REPORT

Sandsfield Gravel Company Ltd

Milegate Eastern Extension Quarry and Landfill

Landfill Gas Risk Assessment

Submitted to:

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Brandesburton
Driffield
East Yorkshire
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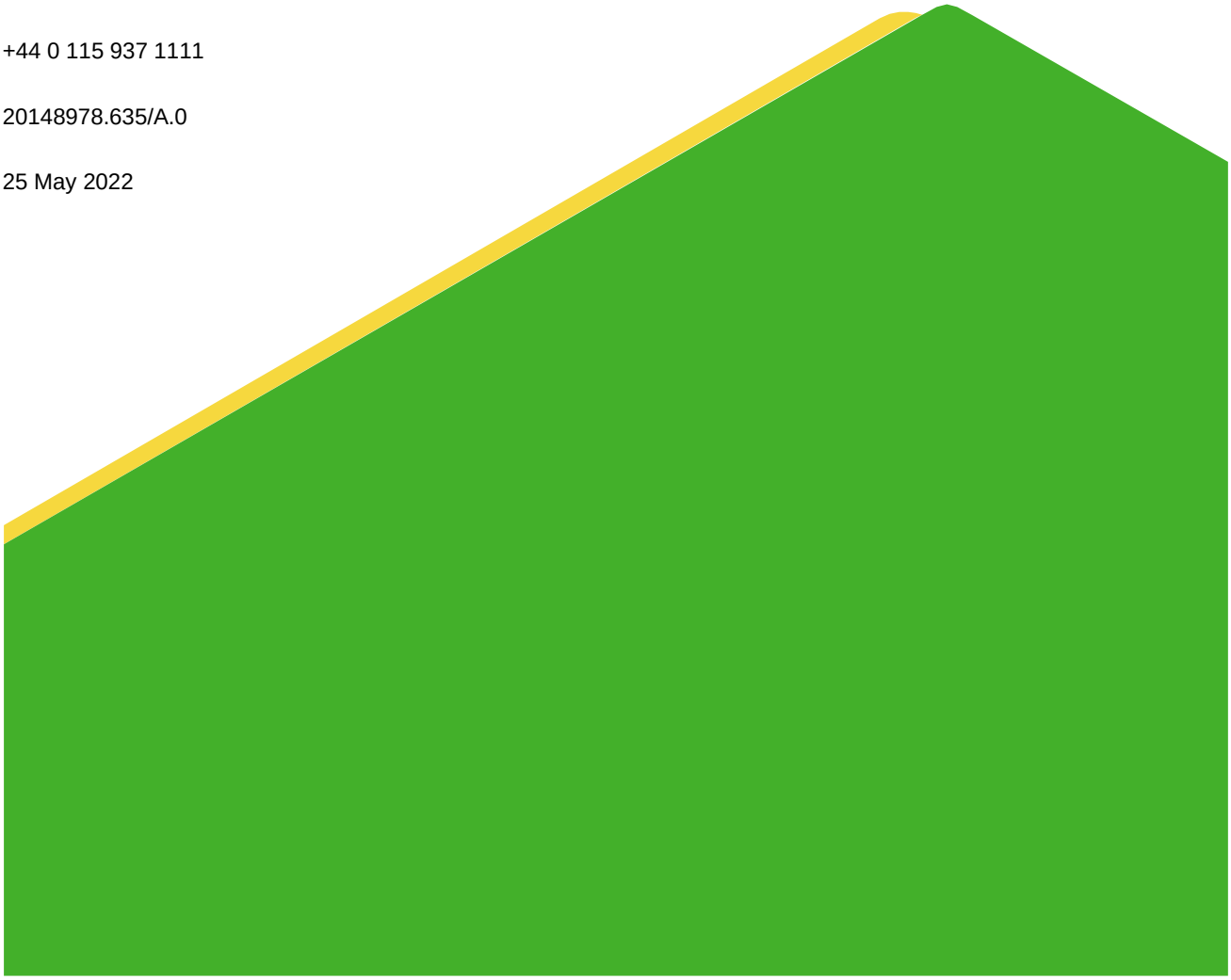

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1.0 INTRODUCTION

1.1 General

Sandsfield Gravel Company Ltd ('Sandsfield'), Sandsfield, Brandesburton, Driffield, East Yorkshire YO25 8SA proposes to develop its existing operations and is applying for planning permission and variation to its Environmental Permit to:

- Allow continued and uninterrupted quarrying and landfilling operations to extend into the neighbouring field to the east (the 'Eastern Extension') which is currently in agricultural use. The Eastern Extension is proposed to be completed within the timeframe already permitted for the existing operations i.e. before February 2038.
- Gain planning approval for movement of the existing landfill flare from the southeast corner to the northwest corner of the existing site (January 2019) and upgrade of that flare (September 2021) (retrospective planning application).
- Install a new landfill gas utilisation compound at the northwest corner of the existing site, in which there will be the phased installation of two new landfill gas-to-energy engines ('micro-generators') and associated equipment. The landfill gas flare will be moved into this compound. A new cable connection will be installed from the compound, extending northwest to a new step-down transformer, enabling the gas engines to generate electricity and supply a neighbouring business by private wire and the National Grid.

Sandsfield's overall objective is to secure the Site to maintain its long-term role in the production of sand and gravel, to support its waste transfer and recycling operations, and to secure the Site's long-term role in providing residual landfill capacity in the East Riding of Yorkshire.

1.2 Background

The existing landfill is located at Catwick Lane, Brandesburton, East Riding of Yorkshire, YO25 8SB and is operated by Sandsfield. The existing landfill comprises the original Site and the Northern Extension which are regulated by Environmental Permit EPR/BX1942IX/V003, dated 17 February 2020, issued by the Environment Agency.

In support of both the planning and Environmental Permit variation applications, Golder has updated the existing Landfill Gas Risk Assessment (GRA) to reflect current landfill operations and the proposed future Site development in line with the planning application. Two scenarios have been assessed, a standard operational scenario (Scenario 1) with landfill gas combusted primarily in two landfill gas engines; and a non-standard operational scenario (Scenario 2) where landfill gas is flared while the engines are non-operational.

The impacts of both fugitive and combustion emissions are assessed at both the Site installation boundary and potentially sensitive receptors in the vicinity of the Site.

1.3 Report Methodology

This report is prepared in accordance with the Gas Risk Assessment methodology as outlined in the Environment Agency's guidance document entitled '*Guidance on the Management of Landfill Gas'* (Environment Agency, 2004a), and Defra and Environment Agency's Guidance '*Air emissions risk assessment for your environmental permit*' (https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit) last updated October 2020. The screening assessment has been performed according to the methodology produced by the Environment Agency's Air Quality Modelling and Assessment Unit (AQMAU) ('*Screening method for emissions to air from landfill sites (typically gas engines, flare stacks and area sources'*)) (Environment Agency, 2004b).

1.4 Modelling Approach

GasSim Version 2.05.0008 (GasSim2.5) (Environment Agency, 2011), a computer software tool developed by Golder for the Environment Agency, has been used to model the potential landfill gas generation, fugitive and combustion emissions from the Site. GasSim2.5 was used to carry out a Tier 1 screening assessment to 'screen out' insignificant fugitive and combustion emissions from the flare and engines and to identify which emissions required detailed assessment.

The model input data have been based on site-specific data where possible. Appropriate assumptions have been made and published data, including GasSim2.5 default data, have been used where site-specific data were not available or not considered appropriate.

The assistance of Sandsfield in the provision of data for this work is gratefully acknowledged. Golder has not independently verified any of the information supplied by Sandsfield to support this risk assessment.

2.0 BACKGROUND AND SETTING

2.1 Site Surroundings

Milegate Extension Landfill is situated approximately 1 km to the east of Brandesburton village and 13 km northeast of the centre of Beverley, at National Grid Reference TA 1310 4750.

The Site lies in an area of relatively flat land, with ground elevations varying from 5 to 15 m AOD. Ground levels across the Site typically fall gently to the south and east towards the Milldam Beck, which lies at an approximate elevation of 5 m AOD. In general terms, much of the area surrounding the Site has been worked for the extraction of sand and gravel, and this has resulted in a number of pits that have been restored to ponds or restored by the disposal of waste as landfill.

To the immediate north of the Site lie open fields. The Moor Main Drain flows along the northern side of the Eastern Extension and joins the Milldam Beck in the northeast corner which then flows around the eastern and southern margins of the Site. Catfoss Airfield, a former RAF base, lies approximately 600 m north of the Site, and extends beyond 1 km from the Site. The airfield is now used as an industrial estate.

Beyond the Milldam Beck to the east are open fields and a minor road passing north to south on which Manor Farm and Catfoss Cottages are located approximately 625 m east of the Site. Beyond this road and residential properties are open fields.

The Site is bound on its southern edge by the Milldam Beck, which flows westwards and discharges to New Drain approximately 600 m southwest of the Site. Beyond the Milldam Beck, there are number of surface water ponds (flooded remains of sand and gravel workings) which are used for coarse fishing. Approximately 250 m southwest of the Site lies Catwick Lane, a minor road orientated northwest to southeast. Beyond Catwick Lane and extending beyond 1 km from the Site, is an area comprising landfill sites (Fosse Hill Quarry, New Feeding Pasture, Pit Field and Catwick Grange Landfills), flooded gravel pits, and open fields. To the southeast are Sandsfield's operations including active workings and Plant Pit 2 and Plant Pit 3 landfills, which are consented under separate planning permissions. Beyond these workings to the southeast are closed historic landfill sites (Westlands Hill East, Catfoss, Catwick Crossroads, Hill Top House and Westfield Farm Landfills).

Adjacent to the western boundary of the Site lies Milegate Landfill. This was historically operated as a quarry and was fully restored by Sandsfield and is now closed. A trading estate (off Catwick Lane) is located approximately 200 m northwest of the Site and extends to approximately 800 m northwest of the Site. The A165 passes north to south about 800 m west of the Site beyond which are further fields and then the village of Brandesburton

2.2 The Site

Landfilling at the existing Site has taken place continuously since waste acceptance commenced in 2007. Filling began in Cell 1 and proceeded in a westerly direction through Cells 3, 5 and 7. Cell 8 was constructed to the north of Cell 7 in 2016, and landfilling has proceeded in an easterly direction through Cells 8 and 6. Cell 4 has been divided in Cells 4A and 4B. Cell 2 will also be divided into Cell 2A and 2B.

Today, Cells 1, 3, 5, 7 and 8 are filled, capped and restored; Cell 6 has been filled and awaits capping and restoration in 2022; Cell 4A was opened in October 2020 and Cell 4B was opened in January 2022; and Cells 2A and 2B await development.

The total landfill void space for the existing Site is estimated as 1,247,280 m^3. At the end of 2020 (the last annual site survey, dated 11 January 2021), the site had received 896,014 m^3 waste with therefore 351,266 m^3 remaining. At an input rate of 90,000 m^3/year, the existing site will be filled by end 2024.

During the period 2017 to 2019, waste was received at the site at an average 88,585 m^3/year and the local market requirement appeared to be increasing. This demand had the potential to be interrupted by the coronavirus pandemic and the local impacts remain unclear, but in the UK, it has generally led to a decrease in the amount of commercial and industrial waste produced, however the amount of municipal waste, recyclables and fines has remained consistent or increased. The site accepted 81,661 m^3 of waste in 2020. With a reasonably predicted input rate of 90,000 m^3/year, the existing site will be filled by end 2024. Despite the pandemic, the site continues to demonstrate its significance in providing residual landfill capacity and Sandsfield expects that the Site will remain an important strategic asset to the region.

Sandsfield is therefore applying to continue mineral extraction and extend landfilling capacity into a proposed Eastern Extension (Cells 9 to 14). Landfill development of the Eastern Extension is estimated to provide additional void space of 0.73 Mm^3 (post-settlement) or 0.82 Mm^3 (pre-settlement). At a waste input rate of 90,000 m^3/year and commencing in 2025, the Eastern Extension will be filled in 2034. Allowing two years for restoration, development will still be completed within the current permitted period of landfilling to 2038.

2.3 Ecological Receptors

Following Defra and Environment Agency (EA) Guidance '*Air emissions risk assessment for your environmental permit*', the nature conservation sites screened for in relation to air quality impacts include:

- Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites (protected wetlands) within 10 km of the Site; and
- Sites of Special Scientific Interest (SSSI) as well as local nature sites (National Nature Reserves (NNR), Local Nature Reserves (LNR), Local Wildlife Sites (LWS) and ancient woodlands) within 2 km of the Site.

Table GRA1 identifies European sites within 10 km and SSSIs as well as local nature reserves (NNR, LNR, known LWS and ancient woodlands) within 2 km of the Site as required for air emission risks assessments.

Table GRA1: Ecological Receptors within Screening Distance

Name	Receptor Type	Distance to the Site Boundary (at the closest point)
Hornsea Mere	Special Protection Area	3,800 m to the east of the Site
Catwick and Brandesburton Pits plus Watersedge Park	Local Wildlife Sites	400 m to the south of the site

2.4 Air Quality Management Areas

Under Section 83(1) of the Environment Act 1995, local authorities have to designate those parts of their areas where the prescribed Air Quality Objectives are not likely to be met by, or at any point beyond the relevant deadline, as Air Quality Management Areas (AQMAs). This applies only to those locations where members of the public might reasonably be exposed.

No AQMA has been declared by East Riding of Yorkshire Council.

2.5 Background Air Quality

2.5.1 East Riding of Yorkshire Monitoring Data

The latest report published by East Riding of Yorkshire Council is the 2021 Air Quality Annual Status Report (East Riding of Yorkshire Council, June 2021). The Council does not currently operate any automatic/continuous monitoring sites. A network of 92 passive diffusion tubes located along principal traffic routes across the East Riding is employed to monitor NO_2 from traffic emissions.

No diffusion tube monitoring has been undertaken in the vicinity of the Site. The closest monitoring location is located in Brandesburton is a kerbside location, approximately 1 km to the northwest of the Site (Site ID 90, 1 Corner Farm, Main Street, Brandesburton, 511628 m, 445479 m). NO_2 concentrations at that location are below the AQS for NO_2 (2020 annual mean of 11.9 µg/m^3). Given the distance to the Site and its location, 1.3 m from the kerb, the monitoring location is not deemed representative of background NO_2 concentrations in the vicinity of the landfill which is located in a rural setting.

2.5.2 Background Air Quality from the Background Maps

In the absence of local representative monitoring data, annual average background data for sulphur dioxide (SO_2), nitrogen dioxide (NO_2), nitrogen oxides (NO_x = NO_2 + NO), particular matter (10µm, PM_{10} and 2.5 µm, $PM_{2.5}$), carbon monoxide (CO), benzene and 1,3-butadiene were sourced from Defra's 1 km by 1 km air quality background maps. Modelled background concentrations for the nearest National Grid Reference (NGR) square to the Site (513500, 447500) were obtained from Defra's website (https://uk-air.defra.gov.uk/data/laqm-background-home) for the year of 2022. Annual mean background concentrations are detailed in **Table GRA2**.

Table GRA2: Annual Mean Background Concentrations from DEFRA Background Maps

Substance	Background Concentration (µg/m^3) 2022[1]
SO_2	4.1[2]
NO_2	6.4[3]
NO_x	8.2[3]
PM_{10}	14.1[3]
$PM_{2.5}$	7.6[3]
CO	101.3[4]
Benzene	0.1[4]
1,3-Butadiene	0.04[4]

Notes:

1) *Background data are long-term annual averages;*
2) *Background data for 2001;*
3) *Projected figure for 2022 using a base year of 2018;*
4) *Projected figure for 2022 using a base year of 2001;*

2.6 Environmental Standards for Air Emissions

Table GRA3 shows the Environmental Standards (ES) for the protection of human health and the protection of vegetation and conservation areas for the main combustion and fugitive emission typically associated with landfilling operations.

Ambient Air Directive (AAD) Limit values for the protection of human health or nature/conservation sites are based on the EU Air Quality Directive (Directive 2008/50/EC) which came into force in June 2008 and was transposed into The Air Quality Standards Regulations in England, Wales, Scotland and Northern Ireland in June 2010.

UK Air Quality Strategy (AQS) Objectives are based on The Air Quality Strategy for England, Scotland, Wales and Northern Ireland which are set into regulation by the Air Quality (England) Regulations 2000 and Air Quality (England) Amendment Regulations 2002. The AQS Objectives take the EU limit values into account and are either effectively identical, or more stringent. The latter is the case for SO_2 measured over a 15 min period for human health.

For fugitive emissions of hydrogen sulphide (H_2S) and carbon disulphide (CS_2) as well as short-term benzene, Environment Agency Environmental Assessment Levels (EAL) apply.

Target values for protected conservation areas are based on the World Health Organisation (WHO) Air Quality Guidelines for Europe and provided in the UK Guidance on Air Emission Risk Assessment (https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit).

Table GRA3: Air Quality Environmental Standards (ES) for the Protection of Human Health and for the Protection of Vegetation and Conservation Areas

Substance	Limit (average)	Exceedances (number of times a year that the limit can be exceeded)	Emission Period	Standard
Sulphur Dioxide	350 µg/m^3	Up to 24 1-hour periods	1 hour	AAD Limit values for the protection of human health
	125 µg/m^3	Up to 3 24-hour periods	24 hour	AAD Limit values for the protection of human health
	266 µg/m^3	Up to 35 15-minute periods	15 minutes	UK AQS Objective
	20 µg/m^3	n/a	Annual mean	AAD Limit value if nature or conservation sites are present/ Target values for protected conservation areas
	10 µg/m^3	n/a	Annual mean	Target values for protected conservation areas where lichens or bryophytes are present
Carbon Monoxide	10 000 µg/m^3	n/a	8 hour running average across a 24-hour period	AAD Limit value for the protection of human health
Nitrogen Dioxide	200 µg/m^3	Up to 18 1-hour periods	1-hour mean	AAD Limit value for the protection of human health
	40 µg/m^3	n/a	Annual mean	AAD Limit values for the protection of human health
	30 µg/m^3	n/a	Annual mean[1]	AAD Limit value if nature or conservation sites are present
	75 µg/m^3		24-hour mean[1]	Target values for protected conservation areas
Benzene	195 µg/m^3	n/a	1-hour mean	EAL
Benzene	5 µg/m^3	n/a	Annual mean	AAD Limit values for the protection of human health
Hydrogen Sulphide	150 µg/m^3	n/a	1-hour mean	EAL
	140 µg/m^3	n/a	Annual mean	EAL
Carbon Disulphide	100 µg/m^3	n/a	1-hour mean	EAL
Carbon Disulphide	64 µg/m^3	n/a	Annual mean	EAL

Note: [1]Nitrogen oxides expressed as NO_2.

2.7 Odour Assessment Criteria

2.7.1 Regulations and Guidelines

This assessment considers surface emissions as a source of odour. There are currently no statutory standards or objectives for assessing odour impacts in the UK and as such odour impact criteria, if assessed, are typically based upon guideline documents and case law. The Environment Agency has published Guidance on *H4 Odour Management* (March 2011).

An odour unit is a measure of the concentration of a mixture of odorous compounds. It is determined by means of olfactometry. Odour unit values are determined by a standard method given in the draft CEN (the European Committee for Standardisation) standard on olfactometry. An odour unit as defined by the CEN standard is 1 OU_E (European Odour Unit). As a very approximate guide, 1 OU_E/m^3 is the point of detection and generally the following apply:

- 1- 5 OU_E/m^3 the odour is recognisable;
- 5 OU_E/m^3 is a faint odour; and
- 10 OU_E/m^3 is a distinct odour.

Exposure is usually quantified in terms of a frequency of occurrence over a year of hourly average concentrations above a certain odour concentration. For odour, the 98%ile of hourly average odour concentrations over the period of a year is commonly used in the UK.

The H4 Odour Management Guidance proposes odour benchmark levels at the site boundary. It states that when the hourly average concentrations of odour are modelled over a year (8,760 hours in a year), 2% (175 hours) of these hourly average concentrations must not exceed:

- 1.5 odour units for most offensive odours;
- 3.0 odour units for moderately offensive odours; or
- 6.0 odour units 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.

Examples of the three categories (most, moderately and less offensive) are given as:

Most Offensive

- Processes involving decaying animal or fish remains;
- Processes involving septic effluent or sludge; and
- Biological landfill odours.

Moderately Offensive

- Intensive livestock;
- Fat frying (food processing);
- Sugar beet processing; and
- Well aerated green waste composting

Less Offensive

- Brewery;
- Confectionery;
- Coffee roasting; and
- Bakery.

Further *Guidance on Assessment of Odour for Planning* that does not involve modelling of odour emissions has been published by the Institute for Air Quality Management (IAQM) in 2014.

2.7.2 Case Law

The most frequently referenced case law in the UK in relation to odour assessment is that of the Newbiggen-by-the-Sea Inquiry, defended by Northumbrian Water Ltd (DoE, 1993). The report concluded that:

"There are no guidelines against which to assess odour emissions. However, the technique defines a 'faint odour' as lying within the range of 5-10 OU_E/m^3. While a particularly sensitive person could detect and emission level as low as 2 OU_E/m^3, it seems to me that adoption of a level of 5 OU_E/m^3 for the appeal site proposals is both reasonable and cautious."

As a result of this case, an impact criterion of 5.0 OU_E/m^3 for the 98%ile of predicted hourly average odour concentrations has been frequently applied. This is generally considered as being sufficient to prevent nuisance for a number of industry sectors.

2.7.3 Criteria for Use in the Odour Assessment

The objective of the assessment is to determine whether there are likely to be any potential odour impacts, which could reasonably be classed as a nuisance, as a result of surface or combustion emissions at the Site. Based on the H4 Odour Management Guidance and case law, as detailed above, a modelled odour limit of 1.5 to 3.0 OU_E/m^3 for highly to moderately offensive odours at an identified receptor has been adopted in this assessment.

3.0 CONCEPTUAL SITE MODEL

3.1 Justification of the Model

GasSim2.5, a computer model developed by Golder for the Environment Agency, has been used to model the landfill gas generation, fugitive and combustion emissions from the Site. GasSim2.5 was also used to carry out a Tier 1 Screening assessment to 'screen out' insignificant emissions from the landfill and to identify which emissions required detailed assessment.

GasSim2.5 uses statistical distributions or probability density functions (PDFs) to characterise most of the input parameters. Each time a calculation is carried out, one value from the defined input distributions is chosen by the computer code and, for example, a concentration at the receptor is calculated. Each result is stored such that after repeating the same calculation many times, an output distribution for the concentration at the receptor is obtained. The distribution output is given in terms of percentiles (%iles). These %iles specify the probability with which a certain value (e.g. gas production rate) will not be exceeded. For instance, if the 95%ile of a gas production rate distribution is given as 1,000 m³/hour, there is a 95% chance that the actual production rate will be below or equal to 1,000 m³/hour. It follows that there is also a 5% chance that the actual production rate will be above this.

GasSim2.5 is an industry standard gas generation modelling tool based on well-established scientific principles that has been validated and independently reviewed. GasSim2.5 include,s an atmospheric dispersion module which is based on the AERMOD air dispersion modelling code.

3.2 The Assessment Scenarios

Landfill gas generation and emissions at the Site have been determined through the entire lifecycle of the Site. Landfill gas surface emissions have been assessed under two different gas plant operational Scenarios, a normal typical operation and a non-typical operation.

The typical operational situation at the Site (Scenario 1) is that two landfill gas engines are operating from 2023 at maximum capacity of 106 m^3/h (at 60% methane v/v). Any surplus landfill gas is being utilised by the single flare installed at the Site. Long-term and short-term surface and lateral emissions arising from the Site have been assessed under this scenario.

A non-typical operation scenario (Scenario 2) considers that both engines are simultaneously non-operational. In this scenario, landfill gas is flared by the single flare operating at maximum capacity of 1,000 m^3/h from 2022. In the unlikely event that such a scenario occurs, only short-term impacts on the emission signature will arise. As such, short-term emissions only will be assessed under this scenario.

3.3 Waste Input and Characteristics

3.3.1 General

GasSim2.5 requires that the waste tonnages, waste breakdown and the composition of individual waste streams are defined to enable it to calculate the gas generation capability of the waste.

Site-specific waste information in the form of waste returns have been provided for the years 2007 to November 2020 detailing the tonnes of waste for each waste stream which have been landfilled at the Site on an annual basis. In addition, topographical survey data was used to calculate waste volume and density estimates in each given year. This is incorporated into GasSim2.5 as described, below.

For future filling, estimates have been used based on future cell volume approximations taking into account the cell sizes which form part of the proposed Eastern Extension and Permit variation application.

3.3.2 Yearly Waste Input Rates

Waste input rates for 2007 to 2019 are based on actual waste data from the Site which are tabulated in **Table GRA4**.

Table GRA4: Annual Waste Inputs 2007 to 2019

Year	Annual Waste Input (t)[1]	Approximate Annual Waste Volume (m^3)[2]	Approximate Annual Waste Density (t/m^3)
2007	29,059	36,590	0.79
2008	79,586	56,638	1.41
2009	21,587	26,516	0.81
2010	12,583	28,213	0.45
2011	15,848	37,032	0.43
2012	11,051	44,365	0.25
2013	15,716	41,898	0.38
2014	25,976	99,282	0.26

Year	Annual Waste Input (t)[1]	Approximate Annual Waste Volume (m^3)[2]	Approximate Annual Waste Density (t/m^3)
2015	35,611	105,926	0.34
2016	27,513	72,138	0.38
2017	22,234	76,203	0.29
2018	41,476	66,605	0.62
2019	31,531	122,947	0.26
Total	**369,771**	**814,353**	
5-year average (2015-2019)			**0.38**

Notes: [1]Annual waste tonnage inputs calculated based on Sandsfield's provided waste returns. [2]Approximate annual waste volume estimated based on annual topographic surveys.

A uniform distribution with a +/- 10% range has been applied to historic waste input tonnages 2007 to 2019 to account for uncertainty in the data. Beyond 2019, the annual waste filling estimate is estimated to be 90,000 m^3/year, which is equivalent to 34,037 tonnes/annum assuming a 5-year average waste density of 0.38 t/m^3. A uniform distribution with a +/- 20% range has been applied to waste input tonnages from 2020 onwards.

At the end of 2020 (the time of the last survey), 896,014 m^3 of waste had been accepted at Site. The remaining void space lies in the completion of Cell 4A and 4B and the development of Cells 2A and 2B, and the Eastern Extension, Cells 9 to 14. The conceptual design of future areas of the Site assumes certain base levels and side slope gradients. The total quantity of waste to potentially be accepted at the site, as per waste already received and the conceptual design, is 2,067,240 m^3.

At an input rate of 90,000 m^3/year, the existing site will be filled by end 2024. At a waste input rate of 90,000 m^3/year and commencing in 2025, the Eastern Extension will be filled in 2034. Allowing two years for restoration, development will be completed within the current permitted period of landfilling to 2038.

Yearly waste tonnages used in the GasSim2.5 model are given in the model printouts in **Appendix GRA1**.

3.3.3 Waste Breakdown

The historic annual waste breakdown was determined by information provided by Sandsfield. The Site currently accepts a combination of wastes which can be classed as domestic, industrial, inert, sludge, or residue from MRF.

The future composition has been determined by averaging the last five years of data (i.e. 2016 to 2020), although the future composition of wastes placed at the site will clearly depend on local market conditions and the specific waste contracts awarded to the site. A range of +/- 10% was assigned to historic waste breakdown 2007 to 2019 and +/- 20% from 2020 onwards to account for uncertainty in the data. The annual waste breakdowns used in the GasSim2.5 model are given in the model printouts in **Appendix GRA1**.

3.3.4 Waste Composition

The waste breakdown data entered into GasSim2.5 is related to waste composition in order to determine likely gas production rates. The default waste compositions within GasSim2.5 do not generate sufficient landfill gas to explain the amount of gas flared at the Site over the past years (see Section 3.4). In order to be able to match the observed flaring rates, the industrial waste composition within the GasSim2.5 default waste stream data for England contained within the GasSim2.5 software package has been amended to consist of 100% 'Other Paper'. It is important to note that this amendment does not mean to reflect the true waste composition of the

industrial wastes accepted at the Site but has been chosen to generate enough gas to adequately represent the source term for the gas risk assessment.

The historic and future anticipated waste compositions accepted at the Site in each year are detailed in **Appendix GRA1**.

3.3.5 Phases

The Site will be developed in fourteen filling phases, details of which are shown in **Figure GRA1**. Cells 1, 3, 5, 7, 8 and 6 have been filled and filling is currently undertaken in Cell 4A. The Eastern Extension Cells 9 to 14 have been added. The modelled landfill (i.e. Cells 1 to 14) covers an area of approximately 159,212 m^2.

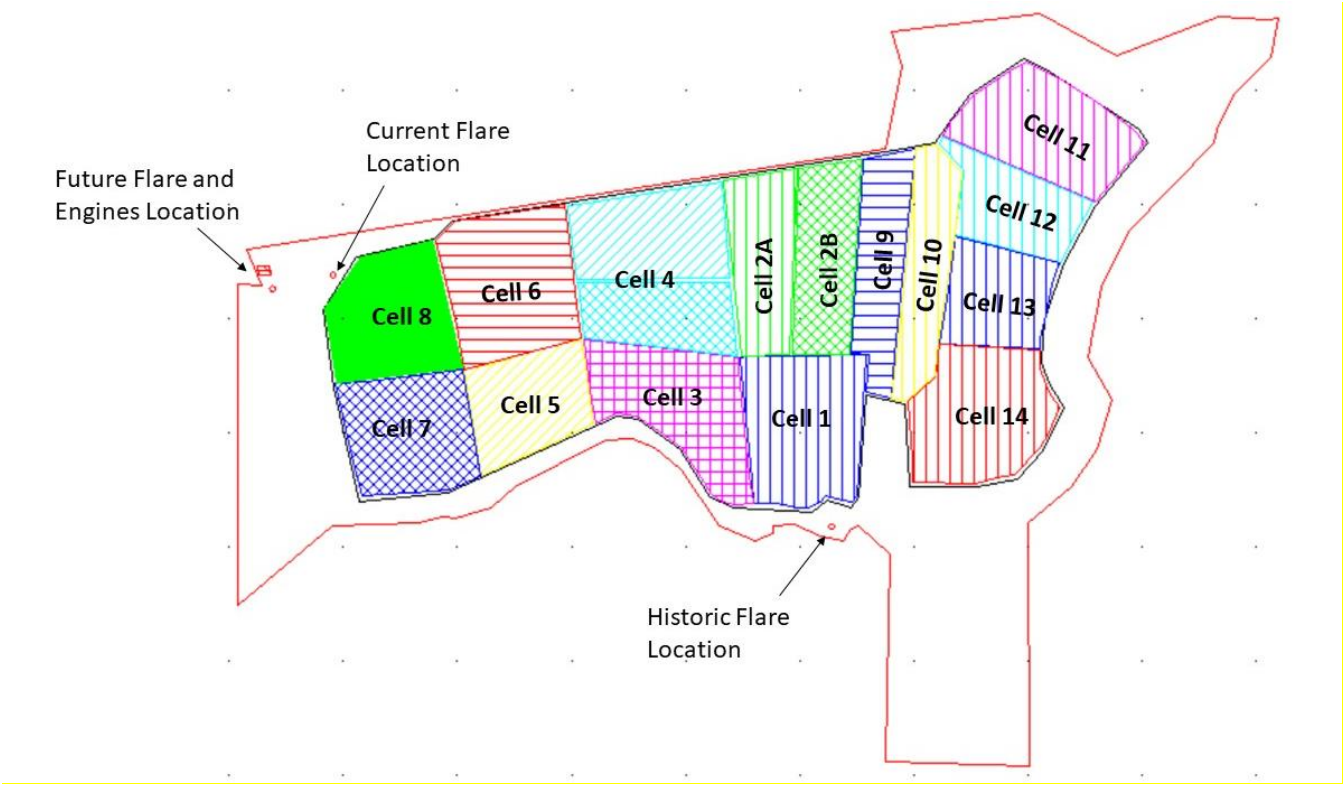

Figure GRA1: Site Layout used in Modelling

3.3.6 Landfill Characteristics

General characteristics of the Site that have been incorporated within the models are detailed in **Appendix GRA1**. The waste density has been updated to reflect the minimum, maximum and average waste density observed 2007 to 2019 (see **Table GRA4**). The waste moisture content of the Site is assumed to be 'wet'.

The cap and liner properties used in the model are summarised in **Appendix GRA1**. Historic and anticipated installation dates of the temporary and permanent cap as well as of the sacrificial and permanent gas extraction system are detailed in **Appendix GRA2**.

The landfill is, and will continue to be, hydraulically separated from its immediate surrounding by a 1.0 to 1.2 m thick clay liner. The clay liner is considered to have a hydraulic conductivity of $1x10^{-10}$ to $1x10^{-9}$ m/s.

Temporary capping is applied in a progressive manner following the infilling of waste, prior to the installation of the engineered final cap. The temporary cap will comprise a layer of clayey soil 0.4 to 0.6 m thick across the Site with a hydraulic conductivity of approximately $1x10^{-7}$ to $1x10^{-5}$ m/s. The permanent capping system at the Site will consist of a 0.006 m thick GCL membrane with a hydraulic conductivity of approximately $1x10^{-14}$ to $1x10^{-12}$ m/s.

3.4 Landfill Gas Composition and Flare Input Data

3.4.1 General

Landfill gas is actively controlled and managed across the Site and will continue to be managed throughout the operational life of the Site and during its post-closure and aftercare period. The existing gas collection and utilisation system will be expanded progressively as landfilling continues.

3.4.2 Landfill Bulk Gas Composition

Landfill gas is primarily composed of methane and carbon dioxide and site-specific values for gas composition based on monthly monitoring 2013 to 2019 have been used as detailed in **Table GRA5** below.

Table GRA5: Landfill Gas Composition

Gas	Composition (%)
Methane (CH_4)	SINGLE (57.0)
Carbon Dioxide (CO_2)	SINGLE (43.0)

3.4.3 Gas Plant Characteristics

Landfill gas collected at the Site is sent to a high-temperature Biogas flare. Between 2009 and December 2018, this comprised a small flare located at the southeast corner of the Site. In January 2019, this was replaced by a new flare (maximum capacity of 500 m^3/h, minimum capacity of 100 m^3/h) hired from Biogas Technology Ltd., but installed in a new location, in the northwest corner of the Site. In December 2021, this was further replaced by a new higher capacity flare (maximum capacity of 1000 m^3/hr, minimum capacity of 200 m^3/hr).

In this risk assessment, a flare with a maximum capacity of 1,000 m^3/h and a minimum capacity of 200 m^3/h has been modelled. Sandsfield is proposing to develop the use of micro-generators for power generation at the Site in an adjacent Gas Utilisation Compound. The characteristics of the historic flares, the flare currently installed at the Site, the generic flare modelled to be commissioned in the future and gas engines are summarised in **Table GRA6**.

