

# **DDE Attard Ltd, Hal Luqa**

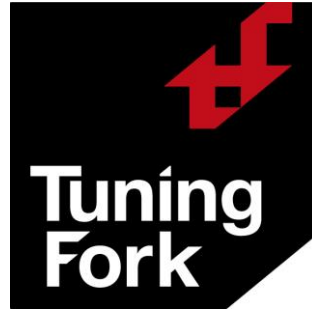
## **Application for Variation of IPPC Permit**

### **Volume 2: IPPC Application Document**



**Version 1: 28<sup>th</sup> September 2022**





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**DDE Attard Ltd, Hal Luqa,**  
**Application for Variation of IPPC Permit: Volume 2**  
September 2022  
Report for: **DDE Attard Ltd**

#### Revision Schedule

Rev	Date	Details	Written by:	Checked by:	Approved by:
00	July 2021	Submission to client	Ing Mark Cilia Business Advisor	Ing Manuele Vagnoli Senior Manager	Ing James Sammut Senior Partner
01	September 2022	Submission to client	Ing Mark Cilia Business Advisor	Colette Konietzny Business Advisor	Ing James Sammut Senior Partner

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# 1. Introduction



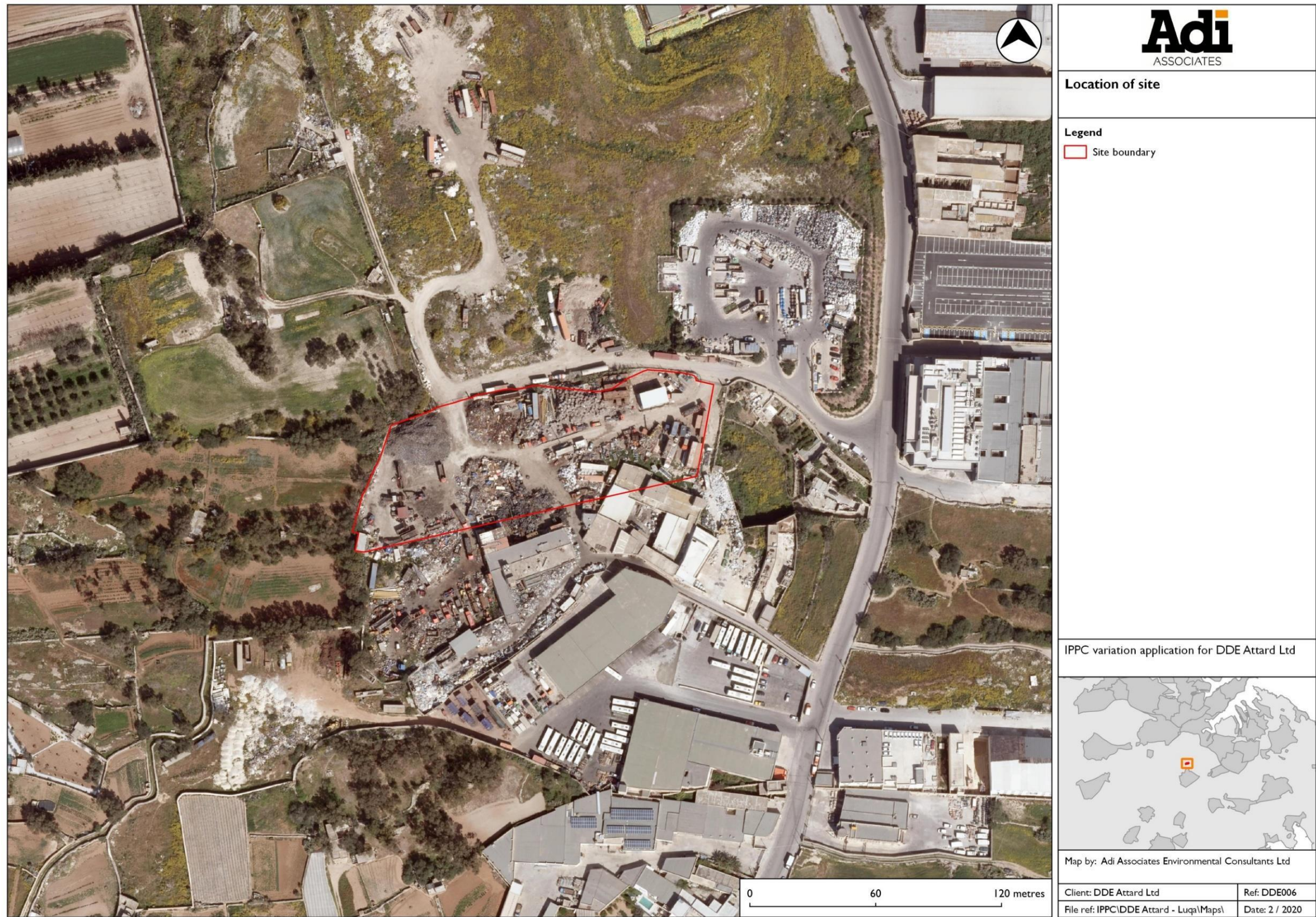
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- 1.1. This application for variation of the Integrated Pollution Prevention and Control (IPPC) permit was commissioned by DDE Attard Ltd.
- 1.2. DDE Attard Ltd currently operates a waste management facility at Scrap Lane, Hal Luqa. Hereafter in the IPPC application, the facility is referred to as 'the Scheme'. DDE Attard Ltd is referred to as 'the Operator'.
- 1.3. The operation of the Scheme is regulated by IPPC permit number IP 0001/13 issued by the Environment and Resources Authority (ERA) in July 2020. The area authorised by the IPPC permit is shown in Figure 1.
- 1.4. As described in the original IPPC application, it is planned that the Scheme site will be reorganised to improve current operations, including the installation of impermeable hardstanding throughout the site, as well as a new shed to bring certain activities under cover. The layout of the Scheme, once the planned upgrades are implemented is shown in Figure 2.
- 1.5. The current programme of works outlined in Approved Document IP 0001/13/A/DOC2 is indicating four phases. DDE Attard would like to request a change to the programme of works. Works will still be conducted in four phases, but works undergone within said phases will be different and undertaken within different timelines. Further information can be found in section 2.5 .
- 1.6. The variation in section 1.5 is being requested since due to COVID-19 pandemic, banks changed their funding procedure, and delayed the issue of the loan required to implement these works. Through this variation, DDE Attard would be enabled to commence ELV processing operations earlier. This would open an important revenue stream and vital for the company's financial recovery following the impacts of COVID-19. It is to be noted that the works financing is still to be sanctioned by the bank.
- 1.7. The current list of incoming waste as per Schedule 3 of the IPPC permit number IP 0001/13 requires to have included EWC 16 01 06.
- 1.8. The variation in section 1.7 is being requested since ELVs end-of-life vehicles, containing neither liquids nor other hazardous components has not been included within original scheme.

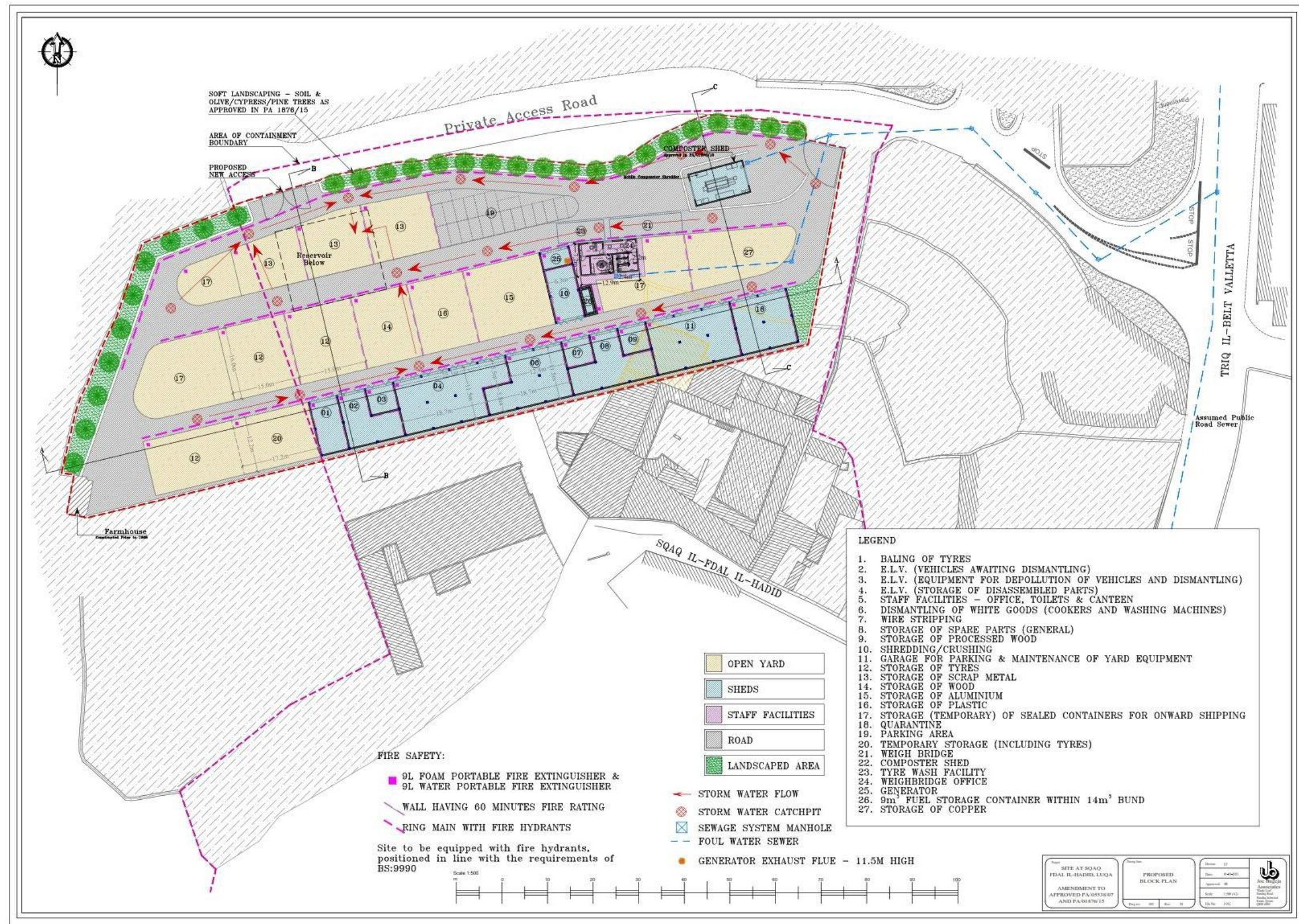


Figure 1: Location of Scheme





### Figure 2: Scheme Layout





## Structure of the IPPC Variation Application

- 1.9. The IPPC variation application is composed of two volumes:
- **Volume 1** comprises the IPPC application forms A and C; and
  - **Volume 2** (the current volume) consists of the IPPC Variation application document.
  - **Volume 3:** Response to Reviews and Regulatory Consultation

## 2. The Scheme

### C1.2 Non-Technical Description

- 2.1. ERA's Terms of Reference (ToR) are:

*Please provide a non-technical description of the proposed changes.*

- 2.2. This application for variation of an Integrated Pollution Prevention and Control (IPPC) permit was commissioned by Mr Daniel Attard on behalf of DDE Attard Ltd, herein referred to as 'the Operator.'
- 2.3. The Operator currently operates a waste management facility at Scrap Lane, Hal Luqa, which is regulated by IPPC permit number IP 0001/13, issued in July 2020.
- 2.4. DDE Attard would like to request a change to the programme of works. Works will still be conducted in four phases, but works undergone within said phases will be different and undertaken within different timelines. Further information can be found in section 2.5
- 2.5. Programme of works:
- Phase 1 – Composter which is within shed shown in Figure 3 will be temporarily removed and stored on site. The stipulated timeframe for this phase is 1 month.
  - Phase 2 – Hardstanding and shed which currently stores the composter will be increased to area indicated in Figure 4. This will be undertaken in order to be able to temporarily place E.L.V dismantling and depollution processes within this area. A temporary interceptor and reservoir servicing this shed will be installed (as per being indicated in Figure 4). Underground pipework and gutters

- will be installed to collect spills inside the shed and surface water from the road just in front of the shed; will be diverted to an oil-water interceptor and reservoir (comprising of a 2m<sup>3</sup> horizontal water tank constructed of plastic). Stipulated timeframe for this phase is of 2months.
- Phase 3 – Works for the area being indicated in figure 5 will be undertaken within a stipulated timeframe of 6 months. Once the shed for storing disassembled parts is built with hardstanding (no 4 in figure 5) this will be used as part of the ELV depollution and disassembly processes in tandem with works undertaken for Phase 2.
  - Phase 4 – Works for the area being indicated in figure 6 will be undertaken within a stipulated timeframe of 10 months. During this phase, works will include the installation of the remaining hardstanding area, the construction of the main reservoir, and the installation of the oil-water interceptors servicing the main reservoir. As part of this phase, the interceptor installed in Phase 2 will be moved to its final location, and the temporary reservoir (installed in Phase 2) will be removed.
- 2.6. The variation in section 1.5 is being requested since due to COVID-19 pandemic, banks changed their funding procedure, and delayed the issue of the loan required to implement these works. Through this variation, DDE Attard would be enabled to commence ELV processing operations earlier. This would open an important revenue stream and vital for the company's financial recovery following the impacts of COVID-19. It is to be noted that the works financing is still to be sanctioned by the bank.
- 2.7. The process for removal and storage of the composter has been provided in Appendix B2 in Volume 3 - Response to Reviews and Regulatory Consultation .
- 2.8. The process of depollution/dismantling of ELV's (preliminary activities, removal of fluids and hazardous items, removal of airbags and dismantling of components from the depolluted ELV) will remain the same as described in the original IPPC application.
- 2.9. DDE Attard would like to include EWC 16 01 06 within the current list of incoming waste (in Schedule 3 of the original IPPC permit number IP 0001/13).



