

APPENDIX E

Supplemental Air Quality
and Noise Analyses

Project Memorandum:

Project: Marketplace at Newburgh

Subject : Supplemental Air Quality and Noise Analyses Marketplace at Newburgh¹

Date: December 14, 2007

Mr. Wilder: RTP Environmental Associates, Inc. was requested to respond to two comments made by NYSDOT staff. The comments are summarized below along with our responses.

Comment No.1: Provide quantitative data for the air quality levels generated by traffic on Road A relative to the residences to the north of the project site (on the south side of Brookside Avenue and on the south side of Wintergreen Avenue), comparing Location A versus Location B.

Response: As requested by the New York State Department of Transportation (NYSDOT), the following summarizes a quantitative ambient air quality analysis from the project generated traffic along two (2) access road alternatives; Route A and Route B (the DOT Parcel). The proposed access road will extend in the westerly direction from the existing intersection of New York State Route 52 and Fifth Avenue. Originally the access road (Route A) was proposed near the neighborhood surrounding Brookside Avenue and Wintergreen Avenue. However, the Route B alternative will be constructed closer to Interstate 84 and will pass through NYSDOT property, and as such, will be further from the neighborhood mentioned above. Both alternatives have the same intersection connection point at NYS Route 52 and Fifth Avenue. The access Route alternatives are displayed aerially in Figure 1 in the above attachment .

A microscale air dispersion modeling analysis was conducted to compare ambient air carbon monoxide (CO) and fine particulate matter (both PM10 and PM2.5) impacts from alternatives Route A and Route B at three (3) locations using CAL3QHC and MOBILE 6.2. The impact locations are depicted in Figure 1 and represent the nearest property boundary of three selected residences. Modeled impacts at the three (3) locations are presented for CO and PM10/PM2.5 in Tables 1 and 2, respectively in the above attachment. Modeling procedures and methodology followed the analysis that was presented in the DEIS and FEIS. Modeling output is provided in a separate attachment (see above).

As you can see from Tables 1 and 2, CO, PM10 and PM2.5 impacts from Route B (the DOT Parcel) are at or below the impact from Road A. The modeling analysis provides quantitative data indicating that ambient air quality impacts from access Route B will be equal or less than the ambient air quality impacts from Route A at the three (3) locations where ambient air quality was predicted.

¹ Source: Email From: Kenneth J. Skipka [mailto:skipka@rtpenv.com]

Sent: Friday, December 14, 2007 5:52 PM

To: Bob Wilder; mcotton@dot.state.ny.us; dterwilliger@dot.state.ny.us; bgorton@dot.state.ny.us; mpw@ddwt.com; john.harris@mckennalong.com; Deborah Post

Cc: Brian Aerne

Comment No.2: Provide quantitative data for the noise levels generated by traffic on Road A relative to the residences to the north of the project site (on the south side of Brookside Avenue and on the south side of Wintergreen Avenue), comparing Location A versus Location B.

Response: The noise analysis being prepared to address this issue is not complete but should be available next week. To quantify the noise levels under the two alternatives, one must first calculate the existing noise levels including Interstate 84 via a Traffic Noise Model (TNM). What can be said is that the noise from Interstate 84 will need to be included in the analysis since the issue is what will be the incremental difference in noise at the residential receptors identified just to the north of the proposed alternative routes. We know that the positioning of the two alternatives will cause the contribution from Alternative Route A to be higher than the contribution from Alternate Route B at the selected residential receptors to the north of the project (see Figure 1 above). However, the combined noise levels including the ambient noise levels along with the contribution of the individual alternatives are still being calculated.

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Subject: Re: Additional Noise Analysis Marketplace at Newburgh²

As per Mr. Wilder's request, please find attached the additional modeling analysis results for the Marketplace at Newburgh. The analysis quantitatively addresses the noise impacts associated with two alternate access routes for the Marketplace at Newburgh. Please direct any questions or need for additional information to Mr. Wilder. Thank you for your attention to this matter.

Comment: Provide quantitative data for the ambient noise levels generated by traffic on Road A relative to the residences to the north of the project site (on the south side of Brookside Avenue and on the south side of Wintergreen Avenue), comparing Location A versus Location B.

Response: RTP Environmental Associates, Inc. and Analysis & Computing (ACINC) has assessed the relative differences in noise contributions of two access road alternatives to the ambient noise environment at three locations selected by the Project. The prediction locations, listed below in Table 1, were located in the backyards facing the access roads. The Figure in the attachment provides the residential receptor locations.

Table 1 Prediction Locations

Site	Location (Section-Block-Lot)
N1	67-5-19
N2	71-4-1
N3	71-4-6

The noise levels were assessed using the FHWA and NYSDOT-approved Traffic Noise Model (TNM) methodology. Traffic data from the Marketplace at Newburgh FEIS, supplemented with NYSDOT traffic data for Orange County, were used to predict the traffic noise contribution at the three prediction sites.

New York State Department of Environmental Conservation (NYSDEC) guidelines consider a 6-dBA increase in noise levels as an impact. New York State Department of Transportation (NYSDOT) defines an area impacted if the noise level is approaching or greater than 66 dBA, or if the noise level under the Build Condition results in a 6-dBA or greater increase in ambient noise level as a result of the project.

The Town of Newburgh does not directly address traffic noise limits. Chapter 125: Noise and Illumination Control of the Town ordinance set a daytime (8 AM to 10 PM) limit of 65 dBA. However, the section specifically exempts noise from motor vehicles on public or private roads.

² Source: Email From: Kenneth J. Skipka [mailto:skipka@rtpenv.com]
Sent: Monday, December 17, 2007 6:06 PM
To: Bob Wilder; mcotton@dot.state.ny.us; dterwilliger@dot.state.ny.us; bgorton@dot.state.ny.us; mpw@ddwt.com; john.harris@mckennalong.com; Deborah Post
Cc: Brian Aerne

The noise contribution from traffic on the access roads varied depending on the prediction location as can be seen in Table 2. The traffic noise contribution without the project has been included for reference. The attached Figure shows the N1 to N3 residential receptors as squares.

