

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Magnox Limited

Effluent treatment facility serving Bradwell Site Bradwell-on-Sea Southminster Essex CM0 7HP

Variation application number

PR2TS/E10760C/V003

Permit number

PR2TS/E10760C

Effluent treatment facility serving Bradwell Site Permit number PR2TS/E10760C

Introductory note

This introductory note does not form a part of the notice.

Under the Environmental Permitting (England & Wales) Regulations 2010 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 1 of the notice specifies the conditions that have been varied and schedule 2 comprises a consolidated permit which reflects the variations being made. Only the variations specified in schedule 1 are subject to a right of appeal.

This variation makes changes to the existing permit for a discharge of mixed effluents in a carrier flow of up to 504,900 cubic meters per day of circulating seawater from the Bradwell Site to the Blackwater Estuary. The changes are necessary to prepare for the predicted eventuality that the existing outlet for the discharge may become inoperable at an unknown date in the future due to siltation. This will necessitate the effluents being pumped through a new outlet structure at the same location. It will also necessitate the separation out of the mix of one of the effluents and its discharge out of a different outlet on the new structure. Because the effluents are to be pumped there will also be no need to add large volumes of seawater as a carrier flow when the new outlets are used. Although the primary purpose of the added volumes of seawater was to provide a head pressure to force the mixed effluents out into the estuary, they did provide pre-dilution for the effluents. This variation therefore includes conditions that will protect the receiving environment from the existing discharge of mixed effluents through the existing outlet and also conditions that will afford the same protection when the effluents are divided and there will be no dilution prior to discharge. The variation also includes conditions requiring the package sewage treatment plant serving the workforce on site to have tertiary UV disinfection facilities for the effluent to meet the appropriate standard for the protection of shellfish for human consumption in the receiving waters. The total residual oxidant (TRO) limit has been removed from the permit as is no longer applicable.

| Status log of the permit | | | | | |
|--|------------|--|--|--|--|
| Description | Date | Comments | | | |
| Permit determined PR2TS/E10760 | 21/12/1960 | Permit issued | | | |
| Variation determined PR2TS/E10760A | 04/03/1993 | | | | |
| Variation determined PR2TS/E10760B | 02/08/1993 | | | | |
| Variation determined PR2TS/E10760C | 07/07/2006 | Full re-write | | | |
| Transfer determined PR2TS/E10760C/T001 | 05/01/2011 | Notice issued to Magnox Limited. | | | |
| Variation determined PR2TS/E10760C/V002 | 29/11/2013 | Varied and consolidated permit issued in modern condition format. Added non-radioactive aqueous effluent to the existing permit. | | | |

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

| Status log of the permit | | | | | | | |
|--|----------------------|--|--|--|--|--|--|
| Description | Date | Comments | | | | | |
| Application PR2TS/E10760C/V003 (variation and consolidation) | Duly made 24/07/2015 | Application to vary and update the permit to modern conditions. | | | | | |
| Additional information received | 01/09/2015 | Clarification of discharge arrangements | | | | | |
| Additional information received | 08/10/2015 | Supplementary modelling reports | | | | | |
| Additional information received | 15/11/2015 | Revised H1 assessments | | | | | |
| Additional information received | 18/11/2015 | Further clarification of H1 assessments | | | | | |
| Additional information received | 21/04/2016 | Clarification of sizing of package sewage treatment plant | | | | | |
| Additional information received | 02/08/2016 | Revised site plan and map references for operating techniques | | | | | |
| Additional information received | 08/08/2016 | Operating technique - new outlet design specification for activity A2 | | | | | |
| Additional information received | 08/08/2016 | Operating technique - flow measurement specification | | | | | |
| Additional information received | 11/08/2016 | Operating technique - site drainage sampling programme | | | | | |
| Additional information received | 15/08/2016 | Operating technique – maximum daily volume of the sewage treatment plant | | | | | |
| Additional information received | 16/08/2016 | Operating technique – new outlet design specification for activity A3 | | | | | |
| Additional information received | 16/08/2016 | Operating technique – maximum capacity of treatment plant for non-radioactive site drainage | | | | | |
| Additional information received | 17/08/2016 | Revised operating technique –site drainage sampling programme | | | | | |
| Additional information received | 17/08/2016 | Operating technique – Pumping arrangements for activity A3 | | | | | |
| Additional information received | 18/08/2016 | Operating techniques – Laboratory methods for analysing the treated site drainage effluents. Revised operating technique for the sewage treatment plant. Change to sampling location. | | | | | |
| Additional information received | 01/09/2016 | Notification of change of registered company address | | | | | |
| Additional information received | 07/09/2016 | Revised operating techniques and supplement documents - Laboratory method for effluent analysis | | | | | |
| Additional information received | 13/09/2016 | Revised site plan | | | | | |
| Additional information received | 09/03/2017 | Additional details on UV disinfection of secondary treated sewage effluent. | | | | | |
| Variation determined PR2TS/E10760C | 13/03/2017 | Varied and consolidated permit issued in modern condition format. | | | | | |

