

Note: This is a reference cited in *AP 42, Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

AP42 Section: 11.1

Reference Number: 216

Title: Summary Of Source Test Results At Granite Rock Co., San Jose, CA,

Bay Area Air Quality Management District, San Jose, CA,

October 18, 1990.

Report No. 910
 Test Date: 10/18
 Test Times:
 Run A: 0940-1036 (50 min)
 Run B: 1125-1244 (50 min)
 Run C: 1311-1423 (50 min)

DISTRIBUTION:
 Firm
 Permit Services
 Enforcement
 Technical Services
 Source Inventory
 Planning
 Requester
 DAPCO

**BAY AREA
 AIR QUALITY MANAGEMENT DISTRICT**
 939 Eilla Street
 San Francisco, California 94109
 (415) 771-8000
**SUMMARY OF
 SOURCE TEST RESULTS**

SOURCE INFORMATION		BAAQMD REPRESENTATIVES
Firm Name and Address GRANITE ROCK COMPANY 110 Granite Rock Way San Jose, CA 95136	Firm Representative and Title Mr. Douglas Tolbert, Plant Operator Phone No. (408)281-8082	Source Test Engineers C. McClure/H. Doi
Permit Conditions None	Source: S-1 Asphalt Plant Plant No. 651 Operates on demand	Permit Services Division / Enforcement Division D. Farr Test Requested by: G. Stone (CDS) (NSPS)

Operating Parameters:
 Plant operated intermittently at a rate of 200 tons per hour producing 600 tons of 3/4 inch asphalt during testing. Kiln is natural gas fired consuming an average of 382 CFM. Baghouse inlet temperature averaged 290°F with a differential pressure of 4 inch W.C. Moisture content of the aggregate was 5%.

Applicable Regulations: **Regulation 10 Subpart I** VN Recommended: **NO**

Source Test Results and Comments:

METHOD: TEST	RUN A	RUN B	RUN C	AVERAGE	LIMIT
ST-17 Stack Volume Flowrate, SDCFM				37,800	
Stack Gas Temperature °F	258	253	263	258	
ST-23 Water Content, Volume %	19.9	21.1	19.8	20.3	
ST-14 Oxygen, Volume %	15.0	15.4	14.7	15.0	
ST-5 Carbon Dioxide, Volume %	3.0	3.2	3.9	3.4	
ST-6 Carbon Monoxide, ppm	>2000*	1700	1980		
Carbon Monoxide, lb/hr	>328	280	325	311**	
ST-15 Particulate, gr/SDCF	.040	.038	.034	.037	.04
Particulate, lb/hr	13.1	12.3	11.1	12.2	
Isokinetic Ratio, Act/Theo.	.94	1.01	.99		

* A ">" indicates results greater than instrument full scale.
 ** CO emissions will exceed 550 lbs in 1.8 hours of operation.

NO COMMERCIAL USE OF THESE RESULTS IS AUTHORIZED

Source Test Team Leader <i>C. McClure</i> C. McClure	Date <i>10/30/90</i>	Senior Source Test Engineer <i>K. Kumaniec</i> K. Kumaniec	Date <i>11/1/90</i>	Approved by Source Test Manager <i>G. Karels</i> G. Karels	Date <i>11/2/90</i>
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GRANITE ROCK #651
2/18/90 S-1

ISO KINETICS

$$R_{I_B} = \frac{(713)(25.02)(100)}{(60)(78.9)(1.286 \times 10^{-4})(50)(110.4)(523)} = \boxed{1.01} > B$$

RUN B) $T_s = 713^\circ R$ $V_m = 25.02 \text{ ft}^3$ $V_s = 110.4 \text{ FPS}$ $T = 50 \text{ MIN}$ $T_m = 523^\circ R$
 $\% \text{H}_2\text{O} = 21.1$ $100 - \% \text{H}_2\text{O} = 78.9\%$

RUN C) $T_s = 722.9^\circ R$ $V_m = 24.78 \text{ ft}^3$ $V_s = 110.4 \text{ FPS}$ $T = 50 \text{ MIN}$ $T_m = 529.9^\circ R$
 $\% \text{H}_2\text{O} = 19.8$ $100 - \% \text{H}_2\text{O} = 80.2$

$$R_{I_C} = \frac{(722.9)(24.78)(100)}{(60)(80.2)(1.286 \times 10^{-4})(50)(110.4)(529.9)} = 0.9896 = \boxed{0.99}$$

