials into concrete trucks must be controlled by a dust collection system, such as a baghouse or fabric filter, which is appropriate for the specific plant design. (Chapters 3 and 15)

(h) Operation and maintenance of dust collection systems associated with pneumatic transport and concrete truck loading shall be in accordance with the following requirements: (Chapter 3)

(i) The dust collection system shall be operated and be controlling emissions at all times when the associated emission units are in operation.

(ii) The dust collection system(s) shall be equipped with an operational pressure differential indicator readings shall be recorded at least once each day that the associated dust control system is operating.

(iii) Filters, filter bags, or cartridge filters are to be inspected and/or replaced as often as necessary to ensure proper operation or more frequently as indicated by pressure differential indicator readings or other indication of failure.

(iv) The owner or operator shall maintain an on-site inventory of spare bags of each type used to ensure rapid replacement in the event of bag failure

(i) Observations of the emission units identified in Condition III.(A)(1) shall be conducted at least once each day during operation to determine whether there are visible emissions, leaks, or other indications that may necessitate corrective action. If corrective action is required, it shall occur immediately. (Chapter 15)

(i) The results of the observations and any corrective actions shall be recorded in a log.

(4) Applicable NSPS, NESHAP, and MACT Requirements:

The NDWEE has not identified any NSPS, NESHAP, or MACT requirements that will always apply to the emission units listed in Condition III.(A)(1) or any associated emission points. There may be applicable requirements based upon specific facilities or design of emission units.

(5) Reporting and Recordkeeping Requirements:

(a) Records documenting total cement and cement supplement used for each calendar month and each period of twelve (12) consecutive calendar months.

(b) Records documenting the maximum concrete production capacity of the plant.

(c) Records documenting total concrete produced for each calendar month and each period of twelve (12) consecutive calendar months.

(d) Records documenting the types of fuel combusted in the external combustion sources (EU-11).

(e) Records documenting the maximum combustion capacity of the external combustion sources (EU-11).

(f) Records documenting the date, time, and pressure differential reading for each day a dust collection system associated with pneumatic loading of silos is in operation.

(g) Records of filter, filter bag, or filter cartridge replacement including the date the replacement occurred and the type of filter, filter bag, or filter cartridge installed for all dust collection systems associated with pneumatic loading of cement and cement supplement silos.

(h) Records documenting the date, time, observations, and corrective actions taken for each day the plant is in operation.

III.(B) Specific Conditions for Haul Roads

(1) Permitted Emission Points:

All haul roads shall comply with the following conditions. (Chapter 15)

(2) Emission Limitations and Testing Requirements:

Haul roads are subject to the requirements of Title 129, Chapter 15, Section 003.02.

(3) Operational and Monitoring Requirements and Limitations:

(a) The owner or operator shall utilize best management practices (BMP) on haul roads. The effectiveness of the BMP to minimize emissions from haul roads will be demonstrated by compliance with Condition I.(I). (Chapters 3 and 15)

(b) A survey of the plant property and haul roads shall be conducted for each day of operation to determine if visible fugitive emissions are being generated and leaving plant property. Implementation of BMP shall be taken upon observation of visible fugitive emissions leaving plant property. (Chapter 15)

(4) Applicable NSPS, NESHAP, and MACT Requirements:

The NDWEE has not identified any NSPS, NESHAP, or MACT requirements that apply to the haul roads.

(5) Reporting and Recordkeeping Requirements:

(a) Records shall be kept documenting the use of BMP on haul roads.

(b) Records documenting the date and time of fugitive dust surveys, whether visible emissions crossed site boundaries, and any corrective action taken if visible emissions are observed in areas to which the public has access.

IV. Specific Conditions for Relocation

(A) The owner or operator shall notify the Director at least 20 days in advance of any proposed change in source location. The following information shall be provided for the proposed new location: (Chapter 6 Section 004)

(1) A specific description of the source, including Standard Industrial Classification (SIC),

(2) A legal description, accurate to the nearest quarter section,

(3) Present or previous use,

(4) Distance to the nearest occupied building,

(5) General description of the site location and adjacent land use,

(6) The anticipated dates of operation of the source at the proposed new location,

(7) Contact information for the responsible on site source operator including: name, mailing address, and telephone number,

(8) The source FID number assigned by the Department, and

(9) The relocation notification shall be signed by a responsible source official or source owner certifying its content.

(B) Relocation within any of the following jurisdictions will require additional notifications:

(1) Lancaster County (Neb. Rev. Statute §81-1504(23))

(a) If the proposed new location is within Lancaster County, the source shall also notify the Air Quality Section of the Lincoln-Lancaster County Health Department (LLCHD) at least 20 days in advance of the proposed location change An additional permit may also be required from LLCHD if the source intends to locate within this jurisdiction.

(2) City of Omaha (Neb. Rev. Statute §81-1504(23))

(a) If the proposed new location is within 3 miles of the Omaha Corporate City limits, the source shall also notify the Air Quality Section at Omaha Air Quality Control (OAQC) at least 20 days in advance of the proposed location change. An additional permit may also be required from OAQC if the source intends to locate within this jurisdiction.

(3) Tribal Lands

(a) If the proposed new location is on Tribal Lands, the source shall also notify and receive approval from the United States Environmental Protection Agency Region VII office and/or the Tribe, as appropriate, at least 20 days advance of the proposed location change. An additional permit may also be required if the source wants to locate within these jurisdictions.

(4) Cass County (Chapter 2)

(a) If the proposed new location is within Cass County, Nebraska, rock processing operations at the source are subject to Chapter 2 requirements requiring 85% reduction in potential emissions from conveying, transfer operation, and railcar and truck loading. Demonstration of the 85% reduction in potential emissions must be submitted with the change in source location notification. An air quality

impact analysis, including dispersion modeling, may also be required to ensure compliance with Title 129, Chapter 2 prior to locating in Cass County.

(C) The Director may disapprove a new proposed location for a temporary source if operation in the new location would cause or contribute to a violation of state or local standards or otherwise adversely affect human health or the environment. (Chapter 6 Section 004)

Fact Sheet for General Permit Number: GCP-CBPCL-2
Date: November 3, 2025

Typical Standard Industrial Classification Code: 3273, Ready-Mixed Concrete

Typical North American Industry Classification Code: 327320 – Ready-Mix Concrete Manufacturing

DESCRIPTION OF GENERAL CONSTRUCTION PERMIT:

The Nebraska Department of Water, Energy, and Environment (NDWEE) has determined there are numerous similar sources in Nebraska that are subject to the same Federal and State regulatory requirements. Chapter 7 of Nebraska Administrative Code Title 129 - Air Quality Regulations allows the NDWEE to issue a general construction permit (GCP) for these sources. This GCP follows the applicable procedures of Chapters 3, 7, and 10 of Nebraska Administrative Code Title 129 - Air Quality Regulations. The owner of a source that qualifies for this GCP must apply to the NDWEE for coverage under the applicable terms of the GCP. Each application must include all information necessary to determine qualification for, and to ensure compliance with, the GCP.

The NDWEE will notify the applicant of the determination of coverage under this GCP for the source identified in the application. If the Director of the NDWEE denies coverage of the source under the GCP, the applicant may request an adjudicative hearing in accordance with the procedures established in Title 115 - Rules of Practice and Procedure. The NDWEE may issue coverage under a GCP to an individual source without repeating the notice and comment procedures required in Chapter 10 of Title 129. The NDWEE shall maintain a list of all sources covered by general permits, which shall be available for public review.

