



Water Use

Supporting Guidance (WAT-SG-69)

Sector-specific Guidance: Distilleries

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Update Summary

Version	Description
v1.0	First issue for Water Use reference. Updates and replaces information held in: <i>WAT-SG-04: Sector-specific Guidance (Section 3)</i>
v2.0	Doc links revised to new website, new template applied, revised example link
v3.0	Expired CMS links reviewed and updated.

Notes

References: Linked references to other documents have been disabled in this web version of the document. See the References section for details of all referenced documents.

Printing the Document: This document is uncontrolled if printed and is only intended to be viewed online.

If you do need to print the document, the best results are achieved using Booklet printing or else double-sided, Duplex (2-on-1) A4 printing (both four pages per A4 sheet).

Always refer to the online document for accurate and up-to-date information.

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1. Background

This guidance is to inform EPI staff of any additional information that will be required for a distillery application, or points to consider during pre-application discussions. This may be for a new facility or an exiting facility that did not apply during the transfer period.

The largest concentration of distilleries is in Speyside with another significant group on the Island of Islay. There are two trade associations which represent the distilling industry – the Scotch Whisky Association (SWA) and the Malt Distillers Association (MDA). The SWA has a wide remit including the protection of Scotch Whisky worldwide. The MDA is principally involved with the production side of malt distilling.

The quality of water used for producing whisky is of particular importance, although this is less critical with respect to water used for cooling purposes.

2. Calculating Water Demand

Water is used in the distilling industry for two main purposes;

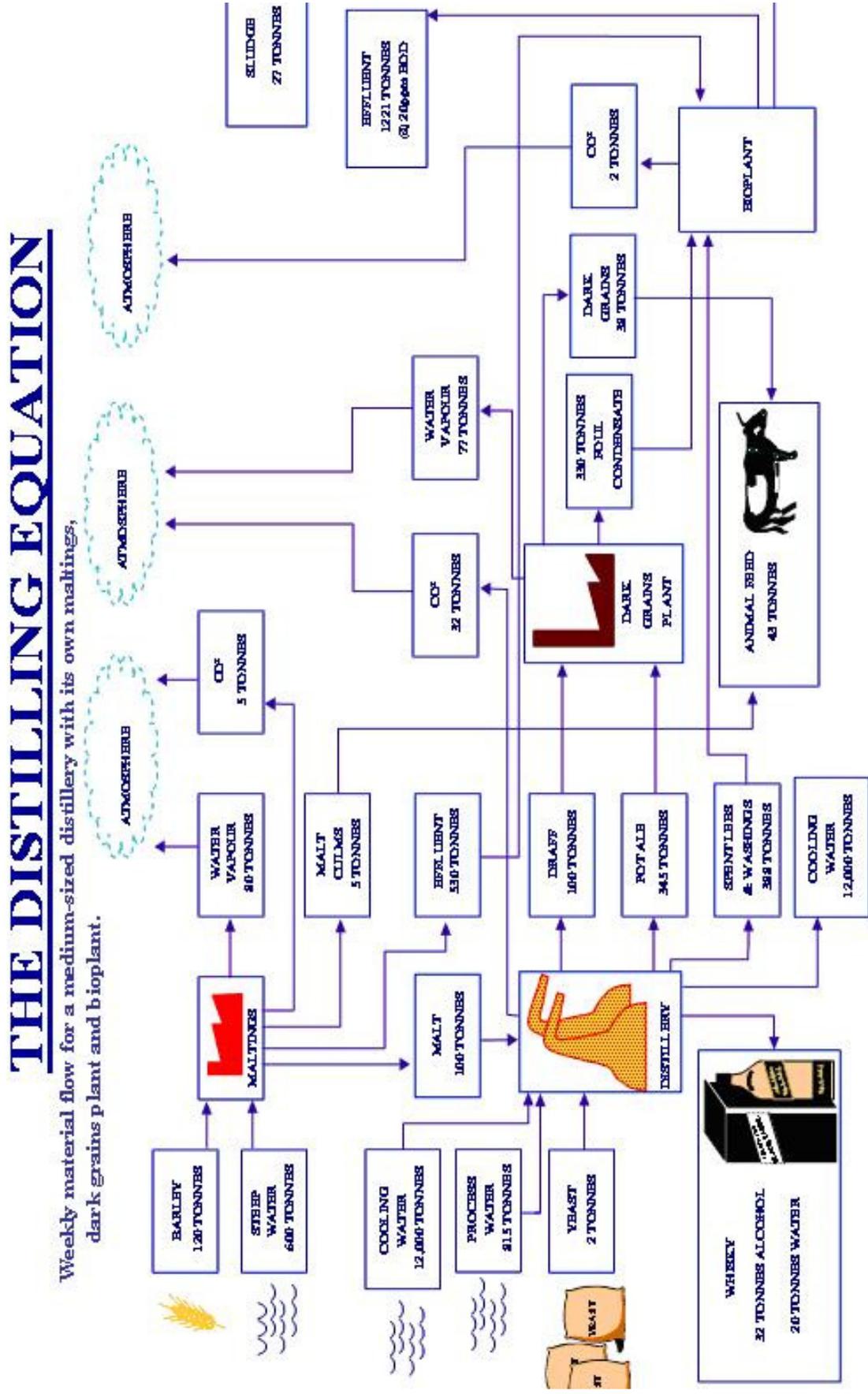
- Process water - around 10% of water is used in the production process. The water is mainly used for the mashing stage. The quality of the water is important for the taste and character of the whisky.
- Cooling water - the remaining 90% of distillery water usage is for the cooling processes

