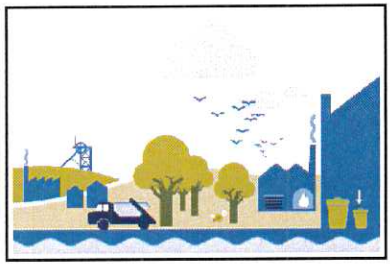
Appendix 1

H1 Assessment – Emissions to Water

H1



Welcome to the H1 Software

Version 2.7.7 - November 2016

If you find the screen fonts in the H1Tool too small to read you can use the Windows zoom feature at any time to magnify the screen by holding down the 'Windows' key and '+' key. To cancel the feature hold down the 'Windows' key and 'Esc' key.

Introduction

This version of the tool accompanies the Horizontal Guidance Note H1 and the eleven supporting technical annexes.

Important Notes:

With the exception of Annex I (Landfill) and Annex J (Groundwater) this software tool can be used to complete risk assessments within the technical annexes which support H1. However, further information may need to be provided in the following areas:

- detailed assessment of fate and effects, where required
- decision-making trails for the comparison and ranking of options

This software provides a general structure for assessing costs and environmental impacts. You may need to decide the best way to apply this structure to fit the nature and pattern of your operation, in particular:

- where load is variable, such as seasonal or demand-led operations
- where a number of processes are conducted at the same time, such as integrated operations
- where a number of products are made, with possible differences in unit operations and release points employed
- where fugitive or potential emergency releases are of particular interest

Information in this database will be used to determine your EPR permit, therefore to get the most from this software tool, you should:

- read the H1 Overview document, to understand the basic principles, module structure and methods
- use the HELP boxes and refer to the H1 guidance as you progress to ensure that the data you input is representative and accurate
- use the comments boxes to clarify assumptions and data sources

This software will also output annual emissions data to an OPRA profile(s), which you can select on the Summary Tables page.

On line instructions on using this tool and on the H1 Methodology itself are available on Gov.UK (click here)

Facility Reference Information

Please complete the following information:

Company Name: Endless Energy Limited

Location: Keighley, Yorkshire

Permit Number:

If you have data already stored in a previous version of the H1 software you may import it by pressing the button to the right.

Import Utility

Please note that before the import can take place any data that already exists in this copy of the tool will be removed. Please also note that any 'Operating Mode' information you had entered in your Air and Water inventories will defer to the default of 100% on data import

NOTE ON MICROSOFT ACCESS SECURITY WARNING
Depending on your security settings, you may get a security notice appearing each time the import routine connects to a table in your source database. You need to click 'Open' on this message for the Import routine to be successful. There are 18 tables to connect to in total but if you place your cursor over the 'Open' button you will be able to repeatedly click your mouse to make this process execute quickly and without too much frustration. We apologise for this inconvenience but it is an aspect of Microsoft Security provisions that are beyond our control.

Step 1

Introduction to Step 1

Step 1: Describe the Scope and Options

The aim of this step is to:

- state the OBJECTIVES of the assessment

- in the case of ENVIRONMENTAL ASSESSMENT of the whole facility, describe the scope of the activities to be included in the assessment;

- in the case of OPTIONS APPRAISALS, identify candidate options for BAT by considering all relevant techniques to prevent and minimise pollution and the scope of activities covered by the techniques.

Depending on the reason for the assessment, you will need to complete different modules of the guidance. The software will automatically select the required modules according to the responses you enter.

NOTE: If you are going to complete more than one assessment or appraisal, make sure that you create a copy of the H1 file for each new assessment BEFORE you begin to input data. This is because Microsoft Access automatically saves changes to the current file you are using, rather than allowing you to save your changes at the end of your work.

TO CONTINUE WITH STEP 1, PRESS "NEXT".

Describe the Objectives

Depending on the reason for the assessment you will need to complete different parts of the tool.

Select the type of assessment:

◉ a)	to carry out an ENVIRONMENTAL ASSESSMENT of the releases resulting from the facility as a whole	Do Steps 1, 2 and 3 only
○ b)	to conduct a costs/benefits OPTIONS APPRAISAL to determine BAT or support the case for derogation under the Industrial Emission Directive.	Do Steps 1,2, 3 and 4 and continue with 5 and 6 if necessary

1.1 Briefly summarise the objectives and reason for the assessment in terms of the main environmental impacts or emissions to be controlled:

To assess the environmental impact of boiler water discharged to foul sewer

Scope of Environmental Assessment

List the activities included in the assessment

Number	Activity
1	Discharge of boiler water to sewer

Use the 'Add' button at the bottom left to create a new activity

Comments

Step 2

Introduction to Step 2

Step 2: Emissions Inventory

The aim of this Step is to produce an inventory of sources and releases of polluting substances from each option. This is used as the basis for the subsequent evaluation of environmental impacts.