Table GRA6: Modelled Flare and Engine Characteristics

Flare/Engine Characteristics	Historic Flare 1	Historic Flare 2	Currently installed Flare (to be relocated in 2023)	Two Micro-Generators modelled to be commissioned in 2023
Type[1]	Biogas Flare	Biogas Flare	Generic Flare	Scania SGI-13 190 kW
Installation Date[1]	2009	2019	2021	2023
Capacity (m^3/h)[1]	30-300	100-500	200-1000	59-114
Downtime (%)[2,3]	UNIFORM(3.0,5.0)	UNIFORM(3.0,5.0)	UNIFORM(3.0,5.0)	UNIFORM(8.0, 12.0)
Air to fuel ratio[2]	11	11	11	7
Destruction efficiency for gases (%)[2]	99	99	99	99
Stack/exhaust height (m)[1]	6.86	6.84	7.48	5.20
Stack/exhaust orifice diameter (m)[1]	0.86	1.12	1.37	0.21
Stack/exhaust location	513328, 447118	512891, 447338	512891, 447338	512830, 447344
			512838, 447326	512831, 447340

Notes:
1. *Site-specific information or assumptions;*
2. *GasSim2.5 default value; and*
3. *Downtime represents the proportion of time that the engine and flare are not operational.*

3.4.4 Trace Gas Composition of Fugitive and Combustion Emissions

GasSim2.5 contains a list of default fugitive and combustion trace gas concentrations to enable the landfill gas source to be modelled. These GasSim2.5 default trace gas concentrations were applied in the modelling.

For fugitive emissions, the provided default concentration range within GasSim2.5 was compared to historic priority trace gas monitoring results. Based on this, the concentration range for H_2S required alignment as shown in **Table GRA7**.

For modelling of flare emissions, the limit values set in the Site's Environmental Permit were used as specified in **Table GRA7.**

The two micro-turbines are proposed to be installed at the Site in 2023 have a combined rated thermal input > 1 MWthermal and will therefore constitute an aggregated specified generator that requires permitting under the Medium Combustion Plant Directive (MCPD). The MCPD Emission Limit Values (ELVs) for NO_x and SO_2 were therefore applied in the modelling. For emissions of CO and Total Volatile Organic Compounds, the emission limits for engines commissioned after 31 December 2005 as stated in LFTGN08 were applied (**Table GRA7**). Please note that the ELVs under MCPD are defined at an oxygen content of 15% for engines and gas turbines whereas combustion trace gas emissions in GasSim2.5 assume 5% oxygen. The MCPD ELVs for NO_x and SO_2 were therefore expressed at 5% oxygen in **Table GRA7**.

Table GRA7: Combustion Emission Trace Gas Concentration Input Data

Gas	Modelled Trace Gas Concentration (mg/m^3)		
	Fugitive Emissions	Flare Emissions[1]	Engine Emissions[2]
Hydrogen Sulphide (H_2S)	LOGTRIANGULAR (2.4, 53.0, 4399)	n/a	n/a
Oxides of Nitrogen (as NO_2)	n/a	SINGLE(150)	SINGLE(512.0)
Carbon Monoxide (CO)	n/a	SINGLE(50)	SINGLE(1400)
Total Volatile Organic Compounds (TVOC)	n/a	SINGLE(10)	SINGLE(1000)
Sulphur Dioxide (SO_2)	n/a	n/a	SINGLE(40)

Notes: [1]Flare reference conditions are temperature: 0°C (273K); pressure: 101.3 KPa; and oxygen: 3 percent (dry gas).
[2]Engine reference conditions are temperature 0°C (273 K); pressure: 101.3 kPa; and oxygen: 5 per cent (dry gas).

3.5 Model Matching to Flare Flow

The GasSim2.5 model was matched to provided monthly flare flow and composition data from January 2013 to September 2021. Monitoring is currently undertaken at monthly intervals at the flare. **Figure GRA2** shows the annual minimum, maximum and average collected gas flow after exclusion of balance gas reflecting the high flow variability observed within each year.

Using the waste data provided and default waste composition assumptions within GasSim2.5 did not result in sufficient gas generation to scale to the observed flare flow. The GasSim2.5 default waste stream data for England was altered to introduce more carbon into the model (Section 3.3.3) increasing the modelled bulk gas source term and hence the amount of gas modelled to be flared (at the 50 %ile), so that the latter matches the observed flaring volumes (**Figure GRA2**). Historically, the gas modelled to be flared aligns to highest monthly flow recorded in each year (2016 to 2020). This was deemed reasonable given the historic development and amendment of landfill gas infrastructure at the Site, and the observed match of modelled and observed flow in 2021.

The GasSim2.5 model should be re-assessed over time as the landfilling is carried out and the gas field is extended to ensure that the assessment of gas plant requirements takes the most up-to-date actual flow information into account.

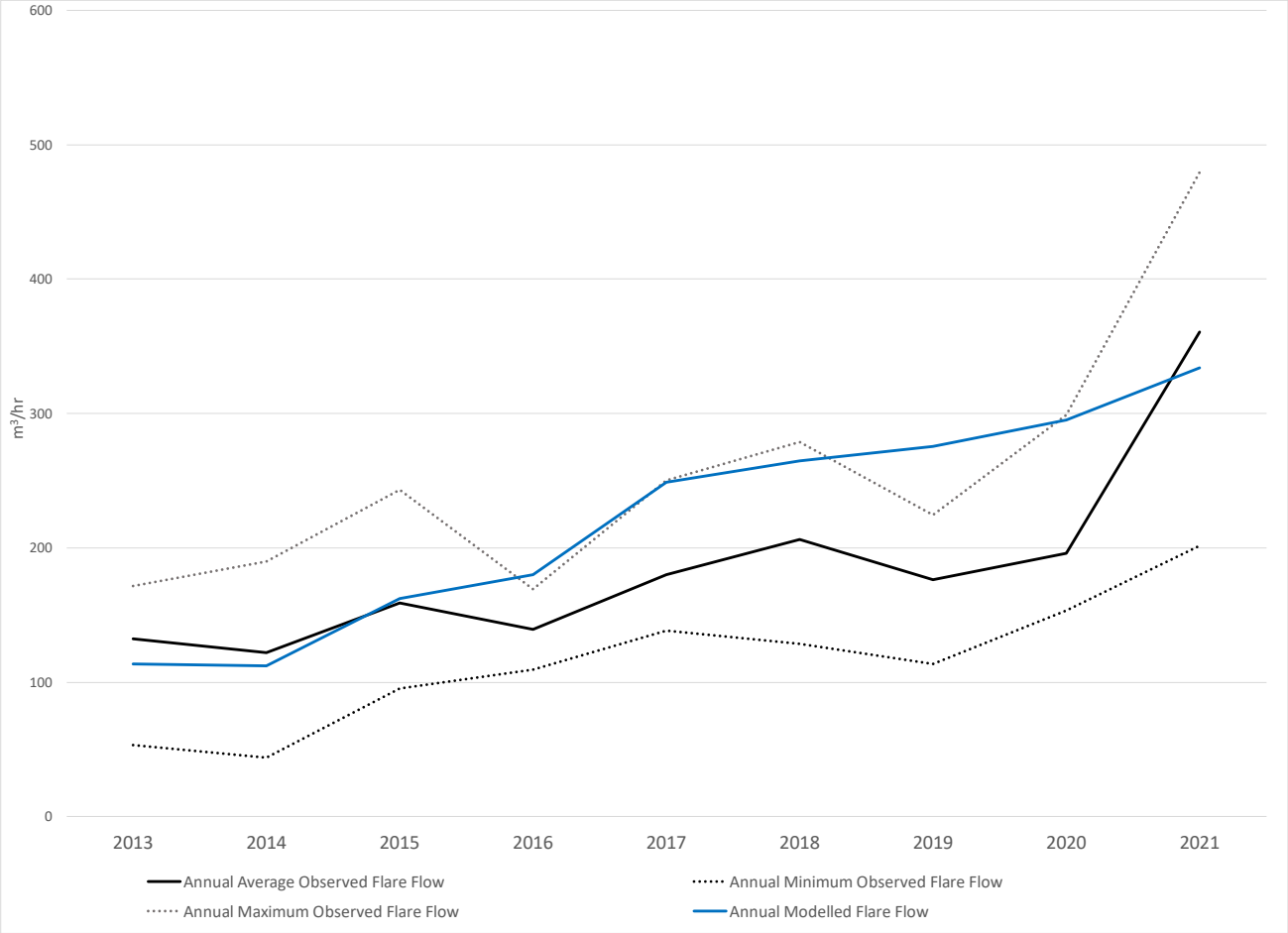

Figure GRA2: Observed and Modelled (50 %ile) Annual Flare Flow (after Exclusion of Balance Gas)

4.0 LANDFILL GAS GENERATION AND EMISSIONS ASSESSMENT

4.1 Landfill Gas Generation

The peak landfill gas generation rate has been modelled by GasSim2.5 to be 633 m^3/hr occurring in 2034 (95%ile), based on the input data described in this report. The actual quantities of landfill gas to be generated will depend on the actual waste inputs to the Site and so should be reassessed as landfilling progresses or when changes to the waste input predictions occur. Landfill gas production curves are provided in **Appendix GRA3**.

4.2 Combustion Emissions

The emissions from the gas plant have been determined from the landfill gas volumes generated, trace gas compositions and the destruction efficiencies for each gas. The destruction efficiency is the proportion of the gas that is destroyed during combustion. For the purposes of this modelling, a destruction efficiency of 99% has been used for all gases except carbon dioxide, i.e. 99% of the methane flared is assumed to be converted to carbon dioxide. The half-lives of trace gases are assumed to be 4.11 years +/- 1.56 (the GasSim2.5 default value). The destruction efficiencies used are summarised in **Table GRA6** above.

The volume of gas to be utilised will vary over time as the landfill gas generation and area under landfill gas collection changes. The flaring and engine requirements should be re-assessed with time taking into

consideration influences such as variations in the actual waste stream and future landfilling operations from that predicted and possible changes in technology.

Within this modelling assessment, the peak of the future flare combustion is 369 m^3/h in 2036 for Scenario 1 and 521 m^3/h in 2036 for Scenario 2 (95%ile). Peak future engine combustion is 167 m^3/h between 2023 and 2048 (95%ile). Combustion emission output curves are provided in **Appendix GRA3**.

4.3 Surface Emissions

The estimated emission rates through the landfill surface and liner are determined by GasSim2.5 software by deducting the quantity of gas utilised or flared from the total landfill gas produced. GasSim2.5 proportions the uncollected gas into the quantity emitted through the surface of the Site, using site-specific information on the nature of the cap and liner thickness and permeability.

The surface emissions from the landfill will vary over time as they are dependent on factors such as the area of the operational face, the volume of waste in place, the area that is temporarily capped or capped with the final capping design, the percentage of the landfill under gas extraction and the collection efficiency of the gas extraction system.

The peak future surface emission is predicted to be 146 m^3/hr in 2041 for Scenario 1. The peak future surface emission is predicted to be 150 m^3/hr in 2049 for Scenario 2. Surface emission output curves are provided in **Appendices GRA3**.

4.4 Global Atmospheric Impact

An assessment of the global impact of the Site in terms of Global Warming Potential ('GWP') and Ozone Depletion Potential ('ODP') has been made using GasSim2.5 for Scenario 1. Scenario 2 has not been assessed as this is a non-typical operation scenario, and therefore only short-term emissions would occur; it is thus not appropriate to assess the global atmospheric impact from Scenario 2.

The results for the peak gas production year (2034) and for the total of all years of gas production at the Site are presented in **Table GRA8**. The impact from the Site if no gas extraction system was used is also reported in the Table. All gases have been included within the modelling for conservatism.

Table GRA8: Global Impact Assessment

Year		Global Warming Potential[1]	Ozone Depletion Potential[2]
With Gas Plant	**Peak Year (2034)**	1.90E+04	0.0248
	Sum of all years	6.65E+05	1.38
Without Gas Plant	**Peak Year (2034)**	4.82E+04	0.112
	Sum of all years	1.45E+06	3.47
Reduction with Gas Plant (%)	**Peak Year (2034)**	61	78
	Sum of all years	54	60

Notes:

1) Global Warming Potential measured as CO_2 Equivalent (tonnes); and

2) Ozone Depletion Potential measured as Trichlorofluoromethane ($CFCl_3$) Equivalent (tonnes).

It can be seen from **Table GRA8** that the collection and combustion of landfill gas reduces the impact on global warming by an estimated 54% and on ozone depletion by 60% over the lifetime of the Site.

5.0 ASSESSMENT OF EMISSIONS TO ATMOSPHERE

5.1 Tier 1 Air Quality Screening Assessment

5.1.1 The Gases to be Screened

All gases present within the fugitive emission files within GasSim2.5 were screened using the software. These gases represent a broad range of substances indicative of landfill surface and engine and flare combustion emissions.

5.1.2 Screening Methodology

A comprehensive screening assessment has been undertaken to determine which fugitive emissions require detailed Tier 2 modelling. The screening assessment was undertaken using look-up tables (incorporated into GasSim2.5). If the emissions of a particular trace gas are below the relevant thresholds, then the values are considered 'insignificant' and no further modelling of that gas is required. If emissions are above the relevant threshold and therefore 'not insignificant', further assessment of that gas is required using Tier 2 (GasSim2.5) or Tier 3 (AERMOD) modelling software tools.

5.1.2.1 Screening Process for Long-Term Emissions

Using the long-term process contribution, the following formulae have been used to determine which trace gases should be modelled using the Tier 2 module within GasSim2.5:

Emissions are considered insignificant if:

- PC long term ≤ 1% ES long-term

Detailed Tier 2 modelling is required if:

- $PC_{long\text{-}term}$ + Background > 70% $ES_{long\text{-}term}$

5.1.2.2 Screening Process for Short-Term Emissions

Using the short-term process contribution, the following formulae have been used to determine which trace gases should be modelled using the Tier 2 module within GasSim2.5:

Emissions are considered insignificant if:

- PC short-term ≤ 10% ES short-term

Detailed Tier 2 modelling is required if:

- $PC_{short\text{-}term}$ + (0.2 x Background) > 20% $ES_{short\text{-}term}$

The short-term background has been taken as double the long term (annual) background. This follows Environment Agency practice since this is effectively representing the 95%ile of the background distribution. For gases where no background data were available, the background has been assumed to be zero.

5.1.3 GasSim Screening Results

When considering the screening results, an emission has been deemed to require detailed assessment against an ES, either short-term or long-term, if GasSim2.5 reports the following:

- Is the emission rate insignificant? 'No' and is detailed modelling required? 'Yes'.

If the benchmark is an ADD limit value, it also requires further assessment when the table reports:

- Is the emission rate insignificant? 'Yes (at receptor)' and is detailed modelling required? 'Yes'.

The current Environment Agency policy position is that ADD limits apply everywhere beyond the Site boundary.

The results of the GasSim2.5 screening exercise are presented in **Appendix GRA4**. A summary of the surface emissions which require detailed modelling at Tier 2 are summarised below in **Table GRA9**. Along with the emissions screened as requiring further detailed assessment, odour emissions are also to be assessed in detail as odour is not explicitly assessed at Tier 1.

Table GRA9: Summary of Tier 1 Screening Results

GasSim2 Tier 1 Screening Results	Scenario 1	Scenario 2
Short-Term	CS_2 Fugitive Surface Emissions, various years	CS_2 Fugitive Surface Emissions, various years
	H_2S Fugitive Surface Emissions, various years	H_2S Fugitive Surface Emissions, various years
	SO_2 Combustion Emissions, various years	SO_2 Combustion Emissions, various years
Long-Term	None	None
Emissions Taken Forward for Further Modelling in Tier 2		
Short-Term	CS_2	CS_2
	H_2S	H_2S
	Odour[1]	Odour[1]
	SO_2	SO_2
Long-Term	n/a	n/a

Notes: 1) Although odour was not identified in the Tier 1 screening as requiring further modelling this has been included for completeness

5.2 Tier 2 Atmospheric Dispersion Modelling

5.2.1 Justification for Modelling Approach and Software

GasSim2.5 has been used to undertake Tier 2 atmospheric dispersion modelling of short-term fugitive CS_2 and H_2S emissions as well as combustion SO_2 emissions which were identified to require further detailed modelling through the Tier 1 screening. In addition, Tier 2 atmospheric dispersion modelling for odour emissions was undertaken.

The atmospheric dispersion module within GasSim2.5 is a fully Environment Agency compliant Tier 2 atmospheric dispersion model based on the USEPA's AERMOD. The AERMOD code was developed by the American Meteorological Society (AMS) / Environmental Protection Agency (EPA) Regulatory Model Improvement Committee (AERMIC). The dispersion model utilised within GasSim2.5 is based on the Gaussian air dispersion model algorithms and the modern Planetary Boundary Layer (PBL) similarity theory.

5.2.2 Assessment Methodology

The procedure for atmospheric dispersion modelling and the evaluation of exposure at critical receptors is complex. The assessment protocol is fully described in Defra and Environment Agency Guidance '*Air emissions risk assessment for your environmental permit*' (https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit, last updated May 2021). Detailed modelling of emissions takes into account the existing background environmental air quality (if available) and calculates a Predicted Environmental Concentration (PEC). The PEC is assessed against the Environmental Standard (Section 2.6) or an odour exposure criterion (Section 2.7), which are indicators of the degree of environmental impact that can be considered acceptable for a particular substance to a receptor.

The assessment for combustion emissions for Scenario 1 and 2 has been undertaken for 2036, the predicted year of maximum volume of combusted landfill gas. The assessment of fugitive surface emissions and odour has been undertaken in 2041 for Scenario 1 and in 2049 for Scenario 2, the predicted year of maximum surface emissions in each scenario.

The predicted concentrations of gases have been assessed against the relevant Environmental Standard at the appropriate averaging period. Where a criterion has a number of exceedances that are allowed, results were calculated at the appropriate percentile. For example, the hourly average NO_2 air quality objective states that the standard should be exceeded no more than 18 times per year, so the modelled impact of the 19th highest hour is calculated, which equates to the 99.79%ile of hourly meteorological data.

5.2.3 Meteorology

GasSim2.5 incorporates default datasets which have been produced by the Environment Agency Air Quality Modelling and Assessment Unit (AQMAU). The default dataset for the Northeast Region: Ridings (East) was used, the associated windrose is shown in **Figure GRA3**. Five years of meteorological data were simulated via the GasSim built-in tick-box option.

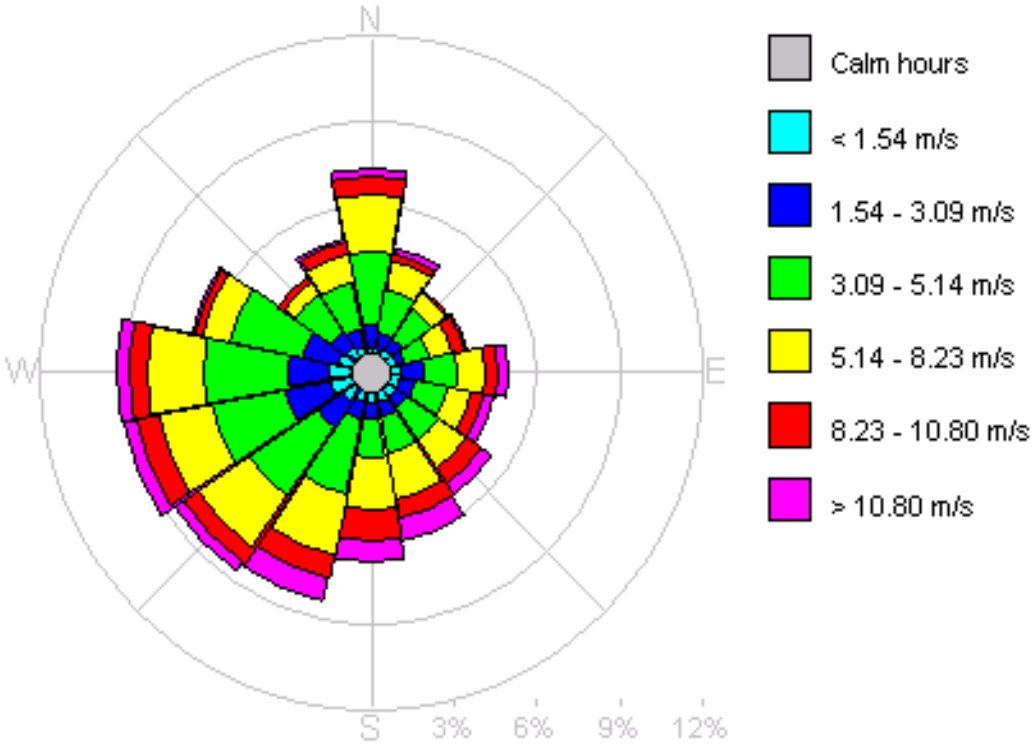

Figure GRA3: Default Windrose for Northeast Region Ridings (East)

Discrete receptors included within the modelling are detailed in **Table GRA10**. The model contains a cartesian receptor grid which originates at grid reference 511292, 446092 and has 73 points along the X axis and 49 points along the Y axis, both with 50 m spacing i.e. a domain of approximately 3.6 km x 2.45 km. Boundary receptors have also been included within the model at 20 m spacing around the Site boundary (see **Figure GRA1**).

Table GRA10: Named Discrete Receptors Used in the Model

Receptor	Receptor No.	X Coordinate (m)	Y Coordinate (m)
Dacre Caravan Park	DR01	512061	447046
Brandesburton	DR02	512067	447402
The Bungalows	DR03	512407	447553
Above Towns Trading Estate	DR04	512633	447336
Fosse Hill Caravan Park	DR05	512850	446500
Bungalows at Watersedge Park	DR06	512867	446876
The Partings	DR07	512876	447930
Fishing Ponds	DR08	512973	447092
Sandsfield Farm	DR09	512990	446365
Public Footpath East Fields	DR10	513028	447798
Residential Property	DR11	513052	446914
Public Footpath Watersedge Park	DR12	513100	447000
Humberside Shooting Ground	DR13	513171	446972
Clay Pigeon Shooting Range	DR14	513263	447041
Westlands Pond	DR15	513542	446590
Catfoss Caravan Storage	DR16	513863	448443
Manor Farm	DR17	514200	447000
Catfoss Grange	DR18	514450	448186
Catfoss Cottage	DR19	514191	447231

5.3 Tier 2 Atmospheric Dispersion Modelling Results

Atmospheric dispersion modelling of the gas plant and surface emissions identified by the Tier 1 screening results as well as odour emissions has been carried out using GasSim2.5. The results are discussed below with regards to the protection of human health. In addition, the impact of combustion emissions from the gas plant on habitats has been considered and is discussed below.

5.4 Scenario 1

Screening indicated that the short-term emissions of SO_2 from the gas plant as well as the short-term emissions of H_2S and CS_2 from the landfill surface required further detailed assessment using the Tier 2 atmospheric dispersion module of GasSim2.5.

The resultant worst short-term PC and PEC at all receptors (including the receptor grids and boundary receptors) have been reported and compared to the relevant air quality assessment criteria as indicated in the following sections.

5.4.1 Short-Term Emissions from Gas Plant in 2036

5.4.1.1 SO_2

Modelling results for short-term SO_2 at discrete receptors are detailed in **Appendix GRA5**. The highest 15 minute SO_2 concentration at any given sensitive human receptor is 28.8 µg/m^3 which is below the ES of 266 µg/m^3. The highest concentration for 1 hour averaging at any given sensitive human receptor is 22.5 µg/m^3 which is below the ES of 350 µg/m^3. The highest concentration for 24 hour averaging at any given sensitive human receptor is 10.7 µg/m^3 which is below the ES of 125 µg/m^3. There are no exceedances anywhere within the model domain for any of the averaging periods.

5.4.2 Short-Term Emissions from Surface in 2041

5.4.2.1 H_2S

Modelling results for short-term H_2S at discrete receptors are detailed in **Appendix GRA5**. The highest short-term H_2S concentration at any given sensitive human receptor is 11.4 µg/m^3 which is below the ES of 150 µg/m^3. There are exceedances of the ES at other locations within the model domain if H_2S is based on the modelled trace gas concentration range.

5.4.2.2 CS_2

Modelling results for short-term CS_2 at discrete receptors are detailed in **Appendix GRA5**. The highest short-term CS_2 concentration at any given sensitive human receptor is 1.3 µg/m^3 which is below the ES of 100 µg/m^3. There are no exceedances of the ES within the model domain if CS_2 is based on model default trace gas component settings.

5.5 Odour

GasSim2.5 has been used to assess the impact of surface emissions from the Site. The results of the odour assessment at discrete receptors are detailed in **Appendix GRA5**. Odour has been assessed at the 95%ile surface emission rate. The results are presented at the 98%ile of hourly averages (Environment Agency, 2011).

The maximum 98%ile PEC at any of the discrete receptors is 0.1 OU_E/m^3 at the clay pigeon shooting range to the south of the landfill. This is below the odour detection range of 1.5 to 3.0 OU_E/m^3. The maximum 98%ile PEC at the installation boundary exceeds 3.0 OUE/m^3.

5.6 Habitats

The screening of nature conservation sites in relation to air quality impacts identified two European sites within 10 km of the landfill: Hornsea Mere is a SPA located approximately 3.8 km to the east of the Site and Catwick and Brandesburton Pits plus Watersedge Park a LWS approximately 400 m south of the Site.

AQTAG014 (Guidance on identifying *'relevance'* for assessment under the Habitats Regulations for PPC installations with combustion processes) provides supplementary criteria based on the size of the combustion process and distance to European sites to identify those requiring detailed assessment. AQTAG014 concludes that installations where the size of the individual combustion process is less than 5 $MW_{thermal}$ do not require an assessment.

The maximum volume of combusted landfill gas in 2036 has modelled to be 527 m^3/h (95%ile). Assuming conservatively a CH_4 content of 70% the resulting maximum CH_4 flow to flare is 368 m^3/h. Assuming further a CH_4 density of 0.73 kg/m^3 and a net calorific CH_4 value of 13.6 kWh/kg (https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020) this translates into a net calorific flaring input of 3.7 $MW_{thermal}$ at the maximum modelled flow rate. The combustion process is therefore not considered 'relevant' for assessment under the EA's procedures which cover the Conservation (Natural Habitats &c.)

Regulations 1994 (Habitats Regulations) and no detailed assessment of the effect of the releases from the Site's flaring is required.

5.7 Scenario 2

5.7.1 Short-Term Emissions from Gas Plant in 2036

5.7.1.1 SO_2

Modelling results for short-term SO_2 at discrete receptors are detailed in **Appendix GRA5**. The highest 15-minute SO_2 concentration at any given sensitive human receptor is 31.2 µg/m^3 which is below the ES of 266 µg/m^3. The highest concentration for 1 hour averaging at any given sensitive human receptor is 25.0 µg/m^3 which is below the ES of 350 µg/m^3. The highest concentration for 24-hour averaging at any given sensitive human receptor is 12.0 µg/m^3 which is below the ES of 125 µg/m^3. There are no exceedances anywhere else within the model domain for any of the averaging periods.

5.7.2 Short-Term Emissions from Surface in 2049

5.7.2.1 H_2S

Modelling results for short-term H_2S at discrete receptors are detailed in **Appendix GRA5**. The highest short-term H_2S concentration at any given sensitive human receptor is 3.5 µg/m^3 which is below the ES of 150 µg/m^3. There are no exceedances of the ES at other locations within the model domain if H_2S is based on model default trace gas component settings.

5.7.2.2 CS_2

Modelling results for short-term CS_2 at discrete receptors are detailed in **Appendix GRA5**. The highest short-term CS_2 concentration at any given sensitive human receptor is 0.5 µg/m^3 which is below the ES of 100 µg/m^3. There are no exceedances of the ES within the model domain if CS_2 is based on model default trace gas component settings.

5.8 Odour

GasSim2.5 has been used to assess the impact of surface emissions from the Site. The results of the odour assessment at discrete receptors are detailed in **Appendix GRA5**. Odour has been assessed at the 95%ile surface emission rate. The results are presented at the 98%ile of hourly averages (Environment Agency, 2011).

The maximum 98%ile PEC at any of the discrete receptors is 0.03 OU_E/m^3 at the Clay Pigeon Shooting Range to the east of the landfill. This is below the odour detection range of 1.5 to 3.0 OU_E/m^3. The maximum 98%ile PEC at the installation boundary does not exceed 3.0 OUE/m^3.

6.0 CONCLUSION

Golder has carried out an assessment of the potential landfill gas production and associated surface and combustion flaring emissions from the Site on behalf of Sandsfield in support of the Site's planning and Environmental Permit variation applications to allow continued and uninterrupted mineral extraction and landfilling operations to extend into the neighbouring field to the east.

GasSim Version 2.05.0008 (GasSim2.5) computer software has been used to model the potential landfill gas generation and emissions from the Site. Using the waste data provided and default waste composition assumptions within GasSim2.5 did not result in sufficient gas generation to scale to the observed flare flow. The GasSim2.5 default waste stream data for England was altered to introduce more carbon into the model increasing the modelled bulk gas source term and hence the amount of gas modelled to be flared so that the latter matches the observed flaring volumes and adequately represent the source term for the gas risk assessment.

Tier 1 screening of the potential emissions highlighted that for both Scenario 1 and Scenario 2 short-term combustion emissions SO_2 and short-term surface emission of H_2S and CS_2 from the landfill surface required further detailed assessment using the Tier 2 atmospheric dispersion module of GasSim2.5. In addition, short-term odour emissions were modelled for completeness.

The atmospheric dispersion modelling results for Scenario 1 and Scenario 2 indicate that the highest short-term concentrations of any of the modelled combustion and surface emissions do not exceed the relevant ESs at any of the identified sensitive receptors.

For odour, the maximum 98%ile PEC at any of the discrete receptors is 0.1 OU_E/m^3 at a clay pigeon shooting ground to the south of the landfill. This is below the odour detection range of 1.5 to 3.0 OUE/m^3. The maximum 98%ile PEC at the installation boundary does not exceed 3.0 OUE/m^3.

An assessment of the global impact of the Site in terms of Global Warming Potential (GWP) and Ozone Depletion Potential (ODP) was made using GasSim2.5. Results illustrated that the GUP reduced the potential impact on global warming by an estimated 54% and on ozone depletion by 60% over the lifetime of the Site.

This Landfill Gas Risk Assessment should be revisited regularly to review the management of landfill gas at the Site. Any future reassessment should consider all up-to-date information available, such as the actual wastes accepted to the Site, changes in the management of the gas plant and gas field, monitoring information obtained, pump tests, and any new technology as appropriate.

7.0 REFERENCES

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Signature Page

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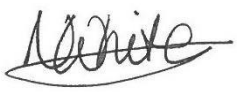

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APPENDIX GRA1

Landfill Characteristics

Table 1: General Landfill Characteristics

Characteristic	Cell 1	Cell 2a	Cell 2b	Cell 3	Cell 4a	Cell 4b	Cell 5	Cell 6
Landfill Area (m^2)[1]	12,882	8,444	8,704	12,045	10,065	7,471	8,846	13,556
Biological methane oxidation in cap[2]	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)
Waste Density (t/m^3)[3]	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)
Waste hydraulic conductivity (m/s)[2]	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)
Leachate head (m)[2]	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)
Waste Moisture Content[3]	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Notes:

1. *Determined by GasSim2.5 from plan of landfill;*
2. *GasSim2.5 default value; and*
3. *Site-specific data.*

Table 2: General Landfill Characteristics – contd.

Characteristic	Cell 7	Cell 8	Cell 9	Cell 10	Cell 11	Cell 12	Cell 13	Cell 14
Landfill Area (m^2)[1]	10,912	10,934	8,006	8,001	11,536	7,585	7,655	12,570
Biological methane oxidation in cap[2]	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)	SINGLE (10.0)
Waste Density (t/m^3)[3]	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)	TRIANGULAR (0.25, 0.5, 1.41)
Waste hydraulic conductivity (m/s)[2]	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)	LOGUNIFORM (1.00E-09, 1.00E-05)
Leachate head (m)[2]	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)	SINGLE (1.0)
Waste Moisture Content[3]	Wet	Wet	Wet	Wet	Wet	Wet	Wet	Wet

Notes:

4. *Determined by GasSim2.5 from plan of landfill;*
5. *GasSim2.5 default value; and*
6. *Site-specific data.*

Table 3: Cap and Liner Characteristics

Characteristic	Cell 1	Cell 2a	Cell 2b	Cell 3	Cell 4a	Cell 4b	Cell 5	Cell 6
Temporary Cap								
Thickness layer (m)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)
Hydraulic conductivity (m/s)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)
Permanent Cap								
Type	Single Liner	Single Liner	Single Liner	Single Liner	Single Liner	Single Liner	Single Liner	Single Liner
Thickness layer (m)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)
Hydraulic conductivity (m/s)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)
Liner								
Type	Clay Liner	Clay Liner	Clay Liner	Clay Liner	Clay Liner	Clay Liner	Clay Liner	Clay Liner
Thickness layer (m)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)
Hydraulic conductivity (m/s)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)

Notes:

1. LOGUNI is an abbreviation of LOGUNIFORM

Table 4: Cap and Liner Characteristics - contd.

