



# JACKSON CONSTRUCTION LTD.

5112 SUN VALLEY DRIVE  
FORT WORTH, TX 76119  
TEL: 817-572-3303  
FAX: 817-478-0443

July 25, 2014

Mr. Jason Cooper  
Texas Commission on Environmental Quality  
Region 4  
2309 Gravel Dr  
Fort Worth Texas 76118-6951

**Subject:** Portable Concrete Batch Plant  
Euless, Tarrant County, Texas

Dear Mr. Cooper,

Jackson Construction, Ltd. is requesting permission to install and operate a portable concrete batch plant under the amended Standard Permit 30 TAC, 116.602. This portable concrete plant will be located on the **northwest corner of Rio Grande Boulevard and Brazos Boulevard, Euless, Texas 76039 (FTW Mapsco 41-5)**. This plant will be located adjacent to public right-of-way and shall be exclusively dedicated to the production of concrete for our **Brazos Boulevard** project in Euless, Tarrant County, Texas 76039.

For your review and approval, please find the following enclosures in support of our request:

- Project Boundaries
- Form PI-1S-CBP, Air Quality Standard Permit Registration for CBP
- Registration Checklist
- Emissions Calculations
- Table 20, Concrete Batch Plants
- Table II, Fabric Filters
- Current Area Map
- Plot Plan
- Principle of Operation, Process Description
- Process Flow Diagram
- Plant Profile, Haganator

If you have any question or need additional information, please feel free to contract me at (817) 572-3303.

Respectfully submitted,

Steve Haberstroh  
Construction Manager

cc: Job File

HTE 14-1100004  
14-06-cc  
\$0.00 - no fee

\*Hold for Council Approval

JUL 25 2014

FILE COPY



Imagery Date: 4/10/2013 32°52'39.62" N 97°06'09.18" W elev 560 ft eye alt 14386 ft

Google Earth



## Form PI-1S-CBP Air Quality Standard Permit Registration for Concrete Batch Plants

UPDATE: The TCEQ is now requiring all applications to be accompanied by the new TCEQ Core Data Form located at: <http://www.tnrcc.state.tx.us/permitting/projects/cr/index.html>.

*Please print or type all information. This form is for use by concrete batch plants ONLY. All other air quality standard permit registrations should use Form PI-1S. Please contact the Mechanical/Combustion Section of the Air Permits Division with any questions at (512) 239-1250 or Fax (512) 239-1300. Written inquiries may be addressed to: Texas Commission on Environmental Quality, Office of Permitting, Remediation, & Registration, Air Permits Division (MC-162), P.O. Box 13087, Austin TX 78711-3087. The registrant is encouraged to use an administrative completeness checklist, available on request, to assist in providing the required information.*

|   |   |          |
|---|---|----------|
| Forward application and supporting documentation to TCEQ, Air Permits Division (MC-162) P.O. Box 13087, Austin, TX 78711-3087;<br>Forward any fees and a copy of this form <u>only</u> to Cashier, TCEQ, P.O. Box 13088, Austin, TX 78711-3088. |   |          |
| For agency use only:  |   |          |
| <b>I. VERY IMPORTANT INFORMATION</b>  |   |          |
| A. Is CONFIDENTIAL information part of this registration?   | YES                                     | NO    X  |
| If "YES", is each confidential page so marked in big red letters?   | YES                                     | NO       |
| B. Is this registration in response to, or related in any way to, a Notice of Violation (NOV) at this location?   |   |          |
|   | YES                                     | NO    X  |
| 1. If "YES", date of NOV:   | and the specific TCEQ rule(s) violated: |          |
| C. Are the new facilities or changes to existing facilities represented in this registration required to be permitted as a disposal facility under the Taxes Solid Waste Disposal Act?  |   |          |
|   | YES                                     | NO    X  |
| D. Does this action result in the registration of any grandfathered facilities?   | YES                                     | NO    X  |
| <b>II. REGISTRANT INFORMATION</b>   |   |          |
| A. PERMITTEE:      Jackson Construction, Ltd.   |   |          |
| (Entity legally responsible for permit; i.e., Owner or Operator of the facility)  |   |          |
| 1. Individual Authorized to Act for Registrant:      Steve Haberstroh   | 2. Title:      Construction Manager     |          |
| 3. Texas State Comptroller's Tax ID No.:      75-2678585  |   |          |
| 4. Mailing Address:      5112 Sun Valley Drive Fort Worth, Texas 76119  |   |          |
| 5. Telephone:      817 572-3303   | 6. Fax:      817 478-0443               |          |
| 7. Technical Contact and Designee for Public Notice Period Questions:   |   | 8. Name: |
| 9. E-mail Address:  | 10. Mailing Address:                    |          |
| 11. Telephone:  | 12. Fax:                                |          |



**Texas Commission on Environmental Quality**  
**Form PI-1S-CBP**  
**Air Quality Standard Permit Registration**  
**for Concrete Batch Plants**

|   |            |   |  |
|---|------------|---|--|
| <b>III. TYPE OF FACILITY:</b>   |            |   |  |
| A. Permanent (Central or Ready Mix)   | X          | B. Portable Ready Mix                                       | C. Permanent Specialty                   |
| <i>(check one):</i>   |            |   |  |
| D. Name of Facility and Company's Facility No.:   |            | JCL Temporary Plant # 1                                     |  |
| E. TCEQ Account ID No. (if known):  |            | 94-7002-C   |  |
| F. Previous Exemption, Permit-by-Rule or Permit No.:  |            | 51662L014   |  |
| G. Proposed Start of Construction:  |            | September 2014  | H. Length of Time at this Site: 180 Days |
| <b>IV. PHYSICAL LOCATION OF FACILITY:</b>   |            |   |  |
| A. Street Address or Description of Location: northwest corner of Rio Grande Boulevard and Brazos Boulevard, Euless, Texas (FTW Mapsco 41-S)  |            |   |  |
| <i>(A physical address or accurate driving directions must be provided on all registrations.)</i>   |            |   |  |
| B. Nearest City: Euless, Texas  |            | C. Zip Code: 76039  | D. County: Tarrant                       |
| E. Latitude: 32   | 52 Minutes | 17 Seconds  | North                                    |
| F. Longitude: 97  | 06 Minutes | 11 Seconds  | West                                     |
| <i>(Latitude and Longitude must be to the nearest second)</i>   |            |   |  |
| <b>V. PUBLIC NOTIFICATION INFORMATION</b>   |            |   |  |
| A. Contiguous or adjacent to Public Works Project?  |            | YES   | X NO                                     |
| B. Total number of employees of the company requesting this application:  |            | 250   |  |
| C. Please list the location (public place in the county where the facilities are/will be located) where you are planning to place a copy of the application for public review and copying during the public comment period: |            |   |  |
| N/A   |            |   |  |
| D. Please furnish the names of the state legislators who represent the area where the facility site is located:   |            |   |  |
| 1. State Senator: Senator Kelly Hancock   |            | 2. State Representative: Representative Jonathan Strickland |  |
| <i>TCEQ FORM PI-1S-CBP, AIR QUALITY STANDARD PERMIT REGISTRATION FOR CONCRETE BATCH PLANT</i>   |            |   |  |
| <b>VI. FEE and FRANCHISE TAX INFORMATION:</b>   |            |   |  |
| A. A fee of \$900 is attached.  |            | YES   | NO X                                     |
| 1. If no, explain why:  |            | Not required, adjacent to public work project               |  |
| <i>A permit fee is required if public notice must be performed.</i>   |            |   |  |
| 2. Please forward the fee and a copy of this form to:   |            | Cashier, TCEQ, P.O. Box 13088, Austin, TX 78711             |  |
| B. A copy of a Certificate of Good Standing from the State Comptroller's Office is attached.  |            | YES   | NO X                                     |
| 1. If no, explain why:  |            | Not required  |  |
| <i>If the permittee is a corporation, a certification is required.</i>  |            |   |  |



