March 27, 2000

MEMORANDUM

TO: Gwen Fransen, Administrator
Coeur D'Alene Regional Office

FROM: Daniel Heiser DH
Technical Services Office

SUBJECT: ***PERMIT TO CONSTRUCT TECHNICAL ANALYSIS***
P-990161, Interstate Concrete and Asphalt, Coeur D'Alene
(Standard Concrete Batch Plant Permit to Construct No. 055-00049; Including Aggregate, Asphalt, and Concrete Production when Collocated in Attainment Areas)

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01.200 (*Rules for the Control of Air Pollution in Idaho*) for issuing Permits to Construct (PTC).

PROJECT DESCRIPTION

Interstate Concrete and Asphalt is proposing to modify a concrete batching facility (note that this is a non-portable source). Interstate Concrete and Asphalt is requesting a PTC be issued to cover the operations of the concrete batching facility in Coeur D'Alene. Note that the Standard PTC for a concrete batching facility also includes provisions for collocated operations in attainment areas with one other source (i.e., rock crusher, hot-mix asphalt, or concrete batch plant). The concrete batch plant's maximum hourly throughput is 130 cubic yards per hour (130 cy/hr).

SUMMARY OF EVENTS

On December 20, 1999, the Idaho Department of Health and Welfare, Division of Environmental Quality (DEQ) received a PTC application for a concrete batching facility.

DISCUSSION

1. Process Description

Concrete is produced by combining water, sand and gravel, and portland cement. A concrete batch plant consists of storage bins for the sand and gravel, a storage silo for the cement, weigh bins that weigh each component, a conveyor, a water supply, and a control panel. Sand and gravel are either produced on site or purchased elsewhere. Typically, three or four different sizes of gravel and one or two different sizes of sand are stockpiles for varying job specifications. Cement is delivered by truck and pneumatically transferred to its storage silo. A baghouse is mounted above the silo to capture cement as air is displaced in the silo. For this source category, the baghouse is considered process equipment primarily, and air pollution control equipment secondarily. Power to run the facility is provided by the local utility, or a gasoline-fired or diesel-fired generator.

After all the storage bins are filled, the production process begins when sand and gravel are drop-fed into their respective weigh bins. When a pre-determined amount of each is weighed, the sand and gravel is drop-fed onto an inclined conveyor which transfers the mixture into a cement truck. A pre-determined amount of cement is also weighed and drop-fed through a rubber chute into the cement truck. The rubber chute directs the cement and provides a measure of dust control. Sometimes, a separate baghouse is used to capture cement dust from the cement weigh bin. Water is then added, and the components are mixed in the truck on the way to the job site.

The Standard PTC requested will allow this concrete batching facility to collocate and simultaneously operate with one other plant (i.e., rock crusher, hot-mix asphalt, or concrete batch plant) in attainment areas. It is important to note that during collocated operations, this concrete batching facility is then part of a single, larger source engaged in the production of either concrete, aggregate and/or asphalt, depending upon which type of portable plant the concrete batching facility is collocated with. While collocated, the two plants (in this case, only the plant collocating to the site would be portable) are now considered to be one source, and the emissions of this single source is the sum of the emissions from the two plants. This single, larger source

must comply with all applicable federal, state, and local requirements. To maintain compliance, specific requirements and limitations have been included in the Standard PTC for this concrete batching facility for collocated operations. As described in the following sections of this Technical Memorandum, specific conservative assumptions and calculations were made to determine these Standard PTC collocation requirements. For this reason, the permit for the other portable plant with which this concrete batching facility will collocate must also contain specific collocation requirements based on the same conservative assumptions and calculations used in this Standard PTC.