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates

Permit number

PR2TS/E10760C

Issued to

Magnox Limited ("the operator")

whose registered office is

Oldbury Technical Centre Oldbury Naite South Gloucestershire BS35 1RQ

company registration number 02264251

to operate water discharge activities at

Effluent treatment facility serving Bradwell Site Bradwell-on-Sea Southminster Essex CM0 7HP

to the extent set out in the schedules.

The notice shall take effect from 14/03/2017

| Name | Date |
|-----------------|------------|
| David Griffiths | 13/03/2017 |

Authorised on behalf of the Environment Agency

Schedule 1

All conditions other than 1.1.2, 3.1.1, 4.2.1, 4.3.3 and 4.4.1 have been varied by the consolidated permit PR2TS/E10760C

The following conditions were varied as a result of an Environment Agency initiated variation:

3.3.4 and Schedule 5

The following conditions were varied as a result of the application made by the operator:

All other conditions.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

PR2TS/E10760C

This is the consolidated permit referred to in the variation and consolidation notice for application PR2TS/E10760C/V003 authorising,

Magnox Limited ("the operator")

whose registered office is

Oldbury Technical Centre Oldbury Naite South Gloucestershire BS35 1RQ

company registration number 02264251

to operate water discharge activities at

Effluent treatment facility serving Bradwell Site Bradwell-on-Sea Southminster Essex CM0 7HP

to the extent authorised by and subject to the conditions of this permit.

| Name | Date |
|-----------------|------------|
| David Griffiths | 13/03/2017 |

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
 - (a) in accordance with a written management system that identifies and minimises risks of pollution so far as is reasonably practicable, including those risks arising from operations, maintenance, accidents, incidents, non-conformances and those drawn to the attention of the operator as a result of complaints; and
 - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of the permit.

2 **Operations**

2.1 Permitted activities

2.1.1 The only activities authorised by the permit are the activities specified in schedule 1 table S1.1.

2.2 The site

2.2.1 The discharge activities shall take place at the discharge points marked on the site plan at schedule 7 to this permit, and as listed in table S3.2; and, the operating techniques that are the subject of conditions prefixed by 2.3 shall be applied at the locations shown, or otherwise described, in schedule 7.

2.3 Operating techniques

- 2.3.1 For the activities A2 & A3 referenced in schedule 1, table S1.1 the activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 For the activities A1 & A4 referenced in schedule 1, table S1.1 the discharge in schedule 3 table S3.3 shall consist solely of secondary treated sewage effluent which has been disinfected by means of ultra violet (UV) radiation as specified in that table.

2.4 Pre-operational conditions

2.4.1 For the activities A2, A3 and A4 referenced in schedule 1, table S1.1 the activities shall not be brought into operation until the measures specified in schedule 1 table S1.3 have been completed.

3 Emissions and monitoring

3.1 Emissions to water

3.1.1 The limits given in schedule 3 table S3.1 shall not be exceeded.

3.2 Emissions of substances not controlled by emission limits

3.2.1 The operator shall take appropriate measures to minimise so far as reasonably practicable the polluting effects of the emissions of substances in the discharge not controlled by emission limits (excluding odour).

3.3 Monitoring

- 3.3.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
 - (a) point source emissions specified in tables S3.1 and S3.4.
- 3.3.2 The operator shall maintain records of all monitoring required by this permit.
- 3.3.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme specified in condition 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.3.4 Accessible monitoring points shall be provided and maintained to enable the emissions monitoring programme and/or other monitoring to be carried out at the monitoring points specified in table S3.4 of schedule 3 and shown marked on the site plan in schedule 7.