GRANITE JZKCO #651
S-1 10/18/90

$$V_0 = \frac{17.71 \cdot V_m \cdot P_b}{T_m}$$

$$V_{0A} = \frac{17.71(21.83)(29.94)}{522.4} = 22.16 \text{ SDCFM}$$

$$V_{0B} = \frac{17.71(25.02)(29.94)}{523} = 25.37 \text{ SDCFM}$$

$$V_{0C} = \frac{17.71(24.78)(29.94)}{529.9} = 24.79 \text{ SDCFM}$$

GRAIN LOADING: $G = 15.43 \cdot \frac{W_p}{V_0}$ $W_{pA} = .0581 \text{ g}$
 $G_A = 15.43 \frac{(0.0581)}{22.16} = 0.0404 \text{ gr/SDCF} = 0.040 \text{ gr/SDCF}$ $W_{pB} = .0624 \text{ g}$
 $W_{pC} = .0550 \text{ g}$

$$G_B = 15.43 \frac{(0.0624)}{25.37} = 0.0379 \text{ gr/SDCF} \Rightarrow 0.038 \text{ gr/SDCF}$$

$$G_C = 15.43 \frac{(0.0550)}{24.79} = 0.0342 \text{ gr/SDCF} \Rightarrow 0.034 \text{ gr/SDCF}$$

$$\underline{G_{avg} = 0.0379 \text{ gr/SDCF}}$$

MASS EMISSIONS: $M_{\text{Lb/HR}} = \frac{G \cdot Q}{116.67}$

$$Q = 37805 \text{ SDCFM}$$

$$M_A = \frac{(0.0404)(37805)}{116.67} = \underline{\underline{13.1 \text{ Lb/HR}}}$$

MASS EMISSIONS (Lb/HR)

GRANITE ROCK CO # 651
S-1 10/18/90

$$M_B = \frac{(0.0379)(37805)}{116.67} = \underline{\underline{12.3 \text{ Lb/HR}}}$$

$$M_C = \frac{(0.0342)(37805)}{116.67} = \underline{\underline{11.1 \text{ Lb/HR}}}$$

SOURCE TEST LAB DATA SHEET

PLANT: GRANITE ROCK, San Jose
 SOURCE OPERATION: Asphalt Baghouse S-1
 SOURCE TEST NO.: _____
 FILTER MEDIA: FLAT FIBER GLASS 110mm

PAGE 1 OF 1
 INITIAL: CM
 TEST DATE: 10/18/90

Drying Procedure: 105°C 24 hours before
 and after test, desiccated

FILTER DATA

RUN NO.	FILTER NO.	TARE WEIGHT (g)		FINAL WEIGHT (g)		SAMPLE WEIGHT (g)
		9/16/90 PM	9/798 PM	10/22/90 AM	10/23/90 AM	
A	434	.7200	.7199	.7460	.7459	0.0259 ✓
B	435	.7203	.7203	.7527	.7526	0.0323 ✓
C	436	.7171	.7171	.7463	.7463	0.0292 ✓

PROBE & NOZZLE RINSE DATA (total all runs)

RUN NO.	FILTER NO.	JAR SAMPLE FINAL WEIGHT (g)	FILTER SAMPLE FINAL WEIGHT (g)	SAMPLE WEIGHT (g)
A	434	0.0322	0.0259	0.0581 ✓
B	435	0.0301	0.0323	0.0624 ✓
C	436	0.0258	0.0292	0.0550 ✓

PROBE & NOZZLE RINSE DATA (each run)

RUN NO.	PROBE/NOZZLE NOS.	JAR TARE WEIGHT (g)		JAR FINAL WEIGHT (g)		JAR SAMPLE WEIGHT (g)
		10/21/90 AM	10/16/90 AM	10/22/90 AM	10/23/90 AM	
A	15	64.4315	64.4312	64.4637	64.4638	0.0322 ✓
B	16	65.8984	65.8982	65.9285	65.9285	0.0301 ✓
C	17	64.4696	64.4695	64.4924	64.4958	0.0258 ✓

