



**Elmfield House
Petersfinger
Salisbury
SP5 3BZ**

51.061713 -1.769908

Odour Impact Assessment

**S23-917/OIA
September 2023**

Prepared by :

**Southwest Environmental Limited
Centre Gate
Colston Avenue
Bristol
BS1 4TR**

On behalf of :

**Dr Keith Rodger
Elmfield House
Petersfinger
Salisbury
SP5 3BZ**



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Appendix 3 – Model Data

1.0 Introduction

Acting on instruction from Dr Keith Rodger, Southwest Environmental Limited are to prepare an Odour Impact Assessment, in conjunction with the proposed development at Elmfield House.

1.1 The Site

The site currently comprises a grassed enclosure. A site Location Plans is included within **Appendix 1**.

Address	Elmfield House Petersfinger Salisbury
Postcode	SP5 3BZ
Grid Reference	50.695723, -4.627170

1.2 Proposed Development

The proposed development is residential. A proposed development plan is included within **Appendix 1**.

2.0 Terms of Reference

- H1 Part 1 – Environmental Risk Assessment
- Review of Dispersion Modelling for Odour Predictions (SC030170/SR3)
- Best Available Techniques (BAT) / BAT reference documents (BREFs)
- Odour Guidance for Local Authorities, Defra, March 2010
- Air quality guidelines for Europe, 1987 (WHO Regional Publications, European Series No. 23)
- Review of Odour Character and Thresholds (SC030170/SR2)
- Guidance on the Assessment of Odour for Planning – IAQM - May 2014

3.0 Dispersion of Odours

The Environment Agency Guidelines and findings from UKWIR use the 98th percentile hourly mean; this is the hourly mean odour concentration that is equalled or exceeded for 2% of the time period considered, which is typically one year. The use of the 98th percentile statistic allows for some consideration of both frequency and intensity of the odours.

It should be noted that a fluctuating odour is often more noticeable than a steady background odour at a low concentration. It is implicit that within the models hourly averaging time and the Environment Agency guidelines and findings from UKWIR that there would be variation in the odour concentration around this mean i.e. there would be short periods when odour concentration would be higher than the mean and lower than the mean.

The FIDOR an often used acronym, is a reminder of the factors that will determine the degree of odour pollution

- Frequency of detection.
- Intensity as perceived.
- Duration of exposure.
- Offensiveness.
- Receptor sensitivity

4.0 Odour Assessment Framework

4.1 Odour Concentration

Odour concentration is expressed in terms of European Odour Units per metre cubed of air (ouE/m³). The following definitions and descriptions of how an odour might be perceived by a human with an average sense of smell may be useful, however, it should be noted that within a human population there is considerable variation in acuity of sense of smell.

- 1 ouE/m³ is defined as the limit of detection, in laboratory conditions.
- At 2.0 – 3.0 ouE/m³ a particular odour might be detected against background odours in an open environment.
- When the concentration reaches around 5.0 ouE/m³ a particular odour will usually be recognisable, if known, but would usually be described as faint.
- At 10.0 ouE/m³ most would describe the intensity of the odour as moderate or strong and if persistent, it is likely that the odour would become intrusive.

The character, or hedonic tone, of an odour is also important; typically odours are grouped into three categories;

Most offensive;

- processes involving decaying animal or fish remains
- **processes involving septic effluent or sludge**
- biological landfill odours

Moderately offensive;

- intensive livestock rearing
- fat frying (food processing)
- sugar beet processing
- well aerated green waste composting

And less offensive

- brewery
- confectionery
- coffee roasting
- bakery

4.2 Environment Agency Guidelines

In April 2011, the Environment Agency published H4 Odour Management guidance (H4) which contains odour benchmarks. The benchmarks are;

- **1.5 ouE/m³ for most offensive odours.**
- 3.0 ouE/m³ for moderately offensive odours
- 6.0 ouE/m³ for less offensive odours.

Any modelled results that project exposures above these benchmark levels, after taking uncertainty into account, indicates the likelihood of unacceptable odour pollution.

4.3 Defining Odour Emissions

Process explained below in term of odour sources, intensity, and mitigative features.

4.3.1 Sources

The source considered in this assessment is the Salisbury Sewage Treatment Works. Odour sources considered are:

- 4 No. radial flow primary tanks with auto desludging;
- 10 No. circular biological filters (8 No. with mineral media, 2 No. with plastic media);
- 6 No. radial humus tanks with auto desludging;
- 5 No. storm tanks;

Salisbury Sewage Treatment Works is owned and maintained by Wessex Water, and is located at Petersfinger on the outskirts of the main town. It serves a population of 58,588 people.

4.3.2 Model Input Data

Data for the model is displayed in **Appendix 3**, and is set at legislative minima (such as required for permit) or is estimated based on the specification of the plant know at the time of writing.