2. Equipment Listing

The analysis upon which this non-portable facility is permitted assumes the following equipment would be used:

2.1 Concrete Batch Plant

Manufacturer	Interstate Concrete and Asphalt
Model	NA
Maximum Capacity (cy/hr)	135 cy/hr

2.2 Cement Storage Silo Baghouse

2.2.1 Silo #1

Stack Height (ft)	59 ft
Stack Diameter (ft) or opening (in^2)	361 in^2
Exit Air Flowrate (acfm)	550 acfm
Capture Efficiency	99.6%

2.2.2 Silo #2

Stack Height (ft)	82 ft
Stack Diameter (ft) or opening (in^2)	361 in^2
Exit Air Flowrate (acfm)	550 acfm
Capture Efficiency	99.6%

2.2.3 Silo #3

Stack Height (ft)	52 ft
Stack Diameter (ft) or opening (in^2)	30 in^2
Exit Air Flowrate (acfm)	550 acfm
Capture Efficiency	99.9%

2.3 Cement Weigh Bin Baghouse

Stack Height (ft)	21 ft
Stack Diameter (ft) or opening (in^2)	188 in^2
Exit Air Flowrate (ft/sec)	63.61 ft/sec
Capture Efficiency	99.99%

When collocated, this concrete batch plant is then part of a single, larger source that produces either concrete, aggregate, and/or asphalt, depending upon which type of portable plant the concrete batch plant is collocated with. The equipment used by this single, larger source would include the concrete batch plant equipment listed above plus the equipment of the other portable plant. To see an equipment description for the other portable plant, see the corresponding permitting files for that plant.

3. Area Classification

The concrete batching facility is a non-portable source and operates in an attainment or unclassifiable area.

4. Emission Estimates

A spreadsheet has been developed specifically for concrete batching facilities to determine their potential to emit (PTE). PTE is used to determine if Prevention of Significant Deterioration (PSD) or Title V Operating Permit requirements apply. In determining PTE, the spreadsheet uses production data supplied by the applicant and emission factors from EPA's AP-42. For concrete batching facilities, PTE is based on emissions from the cement storage silo baghouse, and the cement weigh bin baghouse (if one is used). If the facility includes a generator, its emissions are also included in the determination of the facility's PTE. Because these facilities are not designated facilities or NSPS-affected facilities, fugitive emissions from concrete batch plants do not count toward determining PTE. This facility's PTE is 0.2 ton per any consecutive 12-month period (0.2 T/yr) based on PM-10 emissions.

The spreadsheet inherently limits emissions below certain triggering levels (i.e., PSD and Title V thresholds) by limiting throughput. If a generator is not used, throughput is solely limited to limit a facility's PTE below 99 T/yr of PM-10 emissions. If a generator is used, throughput is limited to protect the NAAQS and it is limited to keep emissions below the 99 T/yr triggering level. The throughput limits for this facility are presented below. The spreadsheet used to calculate the PTE and throughput limit is included as Appendix A of this document.

For collocated operations, a conservative approach is taken by limiting the emissions of each of the collocated units to half of the levels allowed when operating alone. Then the combined emissions of the two collocated sources will be within the allowable levels. See the information below for a more detailed description. This approach is designed to result in acceptable throughput limits for most collocation situations. In cases where the throughput limits are too restrictive, a site-specific analysis and permit amendment may be completed.

4.1 Attainment Area Operations

In the standard permit, two throughput limit options are available to choose from. One option limits annual throughput (annual is any consecutive 12-month period) only and the other option limits daily and annual throughput. The annual throughput limit option is chosen to limit emissions to 99 T/yr or less. This option is most likely chosen if the facility does not include a generator. The daily and annual limit is chosen when throughput has to be limited to protect the 24-hr PM-10 NAAQS and to limit facility emissions to 99 T/yr or less.

For this concrete batch plant, the concrete throughput is unlimited while operating in any attainment or unclassifiable area.

4.2 Collocated Operations in Attainment Areas

Standard PTCs will only allow collocation with one other portable source (i.e., rock crusher, hot-mix asphalt plant, or concrete batch plant) which has also received a Standard PTC that specifically allows collocation. When a combination of one concrete batching unit and one other portable unit are operated at a single location, the emissions of both units must be added together when determining PTE. Consistent with the approach taken for attainment area operations, the spreadsheet inherently limits the combined emissions of the two units to below certain triggering levels (i.e., PSD and Title V thresholds) by limiting the maximum throughput of each. For collocated operations, half of the attainment area triggering levels are used as limits for calculating throughput for each source. The concrete batch plant throughput is then established based on the most limiting pollutant or pollutants (i.e., the pollutant whose emission rate is closest to 49.5 T/yr).

