



Management System Requirements

Guidance

Amendment record

Issue	Date	Amendment
Draft E	Sept 2007	Amendment record added
Draft E	Sept 2007	Quality Management System (QMS) changed to "Management System" throughout – to demonstrate that an Environmental Management System is equally acceptable.
Draft E	Sept 2007	Sect 3 : The first management system surveillance audit is conducted 12 months after the initial assessment.
Draft E	Sept 2007	Sect 4.12 : examples of a "significant change" given
Draft E	Sept 2007	Sect 4.15 : clarification of preventative actions
Draft E	Sept 2007	Sect 6.3 : added section "MCERTS Management Systems Auditors"
Draft E	Sept 2007	Appendix 2 : Consent/Permit holder audit report updated to issue 8
Draft F	Nov 2007	Sect 4.4 : Quality Policy requirements – further guidance added
Draft G	Dec 2007	Sect 4.14 : Data treatment – further guidance added
Draft G	Dec 2007	MCERTS Site Conformity Inspection Certificate added (Appendix 1)
Draft G	Dec 2007	4.4 Quality Policy changed to Quality/Environmental Policy
Draft G	Dec 2007	4.6 Quality Manual changed to Quality Manual/Environmental Documentation
Draft H	Jan 2008	Throughout – updated to reference "Minimum Requirements for the Self-Monitoring of Effluent Flow, Version 3.1, January 2008"
Draft I	Feb 2008	5 Conformance Assessment – The Certification Body should have MCERTS for the Self-Monitoring of Effluent Flow included in their scope of accreditation.
Draft J	March 2008	Throughout – updated to reference "Minimum Requirements for the Self-Monitoring of Effluent Flow, Version 3.2, February 2008"
Draft K	June 2008	Sect 3 : updated to reflect current practice (Sect 3.1, 3.2 and 3.3). Site Operators can contract direct with Sira for audits and inspections.
Draft K	June 2008	Sect 4.1 : An MCERTS management system audit will still need to be carried out, even if Operators maintain an EMS and/or QMS
Draft K	June 2008	Sect 4.2 : the four "key areas" added for information
1	Aug 2008	document issued: Appendix 1 – site conformity inspection certificate is at issue 6 Appendix 2 – consent/permit holder audit report is now at issue 13
2	Sept 2009	Sect 3.1 – Heading changed to "Maintaining Certification"
2	Sept 2009	Sect 4.2 – Equipment Inventory (4.9) and Data treatment (4.14) added to the list of "key areas". Auditing of a management system covering multiple locations includes random sampling based on an appropriate sample size
2	Sept 2009	Sect 4.2 - Auditing of a management system covering multiple locations will include random sampling based on the square root of the number of sites rounded up to the nearest whole number.
2	Sept 2009	Website updated to www.siraenvironmental.com/mcerts
2	Sept 2009	Sect 4.13 - Equipment used for verification checks should be subject to periodic maintenance and calibration
2	Sept 2009	Sect 4.10 – Maintenance records should be retained for 5 years
2	Sept 2009	Sect 5.2 - Audit Detail report (ADR) section added
2	Sept 2009	Sect 5.3 - Corrective action section added
2	Sept 2009	Sect 5.4 - Timescale for completing corrective action section added
2	Sept 2009	Sect 5.5 - Auditor recommendations (initial audits) section added
2	Sept 2009	Sect 5.6 - Auditor recommendations (surveillance audits) section added
3	Oct 2009	Sect 7.2 – Contact details for Flowcheck Ltd updated
4	March 2010	Sect 7.2 - Contact details for Mobrey Measurement changed to METCO Services Ltd
4	March 2010	Sect 7.2 - Contact details for Flowcheck Ltd updated
5	Oct 2010	Sect 5.6 – Reference to Section 3.1 corrected "Maintaining Certification"

Amendment record (Con't)

Issue	Date	Amendment
5	Oct 2010	Throughout – updated to reference “Minimum Requirements for the Self-Monitoring of Effluent Flow, Version 3.3, September 2010”
5	Oct 2010	Appendix 2 - consent/permit holder audit report revised
5	Oct 2010	4 Quality Assurance (Management Systems) re written to reflect Environment Agency policy wrt “Simplified Management Systems”
5	Oct 2010	4.3 Simplified Management Systems – only applicable at the discretion of the Environment Agency
6	Nov 2010	Sect 5.5 – auditor recommendations clarified
7	Jan 2011	Appendix 1 – Site Conformity Inspection Certificate updated (issue 9)
7	Jan 2011	Sect 5.5 – conditional acceptance removed, Auditor recommendation is to either “accept” or “refuse” management system
7	Jan 2011	Sect 5.6 - Where an Operator repeatedly fails to co-operate with Sira in the planning and execution of surveillance audits or in the completion of agreed corrective actions, the MCERTS Site Conformity Inspection Certificate may be suspended or withdrawn and the Environment Agency informed
7	Jan 2011	5.6 – auditor recommendations for frequency of future surveillance audits clarified (2 years, 1 year, <1year)
7	Jan 2011	5.2 – definition of “minor”, “major” and “observation”
8	July 2011	5.3 – corrective actions are reviewed at the next surveillance visit
8	July 2011	5.4 – “Timescale for completing corrective action reports”, section deleted
8	July 2011	5.4 & 5.5 – auditor recommendations are subject to review by Sira Certification Service Director(s)
8	July 2011	Appendix 2 – consent/permit holder audit report updated (issue 19)
8	July 2011	website updated to www.siracertification.com/mcerts
8	July 2011	5.3 Corrective Action Report changed to Proposed Corrective Action Report. Proposed corrective action may be agreed during the audit
8	July 2011	3.1 & 5.5 - reassessment of the management system is conducted every five years
8	July 2011	4.9 - the auditor shall... record the serial No. and location of major items of flow measurement equipment
9	Mar 2012	Sira logo changed to Sira/CSA Group logo
9	Mar 2012	Appendix 2 – Consent/Permit holder audit report is now at issue 23
9	Mar 2012	Sect 2 – reference to UKAS accreditation added
9	Mar 2012	New Sect 5.6 - Suspension/withdrawal of certificates
9	Mar 2012	5.4 – up to 4 “minor” ADR’s permitted for a 12 month surveillance interval
10	Apr 2012	Throughout – updated to reference “Minimum Requirements for the Self-Monitoring of Effluent Flow, Version 3.4, April 2012”
11	Sept 2012	5.6 - “Suspension/withdrawal” replaced with “cancellation” [normally imposed on a certificate holder] by the CB. Section re-worded.
11	Sept 2012	Appendix 1 – Site Conformity Inspection Certificate (issue 11) now includes CSA logo, emission point ref and “date of site inspection (valid from)”
11	Sept 2012	7.2 - MCERTS Inspector contact details updated
11	Sept 2012	4.16 - The MCERTS internal audit shall address each of the “key” areas in Sect 4.2
11	Sept 2012	Appendix 2 - Consent/Permit holder audit report is now at issue 24
12	Feb 2013	Throughout – updated to reference “Minimum Requirements for the Self-Monitoring of Effluent Flow, Version 3.5, Feb 2013”
12	Feb 2013	Sect 4.3 – Simplified Management System – amended to align with SMOEF, Version 3.5, Feb 2013”
12	Feb 2013	Sect 4.1 & 4.3 – Reference to Simplified Management System removed
12	Feb 2013	Sect 6.2 – Simplified Management System Auditor Competence section

