Scenario I_R3:

Technology Benchmarking - Option I
Calculation of Emission Rates including Example Calculation

Emission Rate Calculations for Modeling

						before RC	after RC	before RC	After RC-CFM only								
		Source	B01	B24	B25	B11current	B11	B38current	B38	B08	B10	B32	B33	B34	B35	C79	C80	Total
		Type	Furnace	Furnace	Furnace	FH	FH	FH	FH	RE1	RE2	RE2	RE1	RE2	RE2	RE1	RE1	
		Current Base Case Emission Rate (g/s)	3.55E-05			1.51E-04		3.32E-05		2.05E-06	2.39E-06	2.39E-06		2.39E-06	2.39E-06	2.04E-06	2.04E-06	2.35E-04
Uncertainty =	1.15	2016 Base RC Emission Rate (g/s) with Uncertainty Factor applied		2.04E-05	2.04E-05		8.66E-05		3.82E-05		1.37E-06	1.37E-06	2.36E-06	1.37E-06	1.37E-06	2.34E-06	2.34E-06	1.78E-04
		2016 Base RC Emission Rate (g/s) without uncertainty applied		1.78E-05	1.78E-05		7.53E-05		3.32E-05		1.19E-06	1.19E-06	2.05E-06	1.19E-06	1.19E-06	2.04E-06	2.04E-06	1.55E-04
Combination ID	Option Description		B01	B24	B25	B11	B11	B38current	B38	B08	B10	B32	B33	B34	B35	C79	C80	
I_R3	Facility reconfiguration (RC) + Scrubber system on forehearth stack (6,7,8, or 9) + substituting LSC refractory in the forehearth (11) + forehearth conversion to air/gas combustion (12)	Description of Reduction Component							scrubber + LSC+Air/Gas									
		Individual Reduction Description							(6,7,8,or9)+11+12		partial of 12	partial of 12		partial of 12	partial of 12			
		Reduction Efficiency 1		0%	0%				20%	0%	50%	50%	0%	50%	50%	0%	0%	
		Reduction Efficiency 2							10%									
		Reduction Efficiency 3							86%									
		Comments	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	Source ER (g/s)	TotalER (g/s)
		RC+(6,7,8 or9) +11+12		2.04E-05	2.04E-05				1.70E-05		6.87E-07	6.87E-07	2.36E-06	6.87E-07	6.87E-07	2.34E-06	2.34E-06	6.76E-05
	Explanation of calculation for B38 :	It is not appropriate to apply the air/gas reduction of 86% to the current B38 emission rate since it is using a different technology that would be removed before installing air/gas combustion. Therefore, for emission reduction estimation purposes, the B38 reconfiguration ER is assumed to be identical to that of the B11 reconfiguration emission rate.																

RC = reconfiguration
Before RC = before reconfiguration
After RC = after reconfiguration

This combination does not include any reductions for the furnace source(s). All technologies for this option are for the forehearths.

Conversion to air/gas combustion for all forehearths would require the removal of the existing prototype technologies that are currently installed on the CFM forehearth (see Source ID B38 current).
Therefore, the baseline emission rates (prior to the application of reduction efficiencies) for all forehearths at the facility would be more similar to the conventional forehearth operations (see Source ID B11 current).
However, the reconfiguration involves reducing the conventional forehearth area by approximately 50% - which would reduce the baseline emission rate of B11current by half as shown with Source ID B11 (after RC)
Therefore, the estimated baseline emission rate for all forehearth emissions after reconfiguration and the removal of the prototype technology on the CFM forehearth is shown below:

New Baseline Forehearth ER = (B11 conventional forehearth current emission rate) / 2(for reduction of forehearth area) x uncertainty factor of 1.15 x 2 (to reflect CFM forehearth at same emission rate)

New Baseline Forehearth ER = [0.000151 , g/s / 2] x 1.15 x2

New Baseline Forehearth ER = 1.73E-04

ER after technologies applied = New Baseline Forehearth ER x (1 - reduction efficiency option 1) x (1 - reduction efficiency option 2) x (1-reduction efficiency option 3)