Table 2 Traffic Noise Contribution (dBA)

Location	No Build	Measured	Alternative A (DOT Parcel)	Alternative B
N1	50	--	50	51
N2	52	--	53	56
N3	57	56	58	62

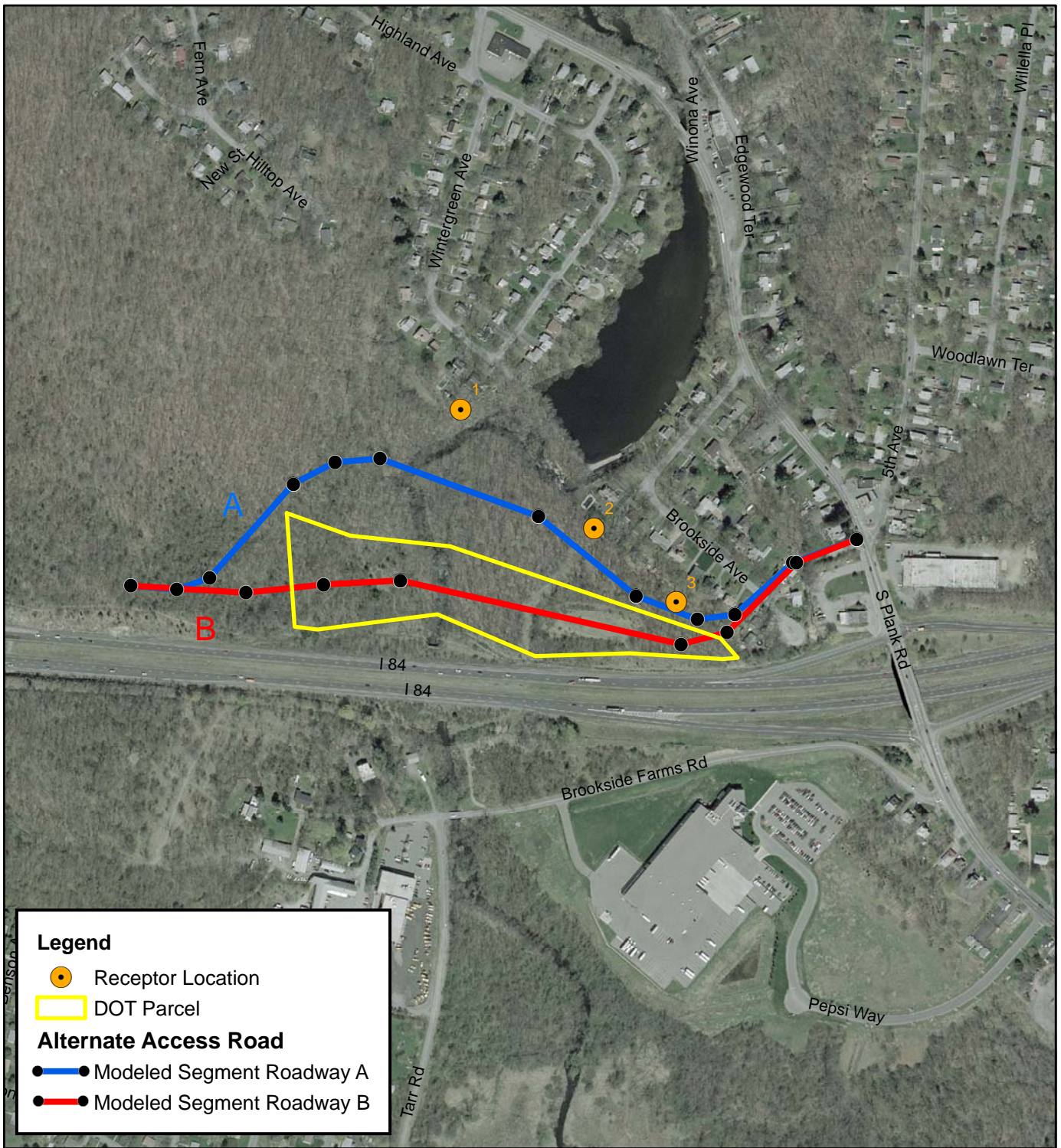
Location N1 is furthest from either proposed access roads. Consequently, differences in traffic noise from these two roadways are minimal and easily overshadowed by traffic noise from I-84. Location N3 has the highest noise level as well as the greatest difference (4 dBA) between the proposed access road alternatives. Location N3 is in the vicinity of noise monitoring Site 2 from the FEIS and has been included in Table 2 as reference. Traffic noise dominates the noise environment at this location. The predicted No Build (the Existing I-84) differed by only 1 dBA from the measured noise level as reported in the FEIS, and is considered in excellent agreement.

Neither proposed access roads will result in noise levels approaching the NYSDOT design noise level of 66 dBA, nor will result in an increase in ambient noise levels of 6 dBA or greater. Consequently, no proposed access roads will result in any noise impact as defined by NYSDEC or NYSDOT.

Noise levels from both access road alternatives are also below the Town of Newburgh daytime noise level limits of 65 dBA, even though vehicular noise are exempt from the Town Code.

In conclusion, neither of the proposed access roadways is expected to result in a noise impact. However, the traffic noise contribution from Access Road in the DOT Parcel is expected to be lower than Access Road closer to the residences by 1 dBA to 4 dBA at the nearest residential receptors.

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IMAGERY SOURCE: NYSGIS CLEARINGHOUSE

FIGURE 1

AERIAL LAYOUT OF MODELED
ACCESS ROAD ALTERNATIVES
THE MARKETPLACE AT NEWBURGH
NEWBURGH, NEW YORK

0 250 500 1,000 Feet



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Table 1
Predicted 1-Hour and 8-Hour Carbon Monoxide Concentrations (ppm) at
NYS Rt. 52 and Fifth Avenue/Access Road

Receptor Location	Maximum 1-Hour CO Impacts			1-Hour NAAQS Standard
	1	2	3	
Access Road Alternative A	0.1	0.3	0.9	35
Access Road Alternative B	0.1	0.1	0.7	35
Receptor Location	Maximum 8-Hour CO Impacts			8-Hour NAAQS Standard
	1	2	3	
Access Road Alternative A	0.07	0.21	0.63	9
Access Road Alternative B	0.07	0.07	0.49	9

Notes:

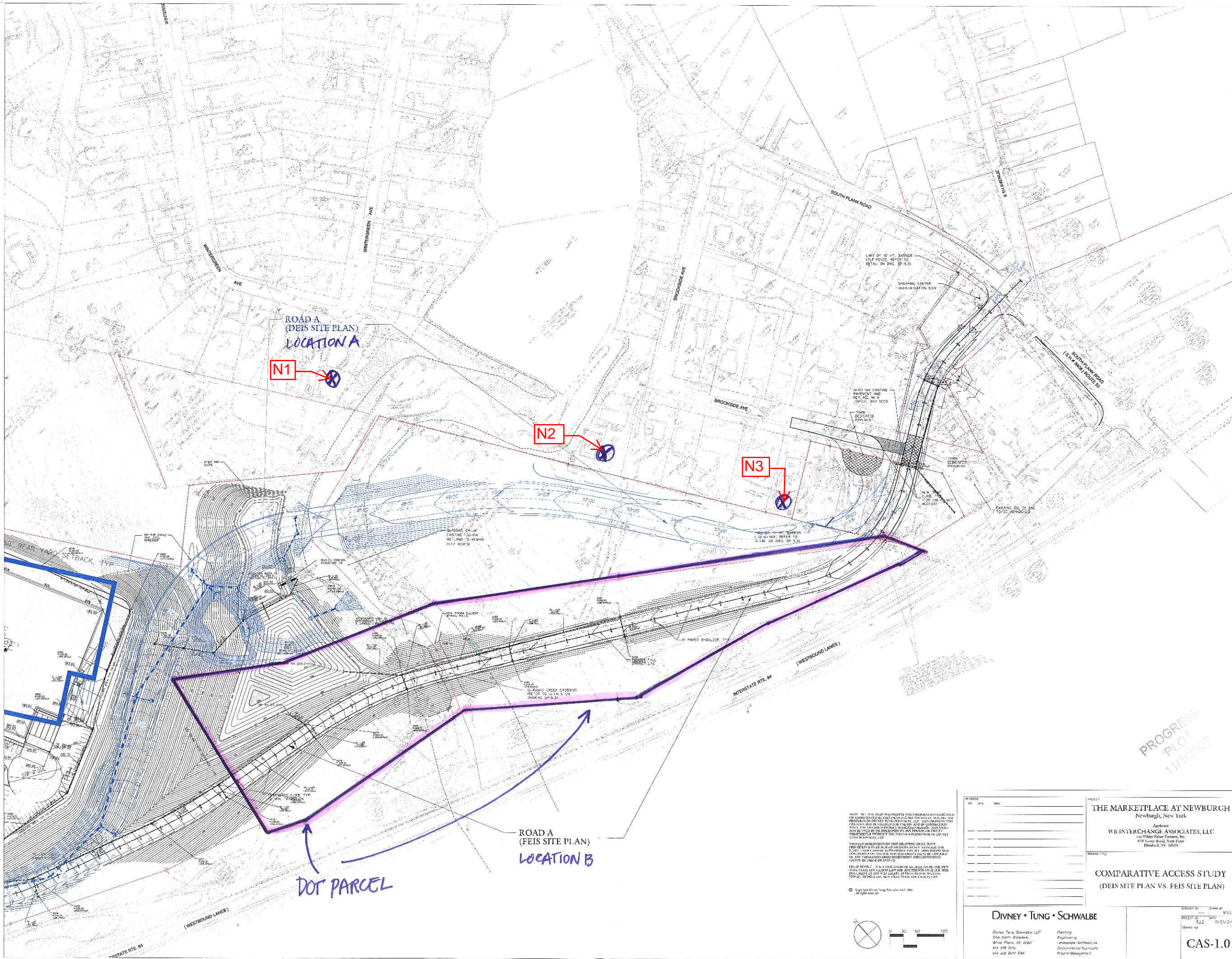
- All values are in parts per million (ppm).
- Impacts represent Build scenario (2008).
- Background CO values were not included in the analysis. NYSDOT Environmental Procedures Manual 1-hr background value is 2.2 ppm.
- 8-hour maximum impact was computed by multiplying the 1-hour impact by 0.7 (NYSDOT Environmental Procedures Manual).
- NAAQS - National Ambient Air Quality Standards.
- See Figure 1 for receptor location details.

**Table 2
Predicted 24-Hour and Annual Particulate Matter Concentrations at
NYS Rt. 52 and Fifth Avenue/Access Road**

Receptor Location	Project 24-Hour PM ₁₀ Maximum Impact			Project Annual PM ₁₀ Maximum Impact			24-Hour PM ₁₀ N/SAAQs Standard	Annual PM ₁₀ N/SAAQs Standard**
	1	2	3	1	2	3		
Access Road Alternative A	0.4	0.4	0.8	0.08	0.08	0.16	150	50
Access Road Alternative B	0.0	0.0	0.4	0.00	0.00	0.08	150	50
Receptor Location	Project 24-Hour PM _{2.5} Maximum Impact			Project Annual PM _{2.5} Maximum Impact			24-Hour PM _{2.5} N/SAAQs Standard*	Annual PM _{2.5} N/SAAQs Standard
	1	2	3	1	2	3		
Access Road Alternative A	0.0	0.4	0.4	0.00	0.08	0.08	35	15.0
Access Road Alternative B	0.0	0.0	0.0	0.00	0.00	0.00	35	15.0

Notes:

- All values are in micrograms per cubic meter.
- Impacts represent Build scenario (2008).
- 1-hour modeled impacts were multiplied by persistence factors to calculate the 24-hour and annual PM₁₀ and PM_{2.5} impacts. A value of 0.4 was used for the 24-hour persistence factor and a value of 0.08 was used for the annual persistence factor. Persistence values obtained from "New York State Department of Transportation Project Level Particulate Matter Analysis, Final Policy" dated September 2004.
- N/SAAQs - National and State Ambient Air Quality Standards.
- See Figure 1 for receptor location details.
- * The 24-hour PM_{2.5} NAAQS was recently reduced by the USEPA to 35 micrograms per cubic meter (Effective December 2006).
- ** Due to a lack of evidence linking health problems to long-term exposure to coarse particulate matter pollution, EPA revoked the annual PM10 standard (effective December 2006), however the NYSDEC has not yet revoked this standard.



ROAD A
(DEIS SITE PLAN)
LOCATION A

N1

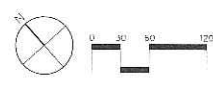
N2

N3

ROAD A
(FEIS SITE PLAN)
LOCATION B

DOT PARCEL

NOTES: ALL THE INFORMATION AND DATA ON WHICH THIS PLAN IS BASED IS THE PROPERTY OF THE ENGINEER AND SHALL BE KEPT IN CONFIDENCE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY OTHERS.



