

Permit Reference Number : BV7460ID

Operator : IR Newport Limited

Installation : Newport Semiconductor Plant

Form Number : S1

Reporting of Emissions to Sewer for the period from ...July 2016.....to.....December 2016.....

Emissions to Sewer							
Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
S1	pH	Minimum 6 Maximum 11	7.0 9.4	Welsh Water Sample - analysis by Seven Trent Laboratories	1 Dec-16 @ 12:30 7 Oct 16 @ 11:12	ISO 17025:2005 No.1314, No.1229, No.1510	Not Known
S1	Suspended solids		187 mg/l	Welsh Water Sample - analysis by Seven Trent Laboratories	17 Nov 16 @ 10:30	As above	Not Known
S1	Chemical Oxygen Demand		1157 mg/l	As above	As above	As above	Not Known
S1	Copper		0.1 mg/l	As above	As above	As above	Not Known
S1	Nickel		0.1 mg/l	As above	As above	As above	Not Known
S1	Zinc		0.1 mg/l	As above	As above	As above	Not Known
S1	Chromium		0.1 mg/l	As above	As above	As above	Not Known
S1	Sulphate		800 mg/l	As above	31 Aug 16 @ 12:39	As above	Not Known
S1	Flow.	Max limit 100 m ³ /hr	62 m ³ /hr	Continuous monitoring	Maximum trade effluent volume		

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.

[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. colorimetry.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements, or flow/time proportional samples, the percentage of the process operating time covered by the monitoring is given.

[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated. The following uncertainties are quoted on a different basis (basis as stated) – {The basis of any other uncertainty figure needs to be stated. Where no figure is available the Agency will need to agree an appropriate uncertainty value.}

Signed
(authorised to sign as representative of the Operator)

Date 2/2/17

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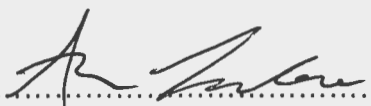
Form Number : R1

Reporting of Waste Disposal and Recovery for the year2016.....

Waste Disposal & Recovery			
Waste Description	Disposal		Recovery
	Route	Tonnes	Tonnes
1a) Hazardous Wastes - Dry	Landfill	14.64	1.50
1b) Hazardous Wastes - Liquid	Waste water treatment	7.06	211.13
2) Non-Hazardous Wastes	Landfill	0	215.63
TOTAL WASTE	Landfill	21.70	

Trends in Waste Disposal and Recovery			
Year	Parameter		
	Named Waste	Total Waste (tonne)	Waste per unit output
2006	Solvent	381.04	
2007	Solvent	400.60	
2008	Solvent	249.30	
2009	Solvent	229.24	
2010	Solvent	199.08	
2011	Solvent	200.69	
2012	Solvent	221.96	
2013	Solvent	224.10	
2014	Solvent	270.02	
2015	Solvent	214.10	
2016	Solvent	211.13	

Operator's comments :

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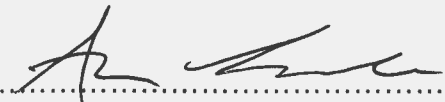
Form Number : WU1

Reporting of Water Usage for the year2016.....

Water Usage		
Water Source	Usage (m ³)	Specific Usage (m ³ /m ²)
Mains water		
2005	759,468	100
2006	772,808	79.3
2007	830,439	79.4
2008	771,938	89.7
2009	668,069	128.1
2010	772,550	77.3
2011	800,686	81.34
2012	824,619	85.1
2013	753,745	70.68
2014	736,771	62.99
2015	649,984	52.54
2016	552,059	45.15

Operator's comments :

Total 2016 output area calculated as 12,228 m²

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Form Number : E1

Reporting of Energy Usage for the year2016.....

Energy Usage			
Energy Source	Energy Usage		CO ₂ Produced (tonnes)
	Quantity	Primary Energy (MWh)	
Electricity *	54,868 MWh	131,684	23,593
Natural Gas	1,390,557 m ³	13,632	2,773
Fuel Oil	2.46 m ³	25	7
TOTAL	-	145,341	26,373

Trends in Energy Usage			
Year	Parameter		
	Primary Energy usage	CO ₂ produced	CO ₂ per unit output
2006	228,188.9	38,342.0	3.93
2007	190,832.1	38,194.3	3.65
2008	192,307.5	32,284.9	3.75
2009	151,828.7	32,703.9	6.27
2010	217,877	36,694.0	3.67
2011	208,351.7	37,580.4	3.82
2012	212,296	38,307	3.95
2013	197,442.7	35,621	3.34
2014	189,056	34,219	2.92
2015	162,069.5	29,389	2.38
2016	145,341	26,373	2.22

Operator's comments :

Primary energy multiplier for electricity assumed as 2.4

KG.CO2 per unit electricity = 0.43 Kg/KWH (Used not primary).

KG.CO2 per KWH Gas = 0.203* (assume flat calorific value of 35.29*MJ/m³ and use site readings). KG.CO2/KWH Diesel = 0.267*

*Values taken from national inventories data 2014

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Date.....2/2/17.....

FY16 Environmental Targets & Achievements – Review**

- Reduce total normal energy consumption on highlighted load centres by **5%** of predicted use as defined within previous Energy Review
 - **Result: achieved**
- Reduce water consumption per m² of silicon shipped by **4%** over FY15 actual
 - **Result: achieved**
- Percentage of non-hazardous waste sent to landfill to be less than **1%**
 - **Result: achieved**

*** Data is from review for July 2015 to June 2016 inclusive*

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Area of silicon output for calendar year 2016

Quarter	FY16 Q3	FY16 Q4	FY17 Q1	FY17 Q1 IFX
Silicon output in m2	2,661.47	3,173.59	3,287.61	3,105.52

Annual fugitive solvent emissions for calendar year 2016

IRN's silicon wafer output in 2016 was largely static compared with 2015, with a reduction of just over 1%. Total chemical usage fell in 2016 by nearly 6% against 2015, due in part, we believe, to our ongoing efforts in materials and cost savings.

Looking at our five year trend, the total quantity of chemical used measured against our silicon output has fallen. The absolute volume of solvent used and the solvent waste subsequently sent for recycling has also continued to fall. However as the chemical reduction rate has been slightly faster than the solvent reduction rate the proportion of solvent versus all chemicals used has increased by just 0.5%.

The configuration of solvent waste collection is unchanged from 2015. With the exception of a very small quantity arising from the Fab10 decommissioning process, all solvent waste is collected in sealed containers and then transferred via a back venting system to a tanker for haulage off site.

In light of the above, we believe that our fugitive solvent emissions as a percentage of solvent used remains below 5%.