4.3.3 Odour Emissions

Reference	Area Odour Emission Rate	Source	Source Area (Per Unit)	Type
UKWIR	31 ouE/m ² /s	Inlet - Sump & Balancing tank	14.8 m ²	Continuous (24 hours)
UKWIR	1.9 ouE/m ² /s	4 x Radial Flow	300 m ²	Continuous (24 hours)
UKWIR	2.1 ouE/m ² /s	10 x Filter Bed	1500 m ²	Continuous (24 hours)
UKWIR	0.35 ouE/m ² /s	6 x Humus Circular	300 m ²	Continuous (24 hours)
UKWIR	0.35 ouE/m ² /s	1 x Outfall	8.4m ²	Continuous (24 hours)
UKWIR	2.1 ouE/m ² /s	5 x Storm Tanks	200 m ²	Continuous (24 hours)

5.0 Modelling

Modelling is used to derive concentrations at various points, the below chapter explains the input values used. A full set of input values are included within **Appendix 3**.

5.1 Sources

There are various discrete sources that have been combined within the model to provide the overall odour emission rate.

5.1.1 Trickle Beds

Bio logical filter is a bed of solid media for bacteria to attach on its surfaces. Wastewater is irrigated on the solid media . It is called a biological filter to emphasise that the filtration process is not mechanical straining of solids, but removal of organic substances by use of bacterial action. These are modelled as a 247/ 365 source.

5.1.2 Primary Flow Tanks

Primary Settlement Tank (PST) The Primary Settlement or sedimentation tanks are designed to reduce the velocity of the wastewater flow, allowing heavier organic solids (called raw sludge) to settle. They are the first stage of treatment after the removal of rags and grit in the inlet works. These are modelled as a 247/ 365 source.

5.1.3 Humus Tanks

A tank in which settle-able solids or humus is separated from the effluent flowing through it. These are modelled as a 247/ 365 source.

5.1.4 Storm Tanks

These provide buffer capacity in the event of a storm. A lot of rain water will flow through the plant during rainy periods, and if heavy the plant will not be able to keep up, and so sewage must be stored. These are modelled as a seasonal source with a 50% weighting.

5.2 Pathway

The pathways were assessed using air dispersion modelling.

5.2.1 Software

Calculations were performed using BREEZE AERMOD. AERMOD is a steady-state Gaussian dispersion model that represents the current state-of-science and promulgated dispersion model from the U.S. EPA. BREEZE AERMOD is an enhanced version of the EPA-approved AERMOD that provides modellers with the tools and functionality required to perform air quality analyses that help to address both permitting, regulatory, and nuisance issues as well as perform academic research. BREEZE AERMOD/ISC offers the most complete air quality modelling system available on the market today.

5.2.2 Terrain

Terrain can influence the dispersion of airborne particulates and gases. Terrain data utilised in the model was sourced from ASTER, and inserted as a geo-referenced GIS layer within the model.

5.2.3 Meteorology

We have used purchase meteo data from Trinity Consultants USA. From repeat modelling using data from 2015 to 2021 we have established a worst case year of 2017.

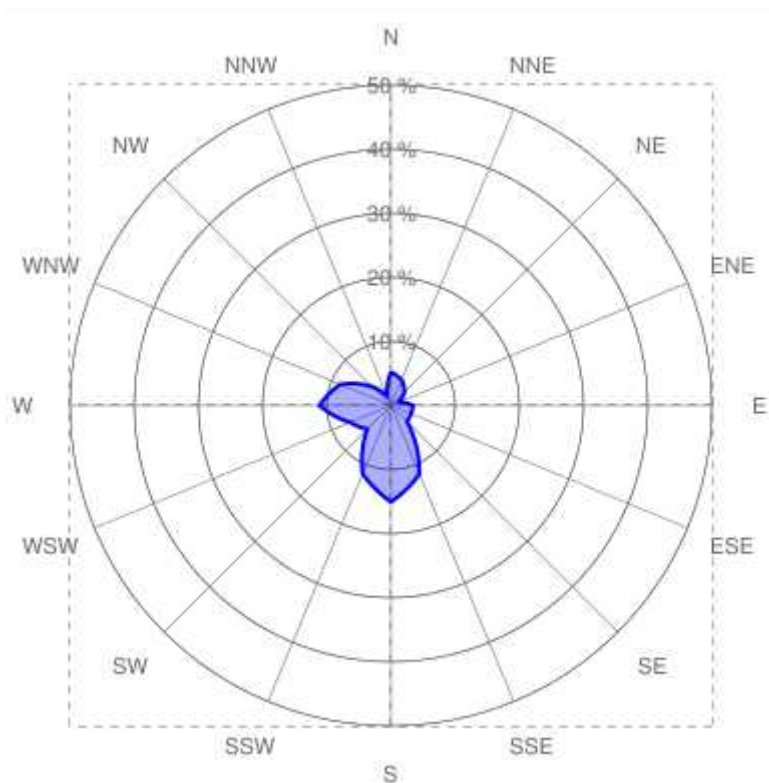


Figure 1 - Wind Rose Bristol Airport

5.3 Receptors

We have encircled the boundary of the site with a series of discrete receptors. This is marked on the model plan within **Appendix 2**. Receptors were chosen to represent worst case situations in terms of proximity. Concentration at the site of the proposed dwellings will be lower than at the boundary.

