MONA AD PLANT ODOUR MANAGEMENT PLAN

Grays Biogas Ltd

VERSION:	1.0	DATE:	14 MARCH 2016		
DOC. REF:	3388-819-OMP	AUTHOR:	RD	CHECKED:	
CLIENT NO:	819	JOB NO:	3388		

Oaktree Environmental Ltd

Waste, Planning & Environmental Consultants

Oaktree Environmental Ltd, Unit 5, Oasis Park, 19 Road One, Winsford, Cheshire, CW7 3RY
Tel: 01606 558833 | Fax: 01606 861183 | E-Mail: sales@oaktree-environmental.co.uk | Web: www.oaktree-environmental.co.uk
REGISTERED IN THE UK | COMPANY NO. 4850754

Document History:

Version	*Issue date*	*Author*	*Checked*	*Description*
1.0	14 March 2015	RD		Final

CONTENTS

List of Appendices:

1 INTRODUCTION

1.1.1 This Odour Management Plan (OMP) has been produced in accordance with Environment Agency (EA)/Natural Resources Wales (NRW) guidance on OMPs including EPR H4 Odour Management Consultation Draft (version 1.2) and Internal Guidance for the Regulation of Odour at Waste Management Facilities (Version 3.0).

1.1.2 This OMP structure is aimed at assisting the operator in effectively managing potential odour releases associated with the operations at Mona AD Biogas Plant, on Mona Industrial Estate, Gwalchmai, Anglesey and minimise the risk of abnormal operations conditions which could lead to increased risk of odours being generated at the site.

1.1.3 Structure of Odour Management Plan

- Background of facility
- Source, releases and impacts
- Controls
- Monitoring-to assess control and potential odorous releases
- Contingencies- action to be taken
- Emergency plans

2 BACKGROUND

2.1.1 Reference should be made to Drawings A2529UK_MONA_00-01_Stage 1 for site location and layout. Copy of the site layout plan in Annex 1 of this document.

2.1.2 The site, which is the subject of this Odour Management Plan will be operated by Grays Biogas Ltd and is located within an area which forms part of the Mona Industrial Estate (NGR SH42035 75575). The site, which is an Anaerobic Digestion facility, will receive organic wastes produced in the surrounding area plus energy crops. The site will provide a facility for recycling organic waste

such as dairy DAF sludge, chicken litter and glycerol at a cost effective rate and to utilise energy crops to generate renewable energy and soil improver.

2.1.3 The throughput of the site will be limited to a maximum of <50,000 tonnes per annum. The maximum amount of waste (authorised by the waste permit) to be stored on site at any time will be limited to the storage capacity of the site.

2.1.4 A modelling report has been produced to assess the potential for odour emissions and their impact on nearby sensitive receptors. Report reference 3388/819/A.

2.1.5 For further details of the management of the site you may wish to refer to Environmental Management System (EMS) and the associated Appendices.

3 SOURCES, RELEASES AND IMPACTS

3.1.1 Reference should be made to ANNEX I for a site layout plan and Air Emission Sources Plan. The potential sources of odour include the following:

- Exposed silage in the silage clamp;
- Exposed silage during transfer to the solids feeder;
- Chicken litter during storage within the building;
- Chicken litter during transfer to the solids feeder; and,
- Digestate during transfer to tankers.
- Accidents/Human Error

3.1.2 Within the following sections, reference to working day(s) includes the following hours of operation:

- Monday to Friday 07:00 to 19:00
- Saturdays 07:00 to 16:00
- Sundays 09:00 to 16:00

3.1.3 Further details of the level of odour generated by each type of feedstock is discussed in the Odour Impact Assessment document no. 3388/819/A

4 Pathways

4.1.1 The pathway for odour dispersal from the site is airborne transport.

5 Receptors

5.1.1 The Odour Impact Assessment document no. 3388/819/A has identified the sensitive receptors in the vicinity of the plant these are detailed in section 4.2 and appendix II of that document. A copy of the Sensitive Receptor Plan has been placed in ANNEX 2 of this OMP document.

5.1.2 Outlined below are the main best practice elements for dealing with potential environmental impacts which will be implemented at Anglesey Biogas Plant.

6 Engaging Neighbours

6.1.1 There have been various open liaison meetings held in the local school which has detailed the proposals for the new site.