For a summary of the whisky production process, please see the following industry links:

- *Scotch Whisky Association*
- *Whisky.com*

There is a wide range of production techniques which influence the volumes that will be needed and there are no accepted industry figures. However, there is a distillery equation, shown overleaf, which can be used as a rough guide. This is not a definitive indication of water usage per unit of production and should be used as a guide only. There are many valid reasons why a particular site will use more or less water than the values indicated here

Figure 1 The Distilling Equation



3. Frequently Asked Questions

3.1 Is water in a lade an abstraction?

Water diverted into a lade is an abstraction under the definition of the regulations and so would need to be authorised.

It is recognised the volume of water that passes through lades can be very high with only a small proportion being used within the distillery. In many cases the lade itself has developed a mature ecology in its own right. Therefore, abstractions through lades are subject to abated charges under *Annex II of the Water Environment (Controlled Activities) Charging Scheme*.

It is recognised that lades have been created where no natural water channel would be but, as stated above, lades often have established ecology in their own right. Lades will be considered as artificial water bodies and will be expected to meet good ecological potential.

Although the water abstracted into the lade will not be included in the subsistence charge, the abstraction will be regulated and therefore referred to in the licence. The licence will identify the abstraction into the lade as an abstraction point and the volume entering the lade will be included within the licence.

In addition to the abstraction into the lade being a controlled activity, the abstraction from the lade into the distillery is also a controlled activity.

3.2 Are impoundments within lades subject to control?

In the same way as locks within a canal, impoundments within the lade are not regulated and do not require any application or licence. This is stated in the *CAR Practical Guide (Controlled Activities Regulations: A Practical Guide)*.

3.3 What happens if I share my abstraction point with someone else?

There may be situations where more than one distillery uses the same source of water. For example, two distilleries using one lade as a source of cooling water. Where both distilleries abstract water from the lade through their own intake structure, then each distillery needs to apply for that abstraction from the lade. Therefore, an abstraction from a lade into a distillery needs to be identified in that distillery's application form.

There will only be one intake from the watercourse into the lade, even though a number of distilleries subsequently abstract from the lade. Only one of the distilleries needs to apply for the abstraction from the watercourse into the lade.

It is up to the companies concerned to ensure that the abstraction into the lade is covered by one of the licences. However, the responsible person who

would normally apply would be the company that can secure compliance with any conditions included in the licence. This will typically be the operator who has access to, operational control over or maintains the structure.

3.4 When does a shallow well become an abstraction point?

There are situations where there are a series of shallow wells that then feed into an underground collection system. In some of these cases the locations of each of the shallow wells may be known. For other sites, the exact locations of these shallow wells may not be individually known, although the general area affected can be identified as can some tanks or cisterns. In either case, there may be no means of determining how much water is being abstracted from each individual point although the total volume transferred to the distillery from the combined collection points will be capable of being measured.

Where there is a discernable feature on the ground surface then this would count as an abstraction point. Where there is nothing to indicate that there is a well present, for example subsurface collection channels, then the collection point (e.g. tank or cistern) would be the abstraction grid reference. The map attached to the application should indicate the area from which this collection point obtains water.

3.5 Will I need to install monitoring?

All licences will need to monitor in some way the volume of water abstracted from key points and this will be a condition of the licence. This monitoring can take a number of forms, such as flow measurement facilities, pump capacities or the maximum flow through a fixed gravity structure.

Where fixed rate pumps are in place it will be acceptable to monitor the hours the pump operates and calculate from this the volumes abstracted. This would not be appropriate for some variable rate pumps where the hours run do not give a clear and auditable indication of the volumes of water abstracted.