Figure 3: Proposed Phase 1 Scheme Layout

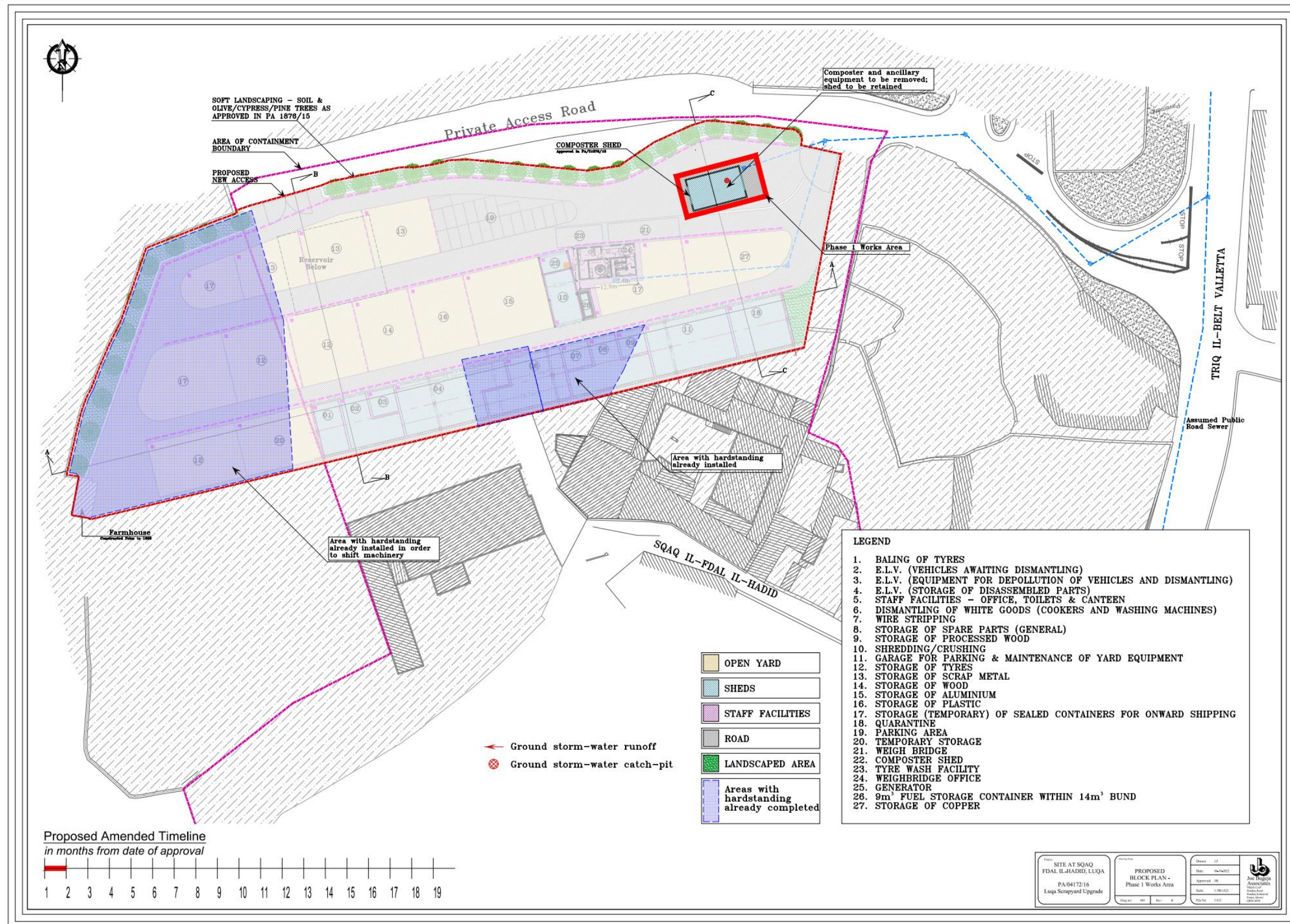




Figure 4: Proposed Phase 2 Scheme Layout

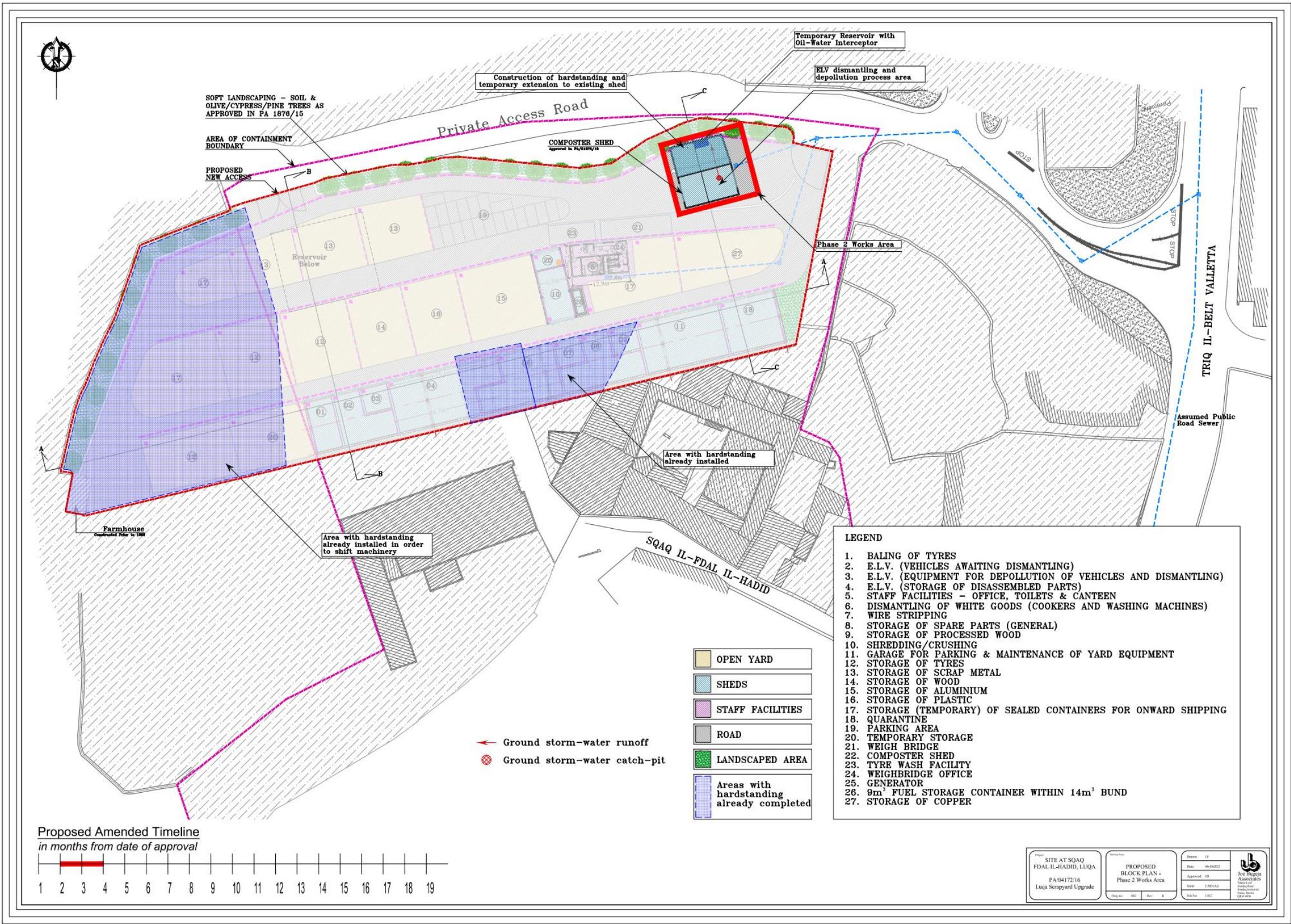








Figure 6: Proposed Phase 4 Scheme Layout

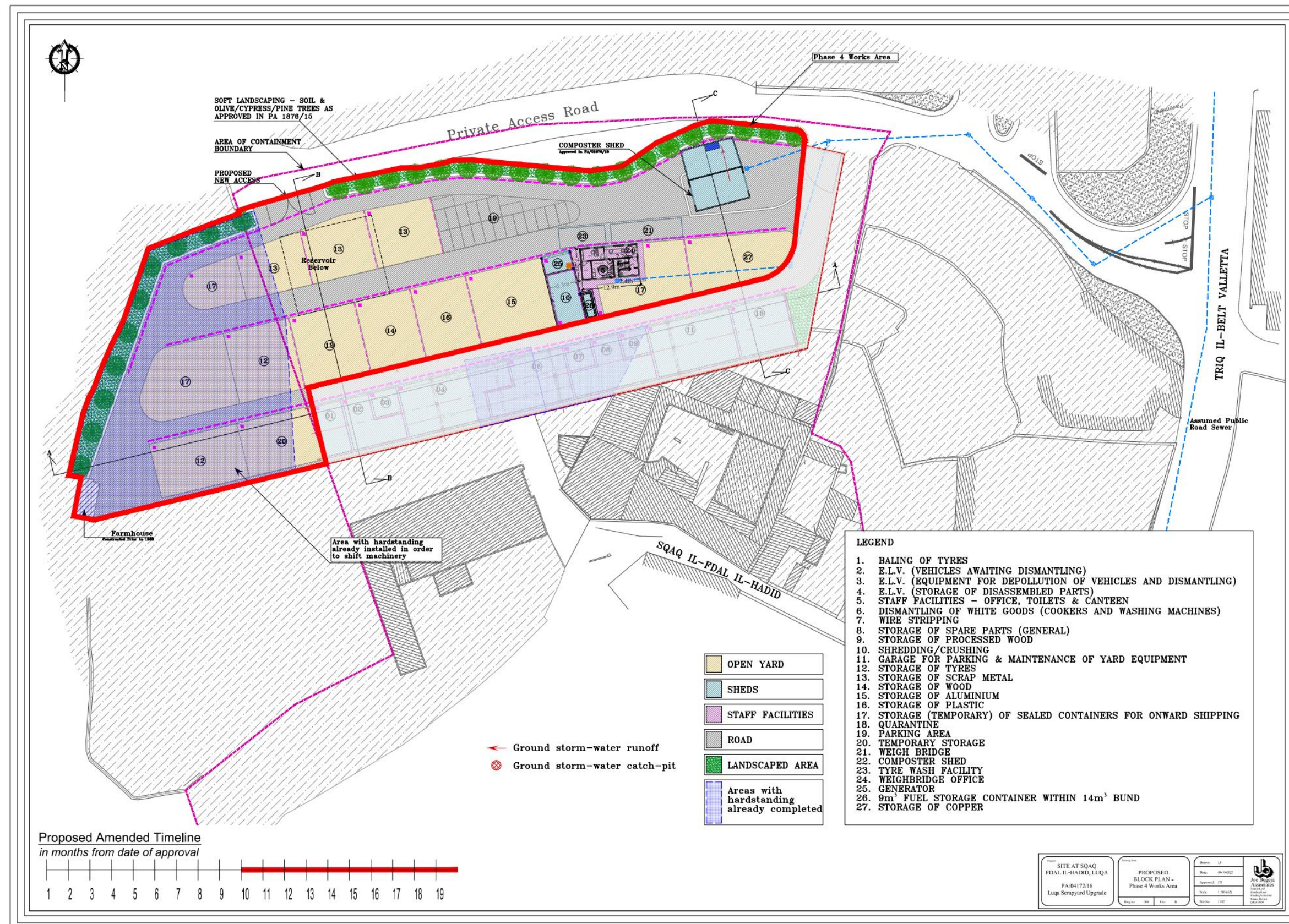
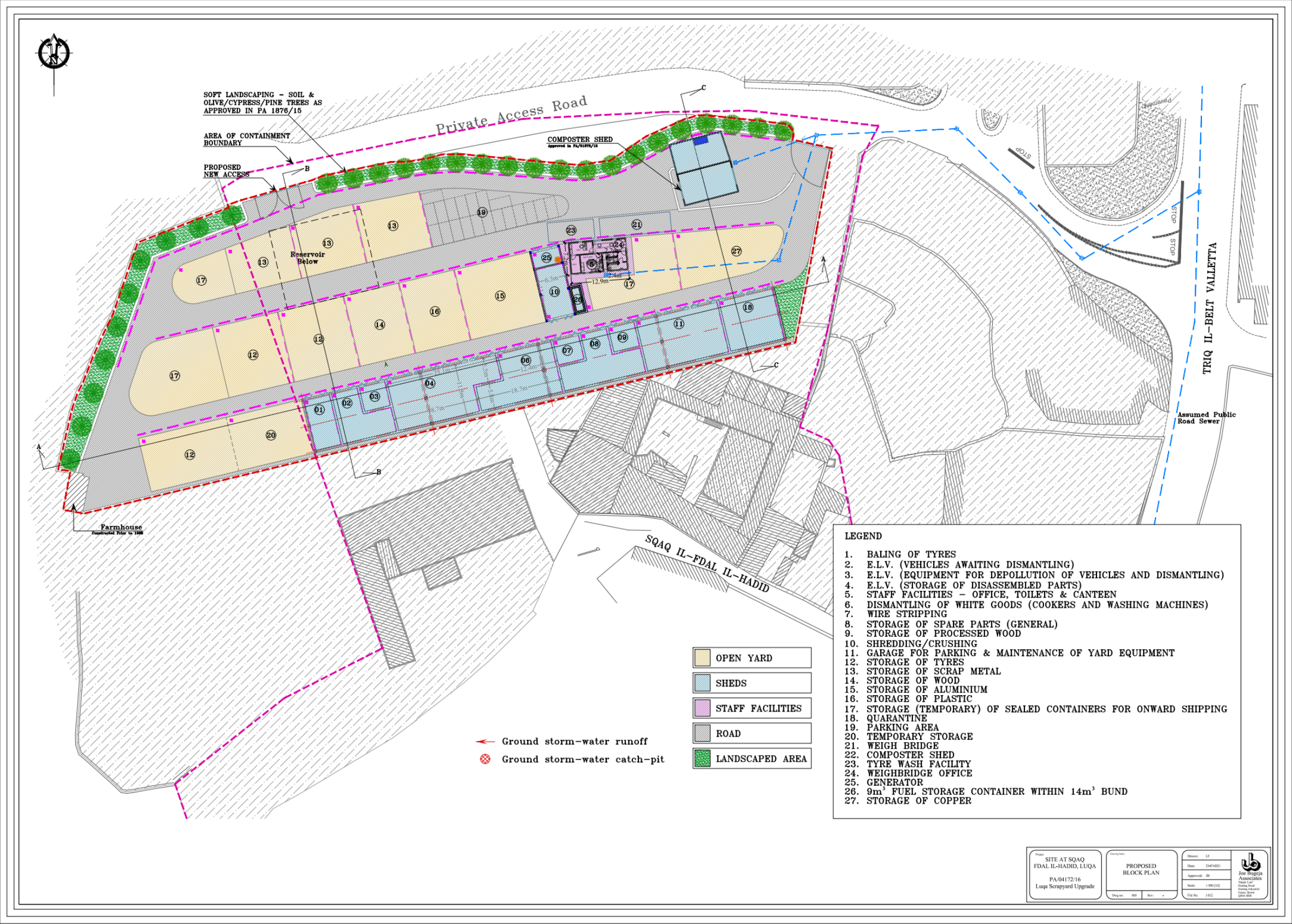




Figure 7: Scheme Layout as per variation



## C1.3 The Proposed Variations

2.10. ERA's application form requires the following:

*Please provide a summary of the variations which you are applying for. This should include:*

- *a description of the change in operation requiring the variation;*
- *an indication of the variations to the conditions of the permit that you wish to apply for.*

2.11. The current programme of works outlined in Approved Document IP 0001/13/A/DOC2 is indicating four phases. DDE Attard would like to request a change to the programme of works. Works will still be conducted in four phases, but works undergone within said phases will be different and undertaken within different timelines. Further information can be found in section 2.5 .

2.12. The current list of incoming waste as per Schedule 3 of the IPPC permit number IP 0001/13 requires to have included EWC 16 01 06.