7 CONTROLS

7.1.1 Principals of controlling odour generation at the facility and the specific control and management measures proposed include, measures to control and minimise the generation and release of odours detailed in the Odour Impact Assessment.

7.1.2 The Odour Impact Assessment identified the DAF sludge tank and the chicken litter storage shed as the areas with the greatest potential to generate odour consequently active controls are to be used for these areas the DAF tank vents and ventilation from the chicken litter shed are directed via a modular odour control system and discharged via a vertical stack.

7.1.3 The odour control unit (OCU) is supplied by Ipur and consists of cartridges containing catalyst coated foamed glass and UV-c Lamps through which air is passed before discharge. Further details are included in the Management System 3407/819/EMS.

7.1.4 Accidents, human error

Grays Biogas Ltd have an Accident Management Plan (AMP) in place for the site which is to be reviewed at least every 4 years. Copy can be found in Appendix L of the EMS.

The AMP details the following:-

- Identifying events or failures which have the potential to cause adverse environmental impacts;
- Assessing the likelihood of these occurrences and the potential environmental consequences;
- Taking action to minimise the potential causes and consequences of accidents; and
- Identifying the actions to be taken to minimise the consequences should such accidents occur.

8 MONITORING

8.1.1 Monitoring Process controls Odour Control relating to:-

- Permitted waste types, composition, mixtures of wastes
- Processing-storage, sorting, treating

8.1.2 The following controls are in place to minimise the production of odours:

a) The chicken litter is received into the storage building which operates under negative pressure with output air passing through a odour control unit.
b) Daily cleaning of reception, loading/unloading and manoeuvring areas within the building to prevent any build up of degradable waste.
c) Daily inspection of drains, details of the site inspections are recorded on the Daily Inspection form (RF4).
d) In the event of breakdown where the plant cannot be repaired, no further waste will be accepted on site until the plant is operational again. See Environmental Management System and Appendix A and C for further details and Mona AD key issues document section 2.1.7 for contingency plan.

9 Monitoring Odorous Releases

9.1.1 Olfactory Monitoring-

- Odour will be monitored at least daily around the perimeter of the site by a trained member of staff (see below) who does not work in areas where they could become accustomed to strong odours. If odour is noted on the site boundary additional monitoring will be undertaken between that point and sensitive receptors. (Recording sheets have a plan and map where points can be marked).

- The monitoring points will generally be selected having regard to the wind direction prevailing at the time of monitoring. The external monitoring points will be selected with particular reference to wind direction.

- At each location observations shall be made concerning odour intensity, persistence and character.

9.1.2 Meterological Monitoring

A monitoring device will be mounted on the waste reception building to provide data about the local weather conditions and hence provide information on the pathways from the odour source to the receptors potentially affected by the odours. This will be continuous monitoring and data logging and will include wind speed, wind direction, barometric pressure, humidity and air temperature.

10 Monitoring Methodology

10.1.1 Meterological data is monitored and recorded continuously by the on-site weather station.

10.1.2 A relevant training procedure will be in place for all staff undertaking assessment duties. Sniff tests will be carried out by trained competent staff at least daily. All staff will be trained in sniff testing and will be expected to report any odours detected outside the reception building during the course of day to day duties.

10.1.3 Odour Assessments will be carried out both routinely and in response to specific complaints or under abnormal operating conditions such as the flare being utilised or biogas being vented.

10.1.4 The assessor should not:-

a) smoke or consume strongly flavoured food or drink for at least 30 minutes before the assessment.
b) consume confectionery or soft drinks immediately before or during the assessment
c) apply scented toiletries, such as perfume of aftershave immediately before an assessment.

10.1.5 For a routine assessment the starting point of assessment will be down-wind of the site, progressing towards the site boundary and then away from the site in an up wind direction.

10.1.6 For an assessment carried out as result of complaint the starting point should be the location from which the complaint was made progressing towards the site boundary and then away from the site in an up wind direction.