		removed
13	June 2013	4.16 interval at which audits take place added
13	June 2013	5.5 note on reassessment taking place within 6 months of site reinspection
14	Feb 2015	Throughout - All references to 'effluent' removed, amended to align with "Minimum Requirements for the SMOF, Version 4, Aug 2014"
14	Feb 2015	Throughout - All references to "site conformity" removed from the certificate title, amended to align with current certificate title format – MCERTS Inspection Certificate"
14	Feb 2015	Throughout – updated to reference "Minimum Requirements for the Self-Monitoring of Flow, Version 4, Aug 2014"
14	Feb 2015	amended to align with "Minimum Requirements for the SMOF, Version 4, Aug 2014"
14	Feb 2015	Sect 4.2 – Management System element titles amended (4.6 & 4.15) to align with "Minimum Requirements for the SMOF, Version 4, Aug 2014"
14	Feb 2015	Sect 4.5 – Guidance improved as to who would make an appropriate candidate for the 'MCERTS responsible person'.
14	Feb 2015	Sect 4.8 – "Quality Manager" replaced with "MCERTS Responsible Person".
14	Feb 2015	Sect 4.9 – Note on the data path added
14	Feb 2015	Sect 4.10 – "Closed channel measurement structures should be subject to periodic internal inspection" added.
14	Feb 2015	Sect 4.10 – "Manufacturer's recommendations" removed.
14	Feb 2015	Sect 4.11 – "Primary device" replaced with "flow measurements structures"
14	Feb 2015	Sect 4.12 – "Unless a documented justification can be developed, see 4.12 site changes" added. Similar sentence removed.
14	Feb 2015	Sect 4.12 – "By the MCERTS responsible person" added.
14	Feb 2015	Sect 4.13 – Sentence added to include supplementary maintenance for electronic verification of electromagnetic flowmeters.
14	Feb 2015	Sect 4.15 – Preventative actions removed as per "Minimum Requirements for the SMOF, Version 4, Aug 2014"
14	Feb 2015	Sect 4.16 – MCERTS internal audit key area guidance removed to align with "Minimum Requirements for the SMOF, Version 4, Aug 2014"
14	Feb 2015	Sect 7.1 – SCS registered address corrected
14	Feb 2015	Sect 7.4 – Contact details amended to include up-to-date list of management system consultants
15	Dec 2016	Sira changed to CSA Group Testing UK Ltd (CSA Group) throughout
15	Dec 2016	Website updated to www.csagroupuk.org/mcerts
15	Dec 2016	Sira Certification logo removed
15	Dec 2016	CSA Group Testing UK Ltd (SCS) contact details updated
15	Dec 2016	Contact details for Environment Agency & SCS updated
15	Dec 2016	Sect 4.16 – "Usually annually" replaced with "annually" "" ". Reference to "suitably qualified individuals" added.
15	Dec 2016	Address updated for Flowcheck
15	Dec 2016	Sect 5.5 Less replaced with "Fewer" from replaced with "form"
16	Nov 2018	Sect 7.2 - MCERTS Inspector contact details updated
16	Nov 2018	CSA Group logo changed
17	July 2019	Addition of Guidance document ref. in footer – "SMOEF"
17	July 2019	Minor corrections - Section 1 word 'form' to 'from', Section 1 insertion of 'part of CSA Group', Section 3.1 word 'approximately' to 'within', Section 4.10 insertion of 'and not less than', Section 5.2 insertion of 'in which a corrective action is not necessarily required.', section 5.3 from 'ADR severity' to 'categorization of the non-conformance being', Section 5.4 insertion of 'Assessment' in sub title and first sentence and 'or' in second line.
17	July 2019	Section 1 - Reference to "Minimum Requirements for the Self-Monitoring of Flow, Version 4, Aug 2014" replaced with "Minimum Requirements for the Self-Monitoring of Flow, (current version)". All other references replaced

		with "The MCERTS Standard".
17	July 2019	Section 1 - Requirement for the supply of up-to-date consent/permit information added.
17	July 2019	Section 1 and 7.4 - references to Qualconsult renamed.
17	July 2019	Section 1 - inclusion of statement with respect to NRW and MCERTS.
17	July 2019	Section 3 - inclusion of '1-stop solution', clarity on Option 2 process paragraphs 3,4,6,7
17	July 2019	Section 4.3 - revised reference to extension of MCERTS scheme.
17	July 2019	Section 4.5 - operator responsibility to notify SCS of changes to the MCERTS responsible person added.
17	July 2019	Section 4.10 - rewording of paragraph 1.
17	July 2019	Section 4.11 - explicit requirement for the purchase of MCERTS-certified equipment added.
17	July 2019	Section 5.1 - rewording of paragraph 1. Insertion of the four types of audits (paragraph 5).
17	July 2019	Section 5.3 - inclusion of 'Proposed' in subtitle and rewording of paragraph 1.
17	July 2019	Section 5.5 - "unless the site inspection report is submitted as evidence of a site change review" added to last paragraph.
17	July 2019	Section 5.5 - inclusion of paragraphs 4,5,6,7 relating to audit dates and clarity on process with associated example.
17	July 2019	Section 5.5 - within table removal of '2 years' recommendation and clarity on '<1 year' to 'six months of less'.
17	July 2019	Section 6.1 first criteria reference to MCERTS Bulletins.