6.0 Results

Results are show that the site boundary receptor is subject to a 1 Hour 98th Percentile Odour Concentration of 0.4 OUE/m³.

7.0 Conclusions

The main odour sources at the proposed facility should be considered highly offensive. Current guidance suggests the use of averaged concentrations, and the averaged concentrations over a period of 8760 hours would appear to be below guide values.

Receptors in the vicinity of the proposed development are shown to be exposed to modelled worst case odour intensities of no greater than 0.4 ouE/m³. Which would suggest the scheme is appropriate when considered in line with current guidance.

8.0 Certification

This report is produced for the sole use of the Client, and no responsibility of any kind, whether for negligence or otherwise, can be accepted for any Third Party who may rely upon it.

The conclusions and recommendations given in this report are based on our understanding of the future plans for the site. If, however, the site is developed for a more or less sensitive use, then a different interpretation might be appropriate. Information within this report should not be utilised in making of assumptions and judgements with regard to the financial value of land or property.

For the avoidance of doubt this report does not form a guarantee express or implied against negative impacts of odours or other emissions on persons, property or amenity value within or in the vicinity of the proposed site.

It necessarily relies on the co-operation of other organizations and the free availability of information and total access.

The scope of this Odour Impact Assessment was discussed and agreed with the Client. No responsibility is accepted for conditions not encountered, which are outside of the agreed scope of work.

This report may suggest an opinion regarding possible odour concentrations on site and in the vicinity of the site. However, this is for guidance only and no liability, whether negligent or otherwise, can be accepted for its accuracy.



APPENDIX 1

Proposed Development

DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT. ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO THE ARCHITECT.



PAUL STEVENS ARCHITECTURE LTD
Unit 3 Redhouse Meadow Business Park
Cherry Orchard Lane
Salisbury
Wiltshire
SP2 7LD

Tel No: 01722 349364

THE DRAWING IS COPYRIGHT. IT MUST NOT BE COPIED, USED OR DISCLOSED TO THIRD PARTIES WITHOUT PRIOR PERMISSION.

PROJECT: Elmfield House
Petersfinger Road
Salisbury
Wiltshire
SP5 3BZ

DRAWING: Proposed Site Plan

SCALE: 1:200 @ A0

DATE: 08/2023

DESIGN: ☒ PLANNING ☐ ROAD WORK

ISSUED: ☐ CONSTRUCTION ☐

DATE: 08/2023

20% No.

963

20% No.

DATE:

CURRENT:

SUPERSEDED:

PLN 01 Proposed Site Plan
1:200

0 5 10 15 20 25
Metres 1:200



APPENDIX 2

Model Map



Model Map

Key

Green—Source
Purple—Receptor



Salisbury Sewage Treatment Works Layout

1—Biological Filters

Bio logical filter is a bed of solid media for bacteria to attach on its surfaces. Wastewater is irrigated on the solid media . It is called a biological filter to emphasise that the filtration process is not mechanical straining of solids, but removal of organic substances by use of bacterial action.

2— Primary Flow Tanks

Primary Settlement Tank (PST) The Primary Settlement or sedimentation tanks are designed to reduce the velocity of the wastewater flow, allowing heavier organic solids (called raw sludge) to settle. They are the first stage of treatment after the removal of rags and grit in the inlet works.

3—Humus Tanks

A tank in which settle able solids or humus is separated from the effluent flowing through it.

4— Storm Tanks

These provide buffer capacity in the event of a storm. A lot of rain water will flow through the plant during rainy periods, and if heavy the plant will not be able to keep up, and so sewage must be stored.

Notes: Other Items not positioned include screens, macerators, dewatering, and various pumping stations.