IMPINGER DATA

SOLUTION	NO.	A TARE WEIGHT	B FILLED WEIGHT	C FINAL WEIGHT	C-A SAMPLE WEIGHT	C-B CONDENSATE WEIGHT

CM
 10/29/90

READ METERS: 1018 1000AT 1/2 min 3/sec

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, Calif. 94109 • 771-6000

Source Test Data Sheet

Source Operation: ASHTRAY STACK
Plant: CARBIDE BOWL #651
Sample Type: ANTICATALYTIC COMBUSTION
Process Cycle: FLIN EXHAUST
Duct Size: 4.2" DIA - 3" CORRUPT
Duct Pressure: ASSUMED H₂O

NATURAL GAS FIRED

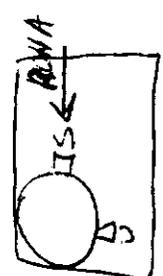
Source Test No.: 78A
Run No.: 10/18/80
Date: 10/18/80

3.9 min
Nozzle Diameter
Pilot Tube
Gas Collector No.
Barometric Pressure
Leak Rate @ 15" Hg
TIME EACH POINT
OF POINTS
TIME EACH RUN

Sampling Train: PROBE ⇒ FILTER # 937 ⇒ IMPH # 1 ⇒ IMPH # 2 ⇒ PUMPH # 0684 ⇒ METER # 037704 ⇒ EXH.

Traverse Point	Dist. From inches	INITIAL TRAVERSE		SAMPLING										REMARKS	
		Duct Temp of	ΔP H ₂ O	Traverse Point	h H ₂ O	V _g FPS	0.940 Time	Rate CFM	METER Temp Op	Volume Ft ³ P ₂	Vac "Hg	Sat'd Gas Temp of	T _g Duct Temp of		
1				R-1	4.8	155.4	5	6576	63	32.16	13.12	21	36	200	39.5
2				2	4.3	146.4	10	6260	63	41.25	19.20	15	38	244	37.6
3				3	3.4	131.88	15		62	43.75	14.90	12	39	262	33
4				4	1.85	98.00	20	4024	62	45.9	9.6	7	40	273	24
5				5	1.3	82.45	25	3362	62	47.6	7.0	6	40	278	20.2
6				6	.85	64.32	30	2818	62	49.13		4.5	40	227	16.9
7				7	1.0	70.93	35	3006	62	50.63		5	40	250	18.0
8				8	1.05	73.14	40	3061	62	52.20		5	40	259	18.4
9				9	1.35	83.28	45	3457	63	53.9		6	40	265	20.7
10				10	3.3	130.60	103	5386	63	56.6		13	41	270	32.3
									62.4	21.83		9.45	89.4	257.8	
									522.4					717.8	

Source Test Team
CHUCK McCLURE
Source Test Engineer II
H. D. O. J.



AP's - .75 → 4" 740R
D_n = 13.7
T_g + 460
V_g (100 - H₂O)
112.4
Q_m = (2.618 x 10⁻³) (100 - H₂O)^{1/2} V_g
3024
V_g = (K)(CP) T_s ΔP
21.83 x 25.94
V₀ = 17.71 (V_m X P₀)
T_m OR 522.4

Condensate 116 (g)
V₀ 221 (650F)
H₂O 222 (650F) 19.7

5.99 PPM (26.73)
= 3.0 24

K = √(P₀ - P₂) / ΔP
2944 - 26 (26.73) = 3090 H₂O
136 27.73 at 15 = 26.4 P
27.87 29.88

1 2 3 4 5 6 7 8 9 10
11 3.4 6.7 9.5 19.4 27.6 32.5 35.8 38.6 40.9 / WALL



BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, Calif. 94109 • 771-6000

1231-500 + 1' / min 25 sec
KUN REHAVST MB'S 310°F > BRIBBLE INLET
Source Operation ASPHALT
Plant: GRANITE BRK
Sample Type: AND 4 COMBUST.
Process Cycle: W/REVERSE STACK
Duct Size: 2-4 2 1
Duct Pressure: - .76" H₂O
ASSUMED H₂O

3.9 Nozzle Diameter
GE=0.8 Pitot Tube
VAN#12 Gas Collector No.
3.94 Barometric Pressure
2.085477 Leak Rate @ 15" Hg
5 TIME EACH POINT
20 # OF POINTS
50 TIME EACH RUN

Source Test No. _____
Run No. B
Date: 10/18/90

Sampling Train: PROBE ⇒ FILTER # 33C ⇒ IMPH # 2 IMPH # 4 ⇒ PUMP # 0684 ⇒ METER # 1039709 ⇒ EXH.