In the standard permit, two throughput limit options are available for collocated-attainment area operations. One is for an annual limit (annual is any consecutive 12-month period), and the other is for a daily and annual limit. The annual limit option is chosen only to limit the combined emissions to 99 T/yr or less. The daily and annual limit option is chosen to protect a 24-hour ambient standard,

an annual ambient standard, and to limit emissions to 99 T/yr. Depending on the circumstances, one or both options may be required. For this concrete batch plant, the concrete throughput is limited to 569,400 cubic yards per consecutive 12-month period (569,400 cy/yr) when collocated with another concrete batch plant, rock crushing plant, or hot-mix asphalt plant in any attainment or unclassifiable area.

4.3 Fugitive Emissions

Even though fugitive dust emissions are not included to determine PTE, they must be reasonably controlled at all times. In order to ensure the air quality is not degraded beyond the facility boundary, the standard permit requires that no visible emissions be seen crossing the facility boundary. It is assumed if no emissions visibly cross the boundary, the air quality is protected. This provision is included in the standard permit in lieu of fugitive dust modeling.

5. Modeling of Point Sources

5.1 Baghouse(s)

The EPA-approved SCREEN3 model was used in this analysis using stack data provided by the applicant to predict the impact the baghouse emissions may have on the ambient air. A representative one (1) pound-per-hour emission rate was input into the model which calculated a maximum 1-hour concentration of 44.7 $\mu g/m^3$ for the cement silo baghouses (a representative stack was used based on merged stack parameters for the three silos). A 1-hour concentration of 11.7 $\mu g/m^3$ was predicted for the weigh batch baghouse. This information was input into the spreadsheet which calculated the allowable throughput.

The SCREEN3 output for each applicable point source is presented as Appendix B of this document.

5.2 Collocated Operations

For collocated operations in attainment areas, operation of the concrete batch plant and its generator (if used) are limited as needed so that the modeled impacts will be half of the available allowable ambient impact. Likewise for collocated operations, the modeled impacts of the other portable facility will also be limited to half of the available allowable, ambient impact so that the combined emissions of the two collocated sources will remain within the NAAQS. Using the 24-hour NAAQS standard for PM-10 (attainment area) as an example, one half of the allowable available impact would be equal to 32 $\mu g/m^3$, as follows:

$$32\ \mu g/m^3 = 0.5 \times [150\ \mu g/m^3 - 86\ \mu g/m^3],$$

where 150 $\mu g/m^3$ is the 24-hour average standard and 86 $\mu g/m^3$ is the conservative statewide 24-hour average background value. Then operation of the concrete batch plant and its generator (if used) would be limited as needed, based on the specific ambient impact modeling, so that the modeled 24-hour concentration does not exceed 32 $\mu g/m^3$ at or beyond the facility's property boundary. This approach is designed to result in acceptable operational limits for most collocation situations. In cases where these limits are too restrictive, a site-specific analysis and permit amendment may be completed.

6. Facility Classification

This facility is not a major facility as defined in IDAPA 16.01.01.006.55 and IDAPA 16.01.01.008.10. Concrete batch plants are not designated facilities as defined in IDAPA 16.01.01.006.27. Concrete batch plants are not subject to federal New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAPS) regulation. The SIC code for concrete batch plants is 3273. The AIRS facility classification for this facility is "B" because the uncontrolled potential to emit is less than (100 T/yr). The spreadsheet included as Appendix A automatically determines the facility classification.

7. Regulatory Review

The following rules and regulations have been reviewed for this permit analysis:

IDAPA 16.01.01.201	Permit to Construct;
IDAPA 16.01.01.202	Application Procedures;
IDAPA 16.01.01.203	Permit Requirements for New and Modified Stationary Sources;
IDAPA 16.01.01.209	Procedures for Issuing Permits;
IDAPA 16.01.01.211	Conditions for Permits to Construct;
IDAPA 16.01.01.212	Obligation to Comply;
IDAPA 16.01.01.577	Ambient PM-10 Air Quality Standard;
IDAPA 16.01.01.625	Visible Emissions; and
IDAPA 16.01.01.650	Rules for Control of Fugitive Dust.