Another method of monitoring the volumes of water abstracted without the use of flow measurement is through calculation based on the capacity of a fixed intake structure. The majority of these structures behave in a predictable manner (i.e. they take a fixed proportion of the flow and are hydraulically controlled). The maximum abstraction rate can therefore be calculated in which circumstances no direct flow measurement is necessary. The licence conditions would instead be set according to the details of the intake structure. The intake structure may need calibrating periodically to demonstrate that the actual abstraction capacity is as described in the licence.

Examples of this may include the intake into the lade from a watercourse which is controlled by a fixed structure taking a proportion of the flow.

Alternatively it may relate to a gravity fed pipe that runs constantly and therefore has a known maximum rate.

Where flow measurement meters are currently in place in a distillery then these should be described in the application form giving details of the locations and type of monitor. These monitoring facilities will generally be accepted and included in the licence where they can demonstrate the volume of water abstracted. Current monitors may, however, require upgrading following a review of the licence if it does not meet set standards. Where this is the case, a timescale will be agreed during the review process.

Where no monitoring is in place and the means of assessing the volumes described above are not possible, then new flow monitoring equipment may need to be installed at specified points. These locations and the timescale for installation will be included in the licence. The timescale for installing any new monitoring that is required will be one year from the date the licence is issued, or a different time period as agreed in writing with SEPA.

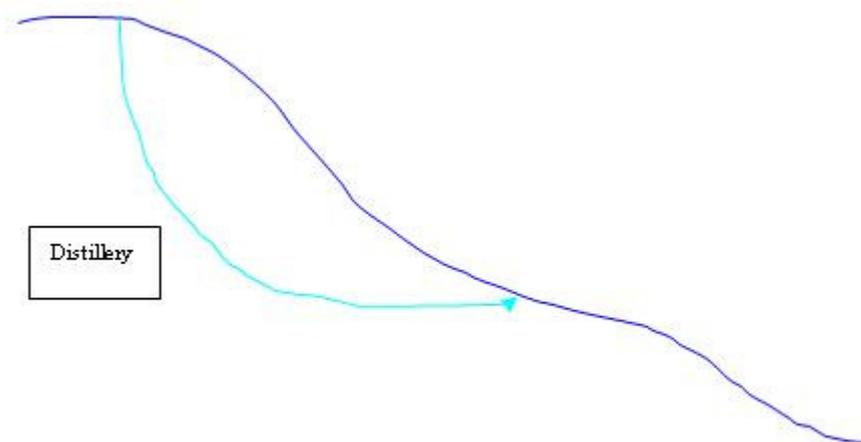
For further details on monitoring please refer to the following guidance, available on the water manual:

- *WAT-SG-51: Water Resource Licence Monitoring Plan Guidance*
- *WAT-TEMP-68: Water Resource Monitoring Plan Licence Template*
 - Includes an *Example Monitoring Plan* in Appendix 1

4. Definitions

Lade: A gravity fed and predominantly open, continuous artificial channel or stream leaving a watercourse and re-entering the water environment at a downstream location, as shown below.

