

EXHIBIT G

PM2.5 Analyses

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject PM_{2.5} Development of 3-Yr Background Value

Data _____

Reviewed by am Date _____

PM_{2.5} Ambient Monitoring Data

<u>Braidwood</u>	<u>24-Hour</u> 98 percentile	<u>Annual</u>
2008	25.9	10.3
2007	29.3	—
2006	21.6	9.8
	ave. 25.6	10.05

but two year average would not consider
higher data likely experienced in 2007

Joliet

2008	31.3	11.7
2007	38.8	14.6
2006	25.9	12.2
	ave. 32.0	ave. 12.83

Joliet would provide data, but site of
ambient monitoring would overstate impacts,
as shown by the 24-hour data.

Calculation of Three-Year Average for Braidwood

Joliet - two year average (2008 and 2006) = 11.95
" - three year average (2008 thru 2006) = 12.83

Braidwood - three year average = $\frac{12.83}{11.95} \times 10.05 = 10.79, \approx 10.8$

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject Evaluation of PM_{2.5} Air Quality

Data _____

Reviewed by _____ Date _____

2008 Background Air Quality ($\mu\text{g}/\text{m}^3$)

Braidwood - 24 hr

25.9 24-hour, 98 percentile
10.3 annual

Adjustment of 24-hour PM₁₀ Impacts

Kiln	-	2.10	$\times 100\%$	2.1
Dust Pile	-	0.21	$\times 100\%$	0.21
Pit	-	17.47	$\times 16\%^*$	2.8
Roads	-	7.21	$\times 10\%^*$	0.72
		<u>21.9</u>		<u>5.83</u>

* from AP-42

$$25.9 + 5.83 = 31.73, < 35$$

Adjustment of Annual PM₁₀ Impacts

Kiln	-	0.13	$\times 100\%$	0.13
Dust Pile	-	0.01	$\times 100\%$	0.01
Pit	-	2.92	$\times 16\%^*$	0.47
Roads	-	1.13	$\times 10\%^*$	0.113
		<u>3.48</u>		<u>0.72</u>

* from AP-42

$$10.3 + 0.72 = 11.02 < 15$$

Romaine, Chris

From: Harrell, Matthew
Sent: Monday, June 01, 2009 12:15 PM
To: Romaine, Chris
Cc: Sprague, Jeff; Kaleel, Rob; Patel, Minesh
Subject: Vulcan-Manteno PM10 Results by Source Group

Chris:

As we discussed, listed below are the source group contribution breakouts for PM10. The impacts from the lime kiln stack are very small compared to the fugitive sources located in the pit and the plant's roadways. Also, please note that the maximum receptor locations for each source group vary. As a result, the sum of the individual source group results exceed the concentration at the highest receptor for source group ALL. Let me know if you need anything else.

Annual PM10 – Highest Year: 2006 - 3.48 ug/m3

Kiln – 0.13
Flue Dust Pile – 0.01
Pit – 2.92
Roads – 1.13

24-hour PM10 – Highest Year: 2003 - 21.90 ug/m3

Kiln – 2.10
Flue Dust Pile – 0.21
Pit – 17.47
Roads – 7.21

Matt

Matthew Harrell
Geographic Information Specialist
Air Quality Planning Section
Illinois EPA
(217) 557-2437