4 Information

4.1 Records

- 4.1.1 All records required to be made by schedule 3, 4 and 5 to this permit shall:
 - (a) be legible;
 - (b) be made as soon as reasonably practicable;
 - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
 - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made.
- 4.1.2 The operator shall maintain convenient access, in either electronic or hard copy, to the records, plan and management system required to be maintained by this permit.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 Within the time period after the end of the reporting period specified in schedule 4 table S4.1 the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
 - (a) in respect of the parameters and monitoring points specified in schedule 4 table S4.1;
 - (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.2; and
 - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.3 Notifications

- 4.3.1 The Environment Agency shall be notified as soon as reasonably practicable following detection, within the site of the regulated facility of:
 - (a) any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution; and
 - (b) any breach of a limit specified in schedule 3 table S3.1.

Any other significant adverse environmental effects, which may have been caused by the activity, shall also be notified to the Environment Agency as soon as reasonably practicable following detection.

- 4.3.2 The information provided under condition 4.3.1 shall be supported by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.
- 4.3.4 Where the operator proposes to make a change in the nature of the activity by increasing the concentration of, or the addition of, or allowing the introduction of, a substance to the activity to an extent that the operator considers could have a significant adverse environmental effect on the receiving waters, and the change is not permitted by emission limits specified within schedule 3 table S3.1 or the subject of an application for approval under the EP Regulations or under the terms of this permit:
 - (a) the Environment Agency shall be notified in writing at least 14 days before the increase or addition or allowing the introduction; and
 - (b) the notification shall contain a description of the proposed change.

4.3.5 For the activities A1 & A4 referenced in schedule 1, table S1.1 the operator shall notify the Local Food Authority / Environmental Health Authority in the event of a discharge of sewage effluent which has not been subjected to the required UV dose as specified in condition 2.3.3, or of power failure causing loss of secondary treatment. Such notification must be made as soon as practicable and no later than 24 hours after the event, and shall detail the reasons why the situation occurred, and the actions taken by the operator.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "as soon as reasonably practicable", in which case it may be provided by telephone.

Schedule 1 – Operations

| Table S1.1 A | Table S1.1 Activities | | | | | | |
|--------------------|---|--|--|--|--|--|--|
| Activity reference | Description of activity | Limits of specified activity | | | | | |
| A1 | Discharge of secondary treated sewage effluent subject to disinfection by ultra violet irradiation and trade effluent consisting of treated radioactive site drainage, treated non-radioactive site drainage, uncontaminated site drainage, waste waters from the reverse osmosis treatment of mains water and a carrier flow of circulating seawaters via Outlet 1 | Effective until PO1 is completed. UV disinfection is only required on the secondary treated sewage effluent component of this mixed effluent. | | | | | |
| A2 | Discharge of trade effluent consisting of treated radioactive site drainage via Outlet 2 | The discharge will take place over 45 minutes each day on the ebb tide between 1 and 2.5 hours after high water. | | | | | |
| A3 | Discharge of trade effluent consisting of treated non- radioactive site drainage, uncontaminated site drainage and waste waters from the reverse osmosis treatment of mains water via Outlet 3 | N/A | | | | | |
| A4 | Discharge of secondary treated sewage effluent subject to disinfection by ultra violet irradiation via Outlet 3 | N/A | | | | | |

| Table S1.2 | Table S1.2 Operating techniques | | | | | |
|--------------------|--|-------|---------------|--|--|--|
| Activity reference | Description of documentation | Parts | Date Received | | | |
| A2 | OT1: Effluent Sampling (AE A2 OT1) BRAD/EN/REP/196 | All | 11/08/2016 | | | |
| | OT2: New Outlet Design Specification (Mixed Effluent A2 OT2) BRAD/ENREP/188 | All | 08/08/2016 | | | |
| | OT3: Mixed Effluent : Analytical Techniques (A2:OT3) BRAD/EN/REP/203 | All | 07/09/2016 | | | |
| | OT4: Flow Monitoring (AE A2 OT4) BRAD/EN/REP/191 | All | 09/08/2016 | | | |
| A3 | OT5: New Outlet Design Specification for the Non- Radioactive constituents (Mixed Effluent A3 OT5) BRAD/EN/REP/200 | All | 16/08/2016 | | | |
| | OT6: Siltbuster Capacity (ME A3 OT6) BRAD/EN/REP/199 | All | 16/08/2016 | | | |
| | OT7: Sewage Treatment Plant Maximum Capacity (Mixed Effluent A3 OT7) BRAD/EN/REP/197 | All | 18/08/2016 | | | |
| | OT8: Effluent sampling (Mixed Effluent A3 OT8) BRAD/EN/REP/193 | | 17/08/2016 | | | |
| | OT9: Analytical Techniques (A3 OT9) BRAD/EN/REP/206 | All | 07/09/2016 | | | |
| | OT10: Pumping Arrangement for the Main Drains Pit (ME A3 OT10) BRAD/EN/REP/201 | All | 17/08/2016 | | | |