Characteristic	Cell 7	Cell 8	Cell 9	Cell 10	Cell 11	Cell 12	Cell 13	Cell 14
Temporary Cap								
Thickness layer (m)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)	UNIFORM (0.4, 0.6)
Hydraulic conductivity (m/s)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)	LOGUNI (1.00E-07, 1.00E-05)
Permanent Cap								
Type	Single Liner	Single Liner	Single Liner	Single Liner	Single Liner	Single Liner	Single Liner	Single Liner
Thickness layer (m)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)	SINGLE (1.00E-03)
Hydraulic conductivity (m/s)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)	LOGUNI (1.00E-14, 1.00E-12)
Liner								
Type	Clay Liner	Clay Liner	Clay Liner	Clay Liner	Clay Liner	Clay Liner	Clay Liner	Clay Liner
Thickness layer (m)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)	UNIFORM (1.0, 1.2)
Hydraulic conductivity (m/s)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)	LOGUNI (1.00E-10, 1.00E-09)

Notes:

2. LOGUNI is an abbreviation of LOGUNIFORM

APPENDIX GRA2

Model Print Out

ProjectDetails

Project Name	Milegate Eastern Extension
Client	Sandsfield
Model	c:\gassim\sandsfield eastern extension scenario 1 2022 run.gss
Model Date	28/01/2022 15:38:29
Comments	
Start Year	2007
Operation Period	28
Simulation Period	150
Iterations	201

Confined Migration Pathway

Waste Composition

Year	Composition
2007	England 2000-2010 Sandsfield 2017
Newspapers	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(48.5)
Hemi-Cellulose (%)	SINGLE(9.0)
Decomposition (%)	SINGLE(35.0)
Magazines	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(42.3)
Hemi-Cellulose (%)	SINGLE(9.4)
Decomposition (%)	SINGLE(46.0)
Other paper	
Domestic	SINGLE(19.8)
Civic Amenity	SINGLE(3.3)
Commercial	SINGLE(28.8)
Industrial	SINGLE(100.0)
Residues from MRF	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(87.4)
Hemi-Cellulose (%)	SINGLE(8.4)
Decomposition (%)	SINGLE(98.0)
Liquid cartons	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Card packaging	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Other card	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Wood	
Domestic	SINGLE(3.0)
Civic Amenity	SINGLE(11.2)
Commercial	SINGLE(3.3)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(21.0)
Hemi-Cellulose (%)	SINGLE(11.0)
Decomposition (%)	SINGLE(75.0)
Textiles	
Domestic	SINGLE(3.3)
Civic Amenity	SINGLE(2.3)
Commercial	SINGLE(1.1)
Water (%)	SINGLE(25.0)
Cellulose (%)	SINGLE(20.0)
Hemi-Cellulose (%)	SINGLE(20.0)
Decomposition (%)	SINGLE(50.0)
Disposable nappies	
Domestic	SINGLE(3.3)
Civic Amenity	SINGLE(2.9)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)
Other misc. combustibles	
Domestic	SINGLE(0.3)
Civic Amenity	SINGLE(4.2)
Commercial	SINGLE(10.4)

Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)
Garden waste	
Domestic	SINGLE(16.0)
Civic Amenity	SINGLE(32.1)
Commercial	SINGLE(9.8)
Water (%)	SINGLE(65.0)
Cellulose (%)	SINGLE(25.7)
Hemi-Cellulose (%)	SINGLE(13.0)
Decomposition (%)	SINGLE(62.0)
Other putrescible	
Domestic	SINGLE(25.6)
Civic Amenity	SINGLE(14.8)
Commercial	SINGLE(10.4)
Water (%)	SINGLE(65.0)
Cellulose (%)	SINGLE(55.4)
Hemi-Cellulose (%)	SINGLE(7.2)
Decomposition (%)	SINGLE(76.0)
10mm fines	
Domestic	SINGLE(4.1)
Civic Amenity	SINGLE(1.2)
Commercial	SINGLE(1.9)
Water (%)	SINGLE(40.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)
Sewage sludge	
Sewage Sludge	SINGLE(100.0)
Chemical Sludge	SINGLE(100.0)
Water (%)	SINGLE(70.0)
Cellulose (%)	SINGLE(14.0)
Hemi-Cellulose (%)	SINGLE(14.0)
Decomposition (%)	SINGLE(75.0)
Composted organic material	
Composted Organic Material	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	UNIFORM(7.47, 9.59)
Hemi-Cellulose (%)	UNIFORM(7.47, 9.59)
Decomposition (%)	SINGLE(57.0)
Incinerator ash	
Commercial	SINGLE(0.2)
Incinerator Ash	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	TRIANGULAR(0.5, 0.7, 1.5)
Hemi-Cellulose (%)	TRIANGULAR(0.5, 0.7, 1.5)
Decomposition (%)	SINGLE(57.0)
Non degradable	
Domestic	SINGLE(24.6)
Civic Amenity	SINGLE(28.0)
Commercial	SINGLE(34.1)
Inert	SINGLE(100.0)
Water (%)	SINGLE(0.0)
Cellulose (%)	SINGLE(0.0)
Hemi-Cellulose (%)	SINGLE(0.0)
Decomposition (%)	SINGLE(0.0)
Calcium Sulphate (%)	
Iron (%)	
2008	England 2000-2010 Sandsfield 2017
2009	England 2000-2010 Sandsfield 2017
2010	England 2010-2013 Sandsfield 2017
Newspapers	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(48.5)
Hemi-Cellulose (%)	SINGLE(9.0)
Decomposition (%)	SINGLE(35.0)
Magazines	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(42.3)
Hemi-Cellulose (%)	SINGLE(9.4)
Decomposition (%)	SINGLE(46.0)
Other paper	
Domestic	SINGLE(14.9)
Civic Amenity	SINGLE(3.3)
Commercial	SINGLE(28.8)
Industrial	SINGLE(100.0)
Residues from MRF	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(87.4)
Hemi-Cellulose (%)	SINGLE(8.4)

Decomposition (%)	SINGLE(98.0)
Liquid cartons	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Card packaging	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Other card	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Wood	
Domestic	SINGLE(2.3)
Civic Amenity	SINGLE(11.2)
Commercial	SINGLE(3.3)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(21.0)
Hemi-Cellulose (%)	SINGLE(11.0)
Decomposition (%)	SINGLE(75.0)
Textiles	
Domestic	SINGLE(2.5)
Civic Amenity	SINGLE(2.3)
Commercial	SINGLE(1.1)
Water (%)	SINGLE(25.0)
Cellulose (%)	SINGLE(20.0)
Hemi-Cellulose (%)	SINGLE(20.0)
Decomposition (%)	SINGLE(50.0)
Disposable nappies	
Domestic	SINGLE(2.5)
Civic Amenity	SINGLE(2.9)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)
Other misc. combustibles	
Domestic	SINGLE(0.2)
Civic Amenity	SINGLE(4.2)
Commercial	SINGLE(10.4)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)
Garden waste	
Domestic	SINGLE(12.0)
Civic Amenity	SINGLE(32.1)
Commercial	SINGLE(9.8)
Water (%)	SINGLE(65.0)
Cellulose (%)	SINGLE(25.7)
Hemi-Cellulose (%)	SINGLE(13.0)
Decomposition (%)	SINGLE(62.0)
Other putrescible	
Domestic	SINGLE(19.2)
Civic Amenity	SINGLE(14.8)
Commercial	SINGLE(10.4)
Water (%)	SINGLE(65.0)
Cellulose (%)	SINGLE(55.4)
Hemi-Cellulose (%)	SINGLE(7.2)
Decomposition (%)	SINGLE(76.0)
10mm fines	
Domestic	SINGLE(3.1)
Civic Amenity	SINGLE(1.2)
Commercial	SINGLE(1.9)
Water (%)	SINGLE(40.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)
Sewage sludge	
Sewage Sludge	SINGLE(100.0)
Chemical Sludge	SINGLE(100.0)
Water (%)	SINGLE(70.0)
Cellulose (%)	SINGLE(14.0)
Hemi-Cellulose (%)	SINGLE(14.0)
Decomposition (%)	SINGLE(75.0)
Composted organic material	
Composted Organic Material	SINGLE(100.0)
Water (%)	SINGLE(30.0)

Cellulose (%)	UNIFORM(7.47, 9.59)
Hemi-Cellulose (%)	UNIFORM(7.47, 9.59)
Decomposition (%)	SINGLE(57.0)
Incinerator ash	
Commercial	SINGLE(0.2)
Incinerator Ash	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	TRIANGULAR(0.5, 0.7, 1.5)
Hemi-Cellulose (%)	TRIANGULAR(0.5, 0.7, 1.5)
Decomposition (%)	SINGLE(57.0)
Non degradable	
Domestic	SINGLE(43.3)
Civic Amenity	SINGLE(28.0)
Commercial	SINGLE(34.1)
Inert	SINGLE(100.0)
Water (%)	SINGLE(0.0)
Cellulose (%)	SINGLE(0.0)
Hemi-Cellulose (%)	SINGLE(0.0)
Decomposition (%)	SINGLE(0.0)
Calcium Sulphate (%)	
Iron (%)	
2011	England 2010-2013 Sandsfield 2017
2012	England 2010-2013 Sandsfield 2017
2013	England 2013-2020 Sandsfield 2017
Newspapers	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(48.5)
Hemi-Cellulose (%)	SINGLE(9.0)
Decomposition (%)	SINGLE(35.0)
Magazines	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(42.3)
Hemi-Cellulose (%)	SINGLE(9.4)
Decomposition (%)	SINGLE(46.0)
Other paper	
Domestic	SINGLE(9.9)
Civic Amenity	SINGLE(3.3)
Commercial	SINGLE(28.8)
Industrial	SINGLE(100.0)
Residues from MRF	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(87.4)
Hemi-Cellulose (%)	SINGLE(8.4)
Decomposition (%)	SINGLE(98.0)
Liquid cartons	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Card packaging	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Other card	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)
Wood	
Domestic	SINGLE(1.5)
Civic Amenity	SINGLE(11.2)
Commercial	SINGLE(3.3)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(21.0)
Hemi-Cellulose (%)	SINGLE(11.0)
Decomposition (%)	SINGLE(75.0)
Textiles	
Domestic	SINGLE(1.7)
Civic Amenity	SINGLE(2.3)
Commercial	SINGLE(1.1)
Water (%)	SINGLE(25.0)
Cellulose (%)	SINGLE(20.0)
Hemi-Cellulose (%)	SINGLE(20.0)
Decomposition (%)	SINGLE(50.0)
Disposable nappies	
Domestic	SINGLE(1.7)
Civic Amenity	SINGLE(2.9)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)

Decomposition (%)	SINGLE(50.0)
Other misc. combustibles	
Domestic	SINGLE(0.2)
Civic Amenity	SINGLE(4.2)
Commercial	SINGLE(10.4)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)
Garden waste	
Domestic	SINGLE(8.0)
Civic Amenity	SINGLE(32.1)
Commercial	SINGLE(9.8)
Water (%)	SINGLE(65.0)
Cellulose (%)	SINGLE(25.7)
Hemi-Cellulose (%)	SINGLE(13.0)
Decomposition (%)	SINGLE(62.0)
Other putrescible	
Domestic	SINGLE(12.8)
Civic Amenity	SINGLE(14.8)
Commercial	SINGLE(10.4)
Water (%)	SINGLE(65.0)
Cellulose (%)	SINGLE(55.4)
Hemi-Cellulose (%)	SINGLE(7.2)
Decomposition (%)	SINGLE(76.0)
10mm fines	
Domestic	SINGLE(2.1)
Civic Amenity	SINGLE(1.2)
Commercial	SINGLE(1.9)
Water (%)	SINGLE(40.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)
Sewage sludge	
Sewage Sludge	SINGLE(100.0)
Chemical Sludge	SINGLE(100.0)
Water (%)	SINGLE(70.0)
Cellulose (%)	SINGLE(14.0)
Hemi-Cellulose (%)	SINGLE(14.0)
Decomposition (%)	SINGLE(75.0)
Composted organic material	
Composted Organic Material	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	UNIFORM(7.47, 9.59)
Hemi-Cellulose (%)	UNIFORM(7.47, 9.59)
Decomposition (%)	SINGLE(57.0)
Incinerator ash	
Commercial	SINGLE(0.2)
Incinerator Ash	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	TRIANGULAR(0.5, 0.7, 1.5)
Hemi-Cellulose (%)	TRIANGULAR(0.5, 0.7, 1.5)
Decomposition (%)	SINGLE(57.0)
Non degradable	
Domestic	SINGLE(62.1)
Civic Amenity	SINGLE(28.0)
Commercial	SINGLE(34.1)
Inert	SINGLE(100.0)
Water (%)	SINGLE(0.0)
Cellulose (%)	SINGLE(0.0)
Hemi-Cellulose (%)	SINGLE(0.0)
Decomposition (%)	SINGLE(0.0)
Calcium Sulphate (%)	
Iron (%)	
2014	England 2013-2020 Sandsfield 2017
2015	England 2013-2020 Sandsfield 2017
2016	England 2013-2020 Sandsfield 2017
2017	England 2013-2020 Sandsfield 2017
2018	England 2013-2020 Sandsfield 2017
2019	England 2013-2020 Sandsfield 2017
2020	England 2020+ Sandsfield 2017
Newspapers	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(48.5)
Hemi-Cellulose (%)	SINGLE(9.0)
Decomposition (%)	SINGLE(35.0)
Magazines	
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(42.3)
Hemi-Cellulose (%)	SINGLE(9.4)
Decomposition (%)	SINGLE(46.0)

Other paper

Domestic	SINGLE(6.9)
Civic Amenity	SINGLE(3.3)
Commercial	SINGLE(28.8)
Industrial	SINGLE(100.0)
Residues from MRF	SINGLE(100.0)
Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(87.4)
Hemi-Cellulose (%)	SINGLE(8.4)
Decomposition (%)	SINGLE(98.0)

Liquid cartons

Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)

Card packaging

Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)

Other card

Water (%)	SINGLE(30.0)
Cellulose (%)	SINGLE(57.3)
Hemi-Cellulose (%)	SINGLE(9.9)
Decomposition (%)	SINGLE(64.0)

Wood

Domestic	SINGLE(1.1)
Civic Amenity	SINGLE(11.2)
Commercial	SINGLE(3.3)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(21.0)
Hemi-Cellulose (%)	SINGLE(11.0)
Decomposition (%)	SINGLE(75.0)

Textiles

Domestic	SINGLE(1.2)
Civic Amenity	SINGLE(2.3)
Commercial	SINGLE(1.1)
Water (%)	SINGLE(25.0)
Cellulose (%)	SINGLE(20.0)
Hemi-Cellulose (%)	SINGLE(20.0)
Decomposition (%)	SINGLE(50.0)

Disposable nappies

Domestic	SINGLE(1.2)
Civic Amenity	SINGLE(2.9)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)

Other misc. combustibles

Domestic	SINGLE(0.1)
Civic Amenity	SINGLE(4.2)
Commercial	SINGLE(10.4)
Water (%)	SINGLE(20.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)

Garden waste

Domestic	SINGLE(5.6)
Civic Amenity	SINGLE(32.1)
Commercial	SINGLE(9.8)
Water (%)	SINGLE(65.0)
Cellulose (%)	SINGLE(25.7)
Hemi-Cellulose (%)	SINGLE(13.0)
Decomposition (%)	SINGLE(62.0)

Other putrescible

Domestic	SINGLE(9.0)
Civic Amenity	SINGLE(14.8)
Commercial	SINGLE(10.4)
Water (%)	SINGLE(65.0)
Cellulose (%)	SINGLE(55.4)
Hemi-Cellulose (%)	SINGLE(7.2)
Decomposition (%)	SINGLE(76.0)

10mm fines

Domestic	SINGLE(1.4)
Civic Amenity	SINGLE(1.2)
Commercial	SINGLE(1.9)
Water (%)	SINGLE(40.0)
Cellulose (%)	SINGLE(25.0)
Hemi-Cellulose (%)	SINGLE(25.0)
Decomposition (%)	SINGLE(50.0)

Sewage sludge

Sewage Sludge		SINGLE(100.0)
Chemical Sludge		SINGLE(100.0)
Water (%)		SINGLE(70.0)
Cellulose (%)		SINGLE(14.0)
Hemi-Cellulose (%)		SINGLE(14.0)
Decomposition (%)		SINGLE(75.0)
Composted organic material		
Composted Organic Material		SINGLE(100.0)
Water (%)		SINGLE(30.0)
Cellulose (%)		UNIFORM(7.47, 9.59)
Hemi-Cellulose (%)		UNIFORM(7.47, 9.59)
Decomposition (%)		SINGLE(57.0)
Incinerator ash		
Commercial		SINGLE(0.2)
Incinerator Ash		SINGLE(100.0)
Water (%)		SINGLE(30.0)
Cellulose (%)		TRIANGULAR(0.5, 0.7, 1.5)
Hemi-Cellulose (%)		TRIANGULAR(0.5, 0.7, 1.5)
Decomposition (%)		SINGLE(57.0)
Non degradable		
Domestic		SINGLE(73.5)
Civic Amenity		SINGLE(28.0)
Commercial		SINGLE(34.1)
Inert		SINGLE(100.0)
Water (%)		SINGLE(0.0)
Cellulose (%)		SINGLE(0.0)
Hemi-Cellulose (%)		SINGLE(0.0)
Decomposition (%)		SINGLE(0.0)
Calcium Sulphate (%)		
Iron (%)		
2021		England 2020+ Sandsfield 2017
2022		England 2020+ Sandsfield 2017
2023		England 2020+ Sandsfield 2017
2024		England 2020+ Sandsfield 2017
2025		England 2020+ Sandsfield 2017
2026		England 2020+ Sandsfield 2017
2027		England 2020+ Sandsfield 2017
2028		England 2020+ Sandsfield 2017
2029		England 2020+ Sandsfield 2017
2030		England 2020+ Sandsfield 2017
2031		England 2020+ Sandsfield 2017
2032		England 2020+ Sandsfield 2017
2033		England 2020+ Sandsfield 2017
2034		England 2020+ Sandsfield 2017
Justification:	[Changed]	Site Specific

Trace Gases

No Combustion Products Selected

Cell 1

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year	AmountDepositied (t)
2007	UNIFORM(2.88E+04, 3.20E+04)
2008	UNIFORM(7.88E+04, 8.75E+04)
2009	UNIFORM(5.77E+03, 6.41E+03)
Justification: [Changed]	Site Specific

Waste Breakdown

2007		
Domestic		UNIFORM(27.0, 47.0)
Industrial		UNIFORM(17.0, 37.0)
Inert		UNIFORM(25.0, 45.0)
Sewage Sludge		SINGLE(1.0)
2008		
Domestic		UNIFORM(4.0, 24.0)
Industrial		UNIFORM(1.0, 21.0)
Inert		UNIFORM(65.0, 85.0)
2009		
Domestic		UNIFORM(23.0, 43.0)
Industrial		UNIFORM(20.0, 40.0)
Inert		UNIFORM(27.0, 47.0)
Justification:	[Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)

1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)	LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone	LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid	SINGLE(0.0)
Odour Units (Predicted)	TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane	LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)	LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)	SINGLE(0.0)
Phenol	SINGLE(0.0)
PM10s	SINGLE(0.0)
Propane	LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol	LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S	LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S	LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene	LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene	LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)	LOGTRIANGULAR(14.7, 79.5, 850.0)
Total fluoride (reported as HF)	LOGTRIANGULAR(5.6, 251.2, 735.0)

Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Site Specific
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Default]	Default Value
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		9
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Cell 3

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2009		UNIFORM(1.56E+04, 1.73E+04)
2010		UNIFORM(1.25E+04, 1.38E+04)
2011		UNIFORM(1.57E+04, 1.74E+04)
2012		UNIFORM(1.09E+04, 1.22E+04)
2013		UNIFORM(1.29E+04, 1.43E+04)
2014		UNIFORM(2.15E+03, 2.39E+03)
Justification:	[Changed]	Site Specific

Waste Breakdown

2009		
Domestic		UNIFORM(23.0, 43.0)
Industrial		UNIFORM(20.0, 40.0)
Inert		UNIFORM(27.0, 47.0)
2010		
Domestic		UNIFORM(21.0, 41.0)
Industrial		UNIFORM(23.0, 43.0)
Inert		UNIFORM(25.0, 45.0)
Sewage Sludge		SINGLE(1.0)
2011		
Domestic		UNIFORM(9.0, 29.0)
Industrial		UNIFORM(42.0, 62.0)
Inert		UNIFORM(18.0, 38.0)
Sewage Sludge		SINGLE(1.0)
2012		
Domestic		UNIFORM(10.0, 30.0)
Industrial		UNIFORM(43.0, 63.0)
Inert		UNIFORM(14.0, 34.0)
Sewage Sludge		SINGLE(2.0)

2013

Domestic	UNIFORM(9.0, 29.0)
Industrial	UNIFORM(47.0, 67.0)
Inert	UNIFORM(13.0, 33.0)

2014

Domestic	UNIFORM(8.0, 28.0)
Industrial	UNIFORM(17.0, 37.0)
Inert	UNIFORM(45.0, 65.0)

Justification: [Default] Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)	LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone	LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid	SINGLE(0.0)
Odour Units (Predicted)	TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	LOGTRIANGULAR(0.006, 0.05, 2.7)

Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		LOGTRIANGULAR(14.7, 79.5, 850.0)
Total fluoride (reported as HF)		LOGTRIANGULAR(5.6, 251.2, 735.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Site Specific
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Default]	Default Value
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		12
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Cell 5

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2013		UNIFORM(2.70E+03, 3.00E+03)
2014		UNIFORM(2.36E+04, 2.62E+04)
2015		UNIFORM(8.74E+03, 9.71E+03)
Justification:	[Changed]	Site Specific

Waste Breakdown

2013		
Domestic		UNIFORM(9.0, 29.0)
Industrial		UNIFORM(47.0, 67.0)
Inert		UNIFORM(13.0, 33.0)
2014		
Domestic		UNIFORM(8.0, 28.0)

Industrial		UNIFORM(17.0, 37.0)
Inert		UNIFORM(45.0, 65.0)
2015		
Domestic		UNIFORM(2.0, 22.0)
Industrial		UNIFORM(21.0, 41.0)
Inert		UNIFORM(47.0, 67.0)
Sewage Sludge		SINGLE(1.0)
Justification:	[Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)	LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone	LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid	SINGLE(0.0)
Odour Units (Predicted)	TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane	LOGTRIANGULAR(0.02, 0.3, 105.0)

Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		LOGTRIANGULAR(14.7, 79.5, 850.0)
Total fluoride (reported as HF)		LOGTRIANGULAR(5.6, 251.2, 735.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Site Specific
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Default]	Default Value
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		6.5
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Cell 6

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2018		UNIFORM(1.01E+04, 1.23E+04)
2019		UNIFORM(2.84E+04, 3.47E+04)
2020		UNIFORM(6.14E+03, 9.21E+03)
Justification:	[Changed]	Site Specific

Waste Breakdown

2018

Domestic		UNIFORM(3.51, 4.28)
Commercial		UNIFORM(0.02, 0.03)
Industrial		UNIFORM(13.2, 16.14)
Inert		UNIFORM(58.99, 72.09)
Sewage Sludge		UNIFORM(0.19, 0.23)
Residues from MRF		UNIFORM(12.16, 14.87)

Chemical Sludge	UNIFORM(1.93, 2.36)
2019	
Domestic	UNIFORM(2.61, 3.19)
Commercial	UNIFORM(0.03, 0.04)
Industrial	UNIFORM(18.75, 22.92)
Inert	UNIFORM(49.73, 60.78)
Residues from MRF	UNIFORM(15.55, 19.0)
Chemical Sludge	UNIFORM(3.33, 4.07)
2020	
Domestic	UNIFORM(2.51, 3.76)
Commercial	UNIFORM(0.48, 0.73)
Industrial	UNIFORM(14.5, 21.75)
Inert	UNIFORM(47.96, 71.95)
Residues from MRF	UNIFORM(13.68, 20.53)
Chemical Sludge	UNIFORM(0.86, 1.29)
Justification: [Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)

Methyl ethyl ketone (2-butanone)		LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone		LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid		SINGLE(0.0)
Odour Units (Predicted)		TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		LOGTRIANGULAR(14.7, 79.5, 850.0)
Total fluoride (reported as HF)		LOGTRIANGULAR(5.6, 251.2, 735.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Site Specific
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Default]	Default Value
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)	12.5
Water Table (mAOD)	1
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)

Cell 7

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2015		UNIFORM(2.65E+04, 2.95E+04)
2016		UNIFORM(2.11E+04, 2.34E+04)
Justification:	[Changed]	Site Specific

Waste Breakdown

2015

Domestic	UNIFORM(2.0, 22.0)
Industrial	UNIFORM(21.0, 41.0)
Inert	UNIFORM(47.0, 67.0)
Sewage Sludge	SINGLE(1.0)

2016

Domestic	UNIFORM(0.0, 17.0)
Industrial	UNIFORM(28.0, 48.0)
Inert	UNIFORM(45.0, 65.0)

Justification: [Default] Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)	LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone	LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid	SINGLE(0.0)
Odour Units (Predicted)	TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)

para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		LOGTRIANGULAR(14.7, 79.5, 850.0)
Total fluoride (reported as HF)		LOGTRIANGULAR(5.6, 251.2, 735.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Site Specific
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Default]	Default Value
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)	8.5
Water Table (mAOD)	1
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)

Cell 8

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2016		UNIFORM(5.60E+03, 6.84E+03)
2017		UNIFORM(1.85E+04, 2.26E+04)
2018		UNIFORM(2.83E+04, 3.45E+04)
2019		UNIFORM(935.0, 1143.0)
Justification:	[Changed]	Site Specific

Waste Breakdown

2016

Domestic	UNIFORM(0.0, 17.0)
Industrial	UNIFORM(28.0, 48.0)

Inert	UNIFORM(45.0, 65.0)
2017	
Domestic	UNIFORM(4.97, 6.08)
Commercial	UNIFORM(0.06, 0.07)
Industrial	UNIFORM(16.89, 20.65)
Inert	UNIFORM(54.77, 66.94)
Residues from MRF	UNIFORM(10.98, 13.42)
Chemical Sludge	UNIFORM(2.33, 2.85)
2018	
Domestic	UNIFORM(3.51, 4.28)
Commercial	UNIFORM(0.02, 0.03)
Industrial	UNIFORM(13.2, 16.14)
Inert	UNIFORM(58.99, 72.09)
Sewage Sludge	UNIFORM(0.19, 0.23)
Residues from MRF	UNIFORM(12.16, 14.87)
Chemical Sludge	UNIFORM(1.93, 2.36)
2019	
Domestic	UNIFORM(2.61, 3.19)
Commercial	UNIFORM(0.03, 0.04)
Industrial	UNIFORM(18.75, 22.92)
Inert	UNIFORM(49.73, 60.78)
Residues from MRF	UNIFORM(15.55, 19.0)
Chemical Sludge	UNIFORM(3.33, 4.07)
Justification: [Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)

Hydrochlorofluorocarbons (HCFCs) (Total		LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)		SINGLE(0.0)
Hydrogen sulphide		LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene		LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury		LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)		LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)		LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)		LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)		LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone		LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid		SINGLE(0.0)
Odour Units (Predicted)		TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		LOGTRIANGULAR(14.7, 79.5, 850.0)
Total fluoride (reported as HF)		LOGTRIANGULAR(5.6, 251.2, 735.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Site Specific
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Default]	Default Value
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)	12
Water Table (mAOD)	1
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)

Cell 2A

Infiltration	NORMAL(500.0, 50.0)

Justification:	[Changed]	Site Specific

Waste Input

Year	AmountDepositied (t)
2022	UNIFORM(5.26E+03, 7.89E+03)
2023	UNIFORM(2.72E+04, 4.08E+04)
2024	UNIFORM(645.0, 968.0)
Justification: [Changed]	Site Specific

Waste Breakdown

2022	
Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)
2023	
Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)
2024	
Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)
Justification: [Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)

Ethylene		UNIFORM(0.2, 5.8)
Ethylene dibromide		SINGLE(0.0)
Ethylene dichloride		LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)		LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113		LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan		LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons		SINGLE(0.0)
Hexachlorocyclohexane (all isomers)		SINGLE(0.0)
Hexane		LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total		LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)		SINGLE(0.0)
Hydrogen sulphide		LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene		LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury		LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)		LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)		LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)		LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)		LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone		LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid		SINGLE(0.0)
Odour Units (Predicted)		TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		SINGLE(0.0)
Total fluoride (reported as HF)		SINGLE(0.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)

Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)	14.5
Water Table (mAOD)	1
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)

Cell 2B

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year	AmountDepositied (t)
2024	UNIFORM(2.66E+04, 3.99E+04)
2025	UNIFORM(2.05E+04, 3.07E+04)
Justification: [Changed]	Site Specific

Waste Breakdown

2024

Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)

2025

Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)
Justification: [Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)

Ethylbenzene		LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene		UNIFORM(0.2, 5.8)
Ethylene dibromide		SINGLE(0.0)
Ethylene dichloride		LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)		LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113		LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan		LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons		SINGLE(0.0)
Hexachlorocyclohexane (all isomers)		SINGLE(0.0)
Hexane		LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total		LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)		SINGLE(0.0)
Hydrogen sulphide		LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene		LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury		LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)		LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)		LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)		LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)		LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone		LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid		SINGLE(0.0)
Odour Units (Predicted)		TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		SINGLE(0.0)
Total fluoride (reported as HF)		SINGLE(0.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value

Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)	14
Water Table (mAOD)	1
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)

Cell 11

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year	AmountDepositied (t)
2028	UNIFORM(1.29E+03, 1.93E+03)
2029	UNIFORM(2.72E+04, 4.08E+04)
2030	UNIFORM(8.34E+03, 1.25E+04)
Justification: [Changed]	Site Specific

Waste Breakdown

2028	
Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)
2029	
Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)
2030	
Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)
Justification: [Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)

Dichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)		LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide		LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide		LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide		LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane		LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)		LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol		LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate		LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene		LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene		UNIFORM(0.2, 5.8)
Ethylene dibromide		SINGLE(0.0)
Ethylene dichloride		LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)		LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113		LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan		LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons		SINGLE(0.0)
Hexachlorocyclohexane (all isomers)		SINGLE(0.0)
Hexane		LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total		LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)		SINGLE(0.0)
Hydrogen sulphide		LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene		LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury		LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)		LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)		LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)		LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)		LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone		LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid		SINGLE(0.0)
Odour Units (Predicted)		TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		SINGLE(0.0)
Total fluoride (reported as HF)		SINGLE(0.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific

Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		12
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Cell 12

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2030		UNIFORM(1.89E+04, 2.83E+04)
2031		UNIFORM(2.58E+04, 3.87E+04)
Justification:	[Changed]	Site Specific

Waste Breakdown

2030

Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)

2031

Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
Justification:	[Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)

Dichlorodifluoromethane		LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)		LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide		LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide		LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide		LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane		LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)		LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol		LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate		LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene		LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene		UNIFORM(0.2, 5.8)
Ethylene dibromide		SINGLE(0.0)
Ethylene dichloride		LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)		LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113		LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan		LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons		SINGLE(0.0)
Hexachlorocyclohexane (all isomers)		SINGLE(0.0)
Hexane		LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total		LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)		SINGLE(0.0)
Hydrogen sulphide		LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene		LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury		LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)		LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)		LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)		LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)		LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone		LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid		SINGLE(0.0)
Odour Units (Predicted)		TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		SINGLE(0.0)
Total fluoride (reported as HF)		SINGLE(0.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)

Justifications

Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		9.5
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Cell 13

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2031		UNIFORM(1.46E+03, 2.18E+03)
2032		UNIFORM(2.72E+04, 4.08E+04)
2033		UNIFORM(1.19E+04, 1.79E+04)
Justification:	[Changed]	Site Specific

Waste Breakdown

2031

Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)

2032

Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)

2033

Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
Justification:	[Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)

Carbon disulphide		LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)		LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide		LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene		LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane		LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane		LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)		LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane		LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane		LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane		LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)		LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide		LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide		LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide		LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane		LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)		LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol		LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate		LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene		LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene		UNIFORM(0.2, 5.8)
Ethylene dibromide		SINGLE(0.0)
Ethylene dichloride		LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)		LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113		LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan		LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons		SINGLE(0.0)
Hexachlorocyclohexane (all isomers)		SINGLE(0.0)
Hexane		LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total		LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)		SINGLE(0.0)
Hydrogen sulphide		LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene		LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury		LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)		LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)		LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)		LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)		LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone		LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid		SINGLE(0.0)
Odour Units (Predicted)		TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		SINGLE(0.0)
Total fluoride (reported as HF)		SINGLE(0.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific

Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specificed
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)	10
Water Table (mAOD)	1
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)

Cell 14

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2033		UNIFORM(1.53E+04, 2.30E+04)
2034		UNIFORM(2.79E+04, 4.18E+04)
Justification:	[Changed]	Site Specific

Waste Breakdown

2033

Domestic	UNIFORM(3.42, 5.13)
Commercial	UNIFORM(0.11, 0.17)
Industrial	UNIFORM(17.16, 25.75)
Inert	UNIFORM(47.8, 71.7)
Sewage Sludge	UNIFORM(0.09, 0.14)
Residues from MRF	UNIFORM(9.86, 14.79)
Chemical Sludge	UNIFORM(1.55, 2.33)

2034

Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
Justification:	[Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)

Butyric acid		LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide		LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)		LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide		LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene		LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane		LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane		LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)		LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane		LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane		LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane		LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)		LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide		LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide		LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide		LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane		LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)		LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol		LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate		LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene		LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene		UNIFORM(0.2, 5.8)
Ethylene dibromide		SINGLE(0.0)
Ethylene dichloride		LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)		LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113		LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan		LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons		SINGLE(0.0)
Hexachlorocyclohexane (all isomers)		SINGLE(0.0)
Hexane		LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total		LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)		SINGLE(0.0)
Hydrogen sulphide		LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene		LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury		LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)		LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)		LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)		LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)		LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone		LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid		SINGLE(0.0)
Odour Units (Predicted)		TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)		LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)		LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane		LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)		LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)		SINGLE(0.0)
Phenol		SINGLE(0.0)
PM10s		SINGLE(0.0)
Propane		LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol		LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S		LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S		LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene		LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene		LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)		SINGLE(0.0)
Total fluoride (reported as HF)		SINGLE(0.0)
Trichlorobenzene (all isomers)		LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)		LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane		LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)

Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		9
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Cell 9

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2025		UNIFORM(6.77E+03, 1.02E+04)
2026		UNIFORM(2.72E+04, 4.08E+04)
2027		UNIFORM(1.05E+04, 1.58E+04)
Justification:	[Changed]	Site Specific

Waste Breakdown

2025		
Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
2026		
Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
2027		
Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
Justification:	[Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)

2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)	LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone	LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid	SINGLE(0.0)
Odour Units (Predicted)	TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane	LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)	LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)	SINGLE(0.0)
Phenol	SINGLE(0.0)
PM10s	SINGLE(0.0)
Propane	LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol	LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S	LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S	LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene	LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene	LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)	SINGLE(0.0)
Total fluoride (reported as HF)	SINGLE(0.0)
Trichlorobenzene (all isomers)	LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)	LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane	LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)	LOGTRIANGULAR(1.1, 31.0, 730.0)

Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		11
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Cell 10

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2027		UNIFORM(1.67E+04, 2.51E+04)
2028		UNIFORM(2.59E+04, 3.89E+04)
Justification:	[Changed]	Site Specific

Waste Breakdown

2027

Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)

2028

Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
Justification:	[Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)

2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)	LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone	LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid	SINGLE(0.0)
Odour Units (Predicted)	TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane	LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)	LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)	SINGLE(0.0)
Phenol	SINGLE(0.0)
PM10s	SINGLE(0.0)
Propane	LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol	LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S	LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S	LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene	LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene	LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)	SINGLE(0.0)
Total fluoride (reported as HF)	SINGLE(0.0)
Trichlorobenzene (all isomers)	LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)	LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane	LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)

Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specificd
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		11
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Call 4A

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2020		UNIFORM(2.11E+04, 3.16E+04)
2021		UNIFORM(1.81E+04, 2.71E+04)
Justification:	[Changed]	Site Specific

Waste Breakdown

2020

Domestic		UNIFORM(2.51, 3.76)
Commercial		UNIFORM(0.48, 0.73)
Industrial		UNIFORM(14.5, 21.75)
Inert		UNIFORM(47.96, 71.95)
Residues from MRF		UNIFORM(13.68, 20.53)
Chemical Sludge		UNIFORM(0.86, 1.29)

2021

Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
Justification:	[Default]	Default Value

Trace Gases

Source Gases	Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane	LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane	LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane	LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane	LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene	LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane	SINGLE(0.0)
1,2-Dichlorotetrafluoroethane	LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol	LOGUNIFORM(1.00E-30, 3.06E-01)
1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)