APPENDIX 3

Output Data

Percentile Report

Parameters:

Source group = ALL
 Avg. period = 1 hour
 Period = 2017/12/31/24 to 2017/12/31/24
 Avg. periods = 2
 Percentiles = 95
 Scaling = 1
 Translation = 0
 Units = 1, EOU/M3, EOU/M3

All Receptors:

Percentile	Corresponding Highest Value	Receptor X-coord (m)	Receptor Y-coord (m)	Maximum Concentration
95	1	416203.31	129132.30	.57503E+00

Individual Receptors:

Receptor Number	Receptor X-coord (m)	Receptor Y-coord (m)	Percentile 95	>	>	>
1	416208.81	129218.00	.42914E+00			
2	416203.31	129132.30	.57503E+00			
3	416228.91	129131.30	.55173E+00			
4	416269.91	129137.30	.50228E+00			
5	416307.81	129149.60	.45224E+00			
6	416341.00	129162.80	.41415E+00			
7	416380.69	129175.10	.38252E+00			
8	416382.50	129187.40	.36589E+00			
9	416372.00	129214.30	.33728E+00			
10	416340.09	129233.00	.33352E+00			
11	416333.31	129236.20	.33457E+00			
12	416294.09	129240.30	.35432E+00			
13	416287.19	129240.30	.35841E+00			
14	416283.59	129229.40	.37101E+00			
15	416228.91	129217.10	.41879E+00			
16	416226.59	129223.00	.41302E+00			

** BREEZE AERMOD
 ** Trinity Consultants
 ** VERSION 7.10

CO STARTING
 CO TITLEONE Elmfield House 2023
 CO MODELOPT DFAULT CONC
 CO RUNORNOT RUN
 CO AVERTIME ANNUAL
 CO POLLUTID Odour
 CO FINISHED

SO STARTING
 SO ELEVUNIT METERS
 SO LOCATION 33QU6014 AREACIRC 415942.8 128575.3 0
 SO LOCATION 33QU6015 AREACIRC 415991.9 128557.4 0
 SO LOCATION 33QU6016 AREACIRC 416009.8 128600.1 0
 SO LOCATION 33QU6017 AREACIRC 415965.5 128619.6 0
 SO LOCATION 33QU6018 AREACIRC 415989.7 128671.8 0
 SO LOCATION 33QU6019 AREACIRC 416035.1 128652.3 0
 SO LOCATION 33QU601A AREACIRC 416009.3 128712.4 0
 SO LOCATION 33QU601B AREACIRC 416054.1 128692.9 0
 SO LOCATION 33QU601C AREACIRC 416047.7 128799.9 0
 SO LOCATION 33QU601D AREACIRC 416091 128779.4 0
 SO LOCATION 33QU601E AREACIRC 415911.7 128692.9 0
 SO LOCATION 33QU601F AREACIRC 415937.6 128682.9 0
 SO LOCATION 33QU601G AREACIRC 415897 128662.3 0
 SO LOCATION 33QU601H AREACIRC 415923.3 128651.8 0
 SO LOCATION 33QU601I AREACIRC 415900.7 128600.7 0
 SO LOCATION 33QU601J AREACIRC 415883.8 128635.4 0
 SO LOCATION 33QU601K AREACIRC 415912.3 128628.1 0
 SO LOCATION 33QU601L AREACIRC 415926 128723 0
 SO LOCATION 33QU601M AREACIRC 415949.2 128706.1 0
 SO LOCATION 33QU601N AREACIRC 415963.9 128733.5 0
 SO LOCATION 33QU601O AREA 415898 128762 0
 SO LOCATION 33QU601P AREA 415878.5 128703.5 0
 SO LOCATION 33QU601S AREACIRC 416010.3 128820 0
 SO SRCPARAM 33QU6014 2.1 1 22.1 20 1

output.txt

SO	SRCPARAM	33QU6015	2.1	1	21.9	20	1		
SO	SRCPARAM	33QU6016	2.1	1	20.6	20	1		
SO	SRCPARAM	33QU6017	2.1	1	22.2	20	1		
SO	SRCPARAM	33QU6018	2.1	1	21.7	20	1		
SO	SRCPARAM	33QU6019	2.1	1	21.2	20	1		
SO	SRCPARAM	33QU601A	2.1	1	23.1	20	1		
SO	SRCPARAM	33QU601B	2.1	1	21.8	20	1		
SO	SRCPARAM	33QU601C	2.1	1	22.1	20	1		
SO	SRCPARAM	33QU601D	2.1	1	22.1	20	1		
SO	SRCPARAM	33QU601E	1.9	2	9.2	20	1		
SO	SRCPARAM	33QU601F	1.9	2	10.6	20	1		
SO	SRCPARAM	33QU601G	1.9	2	12.1	20	1		
SO	SRCPARAM	33QU601H	1.9	2	11.5	20	1		
SO	SRCPARAM	33QU601I	0.35	2	10.8	20	1		
SO	SRCPARAM	33QU601J	0.35	2	10.9	20	1		
SO	SRCPARAM	33QU601K	0.35	2	10.6	20	1		
SO	SRCPARAM	33QU601L	0.35	2	12.4	20	1		
SO	SRCPARAM	33QU601M	0.35	2	10.6	20	1		
SO	SRCPARAM	33QU601N	0.35	2	11.3	20	1		
SO	SRCPARAM	33QU601O	2.1	1	53.3	21.9		25.8	1
SO	SRCPARAM	33QU601P	2.1	1	10.6	23.3		26.8	1
SO	SRCPARAM	33QU601S	31	1	13.3	20	1		
SO	CONCUNIT	1 EOU/M3			EOU/M3				
SO	DEPOUNIT	1 EOU/M3			EOU/M3				
SO	SRCGROUP	ALL							
SO	FINISHED								