8. Permit Coordination

This concrete batching facility is not a major facility as defined by IDAPA 16.01.01.006.55 and IDAPA 16.01.01.008.10, and it is not an NSPS-affected facility. Therefore, coordination for an Operating Permit is not necessary.

9. AIRS Information

Since each of these facilities is considered a new facility for AIRS purposes, an update to the AIRS data base is required. The information necessary to update the data base is included as Appendix C of this technical analysis.

FEES

The facility is not a major facility as defined in IDAPA 16.01.01.008.10. Therefore, registration and registration fees in accordance with IDAPA 16.01.01.526 are not applicable.

RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, staff recommend that Interstate Concrete and Asphalt be issued a PTC for a concrete batching facility. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD PTC requirements.

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cc: State Technical Services Office
EPA Region 10

Appendix A

Emission Estimate Calculations

P-990161, Interstate Concrete and Asphalt

Concrete Batch Plant

Company Name:	Interstate	**Engineer:**	DH
Permit No.:	055-00049	**Date:**	3/15/00
Project:	STANDARD SREADSHEET CONCRETE BATCH PLANTS	**File:**	BATCH WK4

Ton per Year Emission Limit: 100 [=] Tons/yr

Concrete Batch Plant Information

Facility Production Capacity: 130 [=] yd3/hr

Maximum Annual Hours of Operation 8,760 [=] hr/yr

Cement Silo:
Modeled 1-hr Concentration: 44.7 [=] µg/m3, at emission rate of 1 lb/hr
Baghouse Control Effcy. 99.60% %

Cement Hopper:
Modeled 1-hr Concentration: 11.7 [=] µg/m3, at emission rate of 1 lb/hr
Baghouse Control Effcy. 99.99% %

Generator Set Information

Generator? (Y/N) n

1000

B

A

50

Conversion Factor

6.8033 1340.7

560

Background Concentrations

	1-hr	3-hr	8-hr	24-hr	Annual
PM_{10}				86	32.7
CO	11400		5130		
NO_x					40
SO_x		543		144	23.5
TOC					

INPUTS TO PERMIT TO CONSTRUCT (PTC)		Value	Units
Section B "Attainment Area When Not Collocated"			
Section B.1.1Facility Throughput Limits:	Annual Throughput Limit	*Unlimited*	yd3/yr
	<<OR>>		
	Daily Throughput Limit	*Unlimited*	yd3/day
	Annual Throughput Limit	*Unlimited*	yd3/yr
Section B.1.3 Generator Hours of Operation:	Annual Hours of Operation	NA	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	NA	hr/day
Section C "Attainment Area When Collocated"			
Section C.1.3 Facility Throughput Limits:	Annual Throughput Limit	569,400	yd3/yr
	<<OR>>		
	Daily Throughput Limit	*Unlimited*	yd3/day
	Annual Throughput Limit	569,400	yd3/yr
Section C.1.4 Generator Hours of Operation:	Annual Hours of Operation	NA	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	NA	hr/day
Section D "Nonattainment Area"			
Section D.1.1 Facility Throughput Limits:	Annual Throughput Limits	*Unlimited*	yd3/yr
	<<AND/OR>>		
	Daily Throughput Limits	*Unlimited*	yd3/day
	Annual Throughput Limits	*Unlimited*	yd3/yr
Section D.1.3 Generator Hours of Operation:	Annual Hours of Operation	NA	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	NA	hr/day

PERMIT LIMITS TABLE

	Non-Attainment Area			Attainment Area			Collocated Attainment Area		
Production Rate:	130	yds/hr		130	yds/hr		130	yds/hr	
Operational Schedule:	24.0	hr/day	8,760 hr/year	24.0	hr/day	8,760 hr/year	24.0	hr/day	4,380 hr/year
Throughput Limits:	*Unlimited*	yds/day	*Unlimited* yds/yr	*Unlimited*	yds/day	*Unlimited* yds/yr	*Unlimited*	yds/day	569,400 yds/yr
Limiting Pollutant:	None			None			None		
AIRS Facility Classification	B			B			B		