2.13. The suggested variation to the IPPC permit is listed in Table 1.

**Table 1: Proposed variation to IPPC permit condition**

Reference (IP 0001/13)	Condition	Variation Requested
IP 0001/13/A/DOC2	Site Earthworks Method Statement – Project Time Line.	Site Earthworks Method Statement – Revised Project Time Line (refer to Annex 1).
1.6.1	No acceptance processing, treatment or storage of un-depolluted end-of-life vehicles shall take place unless the following have been addressed:  a) All the areas of hard standing dedicated for	No acceptance processing, treatment or storage of un-depolluted end-of-life vehicles shall take place unless the following have been addressed:  a) All the areas of hard standing dedicated for



Reference (IP 0001/13)	Condition	Variation Requested
	<p>this activity according to Schedule 8 have been installed and certified by a third party warranted mechanical or civil engineer to the satisfaction of the Authority.</p> <p>b) The separator and reservoir have been installed and the separator certified in line with the requirements in improvement programme number 4 of Table 1.4.1 covering the area mentioned in (a) above.</p> <p>c) Completion of the construction of structures (in line with PA 4172/16) associated with these activities.</p> <p>d) Certification by a third party warranted engineer that the bunds for the petrol and diesel storage tanks associated with this activity referred to in Improvement Program Item No. 3 in</p>	<p>this activity according to Schedule 8 have been installed and certified by a third party warranted mechanical or civil engineer to the satisfaction of the Authority.</p> <p>b) The separator and reservoir have been installed within temporary and permanent area as indicated in figure 4 and 6 respectively. The separator is certified in line with the requirements in improvement programme number 4 of Table 2 within this variation covering the area mentioned in (a) above for both temporary and permanent installations.</p> <p>c) Completion of the construction of structures (in line with PA 4172/16) associated with these activities.</p> <p>d) Certification by a third party warranted engineer that the bunds for the petrol and diesel storage tanks associated with this activity referred to in Improvement</p>

Reference (IP 0001/13)	Condition	Variation Requested
	Table 1.4.1 have been constructed according to condition 2.6.3 below.	Program Item No. 3 in Table 2 of this variation have been constructed according to condition 2.6.3 of the IPPC permit.
Schedule 8	Schedule 8 shows scheme layout	To include Figure 4 for the temporary installation of ELV depollution and disassembly process area and Figure 7 to show final scheme layout.
Table 1.4.1	Refer to Table 2	
Schedule 3	Refer to Table 3	

**Table 2a: Variation Requests to Improvement Programme**

<b>Reference</b>	<b>Requirement (variation updates requested are shown in bold)</b>	<b>Date</b>	<b>Updated Date Variation</b>
1	To provide WSC the required information in order to obtain the sewer discharge permit.	Within one month of the issue of this permit.	Submitted to ERA.
2	Certificate from a third party warranted engineer or architect showing how the fuel storage tanks listed below in Item No. 3 have a bund constructed according to condition 2.6.3 of this permit.	Within six months of the issue of this permit.	Before any use is made of the fuel storage tanks listed below in Item No. 3
3	<p>In order for the facility to be 'notified' as per S.L. 545.22 Petroleum for the Inland (Retail) fuel market Regulations, the Permit Holder should use and inform the Regulator for Energy and Water Services about the following:</p> <p>a) For petrol - a tank not exceeding 270 litres as approved by a competent person, as described within the same regulations</p> <p>b) For EN 590 diesel:</p> <p>i) 8,000 litre tank for on-site vehicle and equipment refuelling,</p> <p>ii) 270 litre tank for storage of diesel generating by the ELV depollution process</p> <p>iii) 220 litre tank built-in the standby generator as approved by a competent person.</p>	<p>a) &amp; b) ii - Prior to the commencement of End-of-Life vehicle depollution</p> <p>b) i. &amp; iii. Within six months of the issue of this permit</p>	<p>a) &amp; b) ii - Prior to the commencement of End-of-Life vehicle depollution</p> <p>b) i. &amp; iii. Within three years of the issue of the variation</p>



Reference	Requirement (variation updates requested are shown in bold)	Date	Updated Date Variation
4	Certification by an independent warranted civil engineer or architect that the <b>temporary and permanent</b> fuel retention separator has been constructed in accordance with EN 858, including inspection of the efficiency of operation covering the whole area of the permitted installation.	Interim certification following completion of hardstanding works and certification of phase one (1)  Full certification within three months of the installation of the complete hardstanding.	Interim certification following completion of hardstanding works and certification of phase two (2) as per variation.  Full certification within three months of the installation of the complete hardstanding as per phase four (4) of this variation.
5	Certification by an independent warranted civil engineer or architect that the engineered site containment and drainage systems for the whole site are leak-proof and resistant to physical, mechanical and chemical stresses to which they may be subjected	Within one year of granting of permit.	Within 42 months of granting this permit
6	Notification on the completion of works in accordance with PA 4172/16 to ensure compliance with BAT.	24 months from the granting of the permit	50 months from the granting of the permit

Reference	Requirement (variation updates requested are shown in bold)	Date	Updated Date Variation
7	<p>Submission of an effluent monitoring plan for the oil- water separator overflow which considers the materials handled and activities carried out on site.</p> <p>Submission of results obtained from the effluent monitoring exercise approved by ERA.</p>	<p>Within three months of the installation of the complete hardstanding.</p> <p>Within one year from approval of the effluent monitoring plan.</p>	<p>Within three months of the installation of the complete hardstanding as per phase four (4) of this variation.</p> <p>Within one year from approval of the effluent monitoring plan.</p>
8	<p>Submission of a method statement for carrying out a Noise Monitoring Survey in accordance with condition 2.2.9.4.</p> <p>Implementation and submission of Noise Monitoring Survey as approved by ERA.</p>	<p>Within 4 months from the granting of the permit.</p> <p>Within time frames approved by ERA.</p>	<p>Submitted to ERA.</p> <p>Within time frames approved by ERA.</p>
9	<p>a) Certification from a competent company or engineer that the emergency firefighting water supplies for use by the Civil Protection Department are in place according to approved document IP 001/13/DOC3.</p>	<p>a) Within 1 year of granting of the permit.</p>	<p>a) Within 42 months of granting of the variation permit.</p>

Reference	Requirement (variation updates requested are shown in bold)	Date	Updated Date Variation
	b) Updated certificate (a) above showing completion of relevant fire safety procedures and equipment installation according to approved document IP 001/13/DOC3.	b) Within 27 months of granting of the permit.	b) Within 56 months of granting of the variation permit.
10	Submission of a Best Available Techniques (BAT) comparison for the BAT conclusions stipulated under Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing BAT conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council in accordance with conditions 4.4 and 2.4.1.2.	Within eight months of issue permit.	Submitted to ERA and communication is ongoing. BAT's have been resubmitted with this variation.
11	Submission of certification from an independent warranted engineer that all equipment identified in Table 2.2.1.1 is in good working condition.	Within two months of issue of permit.	Within two months of issue of permit.
12	Commissioning of second shredder and sorter based on Eddy current technology to be utilised for secondary processing of end-of-life vehicles following processing in the first shredder.	Prior to the acceptance of un-depolluted End-of-Life vehicles.	DDE Attard is in communication with ERA about this requirement.

**Table 2b: Improvement Programme Updates provided by ERA and accepted by DDE Attard Ltd.**

Reference to Table 1.4.1 in Document IP 001/13 and Table 1.5.1 in Document IP 001/13	Updated from Table 1.4.1 in Document IP 001/13 into Table 1.5.1 in Document IP 001/13 or newly added to Table 1.5.1 in Document IP 001/13	Requirement	Deadline
1	Completed by DDE Attard		
2	Updated	Submission of a certificate from a third party warranted engineer or architect showing how the fuel storage tanks that will be used for the storage of fuel removed from ELVs are equipped with adequate secondary containment in line with Condition 2.5.3	Prior to the acceptance of un-depolluted ELVs
3	Updated	Obtainment of all relevant authorisations from the Regulator from Energy and Water Services.	Within 1 year of the granting of this
4	Updated	Certification by an independent warranted civil engineer or architect that the oil/water interceptor has been constructed in accordance with EN 858, including inspection of the efficiency of operation covering the whole area of the permitted installation.	By the 31 <sup>st</sup> March 2024
5	Updated	Certification by an independent warranted civil engineer or architect that the engineered site containment and drainage systems for the whole site are leak-proof and resistant to physical, mechanical and chemical stresses to which they may be subjected.	By the 31 <sup>st</sup> March 2024
6	Updated	Notification on the completion of works in accordance with PA 4172/16 to ensure compliance with BAT.	By the 31 <sup>st</sup> March 2024
7	Updated	Submission of monitoring results for the effluent monitoring carried out in line with Approved Doc IP 0001/13/V2/DOC4	Within 1 year of the granting of this
8	Updated	Implementation and submission of Noise Monitoring Survey as approved by ERA	Within time frames approved by ERA.

Reference to Table 1.4.1 in Document IP 001/13 and Table 1.5.1 in Document IP 001/13	Updated from Table 1.4.1 in Document IP 001/13 into Table 1.5.1 in Document IP 001/13 or newly added to Table 1.5.1 in Document IP 001/13	Requirement	Deadline
9	Updated	Certification from a competent company or engineer indicating completion of relevant fire safety procedures and equipment installation according to Approved Document IP 0001/13/A/DOC3 that the emergency firefighting water supplies for use by the Civil Protection Department are in place according to Approved Document IP 0001/13/A/DOC3	By the 31 <sup>st</sup> March 2024
10	Completed by DDE Attard		
11	Completed by DDE Attard		
12	Completed by DDE Attard		
13	Newly added	Submission of a certificate from a third party warranted engineer or architect showing how the fuel storage associated with the generator is in line with Condition 2.5.3.	Within 3 months of the granting of this variation notice
14	Newly added	Submission of a Decommissioning Report showing how the composter has been adequately dismantled, decommissioned and stored within the area indicated in Approved Document IP 0001/13/V2/DOC2.	Within 3 months of the granting of this variation notice
15	Newly added	Installation of storage bins for lead acid batteries in line with Condition 2.4.2.14	Within 4 months of the granting of this variation notice
16	Newly added	Submission of the results of the land monitoring referred to in Condition 2.2.10.1.	Within 6 months of the granting of this variation notice

Reference to Table 1.4.1 in Document IP 001/13 and Table 1.5.1 in Document IP 001/13	Updated from Table 1.4.1 in Document IP 001/13 into Table 1.5.1 in Document IP 001/13 or newly added to Table 1.5.1 in Document IP 001/13	Requirement	Deadline
17	Newly added	Submission of an energy efficiency plan in line with Condition 2.6.1.	Within 6 months of the granting of this variation notice
18	Newly added	Submission of a certificate by a warranted engineer or architect that the temporary reservoir indicated in Approved Document IP 0001/13/V2/DOC2 is in line with the requirements of Activity 43 of S.L. 549.45.	Prior to the acceptance of un-depolluted ELVs
19	Newly added	Submission of a certificate by a warranted engineer or architect that the underground reservoir indicated in Approved Document IP 0001/13/V2/DOC2 is in line with the requirements of Activity 43 of S.L. 549.45	By the 31 <sup>st</sup> March 2024
20	Newly added	Submission of a certificate from a third party warranted engineer or architect showing how the bund constructed within the pump room for the fuel storage associated with the fire pumps is in line with Condition 2.5.3.	By the 31 <sup>st</sup> March 2024

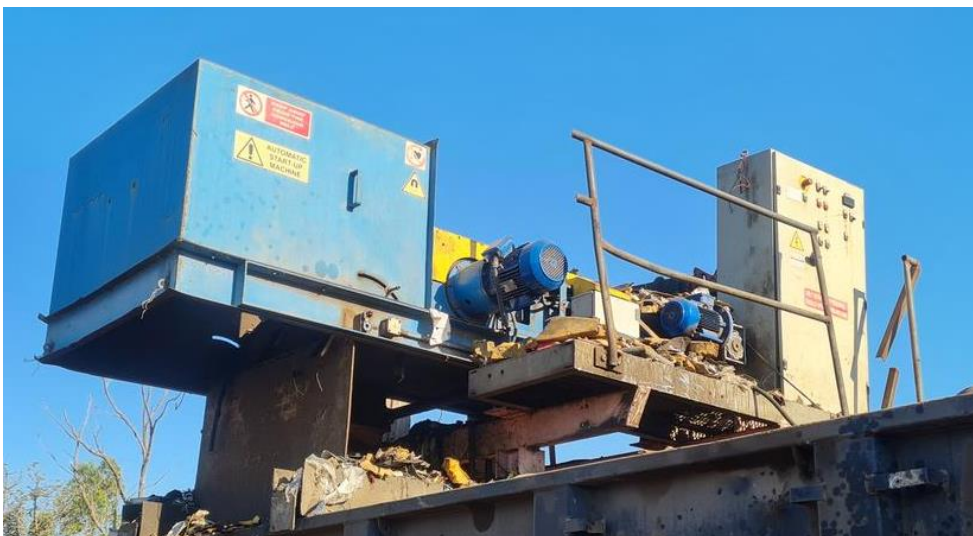
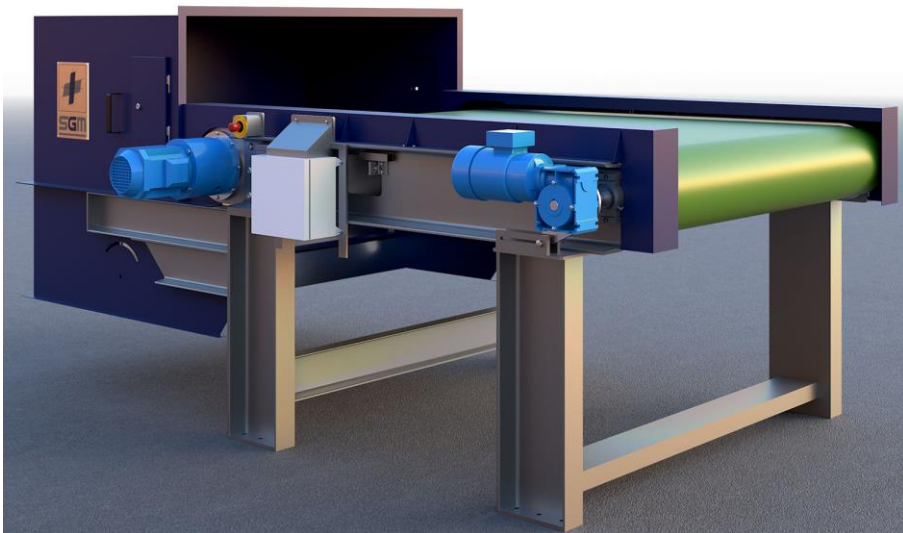
**Table 3: Variation Requests to Schedule 3 List of permitted waste on site – Incoming**

Description	EWC code
ELVs and their components:	
End-of-life vehicles	16 01 04*
End-of-life vehicles, containing neither liquids nor other hazardous components	16 01 06



- 2.14. As per Volume 3 - Response to Reviews and Regulatory Consultation, Eddy-currents separator and sorter are installed. Figure 8, shows these:

**Figure 8: photographs of the installed equipment Model number for this is SGM Magnetics S.p.A. EIS100/150**



- 2.15. As per Volume 3 - Response to Reviews and Regulatory Consultation, after discussions with ERA it was determined that upholstery should not be removed, since the capability of reaching requirements set out by S.L. 549.36, (Waste Management (End of Life Vehicles) Regulations) can be reached without upholstery. Appendix A3 of Volume 3, provides updated response to the one provided on the 3rd April 2019, within VOLUME 3: RESPONSE TO FEEDBACK ON IPPC APPLICATION:



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## 3. Techniques

### C2.2 Proposed Activities

- 3.1. The IPPC application form requires the following:

**C2.2.1** *Describe any proposed changes to the installation activities.*

**C2.2.2** *Describe the proposed techniques and measures to prevent and reduce waste and emissions of substances and heat (including during periods of start-up or shut-down, momentary stoppage, leak or malfunction) as a result of your proposals.*

**C2.2.3** *Submit a flow diagram summarising the proposed installation activities and indicating the changes.*

**C2.2.4** *Include a comparison of the proposed changes to the activities with relevant BAT conclusions published by the European Commission, where these have been published.*

**C2.2.5** *Include an outline of the main alternatives considered to the proposed changes to the technology, techniques and measures.*

**C3.11** *Emissions & waste summary: By means of a mass flow diagram, summarise the emissions and waste described in sections C3.1, C3.2, C3.3, C3.4, C3.6, and C3.8 of this application*

#### Response to C2.2.1

- 3.2. As mentioned, the current programme of works outlined in Approved

Document IP 0001/13/A/DOC2 is indicating four phases. DDE Attard would like to request a change to the programme of works. Works will still be conducted in four phases, but works undergone within said phases will be different and undertaken within different timelines. The variation is being requested since due to COVID-19 pandemic, banks changed their funding procedure, and delayed the issue of the loan required to implement these works. Through this variation, DDE Attard would be enabled to commence ELV processing operations earlier. This would open an important revenue stream vital for the company's financial recovery following the impacts of the COVID-19. It is to be noted that the work's financing is still to be sanctioned by the bank.