DESCRIPTION OF THE SOURCE GROUP:

The plants covered under this GCP produce concrete using a truck-mix or central-mix process by combining portland cement, inert materials such as sand and/or aggregate, water, and usually a cementitious supplement such as pozzolans or fly ash to create wet concrete. These plants may be portable or stationary. This GCP is only applicable to plants with a maximum production capacity of less than 2,500 cubic yards of wet concrete per hour. In addition to the storage pile(s), conveyors, hoppers, bins, and silos necessary for production, each plant may have up to 10 million British thermal units per hour (MMBtu/hr) of external combustion firing natural gas, liquefied petroleum gas, or diesel. Under this GCP, each plant is limited to producing a maximum of 900,000 cubic yards of wet concrete per 12-month period.

This GCP does not permit the installation of a stationary engine. However, any engine which is portable and will not remain at the same location for more than 12 consecutive months is considered a nonroad engine and therefore is not subject to stationary source permitting.

TYPE AND QUANTITY OF AIR CONTAMINANT EMISSIONS ANTICIPATED:

Concrete batch plants covered by this GCP have the potential to emit (PTE) particulate matter (PM), PM with an aerodynamic diameter of less than or equal to 10 microns (PM_{10}), PM with an aerodynamic diameter of less than or equal to 2.5 microns ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen oxides (NO_x,), carbon monoxide (CO), volatile organic compounds (VOC), hazardous air pollutants (HAPs), and greenhouse gases (GHG).

The primary emissions from these facilities will be generated by the storage and transport of the dry components of concrete used to make the final wet mixture. Detailed emissions calculations are included in the fact sheet attachment and a discussion of each general category of emissions follows below.

Raw Material Receiving and Storage:

Facilities usually receive sand, aggregate, cement, and supplement (if used) via truck. In certain cases these materials might exist or be produced on site, but facilities may not add crushing, mining, or other stationary sources of emissions which are not described by this GCP as part of the same project.

Sand and/or aggregate are generally stored in separate piles and moved to the plant via front end loader as needed. Storage pile wind erosion is a source of fugitive emissions, but the addition and removal of material from storage piles is not.

Cement and supplements must be stored in enclosed silos which are pneumatically loaded. Bucket elevators may not be used for loading. Based upon the July 10, 2002, letter from William T. Harnett, Director of Information Transfer and Program Integration Division at EPA to Edward R. Herbert III, the NDWEE considers a dust collection system (such as a filter or baghouse) to be inherent to the process of pneumatically loading these silos. These systems prevent the loss of the lightweight cementitious materials during loading; however, the specific design of these systems will vary. A plant might have a single baghouse which controls both silos, a single baghouse which controls silos and many additional emission units, a simple filter on each silo, or any number of other plant-specific designs.

Although the use dust collection systems is inherent to pneumatic loading, the NDWEE is including permit conditions to require their use for silo loading in this general permit. This ensures that the design and potential emissions of all facilities granted coverage under this general permit will match the PTE calculated for this general permit, and facilities will not exceed any relevant limit or threshold.

Facilities may also choose to use controls such as covers or watering to reduce emissions from sand and aggregate storage, but no control credit is included in PTE. PTE for raw material receiving and storage includes PM, PM_{10}, $PM_{2.5}$, and trace amounts of HAPs.

Concrete Production:

Batch plants are designed to meter specific proportions of the raw materials together to form the final mix, typically dropping dry materials into batchers or weigh hoppers before loading into a truck for mixing and distribution, a central-mix batch plant will load into a stationary mixer for mixing prior to loading into a truck for distribution. Sand and/or aggregate are generally loaded into individual hoppers by front end loader, then dropped onto conveyors as needed for transport to batchers or weigh hoppers. Cement and supplement are transported via screw conveyor, gravity feed, or some other method to batchers or weigh hoppers. Finally, these dry materials and water are loaded into trucks or mixers for final mixing. Under this GCP, the final loading of the dry materials into concrete trucks or mixers must be controlled by a dust collection system such as a filter or baghouse. The exact design of plants covered by this permit will vary, but the overall process is similar.

Facilities covered by this GCP are limited to using 360,000 tons of cementitious materials (cement and cement supplement) per 12-month period. This is equivalent producing the full 12-month limit of 900,000 cubic yards with 20% cementitious materials, by wet weight. Standard concrete mixtures typically use 10 to 15%, but rare specialized applications sometimes use high strength, high cement concrete.

Specific plants may also use dust collection systems to control portions of the batching process such as conveyors. These additional controls are not required under this GCP, but their use will reduce actual plant emissions. For PTE, it is assumed that the dust collection systems will only be used final loadout and pneumatic transport of cementitious materials. Concrete production will produce PM, PM_{10}, $PM_{2.5}$, and trace amounts of HAPs.

External Combustion:

Some batch plants covered by this GCP may use external combustion of natural gas, liquefied petroleum gas (propane, butane, or mixtures), or diesel (equivalent to #2 fuel oil) for heating purposes. Plants that operate throughout the year commonly use water heaters or boilers to ensure that concrete remains workable in cold weather. Additionally, plants my use external combustion for worker comfort or other reasons, provided that all installed equipment uses the fuels named above, does not have a combined combustion capacity exceeding 10 million British thermal units per hour (MMBtu/hr), does not create any air pollutants except combustion emissions, and is not specifically prohibited by any applicable state or federal regulation.

Applicable state regulations include, but are not limited to, open fires not being allowed in Nebraska, except under the provisions of Title 129, Chapter 15. Creation of air pollutants which are not combustion emissions, but are produced by combustion, includes heating of any material which may produce secondary emissions, such as tar or asphalt, or operation of an incinerator. These secondary emissions are not included in PTE under this GCP, therefore any combustion equipment which would produce secondary emissions are not authorized by this permitting action.

PTE for external combustion includes PM, PM_{10}, $PM_{2.5}$, SO_2, nitrogen oxides NO_x, carbon monoxide CO, VOC, HAPs, and greenhouse gases GHG. Emissions assume that the full 10 MMBtu/hr of combustion will be diesel-fired, which has the greatest emissions of the three fuel types.

Haul Roads:

Fugitive PTE includes an estimated haul road distance of 500 feet of unpaved road to deliver raw materials and ship concrete. This distance is based upon the typical layout of these plants, which are located on or near public roads to streamline delivery. Haul roads will produce PM, PM_{10}, $PM_{2.5}$

Internal Combustion:

Facilities may not add stationary internal combustion equipment under this GCP. However, many facilities use nonroad generator engines, which are considered portable rather than stationary. These nonroad engines are designed to be moved: they have wheels, skids, are affixed to a trailer or truck bed, or have some other method of easy transportation between locations. However, these engines must be moved at least once per 12 months, or they are considered stationary.

Portable engines are not considered for PTE under the construction permit program, and therefore are not included in calculations or applicability analyses. Construction of a stationary engine is not authorized by this GCP. If a source wants to install a stationary engine they must evaluate its PTE, determine if its PTE should be aggregated with previous projects, compare the corresponding PTE with the thresholds in Title 129, Chapter 3, and if necessary, submit a construction permit application.

