ASIANTAETH YR AMGYLCHEDD CYMRU
ENVIRONMENT AGENCY WALES

Permit with introductory note

Pollution Prevention and Control Regulations 2000

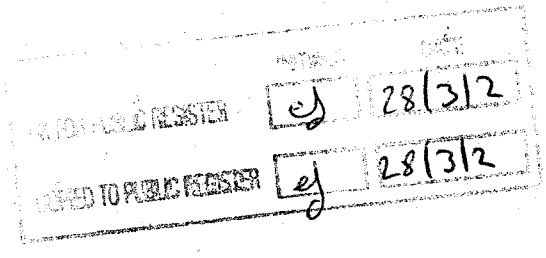
Hydro Aluminium Deeside

Wrexham Aluminium Works

Bridge Road
Wrexham Industrial Estate
Wrexham, LL13 9PS

Permit number

BK3638



Environment Agency

Chester Road, Buckley, Flintshire CH7 3AJ

Asiantaeth yr Amgylchedd

Ffordd Caer, Bwcle, Sir y Fflint, CH7 3AJ

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ENVIRONMENT
AGENCY WALES

Contents

Introductory note

This introductory note does not form a part of the Permit

The following Permit is issued under Regulation 10 of the Pollution Prevention and Control Regulations 2000 (S.I.2000 No.1973) ("the PPC Regulations") to operate an installation carrying out one or more of the activities listed in Part 1 to Schedule 1 of those Regulations, to the extent authorised by the Permit.

The Permit includes conditions that have to be complied with. It should be noted that aspects of the operation of the installation which are not regulated by those conditions are subject to the condition implied by Regulation 12(10) of the PPC Regulations, that the Operator shall use the best available techniques for preventing or, where that is not practicable, reducing emissions from the installation.

Techniques include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

Brief description of the installation regulated by this permit

The main purpose of activities at the installation is production of secondary aluminium, by taking in primary and scrap aluminium in various forms, remelting it and adding alloying elements to provide product for resale. Typically up to 20% of the feed is primary aluminium ingot or sow. Installed production capacity is more than 40,000 tonnes per year.

Two existing melting furnaces, referred to as Melter 3 and Melter 6, are to be decommissioned shortly, along with an associated Holding Furnace, and this permit only allows their operation for a short period while replacement equipment is installed and commissioned. Existing plant is referred to as Centre 1. The new plant, referred to as Centre 2, comprises a new, 28 t capacity, gas-fired reverberatory melting furnace and a new, 28 t capacity, gas-fired, reverberatory holding / casting furnace. Descriptions below refer to the new furnaces unless stated otherwise.

Aluminium is delivered to site by road, the scrap coming in various forms - baled sheet, parts of window frames and other extruded items, bales of wire and lithographic sheet. Some of the feed is coated with polythene, and about 6% of the total feed is polyester-painted extrusion scrap. The scrap forms are stored in dedicated areas within the factory. Scrap is inspected and / or sorted to remove off-spec or other undesirable materials before being fed to the furnace; the new melter has a purpose-built charging machine to allow the furnace door to be opened only for a very short interval while charging. The regenerative burners are controlled automatically and are at low fire whenever the door is opened.

After melting is complete, dross is removed from the surface of the molten metal by skimming into bins. The dross is pressed in a dross press to recover some of the aluminium metal and produce a residual dross suitable for sending to an aluminium reprocessing company. The molten metal is emptied by tilting the furnace so that the aluminium flows along launders. Usually it enters the new holding furnace, where fluxing, sampling and alloying additions may be carried out. During outages of the main melter, the holding furnace may be used for melting aluminium, but for clean metal only.

From the holding furnace, aluminium passes through a filtration / degassing unit which uses argon to degas and clean the metal, then (where necessary) through a ceramic foam filter. It is then cast into cylindrical billets 6 metres long and up to 305 mm diameter. The billets are water-cooled during casting, with most water recycled through a closed-loop system incorporating a water-cooled heat exchanger. Cast billet is put into one of two gas-fired homogenising furnaces to improve its metallurgical structure, after which it is sawn to length. The finished product is stored outside ready for despatch to the customer.

Releases to air The furnaces burn natural gas, so most of the site's releases to air can be described as combustion products. They include oxides of nitrogen and other substances released when aluminium scrap is melted. Off-gases from the main melter, together with air drawn from a hood over the furnace door, are ducted to the three lime-injected bag filter plants outside the factory. Combustion products from the holding and homogenising furnaces generally pass to atmosphere unabated, but the holding furnace emissions are diverted automatically to the bag plants if an installed continuous monitor detects particulate matter. The dross press has its own integral filtration system and its releases to air are normally very small. The Centre 2 furnaces are designed to capture any fumes escaping through the furnace doors by means of extracted hoods; any uncaptured fugitive emissions will normally leave the building through roof fans.

Releases to controlled water (there is no process discharge to sewer)

The main sources of releases to water are bleed-off from the water cooling towers and water used in the casting pit and, occasionally, complete discharge of this water. The discharge route is via an interceptor to a surge basin, which overflows to an underground pit. An orifice plate restricts the flow rate of effluent from the pit to the local stream at release point W1. Surface drainage from the North East side of the factory also discharges into the stream at W1, via an oil / water interceptor into which any rainwater collected by the main oil and fuel storage tank bund is also pumped. The stream discharges into the Redwither Brook. Effluent contains biocide and also some contamination from the mould release agent used on the casting machines.

The local stream is also supplied by a separate land drain which existed before the Operator's factory was built. It runs under land on which the factory was built and is designated release point W2.

Other releases from the process

Dross and used ceramic filters are sent to an aluminium reprocessing company for recovery of the aluminium content. Waste lime from the bag filter plants is classed as hazardous waste and sent to a designated landfill site. Used pallets, general factory waste and waste oil are sent to reclamation and disposal companies, with non-reclaimed waste sent ultimately for deposit at a local landfill site. Recovered metal from the dross press is normally returned to the melter; swarf, resulting from cutting finished product, may also be remelted, but is normally sent to an aluminium reprocessor.

Further information relating to the activities at the installation can be found in the Non-Technical Summary and main IPPC Application documents held on the Public Registers located at the following offices:

The Environment Agency, Chester Road, Buckley, Flintshire CH7 3AJ;

Wrexham County Borough Council, Crown Buildings, P.O. Box 1297, Wrexham LL13 8ZE.

Other PPC Permits relating to this installation		
Permit holder	Permit Number	Date of Issue
None	-	-

Superseded Licences / Consents / Authorisations relating to this installation		
Holder	Reference Number	Date of Issue
Hydro Aluminium Deeside	AS4117 / BD8312	1/12/95

Talking to us

If you contact the Agency about this Permit please quote the Permit Number.

The Operator should use the Emergency Hotline telephone number (0800 80 70 60) or any other number notified to it to give a notification under condition 5.1.1.