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1 INTRODUCTION

The effective environmental protection and management of water bodies requires knowledge about the mass release rate of pollutants. This is achieved by combining flow-measurement data (volume/time) with pollutant concentration (mass/volume).

The Environment Agency's standard "*Minimum Requirements for the Self-Monitoring of Flow, (current version)*" – "*The MCERTS Standard*" (available from gov.uk - www.mcerts.net) specifies the Environment Agency's minimum requirements for the self-monitoring of flow. The standard covers:

- **performance requirements** for flow-metering installations in terms of a target measurement uncertainty
- **management system requirements** to ensure the ongoing performance of flow metering installations

Conformance with this MCERTS standard is based on assessment of the flow-monitoring arrangements by MCERTS Inspectors and assessment of the supporting management system.

The total daily volume of the discharge as specified in the consent/permit shall be measured with a target uncertainty of better than $\pm 8\%$ of total daily volume.

MCERTS Inspection Certificates are issued to Operators following satisfactory assessment against the standard "*The MCERTS Standard*".

N.B It is the responsibility of Operators to ensure that Sira Certification Service(SCS), MCERTS Inspectors and management system auditors are provided with up-to-date consent/permit information – consent/permit number, operator name, site address, details of defined liquid discharge points and applicable monitoring conditions (daily volume limits, dry weather flows, maximum discharge flow rates, requirements for continuous monitoring etc.) – to ensure that compliance is accurately assessed and for accurate MCERTS Inspection Certificates to be issued.

This guidance has been developed by Sira Certification Service (part of CSA Group) and The Qualconsult Partnership (see Section 7 for contact details) to assist Operators of regulated processes and auditors of management systems. It is to be used by management systems auditors when undertaking audits to allow the audit to be conducted in an objective manner. It will also allow Operators to develop an improved understanding of MCERTS requirements.

Permits issued by Cyfoeth Naturiol Cymru Natural Resources Wales (NRW) for the monitoring of liquid waste flows include requirements for compliance with MCERTS which remains the standard for the specification and operation of liquid flow measurement structures.

2 OPERATION OF THE MCERTS SCHEME

SCS operates the scheme on behalf of the Environment Agency through a number of service providers, operating in a commercially competitive market. Contact details for these service providers are available at www.csagroupuk.org/services/mcerts/mcerts-self-monitoring-of-flow and in Section 7 of this guidance.

MCERTS Inspectors are assessed and appointed by SCS in accordance with the MCERTS Standard: “*Competency Standard for MCERTS Inspectors & Assistant Inspectors – Flow Monitoring*”.

MCERTS Inspectors and management systems auditors assess flow monitoring arrangements in accordance with the MCERTS Standard.

SCS also provides bulletins (additional detailed procedures and guidance) which are available at www.csagroupuk.org/services/mcerts/mcerts-self-monitoring-of-flow/mcerts-bulletins/

SCS undertakes accredited certification activities as part of CSA Group.

SCS maintains UKAS accreditation (No. 0011) according to ISO 17065 : 2012 for the auditing of management systems in accordance with “The MCERTS Standard”.

3 THE INSPECTION PROCESS

Site Operators have two options. They can apply directly to SCS for a site inspection and an audit of their management system (referred to as a “1-stop solution”) or they can contact an MCERTS Inspection Company from the published list to arrange a site inspection and then arrange a management system audit separately with SCS.

Option 1 – apply direct to Sira Certification Service (SCS) – the “1-stop solution”

The Operator contacts SCS with details of the flow monitoring arrangements. SCS will co-ordinate the MCERTS Inspector and MCERTS management system auditor separately to ensure that both the inspection and audit are carried out satisfactorily and the inspection/audit reports reviewed. Following review and acceptance, an MCERTS Inspection Certificate (Appendix 1) will be prepared and issued for the site.

Option 2 – apply separately

The Operator chooses an MCERTS Inspector from the list of Service Providers maintained on the CSA Group (SCS) web site at www.csagroupuk.org/services/mcerts/mcerts-self-monitoring-of-flow/approved-inspection-providers/

An MCERTS Inspector undertakes an inspection of the site process configuration/flow monitoring arrangements and prepares an Inspection Report. The MCERTS Inspector provides the Operator with a copy of the Inspection Report.

The Operator contacts SCS to request an MCERTS management system audit. SCS shall quote the Operator the appropriate fee dependant on the type of management system audit to be carried out (i.e. Initial Assessment, Reassessment or Surveillance) and upon signed acceptance from the Operator the process shall progress to scheduling the audit. An Audit Agenda document

shall be prepared by SCS and issued to the Operator confirming the sections of “The MCERTS Standard” to be audited and also the date, time and name of the MS auditor attending.

Alternatively, SCS can provide a service of offering support and assistance for Operators to source management system auditor(s) working on behalf of a suitably accredited Certification Body as per the requirements of clause 4.17.1 of “The MCERTS Standard”

An MCERTS management systems auditor conducts an audit of the MCERTS management system and provides the Operator with an audit report.

Provided that the MCERTS site and management system requirements are met, the process continues for the Operator to obtain an MCERTS Inspection Certificate. The MCERTS Inspector may make the application on behalf of the Operator.

For an MCERTS Inspection Certificate to be issued, supporting documents must include the Site Inspection Report, evidence that the MCERTS management system requirements have been met and the appropriate fee or signed acceptance of the quotation with an accompanying purchase order.

SCS reviews the evidence included in the application. Provided that the MCERTS requirements are met, SCS issues the Operator with an MCERTS Inspection Certificate (Appendix 1).