Emissions Summary:

The following table lists the potential emissions for any individual plant covered by this GCP:

Regulated Pollutant	Total Emissions Including Fugitives (tons/year)	Non-Fugitive Emissions (tons/year)
Particulate Matter (PM)	152.09	36.24
PM smaller than or equal to 10 microns (PM_{10})	45.53	14.74
PM smaller than or equal to 2.5 microns ($PM_{2.5}$)	10.92	6.39
Sulfur Dioxide (SO_2)	2.29	2.29
Oxides of Nitrogen (NO_x)	6.35	6.35
Carbon Monoxide (CO)	3.61	3.61
Volatile Organic Compounds (VOC)	0.38	0.38
Hazardous Air Pollutants (HAPs)	0.17	0.17
Greenhouse Gases (GHG):		
Mass Basis	5,124.00	5,124.00
CO_2e Basis	5,129.00	5,129.00

APPLICABLE REQUIREMENTS AND VARIANCES OR ALTERNATIVES TO REQUIRED STANDARDS:

Chapter 2 – Ambient Air Quality Standards:
Based upon the limits of this GCP, the PTE for any plant covered under this GCP is below the thresholds for which air dispersion modeling is typically required, as established in the NDWEE modeling guidance document entitled *PSD and Minor Source Modeling* (August 2017). Therefore, air dispersion modeling is not required for issuance of coverage under this GCP.

This GCP is not applicable to any concrete batch plant that will be located with an existing hot mix asphalt plant. Such a facility would be required to include fugitive emissions from wind erosion of storage piles towards the state modeling thresholds, which would exceed the modeling threshold for PM_{10}.

Chapter 3 – Construction Permit Requirements:
The source is required to obtain a construction permit for the concrete batch plant because the potential emissions, prior to general construction permit coverage, exceed the thresholds of Chapter 3, Section 001.03A. The source must submit an application fee in order to apply for coverage under this GCP, in accordance with Chapter 3, Section 002.01 and Chapter 7. The NDWEE does not consider PM a regulated pollutant when determining the fee for a construction permit.

Chapter 6 – Operating Permit Requirements:

For the operating permit program, a major or Class I source is one that emits, or has the potential to emit, greater than 100 tons per year (tpy) of any criteria pollutant, 10 tpy of any individual HAP, 25 tpy of total HAPs, or 5 tpy of lead. A minor or Class II source is any facility with does not exceed the major source thresholds but has actual emissions greater than one half of these thresholds.

Before issuance of coverage under this permit, the potential emissions from facilities may or may not exceed the major source thresholds. Most facilities will not have other significant sources of air pollutants and will therefore be a "No Permit Required – Synthetic Minor" or "No Permit Required – Natural Minor" source for the operating permit program because potential and actual emissions will be below the minor source thresholds after coverage is issued.

However, a facility with other sources of emissions, such as equipment covered by another construction permit, may exceed Class II or Class I thresholds for the operating permit program. Each facility covered by this GCP must determine if they are obligated to apply for an operating permit, or revise an existing operating permit, due to coverage under this general construction permit. Fugitive emissions may or may not need to be included when determining operating permit program applicability depending on if the source is or isn't one of the listed categories in 40 CFR 52.21.

Chapter 12 – New Source Performance Standards (NSPS), and 40 CFR Part 60:

The NDWEE has not identified any NSPS which currently applies to emission units explicitly authorized by this permitting action. Emission units specific to a facility, including those not covered by this GP, may have requirements which have not been identified. These rules are subject to change, and any facility issued coverage under this GCP must evaluate, and continue to evaluate, the standards and requirements to which they are subject.

The NDWEE has identified the following NSPS as potentially applicable to a concrete batch plant:

Subpart A – General Provisions: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.01, applies to those units subject to another NSPS subpart. Unless a facility is subject to another NSPS subpart, it will not be subject to Subpart A.

Subpart F – Standards of Performance for Portland Cement Plants: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.10, applies to those affected facilities at Portland cement plants that commenced construction or modification after August 17, 1971. Production of Portland cement is not included in this permitting action and is not a normal operation at concrete batch plants. Therefore, most facilities covered by this GCP will not be subject to Subpart F.

Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.66, applies to those affected facilities in fixed or portable nonmetallic mineral processing plants that commence construction, modification, or reconstruction after August 31, 1983. Facilities "without crushers or grinding mills above ground" are specifically exempted by this subpart. Crushing operations are not authorized by this permitting action, therefore most facilities covered by this GCP will not be subject to Subpart OOO.

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.80, applies to stationary compression ignition internal combustion engines at facilities that commence construction, modification, or reconstruction after July, 2005 and manufacturers of CI ICE with a model year of 2007 or later, with additional applicability conditions for fire pump engines. Stationary engines are not authorized by this GCP, and nonroad engines are not subject to Subpart IIII. Therefore, most facilities covered by this GCP will not be subject to Subpart IIII.

Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.81, applies to owners and operators of stationary spark ignition internal combustion engines at facilities that commence construction, modification, or reconstruction after June 12, 2006, July 1, 2007, January 1, 2008, or January 1, 2009, depending upon engine specifications and use. Stationary engines are not authorized by this GCP, and nonroad engines are not subject to Subpart IIII. Therefore, most facilities covered by this GCP will not be subject to Subpart JJJJ.

Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.05, covers steam generating units with a design rate between 10 MMBtu/hr and 100 MMBtu/hr, installed after June 9, 1989. This general

permit authorizes a maximum combined heat input of 10 MMBtu/hr for external combustion. Therefore, only facilities which install a single steam generating unit at the maximum combined allowable heat input capacity would potentially be subject to Subpart Dc.

It is the source's obligation to comply with all applicable NSPS subparts and requirements whether or not they are identified in this permitting action or Title 129. Additional and updated information on all NSPS is available on the NDWEE NSPS Notebook, which can be located by visiting the NDWEE website at http://dee.ne.gov, and first selecting the "Air" tab, then the "Air Grants, Planning and Outreach Program" dropdown menu tab, then the "New Source Performance Standards (NSPS) Program" dropdown menu tab, and then select "New Source Performance Standards (NSPS) Program". Or alternately use the "Search NDWEE Web" search box on the upper right of the webpage and enter "New Source Performance Standards".

Chapter 13 – Hazardous Air Pollutant Emission Standards (NESHAPs):

Most sources granted coverage under this GCP will be an area source of HAPs because the facility PTE will be below 10 tpy for any single HAP and 25 tpy for combined HAPs. If a facility has additional sources of air emissions, they could potentially be above these thresholds and be major for HAPs, which may change their NESHAP requirements. The NDWEE has not identified any NESHAP which will always apply to emission units explicitly authorized by this permitting action. NESHAP Subparts A and JJJJJJ will apply to hot water heaters firing diesel fuel at facilities which are area sources, and Subparts A and DDDDD will apply to water heaters located at major sources. Emission units specific to a facility, including those not covered by this GCP, may have requirements which have not been identified. Several potentially applicable NESHAPs are discussed below.

The NDWEE has identified the following NESHAP as potentially applicable to a concrete batch plant:

Subpart A – General Provisions: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.01, applies to all sources subject to a NESHAP standard unless otherwise stated in the rule. Unless a facility is subject to another NESHAP subpart, it will not be subject to Subpart A.