Table B3 2006 PARTICULATE MATTER FINE (PM_{2.5}) (micrograms per cubic meter)									
STATION	ADDRESS	TOTAL	NUMBER OF SAMPLES >35 ug/m ³	98th PERCENTILE VALUE	HIGHEST SAMPLES				ANNUAL ARITHMETIC MEAN
					1st	2nd	3rd	4th	
65 BURLINGTON-KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	114	1	27.4	36.5	27.9	27.4	24.8	12.1
66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Bondville	Twp. Rd. 500 E.	58	0	23.0	24.0	23.0	21.7	21.5	11.1
Champaign	606 E. Grove	60	0	25.6	26.1	25.6	25.2	22.5	12.1
Mc LEAN COUNTY									
Normal	Main & Gregory	57	0	23.8	25.6	23.8	23.5	20.2	11.4
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Blue Island	12700 Sacramento	121	0	28.1	33.1	31.3	28.1	27.6	13.2
Chicago-Com Ed	7801 Lawndale	117	0	29.0	33.7	33.0	29.0	28.5	13.5
Chicago-Mayfair	4850 Wilson Ave.	326	4	31.6	42.2	40.8	39.7	38.1	14.5
Chicago-SE Police	103rd & Luella	119	1	26.6	35.6	27.6	26.6	26.3	13.3
Chicago-Springfield	1745 N. Springfield Ave.	111	1	27.7	36.2	32.0	27.7	26.8	13.5
Chicago-Washington HS	3535 E. 114th St.	60	0	27.0	31.8	27.0	25.3	23.7	13.2
Cicero	13th St. & 50th Ave.	115	1	29.2	36.0	34.3	29.2	29.0	14.4
Des Plaines	9511 W. Harrison	119	0	26.8	29.7	28.4	26.8	26.3	11.4
Lyons Township	50th St. & Glencoe Ave.	119	2	32.9	37.6	37.5	32.9	30.8	15.6
Northbrook	750 Dundee Road	120	0	27.0	31.6	30.8	27.0	26.8	11.9
Schiller Park	4743 Mannheim Rd.	113	1	30.0	37.1	33.7	30.0	28.5	14.9
Summit	60th St. & 74th Ave.	119	2	27.4	36.0	36.0	27.4	27.4	13.8
Du PAGE COUNTY									
Naperville	400 S. Eagle St.	59	0	25.1	27.3	25.1	24.1	23.8	12.7
KANE COUNTY									
Aurora	1240 N. Highland	59	0	25.4	29.9	25.4	25.2	25.0	12.7
Elgin	258 Lovell St.	59	0	29.8	30.9	29.8	24.6	22.2	11.8
LAKE COUNTY									
Zion	Camp Logan	61	0	25.6	27.8	25.6	25.1	22.8	10.7
+ - Did not meet minimum statistical selection criteria (See Appendix B.1) Primary 24-Hour Standard 35 ug/m³; Primary Annual Standard 15.0 ug/m³									

Table B3

2006
PARTICULATE MATTER FINE (PM_{2.5})
(micrograms per cubic meter)

STATION	ADDRESS	TOTAL	NUMBER	98th	HIGHEST SAMPLES				ANNUAL
			OF SAMPLES	PERCENTILE	1st	2nd	3rd	4th	ARITHMETIC
			>35 ug/m ³	VALUE					MEAN
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
Mc HENRY COUNTY									
Cary	1st St. & Three Oaks Rd.	116	0	27.6	34.3	29.7	27.6	27.5	11.8
WILL COUNTY									
Braidwood	36400 S. Essex Rd.	55	0	21.6	22.0	21.6	20.3	19.3	9.8
Joliet	Midland & Campbell	58	0	25.9	28.3	25.9	22.0	22.0	12.2
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
Rock Island	32 Rodman Ave.	60	0	26.7	26.7	26.7	25.0	20.9	10.4
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Alton	1700 Annex St.	60	0	27.6	28.2	27.6	25.8	24.0	13.1
Granite City	23rd & Madison	102	3	36.3	40.0	39.9	36.3	33.1	16.3
Granite City	2040 Washington	116	1	32.9	37.2	33.6	32.9	32.6	16.0
Wood River	54 N. Walcott	120	0	28.3	31.8	31.2	28.3	26.3	13.1
RANDOLPH COUNTY									
Houston	Twp Rds. 150 & 45	56	0	25.7	27.0	25.7	23.4	20.7	11.4
ST. CLAIR COUNTY									
East St. Louis	13th & Tudor	55	0	29.2	32.1	29.2	28.9	28.4	14.6
Swansea	1500 Caseyville Ave.	116	0	28.1	29.9	29.5	28.1	27.5	13.4
71 NORTH CENTRAL ILLINOIS INTRASTATE									
LA SALLE COUNTY									
Oglesby	308 Portland Ave.	119	0	26.0	29.3	28.2	26.0	26.0	11.8
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	201 Division St.	57	0	27.3	33.2	27.3	25.9	25.2	12.3

+ - Did not meet minimum statistical selection criteria (See Appendix B.1)

Primary 24-Hour Standard 35 ug/m³; Primary Annual Standard 15.0 ug/m³

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2006
PARTICULATE MATTER FINE (PM_{2.5})
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STATION	ADDRESS	TOTAL	NUMBER	98th	HIGHEST SAMPLES				ANNUAL
			OF SAMPLES	PERCENTILE	1st	2nd	3rd	4th	ARITHMETIC
			>35 ug/m ³	VALUE					MEAN
74 SOUTHEAST ILLINOIS INTRASTATE									
HAMILTON COUNTY									
Knight Prairie Township	State Route 14	56	0	22.3	22.6	22.3	21.0	21.0	11.2
75 WEST CENTRAL ILLINOIS INTRASTATE									
ADAMS COUNTY									
Quincy	732 Hampshire	61	0	26.1	28.1	26.1	24.5	22.5	11.2
JERSEY COUNTY									
Jerseyville	Liberty St.	61	0	27.5	29.5	27.5	22.9	22.4	11.5
MACON COUNTY									
Decatur	2200 N. 22nd	57	0	26.0	26.7	26.0	25.2	22.2	12.2
SANGAMON COUNTY									
Springfield	State Fair Grounds	60	0	28.4	30.1	28.4	23.6	21.4	11.7