PROGRESSIVE
PLOT
1/11/2017

PROJECT NO. 1411 DATE: 11/11/17	THE MARKETPLACE AT NEWBURGH Newburgh, New York Applicant: WE INTERCHANGE ASSOCIATES, LLC c/o Yellow Water Farms, Inc. 570 Lantz Road, 3rd Floor Elmfield, NY 10829
COMPARATIVE ACCESS STUDY (DEIS SITE PLAN VS. FEIS SITE PLAN)	
DIVNEY • TUNG • SCHWALBE Divney Tung Schwalbe LLP One North Broadway White Plains, NY 10607 914 478-2000 914 425-0011 FAX	Planning Engineering Landscape Architecture Environmental Assessment Program Management
DRAWN BY: MSO CHECKED BY: MSO DATE: 11/01/17 DRAWING NO: CAS-1.0	CAS-1.0

ATTACHMENT 1
CAL3QHC MODEL OUTPUT

JOB: Marketplace Road A&B Comparison Build 2 RUN: Road A 2008 Build CO

DATE : 12/14/ 7
 TIME : 14:42:55

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
 U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0

PPM

LINK VARIABLES

EF	H	W	LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH (FT)	BRG TYPE	VPH
(G/MI)	(FT)	(FT)	(VEH)					(DEG)		
8.0	0.0	32.0	1. APPR1-EB	-2.0	-112.0	-230.0	-196.0	243.	250. AG	52.
8.0	0.0	32.0	2. APPR2-EB	-230.0	-196.0	-434.0	-378.0	273.	228. AG	444.
8.0	0.0	32.0	3. APPR3-EB	-434.0	-378.0	-567.0	-396.0	134.	262. AG	444.
8.0	0.0	32.0	4. APPR4-EB	-567.0	-396.0	-785.0	-313.0	233.	291. AG	444.
8.0	0.0	32.0	5. APPR5-EB	-785.0	-313.0	-1131.0	-32.0	446.	309. AG	444.
8.0	0.0	32.0	6. APPR6-EB	-1131.0	-32.0	-1692.0	173.0	597.	290. AG	444.
8.0	0.0	32.0	7. APPR7-EB	-1692.0	173.0	-1851.0	160.0	160.	265. AG	444.
8.0	0.0	32.0	8. APPR8-EB	-1851.0	160.0	-1999.0	84.0	166.	243. AG	444.
8.0	0.0	32.0	9. APPR9-EB	-1999.0	84.0	-2296.0	-248.0	445.	222. AG	444.
8.0	0.0	32.0	10. APPR10-EB	-2296.0	-248.0	-2412.0	-291.0	124.	250. AG	444.

DATE : 12/14/ 7
 TIME : 14:42:55

ADDITIONAL QUEUE LINK PARAMETERS

ARRIVAL RATE	LINK DESCRIPTION	* CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE
3	23. QMAIN1-EB	100	90	0.0	52	1600	71.85	1
3	24. QMAIN2-EB	100	90	0.0	52	1600	71.85	1
3	25. QRIGHT-EB	100	90	0.0	392	1600	71.85	1

RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z	* COORDINATES (FT)
1. R1W	-1406.0	353.0	6.0	*
2. R2C	-934.0	-67.0	6.0	*
3. R3E	-642.0	-329.0	6.0	*

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3
0.	0.0	0.0	0.0
5.	0.0	0.0	0.0
10.	0.0	0.0	0.0
15.	0.0	0.0	0.0
20.	0.0	0.0	0.0
25.	0.0	0.0	0.0
30.	0.0	0.0	0.0
35.	0.0	0.0	0.0
40.	0.0	0.0	0.0
45.	0.0	0.0	0.0
50.	0.0	0.0	0.0
55.	0.0	0.0	0.0
60.	0.0	0.0	0.1
65.	0.0	0.0	0.3
70.	0.0	0.0	0.4
75.	0.0	0.0	0.6
80.	0.0	0.0	0.6
85.	0.0	0.0	0.6
90.	0.0	0.0	0.6
95.	0.0	0.1	0.5
100.	0.0	0.1	0.5
105.	0.0	0.1	0.6
110.	0.0	0.1	0.6
115.	0.1	0.1	0.5
120.	0.1	0.1	0.6

125.	*	0.1	0.1	0.5
130.	*	0.1	0.1	0.6
135.	*	0.1	0.1	0.6
140.	*	0.1	0.1	0.6
145.	*	0.1	0.1	0.6
150.	*	0.1	0.1	0.6
155.	*	0.1	0.2	0.6
160.	*	0.1	0.3	0.6
165.	*	0.1	0.3	0.6
170.	*	0.1	0.3	0.6
175.	*	0.1	0.3	0.6
180.	*	0.1	0.3	0.6
185.	*	0.1	0.2	0.6
190.	*	0.1	0.2	0.6
195.	*	0.1	0.2	0.6
200.	*	0.1	0.2	0.6
205.	*	0.1	0.2	0.6

WIND ANGLE * (DEGR) *	* CONCENTRATION (PPM)		
	REC1	REC2	REC3
210.	0.1	0.2	0.7
215.	0.1	0.2	0.7
220.	0.0	0.2	0.7
225.	0.0	0.2	0.8
230.	0.0	0.2	0.8
235.	0.0	0.2	0.9
240.	0.0	0.2	0.9
245.	0.0	0.1	0.9
250.	0.0	0.1	0.8
255.	0.0	0.1	0.6
260.	0.0	0.1	0.4
265.	0.0	0.2	0.2
270.	0.0	0.1	0.2
275.	0.0	0.0	0.2
280.	0.0	0.1	0.2
285.	0.0	0.2	0.2
290.	0.0	0.2	0.3
295.	0.0	0.0	0.2
300.	0.0	0.0	0.2
305.	0.0	0.0	0.0
310.	0.0	0.0	0.0
315.	0.0	0.0	0.0
320.	0.0	0.0	0.0
325.	0.0	0.0	0.0
330.	0.0	0.0	0.0
335.	0.0	0.0	0.0
340.	0.0	0.0	0.0
345.	0.0	0.0	0.0
350.	0.0	0.0	0.0
355.	0.0	0.0	0.0
360.	0.0	0.0	0.0
MAX	0.1	0.3	0.9
DEGR.	115	160	235

THE HIGHEST CONCENTRATION OF 0.90 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Marketplace Road A&B Comparison Build 2 RUN: Road B 2008 Build CO

DATE : 12/14/ 7
 TIME : 14:43:51

The MODE flag has been set to C for calculating CO averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
 U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0