For this Step you will require information on:

- release points and sources of emissions to air, water (inc. sewer) or land

- concentration and mass rate of released substances

- frequency and duration of releases and how these relate to long term and short term effects

IMPORTANT NOTES

- you may need to consider a suitable method for assessment of groups of pollutants, such as VOCs, heavy metals, uncharacterised liquid effluents, etc (see "Grouping air emissions" in Annex F).

TO CONTINUE WITH STEP 2, PRESS "NEXT".

Receiving Water Body(s)

Please define the Final Discharge Locations for Releases to Water

Are there any discharges to surface waters? Yes

Use the 'Add' button below to list all final discharge points.
For discharges to sewer, this should be the point where the sewage works discharges to a surface water
N.B. For Riverine discharges (River, Upper Estuary) you only need enter the River description and flow once. Further details of individual releases can be entered on the next page. For discharges to TRaC waters, seperate Discharge Locations must be added for each release point that has a different mixing zone

Number	Description	Final Discharge Category	Freshwater Q95 flow rate
1	River Aire via Marley Sewage Works	R	River Flow (m3/s): 0.301

Water Discharge/Release Details and Flow Data

Please define your Release Points for Releases to Water

Number	Description	Location or Grid Reference	Activity or Activities	Final Discharge Point	Discharge via Sewer?	Mean Effluent Flow Rate* m3/s	Max Effluent Flow Rate* m3/s
1	F1	Connection to foul sewer	1	River Aire via Marley Sewage Works	Yes	0.0000	0.0000

Comments: Connection to foul sewer at grid reference SE 08102 41327

* When operating

Release Concentrations of Substances Present in Discharges to Water

Please list all Substances released to Water for each Release Point identified in the previous page.

Which type of assessment method are you using? (See help box & H1 Annex D for information)

Continue with the method below.

Method: Chemical Specific

Reference:

Number	Substance	Meas'ment Method	Operating Mode (% of	Average Concentration in the Effluent (AA)		Maximum Concentration in the Effluent (Max)		Annual Rate	Sewage Treatment Factor	Significant Load (PHS Only)
				Conc. µg/l	Meas'ment Basis	Conc. µg/l	Meas'ment Basis	kg/yr		kg/year
1	Iron	Spot	100.0%	X	Annual Avg	20	Weekly		1	
2	Chloride	Spot	100.0%	X	Annual Avg	70	Monthly		1	
3	Copper	Spot	100.0%	X	Annual Avg	3	Quarterly		1	

Comments: The installation does not contain copper parts. This makes this measurement optional. A quarterly confirmation analysis may be carried out. This provision will be reviewed in the event that copper-alloy items are added at a later date.

Raw Materials

Please list all Raw Materials Consumed:

Number	Material	Annual Consumption	Units
1	Non-potable Water		tonnes/year
2	Potable water		tonnes/year

Comments

Performance Indicators

Enter consumption data to determine your performance indicators

Which of the following parameters do you use for calculating your performance: Product

Please describe and justify your choice

Basic Consumption Data

Name	Annual Quantity	Units
Amount of Product:		
Main Raw Material:		
Potable Water:		m3
Non Potable Water:		m3
Energy:		MWh
Waste: Inert:		tonne
Hazardous:		tonne
Stable Non-reactive Hazardous:		tonne
Biodegradable Non-hazardous:		tonne
Other Non-hazardous:		tonne

Specific Consumption per of :

Production Efficiency:		/
Potable Water:		m3
Non Potable Water:		m3
Energy:		MWh
Waste: Inert:		tonne
Hazardous:		tonne
Stable Non-reactive Hazardous:		tonne
Biodegradable Non-hazardous:		tonne
Other Non-hazardous:		tonne

Step 3

Introduction to Step 3

Step 3: Quantify Impacts

The aim of this Step is to quantify the effects on the environment of the releases listed in the inventory in Step 2. The guidance provides methods for assessing the eight main environmental considerations of most relevance to the EPR regime. Your releases may not result in effects to all eight of these considerations, and this tool allows you to screen out any that are not relevant.