⁺ - Did not meet minimum statistical selection criteria (See Appendix B.1)

Primary 24-Hour Standard 35 ug/m³; Primary Annual Standard 15.0 ug/m³

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2007									
PARTICULATE MATTER FINE (PM _{2.5})									
(micrograms per cubic meter)									
STATION	ADDRESS	TOTAL	NUMBER OF SAMPLES >35 ug/m ³	98th PERCENTILE VALUE	1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
65 BURLINGTON-KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	116	1	34.7	37.2	34.9	34.7	34.7	13.1
66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Bondville	Twp. Rd. 500 E.	58	0	33.5	34.2	33.5	33.0	32.3	13.3
Champaign	606 E. Grove	57	0	33.2	34.0	33.2	32.8	30.3	12.7
Mc LEAN COUNTY									
Normal	Main & Gregory	96	0	33.3	34.8	33.3	33.0	32.4	12.1
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Blue Island	12700 Sacramento	116	2	35.1	42.6	36.1	35.1	33.8	14.3
Chicago-Com Ed	7801 Lawndale	116	3	37.2	42.6	38.3	37.2	33.8	14.3
Chicago-Mayfair	4850 Wilson Ave.	339	12	39.4	51.0	49.2	47.4	47.0	15.5
Chicago-SE Police	103rd & Luella	109	2	33.6	51.3	36.3	33.6	33.2	14.1
Chicago-Springfield	1745 N. Springfield Ave.	111	4	38.9	56.2	46.5	38.9	36.7	15.1
Chicago-Washington HS	3535 E. 114th St.	57	3	35.7	38.6	35.7	35.5	34.8	15.7
Cicero	13th St. & 50th Ave.	105	5	36.9	50.1	39.1	36.9	36.6	14.8
Des Plaines	9511 W. Harrison	118	2	33.9	45.8	45.5	33.9	33.8	12.7
Lyons Township	50th St. & Glencoe Ave.	117	3	36.8	49.5	37.1	36.8	34.8	15.6
Northbrook	750 Dundee Road	120	3	36.8	44.2	39.0	36.8	34.4	13.2
Schiller Park	4743 Mannheim Rd.	113	3	36.6	47.5	39.0	36.6	35.1	15.3
Summit	60th St. & 74th Ave.	120	3	36.7	46.7	39.1	36.7	33.3	14.8
Du PAGE COUNTY									
Naperville	400 S. Eagle St.	59	2	37.8	43.6	37.8	34.5	31.1	13.7
KANE COUNTY									
Aurora	1240 N. Highland	55	2	35.5	46.3	35.5	35.0	30.4	14.6
Elgin	258 Lovell St.	58	1	35.4	46.9	35.4	30.4	28.0	13.2
LAKE COUNTY									
Zion	Camp Logan	60	0	32.8	33.0	32.8	30.2	29.5	11.9
⁺ - Did not meet minimum statistical selection criteria (See Appendix B.1) Primary 24-Hour Standard 35 ug/m³; Primary Annual Standard 15.0 ug/m³									

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2007

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(micrograms per cubic meter)

STATION	ADDRESS	TOTAL	NUMBER	98th	HIGHEST SAMPLES			ANNUAL	
			OF SAMPLES	PERCENTILE	1st	2nd	3rd	4th	ARITHMETIC MEAN
			>35 ug/m ³	VALUE					
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
Mc HENRY COUNTY									
Cary	1st St. & Three Oaks Rd.	116	1	28.6	46.1	32.6	28.6	27.0	11.6
WILL COUNTY									
Braidwood	36400 S. Essex Rd.	53	0	29.3	31.6	29.3	27.5	20.4	+
Joliet	Midland & Campbell	58	2	38.8	44.0	38.8	35.4	34.6	14.6
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
Rock Island	32 Rodman Ave.	53	1	26.9	45.9	26.9	26.7	25.1	12.4
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Alton	1700 Annex St.	54	0	35.0	35.4	35.0	34.7	33.4	14.8
Granite City	23rd & Madison Ave.	111	3	36.0	38.4	38.4	36.0	35.3	15.2
Granite City	2100 Madison Ave.	35	0	33.0	33.0	28.8	23.0	22.2	+
Wood River	54 N. Walcott	113	1	34.5	38.4	35.0	34.5	34.3	14.1
RANDOLPH COUNTY									
Houston	Twp Rds. 150 & 45	59	1	31.8	41.1	31.8	30.8	28.7	14.2
ST. CLAIR COUNTY									
East St. Louis	13th & Tudor	54	0	33.1	34.9	33.1	32.7	32.5	15.6
Swansea	1500 Caseyville Ave.	116	0	32.9	34.2	33.8	32.9	30.8	13.3
71 NORTH CENTRAL ILLINOIS INTRASTATE									
LA SALLE COUNTY									
Oglesby	308 Portland Ave.	114	0	30.9	33.4	33.0	30.9	29.2	11.7
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	201 Division St.	103	1	30.4	42.4	31.7	30.4	29.1	12.4