2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)	LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone	LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid	SINGLE(0.0)
Odour Units (Predicted)	TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane	LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)	LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)	SINGLE(0.0)
Phenol	SINGLE(0.0)
PM10s	SINGLE(0.0)
Propane	LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol	LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S	LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S	LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene	LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene	LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)	SINGLE(0.0)
Total fluoride (reported as HF)	SINGLE(0.0)
Trichlorobenzene (all isomers)	LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)	LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane	LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)
Trimethylbenzene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)

Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)		11.5
Water Table (mAOD)		1
Geosphere Moisture Content		UNIFORM(10.0, 25.0)
Geosphere Porosity		UNIFORM(30.0, 60.0)

Cell 4B

Infiltration		NORMAL(500.0, 50.0)
Justification:	[Changed]	Site Specific

Waste Input

Year		AmountDepositied (t)
2021		UNIFORM(9.14E+03, 1.37E+04)
2022		UNIFORM(2.20E+04, 3.30E+04)
Justification:	[Changed]	Site Specific

Waste Breakdown

2021		
Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
2022		
Domestic		UNIFORM(3.42, 5.13)
Commercial		UNIFORM(0.11, 0.17)
Industrial		UNIFORM(17.16, 25.75)
Inert		UNIFORM(47.8, 71.7)
Sewage Sludge		UNIFORM(0.09, 0.14)
Residues from MRF		UNIFORM(9.86, 14.79)
Chemical Sludge		UNIFORM(1.55, 2.33)
Justification:	[Default]	Default Value

Trace Gases

Source Gases		Concentration [mg/m3]
1,1,1,2-Tetrafluorochloroethane		LOGTRIANGULAR(0.002, 0.2, 2.0)
1,1,1-Trichlorotrifluoroethane		LOGTRIANGULAR(0.005, 0.4, 8.0)
1,1,2-Trichloroethane		LOGTRIANGULAR(0.004, 1.0, 10.0)
1,1-Dichloroethane		LOGTRIANGULAR(0.02, 0.28, 3.9)
1,1-Dichloroethene		LOGTRIANGULAR(0.03, 2.8, 19.0)
1,1-Dichlorotetrafluoroethane		LOGTRIANGULAR(0.05, 0.25, 6.4)
1,2-Dichloropropane		SINGLE(0.0)
1,2-Dichlorotetrafluoroethane		LOGTRIANGULAR(0.01, 9.8, 300.0)
1-butanethiol		LOGUNIFORM(1.00E-30, 3.06E-01)

1-Chloro-1,1-difluoroethane	LOGTRIANGULAR(0.04, 0.57, 31.0)
2-butoxy ethanol	LOGUNIFORM(1.00E-30, 5.00E-02)
2-Chloro-1,1,1-trifluoroethane	LOGUNIFORM(0.05, 1.5)
2-Propanol	LOGTRIANGULAR(0.005, 2.0, 34.0)
Acetalehyde (ethanal)	LOGUNIFORM(0.075, 2.546)
Acetone	LOGTRIANGULAR(0.005, 0.1, 50.0)
Acrylonitrile	LOGTRIANGULAR(0.02, 0.4, 38.0)
Arsenic	LOGTRIANGULAR(1.00E-04, 7.40E-03, 4.30E-01)
Benzene	LOGTRIANGULAR(3.1, 15.0, 73.0)
Bromodichloromethane	SINGLE(0.0)
Butadiene (modelled as 1,3-Butadiene)	LOGUNIFORM(1.00E-30, 2.00E-02)
Butane	LOGTRIANGULAR(0.19, 1.0, 709.0)
Butene isomers	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.80E+00)
Butyric acid	LOGTRIANGULAR(1.00E-30, 1.00E-01, 1.75E+01)
Carbon disulphide	LOGUNIFORM(0.9, 170.0)
Carbon tetrachloride (tetrachloromethane)	LOGUNIFORM(1.00E-30, 2.00E-02)
Carbonyl sulphide	LOGTRIANGULAR(0.006, 0.2, 4.4)
Chlorobenzene	LOGUNIFORM(0.002, 3000.0)
Chlorodifluoromethane	LOGTRIANGULAR(0.005, 0.1, 9900.0)
Chloroethane	LOGUNIFORM(1.00E-30, 5.30E+00)
Chlorofluorocarbons (CFCs) (Total)	LOGTRIANGULAR(0.06, 102.3, 1230.0)
Chlorofluoromethane	LOGTRIANGULAR(0.008, 0.2, 110.0)
Chloroform (trichloromethane)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 7.00E+01)
Chlorotrifluoromethane	LOGTRIANGULAR(0.1, 0.2, 49.0)
Dichlorodifluoromethane	LOGTRIANGULAR(0.01, 9.0, 790.0)
Dichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 6.02E+02)
Dichloromethane (methylene chloride)	LOGTRIANGULAR(1.00E-03, 2.00E-02, 1.52E+03)
Diethyl disulphide	LOGTRIANGULAR(1.00E-03, 2.00E-02, 2.60E+00)
Dimethyl disulphide	LOGTRIANGULAR(0.03, 0.17, 12.0)
Dimethyl sulphide	LOGTRIANGULAR(0.03, 0.73, 24.3)
Ethane	LOGTRIANGULAR(0.005, 6.25, 200.0)
Ethanethiol (ethyl mercaptan)	LOGUNIFORM(1.00E-30, 1.67E+01)
Ethanol	LOGTRIANGULAR(0.005, 0.2, 810.0)
Ethyl butyrate	LOGUNIFORM(0.41, 42.0)
Ethyl toluene (all isomers)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 8.30E+00)
Ethylbenzene	LOGTRIANGULAR(1.00E-03, 1.00E-03, 8.75E+02)
Ethylene	UNIFORM(0.2, 5.8)
Ethylene dibromide	SINGLE(0.0)
Ethylene dichloride	LOGTRIANGULAR(0.006, 0.01, 1820.0)
Fluorotrichloromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Formaldehyde (methanal)	LOGTRIANGULAR(0.026, 0.068, 0.188)
Freon 113	LOGTRIANGULAR(0.013, 4.8, 125.0)
Furan	LOGTRIANGULAR(0.02, 0.82, 6.2)
Halons	SINGLE(0.0)
Hexachlorocyclohexane (all isomers)	SINGLE(0.0)
Hexane	LOGTRIANGULAR(1.00E-03, 9.60E+00, 4.40E+01)
Hydrochlorofluorocarbons (HCFCs) (Total	LOGTRIANGULAR(0.02, 128.8, 916.2)
Hydrofluorocarbons (HFCs) (Total)	SINGLE(0.0)
Hydrogen sulphide	LOGTRIANGULAR(2.4, 53.0, 4399.0)
Limonene	LOGTRIANGULAR(1.00E-03, 1.00E-01, 2.40E+02)
Mercury	LOGUNIFORM(1.70E-04, 1.33E-03)
Methanethiol (methyl mercaptan)	LOGUNIFORM(1.00E-30, 3.00E-01)
Methyl chloride (chloromethane)	LOGTRIANGULAR(0.006, 0.2, 10.0)
Methyl chloroform (1,1,1-Trichloroethane)	LOGTRIANGULAR(1.00E-03, 1.80E+02, 1.60E+03)
Methyl ethyl ketone (2-butanone)	LOGTRIANGULAR(0.005, 0.005, 73.0)
Methyl isobutyl ketone	LOGTRIANGULAR(0.005, 0.2, 9.9)
Nitric acid	SINGLE(0.0)
Odour Units (Predicted)	TRIANGULAR(5.00E+04, 1.25E+05, 2.50E+05)
PAH (reported as Naphthalene)	LOGTRIANGULAR(1.00E-03, 2.00E-01, 1.70E+01)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	LOGTRIANGULAR(0.006, 0.05, 2.7)
Pentane	LOGTRIANGULAR(0.02, 0.3, 105.0)
Pentene (all isomers)	LOGTRIANGULAR(0.24, 3.5, 12.0)
Perfluorocarbons (PFCs) (Total)	SINGLE(0.0)
Phenol	SINGLE(0.0)
PM10s	SINGLE(0.0)
Propane	LOGTRIANGULAR(1.00E-03, 1.90E+00, 1.29E+01)
Propanethiol	LOGUNIFORM(1.00E-30, 1.39E+00)
Sulphide, total simulations with H2S	LOGTRIANGULAR(1.00E-03, 2.40E+00, 5.58E+03)
Sulphide, total simulations without H2S	LOGTRIANGULAR(5.00E-04, 8.00E-03, 3.50E+00)
t-1,2-Dichloroethene	LOGTRIANGULAR(0.02, 0.24, 2.6)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	LOGUNIFORM(1.00E-03, 5.00E+01)
Tetrachloroethylene (Tetrachloroethene)	LOGTRIANGULAR(1.00E-03, 1.00E-02, 7.70E+03)
Toluene	LOGTRIANGULAR(0.01, 0.1, 1250.0)
Total chloride (reported as HCl)	SINGLE(0.0)
Total fluoride (reported as HF)	SINGLE(0.0)
Trichlorobenzene (all isomers)	LOGTRIANGULAR(0.01, 0.01, 0.13)
Trichloroethylene (trichloroethene)	LOGTRIANGULAR(0.25, 1.65, 88.0)
Trichlorofluoromethane	LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.00E+03)
Trichlorotrifluoroethane	LOGTRIANGULAR(1.00E-03, 4.80E+00, 2.40E+01)

Trimethylbenzene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-02, 1.87E+02)
Vinyl chloride (chloroethene, chloroethylene)		LOGTRIANGULAR(1.1, 31.0, 730.0)
Xylene (all isomers)		LOGTRIANGULAR(1.00E-03, 1.00E-03, 6.18E+04)
Justification:	[Default]	Default Value
VOC Halflife		NORMAL(4.11, 1.56)
Justification:	[Default]	Default Value

Waste Moisture Content

Degradation rate - Filling Phase		Wet
Justification:	[Changed]	Site Specific
Degradation rate - after change		Wet
Justification:	[Changed]	Site Specific
Waste Density		TRIANGULAR(0.25, 0.5, 1.41)
Justification:	[Changed]	Site Specific
Leachate Head		SINGLE(1.0)
Justification:	[Default]	Default Value
Hydraulic Conductivity		LOGUNIFORM(1.00E-09, 1.00E-05)
Justification:	[Default]	Default Value

Engineered Controls

Cap		Single Liner
Cap Thickness		SINGLE(1.00E-03)
Cap Hydraulic Conductivity		LOGUNIFORM(1.00E-14, 1.00E-12)
Justifications		
Cap	[Changed]	Site Specific
Cap Thickness	[Changed]	Site Specific
Cap Hydraulic Conductivity	[Changed]	Site Specific
liner		Single Clay
Liner Thickness		UNIFORM(1.0, 1.2)
Liner Hydraulic Conductivity		LOGUNIFORM(1.00E-10, 1.00E-09)
Justifications		
Liner	[Changed]	Site Specific
Liner Thickness	[Changed]	Site Specific
Liner Hydraulic Conductivit	[Changed]	Site Specific
Justification:	[Default]	Default Value
Methane Oxidation %		SINGLE(10.0)
Justification:	[Default]	Default Value
Land Raise Depth		#UNDEFINED?

Geosphere

Ground Surface (mAOD)	11.5
Water Table (mAOD)	1
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)

Site Characteristics

Proportion to CO2 [%]		SINGLE(43.0)
Justification:	[Changed]	Site Specific
Proportion to CH4 [%]		SINGLE(57.0)
Justification:	[Changed]	Site Specific

Cellulose Decay Rates

		Slow	Moderate	Fast
Dry		SINGLE(0.013)	SINGLE(0.046)	SINGLE(0.076)
Average		SINGLE(0.046)	SINGLE(0.076)	SINGLE(0.116)
Wet		SINGLE(0.076)	SINGLE(0.116)	SINGLE(0.694)
Saturated		SINGLE(0.013)	SINGLE(0.046)	SINGLE(0.076)
User Defined 1		SINGLE(0.046)	UNIFORM(0.046, 0.076)	UNIFORM(0.076, 0.116)
User Defined 2		UNIFORM(0.046, 0.076)	UNIFORM(0.076, 0.116)	UNIFORM(0.116, 0.694)
Justification:	[Default]	Default Value		

Gas Plant

Scania SGI-13 190kW		Spark Ignition Engine	
January 2023 to December 2100		44 to 93	Downtime [%]: UNIFORM(8.0, 12.0)
Justification:	[Changed]	Site Specific	
Destruction Efficiency CH4	[Changed]	Site Specific	
Destruction Efficiency H2	[Changed]	Site Specific	
Properties	[Changed]	Site Specific	
Scania SGI-13 190kW		Spark Ignition Engine	
January 2023 to December 2100		44 to 93	Downtime [%]: UNIFORM(8.0, 12.0)
Justification:	[Changed]	Site Specific	
Destruction Efficiency CH4	[Changed]	Site Specific	
Destruction Efficiency H2	[Changed]	Site Specific	
Properties	[Changed]	Site Specific	
Biogas		Flare	
January 2009 to December 2018		30 to 300	Downtime [%]: UNIFORM(3.0, 5.0)
Justification:	[Changed]	Site Specific	
Destruction Efficiency CH4	[Changed]	Site Specific	
Destruction Efficiency H2	[Changed]	Site Specific	
Properties	[Changed]	Site Specific	
Biogas		Flare	

January 2019 to September 2021		100 to 500	Downtime [%]: UNIFORM(3.0, 5.0)
Justification:	[Changed]	Site Specific	
Destruction Efficiency CH4	[Changed]	Site Specific	
Destruction Efficiency H2	[Changed]	Site Specific	
Properties	[Changed]	Site Specific	
Generic		Flare	
September 2021 to January 2023		200 to 1000	Downtime [%]: UNIFORM(3.0, 5.0)
Justification:	[Changed]	Site Specific	
Destruction Efficiency CH4	[Changed]	Site Specific	
Destruction Efficiency H2	[Changed]	Site Specific	
Properties	[Changed]	Site Specific	
Generic		Flare	
January 2023 to December 2100		200 to 1000	Downtime [%]: UNIFORM(3.0, 5.0)
Justification:	[Changed]	Not Justified	
Destruction Efficiency CH4	[Changed]	Not Justified	
Destruction Efficiency H2	[Changed]	Not Justified	
Properties	[Changed]	Not Justified	
Engine/Flare Order	[Changed]	Site Specific	

Trace Gas Plant

1,1,1,2-Tetrafluorochloroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1,1,1-Trichlorotrifluoroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1,1,2-Trichloroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1,1-Dichloroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1,1-Dichloroethene		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1,1-Dichlorotetrafluoroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1,2-Dichloropropane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1,2-Dichlorotetrafluoroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1-butanethiol		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
1-Chloro-1,1-difluoroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
2-butoxy ethanol		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
2-Chloro-1,1,1-trifluoroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
2-Propanol		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)

Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Acetalehyde (ethanal)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Acetone		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Acrylonitrile		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Arsenic		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Benzene		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Benzo(a)pyrene		
Spark Ignition Engine:	combustion products	LOGUNIFORM(1.10E-12, 9.60E-10)
Dual Fuel Engine:	combustion products	LOGUNIFORM(1.10E-12, 9.60E-10)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	LOGUNIFORM(1.00E-06, 6.00E-04)
Bromodichloromethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Butadiene (modelled as 1,3-Butadiene)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Butane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Butene isomers		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Butyric acid		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Carbon disulphide		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Carbon monoxide		
Spark Ignition Engine:	combustion products	SINGLE(1.40E+03)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	SINGLE(50.0)
Carbon tetrachloride (tetrachloromethane)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Carbonyl sulphide		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Chlorobenzene		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)

Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Chlorodifluoromethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Chloroethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Chlorofluorocarbons (CFCs) (Total)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Chlorofluoromethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Chloroform (trichloromethane)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Chlorotrifluoromethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Dichlorodifluoromethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Dichlorofluoromethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Dichloromethane (methylene chloride)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Diethyl disulphide		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Dimethyl disulphide		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Dimethyl sulphide		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Dioxins and furans (modelled as 2,3,7,8-TCDD)		
Spark Ignition Engine:	combustion products	LOGUNIFORM(7.00E-10, 2.30E-06)
Dual Fuel Engine:	combustion products	LOGUNIFORM(7.00E-10, 2.30E-06)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	LOGTRIANGULAR(9.00E-09, 3.10E-08, 3.60E-07)
Ethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Ethanethiol (ethyl mercaptan)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Ethanol		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)

Flare:	non-combustion products	SINGLE(99.0)
Ethyl butyrate		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Ethyl toluene (all isomers)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Ethylbenzene		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Ethylene		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Ethylene dibromide		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Ethylene dichloride		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Fluorotrichloromethane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Formaldehyde (methanal)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Freon 113		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Furan		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Halons		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Hexachlorocyclohexane (all isomers)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Hexane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Hydrochlorofluorocarbons (HCFCs) (Total)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Hydrofluorocarbons (HFCs) (Total)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Hydrogen sulphide		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Limonene

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Mercury

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Methanethiol (methyl mercaptan)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Methyl chloride (chloromethane)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Methyl chloroform (1,1,1-Trichloroethane)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Methyl ethyl ketone (2-butanone)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Methyl isobutyl ketone

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Nitric acid

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Nitrogen dioxide (NO2)

Spark Ignition Engine:	combustion products	SINGLE(0.0)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	SINGLE(0.0)

Nitrogen monoxide (NO)

Spark Ignition Engine:	combustion products	SINGLE(0.0)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	SINGLE(0.0)

Nitrogen oxides (NOx)

Spark Ignition Engine:	combustion products	SINGLE(512.0)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	SINGLE(150.0)

Odour Units (Predicted)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

PAH (reported as Naphthalene)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Pentane

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Pentene (all isomers)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)

Perfluorocarbons (PFCs) (Total)

Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Phenol		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
PM10s		
Spark Ignition Engine:	combustion products	TRIANGULAR(1.2, 4.6, 12.5)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	UNIFORM(1.0, 10.0)
Propane		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Propanethiol		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Sulphide, total simulations with H2S		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Sulphide, total simulations without H2S		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Sulphur dioxide		
Spark Ignition Engine:	combustion products	SINGLE(40.0)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	UNIFORM(0.0, 482.0)
t-1,2-Dichloroethene		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Tetrachloroethylene (Tetrachloroethene)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Toluene		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)
Dual Fuel Engine:	non-combustion products	SINGLE(99.0)
Other Engine:	non-combustion products	SINGLE(99.0)
Flare:	non-combustion products	SINGLE(99.0)
Total chloride (reported as HCl)		
Spark Ignition Engine:	combustion products	LOGTRIANGULAR(5.00E-04, 1.00E+01, 5.84E+02)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	LOGUNIFORM(0.5, 36.0)
Total fluoride (reported as HF)		
Spark Ignition Engine:	combustion products	LOGTRIANGULAR(2.00E-04, 7.00E+00, 4.50E+01)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	LOGUNIFORM(0.4, 21.0)
Total non-methane volatile organic compounds (NMVOCs)		
Spark Ignition Engine:	combustion products	LOGTRIANGULAR(0.0118, 18.1, 90.0)
Dual Fuel Engine:	combustion products	TRIANGULAR(0.0118, 18.1, 90.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	LOGUNIFORM(1.0, 30.0)
Total volatile organic compounds (VOCs)		
Spark Ignition Engine:	combustion products	SINGLE(1.00E+03)
Dual Fuel Engine:	combustion products	SINGLE(0.0)
Other Engine:	combustion products	SINGLE(0.0)
Flare:	combustion products	SINGLE(10.0)
Trichlorobenzene (all isomers)		
Spark Ignition Engine:	non-combustion products	SINGLE(99.0)

Dual Fuel Engine:		non-combustion products	SINGLE(99.0)
Other Engine:		non-combustion products	SINGLE(99.0)
Flare:		non-combustion products	SINGLE(99.0)
Trichloroethylene (trichloroethene)			
Spark Ignition Engine:		non-combustion products	SINGLE(99.0)
Dual Fuel Engine:		non-combustion products	SINGLE(99.0)
Other Engine:		non-combustion products	SINGLE(99.0)
Flare:		non-combustion products	SINGLE(99.0)
Trichlorofluoromethane			
Spark Ignition Engine:		non-combustion products	SINGLE(99.0)
Dual Fuel Engine:		non-combustion products	SINGLE(99.0)
Other Engine:		non-combustion products	SINGLE(99.0)
Flare:		non-combustion products	SINGLE(99.0)
Trichlorotrifluoroethane			
Spark Ignition Engine:		non-combustion products	SINGLE(99.0)
Dual Fuel Engine:		non-combustion products	SINGLE(99.0)
Other Engine:		non-combustion products	SINGLE(99.0)
Flare:		non-combustion products	SINGLE(99.0)
Trimethylbenzene (all isomers)			
Spark Ignition Engine:		non-combustion products	SINGLE(99.0)
Dual Fuel Engine:		non-combustion products	SINGLE(99.0)
Other Engine:		non-combustion products	SINGLE(99.0)
Flare:		non-combustion products	SINGLE(99.0)
Vinyl chloride (chloroethene, chloroethylene)			
Spark Ignition Engine:		non-combustion products	SINGLE(99.0)
Dual Fuel Engine:		non-combustion products	SINGLE(99.0)
Other Engine:		non-combustion products	SINGLE(99.0)
Flare:		non-combustion products	SINGLE(99.0)
Xylene (all isomers)			
Spark Ignition Engine:		non-combustion products	SINGLE(99.0)
Dual Fuel Engine:		non-combustion products	SINGLE(99.0)
Other Engine:		non-combustion products	SINGLE(99.0)
Flare:		non-combustion products	SINGLE(99.0)
Justification:	[Changed]	Sit Specific	

Global Impact

Bulk Gases

Global Warming Potential		
Carbon Dioxide [t]:		1
Methane [t carbon dioxoide]:		25
Hydrogen [t carbon dioxide]:		0
Justification:	[Default]	Default Value
Ozone Depletion Potential		
Carbon Dioxide [t trichlorofluoromethane]:		0
Methane [t trichlorofluoromethane]:		0
Hydrogen [t trichlorofluoromethane]:		0
Justification:	[Default]	Default Value

Trace Gases

Gas	Global Warming Potential	Ozone Depletion Potential
1,1,1,2-Tetrafluorochloroethane	609	0.02
1,1,1-Trichlorotrifluoroethane	6130	1
1,1,2-Trichloroethane	0	0
1,1-Dichloroethane	0	0
1,1-Dichloroethene	0	0
1,1-Dichlorotetrafluoroethane	10000	0.94
1,2-Dichloropropane	0	0
1,2-Dichlorotetrafluoroethane	0	0
1-butanethiol	0	0
1-Chloro-1,1-difluoroethane	2310	0.07
2-butoxy ethanol	0	0
2-Chloro-1,1,1-trifluoroethane	0	0
2-Propanol	0	0
Acetalehyde (ethanal)	1.3	0
Acetone	0.5	0
Acrylonitrile	0	0
Arsenic	0	0
Benzene	0	0
Benzo(a)pyrene	0	0
Bromodichloromethane	1300	1890
Butadiene (modelled as 1,3-Butadiene)	0	0
Butane	4	0
Butene isomers	0	0
Butyric acid	0	0
Carbon disulphide	0	0
Carbon monoxide	0	0
Carbon tetrachloride (tetrachloromethane)	1400	0.73
Carbonyl sulphide	0	0
Chlorobenzene	0	0
Chlorodifluoromethane	1810	0.05
Chloroethane	0	0
Chlorofluorocarbons (CFCs) (Total)	0	0

Chlorofluoromethane	0	0
Chloroform (trichloromethane)	30	0
Chlorotrifluoromethane	14400	0
Dichlorodifluoromethane	10900	1
Dichlorofluoromethane	210	0
Dichloromethane (methylene chloride)	9	0
Diethyl disulphide	0	0
Dimethyl disulphide	0	0
Dimethyl sulphide	0	0
Dioxins and furans (modelled as 2,3,7,8-TCDD)	0	0
Ethane	5.5	0
Ethanethiol (ethyl mercaptan)	0	0
Ethanol	0	0
Ethyl butyrate	0	0
Ethyl toluene (all isomers)	0	0
Ethylbenzene	0	0
Ethylene	3.7	0
Ethylene dibromide	0	0
Ethylene dichloride	0	0
Fluorotrichloromethane	4750	1
Formaldehyde (methanal)	0	0
Freon 113	6130	1
Furan	0	0
Halons	0	0
Hexachlorocyclohexane (all isomers)	0	0
Hexane	0	0
Hydrochlorofluorocarbons (HCFCs) (Total	0	0
Hydrofluorocarbons (HFCs) (Total)	0	0
Hydrogen sulphide	0	0
Limonene	0	0
Mercury	0	0
Methanethiol (methyl mercaptan)	0	0
Methyl chloride (chloromethane)	146	0
Methyl chloroform (1,1,1-Trichloroethane)	0	0
Methyl ethyl ketone (2-butanone)	0	0
Methyl isobutyl ketone	0	0
Nitric acid	0	0
Nitrogen dioxide (NO2)	0	0
Nitrogen monoxide (NO)	0	0
Nitrogen oxides (NOx)	0	0
Odour Units (Predicted)	0	0
PAH (reported as Naphthalene)	0	0
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	0	0
Pentane	0	0
Pentene (all isomers)	0	0
Perfluorocarbons (PFCs) (Total)	0	0
Phenol	0	0
PM10s	0	0
Propane	3.3	0
Propanethiol	0	0
Sulphide, total simulations with H2S	0	0
Sulphide, total simulations without H2S	0	0
Sulphur dioxide	0	0
t-1,2-Dichloroethene	0	0
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	0	0
Tetrachloroethylene (Tetrachloroethene)	0	0
Toluene	2.7	0
Total chloride (reported as HCl)	0	0
Total fluoride (reported as HF)	0	0
Total non-methane volatile organic compounds (NMVOCs)	0	0
Total volatile organic compounds (VOCs)	0	0
Trichlorobenzene (all isomers)	0	0
Trichloroethylene (trichloroethene)	0	0
Trichlorofluoromethane	4750	1
Trichlorotrifluoroethane	6130	1
Trimethylbenzene (all isomers)	0	0
Vinyl chloride (chloroethene, chloroethylene)	0	0
Xylene (all isomers)	0	0

Lateral Migration

Bulk Gases

Air Diffusion Coefficients		
CO2 Dispersivity		SINGLE(0.1613)
CH4 Dispersivity		SINGLE(0.2192)
H2 Dispersivity		#UNDEFINED?
Justification:	[Default]	Default Value

Geosphere

Cell	Cell 1
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 3
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 5
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 6
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 7
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 8
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 2A
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 2B
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 11
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 12
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 13
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 14
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 9
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 10
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Call 4A
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Cell	Cell 4B
Geosphere Moisture Content	UNIFORM(10.0, 25.0)
Geosphere Porosity	UNIFORM(30.0, 60.0)
Justification: [Changed]	Site Specific

Trace Gases

Gas	Air Diffusion Coefficient
1,1,1,2-Tetrafluorochloroethane	SINGLE(0.071)
1,1,1-Trichlorotrifluoroethane	#UNDEFINED?
1,1,2-Trichloroethane	#UNDEFINED?
1,1-Dichloroethane	SINGLE(0.0742)
1,1-Dichloroethene	#UNDEFINED?
1,1-Dichlorotetrafluoroethane	#UNDEFINED?
1,2-Dichloropropane	#UNDEFINED?
1,2-Dichlorotetrafluoroethane	#UNDEFINED?
1-butanethiol	#UNDEFINED?
1-Chloro-1,1-difluoroethane	#UNDEFINED?
2-butoxy ethanol	#UNDEFINED?
2-Chloro-1,1,1-trifluoroethane	#UNDEFINED?
2-Propanol	#UNDEFINED?
Acetalehyde (ethanal)	SINGLE(0.1235)
Acetone	#UNDEFINED?
Acrylonitrile	#UNDEFINED?
Arsenic	#UNDEFINED?
Benzene	SINGLE(0.088)
Benzo(a)pyrene	SINGLE(0.043)
Bromodichloromethane	#UNDEFINED?
Butadiene (modelled as 1,3-Butadiene)	SINGLE(0.102)
Butane	#UNDEFINED?
Butene isomers	SINGLE(0.0977)
Butyric acid	#UNDEFINED?
Carbon disulphide	SINGLE(0.108)
Carbon monoxide	SINGLE(0.2013)
Carbon tetrachloride (tetrachloromethane)	SINGLE(0.078)
Carbonyl sulphide	#UNDEFINED?
Chlorobenzene	SINGLE(0.073)

Chlorodifluoromethane	#UNDEFINED?
Chloroethane	SINGLE(0.1085)
Chlorofluorocarbons (CFCs) (Total)	SINGLE(0.0826)
Chlorofluoromethane	#UNDEFINED?
Chloroform (trichloromethane)	SINGLE(0.104)
Chlorotrifluoromethane	#UNDEFINED?
Dichlorodifluoromethane	#UNDEFINED?
Dichlorofluoromethane	#UNDEFINED?
Dichloromethane (methylene chloride)	SINGLE(0.099)
Diethyl disulphide	#UNDEFINED?
Dimethyl disulphide	SINGLE(0.0898)
Dimethyl sulphide	SINGLE(0.0898)
Dioxins and furans (modelled as 2,3,7,8-TCDD)	SINGLE(0.104)
Ethane	#UNDEFINED?
Ethanethiol (ethyl mercaptan)	#UNDEFINED?
Ethanol	#UNDEFINED?
Ethyl butyrate	#UNDEFINED?
Ethyl toluene (all isomers)	SINGLE(0.0796)
Ethylbenzene	#UNDEFINED?
Ethylene	SINGLE(0.0796)
Ethylene dibromide	#UNDEFINED?
Ethylene dichloride	SINGLE(0.104)
Fluorotrichloromethane	#UNDEFINED?
Formaldehyde (methanal)	SINGLE(0.1591)
Freon 113	#UNDEFINED?
Furan	#UNDEFINED?
Halons	SINGLE(0.0754)
Hexachlorocyclohexane (all isomers)	#UNDEFINED?
Hexane	#UNDEFINED?
Hydrochlorofluorocarbons (HCFCs) (Total	SINGLE(0.0967)
Hydrofluorocarbons (HFCs) (Total)	#UNDEFINED?
Hydrogen sulphide	SINGLE(0.1623)
Limonene	#UNDEFINED?
Mercury	#UNDEFINED?
Methanethiol (methyl mercaptan)	#UNDEFINED?
Methyl chloride (chloromethane)	SINGLE(0.1724)
Methyl chloroform (1,1,1-Trichloroethane)	SINGLE(0.078)
Methyl ethyl ketone (2-butanone)	#UNDEFINED?
Methyl isobutyl ketone	#UNDEFINED?
Nitric acid	#UNDEFINED?
Nitrogen dioxide (NO2)	SINGLE(0.2276)
Nitrogen monoxide (NO)	SINGLE(0.2276)
Nitrogen oxides (NOx)	SINGLE(0.2276)
Odour Units (Predicted)	#UNDEFINED?
PAH (reported as Naphthalene)	SINGLE(0.059)
para-Dichlorobenzene (modelled as 1,4-Dichlorobenzene)	SINGLE(0.069)
Pentane	SINGLE(0.1999)
Pentene (all isomers)	SINGLE(0.1999)
Perfluorocarbons (PFCs) (Total)	SINGLE(0.071)
Phenol	#UNDEFINED?
PM10s	#UNDEFINED?
Propane	#UNDEFINED?
Propanethiol	#UNDEFINED?
Sulphide, total simulations with H2S	#UNDEFINED?
Sulphide, total simulations without H2S	#UNDEFINED?
Sulphur dioxide	SINGLE(0.1289)
t-1,2-Dichloroethene	#UNDEFINED?
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)	SINGLE(0.071)
Tetrachloroethylene (Tetrachloroethene)	SINGLE(0.072)
Toluene	SINGLE(0.087)
Total chloride (reported as HCl)	SINGLE(0.1763)
Total fluoride (reported as HF)	SINGLE(0.2081)
Total non-methane volatile organic compounds (NMVOCs)	#UNDEFINED?
Total volatile organic compounds (VOCs)	#UNDEFINED?
Trichlorobenzene (all isomers)	SINGLE(0.03)
Trichloroethylene (trichloroethene)	SINGLE(0.079)
Trichlorofluoromethane	#UNDEFINED?
Trichlorotrifluoroethane	#UNDEFINED?
Trimethylbenzene (all isomers)	SINGLE(0.0619)
Vinyl chloride (chloroethene, chloroethylene)	SINGLE(0.1126)
Xylene (all isomers)	SINGLE(0.0684)
Justification: [Default]	Default Value