**Texas Commission on Environmental Quality**  
**Form PI-1S-CBP**  
**Air Quality Standard Permit Registration**  
**for Concrete Batch Plants**

| <b>VII. SUBMIT THE FOLLOWING GENERAL INFORMATION:</b>  |                   |                                       |   |                                  |   |
|--|-------------------|---------------------------------------|---|----------------------------------|---|
| A. A current area map is attached.   |                   | YES                                   | <input checked="" type="checkbox"/> X               | NO                               |   |
| 1. <i>A current area map is required for all standard permit registrations. This map must show a true north arrow, the entire plant property, and the location of the property relative to prominent geographical features such as highways, roads, streams, and significant landmarks such as buildings, residences, and schools. All areas within one mile of any plant boundary must appear on this map.</i>  |                   |                                       |   |                                  |   |
| B. A plot plan is attached.  |                   | YES                                   | <input checked="" type="checkbox"/> X               | NO                               |   |
| 1. <i>A plot plan is required for all standard permit registrations. The plot plan must show the plant property and clearly show all property lines, affected emission points, buildings, tanks, process vessels, and other process equipment. The plot plan must have a scale, must indicate a true north arrow, must reference a plant bench mark, and must be dated.</i>  |                   |                                       |   |                                  |   |
| C. A process description is attached.  |                   | YES                                   | <input checked="" type="checkbox"/> X               | NO                               |   |
| 1. If NO, explain why:   |                   |                                       |   |                                  |   |
| 2. <i>A process description and process flow diagram should be submitted for all registrations and must include a description of the project and related processes, and a description of any equipment being installed. The description must be in sufficient detail to indicate that the facility will conform to the specified conditions of the standard permit. If alternative fencing or borders are proposed in lieu of distance setbacks for stockpiles and roads, these design specifics must be included.</i> |                   |                                       |   |                                  |   |
| D. Submit the following emissions data (including fugitive emissions) and the basis of emissions estimates:  |                   |                                       |   |                                  |   |
| Emission Point Number  | Name of Source    | Emission Rate of Each Air Contaminant |   |                                  |   |
|  |                   | lb/hr                                 |   | tons/yr                          |   |
|  |                   | Total Suspended Particulate (PM)      | Particulate Matter < 10 microns (PM <sub>10</sub> ) | Total Suspended Particulate (PM) | Particulate Matter < 10 microns (PM <sub>10</sub> ) |
| 8  | Central Baghouse  | 0                                     | 0.54428   | 0                                | 0.67962   |
| Figure 1   | Material Handling | 17.1                                  | 1.0   | 10.6                             | 0.6   |
| Figure 2   | Stockpiles        | 0                                     | 0   | 1.1                              | 0.5   |
|  |                   |                                       |   |                                  |   |
|  |                   |                                       |   |                                  |   |
|  |                   |                                       |   |                                  |   |
|  |                   |                                       |   |                                  |   |
| <i>TCEQ FORM PI-1S-CBP, AIR QUALITY STANDARD PERMIT REGISTRATION FOR CONCRETE BATCH PLANT</i>  |                   |                                       |   |                                  |   |



**Texas Commission on Environmental Quality**  
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**VIII. GENERAL REQUIREMENTS:**

A. Submit itemized information and/or analysis demonstrating that all applicable general requirements as specified in TCEQ Rules - attach additional information as necessary to justify the following answers.

*1. Please note: Atmospheric dispersion modeling will not be required as part of the air quality impact analysis.*

|     |    |     |                 |  |
|-----|----|-----|-----------------|--|
| YES | NO | N/A | § 116.610(a)(1) | Not applicable   |
|     |    | X   |                 |  |
| YES | NO | N/A | § 116.610(a)(2) | The construction or operation of the permitted sources will commence prior to the effective date of a revision of this standard permit under which the project would no longer meet the requirements for the standard permit |
| X   |    |     |                 |  |
| YES | NO | N/A | § 116.610(a)(3) | The proposed project will comply with applicable provisions of federal New Source Performance Standards (NSPS)   |
|     |    | X   |                 |  |
| YES | NO | N/A | § 116.610(a)(4) | The proposed project complies with applicable provisions of Federal Clean Air Act (FCAA) § 112 (Hazardous Air Pollutants) under Title 40 Code of Federal Regulations Part 61 (40 CFR Part 61).                               |
| X   |    |     |                 |  |
| YES | NO | N/A | § 116.610(a)(5) | The proposed project complies with applicable Maximum Achievable Control Technology (MACT) standards under FCAA 40 CFR Part 63.  |
| X   |    |     |                 |  |
| YES | NO | N/A | § 116.610(b)    | The proposed project does not constitute a new major source or major modification for Prevention of Significant Deterioration (PSD) or nonattainment permits   |
| X   |    |     |                 |  |
| YES | NO | N/A | § 116.610(c)    | The proposed project does not circumvent by artificial limitations the requirements of 30 TAC § 116.610  |
| X   |    |     |                 |  |



**Texas Commission on Environmental Quality**  
**Form PI-1S-CBP**  
**Air Quality Standard Permit Registration**  
**for Concrete Batch Plants**