Traverse Point	Dist. From inches	INITIAL TRAVERSE		SAMPLING METER							T _g Duct Temp °F	REMARKS		
		Duct Temp °F	ΔP H ₂ O in	Traverse Point	h H ₂ O	V _g FPS	Time	Rate CFM	Temp °F	Volume Ft ³			Vac "Hg	Sat'd Gas Temp °F
				P-1	2.0	196	5	4567	63	157.17	8	41	240	27.4
				P-2	1.85	253	10	4415	63	159.48	7	40	233	26.5
				P-3	1.4	386	15	3797	63	167.69	7	40	249	22.8
				P-4	1.05	544	20	3256	63	165.27	5	40	263	19.33
				P-5	1.85	617	25	2924	63	166.77	4	40	237	17.9
				P-6	2.0	1031	30	4535	63	169.05	9	41	250	27.2
				P-7	4.2	1465	35	6521	63	172.31	20	38	261	39.1
				P-8	4.2	1467	40	6511	63	175.58	20	38	260	39.06
				P-9	4.2	1467	45	6611	63	178.87	20	38	263	39.1
				P-10	4.2	1468	24480	6463	63	182.19	17	38	274	38.8
						110.37 FPS			63	2510.2	11.7	39.4	253.8	
									63				713.8	

Condensate $\frac{140}{140} + \frac{124}{140} = \frac{264}{140}$

$Q_n = 13.7 \left[\frac{T_a + 460}{V_s (100 - 11120)} \right]^{1/2}$

$Q_m = (2.638 \times 10^{-3}) (100 - 11120)^{1/2} \left[\frac{V_s}{80 (3.9)} \right] T_s$

$V_s = (K)(C_p) \left[\frac{T_s \cdot \Delta P}{(V_m \times P_b)} \right]^{.02} \frac{85.49}{25.37}$

$V_0 = 17.71 (V_m \times P_b)^{.25} \frac{T_m \text{ OR } 523}{25.37}$

Source Test Team
CHUCK McCLURE
Source Test Engineer H. W. D. I.

1/06 SWT / 1 MIN V/S



BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 Ellis Street, San Francisco, Calif. 94109 • 771-6000
Source Test Data Sheet

Source Operation ASPHALT
Plant GRANITE ROCK STATION
Sample Type HEAT & COMBUSTION GASES
Process Cycle PROBES STACK
Duct Size A-4211
Duct Pressure -0.75" H₂O
ASSUMED H₂O
2000

Source Test No. _____
Run No. _____
Date: 10/11/90

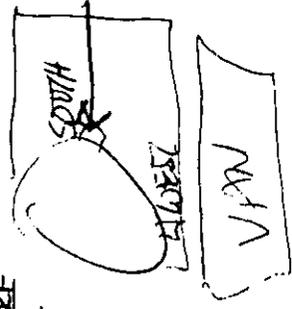
3.9 Nozzle Diameter
CP=0.87 Pilot Tube
VAPOR#2 Gas Collector No.
29.94 Barometric Pressure
0.0022 Leak Rate @ 15" Hg
5 TIME EACH POINT
10 # OF POINTS
SD TIME EACH RUN

Sampling Train: PROBE → FILTER # 236 → IMPH # 16 → PUMP # 0684 → METER # 1039704 → EXH.