APPENDIX GRA3

Model Outputs

Figure 1: Scenario 1 Total Bulk

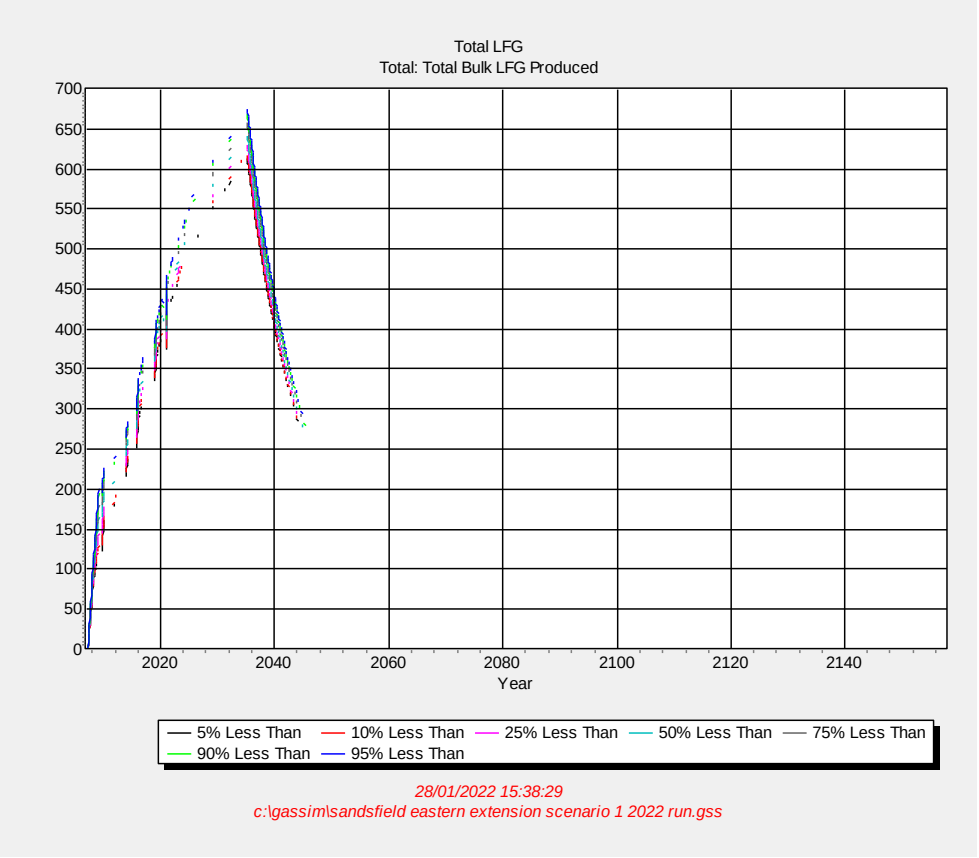


Figure 2: Scenario 1 Total Engine Combusted Landfill Gas

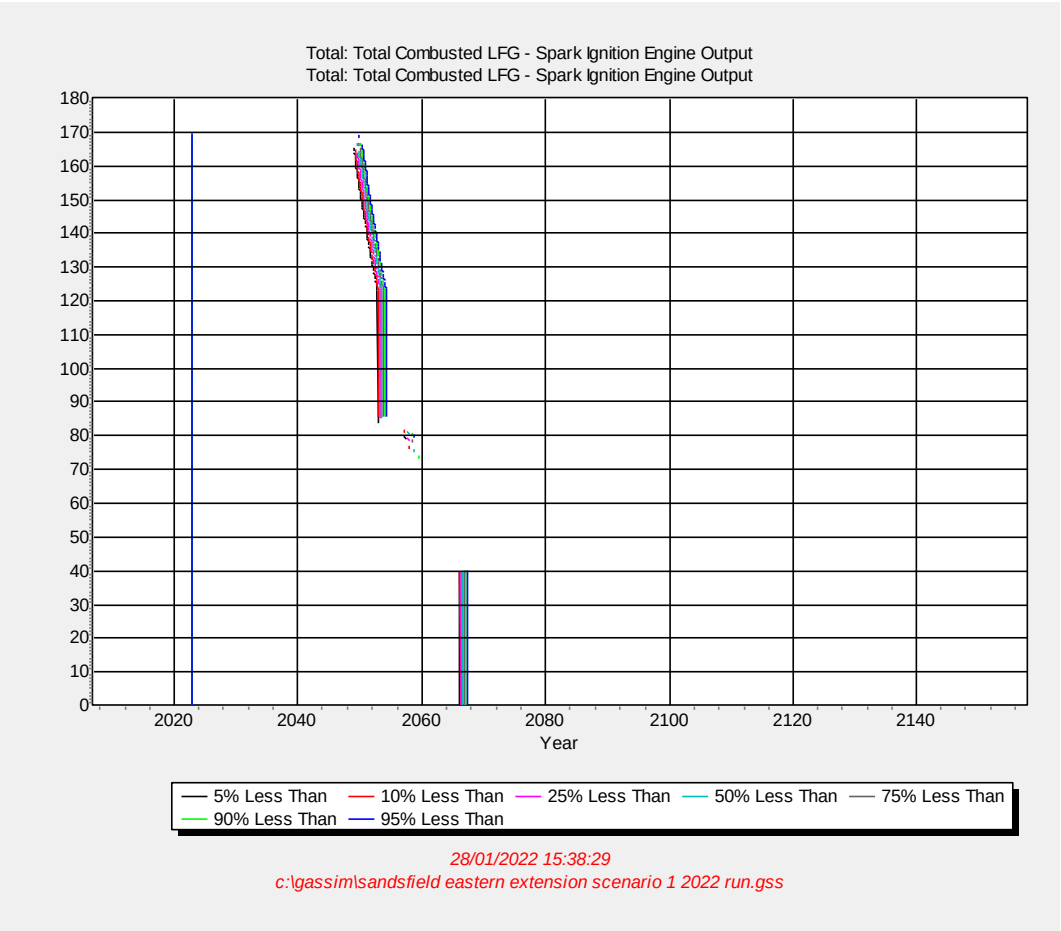


Figure 3: Scenario 1 Total Flare Combusted Landfill Gas

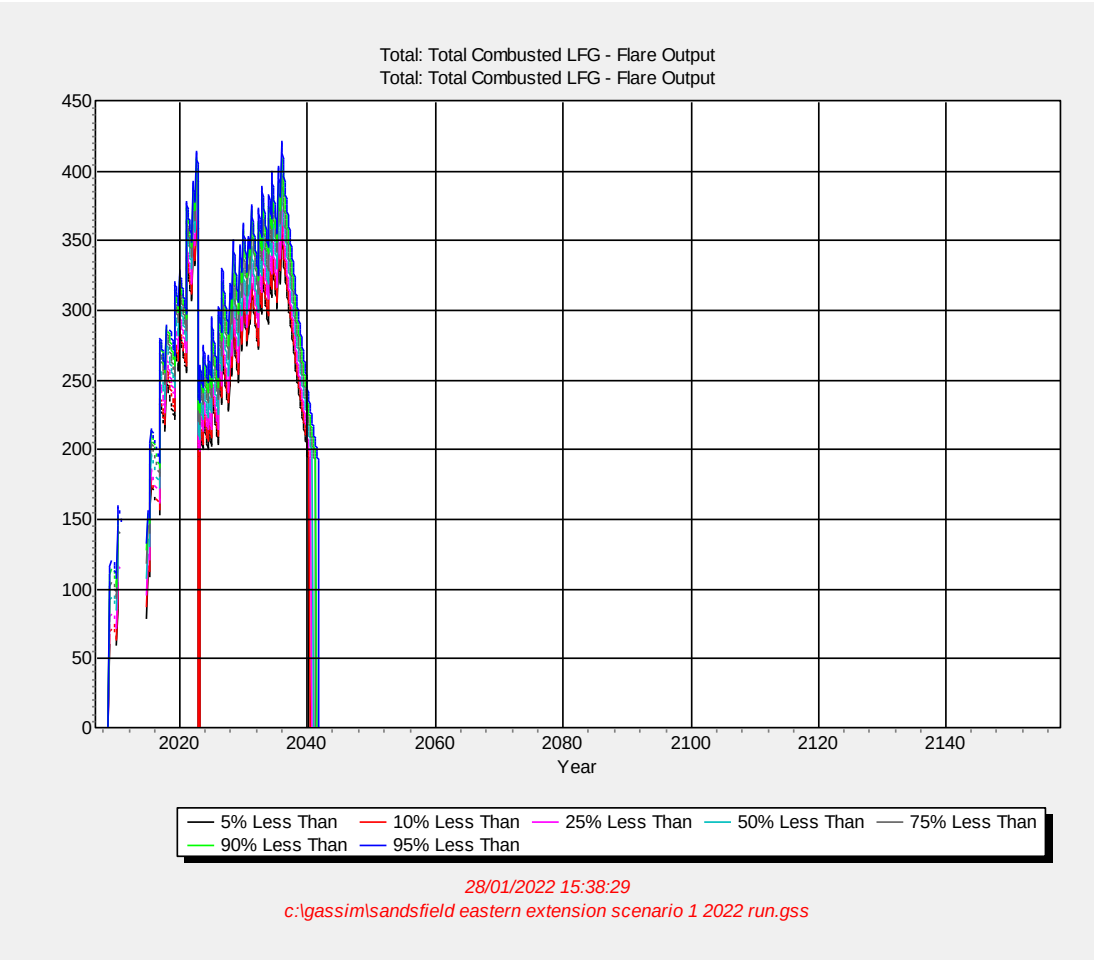


Figure 4: Scenario 1 Total Surface Landfill Gas

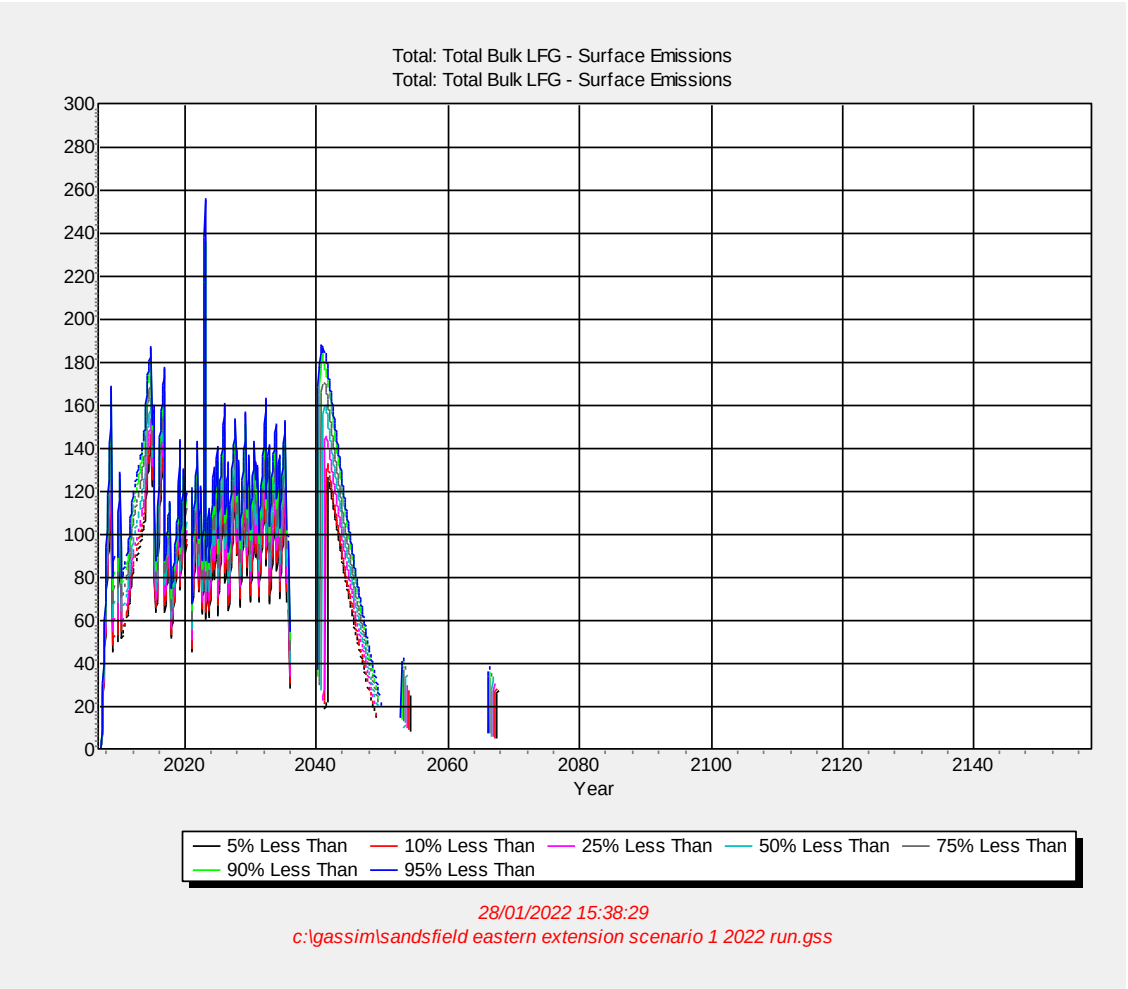


Figure 5: Scenario 2 Total Flare Combusted Landfill Gas

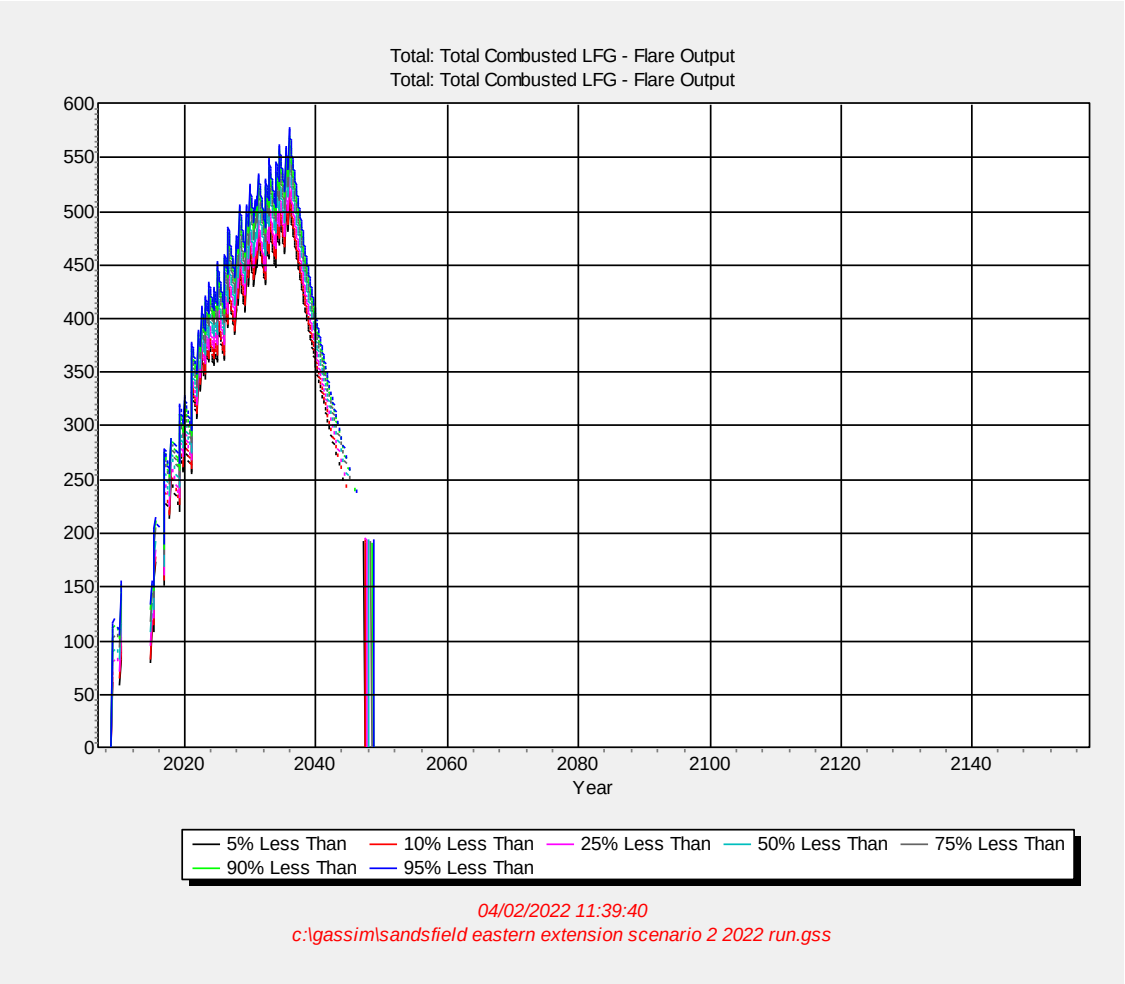
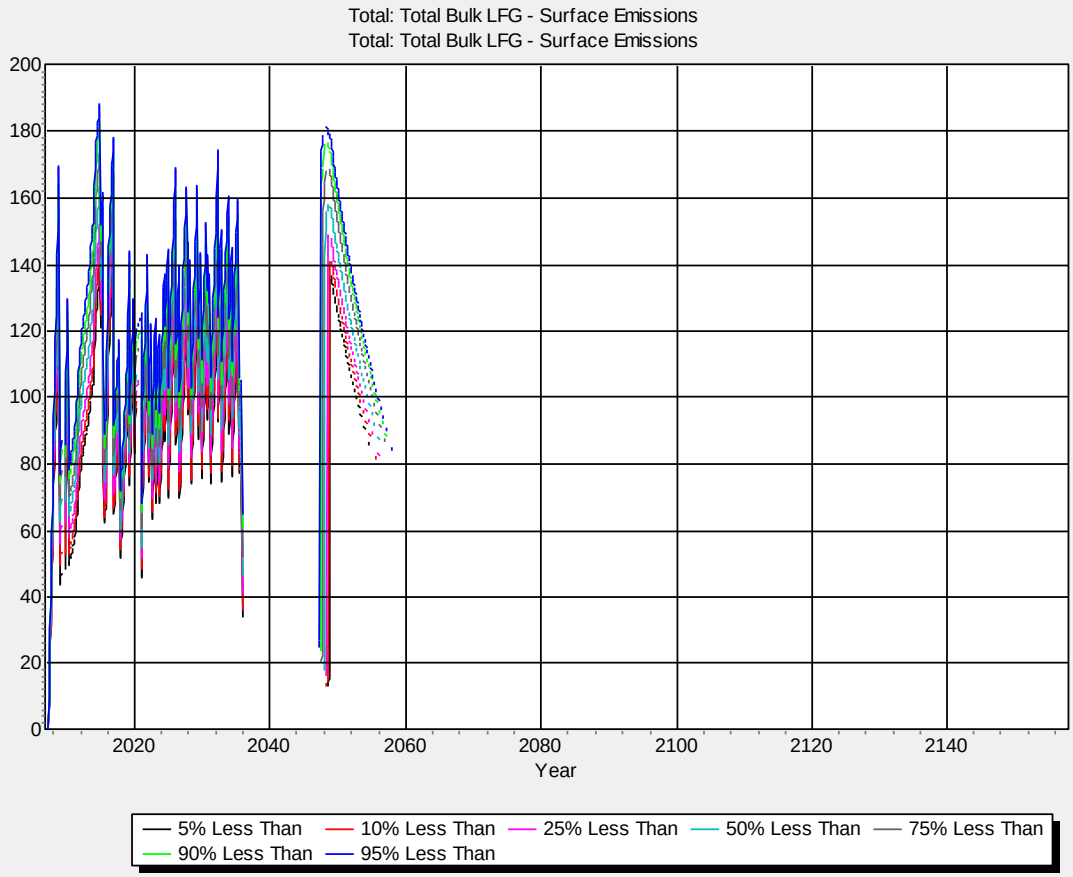


Figure 6: Scenario 2 Total Surface Landfill Gas



APPENDIX GRA4

Tier 1 Screening

Year of Interest: All

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Benzene - surface	2008	195	5	0.1
Benzene - surface	2009	195	5	0.1
Benzene - surface	2010	195	5	0.1
Benzene - surface	2011	195	5	0.1
Benzene - surface	2012	195	5	0.1
Benzene - surface	2013	195	5	0.1
Benzene - surface	2014	195	5	0.1
Benzene - surface	2015	195	5	0.1
Benzene - surface	2016	195	5	0.1
Benzene - surface	2017	195	5	0.1
Benzene - surface	2018	195	5	0.1
Benzene - surface	2019	195	5	0.1
Benzene - surface	2020	195	5	0.1
Benzene - surface	2021	195	5	0.1
Benzene - surface	2022	195	5	0.1
Benzene - surface	2023	195	5	0.1
Benzene - surface	2024	195	5	0.1
Benzene - surface	2025	195	5	0.1
Benzene - surface	2026	195	5	0.1
Benzene - surface	2027	195	5	0.1
Benzene - surface	2028	195	5	0.1
Benzene - surface	2029	195	5	0.1
Benzene - surface	2030	195	5	0.1
Benzene - surface	2031	195	5	0.1
Benzene - surface	2032	195	5	0.1
Benzene - surface	2033	195	5	0.1
Benzene - surface	2034	195	5	0.1
Benzene - surface	2035	195	5	0.1
Benzo(a)pyrene - flare	2021	0	0.00025	0
Benzo(a)pyrene - flare	2022	0	0.00025	0

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Benzo(a)pyrene - flare	2031	0	0.00025	0
Benzo(a)pyrene - flare	2032	0	0.00025	0
Benzo(a)pyrene - flare	2033	0	0.00025	0
Benzo(a)pyrene - flare	2034	0	0.00025	0
Benzo(a)pyrene - flare	2035	0	0.00025	0
Benzo(a)pyrene - flare	2036	0	0.00025	0
Carbon disulphide - surface	2008	100	64	0
Carbon disulphide - surface	2009	100	64	0
Carbon disulphide - surface	2010	100	64	0
Carbon disulphide - surface	2011	100	64	0
Carbon disulphide - surface	2012	100	64	0
Carbon disulphide - surface	2013	100	64	0
Carbon disulphide - surface	2014	100	64	0
Carbon disulphide - surface	2015	100	64	0
Carbon disulphide - surface	2016	100	64	0
Carbon disulphide - surface	2017	100	64	0
Carbon disulphide - surface	2018	100	64	0
Carbon disulphide - surface	2019	100	64	0
Carbon disulphide - surface	2020	100	64	0
Carbon disulphide - surface	2021	100	64	0
Carbon disulphide - surface	2022	100	64	0
Carbon disulphide - surface	2023	100	64	0
Carbon disulphide - surface	2024	100	64	0
Carbon disulphide - surface	2025	100	64	0
Carbon disulphide - surface	2026	100	64	0
Carbon disulphide - surface	2027	100	64	0
Carbon disulphide - surface	2028	100	64	0
Carbon disulphide - surface	2029	100	64	0
Carbon disulphide - surface	2030	100	64	0
Carbon disulphide - surface	2031	100	64	0
Carbon disulphide - surface	2032	100	64	0
Carbon disulphide - surface	2033	100	64	0
Carbon disulphide - surface	2034	100	64	0
Carbon disulphide - surface	2035	100	64	0
Hydrogen sulphide - surface	2007	150	140	0
Hydrogen sulphide - surface	2008	150	140	0
Hydrogen sulphide - surface	2009	150	140	0
Hydrogen sulphide - surface	2010	150	140	0

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Hydrogen sulphide - surface	2011	150	140	0
Hydrogen sulphide - surface	2012	150	140	0
Hydrogen sulphide - surface	2013	150	140	0
Hydrogen sulphide - surface	2014	150	140	0
Hydrogen sulphide - surface	2015	150	140	0
Hydrogen sulphide - surface	2016	150	140	0
Hydrogen sulphide - surface	2017	150	140	0
Hydrogen sulphide - surface	2018	150	140	0
Hydrogen sulphide - surface	2019	150	140	0
Hydrogen sulphide - surface	2020	150	140	0
Hydrogen sulphide - surface	2021	150	140	0
Hydrogen sulphide - surface	2022	150	140	0
Hydrogen sulphide - surface	2023	150	140	0
Hydrogen sulphide - surface	2024	150	140	0
Hydrogen sulphide - surface	2025	150	140	0
Hydrogen sulphide - surface	2026	150	140	0
Hydrogen sulphide - surface	2027	150	140	0
Hydrogen sulphide - surface	2028	150	140	0
Hydrogen sulphide - surface	2029	150	140	0
Hydrogen sulphide - surface	2030	150	140	0
Hydrogen sulphide - surface	2031	150	140	0
Hydrogen sulphide - surface	2032	150	140	0
Hydrogen sulphide - surface	2033	150	140	0
Hydrogen sulphide - surface	2034	150	140	0
Hydrogen sulphide - surface	2035	150	140	0
Hydrogen sulphide - surface	2036	150	140	0
Hydrogen sulphide - surface	2040	150	140	0
Hydrogen sulphide - surface	2041	150	140	0
Hydrogen sulphide - surface	2042	150	140	0
Hydrogen sulphide - surface	2043	150	140	0
Nitrogen oxides (NOx) - flare	2018	200	40	8.2
Nitrogen oxides (NOx) - flare	2019	200	40	8.2
Nitrogen oxides (NOx) - flare	2020	200	40	8.2
Nitrogen oxides (NOx) - flare	2021	200	40	8.2
Nitrogen oxides (NOx) - flare	2022	200	40	8.2
Nitrogen oxides (NOx) - engine	2023	200	40	8.2
Nitrogen oxides (NOx) - engine	2024	200	40	8.2
Nitrogen oxides (NOx) - engine	2025	200	40	8.2

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Nitrogen oxides (NOx) - engine	2026	200	40	8.2
Nitrogen oxides (NOx) - flare	2026	200	40	8.2
Nitrogen oxides (NOx) - engine	2027	200	40	8.2
Nitrogen oxides (NOx) - flare	2027	200	40	8.2
Nitrogen oxides (NOx) - engine	2028	200	40	8.2
Nitrogen oxides (NOx) - flare	2028	200	40	8.2
Nitrogen oxides (NOx) - engine	2029	200	40	8.2
Nitrogen oxides (NOx) - flare	2029	200	40	8.2
Nitrogen oxides (NOx) - engine	2030	200	40	8.2
Nitrogen oxides (NOx) - flare	2030	200	40	8.2
Nitrogen oxides (NOx) - engine	2031	200	40	8.2
Nitrogen oxides (NOx) - flare	2031	200	40	8.2
Nitrogen oxides (NOx) - engine	2032	200	40	8.2
Nitrogen oxides (NOx) - flare	2032	200	40	8.2
Nitrogen oxides (NOx) - engine	2033	200	40	8.2
Nitrogen oxides (NOx) - flare	2033	200	40	8.2
Nitrogen oxides (NOx) - engine	2034	200	40	8.2
Nitrogen oxides (NOx) - flare	2034	200	40	8.2
Nitrogen oxides (NOx) - engine	2035	200	40	8.2
Nitrogen oxides (NOx) - flare	2035	200	40	8.2
Nitrogen oxides (NOx) - engine	2036	200	40	8.2
Nitrogen oxides (NOx) - flare	2036	200	40	8.2
Nitrogen oxides (NOx) - engine	2037	200	40	8.2
Nitrogen oxides (NOx) - flare	2037	200	40	8.2
Nitrogen oxides (NOx) - engine	2038	200	40	8.2
Nitrogen oxides (NOx) - flare	2038	200	40	8.2
Nitrogen oxides (NOx) - engine	2039	200	40	8.2
Nitrogen oxides (NOx) - engine	2040	200	40	8.2
Nitrogen oxides (NOx) - engine	2041	200	40	8.2
Nitrogen oxides (NOx) - engine	2042	200	40	8.2
Nitrogen oxides (NOx) - engine	2043	200	40	8.2
Nitrogen oxides (NOx) - engine	2044	200	40	8.2
Nitrogen oxides (NOx) - engine	2045	200	40	8.2
Nitrogen oxides (NOx) - engine	2046	200	40	8.2
Nitrogen oxides (NOx) - engine	2047	200	40	8.2
Nitrogen oxides (NOx) - engine	2048	200	40	8.2
Nitrogen oxides (NOx) - engine	2049	200	40	8.2
Nitrogen oxides (NOx) - engine	2050	200	40	8.2

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Nitrogen oxides (NOx) - engine	2051	200	40	8.2
Nitrogen oxides (NOx) - engine	2052	200	40	8.2
Nitrogen oxides (NOx) - engine	2053	200	40	8.2
Nitrogen oxides (NOx) - engine	2054	200	40	8.2
Nitrogen oxides (NOx) - engine	2055	200	40	8.2
Nitrogen oxides (NOx) - engine	2056	200	40	8.2
Nitrogen oxides (NOx) - engine	2057	200	40	8.2
Nitrogen oxides (NOx) - engine	2058	200	40	8.2
Nitrogen oxides (NOx) - engine	2059	200	40	8.2
Nitrogen oxides (NOx) - engine	2060	200	40	8.2
Nitrogen oxides (NOx) - engine	2061	200	40	8.2
Nitrogen oxides (NOx) - engine	2062	200	40	8.2
Nitrogen oxides (NOx) - engine	2063	200	40	8.2
Nitrogen oxides (NOx) - engine	2064	200	40	8.2
Nitrogen oxides (NOx) - engine	2065	200	40	8.2
Nitrogen oxides (NOx) - engine	2066	200	40	8.2
Sulphur dioxide - flare	2009	350	50	4.06
Sulphur dioxide - flare	2010	350	50	4.06
Sulphur dioxide 15 min - flare	2010	266		4.06
Sulphur dioxide - flare	2011	350	50	4.06
Sulphur dioxide 15 min - flare	2011	266		4.06
Sulphur dioxide 24 hour - flare	2011	125		4.06
Sulphur dioxide - flare	2012	350	50	4.06
Sulphur dioxide 15 min - flare	2012	266		4.06
Sulphur dioxide - flare	2013	350	50	4.06
Sulphur dioxide 15 min - flare	2013	266		4.06
Sulphur dioxide - flare	2014	350	50	4.06
Sulphur dioxide 15 min - flare	2014	266		4.06
Sulphur dioxide - flare	2015	350	50	4.06
Sulphur dioxide 15 min - flare	2015	266		4.06
Sulphur dioxide 24 hour - flare	2015	125		4.06
Sulphur dioxide - flare	2016	350	50	4.06
Sulphur dioxide 15 min - flare	2016	266		4.06
Sulphur dioxide 24 hour - flare	2016	125		4.06
Sulphur dioxide - flare	2017	350	50	4.06
Sulphur dioxide 15 min - flare	2017	266		4.06
Sulphur dioxide 24 hour - flare	2017	125		4.06
Sulphur dioxide - flare	2018	350	50	4.06

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Sulphur dioxide 15 min - flare	2018	266		4.06
Sulphur dioxide 24 hour - flare	2018	125		4.06
Sulphur dioxide - flare	2019	350	50	4.06
Sulphur dioxide 15 min - flare	2019	266		4.06
Sulphur dioxide 24 hour - flare	2019	125		4.06
Sulphur dioxide - flare	2020	350	50	4.06
Sulphur dioxide 15 min - flare	2020	266		4.06
Sulphur dioxide 24 hour - flare	2020	125		4.06
Sulphur dioxide - flare	2021	350	50	4.06
Sulphur dioxide 15 min - flare	2021	266		4.06
Sulphur dioxide 24 hour - flare	2021	125		4.06
Sulphur dioxide - flare	2022	350	50	4.06
Sulphur dioxide 15 min - flare	2022	266		4.06
Sulphur dioxide 24 hour - flare	2022	125		4.06
Sulphur dioxide - flare	2023	350	50	4.06
Sulphur dioxide 15 min - flare	2023	266		4.06
Sulphur dioxide 24 hour - flare	2023	125		4.06
Sulphur dioxide - flare	2024	350	50	4.06
Sulphur dioxide 15 min - flare	2024	266		4.06
Sulphur dioxide 24 hour - flare	2024	125		4.06
Sulphur dioxide - flare	2025	350	50	4.06
Sulphur dioxide 15 min - flare	2025	266		4.06
Sulphur dioxide 24 hour - flare	2025	125		4.06
Sulphur dioxide - flare	2026	350	50	4.06
Sulphur dioxide 15 min - flare	2026	266		4.06
Sulphur dioxide 24 hour - flare	2026	125		4.06
Sulphur dioxide - flare	2027	350	50	4.06
Sulphur dioxide 15 min - flare	2027	266		4.06
Sulphur dioxide 24 hour - flare	2027	125		4.06
Sulphur dioxide - flare	2028	350	50	4.06
Sulphur dioxide 15 min - flare	2028	266		4.06
Sulphur dioxide 24 hour - flare	2028	125		4.06
Sulphur dioxide - flare	2029	350	50	4.06
Sulphur dioxide 15 min - flare	2029	266		4.06
Sulphur dioxide 24 hour - flare	2029	125		4.06
Sulphur dioxide - flare	2030	350	50	4.06
Sulphur dioxide 15 min - flare	2030	266		4.06
Sulphur dioxide 24 hour - flare	2030	125		4.06

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Sulphur dioxide - flare	2031	350	50	4.06
Sulphur dioxide 15 min - flare	2031	266		4.06
Sulphur dioxide 24 hour - flare	2031	125		4.06
Sulphur dioxide - flare	2032	350	50	4.06
Sulphur dioxide 15 min - flare	2032	266		4.06
Sulphur dioxide 24 hour - flare	2032	125		4.06
Sulphur dioxide - flare	2033	350	50	4.06
Sulphur dioxide 15 min - flare	2033	266		4.06
Sulphur dioxide 24 hour - flare	2033	125		4.06
Sulphur dioxide - flare	2034	350	50	4.06
Sulphur dioxide 15 min - flare	2034	266		4.06
Sulphur dioxide 24 hour - flare	2034	125		4.06
Sulphur dioxide - flare	2035	350	50	4.06
Sulphur dioxide 15 min - flare	2035	266		4.06
Sulphur dioxide 24 hour - flare	2035	125		4.06
Sulphur dioxide - flare	2036	350	50	4.06
Sulphur dioxide 15 min - flare	2036	266		4.06
Sulphur dioxide 24 hour - flare	2036	125		4.06
Sulphur dioxide - flare	2037	350	50	4.06
Sulphur dioxide 15 min - flare	2037	266		4.06
Sulphur dioxide 24 hour - flare	2037	125		4.06
Sulphur dioxide - flare	2038	350	50	4.06
Sulphur dioxide 15 min - flare	2038	266		4.06
Sulphur dioxide 24 hour - flare	2038	125		4.06
Sulphur dioxide - flare	2039	350	50	4.06
Sulphur dioxide 15 min - flare	2039	266		4.06
Sulphur dioxide 24 hour - flare	2039	125		4.06
Sulphur dioxide - flare	2040	350	50	4.06
Sulphur dioxide 15 min - flare	2040	266		4.06
Sulphur dioxide 24 hour - flare	2040	125		4.06
Sulphur dioxide - flare	2041	350	50	4.06
Sulphur dioxide 15 min - flare	2041	266		4.06
Sulphur dioxide 24 hour - flare	2041	125		4.06
Total chloride (reported as HCl) - engine	2023	800	20	0
Total chloride (reported as HCl) - engine	2024	800	20	0
Total chloride (reported as HCl) - engine	2025	800	20	0
Total chloride (reported as HCl) - engine	2026	800	20	0
Total chloride (reported as HCl) - engine	2027	800	20	0

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Total chloride (reported as HCl) - engine	2028	800	20	0
Total chloride (reported as HCl) - engine	2029	800	20	0
Total chloride (reported as HCl) - engine	2030	800	20	0
Total chloride (reported as HCl) - engine	2031	800	20	0
Total chloride (reported as HCl) - engine	2032	800	20	0
Total chloride (reported as HCl) - engine	2033	800	20	0
Total chloride (reported as HCl) - engine	2034	800	20	0
Total chloride (reported as HCl) - engine	2035	800	20	0
Total chloride (reported as HCl) - engine	2036	800	20	0
Total chloride (reported as HCl) - engine	2037	800	20	0
Total chloride (reported as HCl) - engine	2038	800	20	0
Total chloride (reported as HCl) - engine	2039	800	20	0
Total chloride (reported as HCl) - engine	2040	800	20	0
Total chloride (reported as HCl) - engine	2041	800	20	0
Total chloride (reported as HCl) - engine	2042	800	20	0
Total chloride (reported as HCl) - engine	2043	800	20	0
Total chloride (reported as HCl) - engine	2044	800	20	0
Total chloride (reported as HCl) - engine	2045	800	20	0
Total chloride (reported as HCl) - engine	2046	800	20	0
Total chloride (reported as HCl) - engine	2047	800	20	0
Total chloride (reported as HCl) - engine	2048	800	20	0
Total chloride (reported as HCl) - engine	2049	800	20	0
Total chloride (reported as HCl) - engine	2050	800	20	0
Total chloride (reported as HCl) - engine	2051	800	20	0
Total chloride (reported as HCl) - engine	2052	800	20	0
Total chloride (reported as HCl) - engine	2053	800	20	0
Total chloride (reported as HCl) - engine	2054	800	20	0
Total chloride (reported as HCl) - engine	2055	800	20	0
Total chloride (reported as HCl) - engine	2056	800	20	0
Total chloride (reported as HCl) - engine	2057	800	20	0
Total chloride (reported as HCl) - engine	2058	800	20	0
Total chloride (reported as HCl) - engine	2059	800	20	0
Total chloride (reported as HCl) - engine	2060	800	20	0
Total chloride (reported as HCl) - engine	2061	800	20	0
Total chloride (reported as HCl) - engine	2062	800	20	0
Total chloride (reported as HCl) - engine	2063	800	20	0
Total chloride (reported as HCl) - engine	2064	800	20	0

