Appendix G

Deramus Field Station Sampling Data

Master

	Phase	Number of Passes	Percent Moisture 1st	2nd	3rd	4th	Ave.	Soil	Vehicle	Type of Test	Distance From Access	Area sampled (ft^2)	Bag	Tare Weight (g)	Final Weight (g)	Difference (g)	Empty Bag (g)	Nonrecoverable mass (g)	Total loading (g/m)	f	sl_{lower}	sl_{upper}	silt content	10 mesh (%)	20 mesh (%)	40 mesh (%)	100 mesh (%)	140 mesh (%)	200 mesh (%)	Pan (%)
1	phase1-1	100	4.2	4.9			4.6	native	pickup	calibration	10	250	9901	59.9	177.3	117.4	62.5	2.6	1.54	0.15	0.23	0.26	0.17	30.4	14.1	11.6	19.6	4.6	4.6	15.0
2	phase1-1	100	4.2	4.9			4.6	native	pickup	calibration	50	250	9902	61.5	76.8	15.3	61.8	0.3	0.20	0.14	0.03	0.03	0.16	12.9	19.4	23.0	18.7	8.6	2.9	14.4
3	phase1-1	100	4.2	4.9			4.6	native	pickup	calibration	90	250	9903	60.4	103.6	43.2	61.4	1.0	0.57	0.09	0.05	0.06	0.11	44.0	19.3	14.4	11.0	1.5	1.2	8.6
4	phase1-1	100	4.2	4.9			4.6	native	pickup	calibration	130	250	9904	62.0	77.8	15.8	62.7	0.7	0.21	0.08	0.02	0.02	0.12	20.0	28.6	25.0	12.9	3.6	2.1	7.9
5	phase1-2	100	14.3	10.4	7.2	6.0	9.5	native	pickup	calibration	10	250	9905	62.4	235.1	172.7	65.6	3.2	2.27	0.05	0.12	0.16	0.07	34.7	20.9	21.2	13.3	3.6	1.2	5.1
6	phase1-2	100	14.3	10.4	7.2	6.0	9.5	native	pickup	calibration	50	250	9906	61.3	161.9	100.6	63	1.7	1.32	0.08	0.11	0.13	0.10	22.3	19.6	21.2	23.3	2.8	2.7	8.1
7	phase1-3	50	25.0	18.9	20.4		21.4	native	pickup	calibration	130	250	9907	61.4	396.5	335.1	63.3	1.9	4.40	0.08	0.33	0.35	0.08	9.2	20.0	30.5	26.4	4.4	1.9	7.5
8	phase1-3	50	25.0	18.9	20.4		21.4	native	pickup	calibration	90	250	9908	61.3	286.7	225.4	62.5	1.2	2.96	0.06	0.18	0.19	0.07	26.4	24.0	21.8	18.8	1.6	1.4	6.1
9	phase1-3	50	25.0	18.9	20.4		21.4	native	pickup	calibration	50	250	9909	61.3	549.0	487.7	63.9	2.6	6.40	0.09	0.58	0.61	0.10	16.9	22.9	23.9	19.7	5.3	2.2	9.1
10	phase1-3	50	25.0	18.9	20.4		21.4	native	pickup	calibration	10	250	9910	61.5	661.6	600.1	62.8	1.3	7.88	0.05	0.39	0.40	0.05	17.5	27.4	25.2	21.4	1.9	1.6	4.9
11	phase 1A-1	50	23.6	24.6			24.1	native	pickup	calibration/uncontrolled	5	250	9911	61.2	1102.9	1041.7	62.6	1.4	13.67	0.06	0.88	0.90	0.07	37.2	26.7	14.4	11.9	1.7	1.7	6.4
12	phase 1A-1	50	23.6	24.6			24.1	native	pickup	calibration/uncontrolled	45	250	9912	61.2	978.2	917.0	64.8	3.6	12.03	0.08	0.93	0.97	0.08	50.6	17.6	11.7	7.6	3.4	1.3	7.7
13	phase 2-1	50	6.1	5.1	5.2		5.5	sandy	pickup	uncontrolled	5	250	9913	61.1	249.7	188.6	62.7	1.6	2.48	0.17	0.43	0.44	0.18	16.5	19.9	20.2	20.2	3.0	3.0	17.2
14	phase 2-2	50	14.1	10.0			12.1	sandy	pickup	uncontrolled	5	250	9914	60.9	580.0	519.1	63.7	2.8	6.81	0.10	0.69	0.72	0.11	20.0	24.2	27.6	12.6	4.0	1.4	10.1
15	phase 2-3	50	8.8	8.3	6.6		7.9	sandy	pickup	uncontrolled	5	250	9915	60.0	366.6	306.6	61.7	1.7	4.02	0.13	0.52	0.54	0.13	21.2	25.0	23.2	14.5	1.6	1.7	12.9
16	phase 2-4	50	17.6	17.1			17.4	sandy	pickup	uncontrolled	5	250	9916	61.1	620.7	559.6	64.2	3.1	7.34	0.12	0.90	0.93	0.13	25.0	22.5	23.1	12.1	3.6	1.6	12.2
17	phase 2-5	50	11.1	10.0	7.2		9.4	sandy	pickup	uncontrolled	5	250	9917	59.0	419.3	360.3	62	3.0	4.73	0.20	0.96	0.99	0.21	13.7	20.7	25.5	14.9	2.8	2.0	20.4
18	phase 3-1	50	11.1	10.0	7.2		9.4	sandy	pickup	paved apron	25	250	9918	60.5	197.9	137.4	61.6	1.1	1.80	0.25	0.44	0.45	0.25	13.9	21.6	20.9	15.2	1.7	2.1	24.5