- 3.3. The on-site composter will be decommissioned within timelines proposed in Phase 1 as proposed by this variation.
- 3.4. Phase 2 consists of preparing area where composter was located to be able to start handling ELVs (as per figure 4). Once this stage is complete within the timeframes specified beforehand, the ELV processes of depolluting and dismantling will commence.
- 3.5. Once the shed for storing disassembled parts is built with hardstanding (no 4 within figure 5, as per Phase 3) this will be used as part of the ELV depollution and disassembly processes in tandem with works undertaken for Phase 2.
- 3.6. The method of depolluting and dismantling ELV's will remain the same as described in the original IPPC application, where stages mentioned (i.e. Stage 1: Preliminary activities; Stage 2: Removal of fluids and hazardous items; Stage 3: Removal of airbags; and Stage 4: Dismantling of components from the depolluted ELV) will still be maintained.
- 3.7. All requirements of permit IP 0001/13/A with regards to ELV processing, namely sections 2.4.4, 2.4.5, 2.8.10.10, Schedule 5 and Schedule 12 will still be followed.
- 3.8. Phase 3 works will be undertaken within stipulated timelines for the area shown in figure 5.
- 3.9. Phase 4 – Works for the area being indicated in figure 6 will be undertaken within stipulated timeframes. Within this phase, works will include the installation of the remaining hardstanding area, the construction of the main reservoir, and the installation of the oil-water interceptors servicing the main reservoir.
- 3.10. The inclusion of 16 01 06 - End-of-life vehicles, containing neither liquids nor other hazardous components will not impact the installation activities since vehicles containing neither liquids nor

other hazardous components are already being accepted.



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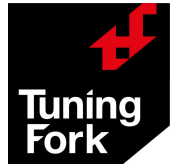
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### Response to C2.2.2

- 3.11. This variation application will not change one of the schemes purposes in continue maximising the reuse, recycling and recovery of waste materials, from ELV's. As described in section B3.1 of the original IPPC application, over 80% of the incoming waste is planned to be reused, recycled or recovered, and appropriate pre-treatment, in this case ELV depollution will be applied on site when possible. Procedures will also be in place for quarantining unauthorised waste.
- 3.12. Area where ELV depollution and decommissioning will temporary take place on hard standing area designated for this purpose. This surface of this hardstanding area will be laid to fall towards a silt trap and oil-water interceptors before being received in a temporary reservoir. This ensures that emissions from any spills are contained and do not contaminate the underlying bedrock / aquifer or disperse beyond the site. Spill kits will also be available for use by staff. Further details are included in the Spill Prevention and Response Plan in Annex 5 of this variation.
- 3.13. The remaining fire prevention / mitigation measures already communicated as part of the IPPC application namely:
- covered shed for activities involving the process of depollution and dismantling of ELV's
  - designated storage areas for the main waste types have been defined, and bunding will be provided for hazardous substances and waste as described in sections B2.2.1 and B2.3 of the original IPPC application
  - air emissions will be minimised through regular maintenance of equipment through inspection and preventative maintenance program (to reduce the risk of abnormal emissions, wetting of metals during shredding and installation of site surfacing).

are still applicable. Furthermore consultation with CPD has been undertaken and all resultant requirements have been addressed as per Volume 3: Response to Reviews and Regulatory Consultation pg 178.

- 3.14. Measures for fire prevention and firefighting are described in Annex 4.
- 3.15. Measure for spill prevention and response plan are described in Annex 5.



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### **Response to C2.2.3**

- 3.16. A flow diagram for the depollution and dismantling of ELV's can be found in Figure 9, 10 and 11. Changes were resultant within Figure 9, 10 and 11 flow charts from review after this variation and this can be found in Appendices A10, B12, B13 and C4 in Volume 3: Response to Reviews and Regulatory Consultation

### **Response to C2.2.4**

- 3.17. In addition to the requirement for a BAT assessment arising from the IPPC variation application form, the Improvement Programme in the IPPC permit (item 10) requires the:

*Submission of a Best Available Techniques (BAT) comparison for the BAT conclusions stipulated under Commission Implementing Decision (EU) 2018/1147 of 10 August 2018 establishing BAT conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council in accordance with conditions 4.4 and 2.4.1.2.*

- 3.18. A comparison of the Scheme against the best available techniques (BAT) conclusions for waste treatment, as established by Commission Implementing Decision (EU) 2018/11747 is included in Annex 2. Annex 2 includes an assessment of the entire Scheme operations (as described in the original IPPC application) as well as this variation application.

### **Response to C2.2.5/C3.11**

- 3.19. Alternatives described in original application namely:
- main alternative to the proposed techniques would be to maintain the Scheme's current operational activities. The techniques currently in use are not considered to be BAT,



especially since most of the ground surface is not impervious, there are no infrastructural arrangements for surface water and spill management, and there are no designated areas for storage of different materials (including bunded areas for hazardous substances and waste). These limitations have also constrained the operator's activities on site, such as the operator is currently constrained to accept ELVs only if they have previously been dismantled to remove hazardous components,

- an alternative site layout was also proposed as part of PA 05538/07; however, this layout only allowed for the treatment of plastics, textiles and scrap metal.
  - the main alternative considered over the shredder for processing metal would be a metal press. However, the installation of a shredder allows for flexibility in operations and for further reduction of the volume of metal over the reduction achieved by a press.
  - the main alternative to installing ELV depollution equipment would be to remove the hazardous components manually. However, this is not the preferred option since processing of ELVs would take longer. Additionally, manual removal would not be as safe for the operators and the environment as using earthed equipment with integrated containers and bunding are still applicable.
- 3.20. The principle alternative to the proposed temporary installation of ELV depollution and dismantling is to keep to the original plan and install where it was originally indicated as per Schedule 8 of the original IPPC application. This was not considered viable since in order for DDE Attard to be able to operate from this area a reservoir was required to be built. This would take around 12 months to build, be more costly (it is to be noted that the work's financing is still to be sanctioned by the bank) and require a reorganization of the existing space (which would disrupt existing operations in the area).
- 3.21. Another alternative proposal to the proposed temporary installation of ELV depollution and dismantling was to install where it was originally indicated as per figure 2 and install temporary oil-interceptor and reservoir near the area. Although this option is more viable than the one stated in section 3.20,

this still resulted in the requirement of the completion of area which would take around 9 months to build. This would disable DDE Attard to commence ELV processing operations earlier, and a loss of an important revenue stream and vital for the company's financial recovery following the impacts of COVID-19. The proposed area is currently idle and implementation for ELV depollution and dismantling can be implemented faster since part of the hardstanding and shed is already in place.



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Figure 9: ELV depollution and dismantling (Stage 1)

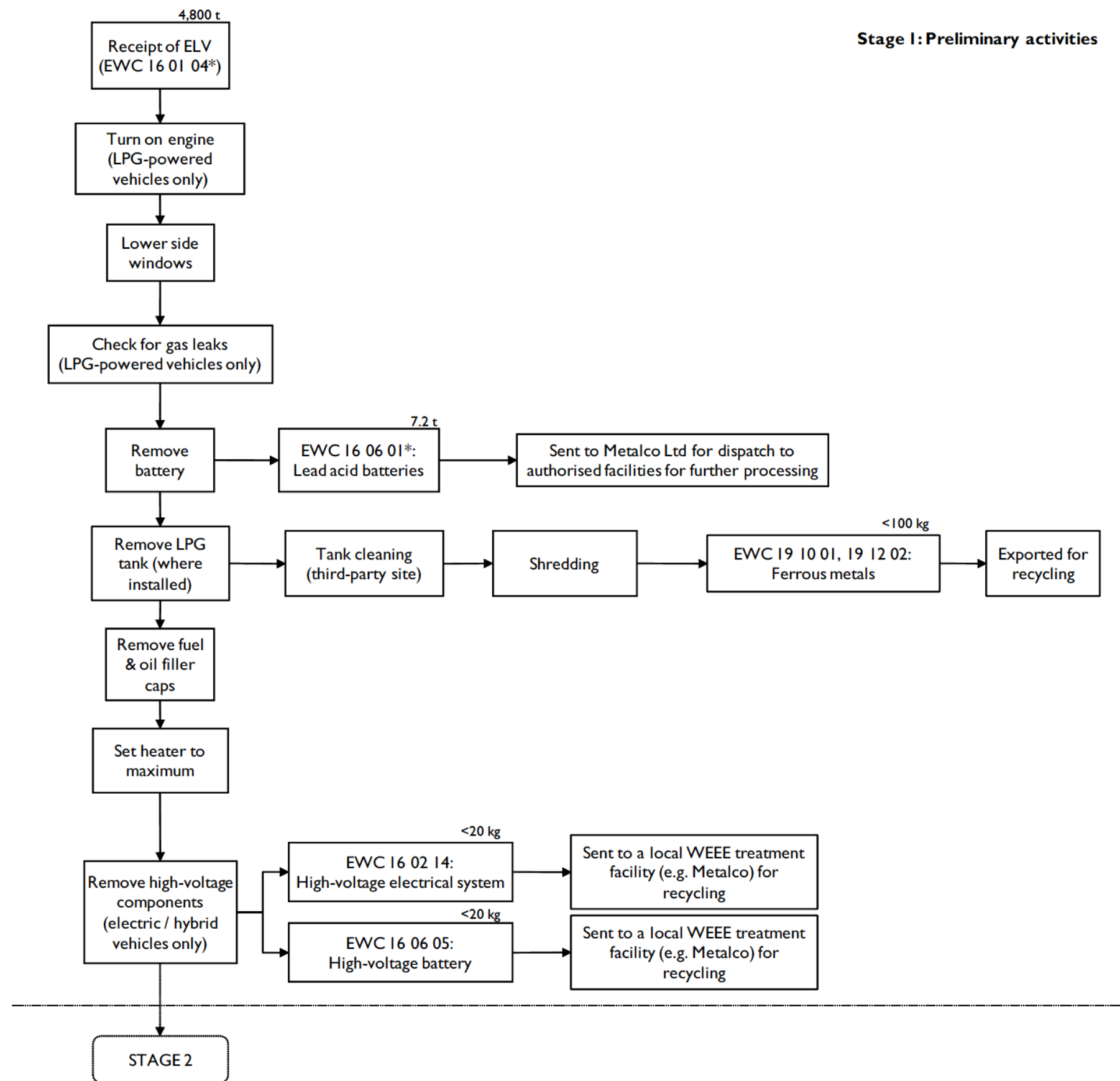


Figure 10: ELV depollution and dismantling (Stage 2)

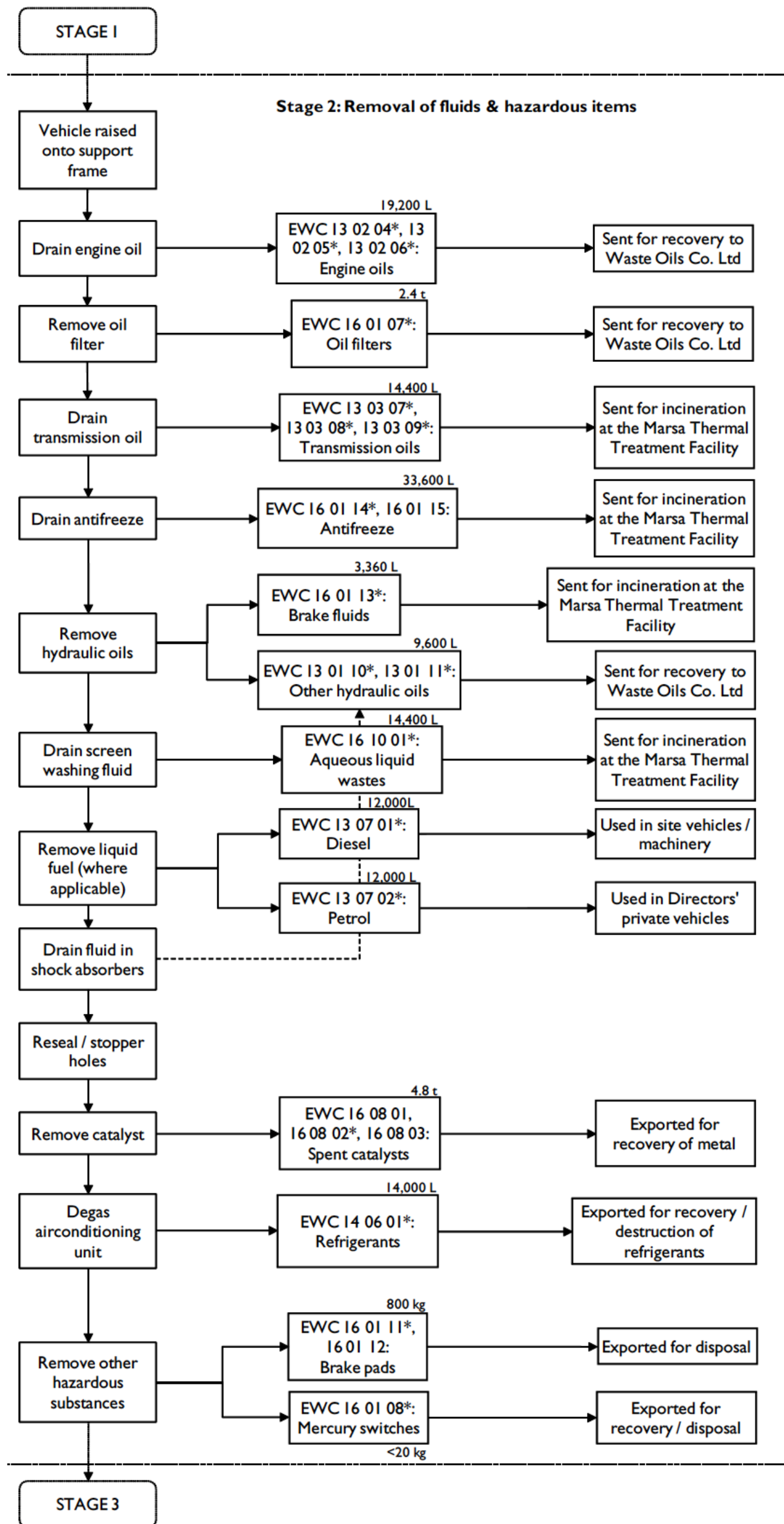
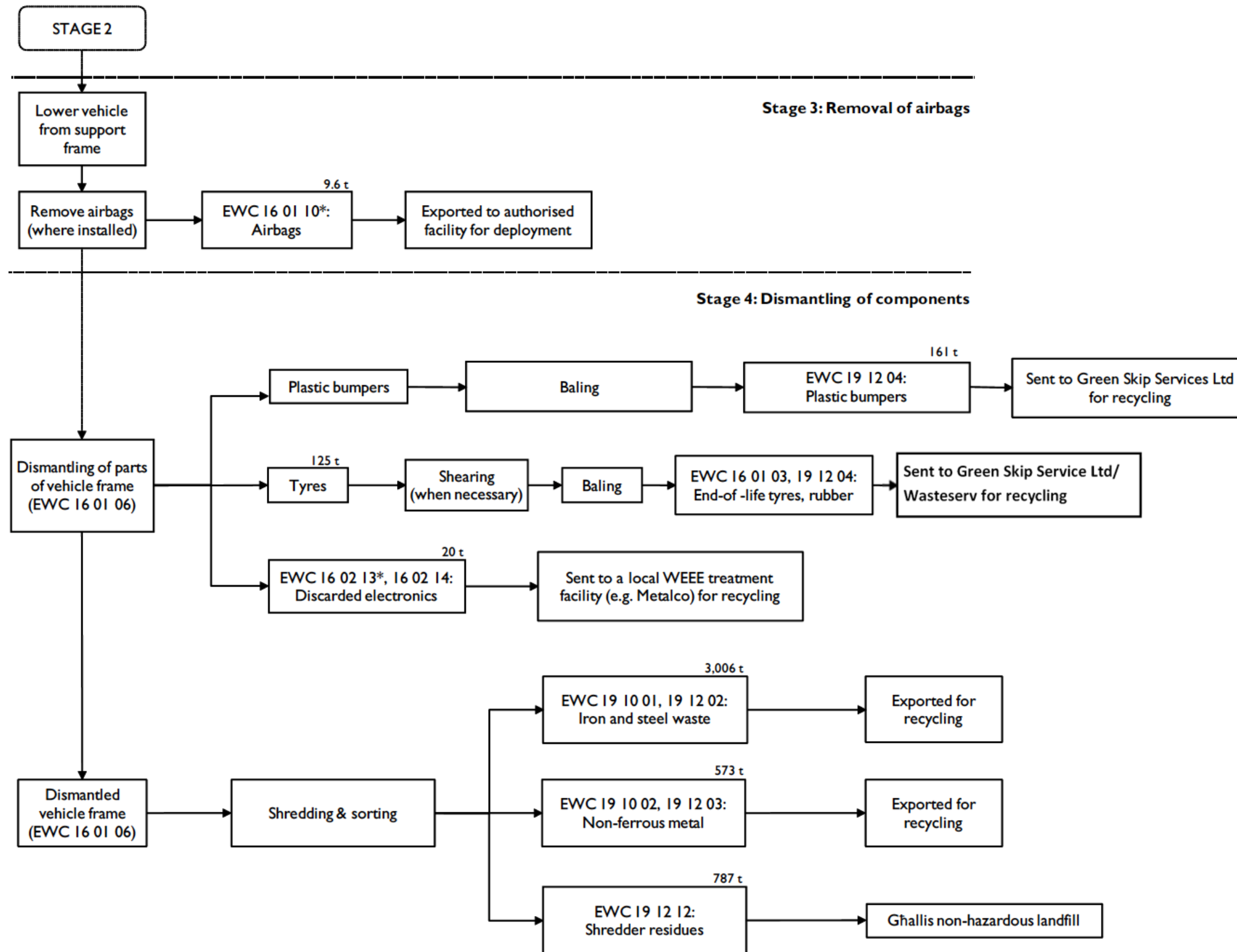


