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|-----------------------------|--|
| Operator | Telford Copper & Stainless Steel Cylinders Ltd |
| Installation Address | Unit 22 Furrows Business Park Haybridge Road Telford Shropshire TF1 2FE |
| Permit Reference | 2713/230622 |
| Grid Reference | SJ663115 |
| Registered Office | Telford Copper & Stainless Steel Cylinders Ltd Unit 22 Furrows Business Park Haybridge Road Telford Shropshire TF1 2FE |
| Company Number | 02353068 |

Telford Copper & Stainless Steel Cylinders Ltd is hereby permitted by Telford & Wrekin Council to carry out the activity of The Surface Treatment of Metals as defined under Schedule 1, Part 2, Section 2.3, Part B(a) of The Environmental Permitting (England and Wales) Regulations 2016 ("The Regulations") and other activities as listed and described below within the installation boundary marked in red on the attached plan in Appendix 1 and in accordance with the conditions within this permit.

Signed: 

Name: Clair Travis

Date: 23 June 2022

Environmental Health Consultant

Authorised by the Borough of Telford and Wrekin to sign in that behalf



| Provenance | Relevant Dates |
|--------------------------|----------------|
| Date Permit First Issued | 23/03/2022 |

Introductory Note – This Introductory note does not form part of the permit.

Determination of application

Particular conditions have been inserted as representing the authority's judgement of what constitutes BAT, having regard to the statutory guidance issued by the Secretary of State and to all site specific considerations.

Description of the Installation

The installation is for the activity of surface treating metals, known as 'pickling'. The site has one pickling line.

Stainless steel and copper hot water cylinders are manufactured on site. The internal surface of the stainless steel tanks are pickled in a solution of nitric and hydrofluoric acid to remove surface scale and oxide layers, in a fully enclosed pickling chamber with a dedicated effluent treatment plant and exhaust scrubbing system.

Raw Materials

The principle raw materials used at the installation comprises of Nitric and Hydrofluoric acid. It is a commercially prepared solution known as Flourinox; an electrolytic solution utilised in the pickling line. Solid caustics and flocculants are used for effluent treatment. Anopol DS is used as a de-smutting agent, which contains Sulphuric acid.

Liquid acids are stored in their original 1,000L IBCs, on portable bunds, within a designated storage area (shown in Appendix 1), with incompatible materials stored physically apart.

Solid raw materials, such as the caustic for the effluent treatment plant, are stored away from process areas in the original packaging in which they were supplied. They are kept dry and are segregated from acid storage areas.

Surface Treatment Activity

The pickling process is undertaken in a self-contained fully automatic polypropylene pickling cabinet. A schematic of the pickling process, the associated effluent treatment plant and scrubber unit, along with a process flow diagram is detailed in Appendix 2.

The process starts with the operator loading the workpiece (stainless steel hot water cylinder) onto the trolley which pulls out of the cabinet. Hose connections are made to the tanks.

The door to the pickling cabinet is interlocked to prevent any operation or chemical dosing whilst the door is open

The pickling solution is mixed in the 'pickle' tank at a ratio of 1:1 with water and Flourinox. The pickling process is undertaken at ambient temperature. A heat exchanger is in place to maintain ambient temperatures during colder months.

Once the pickle cycle is started, pickle solution is dosed from the pickle tank and is sprayed inside the stainless-steel cylinders. The cycle takes approximately 10 – 30 minutes. At the end of the cycle the pickle solution is returned to the pickle tank.

The first rinse following pickling uses recycled water from the used water tank. This is sprayed within the cabinet and returned to the used water tank. The second rinse uses water from the clean water feed (IBC), again this is sprayed within the cabinet and returned to the used water tank which overflows into the waste pit.

Only once the pickling and rinse activities are completed and the solutions have returned to their respective tanks can the door to the cabinet open.

The pickling process will not start if the waste water pit is full or if the water supply IBC is empty.

Effluent Treatment Plant

Rinse waters from the pickling process are treated to allow the reuse of the water. Rinse water from the process overflows into a subterranean waste pit (2,000l) which feeds the effluent treatment plant.