Confidentiality

The Permit requires the Operator to provide information to the Agency. The Agency will place the information onto the public registers in accordance with the requirements of the PPC Regulations. If the Operator considers that any information provided is commercially confidential, it may apply to the Agency to have such information withheld from the register as provided in the PPC Regulations. To enable the Agency to determine whether the information is commercially confidential, the Operator should clearly identify the information in question and should specify clear and precise reasons.

Variations to the permit

This Permit may be varied in the future. The Status Log within the Introductory Note to any such variation will include summary details of this Permit, variations issued up to that point in time and state whether a consolidated version of the Permit has been issued.

Surrender of the permit

Before this Permit can be wholly or partially surrendered, an application to surrender the Permit has to be made. For the applicant to be successful, they would have to be able to demonstrate to the Agency, in accordance with Regulation 19 of the PPC Regulations, that there is no pollution risk and that no further steps are required to return the site to a satisfactory state.

Transfer of the permit or part of the permit

Before the Permit can be wholly or partially transferred to another person, a joint application to transfer the Permit has to be made by both the existing and proposed holders, in accordance with Regulation 18 of the PPC Regulations. A transfer will be allowed unless the Agency considers that the proposed holder will not be the person who will have control over the operation of the installation or will not ensure compliance with the conditions of the transferred Permit. If the Permit authorises the carrying out of a specified waste management activity, then there is a further requirement that the transferee is considered to be a "fit and proper person" to carry out that activity.

Status Log

Detail	Date	Comment
Application BK3638	Received 7/9/01	
Response to Schedule 4 Part 1 Notice	Received 14/1/02	Schedule 4 Information Notice issued 11/12/01
Supplementary information	Received 30/1/02	Map and slight amendment to waste storage information
Supplementary information	Received 25/2/02	Further slight amendment to waste storage information
Supplementary information	Received 8/3/02	Clarification regarding monitoring details
Permit BK638	Determined 15/3/02	

End of introductory Note.

Permit
Pollution Prevention and Control
Regulations 2000

ENVIRONMENT AGENCY

Permit

Permit number
BK3638

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control Regulations 2000 (S.I. 2000 No. 1973), hereby authorises

Hydro Aluminium Deeside ("the Operator"),

Whose Registered Office is

Bridge Road
Wrexham Industrial Estate
Wrexham, LL13 9PS

Company registration number 1786117

to operate an Installation at

Bridge Road
Wrexham Industrial Estate
Wrexham, LL13 9PS

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

Signed

C. G. Hardman

C G HARDMAN

Authorised to sign on behalf of the Environment Agency

Date

15 March 2002

Conditions

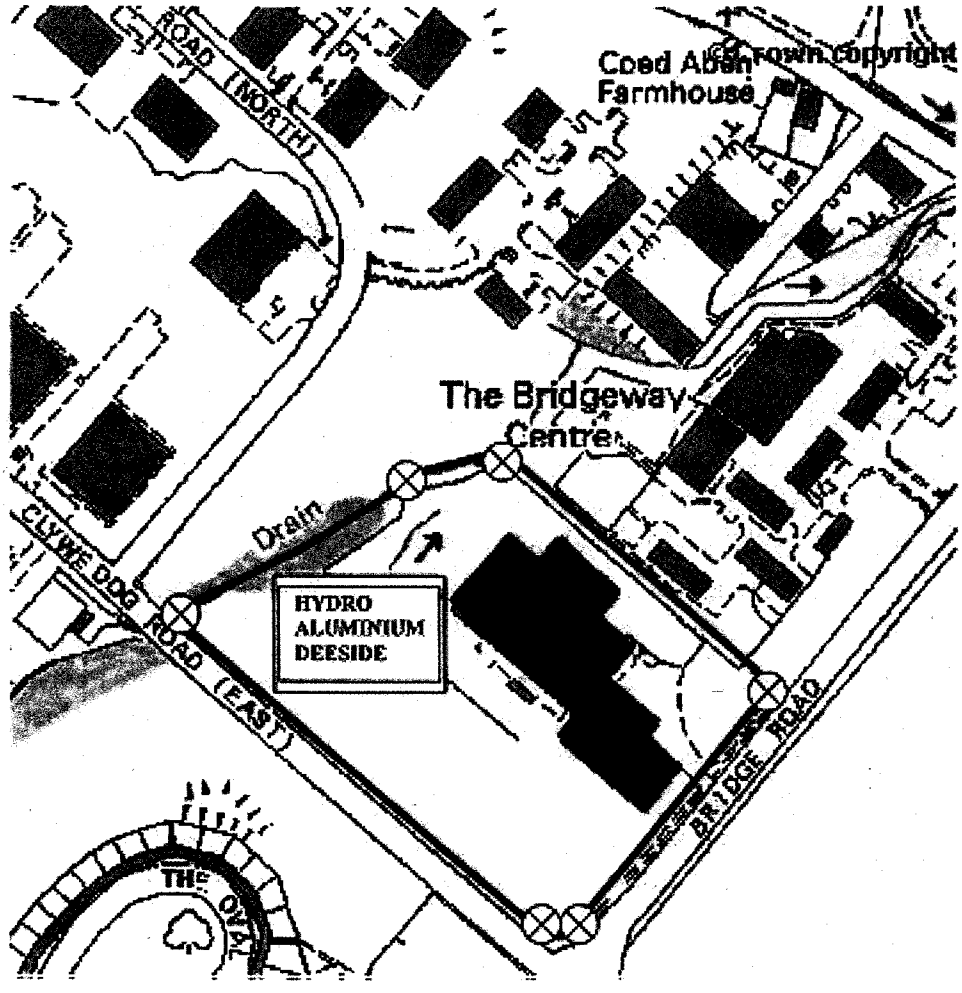
1 The permitted installation

1.1.1 The Operator is authorised to carry out the activities and the associated activities specified in Table 1.1.1.

Table 1.1.1

Activity under Schedule 1 of the Regulations / Associated Activity	Description of specified activity	Schedule 1 Activity Reference (if applicable)	Limits of specified activity
Melting of aluminium, including aluminium scrap	Melting aluminium and making alloys in furnaces, the plant having a melting capacity exceeding 20 t/day and at least one furnace or holding vessel exceeding 5 t capacity.	2.2 A(1) (b)	Receipt of raw materials through to product export.
Off-gas collection, abatement and discharge systems (including fugitives)	Ducting, stacks, and filtration equipment, including three lime-injected bag filter plants.	Directly Associated Activity	From furnaces and dross press through to release points
Water discharges to controlled waters	Discharge of trade effluent and site drainage from the installation.	Directly Associated Activity	From use of water in process to point of entry to controlled waters, including interceptors
All handling of skimmings, dross and waste materials	Skimming activities, dross handling, pressing and storage, lime wastes, other wastes.	Directly Associated Activity	From point of arising through to export.

