

EA Annual
Submissions



Lara Cubley
Natural Resources Wales
Chester Road
Buckley
CH7 3AJ
Flintshire

Your Ref: LP 3738GG (BX4666IZ)

Date: 4th February 2014

Subject: 2013 Annual Submissions

Dear Lara Cubley,

Please find attached our annual submissions report for the Optical Shops manufacturing of Infra red Products Permit LP3738GG (BX4666IZ).

As you will see from the below report and also the already supplied Emissions Report the Total Particulate Matter and VOC emissions have not exceeded the permitted limit. Calculations that led to these conclusions have been carried out in accordance with Note 2, Schedule 2 – Reporting of monitoring Data.

Due to Thallium, Gallium & Selenium not being machined during the time that ESG Ltd conducted the Emissions monitoring estimation for the g/annum has been carried out.

Thallium & Gallium make up around 10% of the overall materials; therefore, it is reasonable to expect that the annual quantity would not exceed that of the Selenium. As Selenium was not being machined at the time of the monitoring, last year's figure was used as a guide. This is thought to be slightly overestimated as the overall lens production output was higher in 2012.

If there is any additional information required please do not hesitate to contact me.

Yours Sincerely,

Debbie Roberts
Environmental & COSHH Engineer

MONITORING RETURNS N. WAL-S

	INITIALS	DATE
CHECKED Vs AUTHORISATION	L.C.	21.3.14
TRACKING	JB	7.2.14
OK FOR PUBLIC REGISTER	L.C.	21.3.14
	JB	EDRM

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Please refer to ESG Limited Report to reinforce the Data used and contained below.

Permit Number: BX4666IZ Operator: Qioptiq LTD, St Asaph

Facility: St Asaph, Infra Red Optics Form Number: A1 – Air

ANNUAL: Reporting of emissions to air for the period from 01/01/2013 to 31/12/2013

Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A2	Particulate Matter	1 mg/m ³	60 Minutes (1161 LTR)	Total Annual: 727.2 g/annum Total: 0.16 g/hr	BS EN 13284-1	13:18-14:18 19/11/13	-
A5	Particulate Matter	1 mg/m ³	60 Minutes (1312 LTR)	Total Annual: 727.2 g/annum Total: 0.16 g/hr	BS EN 13284-1	09:36-10:36 20/11/13	-
A7	Particulate Matter	1 mg/m ³	60 Minutes (1296 LTR)	Total Annual: 2272.5 g/annum Total: 0.50 g/hr	BS EN 13284-1	09:20-10:30 19/11/13	-
A10	Particulate Matter	1 mg/m ³	60 Minutes (1270 LTR)	Total Annual: 3136 g/annum Total: 0.69 g/hr	BS EN 13284-1	10:55-11:55 19/11/13	-
A2,A5,A7,A10 COMBINED	Particulate Matter (g/annum) (See Note 1)	-	NA	6862.9 g/annum	BS EN 13284-1	NA	-
A2	White Spirit, expressed as C (mg/m ³)	-	30 Minutes (1.5 LTR)	Annual: 581.76 kg/annum Total: 128 g/hr	BS EN 13649	13:18-14:18 20/11/13	-
A10	White Spirit, expressed as C (mg/m ³)	-	30 Minutes (1.5 LTR)	Annual: 613.58 kg/annum Total: 135 g/hr	BS EN 13649	11:42-12:12 20/11/13	-
A2	Specified Metals (mg/m ³)	-	60 Minutes (1161 LTR)	Total Annual: 0.23g/annum (As) Total: 0.00005 g/hr	BS EN 14385	13:18-14:18 19/11/13	-
A5	Specified Metals (mg/m ³)	-	60 Minutes (1312 LTR)	Total Annual: 0.14 g/annum (As) Total: 0.00003 g/hr	BS EN 14385	09:36-10:36 20/11/13	-
A7	Specified Metals (mg/m ³)	-	60 Minutes (1296 LTR)	Total Annual: 0.32 g/annum (As) Total: 0.00007 g/hr	BS EN 14385	09:20-10:20 19/11/13	-
A10	Specified Metals (mg/m ³)	-	60 Minutes (1270 LTR)	Total Annual: 0.23 g/annum (Se) Total: 0.00005 g/hr	BS EN 14385	10:55-11:55 19/11/13	-