PPM

LINK VARIABLES

EF	H	W	LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH	BRG TYPE	VPH
(G/MI)	(FT)	(FT)	(VEH)	(FT)	(FT)	(FT)	(DEG)	(FT)	(DEG)	(DEG)
8.0	0.0	32.0	1. APPR1-EB	-2.0	-112.0	-216.0	-196.0	230.	249. AG	52.
8.0	0.0	32.0	2. APPR2-EB	-216.0	-196.0	-462.0	-442.0	348.	225. AG	444.
8.0	0.0	32.0	3. APPR3-EB	-462.0	-442.0	-626.0	-484.0	169.	256. AG	444.
8.0	0.0	32.0	4. APPR4-EB	-626.0	-484.0	-1619.0	-258.0	1018.	283. AG	444.
8.0	0.0	32.0	5. APPR5-EB	-1619.0	-258.0	-1892.0	-272.0	273.	267. AG	444.
8.0	0.0	32.0	6. APPR6-EB	-1892.0	-272.0	-2168.0	-301.0	278.	264. AG	444.
8.0	0.0	32.0	7. APPR7-EB	-2168.0	-301.0	-2576.0	-276.0	409.	274. AG	444.
8.0	0.0	32.0	8. DEP1-EB	-2.0	-99.0	-216.0	-183.0	230.	249. AG	352.
8.0	0.0	34.0	9. DEP2-EB	-216.0	-183.0	-462.0	-429.0	348.	225. AG	352.
8.0	0.0	34.0	10. DEP3-EB	-462.0	-429.0	-626.0	-471.0	169.	256. AG	352.

DATE : 12/14/ 7
 TIME : 14:43:51

ADDITIONAL QUEUE LINK PARAMETERS

ARRIVAL RATE	LINK DESCRIPTION	* CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE
3	15. QMAIN1-EB	100	90	0.0	52	1600	71.85	1
3	16. QMAIN2-EB	100	90	0.0	52	1600	71.85	1
3	17. QRIGHT-EB	100	90	0.0	392	1600	71.85	1

RECEPTOR LOCATIONS

RECEPTOR	* X	* Y	* Z	* COORDINATES (FT)
1. R1W	-1406.0	353.0	6.0	*
2. R2C	-934.0	-67.0	6.0	*
3. R3E	-642.0	-329.0	6.0	*

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3
0.	0.0	0.0	0.0
5.	0.0	0.0	0.0
10.	0.0	0.0	0.0
15.	0.0	0.0	0.0
20.	0.0	0.0	0.0
25.	0.0	0.0	0.0
30.	0.0	0.0	0.0
35.	0.0	0.0	0.0
40.	0.0	0.0	0.0
45.	0.0	0.0	0.0
50.	0.0	0.0	0.0
55.	0.0	0.0	0.0
60.	0.0	0.0	0.1
65.	0.0	0.0	0.3
70.	0.0	0.0	0.4
75.	0.0	0.0	0.6
80.	0.0	0.0	0.6
85.	0.0	0.0	0.6
90.	0.0	0.0	0.6
95.	0.0	0.1	0.5
100.	0.0	0.1	0.5
105.	0.0	0.1	0.5
110.	0.0	0.1	0.4
115.	0.1	0.1	0.4
120.	0.1	0.1	0.4

125.	*	0.1	0.1	0.4
130.	*	0.1	0.1	0.4
135.	*	0.1	0.1	0.4
140.	*	0.1	0.1	0.4
145.	*	0.1	0.1	0.4
150.	*	0.1	0.1	0.4
155.	*	0.1	0.1	0.4
160.	*	0.1	0.1	0.4
165.	*	0.1	0.1	0.4
170.	*	0.1	0.1	0.4
175.	*	0.1	0.1	0.4
180.	*	0.1	0.1	0.4
185.	*	0.1	0.1	0.4
190.	*	0.1	0.1	0.4
195.	*	0.1	0.1	0.4
200.	*	0.1	0.1	0.4
205.	*	0.1	0.1	0.4

WIND	* CONCENTRATION		
ANGLE	* (PPM)		
(DEGR)	* REC1	* REC2	* REC3
210.	* 0.1	0.1	0.5
215.	* 0.1	0.1	0.5
220.	* 0.0	0.1	0.5
225.	* 0.0	0.1	0.6
230.	* 0.0	0.1	0.6
235.	* 0.0	0.1	0.7
240.	* 0.0	0.1	0.7
245.	* 0.0	0.0	0.7
250.	* 0.0	0.0	0.7
255.	* 0.0	0.0	0.5
260.	* 0.0	0.0	0.3
265.	* 0.0	0.0	0.1
270.	* 0.0	0.0	0.0
275.	* 0.0	0.0	0.0
280.	* 0.0	0.0	0.0
285.	* 0.0	0.0	0.0
290.	* 0.0	0.0	0.0
295.	* 0.0	0.0	0.0
300.	* 0.0	0.0	0.0
305.	* 0.0	0.0	0.0
310.	* 0.0	0.0	0.0
315.	* 0.0	0.0	0.0
320.	* 0.0	0.0	0.0
325.	* 0.0	0.0	0.0
330.	* 0.0	0.0	0.0
335.	* 0.0	0.0	0.0
340.	* 0.0	0.0	0.0
345.	* 0.0	0.0	0.0
350.	* 0.0	0.0	0.0
355.	* 0.0	0.0	0.0
360.	* 0.0	0.0	0.0
MAX	* 0.1	0.1	0.7
DEGR.	* 115	95	250

THE HIGHEST CONCENTRATION OF 0.70 PPM OCCURRED AT RECEPTOR REC3 .