1.1.2 The activities authorised under condition 1.1.1 shall not extend beyond the Site, being the area shown edged in green and marked with ⊗ on the plan below



Reproduced from the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationery Office ©Crown Copyright 2000. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings.

1.1.3 There are no pre-operation conditions

2 Operational Matters

2.1 Management techniques and control

2.1.1 The Permitted Installation shall, subject to the conditions of this Permit, be managed and controlled as described in the documentation specified in Table 2.1.1, or as otherwise agreed in writing by the Agency.

Table 2.1.1 : Management and control

Description	Parts	Date Received
Application	The response to question 2.1 given in section B2.1 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 13 – 16.	14/01/2002

2.1.2 All plant, equipment and technical means used in operating the Permitted Installation shall be maintained in good operating condition.

2.1.3 The Permitted Installation shall be supervised by staff who are suitably trained and fully conversant with the requirements of this Permit.

2.1.4 A copy of this Permit and those parts of the application referred to in this Permit shall be available, at all times, for reference by all staff carrying out work subject to the requirements of the Permit.

2.1.5 All staff shall be fully conversant with those aspects of the Permit conditions, which are relevant to their duties and shall be provided with appropriate training and written operating instructions to enable them to carry out their duties.

2.2 Raw materials (including water)

2.2.1 The Operator shall, subject to the conditions of this Permit, use raw materials (including water) as described in the documentation specified in Table 2.2.1, or as otherwise agreed in writing by the Agency.

Table 2.2.1 : Raw materials (including water)

Description	Parts	Date Received
Application	The response to question 2.2 given in sections B2.2 and B2.3.1.1 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 17 – 28, 40 - 42	14/1/2002

2.3 Operating Techniques

2.3.1 The Permitted Installation shall, subject to the conditions of this Permit, be operated using the techniques and in the manner described in the documentation specified in Table 2.3.1, or as otherwise agreed in writing by the Agency.

Table 2.3.1: Operating techniques

Description	Parts	Date Received
Application	The response to questions 2.3 given in section B2.3 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 29 – 47	14/1/2002
Further information attached to telefax message	Answer to question about continuous dust monitor in the new holder discharge stack	30/1/2002

2.3.2 After 30 June 2002, plant and equipment which form part of Centre 1 only (comprising principally the melting and holding furnaces, also Caster 1) shall not be operated.

2.4 Groundwater protection

2.4.1 The Permitted Installation shall, subject to the conditions of this Permit, be controlled as described in the documentation specified in Table 2.4.1, or as otherwise agreed in writing by the Agency.

Table 2.4.1: Groundwater protection

Description	Parts	Date Received
Application	The response to questions 2.4 given in section B2.4 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 45 – 48.	14/1/2002

2.5 Waste handling and storage

2.5.1 The Operator shall, subject to the conditions of this Permit, handle and store waste as described in the documentation specified in Table 2.5.1, or as otherwise agreed in writing by the Agency.

Table 2.5.1: Waste handling and storage

Description	Parts	Date Received
Application	The response to question 2.5 given in section B2.5 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 43 and 49 – 54.	14/1/2002
Further information attached to telefax message	Map and revised answer to question 49	30/1/2002
Further information attached to telefax message	Revised map relating to question 49 response	25/2/2002

2.5.2 Waste materials specified in Table 2.5.2 shall only be stored on the site in the location and manner specified in that Table.

Table 2.5.2: Waste stored on site

Description of Waste	Location of Storage on Site	Manner of Storage	Storage Conditions
Dross / skimmings and used ceramic filters	Dross building	Dedicated area	Managed so as to reduce probability of any releases to atmosphere, by minimising direct exposure to wind and rain
Swarf	Within main factory	In dedicated bins	Contamination by other materials to be avoided
Waste oil	Under the diesel tanks	In a dedicated container	Container to be clearly marked, and kept within the bunded area
Oil filters	Adjacent to NE corner of balancing pond	Dedicated area	Within dedicated, lidded bin
Bag filter residues and lime waste	Lorry park	Dedicated area	In sealed bags within dedicated skip
Broken / used pallets	Lorry park	Dedicated area	Within dedicated skip
Waste refractory and general waste	Alongside NE roadway / perimeter fence	Dedicated area	Within dedicated skip

2.6 Waste recovery and disposal

2.6.1 The Operator shall, subject to the conditions of this Permit, recover and dispose of waste as described in the documentation specified in Table 2.6.1, or as otherwise agreed in writing by the Agency.

Table 2.6.1: Waste recovery and disposal

Description	Parts	Date Received
Application	The response to question 2.6 given in section B2.6 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 43 and 54.	14/1/2002

2.7 Energy Efficiency

2.7.1 The Operator shall, subject to the conditions of this Permit, use energy as described in the documentation specified in Table 2.7.1, or as otherwise agreed in writing by the Agency.

Table 2.7 1: Energy efficiency

Description	Parts	Date Received
Application	The response to question 2.7 given in section B2.7 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 55 – 58.	14/1/2002

2.7.2 The operator shall produce a report annually on the energy consumption of the installation, and shall send a copy of each such report to the Agency. The report shall contain, as a minimum, the information specified in the form listed in Schedule 3.

2.7.3 The operator shall prepare an energy efficiency plan by 1 April 2003 and shall update this plan annually thereafter.

2.8 Accident prevention and control

2.8.1 The Operator shall, subject to the conditions of this Permit, prevent and limit the consequences of accidents as described in the documentation specified in Table 2.8.1, or as otherwise agreed in writing by the Agency.

Table 2.8.1 : Accident prevention and control

Description	Parts	Date Received
Application	The response to question 2.8 given in section B2.8 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 59 – 61.	14/1/2002

2.9 Noise and vibration

2.9.1 The Operator shall, subject to the conditions of this Permit, control noise and vibration as described in the documentation specified in Table 2.9.1, or as otherwise agreed in writing by the Agency.

Table 2.9.1 : Noise and vibration

Description	Parts	Date Received
Application	The response to question 2.9 given in section B2.9 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 62 – 65	14/1/2002

2.10 Monitoring

2.10.1 The Operator shall, subject to the conditions of this Permit, carry out, evaluate and assess monitoring as described in the documentation specified in Table 2.10.1, or as otherwise agreed in writing by the Agency.

Table 2.10.1 : Monitoring

Description	Parts	Date Received
Application	The response to question 2.10 given in section B2.10 of the application	7/9/2001
Application	The response to question 2.9 given in section B2.9.14.9 of the application	7/9/2001
Response to Schedule 4 Part 1 Notice	Response to questions 66 – 82.	14/1/2002
Supplementary Information	Partially amended text in section B2.10.2.2 of the application	8/3/02

2.10.2 The Operator shall, for the purpose of assessing compliance with conditions 6.6.1 and 6.6.2 of this Permit, monitor noise and vibration:

a no later than 1 September 2002, with the aim of establishing both typical background noise levels and the additional contribution made by the main sources in the installation to typical overall noise levels at noise sensitive premises. Measurements shall be undertaken in accordance with the methods described in BS4142;

b within the installation boundary, using the installed microphone continuously as described in the application, subject to possible modification once conditions 9.5 and 9.11 have been satisfied; and

c at least once per year, at noise sensitive premises within 500 m of the installation boundary, taking day and night time measurements in accordance with the methods described in BS4142 and also obtaining sufficient data to determine conformance with Noise Rating Curves 40 (between 21:00 and 07:00 hours) and 50 (between 07:00 and 21:00 hours).