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Benzene - surface - 2008	9.78007(14.1421m)	7.48175(97m)	Yes	No	0.201714(14.1421m)	0.104036(97m)	No	No
Benzene - surface - 2009	6.05246(10m)	4.65268(96.2549m)	Yes	No	0.124832(10m)	0.0653414(96.2549m)	No	No
Benzene - surface - 2010	5.05621(10m)	3.88684(96.2549m)	Yes	No	0.104284(10m)	0.054586(96.2549m)	No	No
Benzene - surface - 2011	5.20375(10m)	4.00026(96.2549m)	Yes	No	0.107327(10m)	0.0561789(96.2549m)	No	No
Benzene - surface - 2012	6.72529(10m)	5.16991(96.2549m)	Yes	No	0.138709(10m)	0.0726052(96.2549m)	No	No
Benzene - surface - 2013	7.59285(10m)	6.26879(84.8764m)	Yes	No	0.156602(10m)	0.10033(84.8764m)	No	No
Benzene - surface - 2014	8.91177(10m)	7.35771(84.8764m)	Yes	No	0.183805(10m)	0.117758(84.8764m)	No	No
Benzene - surface - 2015	6.77741(10m)	6.56654(56.2228m)	Yes	No	0.139784(10m)	0.130822(56.2228m)	No	No
Benzene - surface - 2016	8.88596(10m)	8.60948(56.2228m)	Yes	No	0.183273(10m)	0.171523(56.2228m)	No	No
Benzene - surface - 2017	4.78737(10m)	4.63841(56.2228m)	Yes	No	0.0987395(10m)	0.0924089(56.2228m)	No	No
Benzene - surface - 2018	5.79158(5m)	5.61138(56.2228m)	Yes	No	0.119451(5m)	0.111793(56.2228m)	No	No
Benzene - surface - 2019	6.21766(5m)	6.02421(56.2228m)	Yes	No	0.128239(5m)	0.120017(56.2228m)	No	No
Benzene - surface - 2020	7.00474(5m)	6.78679(56.2228m)	Yes	No	0.144473(5m)	0.13521(56.2228m)	No	No
Benzene - surface - 2021	6.81692(5m)	6.60482(56.2228m)	Yes	No	0.140599(5m)	0.131585(56.2228m)	No	No
Benzene - surface - 2022	5.37012(5m)	5.20303(56.2228m)	Yes	No	0.110759(5m)	0.103658(56.2228m)	No	No
Benzene - surface - 2023	5.00071(5m)	4.84512(56.2228m)	Yes	No	0.10314(5m)	0.096527(56.2228m)	No	No
Benzene - surface - 2024	6.4694(5m)	6.26811(56.2228m)	Yes	No	0.133431(5m)	0.124877(56.2228m)	No	No
Benzene - surface - 2025	5.97095(5m)	5.78517(56.2228m)	Yes	No	0.123151(5m)	0.115255(56.2228m)	No	No
Benzene - surface - 2026	5.2549(5m)	5.0914(56.2228m)	Yes	No	0.108382(5m)	0.101434(56.2228m)	No	No
Benzene - surface - 2027	7.67363(5m)	7.43488(56.2228m)	Yes	No	0.158269(5m)	0.148122(56.2228m)	No	No
Benzene - surface - 2028	5.79919(5m)	5.61875(56.2228m)	Yes	No	0.119608(5m)	0.11194(56.2228m)	No	No
Benzene - surface - 2029	6.37461(5m)	6.17628(56.2228m)	Yes	No	0.131476(5m)	0.123047(56.2228m)	No	No
Benzene - surface - 2030	5.98585(5m)	5.7996(56.2228m)	Yes	No	0.123458(5m)	0.115543(56.2228m)	No	No
Benzene - surface - 2031	6.13204(5m)	5.94125(56.2228m)	Yes	No	0.126473(5m)	0.118365(56.2228m)	No	No
Benzene - surface - 2032	7.19149(5m)	6.96774(56.2228m)	Yes	No	0.148325(5m)	0.138815(56.2228m)	No	No
Benzene - surface - 2033	7.32187(5m)	7.09405(56.2228m)	Yes	No	0.151013(5m)	0.141332(56.2228m)	No	No
Benzene - surface - 2034	5.87296(5m)	5.69023(56.2228m)	Yes	No	0.12113(5m)	0.113364(56.2228m)	No	No
Benzene - surface - 2035	5.98186(5m)	5.79574(56.2228m)	Yes	No	0.123376(5m)	0.115466(56.2228m)	No	No
Benzo(a)pyrene - flare - 2021	9.25858e-005(33.541m)	1.54182e-005(258.008m)	No EAL	No EAL	2.72363e-006(33.541m)	1.48237e-006(258.008m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2022	0.000102706(33.541m)	1.71034e-005(258.008m)	No EAL	No EAL	3.02133e-006(33.541m)	1.6444e-006(258.008m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2031	8.83094e-005(10.4403m)	2.04582e-005(205.244m)	No EAL	No EAL	2.59783e-006(10.4403m)	1.69499e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2032	8.76103e-005(10.4403m)	2.02963e-005(205.244m)	No EAL	No EAL	2.57727e-006(10.4403m)	1.68157e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2033	9.1133e-005(10.4403m)	2.11124e-005(205.244m)	No EAL	No EAL	2.6809e-006(10.4403m)	1.74919e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2034	9.55542e-005(10.4403m)	2.21366e-005(205.244m)	No EAL	No EAL	2.81095e-006(10.4403m)	1.83404e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2035	9.41548e-005(10.4403m)	2.18124e-005(205.244m)	No EAL	No EAL	2.76979e-006(10.4403m)	1.80718e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2036	9.47338e-005(10.4403m)	2.19466e-005(205.244m)	No EAL	No EAL	2.78682e-006(10.4403m)	1.8183e-006(205.244m)	Yes (at receptor)	No

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Carbon disulphide - surface - 2008	27.1673(14.1421m)	20.783(97m)	No	Yes	0.560325(14.1421m)	0.288992(97m)	Yes	No
Carbon disulphide - surface - 2009	15.115(10m)	11.6193(96.2549m)	No	No	0.311746(10m)	0.163179(96.2549m)	Yes	No
Carbon disulphide - surface - 2010	14.982(10m)	11.5171(96.2549m)	No	No	0.309005(10m)	0.161744(96.2549m)	Yes	No
Carbon disulphide - surface - 2011	17.3847(10m)	13.3641(96.2549m)	No	No	0.358559(10m)	0.187682(96.2549m)	Yes	No
Carbon disulphide - surface - 2012	21.6452(10m)	16.6392(96.2549m)	No	Yes	0.446432(10m)	0.233678(96.2549m)	Yes	No
Carbon disulphide - surface - 2013	24.9015(10m)	20.5591(84.8764m)	No	Yes	0.513593(10m)	0.329042(84.8764m)	Yes	No
Carbon disulphide - surface - 2014	27.4367(10m)	22.6522(84.8764m)	No	Yes	0.565881(10m)	0.362542(84.8764m)	Yes	No
Carbon disulphide - surface - 2015	17.5099(10m)	16.9651(56.2228m)	No	No	0.361141(10m)	0.337987(56.2228m)	Yes	No
Carbon disulphide - surface - 2016	20.6743(10m)	20.0311(56.2228m)	No	Yes	0.426408(10m)	0.39907(56.2228m)	Yes	No
Carbon disulphide - surface - 2017	11.7621(10m)	11.3961(56.2228m)	No	No	0.242592(10m)	0.227039(56.2228m)	Yes	No
Carbon disulphide - surface - 2018	15.6271(5m)	15.1408(56.2228m)	No	No	0.322308(5m)	0.301644(56.2228m)	Yes	No
Carbon disulphide - surface - 2019	16.3797(5m)	15.8701(56.2228m)	No	No	0.337831(5m)	0.316172(56.2228m)	Yes	No
Carbon disulphide - surface - 2020	24.3187(5m)	23.5621(56.2228m)	No	Yes	0.501574(5m)	0.469416(56.2228m)	Yes	No
Carbon disulphide - surface - 2021	15.7171(5m)	15.2281(56.2228m)	No	No	0.324165(5m)	0.303382(56.2228m)	Yes	No
Carbon disulphide - surface - 2022	12.6339(5m)	12.2408(56.2228m)	No	No	0.260575(5m)	0.243868(56.2228m)	Yes	No
Carbon disulphide - surface - 2023	12.2499(5m)	11.8688(56.2228m)	No	No	0.252654(5m)	0.236456(56.2228m)	Yes	No
Carbon disulphide - surface - 2024	16.4509(5m)	15.939(56.2228m)	No	No	0.3393(5m)	0.317546(56.2228m)	Yes	No
Carbon disulphide - surface - 2025	18.6009(5m)	18.0221(56.2228m)	No	No	0.383643(5m)	0.359046(56.2228m)	Yes	No
Carbon disulphide - surface - 2026	14.6602(5m)	14.2041(56.2228m)	No	No	0.302367(5m)	0.282981(56.2228m)	Yes	No
Carbon disulphide - surface - 2027	22.7194(5m)	22.0126(56.2228m)	No	Yes	0.468589(5m)	0.438546(56.2228m)	Yes	No
Carbon disulphide - surface - 2028	15.1479(5m)	14.6766(56.2228m)	No	No	0.312425(5m)	0.292395(56.2228m)	Yes	No
Carbon disulphide - surface - 2029	16.6459(5m)	16.128(56.2228m)	No	No	0.343322(5m)	0.321311(56.2228m)	Yes	No
Carbon disulphide - surface - 2030	17.6359(5m)	17.0872(56.2228m)	No	No	0.36374(5m)	0.34042(56.2228m)	Yes	No
Carbon disulphide - surface - 2031	15.1441(5m)	14.6729(56.2228m)	No	No	0.312346(5m)	0.292321(56.2228m)	Yes	No
Carbon disulphide - surface - 2032	17.2071(5m)	16.6717(56.2228m)	No	No	0.354896(5m)	0.332142(56.2228m)	Yes	No
Carbon disulphide - surface - 2033	19.0131(5m)	18.4215(56.2228m)	No	No	0.392145(5m)	0.367003(56.2228m)	Yes	No
Carbon disulphide - surface - 2034	15.1392(5m)	14.6682(56.2228m)	No	No	0.312246(5m)	0.292227(56.2228m)	Yes	No
Carbon disulphide - surface - 2035	15.7896(5m)	15.2984(56.2228m)	No	No	0.325661(5m)	0.304782(56.2228m)	Yes	No
Hydrogen sulphide - surface - 2007	47.6745(14.1421m)	36.471(97m)	No	Yes	0.983286(14.1421m)	0.507137(97m)	Yes	No
Hydrogen sulphide - surface - 2008	242.404(14.1421m)	185.439(97m)	No	Yes	4.99959(14.1421m)	2.57858(97m)	No	No
Hydrogen sulphide - surface - 2009	162.106(10m)	124.615(96.2549m)	No	Yes	3.34343(10m)	1.75007(96.2549m)	No	No
Hydrogen sulphide - surface - 2010	116.142(10m)	89.2814(96.2549m)	No	Yes	2.39543(10m)	1.25385(96.2549m)	Yes (at receptor)	No
Hydrogen sulphide - surface - 2011	112.826(10m)	86.7319(96.2549m)	No	Yes	2.32703(10m)	1.21805(96.2549m)	Yes (at receptor)	No
Hydrogen sulphide - surface - 2012	140.563(10m)	108.054(96.2549m)	No	Yes	2.89911(10m)	1.51749(96.2549m)	No	No
Hydrogen sulphide - surface - 2013	156.108(10m)	128.886(84.8764m)	No	Yes	3.21973(10m)	2.06278(84.8764m)	No	No
Hydrogen sulphide - surface - 2014	157.237(10m)	129.818(84.8764m)	No	Yes	3.24301(10m)	2.07769(84.8764m)	No	No

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Hydrogen sulphide - surface - 2015	157.036(10m)	152.15(56.2228m)	No	Yes	3.23886(10m)	3.03121(56.2228m)	No	No
Hydrogen sulphide - surface - 2016	193.726(10m)	187.698(56.2228m)	No	Yes	3.9956(10m)	3.73943(56.2228m)	No	No
Hydrogen sulphide - surface - 2017	119.688(10m)	115.964(56.2228m)	No	Yes	2.46857(10m)	2.3103(56.2228m)	No	No
Hydrogen sulphide - surface - 2018	202.068(5m)	195.781(56.2228m)	No	Yes	4.16766(5m)	3.90045(56.2228m)	No	No
Hydrogen sulphide - surface - 2019	187.32(5m)	181.492(56.2228m)	No	Yes	3.86347(5m)	3.61577(56.2228m)	No	No
Hydrogen sulphide - surface - 2020	172.411(5m)	167.047(56.2228m)	No	Yes	3.55598(5m)	3.32799(56.2228m)	No	No
Hydrogen sulphide - surface - 2021	195.117(5m)	189.046(56.2228m)	No	Yes	4.02429(5m)	3.76628(56.2228m)	No	No
Hydrogen sulphide - surface - 2022	149.65(5m)	144.994(56.2228m)	No	Yes	3.08653(5m)	2.88864(56.2228m)	No	No
Hydrogen sulphide - surface - 2023	140.408(5m)	136.039(56.2228m)	No	Yes	2.89592(5m)	2.71025(56.2228m)	No	No
Hydrogen sulphide - surface - 2024	171.227(5m)	165.899(56.2228m)	No	Yes	3.53155(5m)	3.30513(56.2228m)	No	No
Hydrogen sulphide - surface - 2025	146.093(5m)	141.547(56.2228m)	No	Yes	3.01316(5m)	2.81998(56.2228m)	No	No
Hydrogen sulphide - surface - 2026	146.769(5m)	142.203(56.2228m)	No	Yes	3.02711(5m)	2.83303(56.2228m)	No	No
Hydrogen sulphide - surface - 2027	234.495(5m)	227.199(56.2228m)	No	Yes	4.83646(5m)	4.52638(56.2228m)	No	No
Hydrogen sulphide - surface - 2028	109.058(5m)	105.665(56.2228m)	No	Yes	2.24933(5m)	2.10512(56.2228m)	No	No
Hydrogen sulphide - surface - 2029	135.542(5m)	131.325(56.2228m)	No	Yes	2.79556(5m)	2.61632(56.2228m)	No	No
Hydrogen sulphide - surface - 2030	178.446(5m)	172.894(56.2228m)	No	Yes	3.68046(5m)	3.44449(56.2228m)	No	No
Hydrogen sulphide - surface - 2031	113.974(5m)	110.428(56.2228m)	No	Yes	2.35071(5m)	2.2(56.2228m)	No	No
Hydrogen sulphide - surface - 2032	129.061(5m)	125.045(56.2228m)	No	Yes	2.66188(5m)	2.49122(56.2228m)	No	No
Hydrogen sulphide - surface - 2033	161.131(5m)	156.117(56.2228m)	No	Yes	3.32332(5m)	3.11025(56.2228m)	No	No
Hydrogen sulphide - surface - 2034	119.766(5m)	116.039(56.2228m)	No	Yes	2.47017(5m)	2.3118(56.2228m)	No	No
Hydrogen sulphide - surface - 2035	112.729(5m)	109.222(56.2228m)	No	Yes	2.32504(5m)	2.17597(56.2228m)	No	No
Hydrogen sulphide - surface - 2036	16.8829(5m)	16.3576(56.2228m)	No	No	0.34821(5m)	0.325885(56.2228m)	Yes	No
Hydrogen sulphide - surface - 2040	15.9335(5m)	15.4378(56.2228m)	No	No	0.328629(5m)	0.307559(56.2228m)	Yes	No
Hydrogen sulphide - surface - 2041	29.5453(5m)	28.6261(56.2228m)	No	No	0.609372(5m)	0.570303(56.2228m)	Yes	No
Hydrogen sulphide - surface - 2042	23.0019(5m)	22.2862(56.2228m)	No	No	0.474414(5m)	0.443997(56.2228m)	Yes	No
Hydrogen sulphide - surface - 2043	16.7205(5m)	16.2003(56.2228m)	No	No	0.34486(5m)	0.32275(56.2228m)	Yes	No
Nitrogen oxides (NOx) - flare - 2018	6.81771(10.4403m)	3.29004(100.767m)	Yes	No	0.401118(10.4403m)	0.400039(100.767m)	No	No
Nitrogen oxides (NOx) - flare - 2019	7.10509(33.541m)	1.1832(258.008m)	Yes	No	0.418026(33.541m)	0.227516(258.008m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2020	7.55812(33.541m)	1.25864(258.008m)	Yes	No	0.44468(33.541m)	0.242023(258.008m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2021	8.48502(33.541m)	1.413(258.008m)	Yes	No	0.499214(33.541m)	0.271704(258.008m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2022	9.35843(33.541m)	1.55845(258.008m)	Yes	No	0.550601(33.541m)	0.299672(258.008m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2023	19.4933(7.61577m)	5.69123(197.162m)	Yes	No	2.0383(7.61577m)	1.13916(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2024	19.496(7.61577m)	5.69204(197.162m)	Yes	No	2.03859(7.61577m)	1.13933(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2025	19.497(7.61577m)	5.69233(197.162m)	Yes	No	2.0387(7.61577m)	1.13939(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2026	19.4935(7.61577m)	5.69129(197.162m)	Yes	No	2.03832(7.61577m)	1.13918(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2026	7.10304(10.4403m)	1.64553(205.244m)	Yes	No	0.417906(10.4403m)	0.272668(205.244m)	Yes (at receptor)	No

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Nitrogen oxides (NOx) - engine - 2027	19.4973(7.61577m)	5.6924(197.162m)	Yes	No	2.03872(7.61577m)	1.1394(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2027	7.20976(10.4403m)	1.67025(205.244m)	Yes	No	0.424185(10.4403m)	0.276765(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2028	19.4961(7.61577m)	5.69204(197.162m)	Yes	No	2.03859(7.61577m)	1.13933(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2028	7.87144(10.4403m)	1.82354(205.244m)	Yes	No	0.463114(10.4403m)	0.302165(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2029	19.4953(7.61577m)	5.69183(197.162m)	Yes	No	2.03851(7.61577m)	1.13928(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2029	7.88866(10.4403m)	1.82753(205.244m)	Yes	No	0.464128(10.4403m)	0.302826(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2030	19.4964(7.61577m)	5.69216(197.162m)	Yes	No	2.03863(7.61577m)	1.13935(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2030	8.22774(10.4403m)	1.90608(205.244m)	Yes	No	0.484077(10.4403m)	0.315842(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2031	19.4961(7.61577m)	5.69206(197.162m)	Yes	No	2.0386(7.61577m)	1.13933(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2031	8.52123(10.4403m)	1.97408(205.244m)	Yes	No	0.501344(10.4403m)	0.327109(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2032	19.4956(7.61577m)	5.6919(197.162m)	Yes	No	2.03854(7.61577m)	1.1393(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2032	8.41411(10.4403m)	1.94926(205.244m)	Yes	No	0.495042(10.4403m)	0.322997(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2033	19.4971(7.61577m)	5.69236(197.162m)	Yes	No	2.0387(7.61577m)	1.13939(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2033	8.73405(10.4403m)	2.02338(205.244m)	Yes	No	0.513866(10.4403m)	0.335278(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2034	19.4958(7.61577m)	5.69197(197.162m)	Yes	No	2.03856(7.61577m)	1.13931(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2034	9.14467(10.4403m)	2.1185(205.244m)	Yes	No	0.538024(10.4403m)	0.351041(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2035	19.4956(7.61577m)	5.69192(197.162m)	Yes	No	2.03855(7.61577m)	1.1393(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2035	9.17971(10.4403m)	2.12662(205.244m)	Yes	No	0.540086(10.4403m)	0.352386(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2036	19.4974(7.61577m)	5.69244(197.162m)	Yes	No	2.03873(7.61577m)	1.13941(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2036	9.42664(10.4403m)	2.18383(205.244m)	Yes	No	0.554614(10.4403m)	0.361865(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2037	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2037	8.30032(10.4403m)	1.9229(205.244m)	Yes	No	0.488347(10.4403m)	0.318629(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2038	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - flare - 2038	7.2857(10.4403m)	1.68785(205.244m)	Yes	No	0.428652(10.4403m)	0.27968(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2039	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2040	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2041	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2042	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2043	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2044	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2045	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2046	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2047	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2048	19.4979(7.61577m)	5.69257(197.162m)	Yes	No	2.03878(7.61577m)	1.13943(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2049	19.4049(7.61577m)	5.66544(197.162m)	Yes	No	2.02906(7.61577m)	1.134(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2050	18.8697(7.61577m)	5.50917(197.162m)	Yes	No	1.97309(7.61577m)	1.10272(197.162m)	No	No

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Nitrogen oxides (NOx) - engine - 2051	17.574(7.61577m)	5.13089(197.162m)	Yes	No	1.83761(7.61577m)	1.02701(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2052	16.2626(7.61577m)	4.74801(197.162m)	Yes	No	1.70049(7.61577m)	0.950368(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2053	15.0504(7.61577m)	4.39411(197.162m)	Yes	No	1.57374(7.61577m)	0.87953(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2054	11.3291(7.61577m)	3.30763(197.162m)	Yes	No	1.18462(7.61577m)	0.66206(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2055	9.77944(7.61577m)	2.85519(197.162m)	Yes	No	1.02258(7.61577m)	0.571499(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2056	9.77448(7.61577m)	2.85375(197.162m)	Yes	No	1.02206(7.61577m)	0.571209(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2057	9.7078(7.61577m)	2.83428(197.162m)	Yes	No	1.01509(7.61577m)	0.567313(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2058	9.39328(7.61577m)	2.74245(197.162m)	Yes	No	0.982201(7.61577m)	0.548932(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2059	8.7169(7.61577m)	2.54497(197.162m)	Yes	No	0.911476(7.61577m)	0.509405(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2060	8.03924(7.61577m)	2.34713(197.162m)	Yes	No	0.840618(7.61577m)	0.469804(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2061	7.41553(7.61577m)	2.16503(197.162m)	Yes	No	0.7754(7.61577m)	0.433355(197.162m)	No	No
Nitrogen oxides (NOx) - engine - 2062	6.84134(7.61577m)	1.99739(197.162m)	Yes	No	0.71536(7.61577m)	0.3998(197.162m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2063	6.31262(7.61577m)	1.84303(197.162m)	Yes	No	0.660075(7.61577m)	0.368902(197.162m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2064	5.82567(7.61577m)	1.70085(197.162m)	Yes	No	0.609157(7.61577m)	0.340445(197.162m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2065	5.37708(7.61577m)	1.56989(197.162m)	Yes	No	0.562251(7.61577m)	0.314231(197.162m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - engine - 2066	4.96377(7.61577m)	1.44922(197.162m)	Yes	No	0.519033(7.61577m)	0.290077(197.162m)	Yes (at receptor)	No
Sulphur dioxide - flare - 2009	17.2787(10.4403m)	8.33826(100.767m)	Yes	No	0.508295(10.4403m)	0.506928(100.767m)	No	No
Sulphur dioxide - flare - 2010	20.3839(10.4403m)	9.8367(100.767m)	Yes	No	0.59964(10.4403m)	0.598027(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2010	27.3144(10.4403m)	13.1812(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2011	21.2894(10.4403m)	10.2737(100.767m)	Yes	No	0.626277(10.4403m)	0.624593(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2011	28.5278(10.4403m)	13.7667(100.767m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2011	12.5607(10.4403m)	6.06147(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2012	20.9387(10.4403m)	10.1044(100.767m)	Yes	No	0.61596(10.4403m)	0.614304(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2012	28.0578(10.4403m)	13.5399(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2013	20.7702(10.4403m)	10.0231(100.767m)	Yes	No	0.611005(10.4403m)	0.609361(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2013	27.8321(10.4403m)	13.431(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2014	20.3765(10.4403m)	9.83313(100.767m)	Yes	No	0.599422(10.4403m)	0.59781(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2014	27.3044(10.4403m)	13.1764(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2015	26.6073(10.4403m)	12.84(100.767m)	Yes	No	0.782716(10.4403m)	0.780611(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2015	35.6537(10.4403m)	17.2055(100.767m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2015	15.6983(10.4403m)	7.57557(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2016	29.1791(10.4403m)	14.0811(100.767m)	Yes	No	0.858373(10.4403m)	0.856064(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2016	39.1(10.4403m)	18.8686(100.767m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2016	17.2157(10.4403m)	8.30782(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2017	39.6188(10.4403m)	19.119(100.767m)	Yes (at receptor)	No	1.16548(10.4403m)	1.16235(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2017	53.0892(10.4403m)	25.6194(100.767m)	Yes (at receptor)	Yes				

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Sulphur dioxide 24 hour - flare - 2017	23.3751(10.4403m)	11.2802(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2018	41.757(10.4403m)	20.1508(100.767m)	Yes (at receptor)	No	1.22838(10.4403m)	1.22508(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2018	55.9544(10.4403m)	27.0021(100.767m)	No	Yes				
Sulphur dioxide 24 hour - flare - 2018	24.6366(10.4403m)	11.889(100.767m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2019	43.5172(33.541m)	7.24685(258.008m)	Yes (at receptor)	No	1.28016(33.541m)	0.696744(258.008m)	No	No
Sulphur dioxide 15 min - flare - 2019	58.313(33.541m)	9.71078(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2019	25.6751(33.541m)	4.27564(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2020	46.2918(33.541m)	7.70892(258.008m)	Yes (at receptor)	No	1.36178(33.541m)	0.741169(258.008m)	No	No
Sulphur dioxide 15 min - flare - 2020	62.0311(33.541m)	10.33(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2020	27.3122(33.541m)	4.54826(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2021	51.9689(33.541m)	8.65432(258.008m)	Yes (at receptor)	No	1.52879(33.541m)	0.832063(258.008m)	No	No
Sulphur dioxide 15 min - flare - 2021	69.6384(33.541m)	11.5968(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2021	30.6617(33.541m)	5.10605(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2022	57.3184(33.541m)	9.54515(258.008m)	Yes (at receptor)	No	1.68616(33.541m)	0.917712(258.008m)	No	No
Sulphur dioxide 15 min - flare - 2022	76.8066(33.541m)	12.7905(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2022	33.8178(33.541m)	5.63164(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2023	36.911(10.4403m)	8.55101(205.244m)	Yes (at receptor)	No	1.08583(10.4403m)	0.708461(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2023	49.4607(10.4403m)	11.4584(205.244m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2023	21.7775(10.4403m)	5.0451(205.244m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2024	37.6392(10.4403m)	8.7197(205.244m)	Yes (at receptor)	No	1.10725(10.4403m)	0.722437(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2024	50.4365(10.4403m)	11.6844(205.244m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2024	22.2071(10.4403m)	5.14462(205.244m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2025	40.5528(10.4403m)	9.3947(205.244m)	Yes (at receptor)	No	1.19296(10.4403m)	0.778361(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2025	54.3408(10.4403m)	12.5889(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2025	23.9262(10.4403m)	5.54287(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2026	43.5046(10.4403m)	10.0785(205.244m)	Yes (at receptor)	No	1.27979(10.4403m)	0.835017(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2026	58.2962(10.4403m)	13.5052(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2026	25.6677(10.4403m)	5.94633(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2027	44.1582(10.4403m)	10.2299(205.244m)	Yes (at receptor)	No	1.29902(10.4403m)	0.847562(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2027	59.172(10.4403m)	13.7081(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2027	26.0534(10.4403m)	6.03567(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2028	48.2109(10.4403m)	11.1688(205.244m)	Yes (at receptor)	No	1.41824(10.4403m)	0.925348(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2028	64.6026(10.4403m)	14.9662(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2028	28.4444(10.4403m)	6.58959(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2029	48.3164(10.4403m)	11.1932(205.244m)	Yes (at receptor)	No	1.42134(10.4403m)	0.927372(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2029	64.7439(10.4403m)	14.9989(205.244m)	Yes (at receptor)	Yes				

	Short Term				Long term			
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Sulphur dioxide 24 hour - flare - 2029	28.5067(10.4403m)	6.60401(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2030	50.3931(10.4403m)	11.6744(205.244m)	Yes (at receptor)	No	1.48243(10.4403m)	0.967234(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2030	67.5268(10.4403m)	15.6436(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2030	29.732(10.4403m)	6.88787(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2031	52.1907(10.4403m)	12.0908(205.244m)	Yes (at receptor)	No	1.53531(10.4403m)	1.00174(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2031	69.9355(10.4403m)	16.2017(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2031	30.7925(10.4403m)	7.13356(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2032	51.5346(10.4403m)	11.9388(205.244m)	Yes (at receptor)	No	1.51601(10.4403m)	0.989143(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2032	69.0564(10.4403m)	15.998(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2032	30.4054(10.4403m)	7.04389(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2033	53.4942(10.4403m)	12.3928(205.244m)	Yes (at receptor)	No	1.57366(10.4403m)	1.02675(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2033	71.6822(10.4403m)	16.6063(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2033	31.5616(10.4403m)	7.31173(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2034	56.0091(10.4403m)	12.9754(205.244m)	Yes (at receptor)	No	1.64764(10.4403m)	1.07503(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2034	75.0522(10.4403m)	17.387(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2034	33.0454(10.4403m)	7.65548(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2035	56.2237(10.4403m)	13.0251(205.244m)	Yes (at receptor)	No	1.65396(10.4403m)	1.07914(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2035	75.3398(10.4403m)	17.4536(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2035	33.172(10.4403m)	7.68481(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2036	57.7362(10.4403m)	13.3755(205.244m)	Yes (at receptor)	No	1.69845(10.4403m)	1.10817(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2036	77.3665(10.4403m)	17.9231(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2036	34.0643(10.4403m)	7.89154(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2037	50.8377(10.4403m)	11.7773(205.244m)	Yes (at receptor)	No	1.49551(10.4403m)	0.975766(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2037	68.1225(10.4403m)	15.7816(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2037	29.9942(10.4403m)	6.94863(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2038	44.6233(10.4403m)	10.3377(205.244m)	Yes (at receptor)	No	1.3127(10.4403m)	0.85649(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2038	59.7953(10.4403m)	13.8525(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2038	26.3278(10.4403m)	6.09924(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2039	38.9873(10.4403m)	9.03201(205.244m)	Yes (at receptor)	No	1.1469(10.4403m)	0.748312(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2039	52.2429(10.4403m)	12.1029(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2039	23.0025(10.4403m)	5.32888(205.244m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2040	33.8547(10.4403m)	7.84297(205.244m)	Yes	No	0.995917(10.4403m)	0.649799(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2040	45.3653(10.4403m)	10.5096(205.244m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2040	19.9743(10.4403m)	4.62735(205.244m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2041	22.2936(10.4403m)	5.16467(205.244m)	Yes	No	0.655821(10.4403m)	0.427899(205.244m)	Yes (at receptor)	No
Sulphur dioxide 15 min - flare - 2041	29.8735(10.4403m)	6.92066(205.244m)	Yes (at receptor)	No				

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Sulphur dioxide 24 hour - flare - 2041	13.1533(10.4403m)	3.04716(205.244m)	Yes (at receptor)	No				
Total chloride (reported as HCl) - engine - 2023	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2024	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2025	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2026	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2027	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2028	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2029	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2030	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2031	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2032	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2033	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2034	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2035	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2036	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2037	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2038	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2039	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2040	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2041	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2042	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2043	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2044	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2045	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2046	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2047	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2048	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2049	13.1368(7.61577m)	3.8354(197.162m)	Yes	No	0.68682(7.61577m)	0.383849(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2050	12.712(7.61577m)	3.71138(197.162m)	Yes	No	0.664611(7.61577m)	0.371438(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2051	11.7577(7.61577m)	3.43276(197.162m)	Yes	No	0.614717(7.61577m)	0.343553(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2052	10.878(7.61577m)	3.17594(197.162m)	Yes	No	0.568727(7.61577m)	0.31785(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2053	8.67263(7.61577m)	2.53205(197.162m)	Yes	No	0.453424(7.61577m)	0.253409(197.162m)	No	No
Total chloride (reported as HCl) - engine - 2054	6.59788(7.61577m)	1.92631(197.162m)	Yes	No	0.344951(7.61577m)	0.192786(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2055	6.59788(7.61577m)	1.92631(197.162m)	Yes	No	0.344951(7.61577m)	0.192786(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2056	6.59788(7.61577m)	1.92631(197.162m)	Yes	No	0.344951(7.61577m)	0.192786(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2057	6.59788(7.61577m)	1.92631(197.162m)	Yes	No	0.344951(7.61577m)	0.192786(197.162m)	Yes (at receptor)	No

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Total chloride (reported as HCl) - engine - 2058	6.33035(7.61577m)	1.8482(197.162m)	Yes	No	0.330964(7.61577m)	0.184969(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2059	5.83763(7.61577m)	1.70435(197.162m)	Yes	No	0.305204(7.61577m)	0.170572(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2060	5.38419(7.61577m)	1.57196(197.162m)	Yes	No	0.281497(7.61577m)	0.157323(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2061	4.96681(7.61577m)	1.4501(197.162m)	Yes	No	0.259676(7.61577m)	0.145127(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2062	4.58253(7.61577m)	1.33791(197.162m)	Yes	No	0.239585(7.61577m)	0.133899(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2063	4.22866(7.61577m)	1.23459(197.162m)	Yes	No	0.221083(7.61577m)	0.123559(197.162m)	Yes (at receptor)	No
Total chloride (reported as HCl) - engine - 2064	3.9027(7.61577m)	1.13943(197.162m)	Yes	No	0.204042(7.61577m)	0.114035(197.162m)	Yes (at receptor)	No

Not Modelled:

1,1,1,2-Tetrafluorochloroethane
1,1,1-Trichlorotrifluoroethane
1,1,2-Trichloroethane
1,1-Dichloroethene
1,1-Dichlorotetrafluoroethane
1,2-Dichloropropane
1,2-Dichlorotetrafluoroethane
1-butanethiol
1-Chloro-1,1-difluoroethane
2-butoxy ethanol
2-Chloro-1,1,1-trifluoroethane
2-Propanol
Arsenic
Bromodichloromethane
Butene isomers
Butyric acid
Carbonyl sulphide
Chlorofluorocarbons (CFCs) (Total)
Chlorofluoromethane
Chlorotrifluoromethane
Diethyl disulphide
Dimethyl disulphide
Dimethyl sulphide
Dioxins and furans (modelled as 2,3,7,8-TCDD)
Ethane
Ethyl butyrate
Ethyl toluene (all isomers)
Ethylene
Ethylene dibromide
Ethylene dichloride
Fluorotrichloromethane
Freon 113
Furan
Halons
Hexachlorocyclohexane (all isomers)
Hydrochlorofluorocarbons (HCFCs) (Total)
Hydrofluorocarbons (HFCs) (Total)
Limonene
Methyl ethyl ketone (2-butanone)
Methyl isobutyl ketone
Nitrogen dioxide (NO2)
Nitrogen monoxide (NO)
Odour Units (Predicted)
Pentane
Pentene (all isomers)