Figure 11: ELV depollution and dismantling (Stage 3 & 4)



## C2.5 Maintenance

- 3.22. The IPPC variation application form requires the following:

*Describe any changes to the maintenance programme for the installation.*

- 3.23. Since the same equipment and procedures will be used, no change will be made to the maintenance programme for the installation except the temporary removal of the composter from this programme.

## C2.6 Energy

- 3.24. ERA's application form requires the following:

- **C2.6.1:** *Describe any changes to the annual energy consumption, highlighting the main energy-consuming equipment, and generation by source and end-use (including information on energy generated on site, if applicable).*
- **C2.6.2:** *Describe any changes to the proposed basic measures for improvement of energy efficiency.*

### Response to C2.6.1

- 3.25. No changes to the annual energy consumption indicated within IPPC application are being foreseen.

### Response to C2.6.2

- 3.26. Improvements of energy efficiency are being considered as per BAT23, reference pg 78 of this document.

## C2.8 Risk Assessment

3.27. The IPPC application form requires the following:

*Describe any changes to the documented system used to identify, assess and minimise the environmental risks and hazards of accidents and their consequences.*

*Include any changes to emergency plans in case of fire, actions to be taken in case of failure of abatement equipment and other environmentally relevant incidents (e.g. spillages, gas leakage).*



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### Overview of the Changes

3.28. DDE Attard would like to request a change to the programme of works. Works will still be conducted in four phases, but works undergone within said phases will be different and undertaken within different timelines. Further information can be found in section 2.5

3.29. Programme of works:

- Phase 1 – Composter which is within shed shown in Figure 3 will be temporarily removed and stored on site. The stipulated timeframe for this phase is 1 month.
- Phase 2 – Hardstanding and shed which currently stores the composter will be increased to area indicated in Figure 4. This will be undertaken in order to be able to temporarily place E.L.V dismantling and depollution processes within this area. A temporary interceptor and reservoir servicing this shed will be installed (as per being indicated in Figure 4). Underground pipework and gutters will be installed to collect spills inside the shed and surface water from the road just in front of the shed; will be diverted to an oil-water interceptor and reservoir (comprising of a 2m<sup>3</sup> horizontal water tank constructed of plastic). Stipulated timeframe for this phase is of 2months.
- Phase 3 – Works for the area being indicated in figure 5 will be undertaken within a stipulated timeframe of 6 months. Once the shed for storing disassembled parts is built with hardstanding (no 4 in figure 5) this will be used

as part of the ELV depollution and disassembly processes in tandem with works undertaken for Phase 2.

- Phase 4 – Works for the area being indicated in figure 6 will be undertaken within a stipulated timeframe of 10 months. During this phase, works will include the installation of the remaining hardstanding area, the construction of the main reservoir, and the installation of the oil-water interceptors servicing the main reservoir. As part of this phase, the interceptor installed in Phase 2 will be moved to its final location, and the temporary reservoir (installed in Phase 2) will be removed.

It is to be noted that within description provided for project timelines, where it is being indicated hardstanding will be complete, reference is also being made to completion of geotextile membrane.

### **Risk Assessment Methodology**

- 3.30. The Environmental Risk Assessment submitted as part of the original IPPC application has not mentioned removal of composter and the temporary installation of the Oil-Water Interceptor and Reservoir.
- 3.31. This part of the risk assessment is therefore being updated. The methodology used, including assessment criteria and risk matrix, are the same as those presented in the original IPPC application (included in Annex 3 for reference).
- 3.32. The Fire Prevention and Response Plan for the site has also been updated (refer to Annex 4) as well as the Spill Prevention and Response Plan (refer to Annex 5)

### **Risk Assessment**

- 3.33. Table 4 summarises potential sources of pollution and the respective pathway to the relevant receptors from this change.
- 3.34. Table 4 also includes the mitigation measures that will be adopted to mitigate such risks, distinguishing between fixed structural elements incorporated into the upgraded plant design, and procedural mitigation measures. The Table also distinguishes between the measures already in place (current mitigation), and other measures that will be implemented as part of the planned upgrading of the site and the proposed Environmental Management Programme.



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**Table 4: Pollution Pathways Identification and Mitigation Measures**

Update/ New	Source	Pathway	Receptor	Current Mitigation	Mitigation measures	
					Additional Proposed Mitigation	
					Structural Measures	Procedural Manners
Update	Spills of other liquid hazardous substances / waste (e.g. during storage, transfer, handling, ELV depollution (temporary), leaks from vehicles / machinery, maintenance)	Direct contamination Permeable strata above water table Rainwater runoff	Land Groundwater	Impermeable hardstanding (part of site).	<ul style="list-style-type: none"> <li>• Impermeable hardstanding;</li> <li>• Gutters leading to silt trap and oil-water separators;</li> <li>• ELV depollution equipment equipped with containers for hazardous materials and banded.</li> </ul>	<ul style="list-style-type: none"> <li>• Spill Prevention and Response Plan; Hazardous waste stored in shed under cover; Containment for liquid hazardous waste (spill trays, prefabricated bunds, and similar systems);</li> <li>• Spill kits;</li> <li>• Staff training on operational procedures and spill prevention and response.</li> </ul>

Update/ New	Source	Pathway	Receptor	Current Mitigation	Mitigation measures	
					Additional Proposed Mitigation	
					Structural Measures	Procedural Manners
Update	Spills of other liquid hazardous substances / waste (e.g. during storage, transfer, handling, ELV depollution (permanent), leaks from vehicles / machinery, maintenance)	Direct contamination Permeable strata above water table Rainwater runoff	Land Groundwater	Impermeable hardstanding (part of site).	<ul style="list-style-type: none"> <li>• Impermeable hardstanding;</li> <li>• Gutters leading to silt trap and oil-water separators;</li> <li>• ELV depollution equipment equipped with containers for hazardous materials and banded.</li> </ul>	<ul style="list-style-type: none"> <li>• Spill Prevention and Response Plan; Hazardous waste stored in shed under cover; Containment for liquid hazardous waste (spill trays, prefabricated bunds, and similar systems);</li> <li>• Spill kits;</li> <li>• Staff training on operational procedures and spill prevention and response.</li> </ul>



## Identification of Potential Releases

- 3.35. Point 3.178 within IPPC permit application identifies what the potential risks associated with ELV depollution. No further risks associated with ELV are being anticipated.

## Identification of Migration Pathways

- 3.36. No further identification of migration pathways have been identified to those indicated within IPPC application

## Identification of Potential Receptors

- 3.37. No further potential receptor or change in said receptors have been identified to those indicated within IPPC application

## Risk Evaluation

- 3.38. The various risks to the environment will be assessed using the evaluation criteria described earlier.
- 3.39. The risks associated with both the current scenario and the scenario with the additional proposed mitigation, are evaluated. It should be noted that the Scheme proposes to include all the mitigation measures described.

## Current Mitigation

- 3.40. Table 5 presents risk levels for each source in the current mitigation scenario, but considers the full range of activities proposed in this Application, including new activities.

**Table 5: Risk Levels (Current Mitigation)**

Added/Updated	Source	Environmental Consequence	Likelihood of Consequence	Resultant Risk Level
Updated	Spill / leaks of other liquid hazardous substance / waste (temporary)	Minor	Almost Certain	Moderate
Updated	Spill / leaks of other liquid hazardous substance / waste (permanent)	Minor	Almost Certain	Moderate



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- 3.41. Other spills and leaks would typically be small-scale and having a minor effect on the environment; however, minor spills almost always occur in such site, for example drips from machinery,
- 3.42. Mitigation scenarios for spill/leaks of other liquid hazardous substance/waste (temporary and permanent) will be the same as those indicated within the original IPPC application.

### **With Proposed Additional Mitigation**

- 3.43. Table 6 presents risk levels for each source in the scenario with the additional planned mitigation measures.

**Table 6: Risk Levels with additional mitigation**

Added/Updated	Source	Environmental Consequence	Likelihood of Consequence	Resultant Risk Level
Updated	Spill / leaks of other liquid hazardous substance / waste (temporary)	Insignificant	Likely	Low
Updated	Spill / leaks of other liquid hazardous substance / waste (permanent)	Insignificant	Likely	Low
Added	Spill from the removal of composter	Insignificant	Unlikely	Very Low



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- 3.44. The mitigated scenario reduces the likelihood of a significant spill occurring during operation to unlikely. The updated Spill Prevention and Response Plan will be in place, together with two types of spill kits (a sawdust spill kit and a commercial spill kit with absorbent pads and booms). Staff will be trained and taught how to control the spill, contain the spill and clean up the spill. After spill procedural training will also be provided as specified within mentioned plan.

### **Fire Prevention and Response**

- 3.45. As mentioned, an updated Fire Prevention and Response Plan is included in Annex 4.
- 3.46. This Plan describes the fire safety procedures that will be implemented at the Scheme, including the equipment to be installed. Once the Plan is fully implemented, the Scheme will engage a competent person to certify that the relevant fire safety procedures and equipment are in place.
- 3.47. This Plan will also be made available to employees, who will also be trained on fire emergency preparedness and response as described in section B2.9 of the original IPPC application.

## Spill Prevention and Response Plan

- 3.48. As mentioned, an updated Spill Prevention and Response Plan is included in Annex 5.
- 3.49. This Plan describes the spill prevention and response procedures that will be implemented at the Scheme, including the equipment to be installed. Once the Plan is fully implemented, the Scheme will engage a competent person to certify that the relevant spill prevention and response procedures and equipment are in place.
- 3.50. This Plan will also be made available to employees, who will also be trained on Spill prevention and response, including dispensing of fuel, storage of hazardous items, use of spill kits as described in section B2.9 of the original IPPC application.
- 3.51. For this variation, DDE Attard will not be accepting electric/hybrid vehicles, until new variation is submitted.

## C2.9 Training

- 3.52. ERA's application form requires the following:

*Please indicate whether any changes to the staff training programme will be required. Please submit the name of the technically competent person on site who will be responsible for such training*

- 3.53. The staff training programme prepared for the original IPPC application remains applicable.
- 3.54. Fire emergency preparedness and response training will be prioritised by the Operator and due to take place early in 2024. All employees will receive such training.
- 3.55. In addition to the fire training, spill prevention and response, including dispensing of fuel, storage of hazardous items and the use of spill kits will be undertaken by the Operator.
- 3.56. Training will be delivered by an external service provider; in-house training may also be carried out by one of the Technically Competent Persons, André Camilleri. The Civil Protection Department will also be invited to carry out fire drills with staff.

## 4. Emissions

### C3.1 WASTE

4.1. ERA's application form requires the following:

**C3.1.1:** *Characterise (using the European Waste Catalogue code, in accordance with Commission Decision 2014/955/EU) and quantify any changes to each waste stream from the installation.*

**C3.1.2:** *Describe any changes to the proposed measures for waste management, storage and handling. If any are identified, also indicate the storage location of wastes on a site layout plan and give details on:*

- *Maximum storage capacity;*
- *Containment measures (including bunding capacity, where applicable);*
- *Protective measures (including security).*

**C3.1.3:** *Describe how each waste stream identified in C3.1.1 is prepared for re use, recycled, recovered or disposed of. If you propose any disposal, explain why recovery is technically and economically impossible and describe the measures planned to avoid or reduce any impact on the environment*

4.2. The original IPPC application (section B3.1) already included the identification of the waste types generated by the facility. No new waste types are envisaged.

4.3. The estimates quantities of incoming and outgoing waste will remain the same as outlined in the original IPPC application.

#### **Waste Acceptance Procedures**

4.4. As previously described in this application, the method of processing, which encompasses preparation for recycling, will remain the same as described in the original IPPC application.

4.5. Waste codes that will be originating from sea and air vehicles will be accepted on site once a method statement is submitted to ERA.

#### **Waste Storage**

4.6. During phase 1, vehicles awaiting dismantling will be temporarily stored in



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area shown in Figure 4. Disassembled parts will be stored within original area of IPPC application (no 4 of Figure 2), which now comprises of Phase 3 works (refer to Figure 5). Once all phases are complete, all ELV depollution and dismantling activities will be located within the area specified in the original IPPC application.

- 4.7. Temporary ELV site will include impermeable hardstanding and containment (including oil-water interceptor). As an additional precaution and to help protect waste from elements, ELV's awaiting dismantling and components from ELV's will be stored in a covered shed.
- 4.8. As previously described in application, the method of processing, which encompasses preparation for recycling, will remain the same as described in the original application.
- 4.9. The maximum storage capacity for the area being proposed to store 16 01 06 is of 64Tonnes (of which these will be continuously processed).
- 4.10. As per Volume 3: Response to Reviews and Regulatory Consultation, Appendix A7 provides the plans and sections showing the location of the proposed shed.
- 4.11. Lead acid batteries from EoLVs will be stored in adequate containment boxes as per images provided in Volume 3: Response to Reviews and Regulatory Consultation, Appendix B4

## C3.9 Noise

- 4.12. ERA's application form requires the following:

*Describe:*

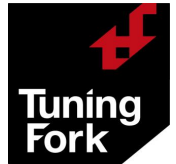
**C3.9.1:** *The main sources of noise and vibration (including infrequent sources) of the new proposal.*

**C3.9.2:** *The proposed techniques and measures for control of noise*

**C3.9.3:** *The nearest noise sensitive locations and distance away from the site (a site map may be submitted for this purpose)*

**C3.9.4:** *Relevant environmental noise measurement surveys which have been undertaken (monitoring shall be according to the latest revisions of ISO1996 and the rating of industrial noise affecting residential areas shall be according to BS 4142; monitoring shall be*

*carried out exclusively using type 1 sound level meter).*



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- 4.13. The temporary placement of an ELV depollution and disassembly station will not change the noise impacts mentioned within the original submitted IPPC application since the ELV depollution machine will have a limited noise output, and will be located inside a shed, helping to attenuate noise further.
- 4.14. Nevertheless, pursuant to the requirements of the IPPC permit number IP001/13, the applicant will commission a noise monitoring survey. As per Volume 3: Response to Reviews and Regulatory Consultation, Noise monitoring will take place following the completion of the hardstanding installation.