**IX. A COPY OF THIS REGISTRATION and all attachments must be sent by the registrant to :**

A. Appropriate TCEQ Regional Office (City): Region 4, Fort Worth

B. Local Programs: 1. N/A  
 2.

|                   |     |    |   |
|-------------------|-----|----|---|
| C. LOCAL PROGRAMS | YES | NO | X |
|-------------------|-----|----|---|

**X. PROFESSIONAL ENGINEER SEAL:**

|  |     |    |   |
|--|-----|----|---|
| A. Is the estimated capital cost of this project greater than \$2 million dollars? | YES | NO | X |
|--|-----|----|---|

1. If **YES**, registration must be submitted under seal of a Texas Licensed Professional Engineer, unless exemption is claimed pursuant to the Texas Engineering Practice Act (TEPA).

|  |     |    |
|--|-----|----|
| B. Exemption from this P.E. seal requirement is claimed pursuant to TEPA Section | YES | NO |
|--|-----|----|

**XI. SIGNATURE**

I, Steve Haberstroh, Construction Manager

*(Name - Please print or type) (Title: Owner, Plant Manager, President, Vice President, Environmental Director, etc.)*

state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which registration is made will not in any way violate any provision of the Texas Health & Safety Code (THSC), Chapter 382, Texas Clean Air Act, as amended, or any of the rules and regulations of the Texas Natural Resource Conservation Commission adopted under Chapter 382 or any local governmental ordinance or resolution pursuant to the Texas Clean Air Act. I further state that I have read and understand Section 382.091, THSC, which defines CRIMINAL OFFENSES for certain violations, including intentionally or knowingly making or causing to be made false material statements or representations in this registration, and Section 382.092, THSC, pertaining to CRIMINAL PENALTIES.

DATE: July 25, 2014

SIGNATURE: *Steve Haberstroh*

*NOTE - ORIGINAL SIGNATURE IN INK IS REQUIRED.*

# Air Quality Standard Permit for Concrete Batch Plants

## Registration Checklist

The following checklist has been developed so the Texas Commission on Environmental Quality (TCEQ), Air Permits Division (APD) can confirm the concrete batch plant (CBP) meets the standard permit requirements. Please read all questions and check "YES", "NO", or "N/A" (equivalent to True, False, or Not Applicable), or give specific information for the facility. If the CBP does not meet all conditions of this standard permit, it will not be allowed to operate under the standard permit and must apply for a case-by-case preconstruction permit as required under Title 30 Texas Administrative Code § 116.111 (30 TAC § 116.111).

COMPANY: Jackson Construction, Ltd. LOCATION: northwest corner of Rio Grande Boulevard and Brazos Boulevard, Euless, Texas 76039 (FTW Mapsco 41-S)

REGISTRATION NO.: 47002 ACCOUNT ID NO.: 94-7002-C COMPLETED BY: Steve Haberstroh

(check one)  "specialty" - complete (1)-(4)  "temporary" - complete (1)-(3) and (5)  "permanent" - complete (1)-(3) and (6)

| Condition Number | YES | NO | N/A | Description   |
|------------------|-----|----|-----|---|
| (1)(A)           | X   |    |     | Registration Form PI-1S-CBP, Table 20, and supporting information attached/mailed to TCEQ, including air emission estimates, control devices and methods, process description, plot plan and area map |
|                  | X   |    |     | Copies of all information mailed to Air Permits Division, regional office and applicable local programs   |
| (1)(B)           |     |    | X   | \$900 fee sent to TCEQ Cashier (If "N/A", the answer to (2) must be "YES" )   |
| (1)(C)           |     | X  |     | Construction and/or operation has begun on the facility   |
| (1)(D)           | X   |    |     | Registration submitted to TCEQ after September 1, 2000  |
| (1)(E)           |     |    | X   | Air dispersion modeling has been submitted as a part of this registration   |
| (1)(F)           | X   |    |     | Records will be maintained on-site to show hourly production and kept for 24 months or duration of operation at this site   |
| (2)              | X   |    |     | Temporary facility located contiguous in or adjacent to the right-of-way of a public works project or related project segments (if "YES", public notice is not required)                              |
| (3)(A)           | X   |    |     | All cement/flyash storage silos and weigh hoppers are vented to a fabric or cartridge filter system   |
| (3)(B)(i)        | X   |    |     | Fabric/cartridge filter systems and suction shroud will be operated properly with no tears or leaks   |
| (3)(B)(ii)       | X   |    |     | All filter systems are designed to meet at least 0.01gr/dscf outlet   |
| (3)(B)(iii)      | X   |    |     | All filter systems and mixer/truck loading control devices will meet visible emissions performance standards  |
| (3)(B)(iv)       |     |    | X   | Cement and/or flyash silo filter exhausts are equipped with sufficient illumination to observe visible emissions performance if filled during non-daylight hours                                      |
| (3)(C)(i)        | X   |    |     | Conveying systems to and from the silos are totally enclosed and maintained with no tears or leaks  |
| (3)(C)(ii)       | X   |    |     | Except during cement/flyash tanker connect and disconnect, conveying systems to and from the storage silos will meet visible emissions performance standards  |

| Condition Number | YES                     | NO | N/A | Description   |
|------------------|-------------------------|----|-----|---|
| (3)(D)           | X                       |    |     | A warning device will be installed on each bulk storage silo to alert operators in sufficient time so that the loading operation can be stopped prior to over-filling and potential failure of filter systems   |
| (3)(E)(i)        |                         | X  |     | All in-plant roads will be covered with a material such as roofing shingles or tire chips   |
|                  |                         | X  |     | All traffic areas will be covered with a material such as roofing shingles or tire chips  |
| (3)(E)(ii)       |                         | X  |     | All in-plant roads will be treated with dust-suppressant chemicals  |
|                  |                         | X  |     | All traffic areas will be treated with dust-suppressant chemicals   |
| (3)(E)(iii)      | X                       |    |     | All in-plant roads will be watered  |
|                  | X                       |    |     | All traffic areas will be watered   |
| (3)(E)(iv)       |                         | X  |     | All in-plant roads will be paved with a cohesive hard surface that is maintained intact and cleaned   |
|                  |                         | X  |     | All traffic areas will be paved with a cohesive hard surface that is maintained intact and cleaned  |
| (3)(F)           | X                       |    |     | Dust emissions from all stockpiles will be minimized at all times by sprinkling with water, dust-suppressant chemicals, or covers   |
| (3)(G)           | X                       |    |     | All material spills immediately cleaned up and contained or dampened so dust emissions are minimized  |
| <b>(4)</b>       | <b>SPECIALTY PLANTS</b> |    |     |   |
| (4)(A)           |                         |    |     | Site production shall not exceed 30 cubic yards per hour  |
| (4)(B)           |                         |    |     | The cement/flyash weigh hopper is vented to a fabric or cartridge filter system   |
|                  |                         |    |     | The cement/flyash weigh hopper is vented inside the batch mixer   |
| (4)(C)(i)        |                         |    |     | Dust emissions at the mixer feed are controlled by a spray device which eliminates visible emissions  |
| (4)(C)(ii)       |                         |    |     | Dust emissions at the mixer feed are controlled by a pickup device delivering air to a filter   |
| (4)(C)(iii)      |                         |    |     | Dust emissions at the mixer feed are controlled by an enclosed batch mixer feed so that no visible emissions occur  |
| (4)(C)(iv)       |                         |    |     | Dust emissions at the mixer feed are controlled by conducting the entire mixing operation inside the enclosed process building such that no visible emissions from the building occur during mixing activities  |
| (4)(D)           |                         |    |     | Vehicles used for the operation of the CBP will not be operated within 25 feet of any property line, except for entrance and exit to the site   |
|                  |                         |    |     | Roads and other traffic areas are bordered by dust-preventive fencing or other barrier along all traffic routes or work areas within the 25-foot specified buffer area and these borders will be constructed to a height of at least 12 feet ( <i>details on the attached plot plan</i> ) |