19	phase 2-6	50	17.4	12.1	14.0		14.5	native	pickup	uncontrolled	5	250	9919	60.9	771.8	710.9	64.4	3.5	9.33	0.16	1.48	1.52	0.16	26.1	19.9	16.3	15.7	3.4	2.8	15.9
20	phase 3-2	50	17.4	12.1	14.0		14.5	native	pickup	paved apron	25	250	9920	60.3	272.2	211.9	61.9	1.6	2.78	0.17	0.48	0.50	0.18	20.0	20.8	15.9	19.0	3.3	3.7	17.2
21	phase 2-7	50	19.4	19.5	19.1		19.3	sandy	pickup	uncontrolled	5	250	9921	60.9	365.7	304.8	64.5	3.6	4.00	0.21	0.83	0.87	0.22	17.9	18.5	23.0	14.9	2.9	2.1	20.8
22	phase 3-3	50	19.4	19.5	19.1		19.3	sandy	pickup	paved apron	25	250	9922	61.2	237.3	176.1	63.4	2.2	2.31	0.27	0.63	0.66	0.28	10.1	17.9	22.3	17.6	2.1	2.4	27.4
23	phase 2-8	54	24.2	25.7			25.0	native	pickup	uncontrolled	5	250	9923	62.3	1321.1	1258.8	67.2	4.9	16.52	0.08	1.40	1.46	0.09	26.8	23.9	18.6	16.2	3.5	2.5	8.5
24	phase 3-4	54	24.2	25.7			25.0	native	pickup	paved apron	25	250	9924	62.2	936.6	874.4	66.7	4.5	11.48	0.06	0.71	0.76	0.07	48.8	20.4	10.8	10.0	2.0	1.8	6.2
25	phase 2-9	50	17.0	18.7	14.5		16.7	sandy	pickup	uncontrolled	5	250	9925	59.5	338.5	279.0	61.2	1.7	3.66	0.22	0.81	0.83	0.23	18.7	20.5	20.2	13.8	2.6	2.2	22.1
26	phase 3-5	50	17.0	18.7	14.5		16.7	sandy	pickup	paved apron	25	250	9926	57.7	225.0	167.3	59	1.3	2.20	0.20	0.43	0.45	0.20	18.5	23.7	20.1	14.5	1.8	1.8	19.7
27	phase 2-10	50	15.7	24.5			20.1	native	pickup	uncontrolled	5	250	9927	58.0	770.0	712.0	60.6	2.6	9.34	0.17	1.56	1.59	0.17	15.6	24.0	19.3	17.6	3.8	3.1	16.7
28	phase 3-6	50	15.7	24.5			20.1	native	pickup	paved apron	25	250	9928	57.9	560.1	502.2	61.2	3.3	6.59	0.15	0.97	1.01	0.15	24.2	24.6	16.2	15.2	2.5	2.6	14.7
29	phase 2-11	50	19.3	17.4			18.4	sandy	pickup	uncontrolled	5	250	9929	54.9	174.7	119.8	55.9	1.0	1.57	0.21	0.32	0.33	0.21	12.5	22.2	22.9	16.0	3.7	2.3	20.5
30	phase 3-7	50	19.3	17.4			18.4	sandy	pickup	paved apron	25	250	9930	55.0	153.7	98.7	55.6	0.6	1.30	0.18	0.24	0.24	0.19	14.9	22.1	23.1	17.7	2.0	2.0	18.3
31	phase 1A-2	50	16.8	22.6			19.7	native	pickup	calibration	45	250	9931	55.3	699.7	644.4	59.1	3.8	8.46	0.10	0.82	0.87	0.10	42.8	20.2	12.8	10.6	2.1	1.7	9.7
32	phase 3-8	50	16.8	22.6			19.7	native	pickup	paved apron	25	250	9932	55.8	693.9	638.1	58.4	2.6	8.37	0.11	0.91	0.94	0.11	39.4	22.5	12.1	11.2	1.9	2.0	10.8
33	phase 2-12	50	16.8	22.6			19.7	native	pickup	calibration/uncontrolled	5	250	9933	55.6	1068.4	1012.8	58.4	2.8	13.29	0.12	1.59	1.62	0.12	26.1	23.5	16.2	16.6	2.8	2.8	12.0
34	phase 2-13	50	22.8	18.2			20.5	sandy	pickup	uncontrolled	5	250	9934	55.7	221.2	165.5	58.3	2.6	2.17	0.22	0.47	0.50	0.23	18.3	20.5	20.4	13.6	3.2	2.1	21.8
35	phase 3-9	50	22.8	18.2			20.5	sandy	pickup	paved apron	25	250	9935	55.7	198.5	142.8	57.4	1.7	1.87	0.17	0.32	0.34	0.18	27.4	20.7	19.2	10.6	3.6	1.5	16.9
36	phase 2-14	50	31.2	16.3			23.8	native	pickup	uncontrolled	5	250	9936	55.6	578.6	523.0	60.3	4.7	6.86	0.22	1.53	1.57	0.23	19.1	20.2	16.4	15.6	3.4	3.0	22.2
37	phase 3-10	50	31.2	16.3			23.8	native	pickup	paved apron	25	250	9937	55.5	381.7	326.2	59.6	4.1	4.28	0.19	0.80	0.85	0.20	22.9	22.8	14.9	15.1	2.6	2.9	18.8
38	phase 2-15	50	19.2	19.1			19.2	sandy	pickup	uncontrolled	5	250	9938	58.9	439.8	380.9	63	4.1	5.00	0.09	0.44	0.49	0.10	27.5	26.9	20.0	15.5	0.0	1.3	8.8