RE	STARTING								
RE	ELEVUNIT	METERS							
**	BOUNDARY	33QU6007							
RE	DISCCART	416208.8	129218	0	0				
RE	DISCCART	416203.3	129132.3	0	0				
RE	DISCCART	416228.9	129131.3	0	0				
RE	DISCCART	416269.9	129137.3	0	0				
RE	DISCCART	416307.8	129149.6	0	0				
RE	DISCCART	416341	129162.8	0	0				
RE	DISCCART	416380.7	129175.1	0	0				
RE	DISCCART	416382.5	129187.4	0	0				

output.txt

```
RE DISCCART 416372 129214.3 0 0
RE DISCCART 416340.1 129233 0 0
RE DISCCART 416333.3 129236.2 0 0
RE DISCCART 416294.1 129240.3 0 0
RE DISCCART 416287.2 129240.3 0 0
RE DISCCART 416283.6 129229.4 0 0
RE DISCCART 416228.9 129217.1 0 0
RE DISCCART 416226.6 129223 0 0
RE FINISHED
```

```
ME STARTING
ME SURFFILE "C:\Users\WT\SWEL\JOBS\S23-917 (Elmfield House 23)\Meteorlogical\Purchased Aermod
Data\EGDY1718 - Mess Baout\EGDY1718\EGDY17.SFC"
** SURFFILE "C:\Users\WT\SWEL\JOBS\S23-917 (Elmfield House 23)\Meteorlogical\Purchased Aermod
Data\EGDY1718 - Mess Baout\EGDY1718\EGDY17.SFC"
ME PROFFILE "C:\Users\WT\SWEL\JOBS\S23-917 (Elmfield House 23)\Meteorlogical\Purchased Aermod
Data\EGDY1718 - Mess Baout\EGDY1718\EGDY17.PFL"
** PROFFILE "C:\Users\WT\SWEL\JOBS\S23-917 (Elmfield House 23)\Meteorlogical\Purchased Aermod
Data\EGDY1718 - Mess Baout\EGDY1718\EGDY17.PFL"
ME SURFDATA 3853 2017
ME UAIRDATA 3853 2017
ME SITEDATA 99999 2017
ME PROFBASE 22.2 METERS
ME FINISHED
```

```
OU STARTING
OU FILEFORM FIX
OU PLOTFILE ANNUAL ALL ALL\ANNUAL.plt 10000
OU POSTFILE ANNUAL ALL UNFORM ALL ANNUAL.bin 10001
OU FINISHED
```

*** Message Summary For AERMOD Model Setup ***

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

```
A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
```

output.txt
A Total of 0 Informational Message(s)

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

***** WARNING MESSAGES *****
OU W565 100 PERPLT: Possible Conflict With Dynamically Allocated FUNIT PLOTFILE
OU W565 101 PERPST: Possible Conflict With Dynamically Allocated FUNIT POSTFILE

*** SETUP Finishes Successfully ***

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023
*** 09/26/23
*** AERMET - VERSION 19191 *** ***
*** 16:14:21

PAGE 1
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** 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 Uses Regulatory DEFAULT Options:

output.txt

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.

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: ODOUR

**Model Calculates ANNUAL Averages Only

**This Run Includes: 23 Source(s); 1 Source Group(s); and 16 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 0 VOLUME source(s)
and: 23 AREA type source(s)
and: 0 LINE source(s)
and: 0 OPENPIT source(s)

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

**The AERMET Input Meteorological Data Version Date: 19191

**Output Options Selected:

Model Outputs Tables of ANNUAL Averages by Receptor

Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE

Keyword)

Model Outputs External File(s) of High Values for Plotting (PLOTFILE 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) = 22.20 ; Decay Coef. = 0.000

output.txt

; Rot. Angle = 0.0
Emission Units = EOU/M3 ; Emission Rate Unit
Factor = 1.0000
Output Units = EOU/M3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023
*** 09/26/23
*** AERMET - VERSION 19191 *** ***
*** 16:14:21

PAGE 2
**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** AREA SOURCE DATA ***