| Table S1.3 F | Table S1.3 Pre-operational measures | | | | |
|--------------|---|--|--|--|--|
| Reference | erence Pre-operational measures | | | | |
| PO1 | The Operator shall notify the Environment Agency in writing when Outlet 1 becomes inoperable and the date that Outlets 2 and 3 are to be brought into operation. The Operator will not begin discharging via Outlets 2 and 3 without written agreement from the Environment Agency. | | | | |

Schedule 2 – Waste types, raw materials and fuels

Schedule 2 not in use.

Schedule 3 – Emissions and monitoring

| Effluent(s) and discharge point(s) | Parameter | Limit (including unit) | Reference Period | Limit of effective range | Monitoring frequency | Compliance Statistic |
|--|-----------------------------------|--|--|-----------------------------------|--------------------------------|-------------------------|
| A1: Secondary treated sewage effluent subject to disinfection by ultra violet | Maximum daily discharge volume | 504,900 m ³ /day | Total daily volume | N/A | N/A | Maximum |
| irradiation and trade effluent consisting of treated radioactive site drainage, treated non-radioactive site drainage, | рН | 6 to 9 | Instantaneous (spot sample) | N/A | N/A | Minimum and maximum |
| uncontaminated site drainage, waste waters from the reverse osmosis treatment of mains water and a carrier flow of circulating seawaters via Outlet 1 | Visible oil or grease | No significant trace present so far as is reasonably practicable | Instantaneous (visual examination) | N/A | N/A | No significant trace |
| A2: Trade effluent consisting of treated radioactive site drainage via Outlet 2 | Maximum daily discharge volume | 30 m ³ /day | Total daily volume | N/A | Every time a discharge occurs | Maximum |
| | рН | 6 to 9 | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT1 table S1.2 | Minimum and maximum |
| | Cadmium as Cd | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT1 table S1.2 | N/A |
| | Chromium as Cr | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT1 table S1.2 | N/A |
| | Copper as Cu | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT1 table S1.2 | N/A |
| | Lead as Pb | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT1 table S1.2 | N/A |
| | Mercury as Hg | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT1 table S1.2 | N/A |
| | Nickel as Ni | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT1 table S1.2 | N/A |

| Effluent(s) and discharge point(s) | Parameter | Limit (including unit) | Reference Period | Limit of effective range | Monitoring frequency | Compliance Statistic |
|--|---|--|--|-----------------------------------|-----------------------------------|-------------------------|
| | Zinc as Zn | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT1 table S1.2 | N/A |
| A3: Trade effluent consisting of treated non-radioactive site drainage, uncontaminated site drainage and waste | Maximum | 50,000 m ³ /day | Total daily volume | Condition 3.3.3 does not apply | Every time a discharge occurs | Maximum |
| waters from the reverse osmosis treatment of mains water via Outlet 3 | рН | 6 to 9 | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT8 table S1.2 | Minimum and maximum |
| | Visible oil or grease | No significant trace present so far as is reasonably practicable | Instantaneous (visual examination) | N/A | N/A | No significant trace |
| | Chromium as Cr (in treated non- radioactive site drainage as monitored at monitoring point SP4) | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT8 table S1.2 | N/A |
| | Copper as Cu (in treated non- radioactive site drainage as monitored at monitoring point SP4) | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT8 table S1.2 | N/A |
| | Lead as Pb (in treated non- radioactive site drainage as monitored at monitoring point SP4) | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT8 table S1.2 | N/A |