3.1 Maintaining certification

MCERTS Inspection Certificates are valid for five years from the initial site inspection. In order to maintain certification throughout the certification period, the Operator’s management system will be subjected to periodic surveillance. The first surveillance visit will be conducted within 12 months after the initial assessment. Thereafter, the frequency of surveillance will be agreed with the Operator, based on the audit findings (See Section 5.5).

Reassessment of the management system is conducted every five years (See Section 5.5).

4 QUALITY ASSURANCE (MANAGEMENT SYSTEMS)

4.1 Introduction

This guidance is based on Section 4 of “*The MCERTS Standard*”.

Operators may choose to maintain an ISO 14001 Environmental Management System (EMS) or an ISO 9001 Quality Management System (QMS), or both. Maintaining an EMS and/or a QMS will not adequately demonstrate compliance with MCERTS requirements. **An MCERTS management system audit will still need to be carried out.**

4.2 Management System

The focus of the Management System should ensure that the required measurement uncertainty and confidence level is maintained. “Quality” in this context is concerned with the accuracy and completeness of the flow data provided to the Environment Agency.

The Management System shall include statements, information and/or documented procedures, as appropriate, covering the following elements:

- quality/environmental policy – Sect 4.4
- management responsibilities – Sect 4.5
- documentation – Sect 4.6
- operating procedures – Sect 4.7
- document control – Sect 4.8
- equipment inventory – Sect 4.9
- maintenance – Sect 4.10
- commissioning – Sect 4.11
- site changes – Sect 4.12
- verification – Sect 4.13
- data treatment – Sect 4.14
- corrective actions – Sect 4.15
- internal audits – Sect 4.16

The following clauses are considered to be the “key” areas

- management responsibilities – Sect 4.5
- equipment inventory – Sect 4.9
- maintenance – Sect 4.10
- site changes – Sect 4.12
- verification – Sect 4.13
- data treatment – Sect 4.14

A major failing in any one of these “key” areas will normally result in the auditor refusing acceptance of the management system and further objective evidence of compliance will need to be collected at a future audit.

Integrating the MCERTS Management System requirements into a wider quality or environmental management system may have some advantages such as common auditing and document control arrangements. However it could be difficult, for example, to have a policy statement that addresses both the quality of product and MCERTS requirements and therefore some areas may be best kept separate.

In developing the management system it is important to ensure that the system is explicit, effective and as easy as possible to understand and implement. Whilst all of the requirements need to be considered, any unnecessary complication will inevitably cause problems.

Assessment of the management system involves an audit to ensure that the requirements have been fully established, implemented, understood and adequately address the requirements of sections 4 of “*The MCERTS Standard*”. The management system shall ensure that flow data is consistently accurate and correctly captured and communicated. The management system shall ensure continued flow measurement accuracy between the five-yearly inspections of site arrangements. This will be verified during periodic surveillance of the management system.

An organisation with more than one site where liquid flow monitoring arrangements are regulated by EA permit may choose to maintain a “Group Management System” covering all discharge locations. If necessary, local operating procedures may also be in place which allow any variations in operating practice necessary for specific discharge sites. Auditing of a Group Management System will include random sampling of information and records associated with the individual locations based on an appropriate sample size. This is generally based on the square root of the number of sites rounded up to the nearest whole number. If an organisation

wishes to have a Group Management System audit, it must be possible to conduct the assessment of all site procedures and records from one location within the time allotted for the visit. (e.g. For an Operator with 64 sites (square root 8) the sample size will be 8. For an Operator with 5 sites (square root 2.24) the sample size will be 3).

4.3 Possible Extension of MCERTS

In future the MCERTS scheme may be extended to cover water abstraction metering and pass forward (PFF) measurement structures.

4.4 Quality/Environmental Policy

The commitment of senior management is important if the Operator is to effectively implement and operate the required management system. A documented statement of this commitment is a fundamental requirement, and it needs to be communicated and understood so that all relevant employees appreciate the significance of MCERTS.

The policy should state senior management's commitment in simple, unambiguous terms. It does not need to include the responsibilities indicated as long as these are defined elsewhere within the system.

An Environmental Policy which includes a commitment to comply with environmental regulations or legislation will satisfy this requirement.

4.5 Management Responsibilities** (key area)

Somebody needs to be responsible for understanding the requirements of MCERTS and for maintaining the management system. This could be a Quality/Environmental Manager or other person with management system experience. It is important that responsibilities are clearly defined, assigned and where necessary documented. An organisation chart plus notes will be required in most circumstances. The person responsible for MCERTS (the MCERTS Responsible Person) needs to have an adequate understanding of flow measurement, MCERTS requirements, the treatment process and sufficient authority to ensure effective operation of the system.

It is not necessary to create specific job functions/titles for a responsible person. The responsibility can be undertaken by existing personnel.

The management system auditor shall record the name(s) of the responsible person(s) in the audit report.

Organisation charts should show the person(s) with principle responsibility for the management system and their relationship to senior management.

Job descriptions should include MCERTS responsibilities but do not need to be over complex. For example, those involved in the cleaning of flow monitoring equipment do not need to have a detailed understanding of MCERTS requirements, they just need to know the extent of their responsibilities and that it is important for flow monitoring accuracy.

Training records should demonstrate that appropriate MCERTS training has been provided. This does not necessarily mean external training courses. Adequate understanding for Quality

Managers could be obtained by a literature study and in such cases it would be adequate for training records to simply detail the information source(s) and date when studied. Training for operatives could be provided internally by Quality Managers with an appropriate entry in each recipients training records.

It is the Operator's responsibility to ensure that SCS are made aware of any changes in the identity or contact information for the MCERTS Responsible Person.

4.6 Documentation

The Manual or Documentation will normally provide a simple overview of the system and include the policy statement, organisation structure with respect to MCERTS, and principle responsibilities.

4.7 Operating procedures

Operating procedures normally fall into two broad types, those that address the **management** system (such as internal auditing) and those that address day to day **operational** issues (such as maintenance). Therefore it is common to have separate sets of procedures for, say Managers and Operatives. Alternatively management procedures could be incorporated in the Quality Manual and operational procedures could be in a separate "Work Instruction". A small organisation may wish to have all procedures and work instructions in one manual.