ER after technologies applied = 0.000173 g/s x (1-0.2) x (1-0.1) x (1-0.864)

ER after technologies applied = 1.70E-05 g/s

Annual Hexavalent Chromium Results
Technical Benchmarking Option I - 5 year data set

Run (tab) Name:	Ann_Opt_I_R3_Metyr1	Ann_Opt_I_R3_Metyr2	Ann_Opt_I_R3_Metyr3	Ann_Opt_I_R3_Metyr4	Ann_Opt_I_R3_Metyr5	
Run Description:	Option I_R2, Reg 419 grid, Site Specific Met (2009)	Option I_R2, Reg 419 grid, Site Specific Met (2010)	Option I_R2, Reg 419 grid, Site Specific Met (2011)	Option I_R2, Reg 419 grid, Site Specific Met (2012)	Option I_R2, Reg 419 grid, Site Specific Met (2013)	**MAX**
Result Units:	**ng/m3**	**ng/m3**	**ng/m3**	**ng/m3**	**ng/m3**	**ng/m3**
ALL	4.26404	4.87285	4.07768	4.32635	4.2754	**4.87285**
B10	0.03908	0.04012	0.04024	0.04071	0.0402	**0.04071**
B32	0.07978	0.0847	0.07868	0.08102	0.08023	**0.0847**
B34	0.05933	0.06748	0.0576	0.06099	0.05966	**0.06748**
B35	0.05924	0.06836	0.05762	0.06181	0.05927	**0.06836**
C79	0.08277	0.10893	0.07708	0.08782	0.08021	**0.10893**
C80	0.07892	0.1091	0.07271	0.08492	0.07221	**0.1091**
B38	1.82247	2.06567	1.72869	1.86421	1.80554	**2.06567**
B24	0.94663	1.05854	0.91869	0.94959	0.98204	**1.05854**
B25	0.85795	0.98808	0.81885	0.85051	0.85959	**0.98808**
B33	0.24981	0.29562	0.23972	0.25766	0.24583	**0.29562**
FURNACE	1.80458	2.04661	1.73754	1.80009	1.84163	**2.04661**
FOREHEAR	1.82247	2.06567	1.72869	1.86421	1.80554	**2.06567**
GENEXHTS	0.63699	0.76057	0.61145	0.66205	0.62822	**0.76057**

Run Description:	Option I_R2, Reg 419 grid, Site Specific Met (2009)	Option I_R2, Reg 419 grid, Site Specific Met (2010)	Option I_R2, Reg 419 grid, Site Specific Met (2011)	Option I_R2, Reg 419 grid, Site Specific Met (2012)	Option I_R2, Reg 419 grid, Site Specific Met (2013)	**MAX**
Result Units:	**ug/m3**	**ug/m3**	**ug/m3**	**ug/m3**	**ug/m3**	**ug/m3**
ALL	0.00426404	0.00487285	0.00407768	0.00432635	0.0042754	**0.004873**
B10	0.00003908	0.00004012	0.00004024	0.00004071	0.0000402	**4.07E-05**
B32	0.00007978	0.0000847	0.00007868	0.00008102	0.00008023	**8.47E-05**
B34	0.00005933	0.00006748	0.0000576	0.00006099	0.00005966	**6.75E-05**
B35	0.00005924	0.00006836	0.00005762	0.00006181	0.00005927	**6.84E-05**
C79	0.00008277	0.00010893	0.00007708	0.00008782	0.00008021	**0.000109**
C80	0.00007892	0.0001091	0.00007271	0.00008492	0.00007221	**0.000109**
B38	0.00182247	0.00206567	0.00172869	0.00186421	0.00180554	**0.002066**
B24	0.00094663	0.00105854	0.00091869	0.00094959	0.00098204	**0.001059**
B25	0.00085795	0.00098808	0.00081885	0.00085051	0.00085959	**0.000988**
B33	0.00024981	0.00029562	0.00023972	0.00025766	0.00024583	**0.000296**
FURNACE	0.00180458	0.00204661	0.00173754	0.00180009	0.00184163	**0.002047**
FOREHEAR	0.00182247	0.00206567	0.00172869	0.00186421	0.00180554	**0.002066**
GENEXHTS	0.00063699	0.00076057	0.00061145	0.00066205	0.00062822	**0.000761**