2.10.3 Where requested in writing by the Agency, the Operator shall provide at least 14 days advance notice of undertaking monitoring / spot sampling.

2.10.4 There shall be provided:

a safe and permanent means of access to enable sampling/monitoring to be carried out in relation to the emission points specified in Schedule 2, unless otherwise specified in that Schedule and

b safe means of access to other sampling/monitoring points when required by the Agency.

2.11 Decommissioning

2.11.1 The Operator shall, subject to the conditions of this Permit, make provision for decommissioning the installation as described in the documentation specified in Table 2.11.1, or as otherwise agreed in writing by the Agency.

Table 2.11.1 : Decommissioning

Description	Parts	Date Received
Application	The response to question 2.11 given in section B2.11 of the application	7/9/2001

2.11.2 The Operator shall submit a detailed site closure plan to the Agency by 31 December 2002 and shall ensure that it remains current thereafter.

2.12 Multi-operator installations

This is not a multi-operator installation

3 Records

3.1.1 A record (a "Specified Record") shall be made of:-

a any malfunction, breakdown or failure of plant, equipment or techniques (including down time and any short term and long term remedial measures) that may have, has had or might have had an effect on the environmental performance of the Permitted Installation. These records shall be kept in a log maintained for that purpose;

b all monitoring and sampling taken or carried out in accordance with the conditions of this permit and any assessment or evaluation made on the basis of such data.

3.1.2 There shall be made available for inspection by the Agency at any reasonable time:

a Specified Records;

b any other records made by the Operator in relation to the operation of the Permitted Installation ("Other Records")

3.1.3 A copy of any Specified or Other Records shall be supplied to the Agency on demand and without charge

3.1.4 Specified Records and Other Records shall:-

a be legible;

b be made as soon as reasonably practicable;

c indicate any amendments which have been made, and include the original record wherever possible.

3.1.5 Specified Records and Other Records shall be retained for a minimum period of 4 years from the date when the records were made.

3.1.6 For all waste received at or produced from the Permitted Installation, the Operator shall record (and shall retain such records for a minimum of 4 years):

a its composition, or as appropriate, description;

b the best estimate of the quantity produced;

c its disposal routes; and

d the best estimate of the quantity sent for recovery.

3.1.7 A record shall be made at the Permitted Installation of any complaints concerning the Installation's effect or alleged effect on the environment. The record shall give the date of complaint, time of complaint, a summary of any investigation and the results of such investigation. Such records shall be made in a log kept for this purpose.

4 Reporting

4.1.1 All reports and notifications required by this Permit, or by Regulation 16 of the PPC Regulations, shall be sent to the Environment Agency at the address notified in writing to the Operator by the Agency.

4.1.2 The Operator shall report the parameters listed in Table S2 to Schedule 2 as follows:

a in respects of the emission points specified;

b for the reporting periods specified in Table S2 to Schedule 2 and using the forms specified in Table S3 to Schedule 3;

c giving the information from such results and assessments as may be required by the forms specified in those Tables; and

d sending the report to the Agency within 28 days of the end of the reporting period.

4.1.3 The Operator shall, within 36 months of the issue of this Permit, submit a report on potential environmental improvements to the Permitted Installation. For each of the subject areas identified in Section 2 of the appropriate technical guidance, the report shall assess the costs and benefits of alternative techniques that may provide environmental improvement. This shall include, but not be limited to, those techniques listed in guidance. The methodologies used should be based on those given in Agency guidance note IPPC H1 (Environmental Assessment and Appraisal of BAT) and should justify, against the Best Available Techniques criteria, where potential improvements are not planned to be implemented. As part of their management system the Operator shall submit an updated report every 36 months.

4.1.4 Where the Operator has a formal environmental management system applying to the Permitted Installation which encompasses annual improvement targets the Operator shall, not later than 31 January in each year, provide a summary report of the previous year's progress against such targets.

4.1.5 Fugitive emissions shall be reviewed on an annual basis and a summary report on this review shall be sent to the Agency detailing such releases and the measures taken to reduce them.

5 Notifications

5.1.1 The Operator shall notify the Agency **without delay** of:

a the detection of an emission of any substance which exceeds any limit or criteria in this Permit specified in relation to the substance;

b the detection of any fugitive emission which has caused or may cause pollution unless the quantity emitted is so trivial that it would be incapable of causing pollution;

c the detection of any malfunction, breakdown or failure of plant or techniques which has caused or may have the potential to cause pollution; and

d any accident which has caused or may have the potential to cause pollution.

5.1.2 The Operator shall submit written confirmation to the Agency of any notification under condition 5.1.1 of this Permit by sending:

a the information listed in Part A of Schedule 1 to this Permit within 24 hours of such notification; and

b the more detailed information listed in Part B of that Schedule as soon as practicable thereafter;

and such information shall be in accordance with that Schedule.

5.1.3 The Operator shall give written notification, as soon as practicable, of any of the following:

a permanent cessation of the operation of any part of or all of the Permitted Installation;

b cessation of the operation of any part of or all of the Permitted Installation for a period, likely to exceed 1 year; and

c resumption of the operation of any part of or all of the Permitted Installation after a cessation notified under 5.1.3(b).

5.1.4 The Operator shall notify the following matters to the Agency, in writing, within 14 days of their occurrence:

i any change in the Operator's trading name, registered name or registered office address;

ii a change to any particulars of the Operator's ultimate holding company (including details of an ultimate holding company where the Operator has become a subsidiary);

iii any steps taken with a view to the Operator going into administration, entering into a company voluntary arrangement or being wound up.

5.1.5 Where the Operator has entered into a Climate Change Levy Agreement with the Government, the Operator shall, within 14 days, notify the Agency, in writing, in the event that the Secretary of State has not re-certified that agreement.

6 Emissions

6.1 Emissions into air

6.1.1 Emissions to air from the emission point(s) specified in Table 6.1.1 shall only arise from the source(s) specified in that Table.

Table 6.1.1: Emission points into air

Emission point reference/description	Source	Location of emission point
A1	Vent from bag filter plants 1 and 2	Coloured red on site layout drawing
A4	Vents from No 1 homogenising furnace	Coloured blue on site layout drawing
A5		
A6		
A7	Vents from No 2 homogenising furnace	
A8		
A9		
A10	Vent from Centre 1 holding furnace	Coloured yellow on site layout drawing
A12	Vent from bag filter plant 3	Coloured red on site layout drawing
A13	Vent from Centre 2 holding furnace (except when furnace vent is re-routed via bag plants 1-3)	Coloured yellow on site layout drawing
A14	Vent from Dross press	Within dross lean-to area

6.1.2 The limits for emissions into air for the parameters and emission points set out in Table 6.1.3 shall not be exceeded.