The emissions you entered in Step 2 are automatically brought forward for assessment into each environmental consideration that is relevant for that type of release (e.g. a release may have more than one type of effect).

This part of the tool allows you to screen out any releases that are insignificant, and to identify those releases where further, detailed assessment of the potential environmental impact may be required.

IMPORTANT NOTE

This software tool only completes part of the requirements for Step 3, as described above. Depending upon the degree of risk to the environment presented by the releases, the operator may need to do further, detailed assessment of the potential effects using methodologies that are not provided here. This information should be submitted separately, as indicated within this part of the tool.

TO CONTINUE WITH STEP 3, PRESS "NEXT".

Identify Relevant Impacts

Identify any environmental impacts that are not relevant to this assessment by deselecting from the list below:

Releases in Part 2?			Justification for omission
No	☐	Air	See Air Quality Report
No	☐	Deposition from Air to Land	See Air Quality Report
Yes	☑	Water	
No	☐	Waste	Waste will be unloaded and treated within the building.
No	☐	Visual	Site designed to minimise visual impacts
No	☐	Ozone Creation	See Air Quality Report
No	☐	Global Warming	See Air Quality Report

If you have deselected an environmental impact as not relevant to this assessment,
no further assessment of this impact will be carried out

Local Environmental Quality

Describe the Quality of the Environment:

Provide a brief description of the main local factors that may influence the importance of the impact of emissions in the surrounding environment

Air Quality

Are there any Environmental Quality Standards relating to substances released from the activities, which may be at risk due to additional contribution from the activity ?
(Environmental Quality Standards for air and water are described in EPR Technical Guidance Notes)

Are there any Local Air Quality Management Plans applicable to releases from the activity?

Water Quality & Resources

Are there any Environmental Quality Standards relating to substances released from the activities, which may be at risk due to additional contribution from the activity?

Are proposals to abstract water satisfactory in order to obtain an abstraction licence?

Is the activity located in a groundwater vulnerable zone (for activities with direct releases to land only)?

Proximity to Sensitive Receptors

Is public annoyance likely to be an issue for noise, odour or plume visibility ?

Are there any wildlife habitats, eg Special Areas of Conservation,or Special Protection Areas, likely to be affected by releases from the activity? (Description of requirements of Habitats Directive is provided in EPR Technical Guidance Notes)

Water Impacts - Fresh Water Releases

Apply Test 1 (See Guidance) and Calculate Process Contributions of Emissions to Water

This table applies Test 1 and also estimates the Process Contribution for Freshwater releases, this is calculated after dilution into the relevant surface water type for each emission to water listed in the inventory, according to the release point parameters input earlier. If you have more accurate data obtained through dilution modelling, this may be entered as indicated and will be used instead of the estimated PC. Any releases which 'Pass' Test 1 are screened out at this point.

Substance	Annual Avg EQS			MAC EQS		
	Release µg/l	EQS µg/l	Release conc < 10% EQS **Test 1**	Release µg/l	MAC µg/l	Release conc < 10% EQS **Test 1**
[F1] Chloride (River Aire via Marley Sewage Works)		##########	Fail	70.0000		N/A
[F1] Copper (River Aire via Marley Sewage Works)		1.0000	Fail	3.0000		N/A
[F1] Iron (River Aire via Marley Sewage Works)		1000.0000	Fail	20.0000		N/A

Note that the Process Contribution shown for each substance is the sum of the individual process contributions of each point from which the substance is emitted. Process Contributions obtained from modelling data should incorporate all relevant release points and flow conditions.

* If you have valid dispersion modelling data available - please enter it here

Comments

Water Impact Modelling Assessment

See guidelines in H1 Annex D and respond to the following

Describe here the justification for whether detailed modelling is, or is not required for any of the releases. Refer to the quidelines in H1 Annex D.