| Effluent(s) and discharge point(s) | Parameter | Limit (including unit) | Reference Period | Limit of effective range | Monitoring frequency | Compliance Statistic |
|--|---|--|--|-----------------------------------|-----------------------------------|-------------------------|
| | Nickel as Ni (in treated non- radioactive site drainage as monitored at monitoring point SP4) | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT8 table S1.2 | N/A |
| | Zinc as Zn (in treated non- radioactive site drainage as monitored at monitoring point SP4) | No limit set Record as ug/l | Instantaneous (spot sample) | Condition 3.3.3 does not apply | As specified in OT8 table S1.2 | N/A |
| A4: Secondary treated sewage effluent | Maximum | 45 m ³ /day | Total daily volume | N/A | N/A | Maximum |
| subject to disinfection by ultra violet irradiation via Outlet 3 | ATU-BOD as O ₂ | 40 mg/l | Instantaneous (spot sample) | N/A | N/A | Maximum |
| | Suspended solids (measured after drying at 105°C) | 60 mg/l | Instantaneous (spot sample) | N/A | N/A | Maximum |
| | Visible oil or grease | No significant trace present so far as is reasonably practicable | Instantaneous (visual examination) | N/A | N/A | No significant trace |

| Table S3.2 Discharge points | | | | | | |
|---|--------------------|------------------------|---------------------------------|--|--|--|
| Effluent Name | Discharge Point | Discharge point NGR | Receiving water/ Environment | | | |
| A1: Secondary treated sewage effluent subject to disinfection by ultra violet irradiation and trade effluent consisting of treated radioactive site drainage, treated non-radioactive site drainage, uncontaminated site drainage, waste waters from the reverse osmosis treatment of mains water and a carrier flow of circulating seawaters | Outlet 1 | TL 99680 09162 | The Blackwater Estuary | | | |
| A2: Trade effluent consisting of treated radioactive site drainage | Outlet 2 | TL 99680 09162 | The Blackwater Estuary | | | |
| A3: Trade effluent consisting of treated non- radioactive site drainage, uncontaminated site drainage and waste waters from the reverse osmosis treatment of mains water | Outlet 3 | TL 99680 09162 | The Blackwater Estuary | | | |
| A4: Secondary treated sewage effluent subject to disinfection by ultra violet irradiation | Outlet 3 | TL 99680 09162 | The Blackwater Estuary | | | |

| Table S3.3 UV process details and process limits | | | | | | |
|---|-----------|----------------------------------|-----------------------|---|--|--|
| Effluent(s) and discharge point(s) | Dose type | Design minimum dose mJ/cm2 | Effective dates | Assumed transmittance to be used in dose calculations | | |
| A1: Secondary treated sewage effluent subject to disinfection by ultra violet irradiation and trade effluent consisting of treated radioactive site drainage, treated non-radioactive site drainage, uncontaminated site drainage, waste waters from the reverse osmosis treatment of mains water and a carrier flow of circulating seawaters | Applied | 32 | 1st Jan - 31st Dec | 45% | | |
| A4: Secondary treated sewage effluent subject to disinfection by ultra violet irradiation via Outlet 3 | Applied | 32 | 1st Jan - 31st Dec | 45% | | |

| Table S3.4 Monitoring points | | | |
|---|--|-------------------------|----------------------------|
| Effluent(s) and discharge point(s) | Monitoring type | Monitoring point NGR | Monitoring point reference |
| A1: Secondary treated sewage effluent subject to disinfection by ultra violet irradiation and trade effluent consisting of treated radioactive site drainage, treated non-radioactive site drainage, uncontaminated site drainage, waste waters from the reverse osmosis treatment of mains water and a carrier flow of circulating seawaters via Outlet 1 | Effluent sampling | TM 00065 08890 | SP1 |
| A2: Trade effluent consisting of treated radioactive site drainage via Outlet 2 | Effluent sampling | TM 00288 08797 | SP2 |
| | Flow Monitoring | TM 00288 08797 | SP2 |
| A3: secondary treated sewage effluent and trade effluent consisting of treated non- radioactive site drainage, uncontaminated site drainage and waste waters from the reverse osmosis treatment of mains water via Outlet 3 | Effluent sampling | TM 00006 08822 | SP3 |
| | Effluent sampling (of treated non- radioactive site drainage) | TM 00026 08836 | SP4 |
| | Flow Monitoring | TM 00026 08836 | SP4 |
| A4: Secondary treated sewage effluent subject to disinfection by ultra violet irradiation via Outlet 3 | Effluent sampling | TM 00003 08830 | SP5 |