### **C3.10 Monitoring**

- 4.15. ERA's application form requires the following:

*Describe the proposed measures for monitoring emissions arising from the proposal, including any environmental monitoring. The following must be specified:*

**C3.10.1:** *The location of each proposed monitoring point (plotted on a suitably-labelled block plan of the site.*

**C3.10.2:** *The substances (in each environmental medium) which are proposed to be monitored.*

**C3.10.3:** *The frequency with which monitoring is proposed to take place.*

**C3.10.4:** *The proposed measurement methodology, which should be a standard methodology, such as EN or ISO standard, or equivalent;*

**C3.10.5:** *The proposed procedure for evaluation of the results.*

- 4.16. Effluent monitoring proposal for the reservoir overflow have been provided in Volume 3: Response to Reviews and Regulatory Consultation Appendix C1.

### C3.11 Emissions & waste summary

4.17. ERA's application form requires the following:

*By means of a mass flow diagram, summarise the emissions and waste described in sections C3.1, C3.2, C3.3, C3.4, C3.6 and C3.8 of this application.*

4.18. Flow diagram for the acceptance and treatment of EWC 16 01 06 have been provided in Volume 3: Response to Reviews and Regulatory Consultation Appendix A10.



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## 5. Impact on the Environment

### C4.1 Environmental Effects

5.1. ERA's application form requires the following:

*Provide an assessment of the potential significant environmental effects (including transboundary effects) of the foreseeable emissions from the proposal.*

5.2. No further environmental effects have been identified to those already mentioned in the original IPPC application

### C4.2 Effects on other Sites

5.3. ERA's application form requires the following:

*Provide an assessment of whether the proposal is likely to have a significant effect on another site in Malta and, if it is, provide an assessment of the implications of the installation for that site.*

5.4. Figure 12 shows the land uses surrounding the Scheme site. The uses immediately surrounding the Scheme site are industrial and agricultural.

5.5. The areas immediately adjoining the Scheme site are occupied primarily by small to medium enterprises, including another waste management facility next door (Metalco) and a civic amenity site operated by Wasteserv Malta Ltd next to the Scheme site entrance.



- 5.6. No effects further to those mentioned in the original IPPC application have been identified.

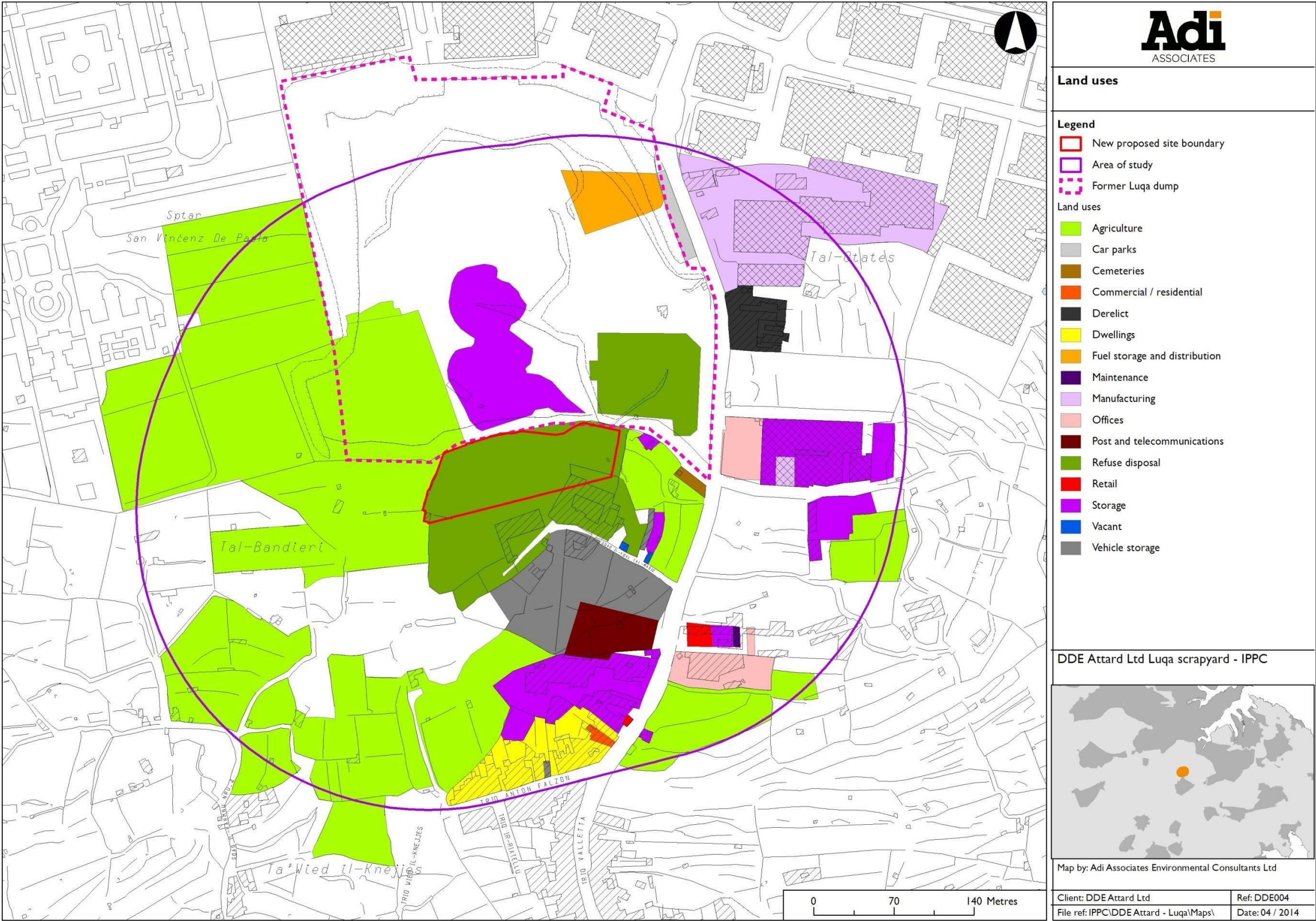


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Figure 12: Surrounding land uses





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## **Annex 1 - Revised Project Timeline**

## Project Time Line

The phasing of the civil works shall be subdivided as per the following time line:

Phase 1 – Composter which is within shed shown in Figure 3 will be temporarily removed and stored on site. The stipulated timeframe for this phase is 1 month.

Phase 2 – Hardstanding and shed which currently stores the composter will be increased to area indicated in Figure 4. This will be undertaken in order to be able to temporarily place E.L.V dismantling and depollution processes within this area. A temporary interceptor and reservoir servicing this shed will be installed (as per being indicated in Figure 4). Underground pipework and gutters will be installed to collect spills inside the shed and surface water from the road just in front of the shed; will be diverted to an oil-water interceptor and reservoir (comprising of a 2m<sup>3</sup> horizontal water tank constructed of plastic). Stipulated timeframe for this phase is of 2months.

Phase 3 – Works for the area being indicated in figure 5 will be undertaken within a stipulated timeframe of 6 months. Once the shed for storing disassembled parts is built with hardstanding (no 4 in figure 5) this will be used as part of the ELV depollution and disassembly processes in tandem with works undertaken for Phase 2.

Phase 4 – Works for the area being indicated in figure 6 will be undertaken within a stipulated timeframe of 10 months. During this phase, works will include the installation of the remaining hardstanding area, the construction of the main reservoir, and the installation of the oil-water interceptors servicing the main reservoir. As part of this phase, the interceptor installed in Phase 2 will be moved to its final location, and the temporary reservoir (installed in Phase 2) will be removed

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## Annex 2: BAT Assessment





# ERA

Environment & Resources  
Authority

IPPC BAT

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**COMMISSION IMPLEMENTING DECISION (EU) 2018/11747** establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council

## BEST AVAILABLE TECHNIQUES (BAT) CONCLUSIONS FOR WASTE SCOPE

These BAT conclusions concern the following activities specified in Annex I to Directive 2010/75/EU, namely:

5.1. Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities:

- (a) biological treatment;
- (b) physico-chemical treatment;
- (c) blending or mixing prior to submission to any of the other activities listed in points 5.1 and 5.2 of Annex I to Directive 2010/75/EU;
- (d) repackaging prior to submission to any of the other activities listed in points 5.1 and 5.2 of Annex I to Directive 2010/75/EU;
- (e) solvent reclamation/regeneration;
- (f) recycling/reclamation of inorganic materials other than metals or metal compounds;
- (g) regeneration of acids or bases;
- (h) recovery of components used for pollution abatement;
- (i) recovery of components from catalysts;
- (j) oil re-refining or other reuses of oil;

5.3.(a) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC <sup>(1)</sup>:

- (i) biological treatment;
- (ii) physico-chemical treatment;
- (iii) pre-treatment of waste for incineration or co-incineration;
- (iv) treatment of ashes;
- (v) treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components.

(b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving one or more of the following activities, and excluding activities covered by Directive 91/271/EEC:

- (i) biological treatment;
- (ii) pre-treatment of waste for incineration or co-incineration;
- (iii) treatment of ashes;
- (iv) treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components.

When the only waste treatment activity carried out is anaerobic digestion, the capacity threshold for this activity shall be 100 tonnes per day.

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<sup>1</sup> Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment ([OJ L 135, 30.5.1991, p. 40](#)).

5.5. Temporary storage of hazardous waste not covered under point 5.4 of Annex I to Directive 2010/75/EU pending any of the activities listed in points 5.1, 5.2, 5.4 and 5.6 of Annex I to Directive 2010/75/EU with a total capacity exceeding 50 tonnes, excluding temporary storage, pending collection, on the site where the waste is generated.

6.11. Independently operated treatment of waste water not covered by Directive 91/271/EEC and discharged by an installation undertaking activities covered under points 5.1, 5.3 or 5.5 as listed above.

Referring to independently operated treatment of waste water not covered by Directive 91/271/EEC above, these BAT conclusions also cover the combined treatment of waste water from different origins if the main pollutant load originates from the activities covered under points 5.1, 5.3 or 5.5 as listed above.

These BAT conclusions do not address the following:

- Surface impoundment.
- Disposal or recycling of animal carcasses or of animal waste covered by the activity description in point 6.5 of Annex I to Directive 2010/75/EU when this is covered by the BAT conclusions on the slaughterhouses and animal by-products industries (SA).
- On-farm processing of manure when this is covered by the BAT conclusions for the intensive rearing of poultry or pigs (IRPP).
- Direct recovery (i.e. without pretreatment) of waste as a substitute for raw materials in installations carrying out activities covered by other BAT conclusions, e.g.:
  - o Direct recovery of lead (e.g. from batteries), zinc or aluminium salts or recovery of the metals from catalysts. This may be covered by the BAT conclusions for the non-ferrous metals industries (NFM).
  - o Processing of paper for recycling. This may be covered by the BAT conclusions for the production of pulp, paper and board (PP).
  - o Use of waste as fuel/raw material in cement kilns. This may be covered by the BAT conclusions for the production of cement, lime and magnesium oxide (CLM).
- Waste (co-)incineration, pyrolysis and gasification. This may be covered by the BAT conclusions for waste incineration (WI) or the BAT conclusions for large combustion plants (LCP).
- Landfill of waste. This is covered by Council Directive 1999/31/EC <sup>(2)</sup>. In particular, underground permanent and long-term storage ( $\geq$  1 year before disposal,  $\geq$  3 years before recovery) are covered by Directive 1999/31/EC.
- *In situ* remediation of contaminated soil (i.e. unexcavated soil).
- Treatment of slags and bottom ashes. This may be covered by the BAT conclusions for waste incineration (WI) and/or the BAT conclusions for large combustion plants (LCP).
- Smelting of scrap metals and metal-bearing materials. This may be covered by the BAT conclusions for non-ferrous metals industries (NFM), the BAT conclusions for iron and steel production (IS), and/or the BAT conclusions for the smitheries and foundries industry (SF).
- Regeneration of spent acids and alkalis when this is covered by the BAT conclusions for ferrous metals processing.

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<sup>2</sup> Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste ([OJ L 182, 16.7.1999, p. 1](#)).



- Combustion of fuels when it does not generate hot gases which come into direct contact with the waste. This may be covered by the BAT conclusions for large combustion plants (LCP) or by Directive (EU) 2015/2193 of the European Parliament and of the Council <sup>(3)</sup>.

Other BAT conclusions and reference documents which could be relevant for the activities covered by these BAT conclusions are the following:

- Economics and cross-media effects (ECM);
- Emissions from storage (EFS);
- Energy efficiency (ENE);
- Monitoring of emissions to air and water from IED installations (ROM);
- Production of cement, lime and magnesium oxide (CLM);
- Common waste water and waste gas treatment/management systems in the chemical sector (CWW);
- Intensive rearing of poultry or pigs (IRPP).

These BAT conclusions apply without prejudice to the relevant provisions of EU legislation, e.g. the waste hierarchy.

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<sup>3</sup> Directive (EU) 2015/2193 of the European Parliament and of the Council of 25 November 2015 on the limitation of emissions of certain pollutants into the air from medium combustion plants ([OJ L 313, 28.11.2015, p. 1](#)).

## DEFINITIONS

For the purposes of these BAT conclusions, the following **definitions** apply:

Term used	Definition
<b>General terms</b>	
<b>Channelled emissions</b>	Emissions of pollutants into the environment through any kind of duct, pipe, stack, etc. This also includes emissions from open-top biofilters.
<b>Continuous measurement</b>	Measurement using an 'automated measuring system' permanently installed on site.
<b>Declaration of cleanliness</b>	Written document provided by the waste producer/holder certifying that the empty waste packaging concerned (e.g. drums, containers) is clean with respect to the acceptance criteria.
<b>Diffuse emissions</b>	Non-channelled emissions (e.g. of dust, organic compounds, odour) which can result from 'area' sources (e.g. tanks) or 'point' sources (e.g. pipe flanges). This also includes emissions from open-air windrow composting.
<b>Direct discharge</b>	Discharge to a receiving water body without further downstream waste water treatment.
<b>Emissions factors</b>	Numbers that can be multiplied by known data such as plant/process data or throughput data to estimate emissions.
<b>Existing plant</b>	A plant that is not a new plant.
<b>Flaring</b>	High-temperature oxidation to burn combustible compounds of waste gases from industrial operations with an open flame. Flaring is primarily used for burning off flammable gas for safety reasons or during non-routine operating conditions.
<b>Fly ashes</b>	Particles from the combustion chamber or formed within the flue-gas stream, that are transported in the flue-gas.
<b>Fugitive emissions</b>	Diffuse emissions from 'point' sources.

<b>Hazardous waste</b>	Hazardous waste as defined in point 2 of Article 3 of Directive 2008/98/EC.
<b>Indirect discharge</b>	Discharge which is not a direct discharge.
<b>Liquid biodegradable waste</b>	Waste of biological origin with a relatively high water content (e.g. fat separator contents, organic sludges, catering waste).
<b>Major plant upgrade</b>	A major change in the design or technology of a plant with major adjustments or replacements of the process and/or abatement technique(s) and associated equipment.
<b>Mechanical biological treatment (MBT)</b>	Treatment of mixed solid waste combining mechanical treatment with biological treatment such as aerobic or anaerobic treatment.
<b>New plant</b>	A plant first permitted at the site of the installation following the publication of these BAT conclusions or a complete replacement of a plant following the publication of these BAT conclusions.
<b>Output</b>	The treated waste exiting the waste treatment plant.
<b>Pasty waste</b>	Sludge which is not free-flowing.
<b>Periodic measurement</b>	Measurement at specified time intervals using manual or automated methods.
<b>Recovery</b>	Recovery as defined in Article 3(15) of Directive 2008/98/EC.
<b>Re-refining</b>	Treatments carried out on waste oil to transform it to base oil.
<b>Regeneration</b>	Treatments and processes mainly designed to make the treated materials (e.g. spent activated carbon or spent solvent) suitable again for a similar use.