ORIENT.	INIT.	NUMBER	EMISSION	RATE	COORD (SW CORNER)	BASE	RELEASE	X-DIM	Y-DIM
SOURCE		URBAN	EMISSION	RATE					
AREA	SZ	PART.	(USER UNITS		X	Y	ELEV.	HEIGHT	OF AREA
ID		SOURCE	SCALAR VARY		(METERS)	(METERS)	(METERS)	(METERS)	OF AREA
(DEG.)	(METERS)	CATS.	/METER**2)	BY					(METERS)
33QU6010		0	0.21000E+01		415898.0	128762.0	0.0	1.00	53.30
25.80	1.00	NO							
33QU601P		0	0.21000E+01		415878.5	128703.5	0.0	1.00	23.30
26.80	1.00	NO							

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023
*** 09/26/23
*** AERMET - VERSION 19191 *** ***
*** 16:14:21

PAGE 3
**MODELOPTs: RegDFAULT CONC ELEV RURAL
Page 6

output.txt

*** AREACIRC SOURCE DATA ***

INIT.	URBAN	NUMBER	EMISSION	RATE	CENTER OF AREA		BASE	RELEASE	RADIUS	NUMBER
SOURCE		EMISSION	RATE	(USER						
SZ	SOURCE	PART.	SCALAR	UNITS	X	Y	ELEV.	HEIGHT	OF AREA	OF VERTS.
ID		CATS.	VAR	/METER**2)	(METERS)	(METERS)	(METERS)	(METERS)		
(METERS)			BY							
33QU6014		0	0.21000E+01		415942.8	128575.3	0.0	1.00	22.10	20
1.00	NO									
33QU6015		0	0.21000E+01		415991.9	128557.4	0.0	1.00	21.90	20
1.00	NO									
33QU6016		0	0.21000E+01		416009.8	128600.1	0.0	1.00	20.60	20
1.00	NO									
33QU6017		0	0.21000E+01		415965.5	128619.6	0.0	1.00	22.20	20
1.00	NO									
33QU6018		0	0.21000E+01		415989.7	128671.8	0.0	1.00	21.70	20
1.00	NO									
33QU6019		0	0.21000E+01		416035.1	128652.3	0.0	1.00	21.20	20
1.00	NO									
33QU601A		0	0.21000E+01		416009.3	128712.4	0.0	1.00	23.10	20
1.00	NO									
33QU601B		0	0.21000E+01		416054.1	128692.9	0.0	1.00	21.80	20
1.00	NO									
33QU601C		0	0.21000E+01		416047.7	128799.9	0.0	1.00	22.10	20
1.00	NO									
33QU601D		0	0.21000E+01		416091.0	128779.4	0.0	1.00	22.10	20
1.00	NO									
33QU601E		0	0.19000E+01		415911.7	128692.9	0.0	2.00	9.20	20
1.00	NO									
33QU601F		0	0.19000E+01		415937.6	128682.9	0.0	2.00	10.60	20
1.00	NO									
33QU601G		0	0.19000E+01		415897.0	128662.3	0.0	2.00	12.10	20

output.txt

1.00	NO								
33QU601H		0	0.19000E+01	415923.3	128651.8	0.0	2.00	11.50	20
1.00	NO								
33QU601I		0	0.35000E+00	415900.7	128600.7	0.0	2.00	10.80	20
1.00	NO								
33QU601J		0	0.35000E+00	415883.8	128635.4	0.0	2.00	10.90	20
1.00	NO								
33QU601K		0	0.35000E+00	415912.3	128628.1	0.0	2.00	10.60	20
1.00	NO								
33QU601L		0	0.35000E+00	415926.0	128723.0	0.0	2.00	12.40	20
1.00	NO								
33QU601M		0	0.35000E+00	415949.2	128706.1	0.0	2.00	10.60	20
1.00	NO								
33QU601N		0	0.35000E+00	415963.9	128733.5	0.0	2.00	11.30	20
1.00	NO								
33QU601S		0	0.31000E+02	416010.3	128820.0	0.0	1.00	13.30	20

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023
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 **MODELOPTs: RegDFAULT CONC ELEV RURAL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID

SOURCE IDs

ALL	33QU6014	,	33QU6015	,	33QU6016	,	33QU6017	,	33QU6018	,	33QU6019	,
33QU601A	, 33QU601B	,										
33QU601I	, 33QU601J	,	33QU601C	,	33QU601D	,	33QU601E	,	33QU601F	,	33QU601G	,

33QU601S , 33QU601K , 33QU601L , 33QU601M , 33QU601N , 33QU601O , 33QU601P ,

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(416208.8, 129218.0, 0.0,	0.0,	0.0);	(416203.3, 129132.3,
0.0, 0.0, 0.0);			
(416228.9, 129131.3, 0.0,	0.0,	0.0);	(416269.9, 129137.3,
0.0, 0.0, 0.0);			
(416307.8, 129149.6, 0.0,	0.0,	0.0);	(416341.0, 129162.8,
0.0, 0.0, 0.0);			
(416380.7, 129175.1, 0.0,	0.0,	0.0);	(416382.5, 129187.4,
0.0, 0.0, 0.0);			
(416372.0, 129214.3, 0.0,	0.0,	0.0);	(416340.1, 129233.0,
0.0, 0.0, 0.0);			
(416333.3, 129236.2, 0.0,	0.0,	0.0);	(416294.1, 129240.3,
0.0, 0.0, 0.0);			
(416287.2, 129240.3, 0.0,	0.0,	0.0);	(416283.6, 129229.4,
0.0, 0.0, 0.0);			
(416228.9, 129217.1, 0.0,	0.0,	0.0);	(416226.6, 129223.0,
0.0, 0.0, 0.0);			