Subpart LLL – National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.46, applies to those affected facilities at portland cement plants. Production of portland cement is not included in this permitting action and is not a normal operation at concrete batch plants. Therefore, most facilities covered by this GCP will not be subject to Subpart LLL.

Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.78, applies to existing, new, or reconstructed stationary reciprocating internal combustion engines (RICE) located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand and existing residential, commercial, and institutional emergency RICE at area sources used for 15 hours or less per year for emergency demand response, provided they are not also used for local reliability. Stationary engines are not authorized by this GCP, and nonroad engines are not subject to Subpart ZZZZ. Therefore, most facilities covered by this GCP will not be subject to Subpart ZZZZ.

Subpart JJJJJJ – National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.101, applies to boilers at area sources of HAPs. Boilers which combust gaseous fuels and only fire solid or liquid fuels during periods of gas curtailment, gas supply interruption, startups, or periodic testing are defined as gas-fired boilers by this subpart and are not subject, provided periodic testing does not exceed a total of 48 hours per calendar year. Boilers or water heaters firing diesel at area sources, except those meeting the definition of gas-fired boilers, will be subject to this subpart.

Subpart DDDDD – National Emissions Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.80, applies to various types of boilers and process heaters at major sources of HAPs. Most facilities covered under this GCP will be area sources of HAPs, and therefore will not be subject to this subpart. Any boiler or water heater at a facility which is a major source will be subject to this subpart.

It is the source's obligation to comply with all applicable NESHAP subparts and requirements whether or not they are identified in this permitting action or Title 129. Additional and updated information on all NESHAP is available on the NDWEE Air Toxics Notebook, which can be located by visiting the NDWEE website at http://dee.ne.gov, and first selecting the "Air" tab, then the "Air Grants, Planning and Outreach Program" dropdown menu tab, then the "Air Toxics Program" dropdown menu tab, and then select "Air Toxics Program – Guide to NESHAPs". Or alternately use the "Search NDWEE Web" search box on the upper right of the webpage and enter "Air Toxics Notebook".

Chapter 15 – Particulate Matter Emissions:

Section 001.01 – Process Weight Rate

Except for fugitive emissions from haul roads and storage pile erosion, all concrete production operations are subject to the requirements of Section 001.01. Facilities will comply with these limits through the proper operation and maintenance of equipment, including dust collection systems. Detailed calculations are included in the fact sheet attachment demonstrating compliance.

Section 001.02 – Particulate Emissions from Combustion Sources

External combustion sources authorized by this permit are subject to Section 001.02. These emission units will comply through the exclusive use of natural gas, liquefied petroleum gas, or diesel, as appropriate, as well as proper operation and maintenance of equipment. Detailed calculations are included in the fact sheet attachment demonstrating compliance.

Section 001.04 – Opacity

No person may cause or allow emissions which are of an opacity equal to or greater than twenty percent (20%) as evaluated by an EPA-approved method, or recorded by a continuous opacity monitoring system operated and maintained pursuant to 40 CFR Part 60 Appendix B. Facilities covered by this GCP will demonstrate compliance with this requirement by properly operating and maintaining equipment.

SPECIFIC PERMIT CONDITIONS DISCUSSION:

Condition III includes conditions that are specific to the emissions units and emission points listed in each respective condition. Permit conditions that require no additional discussion are not included in this section.

Permit conditions specific to the proposed permit are discussed as follows:

II.(A) When a source undertakes a program of construction, reconstruction, or modification they are required to notify the NDWEE when they begin construction/reconstruction/modification and when the source or modification becomes operational. In addition, the NDWEE is requiring that the source submit an equipment list that includes the maximum rated capacity of each unit associated with the facility. These notifications help the NDWEE and source determine when an operating permit application (or revision to an existing operating permit) may be necessary and also whether some emission increases or decreases are within the contemporaneous period. This notification is either for initial operation of the source as a whole (if constructing a new source) or initial operation of the completed project (if modifying an existing source), not individual emission units. Individual emission units subject to specific NSPS or NESHAP standards may have additional notification

requirements specific to those federal standards that are independent of this requirement. Startup of individual emission units (such as a boiler subject to an NSPS) does not necessarily mean the source or project has begun operations. For portable sources this notification is only required for their first commencement of construction following permit issuance. Notifications related to further relocations are handled by the provisions of Condition IV.

II.(B) This condition contains general recordkeeping and reporting requirements that apply to all permitted emission units, control equipment, and monitoring devices. These requirements establish several things including, a completion date when records must be completed, how long records need to be maintained, and identifying specific types of records that must be maintained. Records are required to be maintained to ensure compliance with all applicable requirements, specifically those required in this permit. However, additional recordkeeping requirements may be established in the future to better ensure compliance. Documentation detailing operation and maintenance can be operational and maintenance manuals provided by the manufacturer. If manufacturer manuals are not available, the owner or operator must develop a document containing proper operation and maintenance requirements for each permitted emission unit and piece of required control equipment.

II.(C) This condition requires all permitted emissions units, control equipment, and monitoring equipment to be properly installed, operated, and maintained as required in Specific Condition II.(B)(5). Emission estimates for this permitting action are based on the requirement that all equipment be properly operated and maintained, and comply with the conditions of the permit and regulations.

II.(D) General performance testing requirements. When performance testing is required, it is intended to demonstrate and ensure the source will be in compliance on a continuous basis. As such, testing is generally required to be conducted under conditions producing the highest emissions or loading to a control device. This typically is done at the maximum capacity, which at that level would not create an unsafe condition, and the facility will operate at that level at least some of the time. For a comprehensive evaluation on representative testing conditions, please review the NDWEE guidance on stack testing available on our web site or the national stack testing guidance document found on EPA's web site. All performance tests required throughout this permit are required to be conducted in accordance with these conditions. The owner or operator must provide a testing protocol and written (i.e. hard copy, not electronic or verbal) notice prior to testing to ensure the NDWEE has the opportunity to witness the testing and review the proposed testing plan. Operating parameters are monitored and recorded to document the conditions under which the testing was conducted. The NDWEE may require additional testing if previous testing is not representative of current operations.

II.(E) This condition requires any emissions resulting from equipment failures, malfunctions, or other variations in control or process equipment performance that are, or may be, in excess of the applicable emission control regulations to be reported to the NDWEE in accordance with Title 129, Chapter 15, Section 006.05. The NDWEE must be notified when excess emissions have, or may have occurred along with the cause of the emissions in order to determine the appropriate response. These reports also assist with verifying proper operation and maintenance of process and control equipment.

III.(A) Specific Conditions for Concrete Production:

(1) This condition identifies the general emission units which are authorized for each project approved under this GCP. Each concrete batch plant will vary in design, but must follow the general standard design for truck-mix concrete plants. External combustion heating sources, such as water heaters, are limited to a combined 10 MMBtu/hr capacity using natural gas, liquefied petroleum gas, or diesel to keep emissions below state modeling thresholds.

(2) This section specifies which sections of Chapter 15 apply to each emission unit. Specific facilities may not need to comply with Chapter 15, Sections 001.01 or 001.02 if they are subject to more stringent limits in an applicable federal rule or construction permit.