| Condition Number | Condition               |    |     | Description   |
|------------------|-------------------------|----|-----|---|
|                  | YES                     | NO | N/A |   |
| (5)              | <b>TEMPORARY PLANTS</b> |    |     |   |
|                  | X                       |    |     | This plant is considered temporary and will occupy the designated site for less than 180 consecutive days or will supply concrete for a single project, but not other unrelated projects  |
| (5)(A)           | X                       |    |     | Site production shall not exceed 300 cubic yards per hour   |
| (5)(B)(i)        | X                       |    |     | The facility will occupy the site for less than 180 consecutive days  |
|                  | X                       |    |     | Site production shall not exceed 200 cubic yards per hour   |
|                  |                         |    | X   | The facility will load rotary mix trucks through a discharge spout equipped with a water fog ring having low-velocity fog nozzles spaced to create a continuous fog curtain that minimizes dust emissions   |
|                  |                         |    | X   | The water fog ring will meet the specified visible emissions performance standards  |
| (5)(B)(ii)       | X                       |    |     | The facility will use a suction shroud and fabric filter/cartridge filter system  |
|                  | X                       |    |     | The suction shroud or other pickup device shall be installed at the batch drop point/mixer feed   |
|                  | X                       |    |     | The suction shroud shall be vented to a fabric or cartridge filter system with a minimum of 4,000 acfm  |
| (5)(C)(i)        | X                       |    |     | The shroud baghouse exhaust or truck mix point is located at least <u>100 feet</u> from any property line*  |
| (5)(C)(ii)       |                         |    | X   | The facility is equipped with a water fog ring and the mix truck load point is a minimum of <u>300 feet</u> from the nearest off-property non-industrial receptor   |
| (5)(C)(iii)(a)   | X                       |    |     | The CBP production rate is equal to or less than 200 cyh <b>AND</b> all stationary equipment, stockpiles, or traffic areas used for the operation of the CBP (except for incidental traffic and the entrance and exit to the site) is not located or operated, respectively, within <u>25 feet</u> from any property line*                            |
| (5)(C)(iii)(b)   |                         |    | X   | The CBP production rate is greater than 200 cyh and equal to or less than 300 cyh, <b>AND</b> all stationary equipment, stockpiles, and traffic areas used for the operation of the CBP (except for incidental traffic and the entrance and exit to the site) is not located or operated, respectively, within <u>50 feet</u> from any property line* |
| (5)(C)(iv)(a)    |                         |    | X   | Roads and other traffic areas are bordered by dust preventive fencing or other barrier along all traffic routes or work areas within the 25-foot specified buffer area and these borders will be constructed to a height of at least 12 feet ( <i>details on the attached plot plan</i> )   |
| (5)(C)(iv)(b)    |                         |    | X   | Stockpiles within this buffer distance must be contained within a three-walled bunker which extends at least two feet above the top of the stockpile ( <i>details on the attached plot plan</i> )   |

| Condition Number            | YES | NO | N/A | Description   |
|-----------------------------|-----|----|-----|---|
| <b>(6) PERMANENT PLANTS</b> |     |    |     |   |
| (6)(A)                      |     |    |     | Site production shall not exceed 300 cubic yards per hour   |
| (6)(B)                      |     |    |     | The suction shroud or other pickup device shall be installed at the batch drop point/mixer feed   |
|                             |     |    |     | The suction shroud or device shall be vented to a fabric or cartridge filter system with a minimum of 4,000 acfm  |
| (6)(C)                      |     |    |     | All entry and exit roads and main traffic routes associated with the operation of the CBP (including batch truck and material delivery truck roads) shall be paved with a cohesive hard surface that can be maintained intact and shall be cleaned                              |
|                             |     |    |     | All batch trucks and material delivery trucks shall remain on paved surface when entering, conducting primary function, and leaving the property  |
|                             |     |    |     | Other traffic areas comply with the control requirements of paragraph (3)(E)  |
| (6)(d)(iii)(b)              |     |    |     | Roads and other traffic areas are bordered by dust-preventive fencing or other barrier along all traffic routes or work areas within the specified buffer area and these borders will be constructed to a height of at least 12 feet <i>(details on the attached plot plan)</i> |
|                             |     |    |     | Stockpiles within this buffer distance must be contained within a three-walled bunker which extends at least two feet above the top of the stockpile <i>(details on the attached plot plan)</i>   |

\* For CBPs which supply concrete for a single public works project, the "property line" measurements for purposes of compliance with this standard permit and 30 TAC § 111.155 shall be made to the outer boundaries of the designated public property, roadway project and associated rights-of-way.

**THE VINCE HAGAN COMPANY**

MODEL VH-1083 JP JET PLUSE

IN-TRUSS DUST COLLECTOR

FOR

JACKSON CONSTRUCTION, LTD.