6.1.3 The Operator shall carry out monitoring of the parameters listed in Table 6.1.3, from the emission points and at least at the frequencies specified in that Table.

Table 6.1.3: Emission limits into air

Parameters	Emission Point A1, A12	A4 – A9	A10 (#), A13	A14
Sulphur dioxide mg m^{-3} (as 2 hour ave)	50	-	-	-
Frequency of extractive monitoring	Twice a year	-	-	-
Minimum interval between monitoring	4 months	-	-	-
Volatile Organic Compounds (as carbon) mg m^{-3}	50	-	-	-
Frequency of extractive monitoring	Twice a year	-	-	-
Minimum interval between monitoring	4 months			
Gaseous Fluorides (as HF) mg m^{-3}	1	-	-	-
Frequency of extractive monitoring	Twice a year	-	-	-
Minimum interval between monitoring	4 months	-	-	-
Hydrogen chloride mgm^{-3}	10	-	-	-
Frequency of extractive monitoring	Twice a year	-	-	-
Minimum interval between monitoring	4 months	-	-	-
Dioxins (ITEQ) ngm^{-3}	1	-	-	-
Frequency of extractive monitoring	Four times in first year of operation, Twice a year thereafter	-	-	-
Minimum interval between monitoring	4 months	-	-	-
Carbon monoxide mg m^{-3}	150	-	150	-
Frequency of extractive monitoring	Twice a year	-	Annually	-
Minimum interval between monitoring	4 months	-	10 months	-
Oxides of nitrogen (as NO_2) mg m^{-3}	60	-	60	-
Frequency of monitoring	Twice a year	-	Annually	-
Minimum interval between monitoring	4 months	-	10 months	-
Particulate mg m^{-3} (daily average of continuous monitor reading)	10	-	10 [A13 only]	-
Frequency of extractive monitoring (min 4 hour sample)	Twice a year	-	Annually	-
Minimum interval between monitoring	4 months	-	10 months	-

Notes

For all emission points, the limits are expressed at 273 K, 101.3 kPa, dry basis, actual oxygen.

Note # Release point A10 need not be monitored after Centre 1 ceases operation.

6.2 Emissions to land

6.2.1 There shall be no emission to land from the Permitted Installation

6.2.2 The Operator shall notify the Agency, as soon as practicable, of any information concerning the state of the Site which affects or updates that provided to the Agency as part of the Site Report submitted with the application for this Permit.

6.3 Emissions to water [other than emissions to sewer]

6.3.1 Emissions to water from the emission points specified in Table 6.3.1 shall only arise from the sources specified in that Table.

Table 6.3.1: Emission points into water

Emission Point Reference.	Source	Receiving Water
W1	Process effluent, land drainage and surface water	Redwither Brook
W2	Land drainage	Redwither Brook

6.3.2 Limits for the emissions to water for the parameters and emission points set out in Table 6.3.3 shall not be exceeded.

6.3.3 The Operator shall carry out monitoring of the parameters listed in Table 6.3.3, from the emission points and at least at the frequencies specified in that Table.

Table 6.3.3: Emission limits into water			
Parameter	Emission Point W1	Emission Point W2	Monitoring Frequency
BOD mg l^{-1}	10	-	Fortnightly
Suspended Solids mg l^{-1}	35	-	Fortnightly
pH max	9	-	Fortnightly
pH min	6	-	Fortnightly
Temperature	25° C	-	Fortnightly
COD mg l^{-1}	125	-	Fortnightly
Ammoniacal Nitrogen mg l^{-1}	5	-	Fortnightly
Chloride mg l^{-1}	180	-	Fortnightly
Aluminium mg l^{-1}	0.5	-	Fortnightly
Chromium mg l^{-1}	0.12	-	Fortnightly
Copper mg l^{-1}	0.5	-	Fortnightly
Nickel mg l^{-1}	0.2	-	Fortnightly
Lead mg l^{-1}	0.2	-	Fortnightly
Zinc mg l^{-1}	0.5	-	Fortnightly
Cadmium mg l^{-1}	0.01	-	Fortnightly
Total hydrocarbon oil mg l^{-1}	2	-	Fortnightly
24-hour mass release of any of the above parameters (except pH and temperature) g	-	-	When required by condition 6.3.4

6.3.4 If any W1 sample result for a parameter in Table 6.3.3 exceeds the concentration limit specified therein the Operator shall, by estimating flows and, where appropriate, by analysing additional samples, estimate and record the maximum 24-hour mass release of that parameter.

6.3.5 There shall be no emission into water from the Permitted Installation of any substance prescribed for water for which no limit is specified in Table 6.3.3 except in a concentration which is no greater than the background concentration.

6.4 Emissions to sewer

6.4.1 No emission shall be made into any sewer from the Permitted Installation

6.5 Emissions of heat

6.5.1 There are no specific conditions in relation to emissions of heat.

6.6 Emissions of noise and vibration

6.6.1 From 1 July 2002, the level of noise emitted from the site shall not exceed a rating level of 45 dB(A) when expressed as a 5 minute LA_{eq} between the hours of 21:00 and 07:00 on any day, as measured at noise sensitive premises in accordance with the methods described in BS4142.

6.6.2 From 1 July 2002, the level of noise emitted from the site shall not exceed a rating level of 55 dB(A) when expressed as a 60 minute LA_{eq} between the hours of 07:00 and 21:00 on any day, as measured at noise sensitive premises in accordance with the methods described in BS4142.

7 Transfer to effluent treatment plant

7.1.1 There is no effluent treatment plant.

8 Off site conditions

8.1.1 There are no off site conditions.

9 Improvement programme

9.1.1 The Operator shall complete the requirements specified in Table 9.1.1 by the date specified in that Table, and shall send written notification of the date of completion of each requirement to the Agency, at the Reporting Address, within 14 days of the completion of each such requirement.