(3) Under this permit, cement and cementitious materials use is limited to 360,000 tons to keep emissions under the modeling thresholds and Chapter 15, Section 001.01 limits. This permit is not applicable to concrete batch plants capable of producing more than 2,500 cubic yards per hour to ensure facilities will comply with Chapter 15, Section 001.01. Total production is limited to 900,000 cubic yards on a 12-month rolling basis to ensure facilities covered by this GCP will not exceed modeling thresholds.

Concrete batch plants are required to use enclosed storage silos and pneumatic loading with dust collection systems for cement and cement supplement to keep emissions below modeling thresholds. Plants must also use a dust collection system for loading of dry materials into concrete trucks. This may be done with a single shared system or individual systems for each emission unit.

Many facilities will have additional emission units controlled by dust control systems. If a facility chooses not to use installed control devices, they must ensure that all permitted equipment will continue to function properly to meet the requirements of Condition II.(C).

This condition also gives the requirements for operation and maintenance of the required dust collection system or systems, to keep them in proper working order. Although these requirements are not placed on optional control devices, facilities must ensure that lack of observation or maintenance on optional control devices does not cause a violation of Condition II.(C) for permitted equipment.

Condition III.(A)(3)(i) requires the operator to conduct daily observations during the hours of operation to ensure that there are no visible emissions from the stack or exhaust points of all emission units, leaks, noise from the unit, or atypical monitoring parameters. By requiring daily observations, the NDWEE is confident that any malfunctions will be detected and corrected quickly. The operator must maintain a log containing the results of these observations and any corrective action that occurs as a result of the observations.

(4) This condition clarifies that there are no NSPS, NESHAP, or MACT requirements which will apply to all facilities covered by this GCP. As discussed in the Chapter 12 and 13 discussions above, there may be requirements for certain facilities.

(5) This condition specifies recordkeeping required to comply with Conditions III.(A)(1) through III.(A)(3).

A facility covered by this GCP must maintain records of the production capacity of the concrete batch plant and the heat input capacity of external combustion equipment for the lifetime of this equipment. This demonstrates compliance with the hourly production and external combustion capacity limits, as well as demonstrating the plant qualifies for coverage under this GCP. These records may be the nameplate on equipment, a manual produced by the manufacturer, a manufacturer's specification sheet, or any record that can conclusively demonstrate the design capacity of equipment.

III.(B) Specific Conditions for Haul Roads:

This condition clarifies that any haul roads are subject the fugitive dust limits of Chapter 15, and that any facility covered under this GCP must use weekly fugitive dust surveys to demonstrate compliance with Chapter 15 and Condition I.(L). Best management practices for haul roads include water application, wheel washes, speed limits, applying gravel or aggregate to road surfaces, paving, or other methods of directly reducing haul road emissions.

IV. Specific Conditions for Relocation

This condition provides the requirements associated with relocation of the concrete batch plant operation. A notification is required for each relocation. Each facility covered by this GCP is required to obtain the necessary permits and approvals from either Omaha Air Quality or Lincoln Lancaster Health Department if the source would like to locate within Omaha city limits or Lancaster County, respectively, because the NDWEE has delegated jurisdiction over air quality in these two areas. Relocation on Tribal Lands is outside the NDWEE's jurisdiction. Each facility covered by this GCP must contact the US EPA Region VII office or the specific Tribe to determine permit requirements within Tribal jurisdictions. If a facility covered by this GCP relocates into Cass County they will become subject to Title 129, Chapter 2 Section 005, which imposes additional requirements.

Fact Sheet Attachment

Potential Emissions Summary

Permit-limited production

Truck Mix Concrete Production Limits:	900,000 yd^3/year 2,500 yd^3/hour
Cement and Cement Supplement Use Limit	360,000 tons/year

Summary of PTE (tons/year)

Pollutant	Truck Mix Concrete Batching	Worst-Case External Combustion	Storage Piles	Haul Roads	Facility Worst Case PTE	Facility Worst Case Non-Fugitive PTE[1]
PM	35.60	0.63	14.58	101.28	152.09	36.24
PM_{10}	13.70	1.05	7.29	23.50	45.53	14.74
$PM_{2.5}$	5.34	1.05	2.19	2.35	10.92	6.39
SO_2	-	2.29	-	-	2.29	2.29
NO_x	-	6.35	-	-	6.35	6.35
CO	-	3.61	-	-	3.61	3.61
VOC	-	0.38	-	-	0.38	0.38
Total HAPS	8.39E-02	8.11E-02	-	-	0.17	0.17
Total GHG (mass basis)	-	5,124	-	-	5,124	5,124
Total GHG (CO_2e basis)	-	5,129	-	-	5,129	5,129

[1]Emissions from the storage pile erosion and haul roads are considered fugitive emissions

Emission unit summary

Process Description	Emission Unit ID#	Required Control Device	Combustion Capacity	Fuel Type
Truck Dump onto Aggregate Storage Pile	EU-1	-	-	-
Truck Dump onto Sand Storage Pile	EU-2	-	-	-
Sand Transfer to Conveyor	EU-4	-	-	-
Aggregate Transfer Conveyor(s)	EU-5	-	-	-
Sand Transfer Conveyor(s)	EU-6	-	-	-
Cement Storage Silo Loading (Pneumatic)	EU-7	Baghouse or Dust Collection System	-	-
Cement Supplement Storage Silo Loading (Pneumatic)	EU-8	Baghouse or Dust Collection System	-	-
Weigh Hopper Loading	EU-9	-	-	-
Concrete Truck Loading	EU-10	Baghouse or Dust Collection System	-	-
External Combustion Sources (Boiler[s],Water Heater[s], Heater[s], etc.)	EU-11	-	≤ 10 MMBtu/hr Combined	Natural Gas, LPG, and/or Diesel
Aggregate Storage Pile(s)	FS-1a	-	-	-
Sand Storage Pile(s)	FS-1b	-	-	-
Haul Roads	FS-2	-	-	-

Fact Sheet Attachment

Worst-Case Combined HAPs Analysis

HAPs analysis

Hazardous Air Pollutant	Natural Gas or LPG Combustion (tpy)	Diesel Combustion (tpy)	Truck Mix Plant (tpy)	Worst-Case (tpy)
Benzene	9.02E-05	6.79E-05	-	9.02E-05
Ethylbenzene	-	2.02E-05	-	2.02E-05
Dichlorobenzene	5.15E-05	-	-	5.15E-05
Formaldehyde	3.22E-03	1.05E-02	-	1.05E-02
Hexane	7.73E-02	-	-	7.73E-02
Lead Compounds	2.15E-05	3.94E-04	3.14E-04	7.08E-04
Polycyclic Organic Matter	3.00E-05	3.78E-04	-	3.78E-04
1,1,1-Trichloroethane	-	7.49E-05		7.49E-05
Toluene	1.46E-04	1.97E-03	-	1.97E-03
o-Xylene	-	3.46E-05	-	3.46E-05
Arsenic Compounds	8.59E-06	1.75E-04	1.81E-04	3.56E-04
Beryllium Compounds	5.15E-07	1.31E-04	2.53E-05	1.57E-04
Cadmium Compounds	4.72E-05	1.31E-04	2.69E-05	1.58E-04
Chromium Compounds	6.01E-05	1.31E-04	8.29E-04	9.60E-04
Cobalt Compounds	3.61E-06	-	-	3.61E-06
Manganese Compounds	1.63E-05	2.63E-04	3.78E-03	4.04E-03
Mercury Compounds	1.12E-05	1.31E-04	-	1.31E-04
Nickel Compounds	9.02E-05	1.31E-04	2.31E-03	2.44E-03
Total Phosphorus	-	-	7.64E-02	7.64E-02
Selenium Compounds	1.03E-06	6.57E-04	2.56E-05	6.83E-04
Total HAPs	8.11E-02	1.52E-02	8.39E-02	1.65E-01