Source Pathway - Source Inputs

Point Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/s]	Gas Exit Temp. [K]	Gas Exit Velocity [m/s]	Stack Inside Diameter [m]
POINT	B10	562030.25	4821525.28	312.00	14.45	6.87E-7	321.90	12.10	1.24
		General Exhaust Above T107B F/H							
POINT	B32	562047.16	4821528.02	312.00	14.48	6.87E-7	321.90	19.19	1.24
		General Exhaust Above T106							
POINT	B34	562039.70	4821535.65	312.00	14.48	6.87E-7	321.90	19.19	1.24
		General Exhaust Above T107A F/H							
POINT	B35	562047.03	4821543.82	312.00	14.48	6.87E-7	321.90	19.19	1.24
		General Exhaust Above CFM Main Channel							
POINT	C79	562023.15	4821559.58	312.00	11.64	2.34E-6	310.80	9.59	1.41
		General Exhaust West CFM F/H							
POINT	C80	562028.25	4821564.97	312.00	11.64	2.34E-6	310.80	9.59	1.41
		General Exhaust East CFM F/H							
POINT	B38	562043.48	4821544.79	312.00	16.46	0.00002	379.00	5.43	0.75
		105 Forehearth Stack							
POINT	B33	562055.21	4821536.35	312.00	14.48	2.36E-6	321.90	12.59	1.22
		Gen Exhaust Above T105							
POINT	B24	562052.59	4821531.65	312.00	27.77	0.00002	597.00	5.89	0.53
		105 Furnace Stack							
POINT	B25	562057.67	4821536.90	312.00	27.77	0.00002	597.00	5.89	0.53
		105 Furnace Stack							

Volume Sources

No Volume Sources Specified

Area Sources

No Area Sources Specified

**MODELOPTs: NonDFAULT CONC   ELEV   FLGPOL   BETA

***   MODEL SETUP OPTIONS SUMMARY   ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

  -- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Allows User-Specified Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.
        6. BETA Option for Capped & Horiz Stacks Selected With:

                5 Capped Stack(s); and   0 Horiz Stack(s)

**Other Options Specified:
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Accepts FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: HCR

**Model Calculates ANNUAL Averages Only

**This Run Includes: 10 Source(s);   14 Source Group(s); and   2062 Receptor(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 14134

**Output Options Selected:
         Model Outputs Tables of ANNUAL Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =   325.00 ; Decay Coef. =   0.000   ; Rot. Angle =   0.0
                 Emission Units = GRAMS/S   ; Emission Rate Unit Factor =   0.10000E+10
                 Output Units   = NANOGRAMS/M3

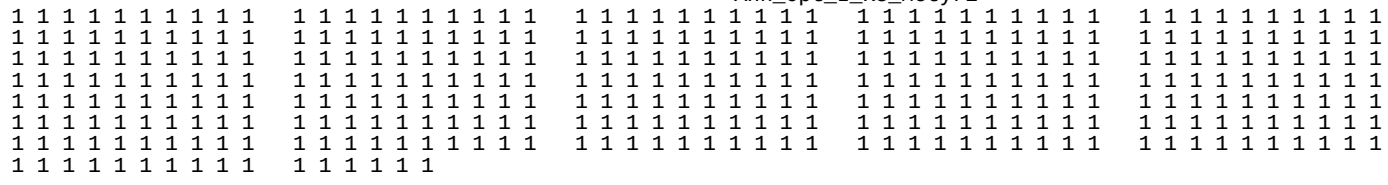
**Approximate Storage Requirements of Model =   4.5 MB of RAM.