39	phase 3-11	50	19.2	19.1			19.2	sandy	pickup	paved apron	25	250	9939	57.9	329.3	271.4	59.5	1.6	3.56	0.13	0.47	0.49	0.14	27.6	21.8	19.9	13.1	2.5	1.7	13.3
40	phase 2-16	50	35.6	29.4			32.5	native	pickup	uncontrolled	5	250	9940	57.3	530.4	473.1	59.5	2.2	6.21	0.15	0.92	0.95	0.15	32.5	22.2	12.9	12.8	2.3	2.4	14.9
41	phase 3-12	50	35.6	29.4			32.5	native	pickup	paved apron	25	250	9941	57.7	368.3	310.6	59.6	1.9	4.08	0.15	0.61	0.63	0.15	34.3	21.9	12.1	13.8	1.1	1.9	14.9
42	phase 2-17	50	19.8	12.8	11.5		14.7	native	dump truck	uncontrolled	5	250	9942	57.8	1511.0	1453.2	61	3.2	19.07	0.21	4.09	4.12	0.22	24.2	16.8	15.7	15.4	3.5	3.0	21.4
43	phase 2-18	50	19.8	12.8	11.5		14.7	sandy	dump truck	uncontrolled	5	250	9943	57.8	695.8	638.0	60.8	3.0	8.37	0.27	2.26	2.29	0.27	10.7	16.0	21.0	19.0	2.9	3.2	27.0
44	phase 2-19	50	21.2	14.8	25.5		20.5	native	dump truck	uncontrolled	5	250	9944	55.6	1081.2	1025.6	59.3	3.7	13.46	0.22	2.96	3.00	0.22	22.9	19.4	14.6	15.3	3.1	2.7	22.0
45	phase 2-20	50	15.6	26.1	11.2		17.6	sandy	dump truck	uncontrolled	5	250	9945	55.9	925.4	869.5	59	3.1	11.41	0.30	3.38	3.41	0.30	14.1	17.6	19.8	14.1	2.5	2.3	29.6
46	phase 4-1	50	13.2	10.2			11.7	sandy	pickup	gravel apron	5	250	9946	55.3	341.2	285.9	58.2	2.9	3.75	0.17	0.65	0.68	0.18	8.8	16.9	24.7	27.9	2.2	2.2	17.3
47	phase 4-2	50	24.2	21.0			22.6	native	pickup	gravel apron	5	250	9947	55.6	518.5	462.9	59.2	3.6	6.07	0.30	1.80	1.83	0.30	13.2	17.0	15.5	17.5	3.7	3.4	29.7
48	phase 4-3	50	14.4	12.1			13.3	sandy	pickup	gravel apron	5	250	9948	55.7	586.0	530.3	58.2	2.5	6.96	0.14	0.98	1.01	0.14	17.5	18.4	25.0	21.1	2.3	1.7	14.1
49	phase 4-4	50	29.1	25.9			27.5	native	pickup	gravel apron	5	250	9949	55.5	318.6	263.1	58.5	3.0	3.45	0.29	1.01	1.04	0.30	10.1	17.6	16.1	18.9	3.7	4.2	29.3
50	phase 4-5	50	17.2	11.9			14.6	sandy	pickup	gravel apron	5	250	9950	57.2	671.4	614.2	60.2	3.0	8.06	0.16	1.27	1.30	0.16	14.3	19.5	23.1	23.5	2.2	1.7	15.7
51	phase 4-6	50	30.2	28.0			29.1	native	pickup	gravel apron	5	250	9951	56.7	785.5	728.8	60.3	3.6	9.56	0.28	2.67	2.70	0.28	15.3	16.9	15.8	16.7	3.8	3.5	27.9
52	phase 4-7	50	17.7	15.7			16.7	sandy	pickup	gravel apron	5	250	9952	62.6	836.7	774.1	66.5	3.9	10.16	0.17	1.77	1.82	0.18	15.8	19.3	20.3	21.9	2.5	2.6	17.5
53	phase 4-8	50	33.9	30.2			32.1	native	pickup	gravel apron	5	250	9954	62.6	627.6	565.0	66.6	4.0	7.41	0.23	1.73	1.77	0.24	17.4	19.8	15.3	17.3	3.7	3.1	23.3
54	phase 4-9	50	4.8	5.1	4.3		4.7	sandy	pickup	gravel apron	5	250	9955	61.6	277.5	215.9	63.8	2.2	2.83	0.19	0.53	0.56	0.20	13.2	20.8	25.0	18.9	2.0	1.4	18.8
55	phase 4-10	50	11.4	16.0	13.1		13.5	native	pickup	gravel apron	5	250	9956	62.3	270.3	208.0	64.5	2.2	2.73	0.25	0.68	0.70	0.26	16.4	24.0	16.1	13.7	2.2	2.6	25.0
56	phase 4-11	50	4.1	4.4			4.3	sandy	pickup	gravel apron	5	250	9957	61.7	152.4	90.7	63.1	1.4	1.19	0.21	0.25	0.27	0.22	15.9	22.8	19.8	17.5	1.7	1.2	21.1
57	phase 4-12	50	15.8	12.3			14.1	native	pickup	gravel apron	5	250	9958	62.3	474.5	412.2	65.4	3.1	5.41	0.34	1.86	1.88	0.35	6.3	14.5	17.5	18.8	4.6	4.0	34.3
58	phase 4-13	50	12.8	8.1			10.5	sandy	pickup	gravel apron	5	250	9959	61.9	466.7	404.8	64.7	2.8	5.31	0.26	1.40	1.43	0.27	7.6	15.5	19.9	24.3	3.1	3.2	26.4