Acid rinses are pumped from the waste pit into the effluent treatment tank. A calibrated probe/meter is used as this water is agitated and is dosed with Calcium Hydroxide (Lime) until a pH of between 8-10 is reached. If overdose occurs and pH raises above this limit then 20% sulphuric acid is used to correct. Calcium hydroxide is dosed from a 930 litre tank in the ETP.

A coagulant and flocculant are mixed into the solution to aid in precipitation and flocculation of heavier compounds. This is then allowed to settle overnight so clean water can be separated at the top of the tank. Solids which precipitate are removed from the bottom of the tank via the filter press. It is pumped through a filter press under pressure, a semi permeable membrane allows clean water to pass through but retains solid material (metal salts and other precipitated compounds) between the plates.

Filter press solids (EWC 160303) will be collected in a suitable waste container for disposal off site by a licenced waste management facility.

Finally the water is passed through a filter media (carbon/sand) to remove all remaining solids. The media in the chamber consists of activated carbon and quartz sand. Any further pH correction is undertaken using a sulfuric acid based chemical (anopol DS).

Once the rinse water has been treated in the effluent treatment plant it is used as the clean rinse water for the pickling process, via a 1,000L IBC located behind the pickling cabinet. Flocculant, Coagulants and Sulphuric acid tanks are 25L and are contained within the pickling bund area.



Periodically the rinse water will need to be replaced - this will be tested and sent to an appropriate licenced waste management facility for disposal.

The filter media will also require periodic replacement - this will be backwashed into an IBC for disposal off site to a licenced waste management facility.

Abatement

The pickling cabinet is served by a wet scrubber abatement unit which discharges emissions through a single stack, detailed as A1 in appendix 1.

A butterfly valve in the roof of the spray cabinet holds fumes inside the cabinet during the spraying process. Once the cycle is complete the cabinet is rinsed with water to the effluent treatment plant – this will capture a significant proportion of the vapours, where they will be treated in the ETP. Any residual vapours and fume from the pickling cabinet are extracted to the wet scrubber unit using water as the scrubber media. If required, Anapol 5 (Potassium Hydroxide reagent), is added to the scrubber liquor to increase the alkali density.

Flue gases pass through the scrubber tower packed with PALL rings (PP). The abatement system has been designed to adsorb malodorous fumes contained in the air coming from the pickling cabinet. Malodorous substances are removed internally by a re-circulating water and the reagent (when needed). The configuration of the scrubber unit is packed static bed with PALL rings packed into the column. Gas is introduced at the bottom whilst the liquid is introduced at the top through ramps of spray nozzles.

The extracted air will initially bubble in the cleaning solution (water and reagent (when needed)) and then pass through the packed bed, fed by a counter-flow of service water. The amount of re-circulated water (and reagent when used) in the column is regulated by a special valve. The water passes through a drop separator situated at the top of the system, which traps particles of re-circulated liquid carried by the flow of gas as it leaves the column. The remaining 'scrubbed' gaseous emissions are discharged into the atmosphere through the stack.

The scrubber unit is served by a recirculation tank for the water and reagent (where used), with a capacity of 1,125l. The water sump has a liquid level gauge to monitor the water level. The scrubber tower extends to the bottom of the tank in order to create a 'hydraulic seal'.

The water and reagent (is used) from the scrubbing unit is changed periodically. Waste-water will be sampled and disposed of to a licence waste management facility.

Waste



All waste materials from the activity will be stored in a designated area until removal to a registered waste facility.

Please Note:

The effluent treatment of waste water has been assessed under Section 5.3 and 5.7 of The Regulations and has been found to be under the threshold for an A1 permit. Section 5.3 has a minimum of 10 tonnes of waste per day being treated and Section 5.7 requires the plant to be operated along with an A2 activity. This site is below the threshold of a vat with a capacity of more than 30m³, therefore an A2 permit is not required.