**File for Saving Result Arrays: Ann_Opt_I_R3_Metyr2.sv1
**File for Summary of Results: Ann_Opt_I_R3_Metyr2.sum

♀ *** AERMOD - VERSION 14134 ***   *** OC Guelph Project 144539 - Site Specific Standard   ***   03/22/15
*** AERMET - VERSION 14134 ***   *** Ann_Opt_I_R3_Metyr2   ***   20:14:11
                                                                                                                    PAGE   2

**MODELOPTs: NonDFAULT CONC   ELEV   FLGPOL   BETA

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                    (1=YES; 0=NO)



METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2010 1 1 1
AND END DATE: 2010 12 31 24

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

♀ *** AERMOD - VERSION 14134 *** *** OC Guelph Project 144539 - Site Specific Standard *** 03/22/15
*** AERMET - VERSION 14134 *** *** Ann_Opt_I_R3_Metyr2 *** 20:14:11
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**MODELOPTs: NonDFAULT CONC ELEV FLGPOL BETA

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: E:_Site Specific Met\OCGuelph_ONLY\V14134\OwensCorning-Guelph-v14134.SFC Met Version: 14134
Profile file: E:_Site Specific Met\OCGuelph_ONLY\V14134\OwensCorning-Guelph-v14134.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 61430 Upper air station no.: 14733
Name: UNKNOWN Name: BUFFALO/GREATER_BUFFALO_INT'L
Year: 2009 Year: 2009

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
09	01	01	1	01	-8.4	0.105	-9.000	-9.000	-999.	81.	11.8	0.57	0.55	1.00	1.50	291.	10.0	258.1	2.0
09	01	01	1	02	-16.5	0.147	-9.000	-9.000	-999.	135.	16.6	0.57	0.55	1.00	2.10	308.	10.0	258.1	2.0
09	01	01	1	03	-8.4	0.105	-9.000	-9.000	-999.	82.	11.8	0.57	0.55	1.00	1.50	294.	10.0	257.5	2.0
09	01	01	1	04	-7.9	0.100	-9.000	-9.000	-999.	76.	11.0	0.50	0.55	1.00	1.50	233.	10.0	255.9	2.0
09	01	01	1	05	-3.5	0.067	-9.000	-9.000	-999.	41.	7.3	0.50	0.55	1.00	1.00	223.	10.0	255.3	2.0
09	01	01	1	06	-3.2	0.067	-9.000	-9.000	-999.	41.	8.1	0.50	0.55	1.00	1.00	222.	10.0	254.8	2.0
09	01	01	1	07	-9.5	0.113	-9.000	-9.000	-999.	91.	13.2	0.70	0.55	1.00	1.50	145.	10.0	255.9	2.0
09	01	01	1	08	-8.5	0.109	-9.000	-9.000	-999.	86.	13.0	0.63	0.50	1.00	1.50	243.	10.0	257.5	2.0
09	01	01	1	09	-6.0	0.107	-9.000	-9.000	-999.	84.	17.8	0.61	0.95	0.76	1.50	127.	10.0	258.1	2.0
09	01	01	1	10	-1.6	0.057	-9.000	-9.000	-999.	33.	9.9	0.30	0.95	0.66	1.00	121.	10.0	263.8	2.0
09	01	01	1	11	13.2	0.424	0.253	0.009	42.	662.	-499.8	0.50	0.55	0.54	3.10	224.	10.0	264.2	2.0
09	01	01	1	12	19.8	0.428	0.402	0.008	114.	671.	-342.9	0.50	0.55	0.51	3.10	196.	10.0	265.4	2.0
09	01	01	1	13	22.9	0.367	0.559	0.011	265.	536.	-187.8	0.50	0.55	0.51	2.60	203.	10.0	265.4	2.0
09	01	01	1	14	2.1	0.468	0.256	0.007	275.	768.	-4237.3	0.70	0.55	0.48	3.10	179.	10.0	265.9	2.0
09	01	01	1	15	-4.6	0.538	-9.000	-9.000	-999.	946.	2954.8	0.70	0.55	0.51	3.60	162.	10.0	265.4	2.0
09	01	01	1	16	-20.2	0.526	-9.000	-9.000	-999.	915.	625.4	0.70	0.55	0.59	3.60	164.	10.0	265.9	2.0
09	01	01	1	17	-33.2	0.401	-9.000	-9.000	-999.	622.	168.7	0.61	0.95	0.82	3.10	141.	10.0	265.9	2.0
09	01	01	1	18	-28.3	0.491	-9.000	-9.000	-999.	824.	362.7	0.61	0.95	1.00	3.60	137.	10.0	265.9	2.0
09	01	01	1	19	-53.3	0.464	-9.000	-9.000	-999.	760.	163.0	0.61	0.95	1.00	3.60	134.	10.0	265.9	2.0
09	01	01	1	20	-60.2	0.545	-9.000	-9.000	-999.	964.	233.5	0.61	0.95	1.00	4.10	127.	10.0	265.4	2.0
09	01	01	1	21	-44.8	0.474	-9.000	-9.000	-999.	788.	206.2	0.61	0.95	1.00	3.60	130.	10.0	265.9	2.0
09	01	01	1	22	-61.4	0.544	-9.000	-9.000	-999.	961.	227.6	0.61	0.95	1.00	4.10	132.	10.0	266.4	2.0
09	01	01	1	23	-53.4	0.464	-9.000	-9.000	-999.	764.	162.3	0.61	0.95	1.00	3.60	140.	10.0	266.4	2.0
09	01	01	1	24	-21.2	0.225	-9.000	-9.000	-999.	318.	46.9	0.70	0.55	1.00	2.10	160.	10.0	267.0	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
09	01	01	01	10.0	1	291.	1.50	258.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: NonDFAULT CONC ELEV FLGPOL BETA