JOB: Marketplace Road A&B Comparison Build 2 RUN: Road A 2008 Build PM10

DATE : 12/14/ 7
 TIME : 14:50:25

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
 U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0
 ug/m**3

LINK VARIABLES

EF	H	W	LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH	BRG TYPE	VPH
(G/MI)	(FT)	(FT)	(VEH)	(FT)	(FT)	(FT)	(DEG)	(FT)	(DEG)	(DEG)
0.0	0.0	32.0	1. APPR1-EB	-2.0	-112.0	-230.0	-196.0	243.	250.	52.
0.0	0.0	32.0	2. APPR2-EB	-230.0	-196.0	-434.0	-378.0	273.	228.	444.
0.0	0.0	32.0	3. APPR3-EB	-434.0	-378.0	-567.0	-396.0	134.	262.	444.
0.0	0.0	32.0	4. APPR4-EB	-567.0	-396.0	-785.0	-313.0	233.	291.	444.
0.0	0.0	32.0	5. APPR5-EB	-785.0	-313.0	-1131.0	-32.0	446.	309.	444.
0.0	0.0	32.0	6. APPR6-EB	-1131.0	-32.0	-1692.0	173.0	597.	290.	444.
0.0	0.0	32.0	7. APPR7-EB	-1692.0	173.0	-1851.0	160.0	160.	265.	444.
0.0	0.0	32.0	8. APPR8-EB	-1851.0	160.0	-1999.0	84.0	166.	243.	444.
0.0	0.0	32.0	9. APPR9-EB	-1999.0	84.0	-2296.0	-248.0	445.	222.	444.
0.0	0.0	32.0	10. APPR10-EB	-2296.0	-248.0	-2412.0	-291.0	124.	250.	444.

DATE : 12/14/ 7
TIME : 14:50:25

3	23.	QMAIN1-EB	*	100	90	0.0	52	1600	0.02	1
3	24.	QMAIN2-EB	*	100	90	0.0	52	1600	0.02	1
3	25.	QRIGHT-EB	*	100	90	0.0	392	1600	0.02	1

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. R1W	-1406.0	353.0	6.0
2. R2C	-934.0	-67.0	6.0
3. R3E	-642.0	-329.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3
0.	0.	0.	0.
5.	0.	0.	0.
10.	0.	0.	0.
15.	0.	0.	0.
20.	0.	0.	0.
25.	0.	0.	0.
30.	0.	0.	0.
35.	0.	0.	0.
40.	0.	0.	0.
45.	0.	0.	0.
50.	0.	0.	0.
55.	0.	0.	0.
60.	0.	0.	0.
65.	0.	0.	0.
70.	0.	0.	0.
75.	0.	0.	1.
80.	0.	0.	1.
85.	0.	0.	1.
90.	0.	0.	1.
95.	0.	0.	1.
100.	0.	0.	1.
105.	0.	0.	1.
110.	0.	0.	1.
115.	0.	0.	1.
120.	0.	0.	1.

125.	*	0.	0.	1.
130.	*	0.	0.	1.
135.	*	0.	0.	2.
140.	*	0.	0.	1.
145.	*	0.	1.	1.
150.	*	0.	1.	1.
155.	*	0.	1.	1.
160.	*	0.	1.	1.
165.	*	0.	1.	1.
170.	*	0.	1.	1.
175.	*	0.	1.	1.
180.	*	0.	1.	1.
185.	*	0.	1.	1.
190.	*	0.	1.	1.
195.	*	0.	1.	1.
200.	*	0.	1.	1.
205.	*	0.	1.	1.

WIND	*	CONCENTRATION			
ANGLE	*	(ug/m**3)			
(DEGR)	*	REC1	REC2	REC3	
210.	*	0.	1.	1.	
215.	*	0.	1.	1.	
220.	*	0.	1.	1.	
225.	*	0.	1.	1.	
230.	*	0.	1.	1.	
235.	*	1.	1.	1.	
240.	*	1.	1.	1.	
245.	*	1.	1.	1.	
250.	*	1.	1.	1.	
255.	*	0.	1.	1.	
260.	*	0.	1.	2.	
265.	*	0.	1.	1.	
270.	*	0.	1.	2.	
275.	*	0.	1.	2.	
280.	*	0.	1.	2.	
285.	*	0.	1.	1.	
290.	*	0.	1.	1.	
295.	*	0.	0.	1.	
300.	*	0.	0.	1.	
305.	*	0.	0.	1.	
310.	*	0.	0.	0.	
315.	*	0.	0.	0.	
320.	*	0.	0.	0.	
325.	*	0.	0.	0.	
330.	*	0.	0.	0.	
335.	*	0.	0.	0.	
340.	*	0.	0.	0.	
345.	*	0.	0.	0.	
350.	*	0.	0.	0.	
355.	*	0.	0.	0.	
360.	*	0.	0.	0.	
MAX	*	1.	1.	2.	
DEGR.	*	240	275	270	

THE HIGHEST CONCENTRATION OF 2. ug/m**3 OCCURRED AT RECEPTOR REC3 .

JOB: Marketplace Road A&B Comparison Build 2 RUN: Road B 2008 Build PM10

DATE : 12/14/ 7
 TIME : 14:50:55

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
 U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0
 ug/m**3

LINK VARIABLES

EF	H	W	LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH	BRG TYPE	VPH
(G/MI)	(FT)	(FT)	(VEH)	(FT)	(FT)	(FT)	(DEG)	(FT)	(DEG)	(DEG)
0.0	0.0	0.0	1. APPR1-EB	-2.0	-112.0	-216.0	-196.0	230.	249.	52.
0.0	0.0	0.0	2. APPR2-EB	-216.0	-196.0	-462.0	-442.0	348.	225.	444.
0.0	0.0	0.0	3. APPR3-EB	-462.0	-442.0	-626.0	-484.0	169.	256.	444.
0.0	0.0	0.0	4. APPR4-EB	-626.0	-484.0	-1619.0	-258.0	1018.	283.	444.
0.0	0.0	0.0	5. APPR5-EB	-1619.0	-258.0	-1892.0	-272.0	273.	267.	444.
0.0	0.0	0.0	6. APPR6-EB	-1892.0	-272.0	-2168.0	-301.0	278.	264.	444.
0.0	0.0	0.0	7. APPR7-EB	-2168.0	-301.0	-2576.0	-276.0	409.	274.	444.
0.0	0.0	0.0	8. DEP1-EB	-2.0	-99.0	-216.0	-183.0	230.	249.	352.
0.0	0.0	0.0	9. DEP2-EB	-216.0	-183.0	-462.0	-429.0	348.	225.	352.
0.0	0.0	0.0	10. DEP3-EB	-462.0	-429.0	-626.0	-471.0	169.	256.	352.