PORTABLE CONCRETE BATCH PLANT

5112 SUN VALLEY DRIVE

FORT WORTH, TX 76119

TEL.: 817 572-3303

FAX: 817 478-0443

**SPECIFICATION**

**MODEL 1083-JP FREE STRANDING BAGHOUSE  
ALSO IN-TRUSS DESIGN**

|                                       |   |
|---------------------------------------|---|
| <b>CLOTH FILTERING AREA</b>           | <b>1083 FT.</b>   |
| <b>NUMBER OF BAGS</b>                 | <b>99</b>   |
| <b>BAG DIAMETER</b>                   | <b>6"</b>   |
| <b>BAG LENGTH</b>                     | <b>84"</b>  |
| <b>CLOTH WEAVE</b>                    | <b>Polyester Fume</b>   |
| <b>PERMEABILITY</b>                   | <b>20 TO 30 CFM/Sq. Ft. Cloth<br/>Area at 1/2" gauge resistance</b> |
| <b>AIR VOLUME INTAKE (20" Blower)</b> | <b>6500 CFM to 17 3/8"</b>  |
| <b>EXHAUST OPENING SIZE</b>           | <b>19 7/16" X 17 3/8"</b>   |
| <b>EFFICIENCY</b>                     | <b>100% AT 1 Micron</b>   |
| <b>MANUFACTURER</b>                   | <b>THE VINCE HAGAN COMPANY</b>                                      |
| <b>BAG WEIGHT</b>                     | <b>16 + 1 oz./sq. yd.</b>   |

**SILO VENT**

$$297.567 \text{ CFM} (1 + 2) = 481$$

**14.6**

**Table 20  
Concrete Batch Plants**

1. What Type of plant? (Check one)     Permanent     Portable
2. What type of batching will be accomplished? (Check one)  
 Wet (Rotary Mix Trucks)     Dry     Central Mix
3. Maximum Production Rates: 150 yd<sub>3</sub>/hr    30,000 yd<sub>3</sub>/yr  
Maximum Operations: 10 hrs/day    5 days/week    52 wks/yr    2,600 hr/yr  
Does facility operate at night? No

4. Cement/Flyash/Additive Silos Information:
- a) How many silos will this plant have?    2
- b) What is the volume of each silo?    1,673 ft<sub>3</sub>
- c) Explain method of loading silo(s):    Pneumatic load
- d) Is each silo equipped with overload warning device?     Yes     No  
Please describe: **HIGH BIN LEVEL INDICATOR W/ LIGHT**
- What Type of abatement device will be used on silo vent(s)?    **CENTRAL BAGHOUSE**
- e) If baghouses are used on the vent(s), for each device submit the following data and attach a Table 11:

I.      Flow rate \_\_\_\_\_ cfm    Total filtering area \_\_\_\_\_ ft<sub>2</sub>  
Air to cloth ratio \_\_\_\_\_    Outlet grain area \_\_\_\_\_ gr/dscf  
Method of cleaning bags \_\_\_\_\_  
Automatic (not manual) sequenced cleaning?     Yes     No

(SILOS VENT TO CENTRAL BAGHOUSE)

II.     Flow Rate 6,500 cfm    Total Filtering area 1,083 ft<sub>2</sub>  
Air to cloth ratio 6 - 1    Outlet grain area .01 gr/dscf  
Method of cleaning bags AUTOMATIC SEQUENCED PULSE JET  
Automatic (not manual) sequenced cleaning?     Yes     No

III.    Flow rate \_\_\_\_\_ cfm    Total filtering area \_\_\_\_\_ ft<sub>2</sub>  
Air to cloth ratio \_\_\_\_\_    Outlet grain area \_\_\_\_\_ gr/dscf  
Method of cleaning bags \_\_\_\_\_  
Automatic (not manual) sequenced cleaning?     Yes     No

5. How will the batch drop to truck or central mixer be controlled to prevent dust emissions?

X      Suction shroud with exhaust air to central baghouse?  
(complete following and attach Table II)  
Flow rate    6,500 cfm    Total Filtering area    1,083 ft<sub>2</sub>  
Air to cloth ratio    6 - 1    Outlet grain area    .01 gr/dscf  
Method of cleaning bags    AUTOMATIC SEQUENCED PULSE JET  
Automatic (not manual) sequenced cleaning?     Yes     No

\_\_\_\_\_ Flexible Discharge Spout with Water Fog Ring (attach design drawing)

\_\_\_\_\_ Other type of abatement device (explain in detail and attach design drawing):  
\_\_\_\_\_  
\_\_\_\_\_

6. The cement weigh hopper will be vented to the: (Pick One)

\_\_\_\_\_ Cement/Flyash Silo Baghouse \_\_\_\_\_ Central Baghouse  
\_\_\_\_\_ Discharge Spout \_\_\_\_\_ Other: \_\_\_\_\_

7. List all additive or ad-mixtures and maximum usage rates at your facility:  
Provide additional information on any items requested above in this space:

WATER REDUCER RETARDER 17.008 OUNCES PER CUBIC YARD  
AIR ENTRAINMENT 2.202 OUNCES PER CUBIC YARD  
\_\_\_\_\_

8. Will the sand and aggregate be washed prior to delivery at your facility? X Yes \_\_\_\_\_ No

9. The number of acres or square feet which may be covered by aggregate stockpiles: 40,000 SF

10. Explain the method of moving aggregate from storage piles to the mixing area (in detail):

MATERIAL WHEEL LOADER TO RADIAL STACKING BIN CHARGING CONVEYOR,  
UP CONVEYOR TO OVERHEAD AGGREGATE BIN.  
\_\_\_\_\_

11. Will water sprays be used at the following locations:

a) Stockpiles X Yes \_\_\_\_\_ No  
b) Aggregate bin outlet \_\_\_\_\_ Yes X No  
c) Conveyor transfer points \_\_\_\_\_ Yes X No  
d) Screens \_\_\_\_\_ Yes X No

12. Plant roads will be: \_\_\_\_\_ Paved & Cleaned \_\_\_\_\_ Paved & Vacuumed  
\_\_\_\_\_ Oil Coated \_\_\_\_\_ Gravel \_\_\_\_\_ Chemical Sprayed X Water Sprinkler