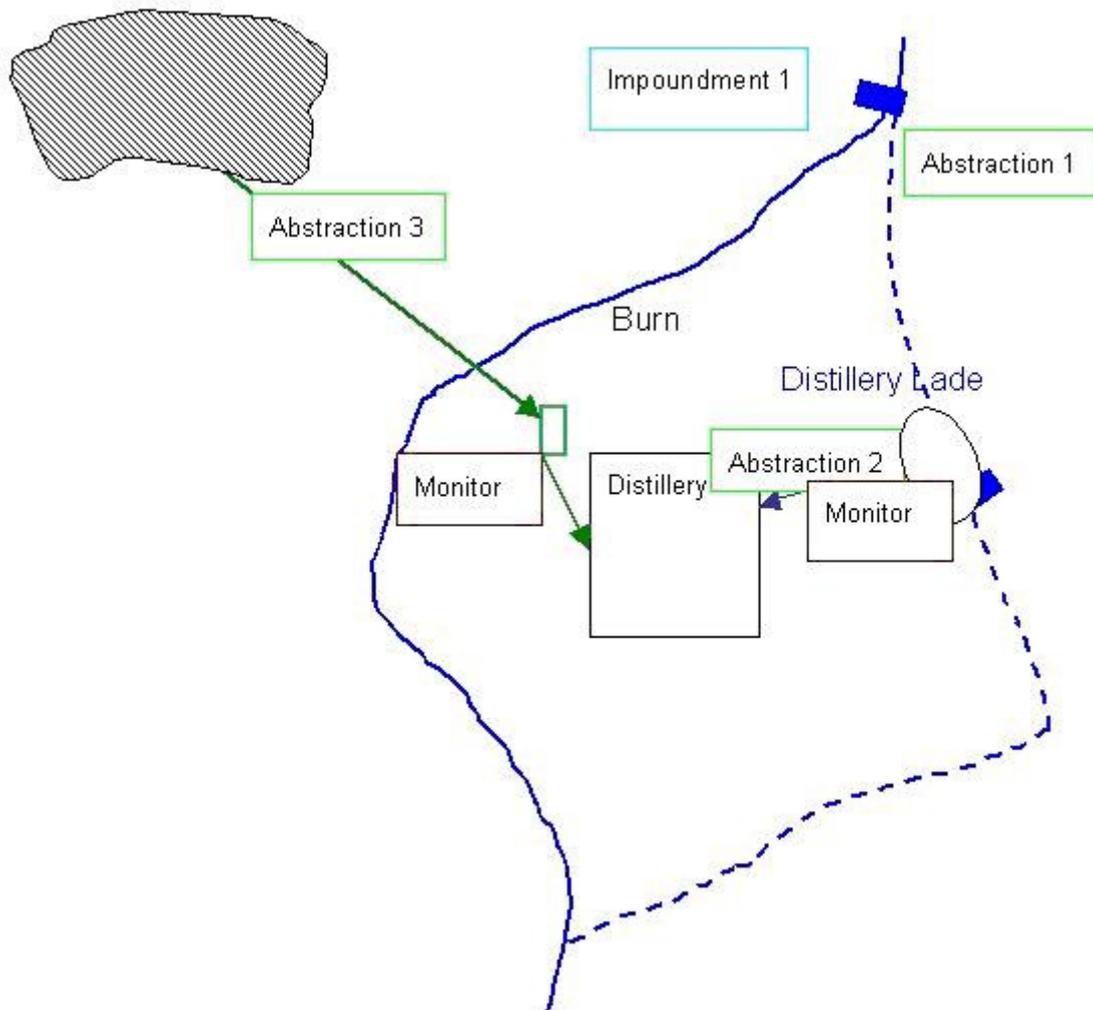
Lades are considered to be part of the water environment and will be treated as artificial water bodies and therefore under WFD requirements will need to meet good ecological potential and not good status. Flows into the lade will be controlled through abstraction and impoundment licence conditions and when licensing abstractions consideration may need to be given to the ecological impacts on the lade.



Example 1

A lade may be constructed to supply a distillery. This is an open structure and should ideally become vegetated and develop habitat. A proportion of the river is diverted into this lade and the waters travel along the lade and re-enter the water environment further downstream. Some water will be removed from the lade to be used by the distillery. This may either be direct from the lade or the lade may be modified to accommodate this abstraction, for example by a wider section of the lade or the creation of a pond using an impoundment. The volume of water that should be used to calculate the application and subsistence charge is the volumes abstracted from the lade and not the diverted water from the river into the lade.

Example 2



This distillery has its cooling water supplied from a lade that passes around the distillery building.

One abstraction point is from the natural watercourse into the lade. In this case the abstraction point has an impoundment on the natural watercourse. The water passes down the lade and a pond is created behind a further impoundment which raises the water level in the pond. The cooling water is taken from this pond into the distillery and this constitutes a second abstraction point.

The process water is obtained from a series of field drains and channels under the ground surface. There are no discernable structures above ground and the water flows down a gravity fed pipe to a process water storage tank. This would be one abstraction point although the waters are collected over a larger area. This larger area should be indicated on the site plan.

For this application there would be three abstractions and one impoundment. The impoundment on the lade itself is not regulated and so no application is required for this.

5. References

NOTE: Linked references to other documents have been disabled in this web version of the document.

See the Water >Guidance pages of the SEPA website for Guidance and other documentation (www.sepa.org.uk/water/water_regulation/guidance.aspx).

All references to external documents are listed on this page along with an indicative URL to help locate the document. The full path is not provided as SEPA can not guarantee its future location.

5.1 Water Manual References

WAT-SG-51: Water Resource Licence Monitoring Plan Guidance

WAT-TEMP-68: Water Resource Monitoring Plan Licence Template

- Includes an *Example Monitoring Plan* in Appendix 1

5.2 Other References

Controlled Activities Regulations: A Practical Guide (www.sepa.org.uk)

Scotch Whisky Association (www.scotch-whisky.org.uk/)

Water Environment (Controlled Activities) Charging Scheme
(www.sepa.org.uk)

Whisky.com website (www.whisky.com)

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