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023

*** 09/26/23

*** AERMET - VERSION 19191 *** ***

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**MODELOPTs: RegDFAULT CONC ELEV RURAL

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

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

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023 1.54, 3.09, 5.14, 8.23, 10.80, 09/26/23 ***
*** AERMET - VERSION 19191 *** *** 16:14:21

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

output.txt

Surface file: C:\Users\WT\SWEL\JOBS\S23-917 (Elmfield House 23)\Meteorological\Purchased
 Aermod Met Version: 19191
 Profile file: C:\Users\WT\SWEL\JOBS\S23-917 (Elmfield House 23)\Meteorological\Purchased
 Aermod
 Surface format: FREE
 Profile format: FREE

Surface station no.: 3853
 Name: UNKNOWN

Upper air station no.: 3853
 Name: UNKNOWN

Year: 2017

Year: 2017

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												
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	01	01	1	01	-20.2	0.200	-9.000	-9.000	-999.	276.	44.1	0.03	0.73	1.00	3.10		
221.		10.0		280.9	2.0												
17	01	01	1	02	-23.6	0.234	-9.000	-9.000	-999.	360.	60.3	0.03	0.73	1.00	3.60		
198.		10.0		280.9	2.0												
17	01	01	1	03	-27.0	0.268	-9.000	-9.000	-999.	447.	79.1	0.03	0.73	1.00	4.10		
184.		10.0		281.4	2.0												
17	01	01	1	04	-23.5	0.234	-9.000	-9.000	-999.	361.	60.4	0.03	0.73	1.00	3.60		
223.		10.0		282.0	2.0												
17	01	01	1	05	-27.0	0.268	-9.000	-9.000	-999.	418.	79.1	0.03	0.73	1.00	4.10		
213.		10.0		281.4	2.0												
17	01	01	1	06	-27.0	0.268	-9.000	-9.000	-999.	447.	79.1	0.03	0.73	1.00	4.10		
202.		10.0		281.4	2.0												
17	01	01	1	07	-23.5	0.234	-9.000	-9.000	-999.	395.	60.4	0.03	0.73	1.00	3.60		
195.		10.0		281.4	2.0												
17	01	01	1	08	-23.5	0.234	-9.000	-9.000	-999.	395.	60.4	0.03	0.73	1.00	3.60		
193.		10.0		281.4	2.0												
17	01	01	1	09	-23.4	0.234	-9.000	-9.000	-999.	395.	60.4	0.03	0.73	0.71	3.60		
187.		10.0		281.4	2.0												
17	01	01	1	10	-13.6	0.202	-9.000	-9.000	-999.	583.	54.6	0.03	0.73	0.46	3.10		

output.txt

211.	10.0	282.0	2.0												
17	01	01	1	11	15.8	0.260	0.682	0.005	724.	319.	-101.0	0.03	0.73	0.35	3.60
224.	10.0	282.5	2.0												
17	01	01	1	12	12.5	0.259	0.625	0.005	702.	316.	-124.3	0.03	0.73	0.31	3.60
226.	10.0	282.5	2.0												
17	01	01	1	13	30.3	0.640	1.047	0.005	1366.	1229.	-780.2	0.11	0.73	0.30	7.20
13.	10.0	279.9	2.0												
17	01	01	1	14	22.1	0.725	0.982	0.005	1543.	1482.	-1555.9	0.11	0.73	0.33	8.20
9.	10.0	278.8	2.0												
17	01	01	1	15	3.0	0.667	0.512	0.005	1630.	1309.	-8888.0	0.05	0.73	0.40	8.80
32.	10.0	277.5	2.0												
17	01	01	1	16	-51.6	0.612	-9.000	-9.000	-999.	1267.	412.4	0.05	0.73	0.57	8.20
44.	10.0	277.0	2.0												
17	01	01	1	17	-62.3	0.610	-9.000	-9.000	-999.	1193.	409.6	0.05	0.73	1.00	8.20
31.	10.0	277.0	2.0												
17	01	01	1	18	-54.7	0.535	-9.000	-9.000	-999.	819.	315.4	0.11	0.73	1.00	6.20
27.	10.0	277.0	2.0												
17	01	01	1	19	-62.2	0.610	-9.000	-9.000	-999.	1194.	409.6	0.05	0.73	1.00	8.20
44.	10.0	277.5	2.0												
17	01	01	1	20	-59.2	0.581	-9.000	-9.000	-999.	871.	370.8	0.11	0.73	1.00	6.70
27.	10.0	277.5	2.0												
17	01	01	1	21	-54.6	0.536	-9.000	-9.000	-999.	704.	315.4	0.11	0.73	1.00	6.20
20.	10.0	277.5	2.0												
17	01	01	1	22	-62.2	0.610	-9.000	-9.000	-999.	1194.	409.6	0.05	0.73	1.00	8.20
32.	10.0	277.5	2.0												
17	01	01	1	23	-54.4	0.533	-9.000	-9.000	-999.	1005.	312.6	0.05	0.73	1.00	7.20
30.	10.0	277.0	2.0												
17	01	01	1	24	-50.6	0.495	-9.000	-9.000	-999.	911.	269.0	0.05	0.73	1.00	6.70
30.	10.0	276.4	2.0												