DATE : 12/14/ 7
TIME : 14:50:55

3	15. QMAIN1-EB	*	100	90	0.0	52	1600	0.02	1
3	16. QMAIN2-EB	*	100	90	0.0	52	1600	0.02	1
3	17. QRIGHT-EB	*	100	90	0.0	392	1600	0.02	1

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. R1W	-1406.0	353.0	6.0
2. R2C	-934.0	-67.0	6.0
3. R3E	-642.0	-329.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3
0.	0.	0.	0.
5.	0.	0.	0.
10.	0.	0.	0.
15.	0.	0.	0.
20.	0.	0.	0.
25.	0.	0.	0.
30.	0.	0.	0.
35.	0.	0.	0.
40.	0.	0.	0.
45.	0.	0.	0.
50.	0.	0.	0.
55.	0.	0.	0.
60.	0.	0.	0.
65.	0.	0.	0.
70.	0.	0.	0.
75.	0.	0.	1.
80.	0.	0.	1.
85.	0.	0.	1.
90.	0.	0.	1.
95.	0.	0.	1.
100.	0.	0.	1.
105.	0.	0.	0.
110.	0.	0.	0.
115.	0.	0.	0.
120.	0.	0.	0.

125.	*	0.	0.	1.
130.	*	0.	0.	0.
135.	*	0.	0.	0.
140.	*	0.	0.	0.
145.	*	0.	0.	0.
150.	*	0.	0.	0.
155.	*	0.	0.	0.
160.	*	0.	0.	0.
165.	*	0.	0.	0.
170.	*	0.	0.	0.
175.	*	0.	0.	0.
180.	*	0.	0.	1.
185.	*	0.	0.	0.
190.	*	0.	0.	0.
195.	*	0.	0.	0.
200.	*	0.	0.	0.
205.	*	0.	0.	0.

WIND * ANGLE * (DEGR) *	CONCENTRATION (ug/m**3)		
	REC1	REC2	REC3
210. *	0.	0.	0.
215. *	0.	0.	1.
220. *	0.	0.	1.
225. *	0.	0.	1.
230. *	0.	0.	1.
235. *	0.	0.	1.
240. *	0.	0.	1.
245. *	0.	0.	1.
250. *	0.	0.	1.
255. *	0.	0.	1.
260. *	0.	0.	1.
265. *	0.	0.	1.
270. *	0.	0.	1.
275. *	0.	0.	0.
280. *	0.	0.	0.
285. *	0.	0.	0.
290. *	0.	0.	0.
295. *	0.	0.	0.
300. *	0.	0.	0.
305. *	0.	0.	0.
310. *	0.	0.	0.
315. *	0.	0.	0.
320. *	0.	0.	0.
325. *	0.	0.	0.
330. *	0.	0.	0.
335. *	0.	0.	0.
340. *	0.	0.	0.
345. *	0.	0.	0.
350. *	0.	0.	0.
355. *	0.	0.	0.
360. *	0.	0.	0.
MAX	0.	0.	1.
DEGR.	140	140	250

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC3 .

JOB: Marketplace Road A&B Comparison Build 2 RUN: Road A 2008 Build PM2.5

DATE : 12/14/ 7
 TIME : 14:55:23

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
 U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0
 ug/m**3

LINK VARIABLES

EF	H	W	LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH	BRG TYPE	VPH
(G/MI)	(FT)	(FT)	(VEH)	(FT)	(FT)	(FT)	(DEG)	(FT)	(DEG)	(DEG)
0.0	0.0	32.0	1. APPR1-EB	-2.0	-112.0	-230.0	-196.0	243.	250.	52.
0.0	0.0	32.0	2. APPR2-EB	-230.0	-196.0	-434.0	-378.0	273.	228.	444.
0.0	0.0	32.0	3. APPR3-EB	-434.0	-378.0	-567.0	-396.0	134.	262.	444.
0.0	0.0	32.0	4. APPR4-EB	-567.0	-396.0	-785.0	-313.0	233.	291.	444.
0.0	0.0	32.0	5. APPR5-EB	-785.0	-313.0	-1131.0	-32.0	446.	309.	444.
0.0	0.0	32.0	6. APPR6-EB	-1131.0	-32.0	-1692.0	173.0	597.	290.	444.
0.0	0.0	32.0	7. APPR7-EB	-1692.0	173.0	-1851.0	160.0	160.	265.	444.
0.0	0.0	32.0	8. APPR8-EB	-1851.0	160.0	-1999.0	84.0	166.	243.	444.
0.0	0.0	32.0	9. APPR9-EB	-1999.0	84.0	-2296.0	-248.0	445.	222.	444.
0.0	0.0	32.0	10. APPR10-EB	-2296.0	-248.0	-2412.0	-291.0	124.	250.	444.

DATE : 12/14/ 7
TIME : 14:55:23

3	23.	QMAIN1-EB	*	100	90	0.0	52	1600	0.02	1
3	24.	QMAIN2-EB	*	100	90	0.0	52	1600	0.02	1
3	25.	QRIGHT-EB	*	100	90	0.0	392	1600	0.02	1

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. R1W	-1406.0	353.0	6.0
2. R2C	-934.0	-67.0	6.0
3. R3E	-642.0	-329.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	REC1	REC2	REC3
0.	0.	0.	0.
5.	0.	0.	0.
10.	0.	0.	0.
15.	0.	0.	0.
20.	0.	0.	0.
25.	0.	0.	0.
30.	0.	0.	0.
35.	0.	0.	0.
40.	0.	0.	0.
45.	0.	0.	0.
50.	0.	0.	0.
55.	0.	0.	0.
60.	0.	0.	0.
65.	0.	0.	0.
70.	0.	0.	0.
75.	0.	0.	0.
80.	0.	0.	0.
85.	0.	0.	0.
90.	0.	0.	0.
95.	0.	0.	1.
100.	0.	0.	0.
105.	0.	0.	0.
110.	0.	0.	1.
115.	0.	0.	0.
120.	0.	0.	1.

125.	*	0.	0.	1.
130.	*	0.	0.	1.
135.	*	0.	0.	1.
140.	*	0.	0.	1.
145.	*	0.	0.	1.
150.	*	0.	0.	1.
155.	*	0.	0.	1.
160.	*	0.	0.	1.
165.	*	0.	0.	1.
170.	*	0.	0.	1.
175.	*	0.	0.	1.
180.	*	0.	0.	1.
185.	*	0.	0.	1.
190.	*	0.	0.	1.
195.	*	0.	0.	1.
200.	*	0.	0.	1.
205.	*	0.	0.	1.