10.1.7 Method of Assessment:

- Walk slowly and breathe normally.
- Follow the classification system for odour

Intensity:

Odour Intensity	Description
1	No detectable odour
2	Faint odour (barely detectable, need to stand still and inhale facing into wind)
3	Moderate odour (odour easily detected while walking and breathing normally, possibly offensive)
4	Strong odour (bearable, but offensive- will my clothes/hair smell?)
5	Very strong odour (this is when you really wish you were somewhere else

Extent: (assuming odour is detectable, if not then 0)

Odour Intensity	Description
1	Local and impersistent (only detected during brief periods when wind drops or blows)
2	Impersistent as above, but detected away from site boundary)
3	Persistent, but fairly localised
4	Persistent and pervasive up to 50m from site boundary
5	Persistent and widespread (odour detected >50m from site boundary)

Sensitivity of Location where Odour Detected: (assuming detection, if not then 0)

Odour Intensity	Description
1	Remote (no housing, commercial/industrial premises or public area within 500m)
2	Low sensitivity (no housing etc within 100m of area affected by odour)
3	Moderate sensitivity (housing etc within 100m affected by odour)
4	High sensitivity (housing etc within area affected by odour)
5	Extra sensitive (complaints arising from residents within area affected by odour)

10.1.8 Results are recorded on site specific inspection forms based on the pro-forma in the H4 guidance document and will be used to record and analyse olfactory tests, detected odours and complaints.

10.1.9 Identifying Potential and Actual Odour Impacts

Identifying potential and actual odour impacts shall be achieved by analysis of olfactory test records and the recording and monitoring of complaints. Complaints may be reported directly to the site or via the Local Authority or Natural Resources Wales. Complaints records will include: date and time, nature of complaint, locality of complaint, name of complainant (if available), a summary of investigations, actions taken and outcome.

11 Review and Revisions

11.1.1 The OMP will be reviewed at least annually unless it becomes apparent that the activities are giving rise to pollution outside the site due to odour, then the Odour Management Plan will be revised if necessary as part of the investigative procedure and a copy forwarded to NRW for approval before implementation.

12 CONTINGENCIES AND EMERGENCY PLANS

12.1.1 In accordance with the EA/NRW guidance on OMPs Contingency Plans have been prepared to react to situations where 'monitoring indicates that a potential odour source is not completely under control, meteorological conditions are unfavourable or that an adverse impact has occurred'.

12.1.2 Identification Potential Source of Odour and Actions to be taken

12.1.3 An Odour Assessment including detailed modelling has been prepared, the model shows that no significant odour impact is expected beyond the site boundary.

12.1.4 If excessive odours are detected at the site boundary or other monitoring point or a complaint is received, the following remedial procedures will be taken:

12.1.5 Firstly identify source of odour- Is it from:-

- Site operations; or
- An off site source (eg. Adjacent poultry unit)

12.1.6 If on site

- Report to duty manager
- Identify the point of release of the odour
- Identify the cause of the release break down leakage fault etc.
- Identify a solution
- Implement solution
- Carry out olfactory tests to check if fix working

12.1.7 In detail the actions taken if odour is being produced on site will be:

- The offending odour will be traced and the reason for causing the problem investigated. The range of potential faults which could cause odour are limited, the most likely being a malfunction in the ventilation and odour treatment systems or a malfunction of the plant itself. In these instances the solution should be clear and rapidly achieved ie repairing the fault and investigating the cause. In such instances there may be a need to modify management or maintenance procedures.
- A less likely source of odour would be a misjudgement or oversight in the plant design. In such instances it may be that a simple rapid solution is available and a course of action similar to that above

provides a model for dealing with the problem, however, if a longer term problem is detected the options would be appraised against BAT and design solution brought forward. In the interim site management would be modified or temporary measures introduced to mitigate the problem.

- Adverse Weather Conditions, the applicant is confident that the plant equipment and management systems will combine to operate in all weather conditions, The bulk of the operation is enclosed within a negative pressure building or a sealed treatment system. If conditions are such that there is a risk of backwash when doors are opened then the ventilation rate may be increased to ensure escape via the doors is minimized.