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF HCR IN NANOGRAMS/M3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
FURNACE	1ST HIGHEST VALUE IS	2.04661 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	2.04661 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	1.72434 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)	DC	
	4TH HIGHEST VALUE IS	1.72434 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	1.65046 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	1.65046 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)	DC	
	7TH HIGHEST VALUE IS	1.43889 AT (562065.76, 4821512.01, 311.00, 311.00, 0.00)	DC	
	8TH HIGHEST VALUE IS	1.32402 AT (562085.76, 4821512.01, 311.00, 311.00, 0.00)	DC	
	9TH HIGHEST VALUE IS	1.27844 AT (562085.76, 4821532.01, 311.00, 311.00, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.97929 AT (562050.10, 4821511.55, 311.00, 311.00, 0.00)	DC	
FOREHEAR	1ST HIGHEST VALUE IS	2.06567 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	2.06567 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	1.77454 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)	DC	
	4TH HIGHEST VALUE IS	1.77454 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	1.55832 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	1.55832 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)	DC	
	7TH HIGHEST VALUE IS	1.42254 AT (562085.76, 4821512.01, 311.00, 311.00, 0.00)	DC	
	8TH HIGHEST VALUE IS	1.39010 AT (562065.76, 4821512.01, 311.00, 311.00, 0.00)	DC	
	9TH HIGHEST VALUE IS	1.25110 AT (562085.76, 4821532.01, 311.00, 311.00, 0.00)	DC	
	10TH HIGHEST VALUE IS	1.02901 AT (562077.84, 4821540.29, 311.01, 311.01, 0.00)	DC	
GENEXHTS	1ST HIGHEST VALUE IS	0.76057 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.76057 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.65066 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.65066 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.60741 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.60741 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.54638 AT (562065.76, 4821512.01, 311.00, 311.00, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.51083 AT (562085.76, 4821512.01, 311.00, 311.00, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.44607 AT (562050.10, 4821511.55, 311.00, 311.00, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.44607 AT (562050.10, 4821511.55, 311.00, 311.00, 0.00)	DC	
B10	1ST HIGHEST VALUE IS	0.04012 AT (562050.10, 4821511.55, 311.00, 311.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.04012 AT (562050.10, 4821511.55, 311.00, 311.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.02875 AT (562076.93, 4821485.66, 310.19, 310.19, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.02875 AT (562076.93, 4821485.66, 310.19, 310.19, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.02713 AT (562070.22, 4821492.13, 310.40, 310.40, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.02713 AT (562070.22, 4821492.13, 310.40, 310.40, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.02679 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.02679 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.02637 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.02637 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)	DC	

**MODELOPTs: NonDFAULT CONC ELEV FLGPOL BETA

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF HCR IN NANOGRAMS/M3 **

GROUP ID AVERAGE CONC RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE NETWORK GRID-ID