CO 1-hr Standard	SO2 3-hr Standard	CO 8-hr Standard
minutes/1-hr	hr/3-hr	hr/8-hr
60.00	3.00	8.00

OUTPUT

POTENTIAL TO EMIT -- EMISSIONS ANALYSIS USING AMBIENT AIR QUALITY STANDARDS

Attainment/Non-Classifiable Areas

Generator	Permitted Controlled Emission Rates	
Pollutant		
PM_{10}	0.00 lbs/hr	0.00 Tons/yr
CO	0.00 lbs/hr	0.00 Tons/yr
NO_x	0.00 lbs/hr	0.00 Tons/yr
SO_2	0.00 lbs/hr	0.00 Tons/yr
TOC	0.00 lbs/hr	0.00 Tons/yr
Concrete Batching Point Sources		
PM_{10}	0.0373 lbs/hr	0.163 Tons/yr

	Uncontrolled	Controlled		Classification
Potential to Emit:	0.2 Tons/yr	0.2 Tons/yr	PM_{10}	B

Enforceable Limits:				
Production Rate:	130 yds/hr			
Operational Schedule:	24.0 hr/day		8,760 hr/year	
Throughput Limits:	*Unlimited* yds/day	*Unlimited*	yds/yr	
Limiting Pollutant:	None			

Non-Attainment Areas

Generator	Permitted Controlled Emission Rates	
Pollutant		
PM_{10}	0.00 lbs/hr	0.00 Tons/yr
CO	0.00 lbs/hr	0.00 Tons/yr
NO_x	0.00 lbs/hr	0.00 Tons/yr
SO_2	0.00 lbs/hr	0.00 Tons/yr
TOC	0.00 lbs/hr	0.00 Tons/yr
Concrete Batching Point Sources		
PM_{10}	0.0373 lbs/hr	0.163 Tons/yr

	Uncontrolled	Controlled		Classification
Potential to Emit:	0.2 Tons/yr	0.2 Tons/yr	PM_{10}	B

Enforceable Limits:				
Production Rate:	130 yds/hr			
Operational Schedule:	24.0 hr/day		8,760 hr/year	
Throughput Limits:	*Unlimited* yds/day	*Unlimited*	yds/yr	
Limiting Pollutant:	None			

ATTAINMENT/NON-CLASSIFIABLE AREAS

Concrete Batching Point Sources

Source	PM Emission Factor [=] lb/yd³ Concrete	Pre-Baghouse PM Emissions [=] lb/hr	Pre-Baghouse PM Emissions [=] T/yr	Given	Baghouse Control Efficiency	Post-Baghouse PM Emissions [=] lb/hr	Post-Baghouse PM Emissions [=] T/yr
Cement Silo Loading (Pneumatic)	0.07	9.1	39.9	8,760 hrs/yr	99.60%	0.036	0.16
Weigh Hopper Loading (Cement)	0.07	9.1	39.9	8,760 hrs/yr	99.99%	0.001	0.00
Total		18.2	79.7			0.037	0.16

Generator and Concrete Batching Point Source Emissions

Pollutant	Generator Emission Factor [=] lb/MMBtu	Generator Emission Rate [=] lb/hr	AAQS Hours of Operation [=] hr/day	AAQS Hours of Operation [=] hr/year	Allowable Impacts < 100 TPY: Other	Allowable Impacts < 100 TPY: Hours of Operation [=] hr/year	Hours of Operation	[=] hr/day	[=] hr/year	Generator & Site Allowable Impacts: Emission Rates [=] lb/day	[=] Tons/year	Permitted Impacts: AAQS Calculated 24-hr Impact [=] µg/m³	Calculated Annual Impact [=] µg/m³	Other	< 100 TPY: Calculated Emissions [=] ton/year
PM	N/A	0.00	N/S	N/S		N/S		24.0	8,760	0.0	0.00	N/S	N/S		0.16
PM_{10}	N/A	0.00	24.0	8,760		8,760	Based on:		Based on:	0.0	0.00	0.7	0.1		0.16
CO	N/A	0.00	N/S	N/S		8,760	None		None	0.0	0.00	0.0	0.0		0.00
CO_2					1.0									0.0	
CO_3					8.0									0.0	
NO_x	N/A	0.00	N/S	8,760		8,760				0.0	0.00	0.0	0.0		0.00
SO_2	N/A	0.00	24.0	8,760		8,760				0.0	0.00	0.0	0.0		0.00
SO_2 4					3.0									0.0	
TOC	N/A	0.00	N/S	N/S		8,760				0.0	0.00	0.0	0.0		0.00