13. Aggregate transport trucks have: X Beds covered by tarps \_\_\_\_\_ A sprinkler system

14. Please provide the following information for all vehicles which travel on plant property:

| Vehicle Type   | Speed     | Weight (LBS)  |               | # Of<br>Wheels | Distanced Traveled Per<br>Round Trip (MI or FT) |             |
|----------------|-----------|---------------|---------------|----------------|---|-------------|
|                |           | Empty         | Full          |                | Paved   | Unpaved     |
| Raw Aggregate  | <u>15</u> | <u>20,000</u> | <u>65,000</u> | <u>18</u>      | <u>Vary</u>                                     | <u>400'</u> |
| Loaders        | <u>15</u> | <u>30,000</u> | <u>30,000</u> | <u>4</u>       | <u>Vary</u>                                     | <u>400'</u> |
| Cement Tankers | <u>15</u> | <u>12,000</u> | <u>60,000</u> | <u>18</u>      | <u>Vary</u>                                     | <u>400'</u> |
| Flyash Tankers | <u>15</u> | <u>12,000</u> | <u>60,000</u> | <u>18</u>      | <u>Vary</u>                                     | <u>400'</u> |
| Additives      | <u>15</u> | <u>20,000</u> | <u>65,000</u> | <u>18</u>      | <u>Vary</u>                                     | <u>400'</u> |
| Mix Trucks     | <u>15</u> | <u>15,000</u> | <u>40,000</u> | <u>10</u>      | <u>Vary</u>                                     | <u>400'</u> |

**TABLE II  
FABRIC FILTERS**

|  |                                   |   |  |   |
|--|-----------------------------------|---|--|---|
| Point Number (from Flow Diagram) <b>8</b>  |                                   | Manufacture & Model No. (if available)<br><b>Vince Hagan Co., Model VH-1083</b>       |  |   |
| Name of Abatement Device<br><b>Cloth Filtering Central Baghouse</b>  |                                   | Type of Particulate Controlled<br><b>Cement, Sand, Aggregates, &amp; Related Dust</b> |  |   |
| <b>GAS STREAM CHARACTERISTICS</b>  |                                   |   |  |   |
| Flow Rate (acfm)   |                                   | Gas Stream Temperature (° F)  |  | Particulate Grain Loading (grain/scf)                               |
| Design Maximum<br><b>6500</b>  | Average Expected<br><b>6500</b>   |   |  | Inlet<br><b>10</b>  |
|  |                                   |   |  | Outlet<br><b>0.01</b>   |
| Pressure Drop<br><b>4.55 (in. H<sub>2</sub>O)</b>  |                                   | Water Vapor Content of Effluent Stream<br>(lb. water/to dry air)                      |  | Fan Requirements<br><b>15 (hp)</b> <b>6500 (ft<sup>3</sup>/min)</b> |
| <b>PARTICULATE DISTRIBUTION (by weight)</b>  |                                   |   |  |   |
| Micron Range   |                                   | Inlet   |  | Outlet  |
| 0.0 - 0.5  |                                   | %   |  | %   |
| 0.5 - 1.0  |                                   | %   |  | %   |
| 1.0 - 5.0  |                                   | <b>100</b>  | %  | <b>100</b> %  |
| 5 - 10   |                                   | <b>99.98</b>  | %  | <b>99.98</b> %  |
| 10 - 20  |                                   | %   |  | %   |
| over 20  |                                   | %   |  | %   |
| <b>FILTER CHARACTERISTICS</b>  |                                   |   |  |   |
| Filter Velocity<br>(acfm/ft <sup>2</sup> of Cloth)<br><b>6 : 1</b>   | Bag Diameter<br>(in.)<br><b>6</b> | Bag Length (ft.)<br><b>7' - 0"</b>  |  | Number of Bags<br><b>99</b>   |
|  |                                   |   | # of Compartments<br>in Baghouse<br><b>ONE</b>                 |   |
| Bag rows will be:<br><b>Staggered</b>  |                                   |   | Walkways will be provided between banks of bags:<br><b>Yes</b> |   |
|  |                                   |   | <b>No</b>  |   |
| Filtering Material: <b>Polyester Fume 16 OZ. / SQ. YD.</b>   |                                   |   |  |   |
| Describe Bag Cleaning Method and Cycle:<br><b>Air header, diaphragm valve, blow pipe &amp; venturi for pulse air at 90 PSI</b> |                                   |   |  |   |
| Capital Installed Cost <b>\$ 29,500.00</b>   |                                   |   | Annual Operating Cost <b>\$ 350.00</b>                         |   |
| <b>ADDITIONAL INFORMATION</b>  |                                   |   |  |   |

On separate sheets attach the following:

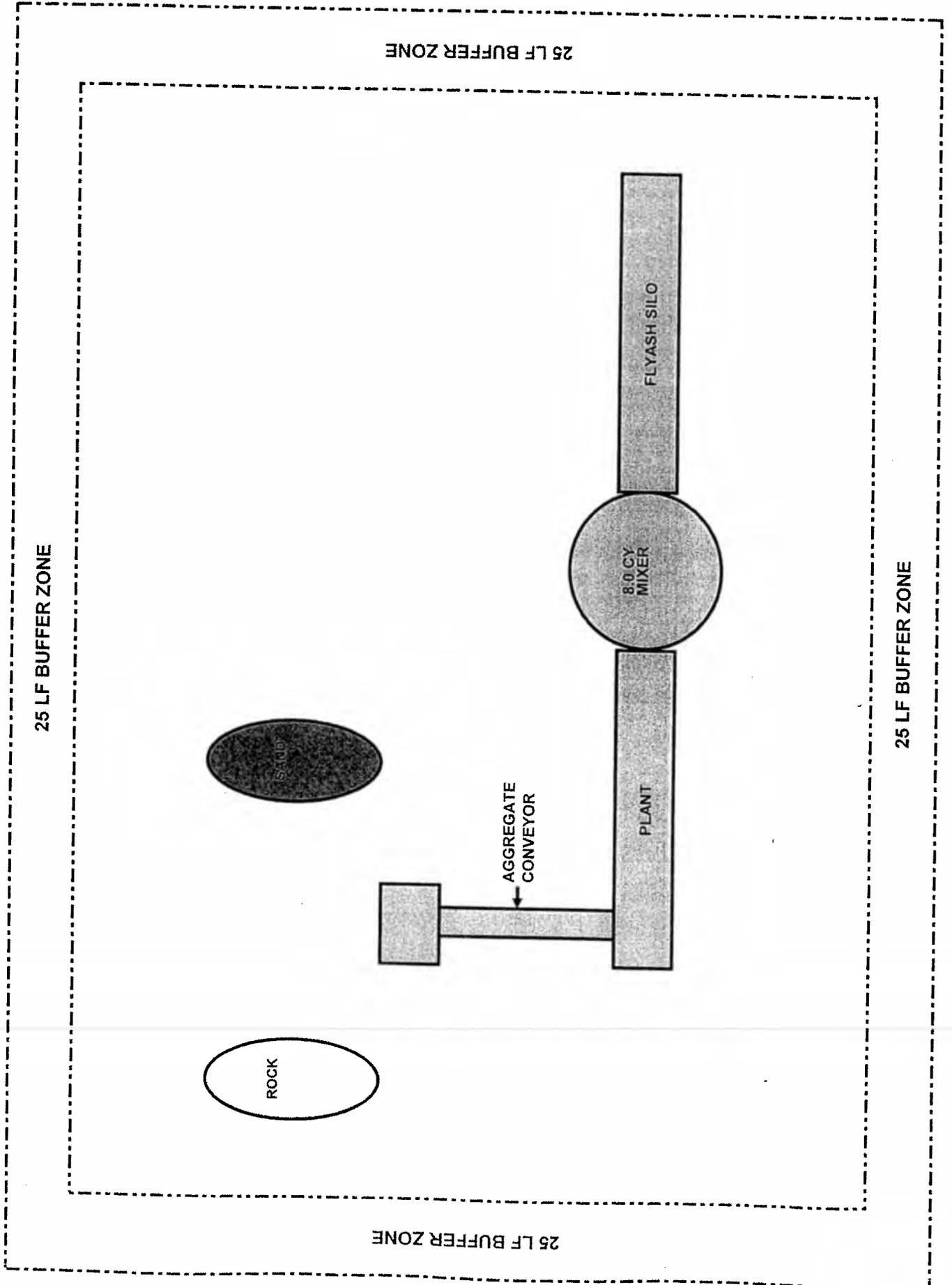
- A. Details regarding principle of operation
- B. An assembly drawing (Front and Top View) of the abatement device dimensional and to scale clearly showing the design, size, and shape.