B24	1ST HIGHEST VALUE IS	1.05854	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC
	2ND HIGHEST VALUE IS	1.05854	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.92257	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.92257	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.85389	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.85389	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.72997	AT (	562065.76,	4821512.01,	311.00,	311.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.69230	AT (	562085.76,	4821532.01,	311.00,	311.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.63497	AT (	562085.76,	4821512.01,	311.00,	311.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.52969	AT (	562077.84,	4821540.29,	311.01,	311.01,	0.00)	DC
B25	1ST HIGHEST VALUE IS	0.98808	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.98808	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.80177	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.80177	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.79658	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.79658	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.70892	AT (	562065.76,	4821512.01,	311.00,	311.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.68905	AT (	562085.76,	4821512.01,	311.00,	311.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.58614	AT (	562085.76,	4821532.01,	311.00,	311.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.50560	AT (	562105.76,	4821512.01,	311.00,	311.00,	0.00)	DC
B32	1ST HIGHEST VALUE IS	0.08470	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.08470	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.07642	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.07642	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.06892	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.06892	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.06327	AT (	562050.10,	4821511.55,	311.00,	311.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.06327	AT (	562050.10,	4821511.55,	311.00,	311.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.04438	AT (	562085.76,	4821512.01,	311.00,	311.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.04392	AT (	562065.76,	4821512.01,	311.00,	311.00,	0.00)	DC
B33	1ST HIGHEST VALUE IS	0.29562	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC
	2ND HIGHEST VALUE IS	0.29562	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC
	3RD HIGHEST VALUE IS	0.25393	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC
	4TH HIGHEST VALUE IS	0.25393	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC
	5TH HIGHEST VALUE IS	0.23387	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC
	6TH HIGHEST VALUE IS	0.23387	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC
	7TH HIGHEST VALUE IS	0.20783	AT (	562065.76,	4821512.01,	311.00,	311.00,	0.00)	DC
	8TH HIGHEST VALUE IS	0.18964	AT (	562085.76,	4821512.01,	311.00,	311.00,	0.00)	DC
	9TH HIGHEST VALUE IS	0.16851	AT (	562050.10,	4821511.55,	311.00,	311.00,	0.00)	DC
	10TH HIGHEST VALUE IS	0.16851	AT (	562050.10,	4821511.55,	311.00,	311.00,	0.00)	DC

**MODELOPTs: NonDFAULT CONC ELEV FLGPOL BETA

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF HCR IN NANOGRAMS/M3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)						OF TYPE	NETWORK GRID-ID
B34	1ST HIGHEST VALUE IS	0.06748	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.06748	AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.05800	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.05800	AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.05603	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.05603	AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.04644	AT (	562050.10,	4821511.55,	311.00,	311.00,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.04644	AT (	562050.10,	4821511.55,	311.00,	311.00,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.04229	AT (	562085.76,	4821512.01,	311.00,	311.00,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.04150	AT (	562065.76,	4821512.01,	311.00,	311.00,	0.00)	DC	

B35	1ST HIGHEST VALUE IS	0.06836 AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.06836 AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.05709 AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.05709 AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.05418 AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.05418 AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.04574 AT (	562065.76,	4821512.01,	311.00,	311.00,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.04462 AT (	562085.76,	4821512.01,	311.00,	311.00,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.04101 AT (	562085.76,	4821532.01,	311.00,	311.00,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03141 AT (	562077.84,	4821540.29,	311.01,	311.01,	0.00)	DC	
B38	1ST HIGHEST VALUE IS	2.06567 AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC	
	2ND HIGHEST VALUE IS	2.06567 AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC	
	3RD HIGHEST VALUE IS	1.77454 AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC	
	4TH HIGHEST VALUE IS	1.77454 AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC	
	5TH HIGHEST VALUE IS	1.55832 AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC	
	6TH HIGHEST VALUE IS	1.55832 AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC	
	7TH HIGHEST VALUE IS	1.42254 AT (	562085.76,	4821512.01,	311.00,	311.00,	0.00)	DC	
	8TH HIGHEST VALUE IS	1.39010 AT (	562065.76,	4821512.01,	311.00,	311.00,	0.00)	DC	
	9TH HIGHEST VALUE IS	1.25110 AT (	562085.76,	4821532.01,	311.00,	311.00,	0.00)	DC	
	10TH HIGHEST VALUE IS	1.02901 AT (	562077.84,	4821540.29,	311.01,	311.01,	0.00)	DC	
C79	1ST HIGHEST VALUE IS	0.10893 AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.10893 AT (	562063.97,	4821525.92,	311.00,	311.00,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.09493 AT (	562085.76,	4821512.01,	311.00,	311.00,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.09149 AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.09149 AT (	562070.91,	4821533.11,	311.00,	311.00,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.08665 AT (	562065.76,	4821512.01,	311.00,	311.00,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.08102 AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.08102 AT (	562057.04,	4821518.74,	311.00,	311.00,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.06501 AT (	562085.76,	4821532.01,	311.00,	311.00,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.06296 AT (	562105.76,	4821512.01,	311.00,	311.00,	0.00)	DC	