Perfluorocarbons (PFCs) (Total)

Not Modelled:

Propane
Propanethiol
Sulphide, total simulations with H2S
Sulphide, total simulations without H2S
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)
Total non-methane volatile organic compounds (NMVOCs)
Total volatile organic compounds (VOCs)
Trichlorobenzene (all isomers)
Trichlorotrifluoroethane

Year of Interest: All

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Benzene - surface	2008	195	5	0.1
Benzene - surface	2009	195	5	0.1
Benzene - surface	2010	195	5	0.1
Benzene - surface	2011	195	5	0.1
Benzene - surface	2012	195	5	0.1
Benzene - surface	2013	195	5	0.1
Benzene - surface	2014	195	5	0.1
Benzene - surface	2015	195	5	0.1
Benzene - surface	2016	195	5	0.1
Benzene - surface	2017	195	5	0.1
Benzene - surface	2018	195	5	0.1
Benzene - surface	2019	195	5	0.1
Benzene - surface	2020	195	5	0.1
Benzene - surface	2021	195	5	0.1
Benzene - surface	2022	195	5	0.1
Benzene - surface	2023	195	5	0.1
Benzene - surface	2024	195	5	0.1
Benzene - surface	2025	195	5	0.1
Benzene - surface	2026	195	5	0.1
Benzene - surface	2027	195	5	0.1
Benzene - surface	2028	195	5	0.1
Benzene - surface	2029	195	5	0.1
Benzene - surface	2030	195	5	0.1
Benzene - surface	2031	195	5	0.1
Benzene - surface	2032	195	5	0.1
Benzene - surface	2033	195	5	0.1
Benzene - surface	2034	195	5	0.1
Benzene - surface	2035	195	5	0.1
Benzo(a)pyrene - flare	2017	0	0.00025	0
Benzo(a)pyrene - flare	2018	0	0.00025	0

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Benzo(a)pyrene - flare	2019	0	0.00025	0
Benzo(a)pyrene - flare	2020	0	0.00025	0
Benzo(a)pyrene - flare	2021	0	0.00025	0
Benzo(a)pyrene - flare	2022	0	0.00025	0
Benzo(a)pyrene - flare	2023	0	0.00025	0
Benzo(a)pyrene - flare	2024	0	0.00025	0
Benzo(a)pyrene - flare	2025	0	0.00025	0
Benzo(a)pyrene - flare	2026	0	0.00025	0
Benzo(a)pyrene - flare	2027	0	0.00025	0
Benzo(a)pyrene - flare	2028	0	0.00025	0
Benzo(a)pyrene - flare	2029	0	0.00025	0
Benzo(a)pyrene - flare	2030	0	0.00025	0
Benzo(a)pyrene - flare	2031	0	0.00025	0
Benzo(a)pyrene - flare	2032	0	0.00025	0
Benzo(a)pyrene - flare	2033	0	0.00025	0
Benzo(a)pyrene - flare	2034	0	0.00025	0
Benzo(a)pyrene - flare	2035	0	0.00025	0
Benzo(a)pyrene - flare	2036	0	0.00025	0
Benzo(a)pyrene - flare	2037	0	0.00025	0
Benzo(a)pyrene - flare	2038	0	0.00025	0
Benzo(a)pyrene - flare	2039	0	0.00025	0
Benzo(a)pyrene - flare	2040	0	0.00025	0
Benzo(a)pyrene - flare	2041	0	0.00025	0
Benzo(a)pyrene - flare	2042	0	0.00025	0
Benzo(a)pyrene - flare	2043	0	0.00025	0
Benzo(a)pyrene - flare	2044	0	0.00025	0
Carbon disulphide - surface	2008	100	64	0
Carbon disulphide - surface	2009	100	64	0
Carbon disulphide - surface	2010	100	64	0
Carbon disulphide - surface	2011	100	64	0
Carbon disulphide - surface	2012	100	64	0
Carbon disulphide - surface	2013	100	64	0
Carbon disulphide - surface	2014	100	64	0
Carbon disulphide - surface	2015	100	64	0
Carbon disulphide - surface	2016	100	64	0
Carbon disulphide - surface	2017	100	64	0
Carbon disulphide - surface	2018	100	64	0
Carbon disulphide - surface	2019	100	64	0

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Carbon disulphide - surface	2020	100	64	0
Carbon disulphide - surface	2021	100	64	0
Carbon disulphide - surface	2022	100	64	0
Carbon disulphide - surface	2023	100	64	0
Carbon disulphide - surface	2024	100	64	0
Carbon disulphide - surface	2025	100	64	0
Carbon disulphide - surface	2026	100	64	0
Carbon disulphide - surface	2027	100	64	0
Carbon disulphide - surface	2028	100	64	0
Carbon disulphide - surface	2029	100	64	0
Carbon disulphide - surface	2030	100	64	0
Carbon disulphide - surface	2031	100	64	0
Carbon disulphide - surface	2032	100	64	0
Carbon disulphide - surface	2033	100	64	0
Carbon disulphide - surface	2034	100	64	0
Carbon disulphide - surface	2035	100	64	0
Hydrogen sulphide - surface	2007	150	140	0
Hydrogen sulphide - surface	2008	150	140	0
Hydrogen sulphide - surface	2009	150	140	0
Hydrogen sulphide - surface	2010	150	140	0
Hydrogen sulphide - surface	2011	150	140	0
Hydrogen sulphide - surface	2012	150	140	0
Hydrogen sulphide - surface	2013	150	140	0
Hydrogen sulphide - surface	2014	150	140	0
Hydrogen sulphide - surface	2015	150	140	0
Hydrogen sulphide - surface	2016	150	140	0
Hydrogen sulphide - surface	2017	150	140	0
Hydrogen sulphide - surface	2018	150	140	0
Hydrogen sulphide - surface	2019	150	140	0
Hydrogen sulphide - surface	2020	150	140	0
Hydrogen sulphide - surface	2021	150	140	0
Hydrogen sulphide - surface	2022	150	140	0
Hydrogen sulphide - surface	2023	150	140	0
Hydrogen sulphide - surface	2024	150	140	0
Hydrogen sulphide - surface	2025	150	140	0
Hydrogen sulphide - surface	2026	150	140	0
Hydrogen sulphide - surface	2027	150	140	0
Hydrogen sulphide - surface	2028	150	140	0

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Hydrogen sulphide - surface	2029	150	140	0
Hydrogen sulphide - surface	2030	150	140	0
Hydrogen sulphide - surface	2031	150	140	0
Hydrogen sulphide - surface	2032	150	140	0
Hydrogen sulphide - surface	2033	150	140	0
Hydrogen sulphide - surface	2034	150	140	0
Hydrogen sulphide - surface	2035	150	140	0
Hydrogen sulphide - surface	2036	150	140	0
Hydrogen sulphide - surface	2037	150	140	0
Nitrogen oxides (NOx) - flare	2019	200	40	8.2
Nitrogen oxides (NOx) - flare	2020	200	40	8.2
Nitrogen oxides (NOx) - flare	2021	200	40	8.2
Nitrogen oxides (NOx) - flare	2022	200	40	8.2
Nitrogen oxides (NOx) - flare	2023	200	40	8.2
Nitrogen oxides (NOx) - flare	2024	200	40	8.2
Nitrogen oxides (NOx) - flare	2025	200	40	8.2
Nitrogen oxides (NOx) - flare	2026	200	40	8.2
Nitrogen oxides (NOx) - flare	2027	200	40	8.2
Nitrogen oxides (NOx) - flare	2028	200	40	8.2
Nitrogen oxides (NOx) - flare	2029	200	40	8.2
Nitrogen oxides (NOx) - flare	2030	200	40	8.2
Nitrogen oxides (NOx) - flare	2031	200	40	8.2
Nitrogen oxides (NOx) - flare	2032	200	40	8.2
Nitrogen oxides (NOx) - flare	2033	200	40	8.2
Nitrogen oxides (NOx) - flare	2034	200	40	8.2
Nitrogen oxides (NOx) - flare	2035	200	40	8.2
Nitrogen oxides (NOx) - flare	2036	200	40	8.2
Nitrogen oxides (NOx) - flare	2037	200	40	8.2
Nitrogen oxides (NOx) - flare	2038	200	40	8.2
Nitrogen oxides (NOx) - flare	2039	200	40	8.2
Nitrogen oxides (NOx) - flare	2040	200	40	8.2
Nitrogen oxides (NOx) - flare	2041	200	40	8.2
Nitrogen oxides (NOx) - flare	2042	200	40	8.2
Nitrogen oxides (NOx) - flare	2043	200	40	8.2
Sulphur dioxide - flare	2009	350	50	4.06
Sulphur dioxide - flare	2010	350	50	4.06
Sulphur dioxide - flare	2011	350	50	4.06
Sulphur dioxide 15 min - flare	2011	266		4.06

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Sulphur dioxide - flare	2012	350	50	4.06
Sulphur dioxide 15 min - flare	2012	266		4.06
Sulphur dioxide - flare	2013	350	50	4.06
Sulphur dioxide 15 min - flare	2013	266		4.06
Sulphur dioxide - flare	2014	350	50	4.06
Sulphur dioxide 15 min - flare	2014	266		4.06
Sulphur dioxide - flare	2015	350	50	4.06
Sulphur dioxide 15 min - flare	2015	266		4.06
Sulphur dioxide 24 hour - flare	2015	125		4.06
Sulphur dioxide - flare	2016	350	50	4.06
Sulphur dioxide 15 min - flare	2016	266		4.06
Sulphur dioxide 24 hour - flare	2016	125		4.06
Sulphur dioxide - flare	2017	350	50	4.06
Sulphur dioxide 15 min - flare	2017	266		4.06
Sulphur dioxide 24 hour - flare	2017	125		4.06
Sulphur dioxide - flare	2018	350	50	4.06
Sulphur dioxide 15 min - flare	2018	266		4.06
Sulphur dioxide 24 hour - flare	2018	125		4.06
Sulphur dioxide - flare	2019	350	50	4.06
Sulphur dioxide 15 min - flare	2019	266		4.06
Sulphur dioxide 24 hour - flare	2019	125		4.06
Sulphur dioxide - flare	2020	350	50	4.06
Sulphur dioxide 15 min - flare	2020	266		4.06
Sulphur dioxide 24 hour - flare	2020	125		4.06
Sulphur dioxide - flare	2021	350	50	4.06
Sulphur dioxide 15 min - flare	2021	266		4.06
Sulphur dioxide 24 hour - flare	2021	125		4.06
Sulphur dioxide - flare	2022	350	50	4.06
Sulphur dioxide 15 min - flare	2022	266		4.06
Sulphur dioxide 24 hour - flare	2022	125		4.06
Sulphur dioxide - flare	2023	350	50	4.06
Sulphur dioxide 15 min - flare	2023	266		4.06
Sulphur dioxide 24 hour - flare	2023	125		4.06
Sulphur dioxide - flare	2024	350	50	4.06
Sulphur dioxide 15 min - flare	2024	266		4.06
Sulphur dioxide 24 hour - flare	2024	125		4.06
Sulphur dioxide - flare	2025	350	50	4.06
Sulphur dioxide 15 min - flare	2025	266		4.06

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Sulphur dioxide 24 hour - flare	2025	125		4.06
Sulphur dioxide - flare	2026	350	50	4.06
Sulphur dioxide 15 min - flare	2026	266		4.06
Sulphur dioxide 24 hour - flare	2026	125		4.06
Sulphur dioxide - flare	2027	350	50	4.06
Sulphur dioxide 15 min - flare	2027	266		4.06
Sulphur dioxide 24 hour - flare	2027	125		4.06
Sulphur dioxide - flare	2028	350	50	4.06
Sulphur dioxide 15 min - flare	2028	266		4.06
Sulphur dioxide 24 hour - flare	2028	125		4.06
Sulphur dioxide - flare	2029	350	50	4.06
Sulphur dioxide 15 min - flare	2029	266		4.06
Sulphur dioxide 24 hour - flare	2029	125		4.06
Sulphur dioxide - flare	2030	350	50	4.06
Sulphur dioxide 15 min - flare	2030	266		4.06
Sulphur dioxide 24 hour - flare	2030	125		4.06
Sulphur dioxide - flare	2031	350	50	4.06
Sulphur dioxide 15 min - flare	2031	266		4.06
Sulphur dioxide 24 hour - flare	2031	125		4.06
Sulphur dioxide - flare	2032	350	50	4.06
Sulphur dioxide 15 min - flare	2032	266		4.06
Sulphur dioxide 24 hour - flare	2032	125		4.06
Sulphur dioxide - flare	2033	350	50	4.06
Sulphur dioxide 15 min - flare	2033	266		4.06
Sulphur dioxide 24 hour - flare	2033	125		4.06
Sulphur dioxide - flare	2034	350	50	4.06
Sulphur dioxide 15 min - flare	2034	266		4.06
Sulphur dioxide 24 hour - flare	2034	125		4.06
Sulphur dioxide - flare	2035	350	50	4.06
Sulphur dioxide 15 min - flare	2035	266		4.06
Sulphur dioxide 24 hour - flare	2035	125		4.06
Sulphur dioxide - flare	2036	350	50	4.06
Sulphur dioxide 15 min - flare	2036	266		4.06
Sulphur dioxide 24 hour - flare	2036	125		4.06
Sulphur dioxide - flare	2037	350	50	4.06
Sulphur dioxide 15 min - flare	2037	266		4.06
Sulphur dioxide 24 hour - flare	2037	125		4.06
Sulphur dioxide - flare	2038	350	50	4.06

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Sulphur dioxide 15 min - flare	2038	266		4.06
Sulphur dioxide 24 hour - flare	2038	125		4.06
Sulphur dioxide - flare	2039	350	50	4.06
Sulphur dioxide 15 min - flare	2039	266		4.06
Sulphur dioxide 24 hour - flare	2039	125		4.06
Sulphur dioxide - flare	2040	350	50	4.06
Sulphur dioxide 15 min - flare	2040	266		4.06
Sulphur dioxide 24 hour - flare	2040	125		4.06
Sulphur dioxide - flare	2041	350	50	4.06
Sulphur dioxide 15 min - flare	2041	266		4.06
Sulphur dioxide 24 hour - flare	2041	125		4.06
Sulphur dioxide - flare	2042	350	50	4.06
Sulphur dioxide 15 min - flare	2042	266		4.06
Sulphur dioxide 24 hour - flare	2042	125		4.06
Sulphur dioxide - flare	2043	350	50	4.06
Sulphur dioxide 15 min - flare	2043	266		4.06
Sulphur dioxide 24 hour - flare	2043	125		4.06
Sulphur dioxide - flare	2044	350	50	4.06
Sulphur dioxide 15 min - flare	2044	266		4.06
Sulphur dioxide 24 hour - flare	2044	125		4.06
Sulphur dioxide - flare	2045	350	50	4.06
Sulphur dioxide 15 min - flare	2045	266		4.06
Sulphur dioxide 24 hour - flare	2045	125		4.06
Sulphur dioxide - flare	2046	350	50	4.06
Sulphur dioxide 15 min - flare	2046	266		4.06
Sulphur dioxide 24 hour - flare	2046	125		4.06
Sulphur dioxide - flare	2047	350	50	4.06
Sulphur dioxide 15 min - flare	2047	266		4.06
Sulphur dioxide 24 hour - flare	2047	125		4.06
Sulphur dioxide - flare	2048	350	50	4.06
Sulphur dioxide 15 min - flare	2048	266		4.06
Sulphur dioxide 24 hour - flare	2048	125		4.06
Total chloride (reported as HCl) - flare	2023	800	20	0
Total chloride (reported as HCl) - flare	2024	800	20	0
Total chloride (reported as HCl) - flare	2025	800	20	0
Total chloride (reported as HCl) - flare	2026	800	20	0
Total chloride (reported as HCl) - flare	2027	800	20	0
Total chloride (reported as HCl) - flare	2028	800	20	0

		Short Term EQS or EAL µg/m3	Long Term EQS or EAL µg/m3	Background Concentration µg/m3
Total chloride (reported as HCl) - flare	2029	800	20	0
Total chloride (reported as HCl) - flare	2030	800	20	0
Total chloride (reported as HCl) - flare	2031	800	20	0
Total chloride (reported as HCl) - flare	2032	800	20	0
Total chloride (reported as HCl) - flare	2033	800	20	0
Total chloride (reported as HCl) - flare	2034	800	20	0
Total chloride (reported as HCl) - flare	2035	800	20	0
Total chloride (reported as HCl) - flare	2036	800	20	0
Total chloride (reported as HCl) - flare	2037	800	20	0
Total chloride (reported as HCl) - flare	2038	800	20	0
Total chloride (reported as HCl) - flare	2039	800	20	0

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Benzene - surface - 2008	8.95475(14.1421m)	6.85038(97m)	Yes	No	0.184692(14.1421m)	0.0952561(97m)	No	No
Benzene - surface - 2009	5.4711(10m)	4.20577(96.2549m)	Yes	No	0.112841(10m)	0.0590651(96.2549m)	No	No
Benzene - surface - 2010	5.15656(10m)	3.96398(96.2549m)	Yes	No	0.106354(10m)	0.0556693(96.2549m)	No	No
Benzene - surface - 2011	5.36501(10m)	4.12422(96.2549m)	Yes	No	0.110653(10m)	0.0579198(96.2549m)	No	No
Benzene - surface - 2012	6.90088(10m)	5.30489(96.2549m)	Yes	No	0.142331(10m)	0.0745008(96.2549m)	No	No
Benzene - surface - 2013	7.65652(10m)	6.32136(84.8764m)	Yes	No	0.157916(10m)	0.101171(84.8764m)	No	No
Benzene - surface - 2014	8.71719(10m)	7.19707(84.8764m)	Yes	No	0.179792(10m)	0.115187(84.8764m)	No	No
Benzene - surface - 2015	5.88788(10m)	5.70469(56.2228m)	Yes	No	0.121438(10m)	0.113652(56.2228m)	No	No
Benzene - surface - 2016	7.48325(10m)	7.25042(56.2228m)	Yes	No	0.154342(10m)	0.144447(56.2228m)	No	No
Benzene - surface - 2017	4.36237(10m)	4.22664(56.2228m)	Yes	No	0.0899739(10m)	0.0842054(56.2228m)	No	No
Benzene - surface - 2018	5.23063(5m)	5.06789(56.2228m)	Yes	No	0.107882(5m)	0.100965(56.2228m)	No	No
Benzene - surface - 2019	6.00588(5m)	5.81901(56.2228m)	Yes	No	0.123871(5m)	0.115929(56.2228m)	No	No
Benzene - surface - 2020	7.99123(5m)	7.74259(56.2228m)	Yes	No	0.164819(5m)	0.154252(56.2228m)	No	No
Benzene - surface - 2021	6.07792(5m)	5.88882(56.2228m)	Yes	No	0.125357(5m)	0.11732(56.2228m)	No	No
Benzene - surface - 2022	4.86532(5m)	4.71395(56.2228m)	Yes	No	0.100347(5m)	0.0939137(56.2228m)	No	No
Benzene - surface - 2023	4.89286(5m)	4.74062(56.2228m)	Yes	No	0.100915(5m)	0.0944451(56.2228m)	No	No
Benzene - surface - 2024	5.74243(5m)	5.56376(56.2228m)	Yes	No	0.118438(5m)	0.110844(56.2228m)	No	No
Benzene - surface - 2025	6.31178(5m)	6.1154(56.2228m)	Yes	No	0.130181(5m)	0.121834(56.2228m)	No	No
Benzene - surface - 2026	5.31709(5m)	5.15166(56.2228m)	Yes	No	0.109665(5m)	0.102634(56.2228m)	No	No
Benzene - surface - 2027	7.91699(5m)	7.67066(56.2228m)	Yes	No	0.163288(5m)	0.152819(56.2228m)	No	No
Benzene - surface - 2028	5.757(5m)	5.57788(56.2228m)	Yes	No	0.118738(5m)	0.111125(56.2228m)	No	No
Benzene - surface - 2029	6.17803(5m)	5.98581(56.2228m)	Yes	No	0.127422(5m)	0.119252(56.2228m)	No	No
Benzene - surface - 2030	5.95888(5m)	5.77348(56.2228m)	Yes	No	0.122902(5m)	0.115022(56.2228m)	No	No
Benzene - surface - 2031	5.97555(5m)	5.78962(56.2228m)	Yes	No	0.123246(5m)	0.115344(56.2228m)	No	No
Benzene - surface - 2032	6.76572(5m)	6.55521(56.2228m)	Yes	No	0.139543(5m)	0.130596(56.2228m)	No	No
Benzene - surface - 2033	7.00368(5m)	6.78577(56.2228m)	Yes	No	0.144451(5m)	0.13519(56.2228m)	No	No
Benzene - surface - 2034	5.59499(5m)	5.42091(56.2228m)	Yes	No	0.115397(5m)	0.107998(56.2228m)	No	No
Benzene - surface - 2035	5.05903(5m)	4.90162(56.2228m)	Yes	No	0.104343(5m)	0.0976528(56.2228m)	No	No
Benzo(a)pyrene - flare - 2017	8.54311e-005(10.4403m)	4.12267e-005(100.767m)	No EAL	No EAL	2.51316e-006(10.4403m)	2.5064e-006(100.767m)	No	No
Benzo(a)pyrene - flare - 2018	9.04488e-005(10.4403m)	4.36482e-005(100.767m)	No EAL	No EAL	2.66077e-006(10.4403m)	2.65361e-006(100.767m)	No	No
Benzo(a)pyrene - flare - 2019	9.30747e-005(33.541m)	1.54996e-005(258.008m)	No EAL	No EAL	2.73802e-006(33.541m)	1.4902e-006(258.008m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2020	9.93499e-005(33.541m)	1.65446e-005(258.008m)	No EAL	No EAL	2.92261e-006(33.541m)	1.59067e-006(258.008m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2021	0.000113997(33.541m)	1.89838e-005(258.008m)	No EAL	No EAL	3.3535e-006(33.541m)	1.82518e-006(258.008m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2022	0.000124467(33.541m)	2.07274e-005(258.008m)	No EAL	No EAL	3.66151e-006(33.541m)	1.99282e-006(258.008m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2023	0.000130646(10.4403m)	3.02661e-005(205.244m)	No EAL	No EAL	3.84326e-006(10.4403m)	2.50758e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2024	0.000131255(10.4403m)	3.04072e-005(205.244m)	No EAL	No EAL	3.86117e-006(10.4403m)	2.51927e-006(205.244m)	No	No

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Benzo(a)pyrene - flare - 2025	0.000137952(10.4403m)	3.19588e-005(205.244m)	No EAL	No EAL	4.05819e-006(10.4403m)	2.64782e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2026	0.000144425(10.4403m)	3.34582e-005(205.244m)	No EAL	No EAL	4.2486e-006(10.4403m)	2.77205e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2027	0.000145994(10.4403m)	3.38218e-005(205.244m)	No EAL	No EAL	4.29477e-006(10.4403m)	2.80218e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2028	0.000156937(10.4403m)	3.63569e-005(205.244m)	No EAL	No EAL	4.61668e-006(10.4403m)	3.01221e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2029	0.000156379(10.4403m)	3.62276e-005(205.244m)	No EAL	No EAL	4.60026e-006(10.4403m)	3.0015e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2030	0.000159058(10.4403m)	3.68482e-005(205.244m)	No EAL	No EAL	4.67906e-006(10.4403m)	3.05291e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2031	0.000165908(10.4403m)	3.84351e-005(205.244m)	No EAL	No EAL	4.88057e-006(10.4403m)	3.18439e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2032	0.000163372(10.4403m)	3.78477e-005(205.244m)	No EAL	No EAL	4.80598e-006(10.4403m)	3.13572e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2033	0.000166193(10.4403m)	3.85012e-005(205.244m)	No EAL	No EAL	4.88896e-006(10.4403m)	3.18987e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2034	0.000173188(10.4403m)	4.01218e-005(205.244m)	No EAL	No EAL	5.09475e-006(10.4403m)	3.32414e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2035	0.000172754(10.4403m)	4.00212e-005(205.244m)	No EAL	No EAL	5.08198e-006(10.4403m)	3.3158e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2036	0.000173895(10.4403m)	4.02854e-005(205.244m)	No EAL	No EAL	5.11552e-006(10.4403m)	3.33769e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2037	0.000159081(10.4403m)	3.68537e-005(205.244m)	No EAL	No EAL	4.67976e-006(10.4403m)	3.05337e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2038	0.000145756(10.4403m)	3.37668e-005(205.244m)	No EAL	No EAL	4.28777e-006(10.4403m)	2.79761e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2039	0.000133679(10.4403m)	3.09688e-005(205.244m)	No EAL	No EAL	3.93248e-006(10.4403m)	2.5658e-006(205.244m)	No	No
Benzo(a)pyrene - flare - 2040	0.000122683(10.4403m)	2.84215e-005(205.244m)	No EAL	No EAL	3.60902e-006(10.4403m)	2.35475e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2041	0.000112647(10.4403m)	2.60964e-005(205.244m)	No EAL	No EAL	3.31378e-006(10.4403m)	2.16212e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2042	0.000103472(10.4403m)	2.39709e-005(205.244m)	No EAL	No EAL	3.04388e-006(10.4403m)	1.98602e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2043	9.50759e-005(10.4403m)	2.20258e-005(205.244m)	No EAL	No EAL	2.79689e-006(10.4403m)	1.82486e-006(205.244m)	Yes (at receptor)	No
Benzo(a)pyrene - flare - 2044	8.73873e-005(10.4403m)	2.02446e-005(205.244m)	No EAL	No EAL	2.57071e-006(10.4403m)	1.67729e-006(205.244m)	Yes (at receptor)	No
Carbon disulphide - surface - 2008	25.7575(14.1421m)	19.7045(97m)	No	Yes	0.531248(14.1421m)	0.273995(97m)	Yes	No
Carbon disulphide - surface - 2009	16.69(10m)	12.83(96.2549m)	No	No	0.344231(10m)	0.180182(96.2549m)	Yes	No
Carbon disulphide - surface - 2010	14.5397(10m)	11.1771(96.2549m)	No	No	0.299882(10m)	0.156969(96.2549m)	Yes	No
Carbon disulphide - surface - 2011	16.0148(10m)	12.311(96.2549m)	No	No	0.330305(10m)	0.172893(96.2549m)	Yes	No
Carbon disulphide - surface - 2012	20.2212(10m)	15.5446(96.2549m)	No	Yes	0.417063(10m)	0.218305(96.2549m)	Yes	No
Carbon disulphide - surface - 2013	23.5112(10m)	19.4113(84.8764m)	No	Yes	0.484919(10m)	0.310672(84.8764m)	Yes	No
Carbon disulphide - surface - 2014	26.7103(10m)	22.0525(84.8764m)	No	Yes	0.550899(10m)	0.352943(84.8764m)	Yes	No
Carbon disulphide - surface - 2015	16.316(10m)	15.8083(56.2228m)	No	No	0.336517(10m)	0.314942(56.2228m)	Yes	No
Carbon disulphide - surface - 2016	19.4096(10m)	18.8056(56.2228m)	No	No	0.400322(10m)	0.374656(56.2228m)	Yes	No
Carbon disulphide - surface - 2017	11.8266(10m)	11.4587(56.2228m)	No	No	0.243924(10m)	0.228285(56.2228m)	Yes	No
Carbon disulphide - surface - 2018	16.3719(5m)	15.8625(56.2228m)	No	No	0.33767(5m)	0.316021(56.2228m)	Yes	No
Carbon disulphide - surface - 2019	16.8608(5m)	16.3362(56.2228m)	No	No	0.347754(5m)	0.325458(56.2228m)	Yes	No
Carbon disulphide - surface - 2020	22.7555(5m)	22.0475(56.2228m)	No	Yes	0.469333(5m)	0.439243(56.2228m)	Yes	No
Carbon disulphide - surface - 2021	16.2092(5m)	15.7049(56.2228m)	No	No	0.334315(5m)	0.312881(56.2228m)	Yes	No
Carbon disulphide - surface - 2022	12.4023(5m)	12.0164(56.2228m)	No	No	0.255797(5m)	0.239397(56.2228m)	Yes	No
Carbon disulphide - surface - 2023	12.0848(5m)	11.7088(56.2228m)	No	No	0.24925(5m)	0.23327(56.2228m)	Yes	No

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Carbon disulphide - surface - 2024	16.2614(5m)	15.7554(56.2228m)	No	No	0.335391(5m)	0.313888(56.2228m)	Yes	No
Carbon disulphide - surface - 2025	19.8556(5m)	19.2378(56.2228m)	No	No	0.409521(5m)	0.383265(56.2228m)	Yes	No
Carbon disulphide - surface - 2026	14.7619(5m)	14.3026(56.2228m)	No	No	0.304464(5m)	0.284943(56.2228m)	Yes	No
Carbon disulphide - surface - 2027	23.9657(5m)	23.2201(56.2228m)	No	Yes	0.494293(5m)	0.462602(56.2228m)	Yes	No
Carbon disulphide - surface - 2028	16.2534(5m)	15.7477(56.2228m)	No	No	0.335227(5m)	0.313734(56.2228m)	Yes	No
Carbon disulphide - surface - 2029	17.5886(5m)	17.0414(56.2228m)	No	No	0.362765(5m)	0.339507(56.2228m)	Yes	No
Carbon disulphide - surface - 2030	20.4182(5m)	19.7829(56.2228m)	No	Yes	0.421125(5m)	0.394125(56.2228m)	Yes	No
Carbon disulphide - surface - 2031	15.9069(5m)	15.412(56.2228m)	No	No	0.32808(5m)	0.307046(56.2228m)	Yes	No
Carbon disulphide - surface - 2032	17.6721(5m)	17.1223(56.2228m)	No	No	0.364488(5m)	0.341119(56.2228m)	Yes	No
Carbon disulphide - surface - 2033	20.5872(5m)	19.9467(56.2228m)	No	Yes	0.424612(5m)	0.397388(56.2228m)	Yes	No
Carbon disulphide - surface - 2034	14.4248(5m)	13.976(56.2228m)	No	No	0.297511(5m)	0.278436(56.2228m)	Yes	No
Carbon disulphide - surface - 2035	14.9313(5m)	14.4667(56.2228m)	No	No	0.307957(5m)	0.288213(56.2228m)	Yes	No
Hydrogen sulphide - surface - 2007	64.8704(14.1421m)	49.6259(97m)	No	Yes	1.33795(14.1421m)	0.690059(97m)	Yes	No
Hydrogen sulphide - surface - 2008	274.784(14.1421m)	210.21(97m)	No	Yes	5.66742(14.1421m)	2.92302(97m)	No	No
Hydrogen sulphide - surface - 2009	153.123(10m)	117.709(96.2549m)	No	Yes	3.15815(10m)	1.65309(96.2549m)	No	No
Hydrogen sulphide - surface - 2010	150.564(10m)	115.742(96.2549m)	No	Yes	3.10538(10m)	1.62546(96.2549m)	No	No
Hydrogen sulphide - surface - 2011	173.016(10m)	133.002(96.2549m)	No	Yes	3.56845(10m)	1.86785(96.2549m)	No	No
Hydrogen sulphide - surface - 2012	196.585(10m)	151.12(96.2549m)	No	Yes	4.05456(10m)	2.1223(96.2549m)	No	No
Hydrogen sulphide - surface - 2013	224.055(10m)	184.984(84.8764m)	No	Yes	4.62114(10m)	2.96061(84.8764m)	No	No
Hydrogen sulphide - surface - 2014	250.216(10m)	206.583(84.8764m)	No	Yes	5.16071(10m)	3.3063(84.8764m)	No	No
Hydrogen sulphide - surface - 2015	167.708(10m)	162.49(56.2228m)	No	Yes	3.45899(10m)	3.23722(56.2228m)	No	No
Hydrogen sulphide - surface - 2016	195.756(10m)	189.665(56.2228m)	No	Yes	4.03746(10m)	3.77861(56.2228m)	No	No
Hydrogen sulphide - surface - 2017	103.713(10m)	100.486(56.2228m)	No	Yes	2.13908(10m)	2.00193(56.2228m)	No	No
Hydrogen sulphide - surface - 2018	177.508(5m)	171.985(56.2228m)	No	Yes	3.66109(5m)	3.42637(56.2228m)	No	No
Hydrogen sulphide - surface - 2019	166.059(5m)	160.892(56.2228m)	No	Yes	3.42496(5m)	3.20538(56.2228m)	No	No
Hydrogen sulphide - surface - 2020	190.24(5m)	184.321(56.2228m)	No	Yes	3.9237(5m)	3.67214(56.2228m)	No	No
Hydrogen sulphide - surface - 2021	170.862(5m)	165.546(56.2228m)	No	Yes	3.52404(5m)	3.2981(56.2228m)	No	No
Hydrogen sulphide - surface - 2022	141.71(5m)	137.301(56.2228m)	No	Yes	2.92277(5m)	2.73538(56.2228m)	No	No
Hydrogen sulphide - surface - 2023	125.911(5m)	121.994(56.2228m)	No	Yes	2.59692(5m)	2.43043(56.2228m)	No	No
Hydrogen sulphide - surface - 2024	166.813(5m)	161.623(56.2228m)	No	Yes	3.44053(5m)	3.21994(56.2228m)	No	No
Hydrogen sulphide - surface - 2025	230.151(5m)	222.99(56.2228m)	No	Yes	4.74687(5m)	4.44253(56.2228m)	No	No
Hydrogen sulphide - surface - 2026	171.261(5m)	165.933(56.2228m)	No	Yes	3.53226(5m)	3.3058(56.2228m)	No	No
Hydrogen sulphide - surface - 2027	195.436(5m)	189.355(56.2228m)	No	Yes	4.03087(5m)	3.77244(56.2228m)	No	No
Hydrogen sulphide - surface - 2028	143.678(5m)	139.207(56.2228m)	No	Yes	2.96335(5m)	2.77336(56.2228m)	No	No
Hydrogen sulphide - surface - 2029	165.515(5m)	160.366(56.2228m)	No	Yes	3.41376(5m)	3.19489(56.2228m)	No	No
Hydrogen sulphide - surface - 2030	151.75(5m)	147.029(56.2228m)	No	Yes	3.12985(5m)	2.92919(56.2228m)	No	No