End of Introductory Note

Permit Conditions

General

1. The best available techniques shall be used to prevent, or where that is not practicable, reduce the emissions from the installation in relation to any aspect of the activity which is not specifically regulated by any condition of this permit.
2. An appropriate person (and deputy) shall be appointed as the primary point of contact with the regulator. The regulator shall be informed in writing of the appointed person (and deputy). In the event of a different person being appointed, the regulator shall be informed without delay.
3. A copy of this permit shall be kept at the installation. All relevant staff shall be made aware of its content and shall be told where it is kept.
4. If the operator proposes to make a change in the operation of the installation, they must, at least 14 days before making the change, notify the regulator on the appropriate form. The notification must contain a description of the proposed change in operation. A 'change in operation' means a change in the nature or functioning, or an extension, of the installation, which may have consequences for the environment.
5. All records required to demonstrate compliance with any conditions of this Permit shall be kept in an organised manner. The records shall be kept electronically or in paper form. Records:
 - a) Must be legible and any amendment entered into a record shall be made in such a way as to leave the original clear and legible.
 - b) Records shall be kept for a period of 3 years, unless otherwise stated.
 - c) Records shall be kept on-site for a minimum of 12 months. Records kept off-site, must be made available within 7 days of any request by the regulator.
6. All documentation required to be submitted to the regulator to demonstrate compliance with relevant conditions, shall be submitted in an electronic format. Submissions shall be sent to: environmentalprotectionteam@telford.gov.uk



Permitted activities

7. The operator is permitted to operate an installation for the activities listed within Table 1 below, subject to the conditions of this permit.

| Table 1 | |
|---|---|
| Activities listed in Environmental Permitting Regulations 2016 | Description of specified activity |
| The surface treatment of metal which is likely to result in the release into air of any acid-forming oxide of nitrogen, as defined under Schedule 1, Part 2, Section 2.3, Part B(a) | The chemical surface treatment of stainless steel cylinders within an enclosed pickling plant, using acids. |
| Directly Associated Activities | Description of directly associated activity |
| The delivery, storage and handling of materials | The receipt, handling and storage of raw materials to be utilised within the pickling plant, the effluent treatment plant and the wet scrubber plant. |
| Effluent treatment of pickling material. | The chemical treatment of pickling waters. |
| The abatement of emissions to air | The treatment of gaseous emissions from the pickling plant within the wet scrubber abatement plant. |
| Waste | The storage, handling and disposal of waste materials from the pickling plant, the effluent treatment plant and the wet scrubber plant. |

8. Only the listed plant and equipment detailed in Table 2 shall be operated within the permitted installation.

| Table 2 | | |
|--|------------------------|----------------------|
| Equipment | Model | Serial number |
| Automatic spray pickling and rinsing booth | Poseidon 3x2 high cube | PCM 2020/21 |
| Effluent treatment plant | DDP20 | PCM 2020/21 |
| Effluent treatment plant filtration unit | WTU | WTU 2020/26 |
| Fume scrubber system | FSS | FSS 2021/20 |



Emissions and monitoring

9. All emissions from the installation shall be free from offensive odour beyond the installation boundary identified in red in Appendix 1.
10. The operator shall conduct daily odour assessments during normal operations. A record of the assessments shall be made available for inspection by the regulator. The assessment must include:
 - a. Location, date and time of the assessment.
 - b. Wind direction and strength.
 - c. The name of the person carrying out the assessment.
 - d. The result of the assessment and any corrective action taken.
11. Where, in the opinion of the operator and/or regulator an offensive odour is attributed to the installation, the operator shall carry out the requirements detailed in Condition 27 and 28.
12. The emission limits, provisions, methods and frequency set out in Table 3 shall be complied with.

| Table 3 | | | | |
|--|---------------|--|---|-----------------------------|
| Substance | Source | Emission limit | Type of monitoring | Monitoring frequency |
| Oxides of nitrogen including nitric acid (expressed as nitrogen dioxide) | Stack A1 | 200 mg/m ³ expressed as a 30 minute mean emission concentration | Manual extractive test. The monitoring technique shall be specifically suitable for nitric acid vapour as well as nitrogen dioxide and nitric oxide. | Annual |
| Fluoride (expressed as hydrogen fluoride) | Stack A1 | 5 mg/m ³ | Manual extractive test | Annual |

13. The reference conditions for limits in Table 3 are: 273.1K, 101.3kPa, the oxygen and water references shall be that which correspond to the normal operating conditions.
14. Commissioning stack monitoring tests shall be undertaken at stack A1, as soon as the plant goes into operation, to determine that the plant will comply with the emission limits stated in table 3. Stack monitoring shall be required annually thereafter.



