Permit Reference Number : BV7460ID

Operator : Newport Wafer Fab Limited

Installation : Newport Semiconductor Plant

Form Number : S1

Reporting of Emissions to Sewer for the period from ...July 2018.....to.....December 2018.....

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	6.3 8.2	Welsh Water Sample - analysis by Seven Trent Laboratories	29 October 18 @ 09:03 22 August 18 @ 11:45	ISO 17025:2005 No.1314, No.1229, No.1510	Not Known
S1	Suspended solids	400mg/L	97mg/L	Welsh Water Sample - analysis by Seven Trent Laboratories	4 December 18 @ 11:11	As above	Not Known
S1	Chemical Oxygen Demand	500mg/L	876mg/L	As above	As above	As above	Not Known
S1	Copper	0.5mg/L	0.1mg/L	As above	As above	As above	Not Known
S1	Nickel	0.5mg/L	0.1mg/L	As above	As above	As above	Not Known
S1	Zinc	0.5mg/L	0.1mg/L	As above	As above	As above	Not Known
S1	Chromium	0.5mg/L	0.1mg/L	As above	As above	As above	Not Known
S1	Sulphate	1500mg/L	1164mg/L	As above	22 August 18 @ 11:45	As above	Not Known
S1	Flow.	Max limit 100 m^3/hr	88m^3/hr	Continuous monitoring	Maximum trade effluent volume 29/10/2018	MCerts	4.37%

[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 1/2/19

Permit Reference Number : BV7460ID

Operator : Newport Wafer Fab Limited

Installation : Newport Semiconductor Plant

Form Number : R1

Reporting of Waste Disposal and Recovery for the year .....2018.....

Waste Disposal & Recovery			
Waste Description	Disposal Route	Tonnes	Recovery Tonnes
1a) Hazardous Wastes - Dry	Landfill	0	19.59*
1b) Hazardous Wastes - Liquid	Waste water treatment	7.7	237.36
2) Non-Hazardous Wastes	Landfill	0	113.73
TOTAL WASTE		7.7	370.68

Trends in Waste Disposal and Recovery			
Year	Parameter		
	Named Waste	Total Waste (tonne)	Waste per unit output
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	
2017	Solvent	267.27	
2018	Solvent	237.36	

Operator's comments : * Hazardous Waste is "treatment" – usually incineration with energy recovery.

Signed .....

(authorised to sign as representative of the Operator)

Date.....1/2/19.....

Permit Reference Number : BV7460ID

Operator : Newport Wafer Fab Limited

Installation : Newport Semiconductor Plant

Form Number : WU1

Reporting of Water Usage for the year .....2018.....

Water Usage		
Water Source	Usage (m^3)	Specific Usage (m^3/m^2)
Mains water		
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
2017	560,339	44.20
2018	554,996	42.80

Operator's comments :
Total 2018 output area calculated as 12,967 m^2

Signed .....

(authorised to sign as representative of the Operator)

Date.....1/2/19.....

Permit Reference Number : BV7460ID

Operator : Newport Wafer Fab Limited

Installation : Newport Semiconductor Plant

Form Number : E1

Reporting of Energy Usage for the year .....2018.....

Energy Usage			
Energy Source	Energy Usage		CO_2 Produced (tonnes)
	Quantity	Primary Energy (MWh)	
Electricity *	53,950 MWh	129,481	23,199
Natural Gas	1,573,394 m^3	15,524	3,162
Fuel Oil	1.23 m^3	12.36	3.3
TOTAL	-	145,017	26,364

Trends in Energy Usage			
Year	Parameter		
	Primary Energy usage	CO_2 produced	CO_2 per unit output
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
2017	142,893	25,937	2.05
2018	145,017	26,364	2.03

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/m^3 and use site readings). KG.CO2/KWH Diesel = 0.267*
**Values taken from national inventories data 2014*

Signed .....

(authorised to sign as representative of the Operator)

Date...1/2/19.....

FY18** Environmental Targets & Achievements – Review

- Reduce total normal energy consumption on highlighted load centres by **3.3%** of predicted use as defined within previous Energy Review
  - **Result: achieved**
- Reduce water consumption per m^2 of silicon shipped by **2%** over FY17 actual
  - **Result: achieved**
- Percentage of non-hazardous waste sent to landfill to be less than **1%**
  - **Result: achieved**

*** Data is from review for October 2017 to September 2018 inclusive*

Permit Reference Number : BV7460ID

Operator : Newport Wafer Fab Limited

Area of silicon output for calendar year 2018

Quarter	FY18 Q2	FY18 Q3	FY18 Q4	FY19 Q1
Silicon output in m^2	3,299.02	3,235.71	3,336.12	3,095.69

Permit Reference Number : BV7460ID Operator : Newport Wafer Fab Limited

Annual fugitive solvent emissions for calendar year 2018

Silicon wafer output rose slightly in 2018 compared with 2017, showing an increase of 2%. During this period the total quantity of chemical used was unchanged, while solvent usage fell by nearly 9%. Solvent waste reduced by a similar amount.

The process mix of product output was consistent throughout the year apart from a trend for reduced complexity which began in the final quarter, a probable contributor to the change in solvent usage.

Overall, manufacturing conditions remained stable during 2018, with no major changes to equipment or infrastructure. The method of solvent waste collection was the same as in previous years, there have been no emergency incidents involving solvents and we therefore believe our fugitive solvent emissions as a percentage of solvent used remain below 5%.