Traverse Point	Dist. From inches	INITIAL TRAVERSE		Traverse Point	h H ₂ O	V _s FPS	Time 1311	Rate CFM	METER Temp OF	Volume Ft ³	Vac "Hg	Sat'd Gas Temp OF	T _g Duct Temp OF	REMARKS
		Duct Temp OF	ΔP H ₂ O											
		STOPPED		P-1	4.1	1426	5	6539	67	186.44	19	40	240	39.2
		STOPPED		P-2 (S.A)	4.2	1443	10	6618	67	189.75	21	42	240	39.7
		STOPPED		P-3	3.3	1270	15	5909	67	192.70	13	44	230	39.5
		STOPPED		P-4	1.95	99.18	30	4472	67	194.94	9	44	252	26.8
				P-5	1.3	81.61	25	3623	71	196.77	6	45	263	21.7
				P-6	1.0	72.56	30	3135	72	198.37	5	43	283	18.8
				P-7	9.5	70.30	35	3074	72	199.96	5	45	274	18.4
				P-8	1.95	100.88	40	4392	72	201.18	9	45	278	26.3
				P-9	2.6	116.97	45	5054	72	204.72	11	46	283	30.3
				P-10	4.2	149.0	42:50	6412	72	207.45	21	46	286	38.5
									69.9	24.78	16.9	44	262.90	
									529.9				722.98	

Source Test Team
CHUCK McCURE
Source Test Engineer
A. DOI

Condensate V₀ (g) SAFE
H₂O



$$D_n = 13.7 \left[\frac{T_B + 460}{V_S (100 - H_2O)} \right]^{1/2}$$

$$Q_m = \left[(2.638 \times 10^{-3}) (100 - H_2O) D^2 \right] \frac{V_s}{T_s}$$

$$V_s = (K)(C_p) \sqrt{T_s \cdot \Delta P}$$

$$V_0 = \frac{17.71 (V_m)(P_0)}{T_m \text{ or } P_0}$$

$$K = \frac{85.49}{\sqrt{(P_0 \pm H_0) P_m}}$$

GAS ANALYSIS

GRANITE ROCK #651 10/18/90
ASPHALT PLANT

DEFN	GAS	UNITS AT SPAN	SPAN GAS VALUE
REFD	O ₂	1.85u	4.9%
CRET	CO ₂	7.4u	14.9%
BLWF	CO	5.15u	1220PPM

RUNA)

O ₂	CO ₂
5.92	1.5
5.73	1.44
5.65	1.54
5.42	1.10
	1.78
	1.50
$\bar{X} = 5.68u$	$\bar{X} = 1.48u$

CO $\frac{4.9\% = X\%}{1.85u = 5.68u}$
 > 9 UNITS $\frac{14.9\% = X\%}{7.4u = 1.48u}$

RUNA

O ₂ = 15.0%
CO ₂ = 3.0%
CO = 7200PPM

GAS	SPAN GAS VALUE	DILUTED UNITS AT SPAN
O₂	4.9%	
CO ₂	14.9%	3.5u
CO	1220PPM	2.4u

O₂ ⇒ NOT DILUTED

CO₂, CO ⇒ DILUTED

RUNB)

O ₂	CO ₂	CO
6.2	.76	2.5
5.58	.80	3.0
5.8	.78	3.4
5.6	.75	4.0
5.8	.69	3.9
	.78	
$\bar{X} = 5.8u$	$\bar{X} = .76u$	$\bar{X} = 3.36u$

$\frac{4.9\% = X\%}{1.85u = 5.8u}$

$\frac{14.9\% = X\%}{3.5u = .76u}$

$\frac{1220PPM = XPPM}{2.4u = 3.36u}$

RUNB

O ₂ = 15.4%
CO ₂ = 3.2%
CO = 1708PPM

RUNC)

O ₂	CO ₂	CO
5.2	.92	2.9
5.7	.95	3.6
5.75	.90	3.45
5.5	.89	4.15
	.97	5.40
$\bar{X} = 5.54u$	$\bar{X} = .926u$	$\bar{X} = 3.9u$

$\frac{4.9\% = X\%}{1.85u = 5.54u}$

$\frac{14.9\% = X\%}{3.5u = .926u}$

$\frac{1220PPM = XPPM}{2.4u = 3.9u}$

RUNC

O ₂ = 14.7%
CO ₂ = 3.9%
CO = 1982PPM

O₂ AVG = 15.0%
 CO₂ AVG = 3.4%
 CO AVG = ?