Operating procedures must be clear and easy to understand and should be available where the work is carried out. It is quite appropriate for routine requirements such as channel cleaning to be displayed using signs or similar at the work location and this would satisfy the requirement for the procedure to be documented.

The "Competent Person" responsible for the issue of operating procedures could be the Quality Manager. It is important that responsibilities are clearly defined and assigned to an appropriate person or persons.

4.8 Document control

Operating procedures (and subsequent revisions) need to be approved by an appropriate person (For example, the MCERTS Responsible Person), with a simple record to confirm this has taken place. Procedures also need to be distributed appropriately and out of date versions withdrawn to prevent inadvertent use. These constitute the necessary controls. They need to be defined in a simple "document control" procedure.

4.9 Equipment inventory** (key area)

Major items of equipment will typically include the ultrasonic level transducer (for open channel flow systems) or the electromagnetic flowmeter and any associated recording equipment. The equipment could be included in an organisation's existing maintenance system or separate records can be maintained.

The auditor shall inspect the list of major items of equipment and record the serial No. and location of major items of flow measurement equipment. Major items of equipment shall normally be included on a list, database, record sheet or card. ***The flow measurement equipment listed in the MCERTS Site Inspection report shall appear on the list together with its unique identifying code (e.g. serial number).*** The equipment inventory and maintenance schedule may be combined into one list.

Key elements of the data path should also be included. See Figure 1 in section 4.1.2 of “The MCERTS Standard”.

4.10 Maintenance** (key area)

An appropriate maintenance schedule needs to be established and maintained. The nature of maintenance activities required will depend on the type of flow monitoring measurement system. Open channel measurement structures: inspection and cleaning of flume, weir tank and plate; sensor verification; instrument checks; loop calibration; visual inspection for leaks, damage or flooding of the measurement structure. Closed channel measurement structures: internal inspection and cleaning; sensor verification; loop calibration; visual inspection for leaks or damage.

Maintenance frequencies should be based on operational experience, and supported by maintenance/inspection records. For example if the records of a monthly cleaning activity regularly report “heavy fouling” the frequency of cleaning needs to be increased. Maintenance activities may be separated into tasks which are performed “daily”, “weekly”, “monthly”, “annually”, “5 yearly” (recertification) or “as required”.

Note the requirement to detect any deterioration in performance, and other problems. Problems could include seasonal or production variations that cause deviations in accuracy. Therefore records need to show that regular functional checks are carried out.

Maintenance functions could be divided into tasks conducted weekly, monthly and annually and records kept. This can be in the form of a simple “tick-sheet” which indicates when maintenance activities were performed and who performed them. Records should be retained for a period at least equal to, and not less than, the validity period of the MCERTS Inspection Certificate (5 years).

If the equipment has specific periodic maintenance requirements these should be entered into the schedule where appropriate. If there are specific seasonal requirements for maintenance these should be entered into the schedule as appropriate. If Total Daily Volume is recorded manually the appropriate frequency should be included in the schedule.

The auditor shall describe the maintenance arrangements in place on site, the frequency of scheduled maintenance and record the location of maintenance records in the audit report.

4.11 Commissioning

This procedure needs to ensure that new installations and any modifications to the flow measurement structures result in an MCERTS inspection, unless a documented justification can be developed, see 4.12 site changes.

At the time of purchase new equipment must be on the list of MCERTS – certified devices maintained by SCS (<https://www.csagroupuk.org/services/mcerts/mcerts-product-certification/mcerts-certified-products/mcerts-certified-products-continuous-water-monitoring-system-part-3-water-flowmeters/>).

4.12 Site changes** (key area)

Any site changes that could influence measurement uncertainty need to be captured, recorded, assessed for their significance by the MCERTS Responsible Person, and suitable action taken to ensure measurement uncertainty is maintained. A documented procedure will be required to demonstrate that the above process has been followed and also to confirm completion of any action necessary.

The key factor is whether any site change affects the validity of the MCERTS Inspection Certificate e.g. previously stated measurement performance is no longer being achieved, or the flow monitoring arrangements are no longer as described in the inspection report.

One example of a “significant change” would be a change to the process which significantly reduces the daily volume measured. This could result in the 8% uncertainty target being exceeded.

Another example would be the abstraction of wash water downstream of the flowmeter resulting in “double counting” of significant flows.

The auditor shall examine the procedure for the assessment of site changes and comment on its suitability.

A single procedure could address the requirements of 4.11 and 4.12. It needs to describe how changes that could influence measurement uncertainty are captured, recorded, assessed for their significance, and suitable action taken to ensure accuracy is maintained. Records need to show that the above process has been followed and also confirm completion of any action necessary.

4.13 Verification** (key area)

Verification procedures may take the form of regular checks using a calibration reference plate (for open channel flowmeters) or a simple comparison of “indicated flow” against “expected flow”. Records of the actual measurements taken shall be maintained. Equipment used for verification checks should be subject to periodic maintenance and calibration.

Consideration should also be given to data path elements.

The frequency of such checks will depend upon such things as how well equipment is protected from damage or tampering, and would normally be carried out every 6 or 12 months.

By recording and plotting daily values of totalised flow, a visual inspection of the graph will give an early warning of any possible errors in the flow measurement. Deposition or silting will invariably result in increasing flow readings.

The auditor shall examine the procedure and the records of the actual measurements taken and comment on their suitability.

4.14 Data treatment** (key area)

The management system is required to describe how flow measurement data is collected and processed and thus demonstrate how the stated measurement uncertainty is maintained.

Where flow measurement data is transmitted to a monitoring station using telemetry, the maximum acceptable data treatment/telemetry error shall be recorded.

Where appropriate, the auditor will expect to see appropriate records covering the activities listed in 4.14.2 of “The MCERTS Standard”.

An MCERTS Inspector will often use a local display to set-up and configure a flowmeter. If flow data is transmitted to and stored on a data archive of some sort (and subsequently sent to the Environment Agency), it is important to ensure that the flow data appearing on the data archive matches the flow data indicated on the local display. A simple check can be carried out during routine verification (Sect 4.13).