Table 9.1.1: Improvement programme requirements

Reference	Requirement	Date
9.1	The Operator shall carry out a feasibility study into improving effluent monitoring and disposal facilities, including flow measurement and representative sampling, and shall submit a report of the study to the Agency. Following this study, and no later than 1 October 2002, the Operator shall submit proposals to the Agency for achieving substantial improvements in methods for determination of discharges to controlled water.	1 July 2002
9.2	The Operator shall (a) install a telephone facility to receive complaint reports from the Agency or the general public during operational hours outside the hours of 9am to 5pm; and (b) instigate a procedure whereby, on receipt of a complaint report, there is no undue delay in undertaking an investigation and feeding the subsequent conclusions back to the Agency in writing.	1 July 2002
9.3	The Operator shall carry out sufficient emission monitoring as part of Centre 2 commissioning to enable comprehensive and representative plant performance data to be collected on oxides of nitrogen ("NOx"). From the data, the operator shall prepare a report showing representative NOx concentrations and mass flow rates, both peak and averaged over relevant periods such as furnace cycle times, for the centre 2 furnaces. Concentrations and mass flow rates which cannot be measured shall be calculated or estimated, including (for example) in the furnace extract duct before dilution by hood extract air. The report shall also include estimates of maximum annual mass emissions from each release point on the site, and a copy shall be sent to the Agency.	1 August 2002
9.4	The Operator shall submit a report to the Agency on the commissioning of the main plant and equipment used in Centre 2. The report shall contain full details of the plant configurations and activities tested and of the operating procedures and equipment settings necessary to comply with the conditions of this permit.	1 September 2002
9.5	The Operator shall submit a report to the Agency, describing how noise readings on the site's continuous monitor are used to indicate (i) likely compliance or otherwise with Conditions 6.6.1 and 6.6.2, and (ii) whether noise levels at noise sensitive premises are likely to conform to Noise Rating Curves 40 (between 21:00 and 07:00 hours) and 50 (between 07:00 and 21:00 hours).	1 September 2002

Table 9.1.1: Improvement programme requirements - continued

Reference	Requirement	Date
9.6	The Operator shall carry out an assessment of whether Centre 2 represents BAT regarding noise emissions and shall report the findings to the Agency.	1 September 2002
9.7	The Operator shall carry out a review of the site's noise control policy and shall submit a review of the findings to the Agency.	1 September 2002
9.8	Following the study required under Reference 9.1 above, the Operator shall submit proposals to the Agency for achieving substantial improvements in methods for determination of discharges to controlled water.	1 October 2002
9.9	The Operator shall investigate means of improving energy efficiency of the site's homogenising furnaces and reducing their NO_X emissions, and shall submit a report of findings to the Agency.	1 December 2002
9.10	The Operator shall submit a report which reviews the potential impact of the site's total releases of oxides of nitrogen on sensitive habitats and their maximum contribution towards environmental NO_X concentrations close to the installation.	1 December 2002
9.11	The Operator shall carry out a review of the suitability of the noise monitor location and setting of monitoring periods during the night. A report of the review shall be sent to the Agency. If monitoring periods any greater than 5 minutes are proposed between the hours of 21:00 and 07:00, the report must include a justification for this proposal.	1 December 2002
9.12	A report shall be sent to the Agency on establishing an Environmental Management System having regard to section 2.1 of the relevant IPPC Sectoral or other Technical Guidance. The report shall include any proposals to implement such a programme.	1 January 2003
9.13	The Operator shall submit a report of a feasibility study into the elimination of all releases to air and water that could result from ingress of water into the dross storage area.	1 January 2003
9.14	The Operator shall carry out a comprehensive audit of the efficiency of water use.	1 March 2003
9.15	The Operator shall carry out an assessment of the quality of the Redwither Brook, in collaboration with the Agency. The Operator shall then assess the potential impact of emissions from the site on the Redwither Brook and submit a report to the Agency.	1 March 2003
9.16	The operator shall submit a report reviewing the effectiveness of bag filtration plant performance monitoring. If the report identifies improvements that represent BAT, the report shall contain a timetable for implementing by **1 April 2004** the improvements to bag plant performance monitoring.	1 June 2003

Table 9.1.1: Improvement programme requirements – continued

Reference	Requirement	Date
9.17	The operator shall submit a report on the potential concentration and mass release of dioxins and furans into air and land from the installation. The report shall include all relevant, available emission data (for A1, A12 and waste lime) and shall identify what steps are necessary to keep releases to air below 0.1 ngm^{-3}. The report shall also contain a timetable for reducing, by **1 April 2004**, emissions of dioxins and furans if the techniques for reduction represent BAT.	1 June 2003
9.18	The operator shall submit a report which:- i identifies sources of ammoniacal nitrogen and BOD in discharges to water; ii reviews options for reducing these emissions through minimisation at source or treatment, to below 2.5 mg l^{-1} for BOD and 1.5 mg l^{-1} for Ammoniacal Nitrogen; and iii assesses options for reducing emissions of metals, suspended solids and COD. If one of the options represents BAT the report shall contain a timetable for implementing by **1 June 2005** that option.	1 June 2003
9.19	The operator shall submit a report reviewing the options for reducing the emissions of the pollutants listed below to below the concentrations indicated i. oxides of nitrogen (as NO_2) 100 mgm^{-3} at standard conditions for releases from the melting furnaces prior to dilution with hood air: ii. particulate matter 5 mgm^{-3} as monthly average of continuous monitor readings, from A1, A12 and A13. If one of the options represents BAT the report shall contain a timetable for implementing that option by **1 June 2005**.	1 June 2003
9.20	The Operator shall review the costs and benefits of installing continuous emission monitors on release points A1 and A12, for measuring NO_x, SO_2, HCl, HF and VOCs. A report of the review shall be sent to the Agency.	1 July 2003
9.21	The Operator shall submit a report detailing investigations into the feasibility of treating and re-using casting cooling water and site surface water.	1 September 2003
9.22	The operator shall submit a report reviewing the effectiveness of dross handling, the extraction from storage areas and the containment standards required for export to dross processors. If the identified improvements represent BAT, the report shall contain a timetable for implementing the improvements by **1 June 2005**.	1 January 2004

10 Interpretation

10.1.1 In this Permit, the following expressions shall have the following meanings:

"Authorised Officer"

means any person authorised by the Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, powers specified in Section 108(4) of that Act.

"Background concentration"

means the same as "background quantity" as defined in paragraph 11 to Part 2 to Schedule 1 of the PPC Regulations.

"Dioxins"

means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-p-furans.

For the determination of the toxic equivalence factor (TEQ) value stated as a release limit the mass concentrations of the following dioxins and furans have to be multiplied with their equivalence factors before summing.

	Equivalence factor
2,3,7,8 Tetrachlordibenzodioxin (TCDD)	1
1,2,3,7,8 Pentachlordibenzodioxin (PeCDD)	0.5
1,2,3,4,7,8 Hexachlordibenzodioxin (HxCDD)	0.1
1,2,3,7,8,9 Hexachlordibenzodioxin (HxCDD)	0.1
1,2,3,6,7,8 Hexachlordibenzodioxin (HxCDD)	0.1
1,2,3,4,6,7,8 Heptachlordibenzodioxin (HpCDD)	0.01
Octachlordibenzodioxin (OCDD)	0.001
2,3,7,8 Tetrachlorodibenzofuran (TCDF)	0.1
2,3,4,7,8 Pentachlorodibenzofuran (PeCDF)	0.5
1,2,3,7,8 Pentachlorodibenzofuran (PeCDF)	0.05
1,2,3,4,7,8 Hexachlordibenzofuran (HxCDF)	0.1
1,2,3,7,8,9 Hexachlordibenzofuran (HxCDF)	0.1
1,2,3,6,7,8 Hexachlordibenzofuran (HxCDF)	0.1
2,3,4,6,7,8 Hexachlordibenzofuran (HxCDF)	0.1
1,2,3,4,6,7,8 Heptachlordibenzofuran (HpCDF)	0.01
1,2,3,4,7,8,9 Heptachlordibenzofuran (HpCDF)	0.01
Octachlordibenzofuran (OCDF)	0.001

"Fugitive emission"

means an emission from any point other than those specified in the Tables in part 6 of this Permit.