Fact Sheet Attachment

Concrete Batching PM (EU-1 through EU-10)

Worst-Case Composition of Concrete Under General Permit (weight %)

Aggregate[1]	75.0%
Sand[1]	0.0%
Cement[2]	12.0%
Cement Supplement[2]	8.0%
Water[3]	5.0%
Total	100%

Truck Mix Permit limit	900,000	yd^3/year	1,800,000	tons/year

Weigh Hopper Loading

Aggregate and Sand	75%

Truck Loading

Cement and Supplement	20%	
Cement and Supplement	360,000	tons/year

Weight of Concrete

Tons per Cubic Yard	2.0

PM emissions from truck mix concrete plants

Operation	Material Throughput[4] (tons/year)	Emission Factors[5] (lb/ton)			Emission Rate (tpy)		
		PM	PM_{10}	$PM_{2.5}$[6]	PM	PM_{10}	$PM_{2.5}$
EU-1: Aggregate Transfer to Stockpile	1,350,000	6.90E-03	3.30E-03	1.04E-03	4.66	2.23	0.70
EU-2: Sand Transfer to Stockpile	0	2.10E-03	9.90E-04	3.15E-04	0.00	0.00	0.00
EU-3: Aggregate Transfer to Conveyor	1,350,000	6.90E-03	3.30E-03	1.04E-03	4.66	2.23	0.70
EU-4: Sand Transfer to Conveyor	0	2.10E-03	9.90E-04	3.15E-04	0.00	0.00	0.00
EU-5: Aggregate Transfer to Bin	1,350,000	6.90E-03	3.30E-03	1.04E-03	4.66	2.23	0.70
EU-6: Sand Transfer to Bin	0	2.10E-03	9.90E-04	3.15E-04	0.00	0.00	0.00
EU-7: Cement Silo Loading[7]	216,000	9.90E-04	3.40E-04	1.49E-04	0.11	0.04	0.02
EU-8: Cement Supplement Silo Loading[7]	144,000	8.90E-03	4.90E-03	1.34E-03	0.64	0.35	0.10
EU-9: Weigh Hopper Loading	1,350,000	4.80E-03	2.80E-03	7.20E-04	3.24	1.89	0.49
EU-10: Truck Loading	360,000	9.80E-02	2.63E-02	1.47E-02	17.64	4.73	2.65
				Total	35.60	13.70	5.34

[1]Emission factors for aggregate are higher than for sand, therefore worst case scenario of all aggregate is assumed.

[2]General permit limits cement and cement supplement combined to 20% by weight. Cement supplement emission factors are greater, but supplement will not exceed 40% of cementitious materials for portland-pozzolan cements (User's Guide to ASTM Specification C94 on Ready-Mixed Concrete, 2005).

[3]Stoichiometric water to cement ratio of 0.25 assumed as worst-case scenario. More water is normally used to ensure complete hydration, reducing particulate matter emissions.

[4]For EU-1 through EU-9 throughput is based upon single component of concrete mixture. Truck loading is based upon weight of cement and cement supplement only.

[5] Emission Factors from AP-42 Table 11.12-2 (6/06).

[6]$PM_{2.5}$ emission factor based on PM particle size distribution in AP-42 Table B.2.2, Category 3, (9/90)

[7]Controlled emission factors used as a baghouse is required by the permit and inherent for pneumatic loading.

Fact Sheet Attachment

Concrete Batch Plant HAPs (EU-7, EU-8, and EU-10)

Worst-Case Composition of Concrete Under General Permit (weight %)

Aggregate[1]	75.0%
Sand[1]	0.0%
Cement[2]	12.0%
Cement Supplement[2]	8.0%
Water[3]	5.0%
Total	100%

Weigh Hopper Loading

Aggregate and Sand	75%

Truck Loading

Cement and Supplement	20%

Weight of Concrete

Tons per Cubic Yard	2.0

Truck Mix Permit limit 900,000 yd^3/year 1,800,000 tons/year

Summary of Truck Mix HAPs

Hazardous Air Pollutant	Cement Silo Loading[4]		Cement Supplement Silo Loading[4]		Truck Loading[4]		Total (tpy)
	Emission Factor[5] (lb/ton)	PTE (tpy)	Emission Factor[5] (lb/ton)	PTE (tpy)	Emission Factor[5] (lb/ton)	PTE (tpy)	
Arsenic	4.24E-09	4.58E-07	1.00E-06	7.20E-05	6.02E-07	1.08E-04	1.81E-04
Beryllium	4.86E-10	5.25E-08	9.04E-08	6.51E-06	1.04E-07	1.87E-05	2.53E-05
Cadmium	2.34E-07	2.53E-05	1.98E-10	1.43E-08	9.06E-09	1.63E-06	2.69E-05
Total Chromium	2.90E-08	3.13E-06	1.22E-06	8.78E-05	4.10E-06	7.38E-04	8.29E-04
Lead	1.09E-08	1.18E-06	5.20E-07	3.74E-05	1.53E-06	2.75E-04	3.14E-04
Manganese	1.17E-07	1.26E-05	2.56E-07	1.84E-05	2.08E-05	3.74E-03	3.78E-03
Nickel	4.18E-08	4.51E-06	2.28E-06	1.64E-04	1.19E-05	2.14E-03	2.31E-03
Total Phosphorus	6.98E-04	7.54E-02	2.28E-06	1.64E-04	4.78E-06	8.60E-04	7.64E-02
Selenium	-	-	7.24E-08	5.21E-06	1.13E-07	2.03E-05	2.56E-05
							8.39E-02

[1]Emission factors for aggregate are higher than for sand, therefore worst case scenario of all aggregate is assumed.

[2]General permit limits cement and cement supplement combined to 360,000 tons per year, which is equivalent to 20% by wet weight. Cement supplement emission factors are greater, but supplement will not exceed 40% of cementitious materials for portland-pozzolan cements (User's Guide to ASTM Specification C94 on Ready-Mixed Concrete, 2005).

[3]Stoichiometric water to cement ratio of 0.25 assumed as worst-case scenario. More water is normally used to ensure complete hydration, reducing particulate matter emissions.

[4]Silo loading factors are based upon weight of cement or cement supplement used, truck loading is based upon weight of cement and cement supplement.

[5]Emission Factors from AP-42 Table 11.12-8 (6/06).