4.15 Corrective actions

Incidents that indicate a failure of the management system or which could threaten the integrity of flow measurement data need to be captured, investigated, and appropriate action put in place. If the organisation operates an ISO 9001 QMS or an ISO 14001 EMS the MCERTS system could utilise the same procedure and records. Incidents need to be assessed by someone with appropriate experience, hence the reference to a “competent person”. Completion of actions, however, could be by any suitable person, with appropriate follow-up by a competent person to ensure their completion and effectiveness.

4.16 Internal audits

The MCERTS audit programme could be incorporated into an organisation’s existing QMS/EMS audit programme and use the same procedures and records, or it could be separate. In either case it is necessary to demonstrate that audits are carried out annually and that they cover all areas of the MCERTS standard in a twelve month period.

Checks by suitably qualified individuals should ensure that the MCERTS management system continues to be operated effectively and remains compliant with the latest version of “The MCERTS standard”.

5 CONFORMANCE ASSESSMENT

The Certification Body conducting the management system audit shall be a UKAS accredited Certification Body or a Certification Body that is an International Accreditation Forum signatory. The management system auditor shall work on behalf of an accredited Certification Body. The Certification Body should have “*The MCERTS Standard*” Self-Monitoring of Flow included in their scope of accreditation.

Management System auditors shall meet the competence criteria defined in Section 6 of this guidance.

5.1 Auditing

In order to maintain certification throughout the certification period, the Operator’s management system shall be subjected to periodic surveillance. The first surveillance visit will be conducted approximately 12 months after the initial assessment, Thereafter, the frequency of surveillance

will be agreed with the Operator, based on the audit findings (see section 5.5). Reassessment of the management system is conducted every five years.

The auditor shall assess the Operator's management system to ensure that the requirements have been satisfactorily met in relation to the flow monitoring arrangements.

The auditor shall assess whether the Operator's systems are in accordance with good practice and shall ensure maintenance of the flow monitoring system's performance over the certification period. The auditor shall obtain objective evidence from Operator's documented records that the systems are satisfactorily implemented in a timely manner.

The auditor shall complete the current version of a "Consent/Permit Holder Audit Report" (available from SCS). A copy of an example report is shown in Appendix 2. The report shall include a recommendation from the auditor to 'accept' or 'refuse' acceptance of the Operator's management system.

There are four types of audits:

Initial Assessment – first review of the Operator's EA permit(s) and any consent(s) to discharge to sewer, flow measurement structure site inspection report(s) and management system(MS) documentation - designed to comply with sections 4.4 to 4.16 of 'The MCERTS Standard'- culminating in a recommendation to 'accept or 'reject' the MS.

Surveillance – a periodic review (annual, or as appropriate) of the Operator's MS and records covering at least the key areas of 'The MCERTS Standard' - sections 4.5, 4.9, 4.10, 4.12, 4.13 and 4.14 - to support on-going MCERTS compliance.

Reassessment – review of the Operator's permit(s), consent(s), site inspection report(s) and management system(MS) documentation designed to comply with sections 4.4 to 4.16 of 'The MCERTS Standard' needed to support the reissue of an/the MCERTS Inspection Certificate(s)

Pre-assessment – a gap analysis report offered to the Operator when there are too many issues identified during an Initial Assessment to make a recommendation for acceptance of the MS.

5.2 Audit Detail report (ADR)

Audit findings are recorded on an Audit Detail Report (ADR) form. A separate ADR is raised for each clause of the standard in which a non-conformance is identified. Depending on the number and nature of nonconformity found, more than one ADR may be raised for each clause. ADR reports are agreed between the auditor and the Operator during (or shortly after) the audit. Each ADR is given a category (**major**, **minor** or **observation**) depending on the severity of the finding.

A **major** finding is one where there is an absence of a required procedure, the total breakdown of a procedure or where there may be a risk of an adverse effect on the performance of the flow measurement.

A **minor** finding is one which would not have such a direct effect on the performance of flow measurement.

An **observation** is raised for information only in which a corrective action is not necessarily required.

5.3 Proposed Corrective action

Completion of the “Proposed Corrective Action” section is required for all non-conformances categorised as “Major” or “Minor”. Proposed Corrective Actions agreed during the audit will be documented by the MS auditor. Corrective actions will be reviewed at the next audit.

Failure to respond to corrective action requests may result in the categorization of the non-conformance being escalated (e.g. from **minor** to **major**). Where the Operator repeatedly fails to initiate corrective action, the MCERTS Inspection Certificate may be cancelled and the Environment Agency informed.

5.4 Auditor recommendations (Initial Assessment audits)

Following the initial assessment audit, the auditor will make a recommendation to:

- **accept** the management system, or
- **refuse** acceptance of the management system (i.e. reassessment of the management system will be required)

The recommendation is based on the objective evidence collected during the audit and on the following criteria.

Audit detail report(s) raised	Recommendation	Action required
Up to 4 “minor”	accept the management system	Schedule first surveillance visit within 12 months
<ul style="list-style-type: none"> • One or more “major” and/or • Five or more “minor” 	refuse acceptance of the management system	Schedule reassessment visit within 6 months

Auditor recommendations are subject to review by the Director(s) of Sira Certification Service who have veto power regarding all certification decisions.

5.5 Auditor recommendations (surveillance/reassessment audits)

The auditor will agree with the Operator the frequency of future surveillance/reassessment audits based on the following guidance.

Audit detail report(s) raised	Recommendation
<ul style="list-style-type: none"> • Four or fewer “minor” 	1 year
<ul style="list-style-type: none"> • One or more “major” and/or • Five or more “minor” 	Six months or less (to be agreed with auditor)

Auditor recommendations are subject to review by the Director(s) of Sira Certification Service who have veto power regarding all certification decisions.

Reassessment of the management system is conducted at least once within each five year period and should take place within 6 months of the site reinspection taking place regardless of the auditor's / SCS's recommendation from previous audit report unless the site inspection report is submitted as evidence of a site change review.