Ambient Air Concentrations w/ Background Values (ug/m3)					
Pollutant	1-hr	3-hr	8-hr	24-hr	Annual
PM					
PM10				87	33
CO	11,400		5,130		
NOx					40
SO2		543		144	24
TOC					

NON-ATTAINMENT AREAS

Concrete Batching Point Sources

Source	PM Emission Factor [=] lb/yd3 Concrete	Pre-Baghouse PM Emissions [=] lb/hr	Pre-Baghouse PM Emissions [=] T/yr	Given		Baghouse Control Efficiency	Post-Baghouse PM Emissions [=] lb/hr	Post-Baghouse PM Emissions [=] T/yr
Cement Silo Loading (Pneumatic)	0.07	9.1	39.86	8,760	hrs/yr	99.60%*	0.036	0.16
Weigh Hopper Loading (Cement)	0.07	9.1	39.86	8,760	hrs/yr	99.99%*	0.001	0.00
Total		18.2	79.72				0.037	0.16

Generator and Concrete Batching Point Source Emissions -- Non-Attainment Areas

Pollutant	Generator Emission Factor [=] lb/hp-hr	Generator Emission Rate [=] lb/hr	Allowable Impacts AAQS Hours of Operation [=] hr/day	Hours of Operation [=] hr/year	Hours of Operation Other 2,3,4	< 100 TPY1 Hours of Operation [=] hr/year	Generator & Silo Allowable Impacts Hours of Operation	[=] hr/day	[=] hr/year	Emission Rates [=] lb/day	[=] Tons/year	Permitted Impacts AAQS Calculated 24-hr Impact [=] µg/m	Calculated Annual Impact [=] µg/m	Other	< 100 TPY1 Calculated Emissions [=] ton/year
PM	N A	0.00	N S	N S		N S		24.0	8,760	0.0	0.00	N S	N S		0.16
PM10	N A	0.00	24.0	8,760		8,760	Based on:		Based on:	0.0	0.00	0.7	0.1		0.16
CO	N A	0.00	N S	N S		8,760	None		None	0.0	0.00	0.0	0.0		0.00
CO 2					1.0									0.0	
CO 3					8.0									0.0	
NOx	N A	0.00	N S	8,760		8,760				0.0	0.00	0.0	0.0		0.00
SO2	N A	0.00	24.0	8,760		8,760				0.0	0.00	0.0	0.0		0.00
SO2 4					3.0									0.0	
TOC	N A	0.00	N S	N S		8,760				0.0	0.00	0.0	0.0		0.00

Notes: 1 TPY calculations include concrete batching point source emissions
2 CO 1-hr Averaging Period
3 CO 8-hr Averaging Period
4 SO2 3-hr Averaging Period
** Assumes ambient TSP concentrations exceed NAAQS in PM-10 Non-Attainment Areas

Attainment Area - Collocated Units - Calculations

Collocated Ambient Air Quality Standards - Calculations (1-hr, 3-hr, 8-hr, 24-hr standards are cut in half for collocation)					
Pollutant	1-hr	3-hr	8-hr	24-hr	Annual (50% Attainment Hours)
PM					
PM-10				31.3449092	8.65
CO	14300		2435		
NOx					30
SO2		378.5		110.5	28.25
TOC					

Background Concentrations -- Attainment/Non-Classifiable Areas (ug/m3)					
Pollutant	1-hr	3-hr	8-hr	24-hr	Annual
PM					
PM-10				86	32.7
CO	11400		5130		
NOx					40
SO2		543		144	23.5
TOC					