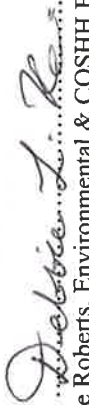
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Emission Point	Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A2,A5,A7,A10 COMBINED	Thallium and its compounds (g/annum)	-	N/A	Total Annual: < 1 g/annum	N/A	N/A	Estimate
A2,A5,A7,A10 COMBINED	Gallium and its compounds (g/annum)	-	N/A	Total Annual: < 1 g/annum	N/A	N/A	Estimate
A2,A5,A7,A10 COMBINED	Selenium and its compounds (g/annum)	-	N/A	Total Annual: < 1 g/annum	N/A	N/A	Estimate
A2,A5,A7,A10 COMBINED	Arsenic and its compounds (g/annum)	-	N/A	Total Annual: 0.96 g/annum	N/A	N/A	-
Installation A2 as C (A2, A10, A11)	Volatile Organic Compounds kg/Annum	-	N/A	Annual: 1223.52 kg/annum	N/A	N/A	-
A11	VOC	75 mg/m ³	30 Minutes (14.45 Litres)	Annual: 28.18 kg/annum Total: 6.2 g/hr	BS EN 13649	09:47-10:17 18/11/13	-
A2	Extraction Rate (m ³ s ⁻¹)		N/A	5.9 m/s	N/A	13:18-14:18 19/11/13	-
A5	Extraction Rate (m ³ s ⁻¹)		N/A	3.5 m/s	N/A	09:36-10:36 20/11/13	-
A7	Extraction Rate (m ³ s ⁻¹)		N/A	4.90 m/s	N/A	09:20-10:20 19/11/13	-
A10	Extraction Rate (m ³ s ⁻¹)		N/A	6.47 m/s	N/A	10:55-11:55 19/11/13	-
A11	Extraction Rate (m ³ s ⁻¹)		N/A	3.08 m/s	N/A	09:47-10:17 18/11/13	-

Operator's comments:

Final annual total figures are based on 4545 operating hours calculated against ESG g/hour result. These operating hours are an averaged annual figure based on a department operating 2 shifts a day at 7 ½ hours each over 303 days (Sundays x 52, and 10 day Christmas shut down has not been included).

(g/hour x 4545) = Annual Total in g/annum

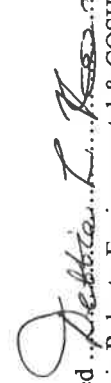
Signed 
(Debbie Roberts, Environmental & COSHH Engineer)

Date 04/02/14

EA Annual Submissions

ANNUAL: Reporting of emissions to sewer for the period from 01/01/13 to 31/12/13 Form Number: S1 –Sewer

Emission Point	Substance / Parameter	Limit Value (mg/l)	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]
S1	Chemicals Oxygen Demand	3000	Not Received	Severn Trent Labs PLC UKAS 1223	Not Received
S1	Chemicals Oxygen Demand	3000	396	Severn Trent Labs PLC UKAS 1223	15/02/13 11:50
S1	Chemicals Oxygen Demand	3000	427	Severn Trent Labs PLC UKAS 1223	06/03/13 10:55
S1	Chemicals Oxygen Demand	3000	857	Severn Trent Labs PLC UKAS 1223	19/04/13 10:30
S1	Chemicals Oxygen Demand	3000	642	Severn Trent Labs PLC UKAS 1223	03/05/13 12:05
S1	Chemicals Oxygen Demand	3000	116	Severn Trent Labs PLC UKAS 1223	07/06/13 11:35
S1	Chemicals Oxygen Demand	3000	Not Received	Severn Trent Labs PLC UKAS 1223	Not Received
S1	Chemicals Oxygen Demand	3000	148	Severn Trent Labs PLC UKAS 1223	16/08/13 09:55
S1	Chemicals Oxygen Demand	3000	163	Severn Trent Labs PLC UKAS 1223	06/09/13 09:20
S1	Chemicals Oxygen Demand	3000	507	Severn Trent Labs PLC UKAS 1223	04/10/13 09:25
S1	Chemicals Oxygen Demand	3000	113	Severn Trent Labs PLC UKAS 1223	14/11/13 09:55
S1	Chemicals Oxygen Demand	3000	129	Severn Trent Labs PLC UKAS 1223	18/12/13 09:18