**MODELOPTs: NonDFAULT CONC ELEV FLGPOL BETA

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF HCR IN NANOGRAMS/M3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
C80	1ST HIGHEST VALUE IS 0.10910 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)		DC	
	2ND HIGHEST VALUE IS 0.10910 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)		DC	
	3RD HIGHEST VALUE IS 0.10763 AT (562065.76, 4821512.01, 311.00, 311.00, 0.00)		DC	
	4TH HIGHEST VALUE IS 0.10032 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)		DC	
	5TH HIGHEST VALUE IS 0.10032 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)		DC	
	6TH HIGHEST VALUE IS 0.08681 AT (562085.76, 4821512.01, 311.00, 311.00, 0.00)		DC	
	7TH HIGHEST VALUE IS 0.07391 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)		DC	
	8TH HIGHEST VALUE IS 0.07391 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)		DC	
	9TH HIGHEST VALUE IS 0.06977 AT (562085.76, 4821492.01, 310.52, 310.52, 0.00)		DC	
	10TH HIGHEST VALUE IS 0.06310 AT (562056.81, 4821505.08, 310.84, 310.84, 0.00)		DC	
ALL	1ST HIGHEST VALUE IS 4.87285 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)		DC	4.87285 ng/m3 = 0.00487285 ug/m3
	2ND HIGHEST VALUE IS 4.87285 AT (562063.97, 4821525.92, 311.00, 311.00, 0.00)		DC	
	3RD HIGHEST VALUE IS 4.10629 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)		DC	
	4TH HIGHEST VALUE IS 4.10629 AT (562070.91, 4821533.11, 311.00, 311.00, 0.00)		DC	
	5TH HIGHEST VALUE IS 3.85944 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)		DC	
	6TH HIGHEST VALUE IS 3.85944 AT (562057.04, 4821518.74, 311.00, 311.00, 0.00)		DC	
	7TH HIGHEST VALUE IS 3.37536 AT (562065.76, 4821512.01, 311.00, 311.00, 0.00)		DC	
	8TH HIGHEST VALUE IS 3.25739 AT (562085.76, 4821512.01, 311.00, 311.00, 0.00)		DC	
	9TH HIGHEST VALUE IS 2.93757 AT (562085.76, 4821532.01, 311.00, 311.00, 0.00)		DC	
	10TH HIGHEST VALUE IS 2.28475 AT (562077.84, 4821540.29, 311.01, 311.01, 0.00)		DC	

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 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
♀*** AERMOD - VERSION  14134 ***   *** OC Guelph Project 144539 - Site Specific Standard                 ***        03/22/15
 *** AERMET - VERSION  14134 ***   *** Ann_Opt_I_R3_Metyr2                                              ***        20:14:11
                                                                                                                 PAGE   8
 **MODELOPTs:   NonDFAULT CONC      ELEV      FLGPOL    BETA

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of            3 Informational Message(s)

 A Total of         8760 Hours Were Processed

 A Total of            3 Calm Hours Identified

 A Total of            0 Missing Hours Identified (  0.00 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***
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