If the device has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.

# Plant Setup Drawing

CONCRETE PLANT LAYOUT

200 LF



200 LF

25 LF BUFFER ZONE

25 LF BUFFER ZONE

25 LF BUFFER ZONE

25 LF BUFFER ZONE

FLYASH SILO

8.0 CY  
MIXER

PLANT

AGGREGATE  
CONVEYOR

ROCK

STANDARD

# CONCRETE BATCH PLANTS

## INTRODUCTION

A concrete batch plant stores, conveys, measures, and discharges the ingredients for making concrete to mixing or transportation equipment. The primary ingredients used to make concrete are sand, aggregate, cement, fly ash, and water. The raw materials are delivered to a plant by rail, truck, or barge. The ingredients are stored separately so that specific amounts of each can later be dispensed for mixing. Depending on the type of operation, the ingredients could be blended in a mixer at the plant, on a truck in route to the job site, or at the job site. The most common operation (for which this package has been written) is loading raw materials into batch mix trucks. Some of the calculation methods described below are also valid for other types of concrete operations.

The basic equipment in a concrete batch plant includes conveyors (belt, screw, and pneumatic), storage silos, hoppers, mixers, as well as packaging, transportation, and loading equipment (trucks and front-end loaders). Figure 1 at the back of this section shows a typical concrete batch plant layout with identifiable emission sources. In most cases, the only pollutant of concern is particulate mater, consisting of cement, aggregate, gravel, sand, and road dust.

## INSTRUCTIONS

This manual was developed with the purpose of providing a guide for calculating emission at concrete batch plants. Tables are provided for identifying the input data required and the particulate matter calculation results. In most cases, the upper portions of the tables are used to enter input data. Use the equations which follow the table to perform emission calculations and record the results in the lower portion of the table.

NOTE: MANY OF THE CALCULATIONS ARE MADE USING DATA IN TABLE 20 "CONCRETE BATCH PLANTS". YOU SHOULD FILL-OUT THIS FORM FROM MAXIMUM OPERATING CONDITIONS AND ACTUAL EQUIPMENT SPECIFICATIONS AT YOUR FACILITY.

Information on the following table is used throughout the calculations.

TABLE 1 - CONCRETE BATCH PLANT CAPACITY

|  |        |
|--|--------|
| AP = Maximum Annual Production<br>in cubic yards per year ( $\text{yd}^3 / \text{yr}$ )    | 30,000 |
| HP = Maximum Hourly<br>Production in cubic<br>yards per hour ( $\text{yd}^3 / \text{hr}$ ) | 150    |
| AH = Maximum Annual Operation<br>Hours<br>in hours per year ( $\text{yr} / \text{yr}$ )    | 2,600  |

### (3) CENTRAL BAGHOUSE CALCULATIONS

Use the following section for concrete batch plants which use a central suction baghouse to control PM emissions from weigh hoppers and/or truck loading points. Therefore, do not use previous calculations for those points that are controlled by this baghouse. PM emissions from forced air baghouses are assumed to be only PM10. For new and modified plants, BACT requires a maximum outlet grain loading of 0.01 gr/dscf.

**TABLE 5 – CENTRAL BAGHOUSE CALCULATIONS**

| <u>INPUT</u>   | <u>OUTPUT</u> |
|--|---------------|
| <u>ACFM = Actual air flow through baghouse (ft<sup>3</sup> / minute)</u> | <u>6500</u>   |
| <u>GL<sub>o</sub> = Outlet grain loading of filter (gr / dscf)</u>       | <u>.01</u>    |
| <u>AH = Maximum Annual operating hours (hr / yr)</u>                     | <u>2600</u>   |
| <u>OUTPUT</u>  |               |
| <u>E<sub>bh</sub> = Hourly PM10 emissions (lb / hr)</u>                  | <u>.54428</u> |
| <u>E<sub>ba</sub> = Annual PM10 emissions (tons / year)</u>              | <u>.67926</u> |

**TABLE 6 – DROP POINT EMISSIONS**

| <u>INPUT</u>  | <u>SAND</u>    | <u>AGGREGATE</u> |
|---|----------------|------------------|
| <u>HP = Maximum Hourly Protection (ton / )hr<br/>(from Table 1 &amp; above)</u>     | <u>131.25</u>  | <u>166.28</u>    |
| <u>AP = Maximum Annual Production (ton /<br/>yr)<br/>(from Table 1 &amp; above)</u> | <u>327.600</u> | <u>414.960</u>   |
| <u>K = particle size multiplier (for Total<br/>Suspended PM)</u>                    | <u>0.74</u>    | <u>0.74</u>      |
| <u>U = mean wind speed – see Table 10</u>   | <u>9.2</u>     | <u>9.2</u>       |
| <u>M = Material moisture content (percentage<br/>divided by 100)</u>                | <u>.04</u>     | <u>.04</u>       |
| <u>CF = Control Factor (see Table 9)</u>  | <u>0.3</u>     | <u>0.3</u>       |
| <u>N = Number of drop points</u>  | <u>4</u>       | <u>4</u>         |
| <u>INTERMEDIATE</u>   |                |                  |
| <u>U1 = MEAN WIND SPEED FACTOR</u>  | <u>2.20</u>    | <u>2.20</u>      |
| <u>M1 = moisture content factor</u>   | <u>2.63</u>    | <u>2.63</u>      |
| <u>OUTPUT</u>   |                |                  |
| <u>E<sub>13</sub> = hourly TSP emissions (lbs / hr)</u>                             | <u>.0257</u>   | <u>.039517</u>   |
| <u>E<sub>14</sub> = hourly PM10 emissions (tons / yr)</u>                           | <u>.01285</u>  | <u>.019758</u>   |
| <u>E<sub>15</sub> = annual TSP emissions (tons / yr)</u>                            | <u>.0321</u>   | <u>.049378</u>   |
| <u>E<sub>16</sub> = annual PM10 emissions (tons / yr)</u>                           | <u>.01605</u>  | <u>.02465</u>    |