15. The sample point on stack A1 shall be fitted with facilities which allow compliance with the relevant sampling standards.
16. The operator shall notify the regulator at least 7 days before any periodic monitoring exercise to determine compliance with emission limit values in Table 3. The operator shall state the provisional time and date of monitoring, pollutants to be tested and the methods to be used.
17. The results of non-continuous emission testing shall be forwarded to the regulator within 8 weeks of completion of the sampling.
18. Adverse results from any monitoring activity shall be investigated by the operator as soon as the monitoring data has been obtained. The operator shall:
 - a. Identify the cause and take corrective action;
 - b. clearly record as much detail as possible regarding the cause and extent of the problem, and the remedial action taken;
 - c. re-test to demonstrate compliance as soon as possible; and inform the regulator of the steps taken and the re-test results.

Operational controls

19. The storage of liquid raw materials shall be inside the installation and kept on a bund. The bunds shall:
 - a. Be impervious and resistant to the substances in storage;
 - b. Be capable of holding 110% of the material stored on it.
20. The pickling plant shall not operate unless the wet scrubber listed in Table 2 is fully operational.
21. A high standard of housekeeping shall be maintained.

Fume Scrubber

22. Commissioning or proving tests shall be undertaken before the plant goes into operation, to determine the lowest concentrations of alkaline scrubbing media and the maximum density of scrubber liquor which are consistent with meeting the emission limits in Table 3. The results of these tests shall be forwarded to the regulator.
23. The alkali concentration and scrubber liquor density shall be tested at least once a week to demonstrate that the scrubber is working within the parameters determined in the tests detailed in Condition 22. The weekly test results shall be recorded and made available for inspection.
24. Where the process is continuously in operation on a day to day basis, the liquor pH value shall be continuously monitored.
25. Scrubber liquor flow shall be continuously monitored, triggering an alarm and/or stand-by pump in the event of pump failure.



26. A visual inspection of the scrubber system equipment shall be made at least once a week to ensure correct functioning including adequate liquor circulation.

This includes:

- a. Ensuring that the spray heads are all spraying fully and evenly;
- b. Checking that the scrubber packing is not blocked or that baffles are intact and in place;
- c. checking seals for signs of perishing and checking that the mist eliminator is intact and in place;
- d. the liquor shall be checked for signs of caustic crystallisation and fouling.

The results of the inspection should be recorded and made available for inspection.

Abnormal events

27. In the case of abnormal emissions, malfunction or breakdown leading to abnormal emissions the operator shall:

- a. investigate and undertake remedial action immediately;
- b. Adjust and/or stop the process to minimise those emissions; and
- c. promptly record the events and actions taken.

28. The regulator shall be informed without delay, whether or not there is related monitoring showing an adverse result:

- a. if there is an emission that is likely to have an effect on the local community; or
- b. in the event of the failure of the wet scrubber listed in Table 2.

Waste

29. Waste storage areas shall be clearly marked. All containers shall be clearly labelled with the contents and the date placed into the waste area.

30. Liquid waste materials from the activity and directly associated activities listed in Table 1, must be kept within a bunded area.

Maintenance

31. Flues and ductwork shall be cleaned regularly, as part of the routine maintenance programme.

32. The operator shall have the following available for inspection by the regulator:

- a. A written maintenance programme for the plant and equipment listed in Table 2, in line with the Manufacturer's instructions.
- b. A record of the maintenance carried out.