Fact Sheet Attachment

External Combustion if Natural Gas-Fired (EU-11)

Maximum Combined Capacity	10.0	MMBtu/hr
Combustion Total	87,600	MMBtu/year
Natural Gas Heating Value	1,020	MMBtu/10^6 SCF
Annual Natural Gas Use[1]	85.88	10^6 SCF/year

External combustion emissions (natural gas)

Pollutant	Emission Factor[2] ($lb/10^6$ SCF)	PTE (tons/year)
PM	1.9	0.08
PM_{10}	7.6	0.33
$PM_{2.5}$	7.6	0.33
SO_2	0.6	2.58E-02
NO_x	100	4.29
CO	84	3.61
VOC	5.5	0.24
Hazardous Air Pollutants (HAPs)		
Benzene	2.10E-03	9.02E-05
Dichlorobenzene	1.20E-03	5.15E-05
Formaldehyde	7.50E-02	3.22E-03
Hexane	1.80	7.73E-02
Lead Compounds	5.00E-04	2.15E-05
Polycyclic Organic Matter	6.98E-04	3.00E-05
Toluene	3.40E-03	1.46E-04
Arsenic Compounds	2.00E-04	8.59E-06
Beryllium Compounds	1.20E-05	5.15E-07
Cadmium Compounds	1.10E-03	4.72E-05
Chromium Compounds	1.40E-03	6.01E-05
Cobalt Compounds	8.40E-05	3.61E-06
Manganese Compounds	3.80E-04	1.63E-05
Mercury Compounds	2.60E-04	1.12E-05
Nickel Compounds	2.10E-03	9.02E-05
Selenium Compounds	2.40E-05	1.03E-06
Total HAPs		8.11E-02
Greenhouse Gases[3] (GHGs)	**(kg/MMBtu)**	
CO_2	53.06	5,124
CH_4	1.00E-03	9.66E-02
N_2O	1.00E-04	9.66E-03
GHGs (mass basis)	53.06	5,123.66
CO_2e	53.11	5,128.57

[1]Based upon operating 8,760 hours

[2]AP-42 Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4 (6/1998) for everything except GHGs.

[3]GHG Emission Factors from 40 CFR 98 Tables A-1 (Oct. 30, 2009), C-1 and C-2 (Nov. 29, 2013)

Fact Sheet Attachment

External Combustion if LPG-Fired (EU-11)

Total Boiler Capacity	10.0	MMBtu/hr
LPG Heat Content	92	MMBtu/10^{-3} gal
LPG Heat Input	87,600	MMBtu/yr
Maximum LPG Use	952	10^{-3} gal/year
LPG Sulfur Content[1]	185	ppmw
	0.16	gr/ft^3

External combustion emissions (LPG)

Pollutant	Emission Factor[2] ($lb/10^3$ gal)	LPG PTE (tpy)
PM	0.2	0.10
PM_{10}	0.7	0.33
$PM_{2.5}$	0.7	0.33
SO_2	1.62E-02	7.71E-03
NO_x	13	6.19
CO	7.5	3.57
VOC	0.8	0.38
Hazardous Air Pollutants[3]		8.11E-02
Greenhouse Gases[4]	(kg/MMBtu)	
CO_2	62.87	6,071
CH_4	3.00E-03	2.90E-01
N_2O	6.00E-04	5.79E-02
GHGs (mass basis)		6,071.17
CO_2e		6,094.86

[1]LPG sulfur content assumed 185 ppmw based upon data from Gas Producer's Association Standard 2140-92. Based upon a density of 0.125 lb/ft3 from Marathon Technical Service, http://www.marathontech.ca/assets/reference-material/fueltbl.pdf.

[2]AP-42 Table 1.5-1 (7/08) for all emission factors except HAPs and greenhouse gases.

[3]It is assumed HAP emissions are the same as natural gas. Rounding for LPG density creates slight difference in potential HAP emission factors for LPG and natural gas.

[4]Greenhouse Gases Emission Factors and CO2e conversion factors from 40 CFR 98 Tables A-1 (Oct. 30, 2009), C-1 and C-2 (Nov. 29, 2013). Emission factors converted from kg/MMBtu to lb/MMBtu.

Fact Sheet Attachment

External Combustion if Diesel-Fired (EU-11)

Maximum Combined Capacity	10.0	MMBtu/hr
Annual Diesel Use[1]	635	10^3 gal/year

External combustion emissions (diesel)

Pollutant	Emission Factor[2] ($lb/10^3$ gal)	PTE (tons/year)
PM	2	0.63
PM_{10}	3.3	1.05
$PM_{2.5}$	3.3	1.05
SO_2	7.2	2.29
NO_x	20	6.35
CO	5	1.59
VOC	0.34	1.08E-01
Organic Hazardous Air Pollutants (HAPs)		
Benzene	2.14E-04	6.79E-05
Ethylbenzene	6.36E-05	2.02E-05
Formaldehyde	3.30E-02	1.05E-02
Polycyclic Organic Matter	1.19E-03	3.78E-04
1,1,1-Trichloroethane	2.36E-04	7.49E-05
Toluene	6.20E-03	1.97E-03
o-Xylene	1.09E-04	3.46E-05
Metallic HAPs	**($lb/10^{12}$ Btu)**	
Arsenic	4	1.75E-04
Beryllium	3	1.31E-04
Cadmium	3	1.31E-04
Chromium	3	1.31E-04
Lead	9	3.94E-04
Manganese	6	2.63E-04
Mercury	3	1.31E-04
Nickel	3	1.31E-04
Selenium	15	6.57E-04
Total HAPs		1.52E-02
Greenhouse Gases[3] (GHGs)	**(kg/MMBtu)**	
CO_2	73.96	7,142
CH_4	3.00E-03	2.90E-01
N_2O	6.00E-04	5.79E-02
GHGs (mass basis)	73.96	7,142.03
CO_2e	74.21	7,165.73

[1]Based upon operating 8,760 hours and 138 MMBtu/10^3 gal.

[2]AP-42 Tables 1.3-1, 1.3-2, 1.3-3, 1.3-9, and 1.3-10 (5/10) for everything except GHGs

[3]GHG Emission Factors from 40 CFR 98 Tables A-1 (Oct. 30, 2009), C-1 and C-2 (Nov. 29, 2013)

Fact Sheet Attachment

Storage Piles (FS-1a and FS-1b)

Equation (5) for Total Suspended Particulate from Wind Erosion of Active Storage Piles[1] $EF = 1.7 \times \left(\frac{s}{1.5}\right) \times \left(\frac{365 - p}{235}\right) \times \left(\frac{f}{15}\right) \times \left(\frac{1}{24}\right)$

EF: Total suspended particulate emission factor (lb/day/acre)

s: Silt Content Material (%)[2]

p: Number of days with greater then 0.01 in. of precipitation per year[3]

p = 90

f: % of time unobstructed wind speed exceeds 12 mph at mean pile height[4]

f = 30.9

As written, the equation calculates TSP. It is assumed that 50% of the TSP equals PM_{10}, and 30% of PM_{10} is $PM_{2.5}$.[5]

Storage pile erosion emissions

EP ID	Description	Silt Content[2] (%)	Exposed Surface Area[6] (Acres)	PM Emission Factor (lb/hr-acre)	PM_{10} Emission Factor (lb/hr-acre)	$PM_{2.5}$ Emission Factor (lb/hr-acre)	PM PTE (ton/yr)	PM_{10} PTE (ton/yr)	$PM_{2.5}$ PTE (ton/yr)
FS-1a	Aggregate Pile	2.6	2.00	0.30	0.15	4.44E-02	2.60	1.30	3.89E-01
FS-1b	Sand Pile	12	2.00	1.37	0.68	2.05E-01	11.98	5.99	1.80E+00
						TOTAL	14.58	7.29	2.19

[1]From *Air Pollution Engineering Manual* (1992), Chapter 4: Fugitive Emissions

[2]AP-42 Table 13.2.4-1 (11/06) for miscellaneous fill materials or sand.