TECHNICAL REPORT DATA
(Please read instructions on the reverse before completing)

1. REPORT NO.	2.	3. RECIPIENT'S ACCESSION NO.
EPA-600/R-01-031		

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15. SUPPLEMENTARY NOTES APPCD project officer C. C. Masser is no longer with the Agency. For details, contact John Kinsey, Mail Drop 61, 919/ 541-4121.

16. ABSTRACT The report summarizes the results of field testing of the effectiveness of control measures for sources of fugitive particulate emissions found at construction sites. The effectiveness of watering temporary, unpaved travel surfaces on emissions of particulate matter with aerodynamic diameters of < 10 micrometers (PM-10) was tested in Beloit, Kansas, during September 1999. The tested operation was scraper transit. The effectiveness of paved and graveled access aprons on mud/dirt trackout from unpaved truck exit routes was tested in Grandview, Missouri, during November 1999. In the later tests, moisture content and soil type were varied to determine if watering of exit routes, while reducing on-site emissions, might offset the effect of increasing emissions attributable to in-place mud/dirt trackout controls.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Pollution	Pollution Control	13B
Emissions	Stationary Sources	14G
Particles	Fugitive Emissions	
Dust Control	Particulate	05E
Construction Equipment	Construction Sites	13C
Scrapers	Dirt Roads	

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