+ - Did not meet minimum statistical selection criteria (See Appendix B.1)

Primary 24-Hour Standard 35 ug/m³; Primary Annual Standard 15.0 ug/m³

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STATION	ADDRESS	TOTAL	NUMBER	98th	HIGHEST SAMPLES				ANNUAL
			OF SAMPLES	PERCENTILE	1st	2nd	3rd	4th	ARITHMETIC
			>35 ug/m ³	VALUE					MEAN
74 SOUTHEAST ILLINOIS INTRASTATE									
HAMILTON COUNTY									
Knight Prairie Township	State Route 14	54	1	33.4	43.7	33.4	30.7	28.6	13.4
75 WEST CENTRAL ILLINOIS INTRASTATE									
ADAMS COUNTY									
Quincy	1301 S. 48 th St	45	0	28.9	28.9	25.3	21.6	20.8	+
JERSEY COUNTY									
Jerseyville	Liberty St.	56	0	31.3	31.7	31.3	30.3	29.3	13.3
MACON COUNTY									
Decatur	2200 N. 22nd	59	2	35.8	36.7	35.8	33.0	31.8	14.0
SANGAMON COUNTY									
Springfield	State Fair Grounds	102	0	34.3	34.6	34.3	34.3	32.0	13.0

+ - Did not meet minimum statistical selection criteria (See Appendix B.1)

Primary 24-Hour Standard 35 ug/m³; Primary Annual Standard 15.0 ug/m³

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66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Bondville	Twp. Rd. 500 E.	59	0	25.9	26.9	25.9	25.3	25.0	10.9
Champaign	606 E. Grove	58	0	27.1	28.4	27.1	25.7	22.5	10.5
Mc LEAN COUNTY									
Normal	Main & Gregory	115	0	24.0	27.0	24.3	24.0	23.3	10.7
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Chicago-SE Police	103rd & Luella	106	0	27.3	32.7	27.9	27.3	26.6	11.8
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Chicago-Washington HS	3535 E. 114th St.	57	0	31.2	31.3	31.2	27.9	27.3	12.5
Cicero	13th St. & 50th Ave.	97	1	34.1	36.7	34.1	30.1	29.6	+
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Lyons Township	50th St. & Glencoe Ave.	119	1	33.9	37.3	35.1	33.9	32.2	12.9
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Summit	60th St. & 74th Ave.	119	0	29.3	34.5	34.4	29.3	26.3	12.0
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Naperville	400 S. Eagle St.	59	1	33.1	37.7	33.1	27.1	26.2	11.3
KANE COUNTY									
Aurora	1240 N. Highland	57	0	26.3	35.3	26.3	26.2	23.8	10.4
Elgin	258 Lovell St.	60	1	33.3	35.7	33.3	23.6	23.6	10.8
LAKE COUNTY									
Zion	Camp Logan	61	0	22.8	28.4	22.8	22.3	21.0	9.3

+ - Did not meet minimum statistical selection criteria (See Appendix B.1)

Primary 24-Hour Standard 35 ug/m³; Primary Annual Standard 15.0 ug/m³

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RANDOLPH COUNTY										
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HAMILTON COUNTY										
Knight Prairie Township	State Route 14	55	1	25.7	38.6	25.7	25.2	24.9	12.4	
75 WEST CENTRAL ILLINOIS INTRASTATE										
ADAMS COUNTY										
Quincy	1301 S. 48 th St	59	0	19.8	21.1	19.8	19.4	19.0	9.2	
JERSEY COUNTY										
Jerseyville	Liberty St.	56	0	21.6	26.8	21.6	19.7	18.7	10.1	
MACON COUNTY										
Decatur	2200 N. 22nd	59	0	26.6	28.6	26.6	25.2	25.1	12.0	
SANGAMON COUNTY										
Springfield	State Fair Grounds	112	0	24.1	29.9	27.3	24.1	23.8	11.0	

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