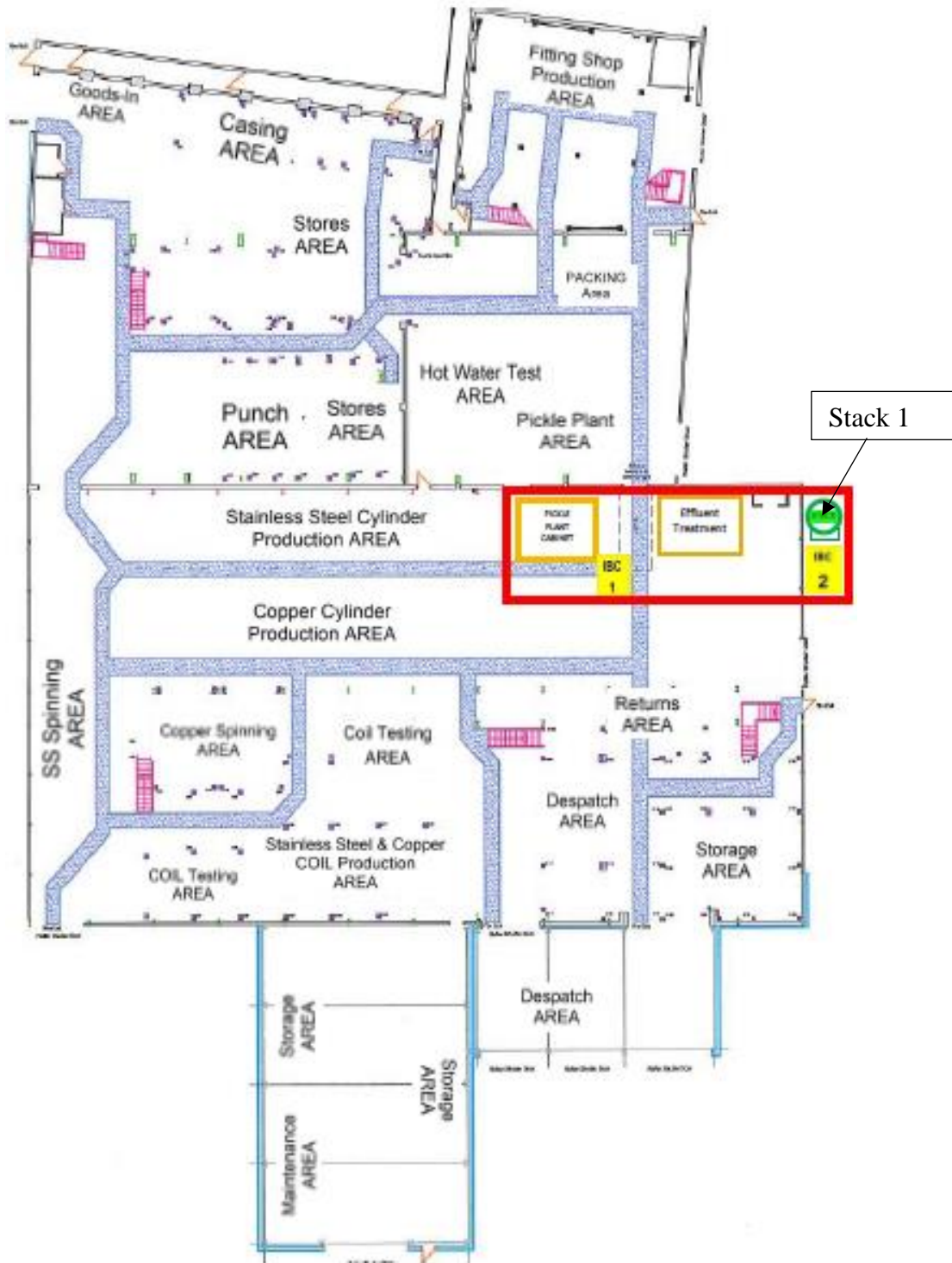
33. The manufacturer's instructions, including details of the maintenance required for plant and equipment listed in Table 2, shall be kept on file and made available for inspection.



Training

- 34.** All staff whose functions could impact emissions from the activity, shall receive appropriate training on those functions. This shall include:
- a. How to operate the plant and equipment listed in Table 2.
 - b. Awareness of their responsibilities under the permit.
 - c. Steps that are necessary to minimise emissions during start-up, shut down and during normal operations.
 - d. Actions to take when there are abnormal conditions, or accidents, or spillages that could, if not controlled, result in emissions.
- 35.** The operator shall:
- a. Maintain a statement of training requirements for each post with the above mentioned functions in Condition 34.
 - b. Have written training procedures and a record of the training received by each person.
 - c. Make available all training records and procedures for inspection by the regulator.