[4]From AWDN Wind Summary Information, average of all measurement stations in Nebraska for 1996 to 2012 with the two lowest stations thrown out. Data conservatively includes wind speed of 10 mph and above. http://www.hprcc.unl.edu/awdn/winds/

[5] From AP-42 Appendix B.2 Table B.2.2 Category 3

[6]Conservative estimate of maximum storage pile size for this type of facility.

Fact Sheet Attachment

Haul Roads: FS-2

Unpaved roads {AP-42 Chapter 13.2.2 (11/06)}

Equation (1a): (modified)

$$E = k \times \left(\frac{sC}{12}\right)^{a} \times \left(\frac{W}{3}\right)^{b} \times \left(\frac{365-P}{365}\right) \times \left(\frac{S}{30}\right)^{d} \times (1-CE)$$

	k	*a*	*b*	*d*
PM	4.9	0.7	0.45	0.3
PM_{10}	1.5	0.9	0.45	0.5
$PM_{2.5}$	0.15	0.9	0.45	0.5

Haul Road / Traffic Parameters

Activity / Road Description	Road Type / Silt Value		Roundtrip Length (feet)		Truck Weight (tons)			Ave. Speed (mph)	Unrestricted Maximum Throughput (units/yr)	Ave. Truck Capacity (units/truck)		Annual VMT
			empty	full	empty	full	Ave.					
Aggregate Delivery	u	6.00	500	500	15	30	22.5	15	1,350,000	15	ton	17,045
Sand Delivery	u	6.00	500	500	15	30	22.5	15	0	15	ton	0
Cement Delivery	u	6.00	500	500	15	30	22.5	15	216,000	15	ton	2,727
Supplement Delivery	u	6.00	500	500	15	30	22.5	15	144,000	15	ton	1,818
Concrete Loadout	u	6.00	500	500	15	30	22.5	15	1,800,000	15	ton	22,727

Emission Calculations

	Emission Factors (lb/VMT)			Potential Emissions (tons/yr)		
	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
Aggregate Delivery	4.57	1.06	0.11	38.95	9.04	0.90
Sand Delivery	4.57	1.06	0.11	0.00	0.00	0.00
Cement Delivery	4.57	1.06	0.11	6.23	1.45	0.14
Supplement Delivery	4.57	1.06	0.11	4.16	0.96	0.10
Concrete Loadout	4.57	1.06	0.11	51.94	12.05	1.20
			Total	**101.28**	**23.50**	**2.35**

Description of Constants/Variables

E: haul road emissions (lb/VMT)
Chapter 13.2.1 (paved)

k, a, b, c, d: dimensionless constants from AP-42 Tables 13.2.1-1 & 13.2.2-2 (unpaved)

sL: silt loading (g/m^2) of paved road surface

sC: silt content (%) of unpaved road surface

W: average vehicle weight (tons)

P: days/yr with at least 0.01" of precipitation
P = 90 default = 90

S: mean vehicle speed on road (mph)
default = 30, minimum =15

CE: unpaved road, dust control efficiency
CE = 0 % default = 0%

VMT: vehicle miles traveled

Fact Sheet Attachment

Chapter 15 Limits for Concrete Batch Plants

Title 129, Chapter 15, Section 001.01

For process weight rates up to 60,000 lbs/hr:	$E= 4.10\ p^{0.67}$
For process weight rates in excess of 60,000 lbs/hr:	$E= 55.0\ p^{0.11}-40$
where E = rate of emissions in lbs/hr PM and p = process weight rate in tons/hr.	

Truck Mix Maximum Hourly Throughput (based upon 2 tons/yd^3) 5,000 tons/hr

Section 001.01 scenario 1: Only required controls installed, separate emission points for controlled emission units [1]

Emission Point	Process	p = Process Weight Rate		E = Emissions Limit		Worst-Case PM Emission Rate	
EP-1	EU-1: Aggregate Transfer to Stockpile	3,750	tons/hr	95.99	lbs/hr	25.88	lbs/hr
EP-2	EU-2: Sand Transfer to Stockpile	0	tons/hr	0.00	lbs/hr	0.00	lbs/hr
EP-3	EU-3: Aggregate Transfer to Conveyor	3,750	tons/hr	95.99	lbs/hr	25.88	lbs/hr
EP-4	EU-4: Sand Transfer to Conveyor	0	tons/hr	0.00	lbs/hr	0.00	lbs/hr
EP-5	EU-5: Aggregate Transfer to Bin	3,750	tons/hr	95.99	lbs/hr	25.88	lbs/hr
EP-6	EU-6: Sand Transfer to Bin	0	tons/hr	0.00	lbs/hr	0.00	lbs/hr
EP-7	EU-7: Cement Silo Loading	600	tons/hr	71.16	lbs/hr	0.59	lbs/hr
EP-8	EU-8: Cement Supplement Silo Loading	400	tons/hr	66.31	lbs/hr	3.56	lbs/hr
EP-9	EU-9: Weigh Hopper Loading	3,750	tons/hr	95.99	lbs/hr	18.00	lbs/hr
EP-10	EU-10: Truck Loading	5,000	tons/hr	100.36	lbs/hr	98.00	lbs/hr

Section 001.01 scenario 2: Only required controls installed, controlled emission units share an emission point [1]

Emission Point	Process	P = Process Weight Rate		E = Emissions Limit		Worst-Case PM Emission Rate	
EP-7/8	EU-8: Cement Silo Loading EU-9: Cement Supplement Silo Loading	1,000	tons/hr	77.59	lbs/hr	4.15	lbs/hr

[1] Chapter 15, Section 001.01 emission limits apply to emission points, not individual emission units. Potential configurations are analyzed to ensure facility will comply with Chapter 20. Uncontrolled emission units sharing an emission point is not considered because it would require an air handling system which would include a baghouse or filter for all practical designs. Uncontrolled emission units being controlled is not considered because the controlled emission factors are significantly lower, no combination would potentially be the worst case scenario.

Fact Sheet Attachment

Chapter 15 Limits for Concrete Batch Plants

Title 129, Chapter 15, Section 001.02

Total Heat Input (MMBtu/hr)	Maximum Allowable Emissions of PM (lbs/MMBtu)
10 or less	0.6
Between 10 and 10,000	$1.026/I^{0.233}$
	Where I = total heat input in MMBtu/hr
10,000 or more	0.12

Section 001.02 combustion source limits (Section 001.02)

Source[1]	Description	Combustion Rate	Chapter 15 Limit (lb/MMBtu)	EF (lb/MMBtu)	Chapter 15 Exceeded
EU-11	Natural Gas Combustion	10	0.60	1.86E-03	No
EU-11	LPG	10	0.60	2.17E-03	No
EU-11	Diesel	10	0.60	1.45E-02	No

[1]Chapter 15 limit is based upon emission points, but combined emissions are limited to 10 MMBtu/hr. Therefore, all emissions will have a limit of .06 lb/MMBtu, no matter how emission points are structured.