**APPENDIX 3**

**Calculating your annual solvent emission**

PPC PERMIT NUMBER \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SITE NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12 MONTH PERIOD COVERED (month & year) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Notes:**

* You must keep weekly records to provide the data required in this calculation.
* The calculation is for the whole dry cleaning site rather than individual machines. A lower performing machine may be balanced out by a better performing one.
* Any solvent spillage must **not** be included in the volume of solvent used (Step 3)
* Contact wasteandindustry@sepa.org.uk for assistance.

**Step 1 – Solvent disposed of as waste (solvent contaminated residues)**

This is known as ‘**A**’ and is the volume of solvent contaminated residues pumped or raked out of the still in litres BUT NOT any water separator waste which must not be included in this figure.

Solvent becomes dirty as fabrics are cleaned. This dirty solvent is pumped to the still where it is heated to turn it into a vapour. The vapour leaves the dirt behind and is cooled back into a solvent/water mixture. This mixture then moves to the separator where clean solvent is sent back to the solvent tank and the separated water is drained off, usually to sewer.

However, if you collect the water separator waste instead and put it into the same waste container as the solvent contaminated residues, you must subtract this volume from the amount of solvent contaminated residues disposed of.

|  |
| --- |
| **A =**  |

**Step 2 – Removal factor**

The volume of solvent contaminated residues is multiplied by the appropriate removal factor to account for the efficiency of the removal method.

|  |  |  |
| --- | --- | --- |
| **Removal method** | **Factor** | **B = A x factor** |
| Powder filter rake-out | 0.15 | **B =**  |
| Ecological filter rake-out | 0.35 |
| Plumbed in pump-out | 0.5 |

**Step 3 – Total solvent used in litres**

|  |  |
| --- | --- |
| Volume of solvent in the machine at the start of the year | **C =**  |
| Total volume of solvent added to the machine during the year | **D =**  |
| Volume of solvent in the machine at the end of the year | **E =**  |
|  | **F = C + D - E** |
| Total solvent used throughout the year | **F =**  |

**Step 4 – Overall solvent used in litres**

|  |  |
| --- | --- |
| Total volume of solvent used throughout the year as calculated in Step 3 minus the solvent contaminated residues as calculated in Step 2. | **G = F – B** |
| Overall solvent used in litres | **G =**  |

**Step 5 – Convert volume to weight**

To convert overall solvent used from litres to grams, multiply **G** by the following factor depending on the solvent you use.

|  |  |  |
| --- | --- | --- |
| **Solvent type** | **Factor** | **H = G x factor** |
| Perchloroethylene | 1600 | **H =** |
| Siloxane | 970 |
| HCSSensene | 970839 |

**Step 6 – Total weight of material cleaned**

|  |  |
| --- | --- |
| Total of all the clothes and/or fabric cleaned over the year in kilograms (kg) | **I =**  |

**Step 7 – Annual solvent emission**

|  |  |
| --- | --- |
| Your annual solvent emission (g/kg) is calculated by dividing the weight of solvent used in grams (g) as calculated in Step 5, by the total weight of material cleaned in kilograms (kg) as calculated in Step 6.  | **J = H ÷ I** |
| Annual solvent emission (g/kg) | **J =**  |

**Step 8 – Have you met the permitted emission limit?**

|  |  |
| --- | --- |
| Permit limit = 20g of solvent per kg of clothes/fabric cleanedIf **J** exceeds 20 then you are NOT in compliance.  | **Yes / No** |

**If you are not compliant, please explain why:**

|  |
| --- |
|  |

**Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**