<b>Sensitive receptor</b>	Area which needs special protection, such as: — residential areas; — areas where human activities are carried out (e.g. neighbouring workplaces, schools, daycare centres, recreational areas, hospitals or nursing homes).
<b>Surface impoundment</b>	Placement of liquid or sludgy discards into pits, ponds, lagoons, etc.
<b>Treatment of waste with calorific value</b>	Treatment of waste wood, waste oil, waste plastics, waste solvents, etc. to obtain a fuel or to allow a better recovery of its calorific value.
<b>VFCs</b>	Volatile (hydro)fluorocarbons: VOCs consisting of fluorinated (hydro)carbons, in particular chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs).
<b>VHCs</b>	Volatile hydrocarbons: VOCs consisting entirely of hydrogen and carbon (e.g. ethane, propane, iso-butane, cyclopentane).
<b>VOC</b>	Volatile organic compound as defined in Article 3(45) of Directive 2010/75/EU.
<b>Waste holder</b>	Waste holder as defined in Article 3(6) of Directive 2008/98/EC of the European Parliament and of the Council <a href="#">(4)</a> .
<b>Waste input</b>	The incoming waste to be treated in the waste treatment plant.
<b>Water-based liquid waste</b>	Waste consisting of aqueous liquids, acids/alkalis or pumpable sludges (e.g. emulsions, waste acids, aqueous marine waste) which is not liquid biodegradable waste.
<b>Pollutants/parameters</b>	
<b>AOX</b>	Adsorbable organically bound halogens, expressed as Cl, include adsorbable organically bound chlorine, bromine and iodine.
<b>Arsenic</b>	Arsenic, expressed as As, includes all inorganic and organic arsenic compounds, dissolved or bound to particles.

<sup>4</sup> Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives ([OJ L 312, 22.11.2008, p. 3](#)).



<b>BOD</b>	Biochemical oxygen demand. Amount of oxygen needed for the biochemical oxidation of organic and/or inorganic matter in five (BOD <sub>5</sub> ) or in seven (BOD <sub>7</sub> ) days.
<b>Cadmium</b>	Cadmium, expressed as Cd, includes all inorganic and organic cadmium compounds, dissolved or bound to particles.
<b>CFCs</b>	Chlorofluorocarbons: VOCs consisting of carbon, chlorine and fluorine.
<b>Chromium</b>	Chromium, expressed as Cr, includes all inorganic and organic chromium compounds, dissolved or bound to particles.
<b>Hexavalent chromium</b>	Hexavalent chromium, expressed as Cr(VI), includes all chromium compounds where the chromium is in the oxidation state +6.
<b>COD</b>	Chemical oxygen demand. Amount of oxygen needed for the total chemical oxidation of the organic matter to carbon dioxide. COD is an indicator for the mass concentration of organic compounds.
<b>Copper</b>	Copper, expressed as Cu, includes all inorganic and organic copper compounds, dissolved or bound to particles.
<b>Cyanide</b>	Free cyanide, expressed as CN <sup>-</sup> .
<b>Dust</b>	Total particulate matter (in air).
<b>HOI</b>	Hydrocarbon oil index. The sum of compounds extractable with a hydrocarbon solvent (including long-chain or branched aliphatic, alicyclic, aromatic or alkyl-substituted aromatic hydrocarbons).
<b>HCl</b>	All inorganic gaseous chlorine compounds, expressed as HCl.
<b>HF</b>	All inorganic gaseous fluorine compounds, expressed as HF.
<b>H<sub>2</sub>S</b>	Hydrogen sulphide. Carbonyl sulphide and mercaptans are not included.
<b>Lead</b>	Lead, expressed as Pb, includes all inorganic and organic lead compounds, dissolved or bound to particles.

<b>Mercury</b>	Mercury, expressed as Hg, includes elementary mercury and all inorganic and organic mercury compounds, gaseous, dissolved or bound to particles.
<b>NH<sub>3</sub></b>	Ammonia.
<b>Nickel</b>	Nickel, expressed as Ni, includes all inorganic and organic nickel compounds, dissolved or bound to particles.
<b>Odour concentration</b>	Number of European Odour Units (ou <sub>E</sub> ) in one cubic metre at standard conditions measured by dynamic olfactometry according to EN 13725.
<b>PCB</b>	Polychlorinated biphenyl.
<b>Dioxin-like PCBs</b>	Polychlorinated biphenyls as listed in Commission Regulation (EC) No 199/2006 <a href="#">(5)</a> .
<b>PCDD/F</b>	Polychlorinated dibenzo- <i>p</i> -dioxin/furan(s).
<b>PFOA</b>	Perfluorooctanoic acid.
<b>PFOS</b>	Perfluorooctanesulphonic acid.
<b>Phenol index</b>	The sum of phenolic compounds, expressed as phenol concentration and measured according to EN ISO 14402.
<b>TOC</b>	Total organic carbon, expressed as C (in water), includes all organic compounds.
<b>Total N</b>	Total nitrogen, expressed as N, includes free ammonia and ammonium nitrogen (NH <sub>4</sub> -N), nitrite nitrogen (NO <sub>2</sub> -N), nitrate nitrogen (NO <sub>3</sub> -N) and organically bound nitrogen.
<b>Total P</b>	Total phosphorus, expressed as P, includes all inorganic and organic phosphorus compounds, dissolved or bound to particles

<sup>5</sup> Commission Regulation (EC) No 199/2006 of 3 February 2006 amending Regulation (EC) No 466/2001 setting maximum levels for certain contaminants in foodstuffs as regards dioxins and dioxin-like PCBs ([OJ L 32, 4.2.2006, p. 34](#)).

<b>TSS</b>	Total suspended solids. Mass concentration of all suspended solids (in water), measured via filtration through glass fibre filters and gravimetry.
<b>TVOC</b>	Total volatile organic carbon, expressed as C (in air).
<b>Zinc</b>	Zinc, expressed as Zn, includes all inorganic and organic zinc compounds, dissolved or bound to particles.

**For the purposes of these BAT conclusions, the following acronyms apply:**

<b>Acronym</b>	<b>Definition</b>
<b>EMS</b>	Environmental management system
<b>EoLVs</b>	End-of-life vehicles (as defined in Article 2(2) of Directive 2000/53/EC of the European Parliament and of the Council <a href="#">(6)</a> )
<b>HEPA</b>	High-efficiency particle air (filter)
<b>IBC</b>	Intermediate bulk container
<b>LDAR</b>	Leak detection and repair
<b>LEV</b>	Local exhaust ventilation system
<b>POP</b>	Persistent organic pollutant (as listed in Regulation (EC) No 850/2004 of the European Parliament and of the Council <a href="#">(7)</a> )
<b>WEEE</b>	Waste electrical and electronic equipment (as defined in Article 3(1) of Directive 2012/19/EU of the European Parliament and of the Council <a href="#">(8)</a> )

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<sup>6</sup> Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles ([OJ L 269, 21.10.2000, p. 34](#)).

<sup>7</sup> Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC ([OJ L 158, 30.4.2004, p. 7](#)).

<sup>8</sup> Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) ([OJ L 197, 24.7.2012, p. 38](#)).

## General Considerations:

### Best Available Techniques

The techniques listed and described in these BAT conclusions are neither prescriptive nor exhaustive. Other techniques may be used that ensure at least an equivalent level of environmental protection. Unless otherwise stated, the BAT conclusions are generally applicable.

### Emission levels associated with BAT

Unless stated otherwise, emission levels associated with the best available techniques (BAT-AELs) for emissions to air given in these BAT conclusions refer to concentrations (mass of emitted substances per volume of waste gas) under the following standard conditions: dry gas at a temperature of 273,15 K and a pressure of 101,3 kPa, without correction for oxygen content, and expressed in  $\mu\text{g}/\text{Nm}^3$  or  $\text{mg}/\text{Nm}^3$ .

For averaging periods of BAT-AELs for emissions to air, the following definitions apply.

Type of measurement	Averaging period	Definition
Continuous	Daily average	Average over a period of one day based on valid hourly or half-hourly averages.
Periodic	Average over the sampling period	Average value of three consecutive measurements of at least 30 minutes each <sup>9</sup> .

Where continuous measurement is used, the BAT-AELs may be expressed as daily averages.

### Emission levels associated with the best available techniques (BAT-AELs) for emissions to water

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<sup>9</sup> For any parameter where, due to sampling or analytical limitations, a 30-minute measurement is inappropriate, a more suitable measurement period may be employed (e.g. for the odour concentration). For PCDD/F or dioxin-like PCBs, one sampling period of 6 to 8 hours is used.



Unless stated otherwise, emission levels associated with the best available techniques (BAT-AELs) for emissions to water given in these BAT conclusions refer to concentrations (mass of emitted substances per volume of water), expressed in µg/l or mg/l.

Unless stated otherwise, averaging periods associated with the BAT-AELs refer to either of the following two cases:

- in the case of continuous discharge, daily average values, i.e. 24-hour flow-proportional composite samples;
- in the case of batch discharge, average values over the release duration taken as flow-proportional composite samples, or, provided that the effluent is appropriately mixed and homogeneous, a spot sample taken before discharge.

Time-proportional composite samples can be used provided that sufficient flow stability is demonstrated. All BAT-AELs for emissions to water apply at the point where the emission leaves the installation.

### **Abatement efficiencies**

The calculation of the average abatement efficiency referred to in these BAT conclusions (see Table 6.1) does not include, for COD and TOC, initial treatment steps aiming at separating the bulk organic content from the water-based liquid waste, such as evapo-condensation, emulsion breaking or phase separation.

### **General BAT conclusions**

Kindly cross-reference to the relevant part of the application document for the various aspects below (as may be required) and include further justifications for the responses provided.

Status at Installation for BAT																			
<b>1.1 Environmental management systems</b>																			
<b>BAT 1</b>																			
Is an Environmental Management System (EMS) being implemented as part of the installation process? <b>The EMS is described in section B2.1 of the original IPPC application. A proposed change to the EMS in the IPPC variation can be found in Annex 6.</b>																			
If yes, does it incorporate the aforementioned features? (Ex: commitment of the management, planning and establishing the necessary procedures in conjunction with investment and financial planning etc.) If certain features are not incorporated in the current EMS kindly indicate a timeframe by when the EMS shall be updated to include all missing features ( <i>as may be applicable to your operations</i> ).																			
	<table border="1"> <thead> <tr> <th>Features</th> <th>Yes/No</th> </tr> </thead> <tbody> <tr> <td>i. Commitment of the management, including senior management</td> <td>Yes</td> </tr> <tr> <td>ii. An environmental policy that includes the continuous improvement of the installation by the management</td> <td>Yes</td> </tr> <tr> <td>iii. Planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment</td> <td>Yes</td> </tr> <tr> <td>iv. Implementation of procedures paying particular attention to :  a) Structure and responsibility  b) Recruitment, training, awareness and competence  c) Communication  d) Employee involvement  e) Documentation  f) Effective process control  g) Maintenance programmes</td> <td>Yes</td> </tr> <tr> <td>v. checking performance and taking corrective action, paying particular attention to:  a) monitoring and measurement (see also the Reference Report on Monitoring of emissions to Air and Water from IED installations — ROM);  b) Corrective and preventive action  c) Maintenance of records  d) independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained;</td> <td>Yes.  Waste reporting will be audited as required by the IPPC permit.</td> </tr> <tr> <td>vi. review of the EMS and its continuing suitability, adequacy and effectiveness by senior management</td> <td>Yes</td> </tr> <tr> <td>vii. following the development of cleaner technologies;</td> <td>Yes</td> </tr> <tr> <td>viii. consideration for the environmental impacts from the eventual decommissioning of the plant at the design stage of a new plant, and throughout its operating life;</td> <td>Yes</td> </tr> </tbody> </table>	Features	Yes/No	i. Commitment of the management, including senior management	Yes	ii. An environmental policy that includes the continuous improvement of the installation by the management	Yes	iii. Planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment	Yes	iv. Implementation of procedures paying particular attention to : a) Structure and responsibility b) Recruitment, training, awareness and competence c) Communication d) Employee involvement e) Documentation f) Effective process control g) Maintenance programmes	Yes	v. checking performance and taking corrective action, paying particular attention to: a) monitoring and measurement (see also the Reference Report on Monitoring of emissions to Air and Water from IED installations — ROM); b) Corrective and preventive action c) Maintenance of records d) independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained;	Yes.  Waste reporting will be audited as required by the IPPC permit.	vi. review of the EMS and its continuing suitability, adequacy and effectiveness by senior management	Yes	vii. following the development of cleaner technologies;	Yes	viii. consideration for the environmental impacts from the eventual decommissioning of the plant at the design stage of a new plant, and throughout its operating life;	Yes
Features	Yes/No																		
i. Commitment of the management, including senior management	Yes																		
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iii. Planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment	Yes																		
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v. checking performance and taking corrective action, paying particular attention to: a) monitoring and measurement (see also the Reference Report on Monitoring of emissions to Air and Water from IED installations — ROM); b) Corrective and preventive action c) Maintenance of records d) independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained;	Yes.  Waste reporting will be audited as required by the IPPC permit.																		
vi. review of the EMS and its continuing suitability, adequacy and effectiveness by senior management	Yes																		
vii. following the development of cleaner technologies;	Yes																		
viii. consideration for the environmental impacts from the eventual decommissioning of the plant at the design stage of a new plant, and throughout its operating life;	Yes																		

	ix. application of sectoral benchmarking on a regular basis	Will be carried out if required by ERA and if sectoral data is available; otherwise the Scheme will compare its performance with previous years' data.
	x. waste management plan (see BAT 2)	Yes. Details of how incoming waste will be managed are provided in sections B2.2.1 and B3.1 of the original IPPC application and sections C2.2.1 and C3.1 of this variation application.
	xi. BAT is to incorporate the following features in the EMS: a. if applicable, on multi-operator installations/sites, establishment of a convention that sets out the roles, responsibilities and coordination of operating procedures of each plant operator in order to enhance the cooperation between the various operators b. establishment of inventories of waste water and waste gas streams(see BAT 3).	a. Not applicable – not a multi- operator site. b. See response to BAT 3 below.
	xii. residues management plan (see description in Section 6.5)	Yes. Details of how incoming waste will be managed, and how reuse / recycling / recovery of residues generated (or proper disposal) will be ensured are included in section B3.1 of the original IPPC application.
	xiii. accident management plan (see description in Section 6.5)	Yes. An environmental risk assessment, a Fire and Explosion Prevention and Response Plan, and a Spill Prevention and Response Plan have been updated and are included in section C2.8 of this IPPC Variation application.
	xiv. odour management plan (see BAT 12)	Not applicable. Due to the nature and scale of the potentially odour-generating activities, the mitigation measures in place, and the distance from odour sensitive receptors (as described in section B3.7 of the original IPPC application), odour nuisance at sensitive receptors is not expected.
	xv. noise management plan (see BAT 17)	A noise study was undertaken as part of the IPPC application (section B3.9), and no discernible impact on the nearest receptor was identified. The study also concluded that new equipment was unlikely to have a significant impact due to its location, existing noise levels, the distance to receptors, and

		<p>the noise output of other activities in the area.</p> <p>However, as required by the improvement programme item in the IPPC permit, another noise monitoring study will be carried out. Should a significant impact be identified, a noise management plan will be drawn up and implemented.</p>
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**BAT 2**