"LAeq"

means the A-weighted equivalent continuous equal energy level (dBA)

"Monitoring"

includes the taking and analysis of samples, instrumental measurements (periodic and continual), calibrations, examinations, tests and surveys.

"Noise sensitive premises"

means any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.

"Permitted Installation"

means the activities and the limits to those activities described in Table 1.1.1 of this Permit.

"PPC Regulations"

means the Pollution Prevention and Control Regulations 2000 (S.I. 2000 No. 1973) and words and expressions defined in the PPC Regulations shall have the same meanings when used in this Permit.

"Staff"

includes employees, directors or other officers of the Operator, and any other person under the Operator's direct or indirect control, including contractors.

"Substances prescribed for water"

means those substances mentioned in paragraph 13 of Part 2 of Schedule 1 to the PPC Regulations.

"Year"

means calendar year ending 31 December.

10.1.2 Where a minimum limit is set for any emission parameter, references to exceeding the limit shall mean that the parameter shall not be less than that limit.

10.1.3 Unless otherwise stated, any references in this Permit to concentrations of substances in emissions into air means:

a in relation to gases from combustion processes, the concentration in dry air at a temperature of 273 K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or

b in relation to gases from non-combustion sources, the concentration at a temperature of 273 K and at a pressure of 101.3 kPa, with no correction for water vapour content.

11 Written agreement to changes

11.1.1 When the qualification "or as otherwise agreed in writing" is used in a condition of this Permit, the Operator shall seek such agreement in the following manner:

a the Operator shall give the Agency written notice of the details of the proposed change, indicating the relevant part(s) of this Permit; and

b such notice shall include an assessment of the possible effects of the proposed change (including waste production) on risks to the environment from the Permitted Installation.

11.1.2 Any change proposed according to condition 11.1.1 and agreed in writing by the Agency, shall not be implemented until the Operator has given the Agency prior written notice of the implementation date for the change. As from that date, the Operator shall operate the Permitted Installation in accordance with that change, and any relevant documentation referred to in this Permit shall be deemed to be amended.

Schedule 1

Confirmation of condition 5.1.1 notifications, in accordance with condition 5.1.2

This Schedule outlines the information that the Operator must provide to the Agency to satisfy condition 5.1.2 of this Permit.

Units of measurement used in information supplied under Part A and B requirements must 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 PPC Regulations.

Returns should contain

Part A

- ☐ Name of Operator.
- ☐ Permit Number
- ☐ Location of Installation.
- ☐ Date information provided.
- ☐ Time, date and location of the emission.
- ☐ Identity and details of the substance[s] emitted to include:-
  - ☐ Best estimate of the quantity or the rate of emission, and the time during which the emission took place.
  - ☐ Environmental medium into which the emission took place.
  - ☐ Measures taken, or intended to be taken, to stop the emission.

Part B

- ☐ Any more accurate information on the matters notified under Part A.
- ☐ Measures taken, or intended to be taken, to prevent a recurrence of the incident.
- ☐ Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment or harm which has been or may be caused by the emission.
- ☐ The dates of any Part A notifications within the previous 24 months.

☐ Name ☐ Post.....

☐ Signature ☐ Date

☐ Statement that signatory is authorised to sign on behalf of Hydro Aluminium Deeside

Schedule 2

Reporting of monitoring data

Parameters for which reports shall be made, in accordance with conditions 4.1.2 of this Permit, are listed below.

Table S2: Reporting of monitoring data

Parameter	Emission point	Reporting period	Period begins
Sulphur dioxide mg m^{-3}	A1, A12	Every 6 months	1 July 2002
VOCs mg m^{-3}	A1, A12	Every 6 months	1 July 2002
Oxides of nitrogen (as NO_2) mg m^{-3}	A1, A12 A13	Every 6 months Annually	1 July 2002
Hydrogen chloride mg m^{-3}	A1, A12	Every 6 months	1 July 2002
Gaseous fluorides as HF mg m^{-3}	A1, A12	Every 6 months	1 July 2002
Particulates mg m^{-3}	A1, A12 A13	Every 6 months Annually	1 July 2002
Dioxins (ITEQ) ng m^{-3}	A1, A12	Every 6 months	1 July 2002
Carbon monoxide mg m^{-3}	A1, A12 A13	Every 6 months Annually	1 July 2002
Effluent flow	W1, W2	Every 6 months	1 July 2002
Biochemical oxygen demand mg l^{-1}	W1. W2	Every 6 months	1 July 2002
Suspended solids mg l^{-1}	W1, W2	Every 6 months	1 July 2002
pH	W1, W2	Every 6 months	1 July 2002
Temperature	W1, W2	Every 6 months	1 July 2002
Chemical Oxygen Demand mg l^{-1}	W1, W2	Every 6 months	1 July 2002
Ammoniacal Nitrogen mg l^{-1}	W1, W2	Every 6 months	1 July 2002
Chloride mg l^{-1}	W1, W2	Every 6 months	1 July 2002
Metals: aluminium, chromium, copper, nickel, lead, zinc, cadmium mg l^{-1}	W1, W2	Every 6 months	1 July 2002
Total hydrocarbon oil mg l^{-1}	W1, W2	Every 6 months	1 July 2002
Noise	At installed noise monitor and (once per year) at noise sensitive premises	Every 6 months	1 July 2002
Annual waste arisings	Whole installation	Every 12 Months	1 July 2002

Schedule 3

Forms to be used

Unless otherwise agreed in writing between Agency and the Operator, the following Agency forms are to be used for reports submitted to Agency.