Appendix B

Modeling

P-990161, Interstate Concrete and Asphalt

Concrete Batch Plant

03/15/00
09:22:13

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Batch Scale

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.126000
STACK HEIGHT (M)	=	6.4000
STK INSIDE DIAM (M)	=	.3900
STK EXIT VELOCITY (M/S)	=	63.6100
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	1.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

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

BUOY. FLUX = .000 M**4/S**3; MOM. FLUX = 153.858 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.1173E-06	6	1.0	1.0	10000.0	31.16	4.45	4.45	NO
100.	8.432	3	10.0	10.0	3200.0	13.84	12.64	7.74	NO
200.	8.446	4	10.0	10.0	3200.0	13.84	15.71	8.76	NO
300.	7.973	4	8.0	8.0	2560.0	15.70	22.77	12.38	NO
400.	6.914	4	5.0	5.0	1600.0	21.28	29.76	15.85	NO
500.	7.779	5	1.0	1.0	10000.0	33.58	28.11	14.97	NO
600.	9.596	5	1.0	1.0	10000.0	33.58	32.86	16.62	NO
700.	10.80	5	1.0	1.0	10000.0	33.58	37.58	18.25	NO
800.	11.46	5	1.0	1.0	10000.0	33.58	42.27	19.85	NO
900.	11.71	5	1.0	1.0	10000.0	33.58	46.91	21.43	NO
1000.	11.66	5	1.0	1.0	10000.0	33.58	51.53	22.98	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
930.	11.72	5	1.0	1.0	10000.0	33.58	48.35	21.91	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

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

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	11.72	930.	0.

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

03/15/00
09:14:55

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Interstate Concrete and Asphalt Silo #1 (Used as Representative Stack)

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.126000
STACK HEIGHT (M)	=	18.0000
STK INSIDE DIAM (M)	=	.5400
STK EXIT VELOCITY (M/S)	=	1.1334
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	1.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

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

STACK EXIT VELOCITY WAS CALCULATED FROM
VOLUME FLOW RATE = 550.00000 (ACFM)

BUOY. FLUX = .000 M**4/S**3; MOM. FLUX = .094 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	19.32	.44	.24	NO
100.	39.49	1	1.0	1.0	320.0	19.32	26.86	13.96	NO
200.	44.56	3	1.0	1.1	320.0	19.27	23.63	14.04	NO
300.	38.40	4	1.0	1.1	320.0	19.18	22.62	12.10	NO
400.	37.14	4	1.0	1.1	320.0	19.18	29.46	15.28	NO
500.	32.05	4	1.0	1.1	320.0	19.18	36.15	18.30	NO
600.	30.56	5	1.0	1.2	10000.0	18.87	31.93	14.70	NO
700.	28.00	5	1.0	1.2	10000.0	18.87	36.77	16.52	NO
800.	26.42	6	1.0	1.4	10000.0	18.59	27.64	11.98	NO
900.	26.14	6	1.0	1.4	10000.0	18.59	30.78	12.99	NO
1000.	25.32	6	1.0	1.4	10000.0	18.59	33.89	13.96	NO

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

192.	44.68	3	1.0	1.1	320.0	19.27	22.86	13.59	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

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

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	44.68	192.	0.

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

Appendix C

AIRS Database Update Form

P-990161, Interstate Concrete and Asphalt

Concrete Batch Plants

ABBREVIATED AIRS DATA ENTRY SHEET - Concrete Batch Plant

Name of Facility: Interstate Concrete and Asphalt

AIRS/Permit #: 055-00049

Permit Issue Date: March 27, 2000

*Source/Emissions Unit Name (25 spcs) (Please use name as indicated in permit)	SCC # (8 digit #)	Air Program (SIP/NESHAP/ NSPS/PSD)
* Flyash/Cement to Silo	30501199	SIP
Agg Handling/Piles	30500204	SIP
Transit Mix Truck Loading	30501110	SIP
Fugitives	30588801	SIP
Property Boundary	30588801	SIP

RETURN TO PAT RAYNE
AIRS-PT.LST (9/95)