For first time (initial) certifications (i.e. following a successful site inspection and initial assessment) the next audit due date for the MS surveillance visit shall default to 1 year. Subsequent surveillance audit due dates for each year shall continue to default to the same day and month associated with the date of initial certification. This cycle will continue until recertification is confirmed where by the next cycle of annual surveillance audit due dates shall follow the auditor's recommendation for the interval from reassessment to subsequent surveillance visit.

Delays in completing surveillance and reassessment visits in accordance with previous visit recommendations will result in a corresponding reduction in interval to the next visit.

E.g. next surveillance audit due date 01/07/19 - actual date of surveillance audit 23/08/19 – next surveillance audit due date 01/07/20(subject to guidance in section 5.5)

5.6 Cancellation of certificates

Where significant deficiencies are identified in the Operator's Management System or where an Operator repeatedly fails to co-operate with SCS in the planning and execution of audits, or in the completion of agreed corrective actions, the MCERTS Inspection Certificate may be cancelled and the Environment Agency informed.

Following cancellation, an MCERTS Inspection Certificate can only be reinstated once a reassessment of the management system has taken place. If significant changes have been made to the site flow monitoring arrangements a further site inspection will also need to take place.

6 AUDITOR COMPETENCE

6.1 Standard Management System Auditor Competence

The following guidance describes the competence requirements of MCERTS EMS auditors to conduct MCERTS management system audits in accordance with Section 4.2 of "The MCERTS Standard".

Knowledge

MCERTS management system auditors shall:

- be aware of and understand the content and application of Section 4 of "The MCERTS Standard" and the MCERTS bulletins
- be aware of and understand the published guidance for MCERTS auditors
- be aware of the procedures for calculating measurement uncertainty

Skills

MCERTS management system auditors shall:

- be qualified to carry out ISO 9001/ISO 14001 audits according to the Certification Body's auditor competence requirements
- be able to read, interpret and apply the requirements of the scheme documentation (Environment Agency standards and MCERTS bulletins)

Technical Understanding

MCERTS management system auditors shall possess:

- an understanding of the principles of flow measurement
- an understanding of wastewater treatment processes
- an understanding of the potential effect of management system deficiencies on flow measurement accuracy/uncertainty

One mechanism to demonstrate that an auditor has the necessary technical understanding is by attending an "MCERTS Awareness Seminar" provided by the MCERTS Inspection Body.

Certification Bodies shall have records to show how they have determined that their auditors can demonstrate the above requirements.

7 CONTACT DETAILS

7.1 Environment Agency/Sira Certification Service

Environment Agency

Monitoring and Assessment Team
Site Based Regulation
Kings Meadow House
Kings Meadow Road
Reading
RG1 8DQ

Tel: 0118 953 5332

email: andrew.chappell@environment-agency.gov.uk

web: www.mcerts.net

Sira Certification Service

CSA Group Testing UK Ltd
Unit 6
Hawarden Industrial Park
Hawarden
Deeside
CH5 3US

Tel: 01244 670900

email: mcerts@csagroupuk.org

web: www.csagroupuk.org

7.2 MCERTS Inspectors

Auditing Group – Emerson Process Management Ltd | METCO

Emerson House
Kirkhill Drive
Kirkhill Industrial Estate
Dyce, Aberdeen
AB21 0EU

Tel: 01224 215700

email: metcosales@emerson.com

web: www.emersonprocess.com/metco

Critical Flow Systems Ltd

Coln Park Industrial Estate
Andoversford
Cheltenham
Gloucestershire
GL54 4HJ

Tel: 01242 820199

email: mcerts@criticalflow.co.uk

web: www.criticalflow.co.uk

Flowcheck Ltd

Oaktree Court Business Centre
Mill Lane
Neston, South Wirral
CH64 8TP

Tel: 0151 336 8328

email: mark@flowcheck.co.uk

web: www.flowcheck.co.uk

Hydro-Logic Services Ltd

18-20 West End Road
Mortimer
Reading
Berkshire
RG7 3TF

Tel: 01889 331325

email: mcerts@hydro-logic.co.uk

web: www.hydro-logic.co.uk

Siris Environmental Flow Surveys Ltd (SEFS)

Business Innovation Centre
Enterprise Park East
Wearfield, Sunderland
SR5 2TA

Tel: 0191 513 1313

email: nick.richardson@siris.co.uk

web: www.siris.co.uk

7.3 MCERTS Management System Auditors

Contact Sira Certification Service.

7.4 MCERTS Management System Consultants

The Qualconsult Partnership

Tel: 07940 575891

email: graham@qualconsult.co.uk

Eco-Smart Consultancy

Tel: 01234 273567

Email: info@eco-smartconsultancy.co.uk

APPENDIX 1 MCERTS INSPECTION CERTIFICATE



MCERTS Inspection Certificate

This is to certify that the effluent flow monitoring arrangements at:

Consent/Permit holder: **The Effluent Company**
Site: **The Pond**
Emission point ref: **The site has a single emission point**

Site reference or postcode: **100592**
Grid reference: **SU 5650 0330**
Consent/Permit ref: **EP4444TY**

have been inspected and found to comply with the Environment Agency's MCERTS standard:

**Minimum Requirements for the Self-Monitoring of Flow
Version 4.0 August 2014**

The results of the inspection of the flow measurement system are given in the following report:
CSA 123

The Consent/Permit holder's management system has been audited and found to comply with the above MCERTS requirements.

This certificate is issued subject to the Consent/Permit holder maintaining its management system to the required standard, which will be subjected to periodic surveillance. The use of this certificate and the Sira Certification Mark are subject to the Regulations Applicable to Holders of Sira Certificates.

Certificate No: **Sira ME19 1486 rev 3**
Date of initial certification: **13-Aug-10**
Date of site inspection (valid from): **11-Jun-19**
This certificate issued: **1-Jul-19**
Renewal date: 11-Jun-24



James May
Senior Operations Manager


MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service

Unit 6, Hawarden Industrial Park,
Hawarden, Deeside, CH5 3US
Tel: +44 (0)1244 670 900


This certificate remains the property of Sira and shall be returned when requested.
It may only be reproduced in its entirety and without change.