Table S3:Reporting Forms		
Medium / parameter	**Form Number**	**Date of Form**
Air	A1	1 March 2002
Water	W1	1 March 2002
Water	W2	1 March 2002
Noise	N1	1 March 2002
Energy	E1	1 March 2002
Waste Return	R1	1 March 2002

END OF PERMIT

SCHEDULE 3

EMISSIONS TO AIR

Release Summary for 6 months to --/--/20—

Permit Number BK3638

Hydro Aluminium Deeside, Wrexham Industrial Estate

Table S3 - A1 Reporting Form – Emissions to air			
Parameters	Emission Point A1	A12	A13
Dates of extractive samples for particulates			
Results of extractive samples for particulates mg m^{-3}			*
Continuous monitoring results for particulates: Maximum daily average value over the reporting period mg m^{-3}			
95th percentile of all daily average values over the reporting period mg m^{-3}			
Dates of extractive samples for gaseous parameters			
Sulphur dioxide mg m^{-3} (as 2 hour average)			[redacted]
Volatile Organic Compounds mg m^{-3} (as carbon)			
Gaseous fluorides (as HF) mg m^{-3}			
Hydrogen chloride mg m^{-3}			
Dioxins (ITEQ) ng m^{-3}			
Carbon monoxide mg m^{-3}			*
Oxides of nitrogen (as NO_2) mg m^{-3}			*

Notes to Table S3-A1

All reported values are to be expressed at 273 K, 101.3 kPa, dry basis, actual oxygen.

* Extractive sampling is only required annually for CO, NO_X and particulate releases from A13

Signed on behalf of the Operator .....

Dated .....

Form A1

15 March 2002

SCHEDULE 3

EMISSIONS TO WATER [other than emissions to sewer]

Release Summary for 6 months to --/--/20--

Permit Number BK3638

Hydro Aluminium Deeside, Wrexham Industrial Estate

Release Point W1, sampled fortnightly

Table S3 – W1 Reporting Form – Emissions to Water – Emission Point W1				
Parameter	**Mean value in period**	**Maximum value in period [#]**	**Sample date corresponding to maximum value**	**24-hour mass release, estimated in accordance with condition 6.3.4, when the concentration limit in Table 6.3.3 has been exceeded [$]**
BOD mg l^{-1}				
Suspended Solids mg l^{-1}				
pH				
pH min				
Temperature °C				
COD mg l^{-1}				
Ammoniacal Nitrogen mg l^{-1}				
Chloride mg l^{-1}				
Aluminium mg l^{-1}				
Chromium mg l^{-1}				
Copper mg l^{-1}				
Nickel mg l^{-1}				
Lead mg l^{-1}				
Zinc mg l^{-1}				
Cadmium mg l^{-1}				
Total hydrocarbon oil mg l^{-1}				

Note **#** - In the case of pH min, the minimum period value should be recorded.
$ - If an individual parameter has exceeded the limit more than once in the six-month period, the highest 24-hour discharge in that period is to be reported here.

Signed on behalf of the Operator .....

Dated .....

Form W1

15 March 2002

SCHEDULE 3

EMISSIONS TO WATER [other than emissions to sewer]

Release Summary for 6 months to --/--/20--

Permit Number BK3638

Hydro Aluminium Deeside, Wrexham Industrial Estate

Release Point W2, sampled fortnightly

Table S3 – W2 Reporting Form – Emissions to Water - Emission Point W2				
Parameter	**Mean value in period**	**Maximum value in period [#]**	**Investigation trigger levels [$]**	**Sample date corresponding to maximum value**
Flow l s^{-1}				
BOD mg l^{-1}			10	
Suspended Solids mg l^{-1}			35	
pH			9	
pH min			6	
Temperature °C			25	
COD mg l^{-1}			125	
Ammoniacal Nitrogen mg l^{-1}			-	
Chloride mg l^{-1}			180	
Aluminium mg l^{-1}			0.5	
Chromium mg l^{-1}			0.12	
Copper mg l^{-1}			0.5	
Nickel mg l^{-1}			0.2	
Lead mg l^{-1}			0.2	
Zinc mg l^{-1}			0.5	
Cadmium mg l^{-1}			0.01	
Total hydrocarbon oil mg l^{-1}			2	

Note **#** - In the case of pH min, the minimum period value should be recorded.
$ - Whenever a sample result exceeds the designated "investigation trigger level", the Operator shall investigate the possible causes, record the findings and report them with this form.

Parameter exceeding Investigation trigger level	Date	Plant investigations carried out	Location of samples taken and results of sample analyses	Conclusions as to cause of exceedance

Continue on separate page if necessary

Signed on behalf of the Operator .....

Dated .....

Form W2

15 March 2002

SCHEDULE 3

EMISSIONS OF NOISE AND VIBRATION

Release Summary for 6 months to --/--/20--

Permit Number BK3638

Hydro Aluminium Deeside, Wrexham Industrial Estate

Location of Noise Monitor .....

Table S3 – N1 Reporting Form – Continuous Noise Monitor Results			
Time Period	**Mean noise level at monitor**	**Number of occasions when monitored level indicates:** **(A) possible breach of limits (conditions 6.6.1 & 6.6.2);** **(B) likely failure to conform to Noise Rating Curve 50 (day) or 40 (night).**	**Summary findings of investigations into high noise monitoring results and complaints from the public** **Continue on separate page if necessary**
Day time 07:00 to 21:00 hours			
Night time 21:00 to 07:00 hours			

Results of Annual Noise and Vibration Measurement at Noise Sensitive Premises #			
Date(s) of measurements	**Date and reference number of report**	**Indicate:** **(A) degree of compliance with limits (conditions 6.6.1 & 6.6.2);** **(B) degree of conformity to Noise Rating Curve 50 (day) and 40 (night).**	**Summary of main results** **Continue on separate page if necessary**

Note to Table S3-N1

Measurements shall be undertaken in accordance with the methods described in BS4142.

Signed on behalf of the Operator .....

Dated .....

Form N1

15 March 2002

SCHEDULE 3

ENERGY CONSUMPTION

Annual Summary for Year Ending 20--

Permit Number BK3638

Hydro Aluminium Deeside, Wrexham Industrial Estate

Table S3 – E1 Reporting Form – Annual Energy Consumption of the Installation

Energy Source	Annual Energy Consumption[1]		Carbon Dioxide Emissions[3] (tonnes)
	Delivered, MWh	Primary[2], MWh	
Electricity			
Natural Gas			

Notes to Table S3-E1

1. Energy consumption figures shall incorporate all sub-metered cells within the scope of the installation.
2. Units of electricity from the public supply shall be multiplied by a factor of 2.6 to account for the energy loss in generation.
3. Direct and indirect emissions of carbon dioxide shall be calculated using the factors provided in Section 3 of the Environment Agency's Horizontal Guidance Note IPPC H2 - Energy Efficiency

Signed on behalf of the Operator .....

Dated .....

Form E1

15 March 2002

SCHEDULE 3

WASTE RETURN

Annual Summary for year ending 20—

Permit Number BK3638

Hydro Aluminium Deeside, Wrexham Industrial Estate

TABLE S3 – R1 Reporting Form - Annual Waste Return	
Description of Waste	**Quantity removed off site for recovery/ disposal (tonnes)**
Dross and skimmings, used ceramic filters and swarf	
Waste oil	
Oil filters	
Bag plant residues and waste lime	
Broken / used pallets	
Waste refractory and general waste	

Signed on behalf of the Operator .....

Dated .....

Form R1

15 March 2002