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
17	01	01	01	10.0	1	221.	3.10	281.0	99.0	-99.00	-99.00

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

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 **MODELOPTs: RegDFAULT CONC ELEV RURAL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR

 SOURCE GROUP: ALL INCLUDING SOURCE(S): 33QU6014 , 33QU6015 , 33QU6016
 , 33QU6017 , 33QU6018 ,
 , 33QU6019 , 33QU601A , 33QU601B , 33QU601C , 33QU601D , 33QU601E
 , 33QU601F , 33QU601G ,
 , 33QU601H , 33QU601I , 33QU601J , 33QU601K , 33QU601L , 33QU601M
 , 33QU601N , 33QU601O ,
 , 33QU601P , 33QU601S ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF ODOUR IN EOU/M3

**

CONC	X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)
0.57503	416208.80	129218.00	0.42914	416203.30	129132.30
0.50228	416228.90	129131.30	0.55173	416269.90	129137.30
0.41415	416307.80	129149.60	0.45224	416341.00	129162.80
0.36589	416380.70	129175.10	0.38252	416382.50	129187.40
0.33352	416372.00	129214.30	0.33728	416340.10	129233.00
0.35432	416333.30	129236.20	0.33457	416294.10	129240.30
	416287.20	129240.30	0.35841	416283.60	129229.40

output.txt

0.37101 416228.90 129217.10 0.41879 416226.60 129223.00

0.41302

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023
*** 09/26/23
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**MODELOPTs: RegDFAULT CONC ELEV RURAL

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

** CONC OF ODOUR IN EOU/M3
**

GROUP ID	NETWORK	AVERAGE CONC	RECEPTOR	(XR, YR, ZELEV, ZHILL,
ZFLAG)	OF TYPE GRID-ID			
ALL	1ST HIGHEST VALUE IS	0.57503 AT (	416203.30,	129132.30,
0.00)	DC			0.00,
	2ND HIGHEST VALUE IS	0.55173 AT (	416228.90,	129131.30,
0.00)	DC			0.00,
	3RD HIGHEST VALUE IS	0.50228 AT (	416269.90,	129137.30,
0.00)	DC			0.00,
	4TH HIGHEST VALUE IS	0.45224 AT (	416307.80,	129149.60,
0.00)	DC			0.00,
	5TH HIGHEST VALUE IS	0.42914 AT (	416208.80,	129218.00,
0.00)	DC			0.00,
	6TH HIGHEST VALUE IS	0.41879 AT (	416228.90,	129217.10,
0.00)	DC			0.00,
	7TH HIGHEST VALUE IS	0.41415 AT (	416341.00,	129162.80,
				0.00,

output.txt

0.00) DC
8TH HIGHEST VALUE IS 0.41302 AT (416226.60, 129223.00, 0.00, 0.00,
0.00) DC
9TH HIGHEST VALUE IS 0.38252 AT (416380.70, 129175.10, 0.00, 0.00,
0.00) DC
10TH HIGHEST VALUE IS 0.37101 AT (416283.60, 129229.40, 0.00, 0.00,
0.00) DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

♀ *** AERMOD - VERSION 15181 *** *** Elmfield House 2023
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**MODELOPTs: RegDFAULT CONC ELEV RURAL

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

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

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 405 Informational Message(s)

A Total of 8760 Hours Were Processed

A Total of 113 Calm Hours Identified

A Total of 292 Missing Hours Identified (3.33 Percent)

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

output.txt

```
***** WARNING MESSAGES *****
OU W565      100      PERPLT: Possible Conflict with Dynamically Allocated FUNIT      PLOTFILE
OU W565      101      PERPST: Possible Conflict with Dynamically Allocated FUNIT      POSTFILE

*****
*** AERMOD Finishes Successfully ***
*****
```