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Hydrogen sulphide - surface - 2031	143.307(5m)	138.848(56.2228m)	No	Yes	2.95571(5m)	2.76621(56.2228m)	No	No
Hydrogen sulphide - surface - 2032	155.246(5m)	150.415(56.2228m)	No	Yes	3.20194(5m)	2.99665(56.2228m)	No	No
Hydrogen sulphide - surface - 2033	189.644(5m)	183.744(56.2228m)	No	Yes	3.91141(5m)	3.66064(56.2228m)	No	No
Hydrogen sulphide - surface - 2034	139.381(5m)	135.044(56.2228m)	No	Yes	2.87472(5m)	2.69042(56.2228m)	No	No
Hydrogen sulphide - surface - 2035	147.95(5m)	143.347(56.2228m)	No	Yes	3.05147(5m)	2.85583(56.2228m)	No	No
Hydrogen sulphide - surface - 2036	20.0516(5m)	19.4277(56.2228m)	No	No	0.413565(5m)	0.38705(56.2228m)	Yes	No
Hydrogen sulphide - surface - 2037	15.808(5m)	15.3161(56.2228m)	No	No	0.32604(5m)	0.305136(56.2228m)	Yes	No
Nitrogen oxides (NOx) - flare - 2019	7.07738(33.541m)	1.17859(258.008m)	Yes	No	0.416396(33.541m)	0.226629(258.008m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2020	7.52746(33.541m)	1.25354(258.008m)	Yes	No	0.442876(33.541m)	0.241041(258.008m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2021	8.45208(33.541m)	1.40751(258.008m)	Yes	No	0.497276(33.541m)	0.270649(258.008m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2022	9.27673(33.541m)	1.54484(258.008m)	Yes	No	0.545794(33.541m)	0.297055(258.008m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2023	9.83834(10.4403m)	2.2792(205.244m)	Yes	No	0.578836(10.4403m)	0.377669(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2024	9.97881(10.4403m)	2.31175(205.244m)	Yes	No	0.587101(10.4403m)	0.383062(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2025	10.3847(10.4403m)	2.40577(205.244m)	Yes	No	0.610981(10.4403m)	0.398642(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2026	10.8591(10.4403m)	2.51568(205.244m)	Yes	No	0.638894(10.4403m)	0.416855(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2027	10.9001(10.4403m)	2.52517(205.244m)	Yes	No	0.641302(10.4403m)	0.418426(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2028	11.5931(10.4403m)	2.68573(205.244m)	Yes	No	0.682079(10.4403m)	0.445031(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2029	11.648(10.4403m)	2.69843(205.244m)	Yes	No	0.685306(10.4403m)	0.447137(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2030	12.0821(10.4403m)	2.79901(205.244m)	Yes	No	0.71085(10.4403m)	0.463803(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2031	12.3644(10.4403m)	2.86441(205.244m)	Yes	No	0.727459(10.4403m)	0.47464(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2032	12.2425(10.4403m)	2.83616(205.244m)	Yes	No	0.720284(10.4403m)	0.469959(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2033	12.5548(10.4403m)	2.90851(205.244m)	Yes	No	0.738657(10.4403m)	0.481946(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2034	13.0199(10.4403m)	3.01625(205.244m)	Yes	No	0.76602(10.4403m)	0.4998(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2035	12.9756(10.4403m)	3.006(205.244m)	Yes	No	0.763417(10.4403m)	0.498101(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2036	13.1674(10.4403m)	3.05043(205.244m)	Yes	No	0.7747(10.4403m)	0.505463(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2037	12.0446(10.4403m)	2.79032(205.244m)	Yes	No	0.708642(10.4403m)	0.462363(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2038	11.0348(10.4403m)	2.55638(205.244m)	Yes	No	0.649229(10.4403m)	0.423598(205.244m)	No	No
Nitrogen oxides (NOx) - flare - 2039	10.1197(10.4403m)	2.34439(205.244m)	Yes	No	0.595392(10.4403m)	0.388471(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2040	9.28683(10.4403m)	2.15144(205.244m)	Yes	No	0.546389(10.4403m)	0.356498(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2041	8.5267(10.4403m)	1.97534(205.244m)	Yes	No	0.501666(10.4403m)	0.327319(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2042	7.83186(10.4403m)	1.81437(205.244m)	Yes	No	0.460786(10.4403m)	0.300646(205.244m)	Yes (at receptor)	No
Nitrogen oxides (NOx) - flare - 2043	7.19606(10.4403m)	1.66708(205.244m)	Yes	No	0.423378(10.4403m)	0.276239(205.244m)	Yes (at receptor)	No
Sulphur dioxide - flare - 2009	17.0127(10.4403m)	8.20986(100.767m)	Yes	No	0.500468(10.4403m)	0.499122(100.767m)	Yes (at receptor)	No
Sulphur dioxide - flare - 2010	19.8211(10.4403m)	9.56513(100.767m)	Yes	No	0.583085(10.4403m)	0.581517(100.767m)	No	No
Sulphur dioxide - flare - 2011	21.0599(10.4403m)	10.1629(100.767m)	Yes	No	0.619526(10.4403m)	0.61786(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2011	28.2202(10.4403m)	13.6183(100.767m)	Yes (at receptor)	No				

	Short Term				Long term			
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Sulphur dioxide - flare - 2012	20.9354(10.4403m)	10.1029(100.767m)	Yes	No	0.615865(10.4403m)	0.614208(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2012	28.0534(10.4403m)	13.5378(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2013	20.7776(10.4403m)	10.0267(100.767m)	Yes	No	0.611221(10.4403m)	0.609577(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2013	27.8419(10.4403m)	13.4358(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2014	20.3742(10.4403m)	9.83203(100.767m)	Yes	No	0.599355(10.4403m)	0.597743(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2014	27.3014(10.4403m)	13.1749(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2015	26.3708(10.4403m)	12.7258(100.767m)	Yes	No	0.775759(10.4403m)	0.773673(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2015	35.3368(10.4403m)	17.0526(100.767m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2015	15.5588(10.4403m)	7.50824(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2016	28.9821(10.4403m)	13.986(100.767m)	Yes	No	0.852578(10.4403m)	0.850285(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2016	38.836(10.4403m)	18.7412(100.767m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2016	17.0995(10.4403m)	8.25173(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2017	39.2142(10.4403m)	18.9237(100.767m)	Yes (at receptor)	No	1.15358(10.4403m)	1.15048(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2017	52.547(10.4403m)	25.3578(100.767m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2017	23.1364(10.4403m)	11.165(100.767m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2018	41.4369(10.4403m)	19.9964(100.767m)	Yes (at receptor)	No	1.21897(10.4403m)	1.21569(100.767m)	No	No
Sulphur dioxide 15 min - flare - 2018	55.5255(10.4403m)	26.7951(100.767m)	No	Yes				
Sulphur dioxide 24 hour - flare - 2018	24.4478(10.4403m)	11.7978(100.767m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2019	43.1559(33.541m)	7.18669(258.008m)	Yes (at receptor)	No	1.26953(33.541m)	0.69096(258.008m)	No	No
Sulphur dioxide 15 min - flare - 2019	57.8289(33.541m)	9.63017(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2019	25.462(33.541m)	4.24015(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2020	45.9004(33.541m)	7.64373(258.008m)	Yes (at receptor)	No	1.35027(33.541m)	0.734901(258.008m)	No	No
Sulphur dioxide 15 min - flare - 2020	61.5065(33.541m)	10.2426(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2020	27.0812(33.541m)	4.5098(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2021	51.5385(33.541m)	8.58263(258.008m)	Yes (at receptor)	No	1.51613(33.541m)	0.825171(258.008m)	No	No
Sulphur dioxide 15 min - flare - 2021	69.0615(33.541m)	11.5007(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2021	30.4077(33.541m)	5.06375(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2022	56.5669(33.541m)	9.42002(258.008m)	Yes (at receptor)	No	1.66405(33.541m)	0.905681(258.008m)	No	No
Sulphur dioxide 15 min - flare - 2022	75.7997(33.541m)	12.6228(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2022	33.3745(33.541m)	5.55781(258.008m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2023	59.9915(10.4403m)	13.898(205.244m)	Yes (at receptor)	No	1.76479(10.4403m)	1.15146(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2023	80.3886(10.4403m)	18.6233(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2023	35.395(10.4403m)	8.1998(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2024	60.8481(10.4403m)	14.0964(205.244m)	Yes (at receptor)	No	1.78999(10.4403m)	1.1679(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2024	81.5364(10.4403m)	18.8892(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2024	35.9004(10.4403m)	8.31688(205.244m)	Yes (at receptor)	Yes				

	Short Term				Long term			
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Sulphur dioxide - flare - 2025	63.323(10.4403m)	14.6698(205.244m)	Yes (at receptor)	No	1.8628(10.4403m)	1.21541(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2025	84.8528(10.4403m)	19.6575(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2025	37.3606(10.4403m)	8.65516(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2026	66.2159(10.4403m)	15.34(205.244m)	Yes (at receptor)	No	1.9479(10.4403m)	1.27093(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2026	88.7294(10.4403m)	20.5555(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2026	39.0674(10.4403m)	9.05057(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2027	66.4656(10.4403m)	15.3978(205.244m)	Yes (at receptor)	No	1.95524(10.4403m)	1.27572(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2027	89.0639(10.4403m)	20.633(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2027	39.2147(10.4403m)	9.08469(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2028	70.6917(10.4403m)	16.3768(205.244m)	Yes (at receptor)	Yes	2.07957(10.4403m)	1.35684(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2028	94.7269(10.4403m)	21.945(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2028	41.7081(10.4403m)	9.66234(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2029	71.0261(10.4403m)	16.4543(205.244m)	Yes (at receptor)	Yes	2.0894(10.4403m)	1.36326(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2029	95.175(10.4403m)	22.0488(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2029	41.9054(10.4403m)	9.70804(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2030	73.6736(10.4403m)	17.0676(205.244m)	Yes (at receptor)	Yes	2.16728(10.4403m)	1.41407(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2030	98.7226(10.4403m)	22.8706(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2030	43.4674(10.4403m)	10.0699(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2031	75.395(10.4403m)	17.4664(205.244m)	Yes (at receptor)	Yes	2.21792(10.4403m)	1.44711(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2031	101.029(10.4403m)	23.405(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2031	44.483(10.4403m)	10.3052(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2032	74.6514(10.4403m)	17.2942(205.244m)	Yes (at receptor)	Yes	2.19605(10.4403m)	1.43284(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2032	100.033(10.4403m)	23.1742(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2032	44.0443(10.4403m)	10.2036(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2033	76.5555(10.4403m)	17.7353(205.244m)	Yes (at receptor)	Yes	2.25206(10.4403m)	1.46939(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2033	102.584(10.4403m)	23.7653(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2033	45.1677(10.4403m)	10.4638(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2034	79.3915(10.4403m)	18.3923(205.244m)	Yes (at receptor)	Yes	2.33549(10.4403m)	1.52382(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2034	106.385(10.4403m)	24.6457(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2034	46.841(10.4403m)	10.8514(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2035	79.1217(10.4403m)	18.3298(205.244m)	Yes (at receptor)	Yes	2.32755(10.4403m)	1.51864(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2035	106.023(10.4403m)	24.5619(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2035	46.6818(10.4403m)	10.8146(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2036	80.2911(10.4403m)	18.6007(205.244m)	Yes (at receptor)	Yes	2.36195(10.4403m)	1.54109(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2036	107.59(10.4403m)	24.9249(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2036	47.3717(10.4403m)	10.9744(205.244m)	Yes (at receptor)	Yes				

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Sulphur dioxide - flare - 2037	73.4447(10.4403m)	17.0146(205.244m)	Yes (at receptor)	Yes	2.16055(10.4403m)	1.40968(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2037	98.4159(10.4403m)	22.7996(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2037	43.3324(10.4403m)	10.0386(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2038	67.2871(10.4403m)	15.5881(205.244m)	Yes (at receptor)	No	1.97941(10.4403m)	1.29149(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2038	90.1647(10.4403m)	20.888(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2038	39.6994(10.4403m)	9.19698(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2039	61.7074(10.4403m)	14.2955(205.244m)	Yes (at receptor)	No	1.81527(10.4403m)	1.1844(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2039	82.6879(10.4403m)	19.1559(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2039	36.4073(10.4403m)	8.43433(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2040	56.6286(10.4403m)	13.1189(205.244m)	Yes (at receptor)	No	1.66586(10.4403m)	1.08691(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2040	75.8823(10.4403m)	17.5793(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2040	33.4108(10.4403m)	7.74014(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2041	51.9935(10.4403m)	12.0451(205.244m)	Yes (at receptor)	No	1.52951(10.4403m)	0.99795(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2041	69.6713(10.4403m)	16.1404(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2041	30.6762(10.4403m)	7.10661(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2042	47.7565(10.4403m)	11.0635(205.244m)	Yes (at receptor)	No	1.40487(10.4403m)	0.916627(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2042	63.9938(10.4403m)	14.8252(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2042	28.1764(10.4403m)	6.52749(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2043	43.8796(10.4403m)	10.1654(205.244m)	Yes (at receptor)	No	1.29082(10.4403m)	0.842214(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2043	58.7986(10.4403m)	13.6216(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2043	25.8889(10.4403m)	5.99758(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2044	40.3295(10.4403m)	9.34295(205.244m)	Yes (at receptor)	No	1.18639(10.4403m)	0.774074(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2044	54.0415(10.4403m)	12.5196(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide 24 hour - flare - 2044	23.7944(10.4403m)	5.51234(205.244m)	Yes (at receptor)	Yes				
Sulphur dioxide - flare - 2045	37.0769(10.4403m)	8.58945(205.244m)	Yes (at receptor)	No	1.09071(10.4403m)	0.711645(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2045	49.6831(10.4403m)	11.5099(205.244m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2045	21.8754(10.4403m)	5.06777(205.244m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2046	34.0957(10.4403m)	7.89881(205.244m)	Yes	No	1.00301(10.4403m)	0.654425(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2046	45.6883(10.4403m)	10.5844(205.244m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2046	20.1165(10.4403m)	4.6603(205.244m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2047	31.3622(10.4403m)	7.26554(205.244m)	Yes	No	0.922593(10.4403m)	0.601958(205.244m)	No	No
Sulphur dioxide 15 min - flare - 2047	42.0253(10.4403m)	9.73582(205.244m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2047	18.5037(10.4403m)	4.28667(205.244m)	Yes (at receptor)	No				
Sulphur dioxide - flare - 2048	24.212(10.4403m)	5.60909(205.244m)	Yes	No	0.712255(10.4403m)	0.46472(205.244m)	Yes (at receptor)	No
Sulphur dioxide 15 min - flare - 2048	32.4441(10.4403m)	7.51619(205.244m)	Yes (at receptor)	No				
Sulphur dioxide 24 hour - flare - 2048	14.2851(10.4403m)	3.30937(205.244m)	Yes (at receptor)	No				

	Short Term				Long term			
	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?	Predicted Boundary Concentration µg/m3	Predicted Nearest Receptor Concentration µg/m3	Is the emission rate Insignificant?	Is detailed modelling required?
Total chloride (reported as HCl) - flare - 2023	6.97183(10.4403m)	1.61513(205.244m)	Yes	No	0.205093(10.4403m)	0.133816(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2024	7.12944(10.4403m)	1.65165(205.244m)	Yes	No	0.20973(10.4403m)	0.136841(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2025	7.4529(10.4403m)	1.72658(205.244m)	Yes	No	0.219245(10.4403m)	0.143049(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2026	7.7668(10.4403m)	1.7993(205.244m)	Yes	No	0.228479(10.4403m)	0.149074(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2027	7.84298(10.4403m)	1.81695(205.244m)	Yes	No	0.23072(10.4403m)	0.150536(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2028	8.39007(10.4403m)	1.94369(205.244m)	Yes	No	0.246814(10.4403m)	0.161037(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2029	8.37838(10.4403m)	1.94098(205.244m)	Yes	No	0.24647(10.4403m)	0.160812(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2030	8.65412(10.4403m)	2.00486(205.244m)	Yes	No	0.254582(10.4403m)	0.166105(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2031	9.05781(10.4403m)	2.09838(205.244m)	Yes	No	0.266457(10.4403m)	0.173853(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2032	8.92236(10.4403m)	2.067(205.244m)	Yes	No	0.262473(10.4403m)	0.171254(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2033	9.07233(10.4403m)	2.10175(205.244m)	Yes	No	0.266884(10.4403m)	0.174132(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2034	9.20541(10.4403m)	2.13258(205.244m)	Yes	No	0.270799(10.4403m)	0.176686(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2035	9.12576(10.4403m)	2.11413(205.244m)	Yes	No	0.268456(10.4403m)	0.175158(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2036	9.31315(10.4403m)	2.15754(205.244m)	Yes	No	0.273969(10.4403m)	0.178754(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2037	8.51845(10.4403m)	1.97343(205.244m)	Yes	No	0.25059(10.4403m)	0.163501(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2038	7.80395(10.4403m)	1.80791(205.244m)	Yes	No	0.229572(10.4403m)	0.149787(205.244m)	Yes (at receptor)	No
Total chloride (reported as HCl) - flare - 2039	7.15654(10.4403m)	1.65792(205.244m)	Yes	No	0.210527(10.4403m)	0.137361(205.244m)	Yes (at receptor)	No

Not Modelled:

1,1,1,2-Tetrafluorochloroethane
1,1,1-Trichlorotrifluoroethane
1,1,2-Trichloroethane
1,1-Dichloroethene
1,1-Dichlorotetrafluoroethane
1,2-Dichloropropane
1,2-Dichlorotetrafluoroethane
1-butanethiol
1-Chloro-1,1-difluoroethane
2-butoxy ethanol
2-Chloro-1,1,1-trifluoroethane
2-Propanol
Arsenic
Bromodichloromethane
Butene isomers
Butyric acid
Carbonyl sulphide
Chlorofluorocarbons (CFCs) (Total)
Chlorofluoromethane
Chlorotrifluoromethane
Diethyl disulphide
Dimethyl disulphide
Dimethyl sulphide
Dioxins and furans (modelled as 2,3,7,8-TCDD)
Ethane
Ethyl butyrate
Ethyl toluene (all isomers)
Ethylene
Ethylene dibromide
Ethylene dichloride
Fluorotrichloromethane
Freon 113
Furan
Halons
Hexachlorocyclohexane (all isomers)
Hydrochlorofluorocarbons (HCFCs) (Total)
Hydrofluorocarbons (HFCs) (Total)
Limonene
Methyl ethyl ketone (2-butanone)
Methyl isobutyl ketone
Nitrogen dioxide (NO2)
Nitrogen monoxide (NO)
Odour Units (Predicted)
Pentane
Pentene (all isomers)

Perfluorocarbons (PFCs) (Total)

Not Modelled:

Propane
Propanethiol
Sulphide, total simulations with H2S
Sulphide, total simulations without H2S
Tetrachloroethane (modelled as 1,1,2,2-Tetrachloroethane)
Total non-methane volatile organic compounds (NMVOCs)
Total volatile organic compounds (VOCs)
Trichlorobenzene (all isomers)
Trichlorotrifluoroethane

APPENDIX GRA5

Tier 2 Modelling Results

Table 1: 15 Minute Short-Term SO_2 Modelling Results Scenario 1

The 36th (99.90%ile) Maximum 15 Minute Concentration of SO_2						
Sensitive Receptor	**EAL ($\mu g/m^3$)**	**Max. PC ($\mu g/m^3$)**	**% PC of EAL (%)**	**Background[1,2] ($\mu g/m^3$)**	**PEC[3] ($\mu g/m^3$)**	**% PEC of EAL (%)**
DR01	266	2.6	1.0	10.9	13.5	5.1
DR02		2.6	1.0		13.5	5.1
DR03		5.2	2.0		16.1	6.1
DR04		17.9	6.7		28.8	10.8
DR05		3.4	1.3		14.3	5.4
DR06		7.5	2.8		18.4	6.9
DR07		4.9	1.8		15.8	5.9
DR08		11.8	4.4		22.7	8.5
DR09		2.9	1.1		13.8	5.2
DR10		6.8	2.6		17.7	6.7
DR11		6.4	2.4		17.3	6.5
DR12		6.5	2.5		17.4	6.5
DR13		5.5	2.1		16.4	6.2
DR14		6.2	2.3		17.1	6.4
DR15		2.7	1.0		13.6	5.1
DR16		1.9	0.7		12.8	4.8
DR17		2.4	0.9		13.3	5.0
DR18		1.9	0.7		12.8	4.8
DR19		2.2	0.8		13.1	4.9

Notes:
1) Background air quality data for 2001 were obtained from Air Quality Archive for co-ordinates 513500E 447500N;
2) 15 min background has been obtained by doubling the long-term background and multiplying by 1.34; and
3) PEC = PC + Background.

Table 2: 1 Hour Short-Term SO_2 Modelling Results Scenario 1

The 25th (99.73 %ile) Maximum Hourly Concentration of SO_2						
Sensitive Receptor	**EAL (µg/m³)**	**Max. PC (µg/m³)**	**% PC of EAL (%)**	**Background[1,2] (µg/m³)**	**PEC[3] (µg/m³)**	**% PEC of EAL (%)**
DR01	350	2.3	0.6	8.1	10.4	3.0
DR02		2.3	0.7		10.4	3.0
DR03		4.3	1.2		12.4	3.5
DR04		14.4	4.1		22.5	6.4
DR05		2.8	0.8		10.9	3.1
DR06		5.9	1.7		14.0	4.0
DR07		3.9	1.1		12.0	3.4
DR08		10.6	3.0		18.7	5.3
DR09		2.3	0.7		10.4	3.0
DR10		5.3	1.5		13.4	3.8
DR11		5.3	1.5		13.4	3.8
DR12		5.4	1.5		13.5	3.9
DR13		4.8	1.4		12.9	3.7
DR14		4.9	1.4		13.0	3.7
DR15		2.2	0.6		10.3	2.9
DR16		1.5	0.4		9.6	2.7
DR17		1.8	0.5		9.9	2.8
DR18		1.5	0.4		9.6	2.7
DR19		1.8	0.5		9.9	2.8

Notes:
1) Background air quality data for 2001 were obtained from Air Quality Archive for co-ordinates 513500E 447500N;
2) 1 hour background has taken as twice the long-term background; and
3) PEC = PC + Background.

Table 3: 24 Hour Short-Term SO_2 Modelling Results Scenario 1

The 4th (99.18 %ile) Maximum 24 Hour Concentration of SO_2						
Sensitive Receptor	**EAL (µg/m³)**	**Max. PC (µg/m³)**	**% PC of EAL (%)**	**Background[1,2] (µg/m³)**	**PEC[3] (µg/m³)**	**% PEC of EAL (%)**
DR01	125	0.6	0.5	4.8	5.4	4.3
DR02		0.6	0.5		5.4	4.4
DR03		1.5	1.2		6.3	5.1
DR04		5.9	4.7		10.7	8.6
DR05		0.9	0.7		5.7	4.6
DR06		2.2	1.8		7.0	5.6
DR07		1.3	1.0		6.1	4.9
DR08		3.4	2.7		8.2	6.5
DR09		0.7	0.6		5.5	4.4
DR10		2.1	1.7		6.9	5.5
DR11		1.5	1.2		6.3	5.0
DR12		1.6	1.3		6.4	5.1
DR13		1.1	0.9		5.9	4.7
DR14		1.2	1.0		6.0	4.8
DR15		0.4	0.3		5.2	4.2
DR16		0.4	0.3		5.2	4.2
DR17		0.5	0.4		5.3	4.2
DR18		0.3	0.3		5.1	4.1
DR19		0.5	0.4		5.3	4.3

Notes:
1) Background air quality data for 2001 were obtained from Air Quality Archive for co-ordinates 513500E 447500N;
2) 24 hour background has been obtained by doubling the long-term background and multiplying by 0.59; and
3) PEC = PC + Background.

Table 4: Short-Term H_2S Modelling Results Scenario 1

The 100th %ile Maximum Hourly Concentration of H_2S						
Sensitive Receptor	**EAL (µg/m³)**	**Max. PC (µg/m³)**	**% PC of EAL (%)**	**Background[1] (µg/m³)**	**PEC (µg/m³)**	**% PEC of EAL (%)**
DR01	150	2.7	1.8	-	2.7	1.8
DR02		4.1	2.8		4.1	2.8
DR03		3.6	2.4		3.6	2.4
DR04		6.8	4.5		6.8	4.5
DR05		2.8	1.9		2.8	1.9
DR06		3.2	2.2		3.2	2.2
DR07		1.9	1.3		1.9	1.3
DR08		5.7	3.8		5.7	3.8
DR09		7.1	4.7		7.1	4.7
DR10		4.4	2.9		4.4	2.9
DR11		4.3	2.9		4.3	2.9
DR12		5.2	3.5		5.2	3.5
DR13		5.9	3.9		5.9	3.9
DR14		11.4	7.6		11.4	7.6
DR15		9.6	6.4		9.6	6.4
DR16		4.0	2.7		4.0	2.7
DR17		3.2	2.2		3.2	2.2
DR18		1.9	1.3		1.9	1.3
DR19		7.0	4.7		7.0	4.7

Notes:

1) *There is no background data for H_2S and hence the PC = PEC.*

Table 5: Short-Term CS_2 Modelling Results Scenario 1

The 100th %ile Maximum Hourly Concentration of CS_2						
Sensitive Receptor	**EAL (µg/m³)**	**Max. PC (µg/m³)**	**% PC of EAL (%)**	**Background[1] (µg/m³)**	**PEC (µg/m³)**	**% PEC of EAL (%)**
DR01	100	0.3	0.3	-	0.3	0.3
DR02		0.5	0.5		0.5	0.5
DR03		0.4	0.4		0.4	0.4
DR04		0.8	0.8		0.8	0.8
DR05		0.3	0.3		0.3	0.3
DR06		0.4	0.4		0.4	0.4
DR07		0.2	0.2		0.2	0.2
DR08		0.7	0.7		0.7	0.7
DR09		0.8	0.8		0.8	0.8
DR10		0.5	0.5		0.5	0.5
DR11		0.5	0.5		0.5	0.5
DR12		0.6	0.6		0.6	0.6
DR13		0.7	0.7		0.7	0.7
DR14		1.3	1.3		1.3	1.3
DR15		1.2	1.2		1.2	1.2
DR16		0.5	0.5		0.5	0.5
DR17		0.4	0.4		0.4	0.4
DR18		0.2	0.2		0.2	0.2
DR19		0.8	0.8		0.8	0.8

Notes:

1) There is no background data for CS_2 and hence the PC = PEC.

Table 6: The 98%ile Maximum Short-Term (Hourly) Concentrations of Odour Scenario 1

The 98%ile Maximum Short-Term (Hourly) Concentrations of Odour	
Sensitive Receptor	**PEC[1] OUE/m^3 Based on 98%ile Emission Rate**
DR01	0.0
DR02	0.0
DR03	0.0
DR04	0.0
DR05	0.0
DR06	0.0
DR07	0.0
DR08	0.0
DR09	0.0
DR10	0.0
DR11	0.0
DR12	0.1
DR13	0.1
DR14	0.1
DR15	0.0
DR16	0.0
DR17	0.1
DR18	0.0
DR19	0.1

Notes:
1) There is no background data for CS_2 and hence the PC = PEC.

Table 7: 15 Minute Short-Term SO_2 Modelling Results Scenario 2

The 36th (99.90%ile) Maximum 15 Minute Concentration of SO_2						
Sensitive Receptor	**EAL ($\mu g/m^3$)**	**Max. PC ($\mu g/m^3$)**	**% PC of EAL (%)**	**Background[1,2] ($\mu g/m^3$)**	**PEC[3] ($\mu g/m^3$)**	**% PEC of EAL (%)**
DR01	266	2.8	1.1	10.9	13.7	5.2
DR02		2.9	1.1		13.8	5.2
DR03		5.8	2.2		16.7	6.3
DR04		20.3	7.6		31.2	11.7
DR05		4.1	1.5		15.0	5.6
DR06		8.8	3.3		19.7	7.4
DR07		5.7	2.1		16.6	6.2
DR08		13.1	4.9		24.0	9.0
DR09		3.3	1.2		14.2	5.3
DR10		7.5	2.8		18.4	6.9
DR11		6.8	2.6		17.7	6.7
DR12		6.8	2.5		17.7	6.6
DR13		5.6	2.1		16.5	6.2
DR14		7.1	2.7		18.0	6.8
DR15		2.6	1.0		13.5	5.1
DR16		2.1	0.8		13.0	4.9
DR17		2.4	0.9		13.3	5.0
DR18		1.8	0.7		12.7	4.8
DR19		2.4	0.9		13.3	5.0

Notes:
1) Background air quality data for 2001 were obtained from Air Quality Archive for co-ordinates 513500E 447500N;
2) 15 min background has been obtained by doubling the long-term background and multiplying by 1.34; and
3) PEC = PC + Background.

Table 8: 1 Hour Short-Term SO_2 Modelling Results Scenario 2

The 25th (99.73 %ile) Maximum Hourly Concentration of SO_2						
Sensitive Receptor	**EAL (µg/m³)**	**Max. PC (µg/m³)**	**% PC of EAL (%)**	**Background[1,2] (µg/m³)**	**PEC[3] (µg/m³)**	**% PEC of EAL (%)**
DR01	350	2.5	0.7	8.1	10.6	3.0
DR02		2.5	0.7		10.6	3.0
DR03		5.0	1.4		13.1	3.7
DR04		16.9	4.8		25.0	7.1
DR05		3.2	0.9		11.3	3.2
DR06		7.1	2.0		15.2	4.3
DR07		4.6	1.3		12.7	3.6
DR08		11.1	3.2		19.2	5.5
DR09		2.6	0.7		10.7	3.1
DR10		6.0	1.7		14.1	4.0
DR11		5.8	1.7		13.9	4.0
DR12		5.7	1.6		13.8	3.9
DR13		4.9	1.4		13.0	3.7
DR14		5.8	1.7		13.9	4.0
DR15		2.4	0.7		10.5	3.0
DR16		1.6	0.5		9.7	2.8
DR17		1.9	0.5		10.0	2.8
DR18		1.4	0.4		9.5	2.7
DR19		1.9	0.5		10.0	2.9

Notes:
1) Background air quality data for 2001 were obtained from Air Quality Archive for co-ordinates 513500E 447500N;
2) 1 hour background has taken as twice the long-term background; and
3) PEC = PC + Background.

Table 9: 24 Hour Short-Term SO_2 Modelling Results Scenario 2

The 4th (99.18 %ile) Maximum 24 Hour Concentration of SO_2						
Sensitive Receptor	**EAL (µg/m³)**	**Max. PC (µg/m³)**	**% PC of EAL (%)**	**Background[1,2] (µg/m³)**	**PEC[3] (µg/m³)**	**% PEC of EAL (%)**
DR01	125	0.7	0.6	4.8	5.5	4.4
DR02		0.8	0.7		5.6	4.5
DR03		2.0	1.6		6.8	5.5
DR04		7.2	5.7		12.0	9.6
DR05		1.0	0.8		5.8	4.7
DR06		2.6	2.1		7.4	6.0
DR07		1.6	1.2		6.4	5.1
DR08		3.6	2.9		8.4	6.7
DR09		0.8	0.7		5.6	4.5
DR10		2.3	1.8		7.1	5.6
DR11		1.8	1.4		6.6	5.3
DR12		1.5	1.2		6.3	5.0
DR13		1.2	1.0		6.0	4.8
DR14		1.4	1.1		6.2	5.0
DR15		0.5	0.4		5.3	4.2
DR16		0.5	0.4		5.3	4.2
DR17		0.6	0.5		5.4	4.3
DR18		0.4	0.3		5.2	4.1
DR19		0.6	0.5		5.4	4.3

Notes:
1) Background air quality data for 2001 were obtained from Air Quality Archive for co-ordinates 513500E 447500N;
2) 24 hour background has been obtained by doubling the long-term background and multiplying by 0.59; and
3) PEC = PC + Background.

Table 10: Short-Term H_2S Modelling Results Scenario 2

The 100th %ile Maximum Hourly Concentration of H_2S						
Sensitive Receptor	**EAL (µg/m³)**	**Max. PC (µg/m³)**	**% PC of EAL (%)**	**Background[1] (µg/m³)**	**PEC (µg/m³)**	**% PEC of EAL (%)**
DR01	150	0.9	0.6	-	0.9	0.6
DR02		1.4	0.9		1.4	0.9
DR03		1.2	0.8		1.2	0.8
DR04		2.2	1.5		2.2	1.5
DR05		0.9	0.6		0.9	0.6
DR06		1.1	0.7		1.1	0.7
DR07		0.6	0.4		0.6	0.4
DR08		1.8	1.2		1.8	1.2
DR09		2.3	1.5		2.3	1.5
DR10		1.6	1.0		1.6	1.0
DR11		1.4	0.9		1.4	0.9
DR12		1.7	1.1		1.7	1.1
DR13		1.9	1.3		1.9	1.3
DR14		3.5	2.4		3.5	2.4
DR15		3.1	2.1		3.1	2.1
DR16		1.3	0.9		1.3	0.9
DR17		1.1	0.7		1.1	0.7
DR18		0.6	0.4		0.6	0.4
DR19		2.3	1.5		2.3	1.5

Notes:

1) *There is no background data for H_2S and hence the PC = PEC.*

Table 11: Short-Term CS_2 Modelling Results Scenario 2

The 100th %ile Maximum Hourly Concentration of CS_2						
Sensitive Receptor	**EAL (µg/m³)**	**Max. PC (µg/m³)**	**% PC of EAL (%)**	**Background[1] (µg/m³)**	**PEC (µg/m³)**	**% PEC of EAL (%)**
DR01	100	0.1	0.1	-	0.1	0.1
DR02		0.2	0.2		0.2	0.2
DR03		0.2	0.2		0.2	0.2
DR04		0.3	0.3		0.3	0.3
DR05		0.1	0.1		0.1	0.1
DR06		0.1	0.1		0.1	0.1
DR07		0.1	0.1		0.1	0.1
DR08		0.2	0.2		0.2	0.2
DR09		0.3	0.3		0.3	0.3
DR10		0.2	0.2		0.2	0.2
DR11		0.2	0.2		0.2	0.2
DR12		0.2	0.2		0.2	0.2
DR13		0.3	0.3		0.3	0.3
DR14		0.5	0.5		0.5	0.5
DR15		0.4	0.4		0.4	0.4
DR16		0.2	0.2		0.2	0.2
DR17		0.1	0.1		0.1	0.1
DR18		0.1	0.1		0.1	0.1
DR19		0.3	0.3		0.3	0.3

Notes:

1) There is no background data for CS_2 and hence the PC = PEC.

Table 12: The 98%ile Maximum Short-Term (Hourly) Concentrations of Odour Scenario 2

The 98%ile Maximum Short-Term (Hourly) Concentrations of Odour	
Sensitive Receptor	**PEC[1] OUE/m^3 Based on 98%ile Emission Rate**
DR01	0.0
DR02	0.0
DR03	0.0
DR04	0.0
DR05	0.0
DR06	0.0
DR07	0.0
DR08	0.0
DR09	0.0
DR10	0.0
DR11	0.0
DR12	0.0
DR13	0.0
DR14	0.0
DR15	0.0
DR16	0.0
DR17	0.0
DR18	0.0
DR19	0.0

Notes:
1) There is no background data for CS_2 and hence the PC = PEC.

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