Describe source of background information:

Describe location of detailed modelling work:

Summary Tables

Print or Preview summary tables:

Choose which summary tables

Water

Export to Excel

Export Releases to OPRA Profile

Preview

Print

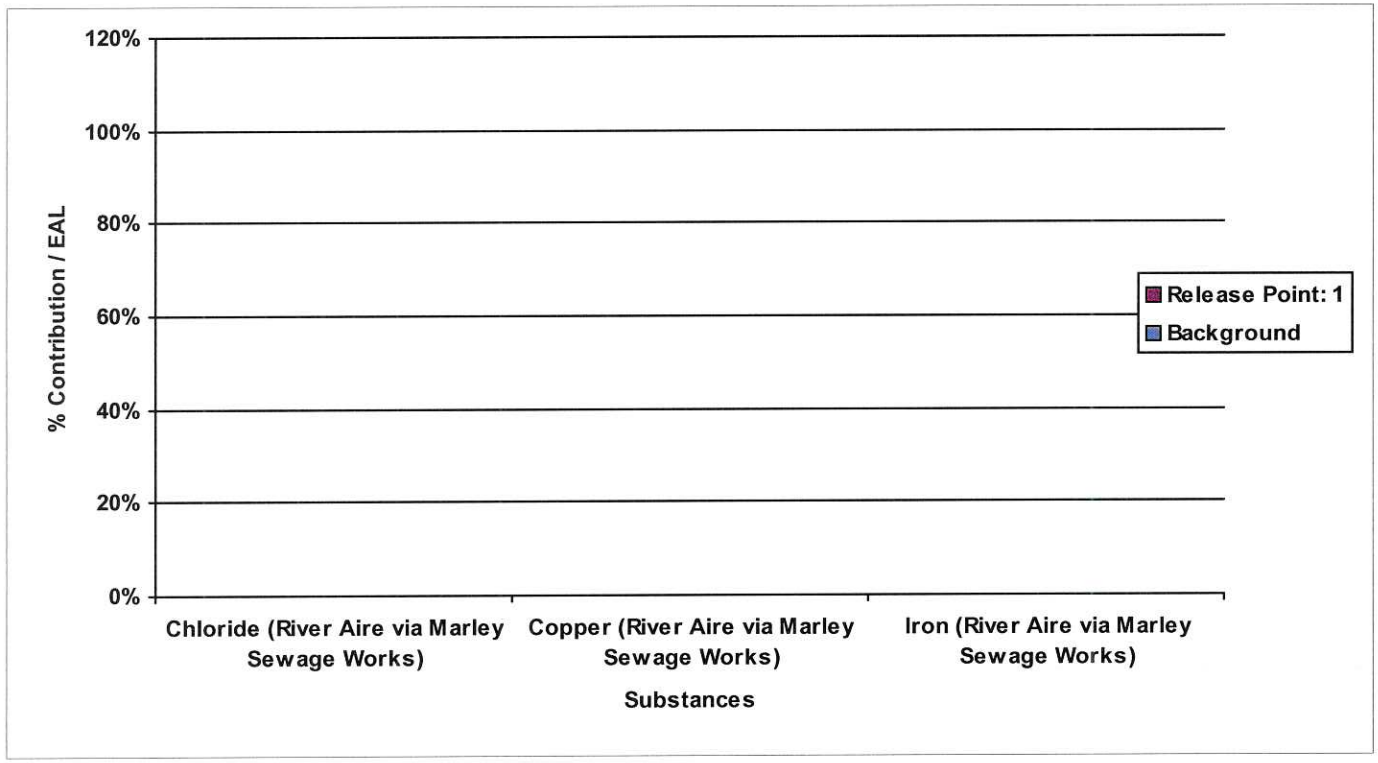
Include

- ○ All Air and Water Substances
- ◉ Air and Water Release Not Screend Out

Short Term Water - Substance Comparison

No Data Available

Water Long Term Effects - Comparison by Substance



Summary of Environmental Assessment

You have now completed all of the steps in this software for the environmental assessment. This will provide you with:

- an inventory of all emissions sources and substances emitted from your activities
- an information trail of how the impacts of these emissions have been assessed
- a summary of the impacts

You now need to use this information to confirm whether the emissions are acceptable, i.e. that they do not cause significant pollution to occur, by responding below:

Do any of the emissions exceed any of the folllowing

Statutory Emission limit values:	No	If yes, identify the substances concerned and improvements that are needed to at least meet the statutory requirement
Environmental Quality Standards (air and water):	No	If yes, identify the substances concerned, the contribution from the activities and investigate whether further detailed fate and effect modelling and/or pollution controls are needed. Ensure that the relevant EQS reference conditions are applied.
Environmental Assessment Levels:	No	If yes, identify the substances concerned, the contribution from the activities and investigate whether further detailed fate and effect modelling and/or pollution controls are needed.

Use the box below to provide further information on any of the above to which you have responded 'Yes':

Finally, print all of the information and submit with your application. Remember to include any supplementary information and reports that you have had made reference to during the assessment procedure.