Signed 
(Debbie Roberts, Environmental & COSHH Engineer)

Date: 04/02/14

EA Annual Submissions

Facility: St Asaph, Infra Red Optics Form Number: WU 1 - Water Usage

Annual: Reporting of Water Usage for the year 2013

Water Source	Usage (m ³ /year)	Specific Usage (m ³ /unit output)
Mains water	108.9	0.12 m3/unit
TOTAL WATER USAGE	108.9	

Operator's comments :

Using the water meter readings which are strategically placed in all key areas of the optical shop an accurate estimate of the consumption of water per unit is as follows:
 9,125 lenses as defined in the permit have been processed throughout 2013; this is 19% of the 47,674 lens grand total which were processed on site at St Asaph. By dividing the defined permitted lens against the Optical Shop meter readings has generated this specific usage figure.

Signed *Debbie L. Roberts*.....
 (Debbie Roberts, Environmental & COSHH Engineer)

Date 04/02/14

EA Annual Submissions

Facility: St Asaph, Infra Red Optics

Form Number: E1 - Energy

Annual: Reporting of Energy Usage for the year 2013

Energy Source	Energy Usage		CO2 Produced (Tonnes)
	Quantity	Primary Energy (MWh)	
Electricity *	1538.74	3692.98	831
Natural Gas	609.94	609.94	112
TOTAL	2148.68	4302.92	943

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments:

Electricity Total: 10,991MWh with 14% installation estimate = 1538.74 MWh.
Gas Total: 3210.26 with 19% of installation estimate = 609.94 MWh

Signed
(Debbie Roberts, Environmental & COSHH Engineer)

Date: 04/02/14

EA Annual Submissions

Facility: St Asaph, Infra Red Optics Form Number: R1 – Waste Disposal

Annual: Reporting of Waste disposal and recovery for the year 2013

Waste Description	Disposal Route	Tonnes	Recovery Tonnes
Hazardous Waste Total	Segregation and recycling Facility & landfill.	49.26	4.6
Non-hazardous Waste (40% of Site Total)	Segregation and recycling Facility & landfill.	39.00	29.3
TOTAL:		88.26	33.9

Trends in Waste Recovery Year	Disposal and Parameter	TOTAL N/H Waste (Tonnes)
2005	Total Hazardous Waste (Tonnes)	46
2006		40.7
2007		38.9
2008		45.2
2009		44.2
2010		41.4
2011		44
2012		35.48
2013		39.00

Operator Comments:

ASH Waste Services released their recycling figures which had an overall average of 70.81% recovery rate for general waste. Cardboard and Paper has been recycled at a 100% recovery rate. Wood has been recycled at 99% recovery rate. For the purpose of this report 75% has been used to calculate the figures. 2013 has been a good year for Qioptiq Ltd in reducing the waste the company sent to landfill. The Optical Shop accounts for an estimated 40% of the site's overall non-hazardous waste.

The Optical Shop accounts for an estimated 40% of Qioptiq's total hazardous waste (123.15).

Signed
(Debbie Roberts, Environmental & COSHH Engineer)

Date 04/02/14

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Facility: St Asaph, Infra Red Optics Form Number: P/1 Performance

Annual: Reporting of other performance indicators for the period 01/01/2013 to 31/12/2013

Parameter	Units
Water Usage	108.9
Energy Consumption	4302.92

Trends in Environmental Performance	
Year	Water Consumption Per Infra Red Optic
2005	1.30 m3 / lens
2006	0.0303 m3 / lens
2007	0.0167 m3 / lens
2008	0.0240 m3 / lens
2009	0.0404 m3 / lens
2010	0.124 m3 / lens
2011	0.077 m3 / lens
2012	0.011 m3 / lens
2013	0.012 m3 / lens

Operator's comments :

Total 9,125: Typically Gallium Arsenide Lens: 36.2g from a 70g blank. Viewed as the typical lens and produced in volume.

9,125 lenses as defined in the permit have been processed throughout 2013; this is 19% of the 47,674 lens grand total which were processed on site at St Asaph. By dividing the defined permitted lens against the Optical Shop meter readings and Mwh this has generated this specific usage figure.

Signed  Date 04/02/14
(Debbie Roberts, Environmental & COSHH Engineer)