**TABLE 8 - VEHICLE EMISSIONS DATA**

|   | <u>TRUCK<br/>#1</u> | <u>TRUCK<br/>#2</u> | <u>TRUCK<br/>#3</u> | <u>TRUCK<br/>#4</u> | <u>TRUCK<br/>#5</u> |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| <u>k = particle size multiplier</u>   | <u>0.80</u>         | <u>0.80</u>         | <u>0.80</u>         | <u>0.80</u>         | <u>0.80</u>         |
| <u>sc = silt content of road surface,<br/>if not known, use: unpaved<br/>surface = 4.8%, paved = 7.1%</u> | <u>7.1</u>          |                     |                     |                     |                     |
| <u>S = average vehicle speed (mph)</u>  | <u>15</u>           |                     |                     |                     |                     |
| <u>WT = average vehicle weight in tons</u>  | <u>20</u>           |                     |                     |                     |                     |
| <u>W = # of wheel / truck</u>   | <u>10</u>           |                     |                     |                     |                     |
| <u>P = number of days with at least<br/>0.01 in. rain per year<br/>(see Figure 2)</u>                     | <u>190</u>          |                     |                     |                     |                     |
| <u>Cf = control factor<br/>(see Table 11)</u>   | <u>.3</u>           |                     |                     |                     |                     |
| <u>AP = maximum annual<br/>Production rate (tons / tr)</u>  | <u>742.56</u>       |                     |                     |                     |                     |
| <u>DT = distance traveled per<br/>Round trip (miles)</u>  | <u>1.5</u>          |                     |                     |                     |                     |
| <u>TC = average truck capacity per<br/>trip (tons)</u>  | <u>24</u>           |                     |                     |                     |                     |
| <u>WT1 = average weight factor</u>  | <u>3.773</u>        |                     |                     |                     |                     |
| <u>W1 = wheel factor</u>  | <u>1.58</u>         |                     |                     |                     |                     |
| <u>VMT = vehicle miles traveled</u>   | <u>7280</u>         |                     |                     |                     |                     |
| <u>E<sub>1</sub> = TSP road emissions<br/>(tons / yr)</u>   | <u>4.68</u>         |                     |                     |                     |                     |
| <u>E<sub>22</sub> = PM10 road emissions<br/>(tons / yr)</u>   | <u>2.31</u>         |                     |                     |                     |                     |

# FANS

THE VOLUME PER UNIT OF TIME VARIES DIRECTLY AS THE FAN SPEED. THE TOTAL FAN HEAD AND FAN STATIC PRESSURE VARY AS THE SQUARE OF THE FAN SPEED.

THE AIR POWER VARIES AS THE CUBE OF THE FAN SPEED. THE FAN POWER MAY ALSO BE TAKEN AS VARYING IN THE SAME MANNER

$$\text{FAN HORSEPOWER} = 0.0158 \times \text{CFM} \times \text{WgE}$$

WHERE

CFM = VOLUME HANDLED BY THE FAN AT THE GIVEN TEMPERATURE IN CUBIC FEET PER MINUTE

Wg = PRESSURE OR SUCTION INCHES WATER GAUGE

E = PERCENT FAN EFFICIENCY WHEN OPERATING UNDER THE ABOVE CONDITIONS

WHEN DESIGNING FANS TO OPERATE AT AN ALTITUDE, VOLUME AND HEAD SHOULD BE MULTIPLIED BY THE FOLLOWING FACTORS:

| <u>ALTITUDE FT. ABOVE SEA LEVEL</u> | <u>0</u>   | <u>2000</u>  | <u>4000</u>  | <u>6000</u>  | <u>8000</u>  | <u>10000</u> | <u>12000</u> | <u>14000</u> |
|-------------------------------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <u>MULTIPLYING FACTOR</u>           | <u>1.0</u> | <u>1.079</u> | <u>1.165</u> | <u>1.257</u> | <u>1.357</u> | <u>1.464</u> | <u>1.581</u> | <u>1.700</u> |

## APPROXIMATE FAN EFFICIENCIES

|   |                 |
|---|-----------------|
| <u>PADDLE BLADED AND FORWARD CURVED</u> | <u>45 – 60%</u> |
| <u>BACKWARD CURVED BLADES</u>           | <u>60 – 75%</u> |
| <u>RADIAL TIPPED</u>                    | <u>50 – 65%</u> |
| <u>AEROFOIL</u>                         | <u>70 – 80%</u> |

1. AGGREGATE STORAGE BIN
2. AGGERGATE WEIGH BATCHER
3. BATCH TRANSFER CONVEYOR
4. CEMENT STORAGE SILO
5. CEMENT FEEDER
6. CEMENT WEIGH BATCHER
7. FLY ASH STORAGE SILO
8. VH-1083 JP DUST COLLECTOR
9. 8.0 CUBIC YARD HORIZONTAL SHAFT RIBON MIXER

PROSECC FLOW DIAGRAM

CONCRETE BATCH PLANT

A. CEMENT, FLYASH, SAND, & AGGREGATE DUST

AIR  
DELIVERY

SOURCE #6  
111 CU. FT. CEMENT  
WEIGH BATCHER

SOURCE #9  
MIXER  
LOADING

CONTROL #8  
VH-1083  
BAGHOUSE

AIR  
DELIVERY

SOURCE #4  
1673 CU. FT.  
CEMENT SILO

SOURCE #7  
1252 CU. FT.  
FLYASH SILO

B. SAND AND STONE AGGREGATES

SOURCE #1  
CONTROL #8 -- PRE-WASHING

C. PLANT ROADS

SOURCE #3  
CONTROL #3 -- GRAVEL -- WATERING DOWN AS NECESSARY