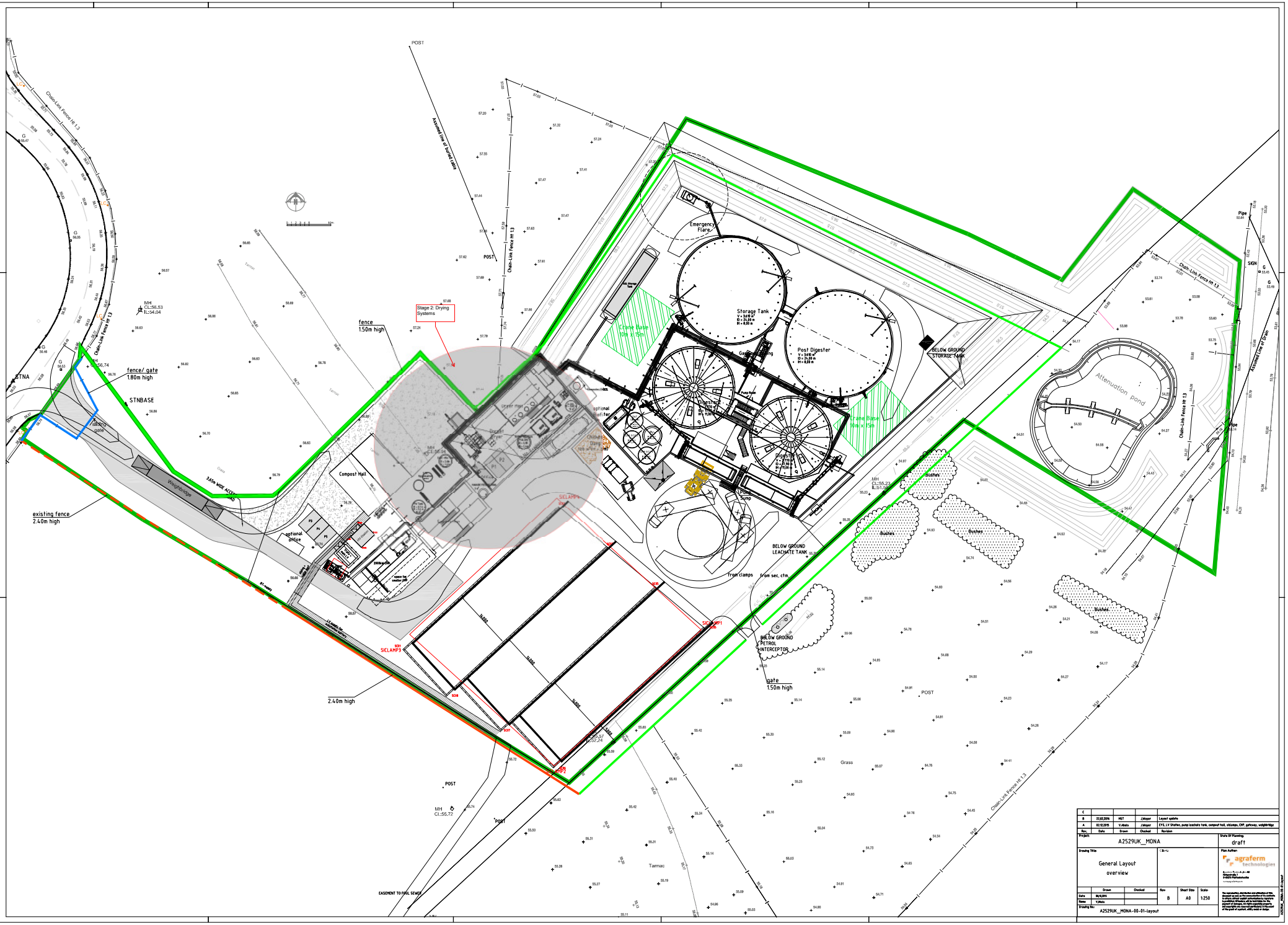
- Errors and accidents, these will occur in almost every system but there are robust checks and balances within the plant design that can contain and hold leakages and losses. The site accident management plan seeks to address the possible scenarios and the solutions available.

- In all such cases NRW and local authority would be involved at an early stage and throughout the process of rectifying any problems encountered.

- Once solutions are in place olfactory monitoring would be scrutinised to ensure the solutions put in place are having the desired effect.

ANNEX 1

Site Layout Plan and Area Emission Sources Plan



Rev.	Date	Drawn	Checked	Revision
C				
B	22.02.2016	HGT	JJdyer	Layout update
A	02.12.2015	V.Abels	JJdyer	ETS, LV Station, pump leachate tank, compost hall, sliclamps, CWP, gateway, weighbridge

Project: A2529UK_MONA

State Of Planning: draft

Drawing Title: General Layout overview

Client:

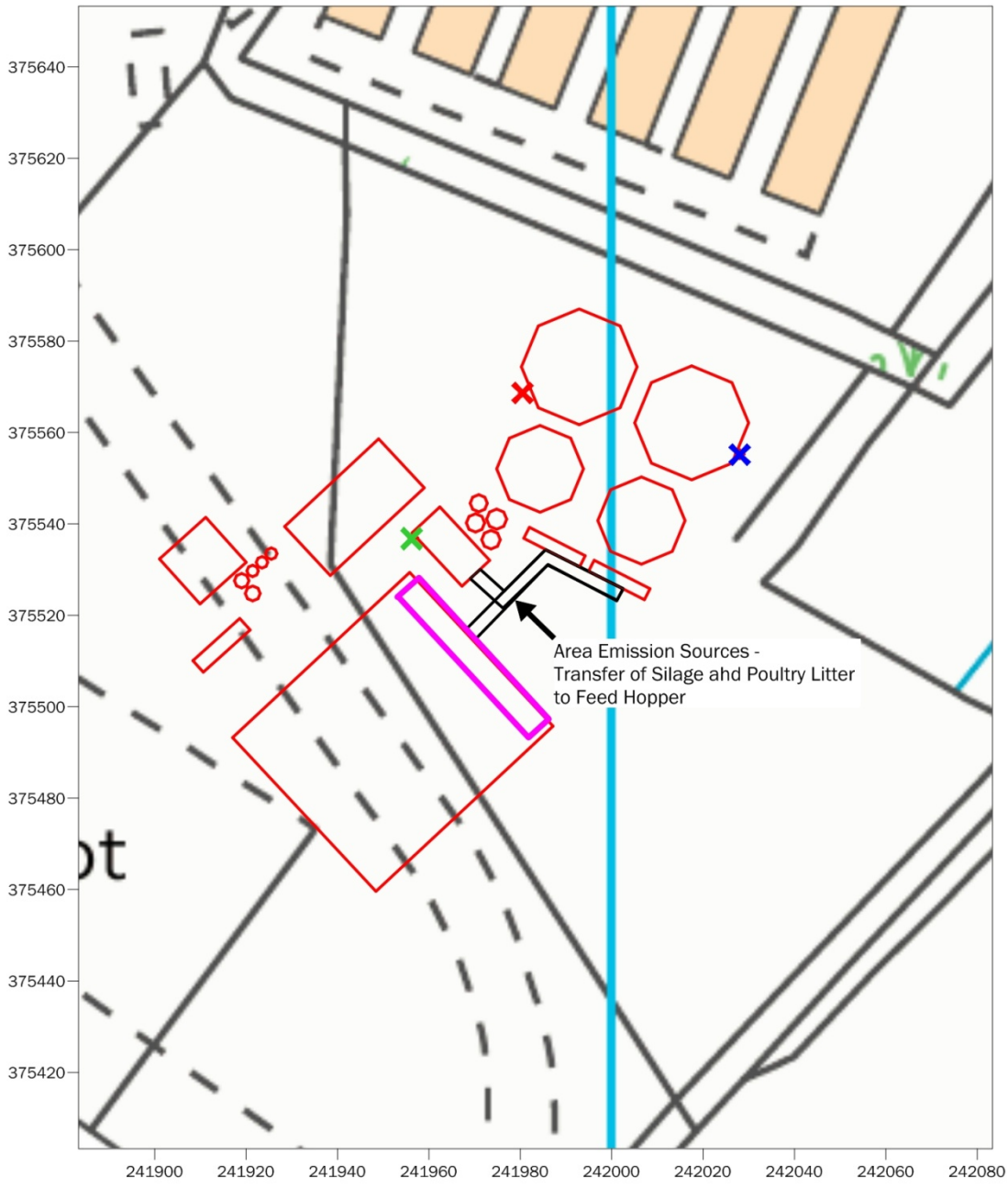
Plan Author: agraferm technologies

	Drawn	Checked
Date	06/05/2015	
Name	V.Abels	

Rev: B | Sheet Size: A0 | Scale: 1:250

Drawing No: A2529UK_MONA-00-01-Layout

A2529UK_MONA-00-01-Layout



Appendix I - Buildings and Emission Sources Digitised within Model

Point Source Emission - Chicken Litter Building/DAF Tank Control Unit

Point Source Emission - Digestate Tanker (Scenario 2)