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

| Table S4.1 Reporting of monitoring data | | | |
|---|----------------------------|---|---------------|
| Parameter | Monitoring point reference | Reporting period | Period begins |
| A2: Total daily volume | SP2 | Annually Report to be submitted within 1 month of the end of the calendar year | 1 January |
| A2: Cadmium as Cd, Chromium as Cr, Copper as Cu, Lead as Pb, Mercury as Hg, Nickel as Ni, Zinc as Zn and pH. | SP2 | Quarterly Report to be submitted within 28 days | 1st of month |
| A3: Total daily volume | SP4 | Annually Report to be submitted within 1 month of the end of the calendar year | 1 January |
| A3: Chromium as Cr, Copper as Cu, Lead as Pb, Nickel as Ni, Zinc as Zn and pH. | SP4 | Quarterly Report to be submitted within 28 days | 1st of month |

| Table S4.2 Reporting forms | | |
|--|---|--|
| Parameter | Reporting format | |
| A2 and A3: Total daily volume | Electronic format as agreed with the Environment Agency | |
| A2: Cadmium as Cd, Chromium as Cr, Copper as Cu, Lead as Pb, Mercury as Hg, Nickel as Ni, Zinc as Zn and pH. | Electronic format as agreed with the Environment Agency | |
| A3: Chromium as Cr, Copper as Cu, Lead as Pb, Nickel as Ni, Zinc as Zn and pH. | Electronic format as agreed with the Environment Agency | |

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

| Permit Number | |
|--------------------------------|--|
| Name of operator | |
| Location of Facility | |
| Time and date of the detection | |

| (a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution | | |
|--|--|--|
| To be notified within 24 hours of detection unless otherwise agreed in writing by the Environment Agency | | |
| Date and time of the event | | |
| Reference or description of the location of the event | | |
| Description of where any release into the environment took place | | |
| Substances(s) potentially released/type or nature of sewage released | | |
| Best estimate of the quantity or rate of release of substances and/or duration of discharge | | |
| Best estimate of the environmental impact of the discharge | | |
| Measures taken, or intended to be taken, to stop any emission | | |
| Description of the failure or accident. | | |

| (b) Notification requirements for the breach of a limit specified in schedule 3 table S3.1 | | |
|--|-----------------------------|--|
| The information specified below is to be notified to the Environment Agency as soon as reasonably practicable following detection. | | |
| Monitoring point reference/ source | | |
| Self monitoring regime (where relevant) | | |
| Type of failure | e.g. Maximum/minimum /other | |
| Date of sample/event | | |
| Parameter | | |
| Result and units | | |
| Limit and units | | |

Part B – to be submitted as soon as reasonably practicable unless otherwise agreed in writing by the Environment Agency

| Any more accurate information on the matters for notification under Part A. | |
|--|--|
| Measures taken, or intended to be taken, to prevent a recurrence of the incident/breach/exceedance | |
| Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission | |

| Name* | |
|-----------|--|
| Post | |
| Signature | |
| Date | |

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

"accident" means an accident that may result in pollution.

"annually" means once every year.

"application" means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

"appropriate measures" for the purposes of the emission of substances not controlled by emission limits condition (condition 3.2.1) do not require the operator to undertake treatment to a level beyond that specified in schedule 1 table S1.1, or to carry out routine monitoring for substances not controlled by emission limits.

"ATU-BOD as O₂" means the biochemical oxygen demand (measured after 5 days at 20°C with nitrification suppressed by the addition of allylthiourea).

"disinfection" means the use of a process designed specifically to reduce the number of viable, potentially infectious micro organisms in the effluent.

"emissions of substances not controlled by emission limits" means emissions of substances to air, water or land from the permitted activities, which are not controlled by an emission limit.

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"MCERTS" means the Environment Agency's Monitoring Certification Scheme.

"quarter" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"significant pollution" means a category 1 or category 2 incident indicated by the Common Incident Classification Scheme (CICS).

"year" means calendar year ending 31 December.

Schedule 7 – Site plan



END OF PERMIT