GRANITERA - S/J PLT# 651
10/18/90

NATURAL GAS USAGE

TIME	AMOUNT	ELAPSED TIME
1018	1000 ft ³	2 MIN 31 SEC → 151 SEC
1221	500 ft ³	1 MIN 25 SEC → 85 SEC
1405	500 ft ³	1 MIN 18 SEC → 78 SEC
	<hr/> 2000 ft ³	→ 314 SEC

$$\therefore \frac{2000 \text{ ft}^3}{314 \text{ SEC}} \cdot \frac{60 \text{ SEC}}{1 \text{ MIN}} = \underline{\underline{382 \text{ ft}^3 / \text{MIN AVERAGE.}}}$$

SOURCE TEST LAB DATA SHEET

PLANT: Granite Rock, San Jose
 SOURCE OPERATION: Asphalt Baghouse
 SOURCE TEST NO.: _____
 FILTER MEDIA: _____

PAGE 1 OF 7
 INITIAL cm
 TEST DATE 10/18/90

Drying Procedure: 105 °C 24 hours before and after test, desiccated

FILTER DATA

RUN NO.	FILTER NO.	TARE WEIGHT (g)	FINAL WEIGHT (g)	SAMPLE WEIGHT (g)

PROBE & NOZZLE RINSE DATA (total all runs)

RUN NO.	FILTER NO.	JAR SAMPLE FINAL WEIGHT (g)	FILTER SAMPLE FINAL WEIGHT (g)	SAMPLE WEIGHT (g)

PROBE & NOZZLE RINSE DATA (each run)

RUN NO.	PROBE/NOZZLE NOS.	JAR TARE WEIGHT (g)	JAR FINAL WEIGHT (g)	JAR SAMPLE WEIGHT (g)

IMBINGER DATA

SOLUTION	NO.	A TARE WEIGHT	B FILLED WEIGHT	C FINAL WEIGHT	C-A SAMPLE WEIGHT	C-B CONDENSATE WEIGHT
H ₂ O	P-1	480.0	580.2	693.9	213.9	113.7 > 113.2
	P-2	473.9	573.9	573.4	99.5	< 0.57 >
	P-3	494.2	594.4	717.4	223.2	123.0 > 128.7
	P-4	470.2	570.4	586.1	115.9	15.7 >
	P-5	441.8	542.0	655.3	213.5	113.3 > 123.2
	P-6	477.5	578.0	587.9	110.4	9.9 >

PLANT: GRANITE ROCK

DATE: 10/18/90

ADDRESS:

OPERATOR: DOUG. T.

PLANT #: 651

- 1) What are you producing: 1/4", 1/2" 3/4"
- 2) What rate are you producing at: 200 Tons/Hour - Average
- 3) What is your maximum rate of production: Tons/Hour
- 4) How much will you produce today: 600 Tons-Average
- 5) What type of fuel are you burning: NATL GAS
- 6) What is your rate of fuel useage: READ METER
- 7) What is your baghouse inlet temperature averaging: ✓
- 8) What is your baghouse differential pressure: 4 "H₂O
- 9) What is the moisture content of the aggregate: 5 % H₂O
- 10) Are there any abnormal conditions in the plant today: NO

Thank You

INTERMITTENTLY
INTERMITTENT
AVERAGE TESTING
AT A RATE OF

PLANT OPERATED AT 200 TONS PER HOUR PRODUCING 600 TONS OF
3/4 INCH ASPHALT DURING TESTING, KILN IS NATURAL GAS FIRED
INSOMUCH AS
AVERAGE OF 382 CFM, BAGHOUSE INLET TEMPERATURE AVERAGED 290°F WITH
DIFFERENTIAL PRESSURE OF 4" W.C. MOISTURE CONTENT OF THE AGGREGATE WAS 5%.

PLANT# 651

Granite Rock Company
110 Granite Rock Wy
San Jose, CA 95136

Sources:

- 1 HOT MIX PLANT
- 2 AGGREGATE STOCKPILE
- 3 ENCLOSED HOT MIX STORAGE BIN & ELEVATOR
- 4 ENCLOSED HOT MIX STORAGE BIN & ELEVATOR
- 5 HOT MIX STORAGE BIN
- 6 ASPHALT TANK
- 7 ASPHALT TANK
- 8 EMULSIFIED ASPHALT TANK
- 9 CONVEYORS
- 10 Recycle Crusher Plant
- 11 Recycle Screen
- 12 Recycle Conveyor System Stockpile

Abatement Devices:

- 1 BAG HOUSE
- 10 Recycle Crusher Water Spray
- 11 Recycle Screen's Water Spray
- 12 Water Spray System

Emission Points:

- 1 train: ,A1,,