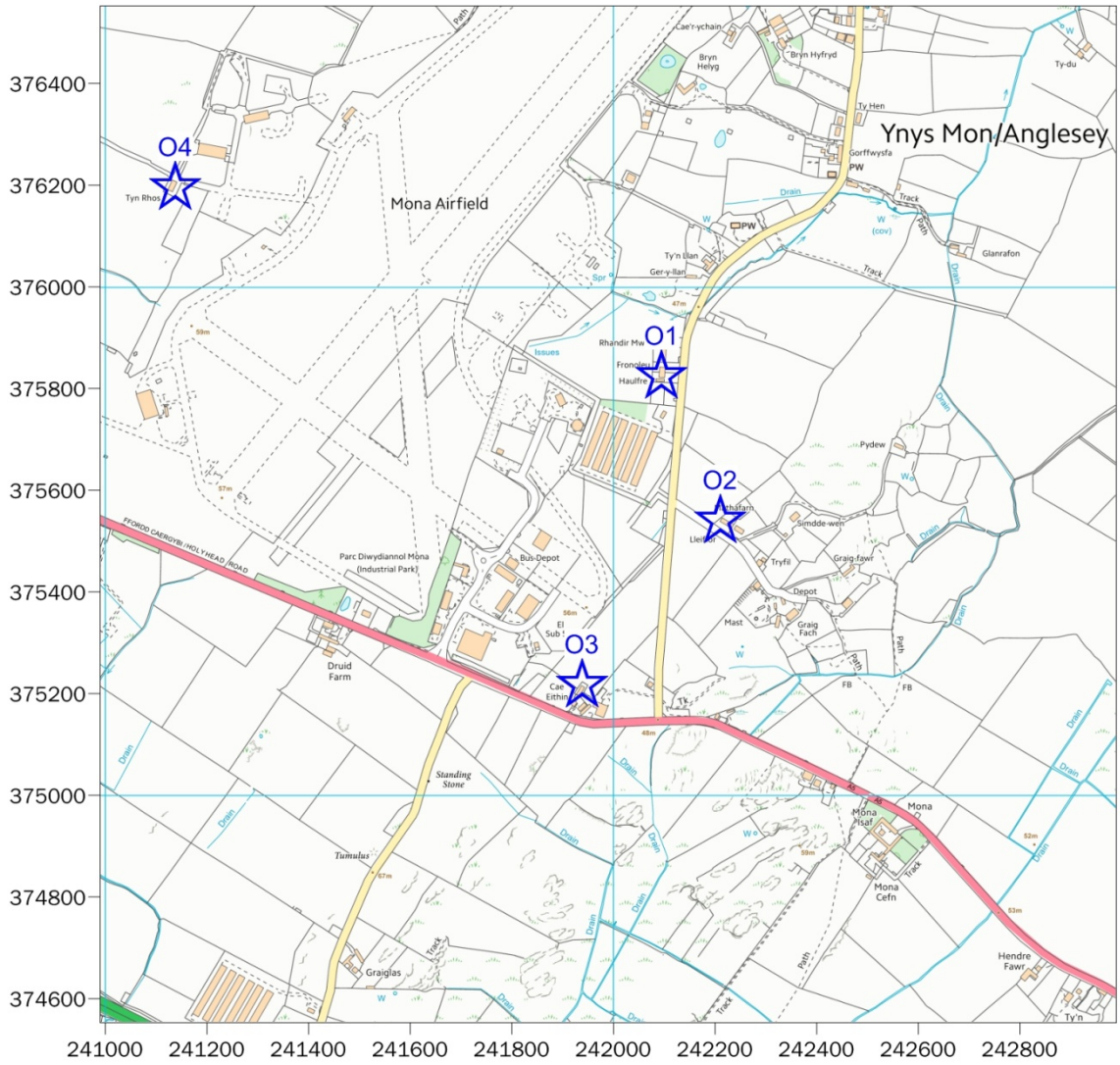
Point Source Emission - Digestate Tanker (Scenario 1)

Area Source Emission - Silage Clamp

Oaktree Environmental Ltd
Unit 5 Oasis Park
19 Road One
Winsford
Cheshire
CW7 3RY

ANNEX 2

Sensitive Receptor Plan



Appendix II Figure 1 - Odour Sensitive Receptors

☆ Odour Receptor Location

O1 Odour Receptor Identifier

Oaktree Environmental Ltd
Unit 5 Oasis Park
19 Road One
Winsford
Cheshire
CW7 3RY