WIND * ANGLE * (DEGR) *	CONCENTRATION (ug/m**3)		
	REC1	REC2	REC3
210. *	0.	0.	1.
215. *	0.	0.	1.
220. *	0.	0.	1.
225. *	0.	0.	1.
230. *	0.	0.	1.
235. *	0.	0.	1.
240. *	0.	0.	1.
245. *	0.	0.	1.
250. *	0.	0.	1.
255. *	0.	0.	1.
260. *	0.	0.	1.
265. *	0.	0.	1.
270. *	0.	0.	1.
275. *	0.	0.	1.
280. *	0.	0.	1.
285. *	0.	1.	1.
290. *	0.	0.	1.
295. *	0.	0.	1.
300. *	0.	0.	1.
305. *	0.	0.	0.
310. *	0.	0.	0.
315. *	0.	0.	0.
320. *	0.	0.	0.
325. *	0.	0.	0.
330. *	0.	0.	0.
335. *	0.	0.	0.
340. *	0.	0.	0.
345. *	0.	0.	0.
350. *	0.	0.	0.
355. *	0.	0.	0.
360. *	0.	0.	0.
MAX	0.	1.	1.
DEGR. *	145	285	130

THE HIGHEST CONCENTRATION OF 1. ug/m**3 OCCURRED AT RECEPTOR REC3 .

JOB: Marketplace Road A&B Comparison Build 2 RUN: Road B 2008 Build PM10

DATE : 12/14/ 7
 TIME : 14:55:29

The MODE flag has been set to P for calculating PM averages.

SITE & METEOROLOGICAL VARIABLES

VS = 0.0 CM/S VD = 0.0 CM/S Z0 = 108. CM
 U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0
 ug/m**3

LINK VARIABLES

EF	H	W	LINK DESCRIPTION	X1	Y1	X2	Y2	LENGTH	BRG TYPE	VPH
(G/MI)	(FT)	(FT)	(VEH)	(FT)	(FT)	(FT)	(DEG)	(FT)	(DEG)	(DEG)
0.0	0.0	32.0	1. APPR1-EB	-2.0	-112.0	-216.0	-196.0	230.	249. AG	52.
0.0	0.0	32.0	2. APPR2-EB	-216.0	-196.0	-462.0	-442.0	348.	225. AG	444.
0.0	0.0	32.0	3. APPR3-EB	-462.0	-442.0	-626.0	-484.0	169.	256. AG	444.
0.0	0.0	32.0	4. APPR4-EB	-626.0	-484.0	-1619.0	-258.0	1018.	283. AG	444.
0.0	0.0	32.0	5. APPR5-EB	-1619.0	-258.0	-1892.0	-272.0	273.	267. AG	444.
0.0	0.0	32.0	6. APPR6-EB	-1892.0	-272.0	-2168.0	-301.0	278.	264. AG	444.
0.0	0.0	32.0	7. APPR7-EB	-2168.0	-301.0	-2576.0	-276.0	409.	274. AG	444.
0.0	0.0	32.0	8. DEP1-EB	-2.0	-99.0	-216.0	-183.0	230.	249. AG	352.
0.0	0.0	34.0	9. DEP2-EB	-216.0	-183.0	-462.0	-429.0	348.	225. AG	352.
0.0	0.0	34.0	10. DEP3-EB	-462.0	-429.0	-626.0	-471.0	169.	256. AG	352.

DATE : 12/14/ 7
TIME : 14:55:29

3	15.	QMAIN1-EB	*	100	90	0.0	52	1600	0.02	1
3	16.	QMAIN2-EB	*	100	90	0.0	52	1600	0.02	1
3	17.	QRIGHT-EB	*	100	90	0.0	392	1600	0.02	1

RECEPTOR LOCATIONS

RECEPTOR	X	Y	Z
1. R1W	-1406.0	353.0	6.0
2. R2C	-934.0	-67.0	6.0
3. R3E	-642.0	-329.0	6.0

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (ug/m**3)	REC1	REC2	REC3
0.	0.	0.	0.	0.
5.	0.	0.	0.	0.
10.	0.	0.	0.	0.
15.	0.	0.	0.	0.
20.	0.	0.	0.	0.
25.	0.	0.	0.	0.
30.	0.	0.	0.	0.
35.	0.	0.	0.	0.
40.	0.	0.	0.	0.
45.	0.	0.	0.	0.
50.	0.	0.	0.	0.
55.	0.	0.	0.	0.
60.	0.	0.	0.	0.
65.	0.	0.	0.	0.
70.	0.	0.	0.	0.
75.	0.	0.	0.	0.
80.	0.	0.	0.	0.
85.	0.	0.	0.	0.
90.	0.	0.	0.	0.
95.	0.	0.	0.	0.
100.	0.	0.	0.	0.
105.	0.	0.	0.	0.
110.	0.	0.	0.	0.
115.	0.	0.	0.	0.
120.	0.	0.	0.	0.

125.	*	0.	0.
130.	*	0.	0.
135.	*	0.	0.
140.	*	0.	0.
145.	*	0.	0.
150.	*	0.	0.
155.	*	0.	0.
160.	*	0.	0.
165.	*	0.	0.
170.	*	0.	0.
175.	*	0.	0.
180.	*	0.	0.
185.	*	0.	0.
190.	*	0.	0.
195.	*	0.	0.
200.	*	0.	0.
205.	*	0.	0.

WIND * ANGLE * (DEGR) *	CONCENTRATION (ug/m**3)		
	REC1	REC2	REC3
210. *	0.	0.	0.
215. *	0.	0.	0.
220. *	0.	0.	0.
225. *	0.	0.	0.
230. *	0.	0.	0.
235. *	0.	0.	0.
240. *	0.	0.	0.
245. *	0.	0.	0.
250. *	0.	0.	0.
255. *	0.	0.	0.
260. *	0.	0.	0.
265. *	0.	0.	0.
270. *	0.	0.	0.
275. *	0.	0.	0.
280. *	0.	0.	0.
285. *	0.	0.	0.
290. *	0.	0.	0.
295. *	0.	0.	0.
300. *	0.	0.	0.
305. *	0.	0.	0.
310. *	0.	0.	0.
315. *	0.	0.	0.
320. *	0.	0.	0.
325. *	0.	0.	0.
330. *	0.	0.	0.
335. *	0.	0.	0.
340. *	0.	0.	0.
345. *	0.	0.	0.
350. *	0.	0.	0.
355. *	0.	0.	0.
360. *	0.	0.	0.
MAX	0.	0.	0.
DEGR. *	150	150	75

THE HIGHEST CONCENTRATION OF 0. ug/m**3 OCCURRED AT RECEPTOR REC3 .