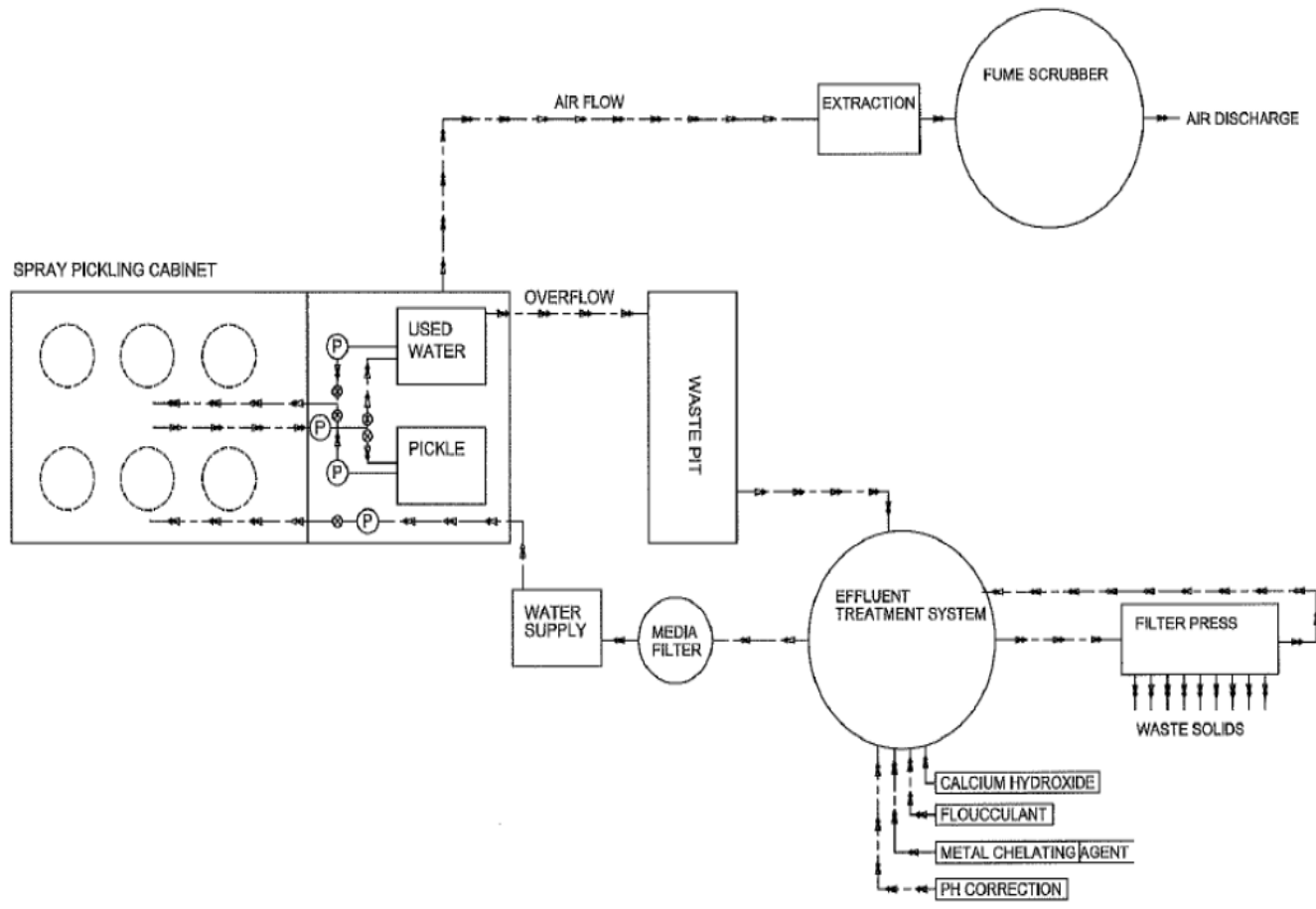
Appendix 1. Installation Boundary



Appendix 1 continued: Site Location

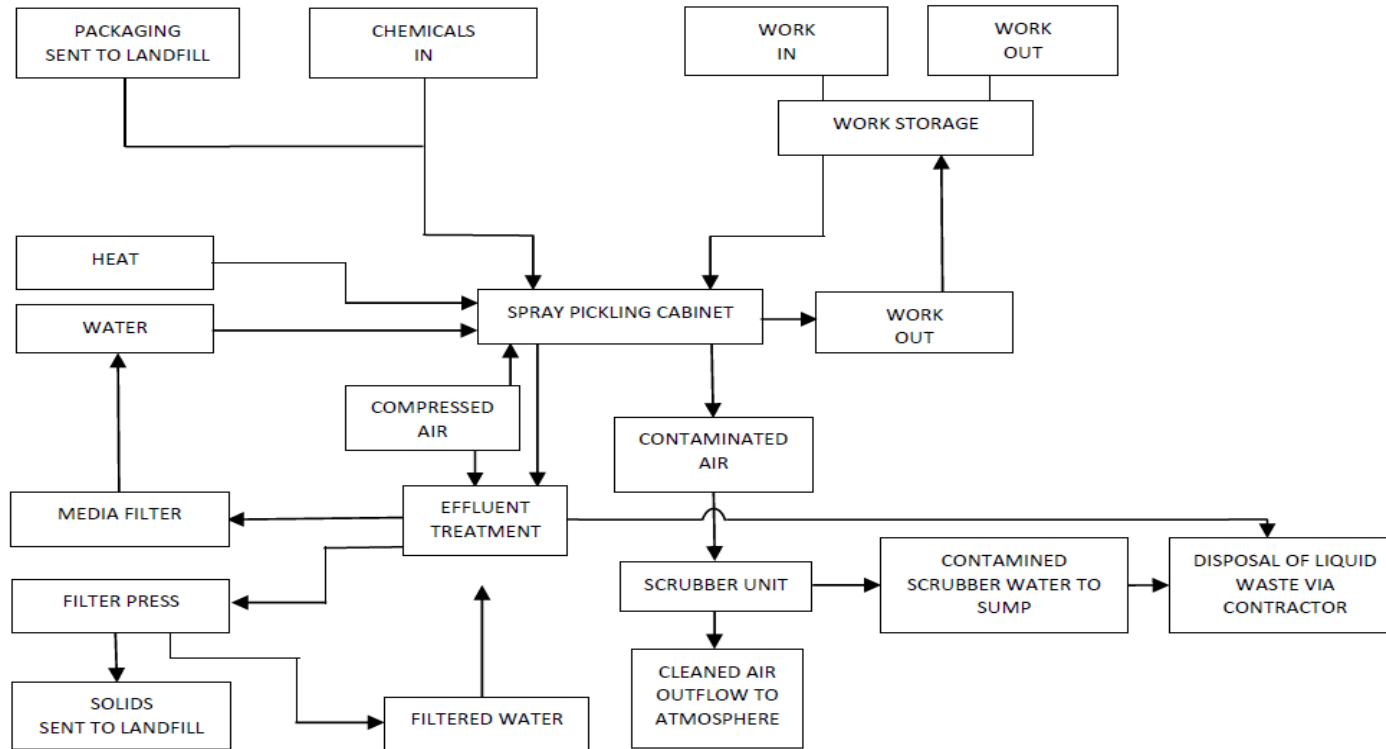


Appendix 2. Installation Plan



Appendix 3 Process Flow Chart

PROCESS FLOW CHART



End of Permit Conditions



This section does not form part of the permit, but contains guidance relevant to it.

Inspections

Regular inspections will be made by officers of Telford & Wrekin Council (without prior notice), in order to check and ensure full compliance with this permit. Inspection will be carried out in accordance with a risk assessment, and/or following from any complaints or applications.

BAT (Best Available Techniques)

Article 2(11) of the IPPC Directive defines “best available techniques” as follows: *“the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent, and where that is not practicable, generally to reduce emissions and the impact on the environment as a whole”.*

- “techniques” shall include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned,
- “available” techniques shall mean those developed on a scale which allows implementation in the relevant industrial sector , under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator,
- “best” shall mean most effective in achieving a high general level of protection if the environment as a whole.

In determining the best available techniques, special consideration should be given to the items listed in Annex IV of the Directive.

Confidentiality

The permit requires the operator to provide information to the regulator. The regulator will place the information onto the public register in accordance with the Regulations. If the operator considers that any information provided is commercially confidential, it may apply to the council to have such information withheld from the register as provided in the Regulations.

Health and Safety at Work and Other Statutory Requirements

Compliance with this permit does not necessarily infer compliance with any other legislation.