APPENDIX 2 CONSENT/PERMIT HOLDER AUDIT REPORT

AUDIT REPORT MCERTS – "Minimum Requirements for the Self-Monitoring of Flow" CONFIDENTIAL		
Audit Report Ref:		
Consent/Permit No.		
Date of Assessment		

Operator (auditee)						
Operator representative						
Name:				Tel:		
Title:				email:		
Operator Site/Address						
Scope of audit						
Minimum Requirements for the Self-Monitoring of Flow					Version 4.0	
Pre-assessment		Initial assessment		Surveillance		Re-assessment
Site Inspection Service Provider	Inspector	Survey Date	Report No.	Pass / Fail	Certificate No.	Expiry Date
Recommendations <i>[delete where applicable]</i>		Next audit frequency <i>[indicate where applicable]</i>				
accept MS (management system)		12 months, Other (specify)				
maintain acceptance of MS		12 months, Other (specify)				
Refuse acceptance/withdraw acceptance		Cancel certificate and notify Environment Agency				
Date of next Audit/Type:						
<i>Auditor recommendations are subject to review by Sira Certification Service(SCS) who has veto power regarding all recommendations</i>						

Auditor	Operator	Sira
Signed	Signed to accept recommendations	Signed

AUDIT REPORT <i>MCERTS – "Minimum Requirements for the Self-Monitoring of Flow"</i>		
CONFIDENTIAL		
Audit Report Ref:		
Consent/Permit No.		
Date of Assessment		

Impartiality Declaration

I confirm that neither I nor my organisation has had any consultancy or other relationship that could result in a conflict of interest with the above company within the last two years, other than activities conducted under the direction of Sira Certification Service, and will notify Sira Certification Service if this situation should change.

Signature		Date	
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1 SUMMARY REPORT

Summary *an overview of compliance of the management system with the MCERTS requirements*

Operator background:

Site Description:

Details of permit/consent:

Description of flow measurement structures:

Outcome of most recent Site inspection visit:

Site changes since previous visit(if applicable):

Result of the review of any ADRs documented on previous visit:

Summary of ADRs(no.):

Major:


Minor:

Observation:


Recommendation:

*Initial Assessment(delete where applicable): **accept the management system/refuse acceptance of the management system***


*Surveillance/Reassessment(delete where applicable): **maintain acceptance of MS/withdraw acceptance***

AUDIT REPORT MCERTS – "Minimum Requirements for the Self-Monitoring of Flow" CONFIDENTIAL		
Audit Report Ref:		
Consent/Permit No.		
Date of Assessment		

2 AUDIT DATA		
Audit team members		
Interviewed Operator representative(s) (auditee)		
<i>Area</i>	<i>Name</i>	<i>Title / Job Function</i>
Areas sampled <i>Indicate the areas sampled during the audit(S-Sampled, NS- Not sampled) and the ADR ref. associated with each section(4.4-4.16) where applicable</i>		
Requirement	Ref.(S,NS, "ADR ref")	
4.4 Quality/Environmental policy		
4.5 Management responsibilities		
4.6 Documentation		
4.7 Operating procedures		
4.8 Document control		
4.9 Equipment inventory		
4.10 Maintenance		
4.11 Commissioning		
4.12 Site changes		
4.13 Verification		
4.14 Data treatment		
4.15 Corrective actions		
4.16 Internal audits		

AUDIT REPORT MCERTS – "Minimum Requirements for the Self-Monitoring of Flow" CONFIDENTIAL		
Audit Report Ref:		
Consent/Permit No.		
Date of Assessment		

3 AUDIT DETAIL REPORT		ADR Ref:	
Indicate Para No. of Standard for each ADR 4.4 4.5 4.6 4.7 4.8 4.9 4.10 4.11 4.12 4.13 4.14 4.15 4.16			
Description	Category	Major	
		Minor	
		Observation	
Auditor <i>sign</i>		Operator <i>sign</i>	
PROPOSED CORRECTIVE ACTION <i>(to be entered if agreed after discussion during audit)</i>			
Auditor <i>sign</i>		Operator <i>sign</i>	

AUDIT REPORT MCERTS – "Minimum Requirements for the Self-Monitoring of Flow" CONFIDENTIAL		
Audit Report Ref:		
Consent/Permit No.		
Date of Assessment		

4 AUDIT NARRATIVE <i>Information relevant to the audit which is not already included herein</i> <i>Colour Code: Non-conformance (major/minor) Observation Satisfactory</i>	
4.4 Quality/Environmental policy	
4.5 Management responsibilities	
4.6 Documentation	
4.7 Operating procedures	
4.8 Document control	
4.9 Equipment inventory	
4.10 Maintenance	
4.11 Commissioning	
4.12 Site changes	
4.13 Verification	
4.14 Data treatment	
4.15 Corrective actions	
4.16 Internal audits	

5 CORRECTIVE ACTION REVIEW <i>a review of corrective action resulting from previous Audit Detail Reports raised where applicable, delete as appropriate ;</i> APPLICABLE/NOT APPLICABLE						
ADR Ref	Cat	Ref	Finding	Response	Evidence	Status
		4.4				
		4.5				
		4.6				
		4.7				
		4.8				
		4.9				
		4.10				
		4.11				
		4.12				
		4.13				
		4.14				
		4.15				
		4.16				

AUDIT REPORT <i>MCERTS – "Minimum Requirements for the Self-Monitoring of Flow"</i>		
CONFIDENTIAL		
Audit Report Ref:		
Consent/Permit No.		
Date of Assessment		

6 Random Sampling of Multiple Discharge Sites/ Locations
 For Water Utility sites complete table a), for industrial sites complete table b).

a) **Water Utility Site**

Site/Location	Permit/Consent	DWF (m ³)	Type/Serial no.	Site Inspection Report/Date	Certificate Expiry date	Flow data	Maintenance/Training Records

b) **Industrial Site**

Site/Location	Permit/Consent	DWF (m ³)	Type/Serial no.	Site Inspection Report/Date	Certificate Expiry date	Flow data	Maintenance/Training Records