Notification of Changes to the activity or Operator



If the operator proposes to make a change in the operation of the installation, they must, at least 14 days before making the change, notify the regulator on the appropriate form. The notification must contain a description of the proposed change in operation. A 'change in operation' means a change in the nature or functioning, or an extension, of the installation, which may have consequences for the environment.

The operator may be liable to prosecution if they operate otherwise than in accordance with the conditions and plant described in this permit.

Transfer of the permit

Before the permit can be wholly or partially transferred to another person, an application to transfer the permit has to be made jointly by the existing and proposed operators. A transfer will be allowed unless the regulator considers the proposed operator will not be the person who will have control over the operation of the installation, or will not comply with the conditions of the transferred permit.

Surrender of the permit

Where the operator intends to cease the operation of an installation (in whole or in part). In the case of Part B Permits, the operator must notify the Council on the appropriate form in accordance with Regulation 24. For A2 permits, the operator must apply for a surrender, using the appropriate form and in accordance with Regulation 25 and part 1 of Schedule 5.

Risk Rating

Procedures and records shall be examined during inspections and will be referred to during the Department of Food and Rural Affairs (DEFRA) risk rating, carried out to determine the risk category: LOW, MEDIUM or HIGH which will determine the annual subsistence fee and the inspection frequency of the regulator.

Enforcement

The operator will be liable to enforcement action where: -

- a) the operator fails to comply with or contravenes any permit condition;
- b) a change is made to the installation operation without prior notification of the change to the regulator;
- c) intentional false entries are made in any record required to be kept under the conditions of the permit;
- d) false or misleading statement is made.

Any enforcement action is taken in accordance with the regulator's enforcement policy.
<http://www.telford.gov.uk/NR/rdonlyres/240C3F4A-8E36-4C12-8311-E4E57A3DF8CC/26214/MicrosoftWordEnvironmentalHealthandWellbeingEnforc.pdf>

Annual Subsistence Charge

An annual subsistence fee is payable in order to operate your installation. An invoice will be issued annually by the regulator which will include details of how to pay. The charges are based on the DEFRA risk rating Details of the risk assessment can be found at <http://www.defra.gov.uk/environment/ppc/localauth/fees-risk/risk.htm> .

You are reminded that failure to pay the subsistence fee may result on the Permit being revoked. It is an offence to operate a regulated facility without a permit and upon summary conviction liable to a fine and/or imprisonment.

Appeal against Regulatory Action

The operator can appeal against regulatory action by the regulator to the Secretary of State for Environment, Food & Rural Affairs. Appeals must be made in accordance with Regulation 31 and sent to the Secretary of State for Environment Food and Rural Affairs. The appeal for can be found at:

http://www.planning-inspectorate.gov.uk/pins/environment/environment/environmental_appeals/environmental_permitting_appeal_form.pdf

Guidance on the appeal procedure can be found at

http://www.planning-inspectorate.gov.uk/pins/environment/environment/environmental_appeals/environmental_permitting_guidance_notes.pdf

There are time limits for making an appeal as follows:

- a) in relation to an appeal against a revocation notice, before the notice takes effect;
- b) in relation to the withdrawal of a duly-made application under paragraph 4(2) of Schedule 5, not later than 15 working days from the date of the notice served under that paragraph;
- c) in relation to a variation notification, a suspension notice, an enforcement notice or a landfill closure notice, not later than 2 months from the date of the notification or notice;
- d) in any other case not later than 6 months from the date of the decision or deemed decision.

Please note:

An appeal will not suspend the effect of the conditions appealed against; the conditions must still be complied with.

In determining an appeal against one or more conditions, the Act allows the Secretary of State in addition to quash any of the other conditions not subject to the appeal and to direct the local authority either to vary any of these other conditions or to add new conditions.

Contact Numbers for the Regulator

The Regulator is the Public Protection Team of Telford & Wrekin Council. They can be contacted on 01925 381 818. You may also contact them by email at any time. environmentalprotectionteam@telford.gov.uk

Correspondence Address

All correspondence to Telford & Wrekin Council relating to this information shall be addressed to: Public Protection, Telford and Wrekin Council, Addenbrooke House, Telford, TF3 4NT