Which of the following techniques are used to assess environmental performance (kindly providesupporting documentation as evidence that such measures are being implemented):

*Should any of the techniques below not be currently implemented on site, kindly provide a timeframe andproposal for their implementation.*

	Technique	Yes/No
a.	Set up and implement waste characterisation and pre-acceptance procedures	<p>Yes. Information about the nature and origin of waste will be collected from the originating facility prior to acceptance.</p> <p>With respect to food waste from schools, an educational campaign will also be run at the waste generator sites to increase awareness regarding which wastes can be placed in the bin designated for composting, and wheelie bins designated for food waste will also be appropriately labelled. An agreement will be in place with the waste generators for delivery of the waste according to an established schedule. Waste will only be accepted if it can start to be processed within 48 hours.</p> <p>Additionally, sealed containers containing hazardous waste will be inspected by Scheme staff at the site of generation, before the container is sealed. To minimise environmental risks, such containers will not be opened on site.</p>
b.	Set up and implementwaste acceptance procedures	<p>Yes. Waste is inspected upon receipt to ensure it is as described. The correctness of the EWC code will also be verified upon receipt of the waste. Waste may be refused if unacceptable. Considering the natureof the waste accepted, a visual check of the waste upon receipt will be sufficient to determine whether the waste received matches the waste types that the facility is authorised to receive. Sampling and laboratory analysis are not warranted.</p> <p>Additionally, a quarantine area is planned next to the site entrance. Inthe event of any waste appearing not to fall within the list of authorised waste after the truck has been unloaded, such waste will be placed in the quarantine area and removed from the site to an authorised facility as soon as practicable, typically within a few days.</p> <p>Waste loading into the composter will be carried out by trained Scheme operators. These operators will carry out visual inspections of the waste before it is tipped into the composter. Any waste identified as not suitable for composting will be removed manually prior to tipping.</p>
c.	Set up and implement a waste tracking system and inventory	<p>Yes. A computer database will be in place (linked to the weighbridge data), which will allow for tracking of incoming and outgoing waste, and can also act as a stock control system.</p> <p>Database system will be in place once all works indicated within this variation are complete.</p>



	d.	Set up and implement an output quality management system	<p>An output QMS allows verification that the characteristics of the waste output are in line with the expectations, which may be product specifications, contaminant removal efficiency rate, etc.</p> <p>It is to be noted that the Scheme will only accept a limited and defined set of wastes for processing, and the treatment method for each type of waste is well-defined. Given the nature of the waste accepted, a visual check of the incoming waste upon receipt, direct observation of WEEE and ELV by site operatives throughout the process, and a visual check of the segregated components prior to their removal from site will be sufficient to determine whether expected output quality is achieved. Additionally, the Operator maintains close relationships with the recipients of the outgoing materials, which ensures that any problems in output quality as perceived by the end user are communicated.</p> <p>With regard to the production of compost from food waste, this process will follow the procedures described in section B2.2.1 of the original IPPC application, and an end-of-waste application will be submitted to ERA. Testing of the compost will be carried out as required by ERA, to determine whether the compost has achieved end-of-waste status for a product, before any dispatch of compost as a product.</p>
	e.	Ensure waste segregation	Yes. Different waste types are stored and processed in designated areas, as described in section B3.1 of the original IPPC application and section C3.1 of the variation application.
	f.	Ensure waste compatibility prior to mixing or blending of waste	Yes. The Scheme will only accept a limited range of wastes and no compatibility issues are foreseen. No mixing / blending of liquid wastes is envisaged. Wastes of the same type will be processed / stored together.
	g.	Sort incoming solid waste	<p>Yes. Different waste types are stored and processed in designated areas, as described in sections B2.2.1 and B3.1 of the original IPPC application and section C2.2.1 and C3.1 of the variation application.</p> <p>Additionally, the dismantling of ELVs and WEEE includes separation and sorting of different types of solid waste components, and the proposed two-stage shredding and sorting of depolluted ELVs will enable segregation of different types of metals from other components (see section B2.2.1 of the original IPPC application). The electrical cable stripper is also able to separate different components of wires (see section B2.2.1 of the original IPPC application).</p>

**BAT 3**

Which of the following elements are included as part of the inventory relating wastewater? (kindly provide supporting documentation as evidence of the information requested below).

(i) information about the characteristics of the waste to be treated and the waste treatment processes,including:

Features	Yes/No
a) simplified process flow sheets that show the origin of the emissions;	Yes – section B2.2.3 of the original IPPC application and C2.2.3 of the variation application
b) descriptions of process-integrated techniques and waste water/waste gas treatment at source including their performances;	Yes – sections B3.3, B3.6 and B3.7 of the original IPPC application.

(ii) information about the characteristics of the waste water streams, such as:

Features	Yes/No
a) average values and variability of flow, pH, temperature, and conductivity;	Surface runoff water will be resultant within reservoir. Such testing will be undertaken as per information provided in response C3.10 in Volume 3: Response to Reviews and Regulatory Consultation.
b) average concentration and load values of relevant substances and their variability (e.g. COD/TOC, nitrogen species, phosphorus, metals, priority substances / micropollutants)	
c) data on bioeliminability (e.g. BOD, BOD to COD ratio, Zahn-Wellens test, biological inhibition potential (e.g. inhibition of activated sludge)) (see BAT 52);	

(iii) Which of the following elements are included as part of the inventory relating waste gas streams?

Features	Yes/No
a) average values and variability of flow and temperature;	Emissions to air are described in section B3.6 of the original IPPC application. An air monitoring programme will be implemented in accordance with the requirements of the IPPC permit, which are tailored to the nature of the emissions.
b) average concentration and load values of relevant substances and their variability (e.g. organic compounds, POPs such as PCBs);	
c) flammability, lower and higher explosive limits, reactivity;	
d) presence of other substance that may affect the waste gas treatment system or plant safety (e.g. oxygen, nitrogen, water vapour, dust)	

**BAT 4**

Kindly provide details on how each of the following techniques are being implemented on site.

	Technique	Yes/No
a.	Optimized storage location	Yes
	Waste will be stored in designated storage areas; hazardous waste will be stored under cover, or in sealed storage containers. The entire site will be concreted, and potentially contaminated rainwater reaching the site surface will be collected through surface gutters, and treated in a silt- trap and oil-water interceptors before being received in a temporary 2m3 reservoir (once Phase 2 works are complete) and then in an underground 800 m3 reservoir (once phase 4 works are complete).	
	Process flows are described in section B2.2.1 of the original IPPC application and section C2.2.1 of the variation, and do not include any unnecessary handling of wastes.	
b.	Adequate storage capacity	Yes
	The storage capacity is defined by the dimensions of the various designated areas on site, and will not be exceeded. For certain hazardous substances / waste, the maximum quantity stored was estimated as part of the COMAH Assessment undertaken as part of the original IPPC application (Volume 3). Wastes will be removed as frequently as necessary to ensure the quantities on site remain within the site's capacity.	
	A computer database will be in place (linked to the weighbridge data), which will allow for tracking of incoming and outgoing waste, and can also act as a stock control system.	
c.	In accordance with the IPPC permit, the maximum residence time of waste is 12 months if pending disposal and 36 months if pending recovery; however, this will typically be much lower.	
	Safe storage operation	Yes
	Loading / unloading activities are carried out by equipment / machinery (e.g. grab excavator, forklift tucks) which does not need labelling.	
d.	Designated areas have been identified for various waste types, as described in the IPPC application. Waste oils, fuels and batteries from end-of-life vehicles will be stored under cover in the shed.	
	Containers will be fit for purpose and stored securely.	
	Separate area for storage and handling of packaged hazardous waste	Not applicable
d.	No packaged hazardous waste (e.g. solvents / laboratory smalls) is envisaged.	

**BAT 5**

**How will handling and transfer procedures be carried out?**

Employees will be trained, as described in section B2.9 of the original IPPC application and section C2.9 of the variation application.

Waste handling and transfer activities are typically carried out using the following methods; inputs and outputs of waste from the Scheme are documented:

- Tipping the load from a dump truck by raising the tipper bed (unloading only);
- Using a telehandler;
- Using the grab excavator;
- Using a forklift truck;
- Using a palletiser.

Spill prevention and response measures are described in section B2.8 of the original IPPC application. No mixing / blending of wastes of different types is envisaged

**1.2 Monitoring**

**BAT 6**

Which process parameters will be monitored, and at which points?

There are no direct discharges of wastewater to a water body.

As described in section B3.3 of the original IPPC application, there may be occasional discharge of non-hazardous condensate to the sewer; in this case monitoring will be in accordance with WSC and IPPC permit requirements. Such monitoring is tailored to the nature of the emissions. It is noted that effluent discharged to sewer is further treated in the WSC’s effluent treatment plant.

As described in section B3.5 of the original IPPC application, there may also be overflow of treated water from the underground reservoir. A monitoring programme will be in place for such emissions, and will be tailored to the nature of the potential emissions, as required by the IPPC permit.

Parameters	Yes/No (If yes, at which points?)
Waste water flow	
pH	
Temperature	
Conductivity	
BOD	

Monitoring proposal has been provided in comments to C3.10 in Volume 3: Response to Reviews and Regulatory Consultation



**BAT 7**

Kindly include the list of parameters together with the proposed monitoring standard as part of the monitoring proposal submitted in line with Section B3.10 of the application.

*Should the operator, request any deviations from the requirements listed in BAT 7, adequate justification with cross-reference to the applicable application document is to be provided for ERA’s consideration.*

There are no direct discharges of wastewater to a water body.

As described in section B3.3 of the original IPPC application, there may be occasional discharge of non-hazardous condensate to the sewer; in this case monitoring will be in accordance with WSC and IPPC permit requirements. Such monitoring is tailored to the nature of the emissions. The methodology to be used for such monitoring will be as agreed with the WSC. As this would be an occasional discharge, the monitoring frequency will be prior to every discharge.

As described in section B3.5 of the original IPPC application, there may also be overflow of treated water from the underground reservoir. A monitoring programme will be in place for such emissions, as required by the IPPC permit, and will be tailored to the nature of the potential emissions. The methodology to be used for such monitoring will be defined in the monitoring programme to be submitted to ERA. As required by the IPPC permit, monitoring will take place twice a year, once the reservoir is in place.

**BAT 8**

*Should the operator, request any deviations from the requirements listed in BAT 7, adequate justification with cross-reference to the applicable application document is to be provided for ERA’s consideration.*

Monitoring of emissions to air from the composter (should it start operating) will be in accordance with the requirements of the IPPC permit, which more than meet the requirements of BAT 8.

Currently there is no channeled emission point corresponding to the shredder (see also the response to BAT 25), however, should a channeled emission point be put in place then a monitoring proposal will also be put forward.

**BAT 9**

Which techniques will be applied to monitor diffuse emissions of organic compounds from solvent regeneration?

Kindly also specify how diffuse emissions shall be monitored using the chosen technique. Kindly include the proposed monitoring technique as part of the monitoring proposal submitted in line with Section B3.10 of the application.

Technique	Yes/No
Measurement	
Emissions factors	
Mass balance	

Not applicable. None of the activities that BAT 9 applies to are proposed at the Scheme

**BAT 10**

Which methods or features will be applied for frequent monitoring of odour emissions?

Kindly also specify how odour emissions shall be monitored using the chosen technique. Kindly include the proposed monitoring technque as part of the monitoring proposal submitted in line with Section B3.10 of the application.

Features/Methods	Yes/No
1) EN standards (e.g. dynamic olfactometry according to EN 13725 to determine the odour concentration or EN 16841-1 or -2 in order to determine odour exposure)	
2) Alternative methods for which no EN standards are available	
3) ISO, national or other international standards thatensure the provision of data of an equivalent scientific quality	

Not applicable. As described in the original IPPC application, due to the nature and scale of the potentially odour- generating activities, the mitigation measures in place, and the distance from odour sensitive receptors (as described insection B3.7 of the original IPPC application), odour nuisance at sensitive receptors is not expected.

Nevertheless, as stated in the IPPC application, if ERA receives complaints regarding odours from the Scheme, an odour monitoring programme based on sniff testing can be prepared and implemented

**BAT 11**

How will the monitoring of the annual consumption of water, energy and raw materials, as well as the annual generationof residues and wastewater, be carried out?

Water and electricity consumption will be metered. There will be minimal consumption of raw materials, as described in section B2.3 of the original IPPC application; nevertheless consumption will be monitored through purchase records.The quantity of each type of waste removed from site (including waste water, if applicable) will be measured using the site’s weighbridge and recorded.

DDE Attard Ltd has identified that overflow to land will be considered to be discharge to land, and if such occurs this will be measured using method indicated in Appendix C2 of Volume 3: Response to Reviews and Regulatory Consultation.

**1.3 Emissions to air**

**BAT 12**

Kindly specify which of the following elements are included or proposed to be included as part of the odour management plan. Should any of these elements not be currently included in such plan, kindly provide a timeframe by when these elements will be included.

Elements	Yes/No
1) A protocol containing actions and timelines	
2) A protocol conducting odour monitoring as set out in BAT 10	
3) A protocol for response to identified odour incidents, e.g. complaints	
4) An odour prevention and reduction programme designed to identify thesource(s); to characterize the contributions of the sources; and to implement prevention and/or eduction measures	

Not applicable. Due to the nature and scale of the potentially odour-generating activities, the mitigation measures in place, and the distance from odour sensitive receptors (as described in section B3.7 of the original IPPC application), odour nuisance at sensitive receptors is not expected.

**BAT 13**

Kindly specify which odour minimisation technique shall be implemented on site and provide details of the chosen technique:

Technique	Yes/No
1) Minimizing residence times	Yes: <ul style="list-style-type: none"><li>Sealed containerised waste will typically be stored for not more than a few days / weeks to minimise risks of odours; it is noted that certain odorous wastes (animal tissue waste, body parts and organs, and mixed municipal waste) will not be accepted at the Scheme; and</li><li>Food waste will only be accepted on site if composting can commence within 48 hours; it is noted that the composting plant is a small-scale pilot plant.</li></ul>
2) Using chemical treatment	No; however, the composter will be fitted with a biofilter.
3) Optimizing aerobic treatment	No

Further measures to reduce odour emissions are described in section B3.7 of the original IPPC application

**BAT 14**

Which techniques will be used in order to reduce diffuse emissions to air, in particular dust, organic compounds and odour?

Technique	Yes/No
a) Minimizing the number of potential diffuse emission sources	Yes. Shredding and composting will be carried out under cover in a shed. Loading into the shredder will be carried out using a grab excavator, instead of dropped from a height.  The only process wastewater that may be generated is non-hazardous effluent from the composter; therefore diffuse emissions from pipework are not relevant to the Scheme.  Additionally hardstanding will be installed over the entire site, which will reduce dust entrainment from vehicle movements.
b) Selection and use of high-integrity equipment	Not applicable. The only process wastewater that may be generated is non-hazardous effluent from the composter.

	c) Corrosion prevention	Yes. Construction materials are appropriate to the type of activities carried out. It is noted that the only process wastewater that may be generated is non-hazardous effluent from the composter; pipework will also be in place to handle sanitary waste and rainwater (as described in section B3.3 and B3.5 of the original IPPC application). Pipework will be of appropriate material to prevent corrosion.
	d) Containment, collection and treatment of diffuse emissions	Yes. Metal wetting is carried out during shredding; see also the response to BAT 25. A biofilter is already in place for the composter.
	e) Dampening	Yes. Metals are wetted during shredding.
	f) Maintenance	Yes. Please refer to section B2.5 of the original IPPC application and section C2.5 of the variation application.
	g) Cleaning of waste treatment and storage areas	Yes. Regular cleaning of the site is already implemented, and housekeeping will improve once the site is fully surfaced. Equipment is cleaned as needed.
	h) Leak detection and repair programmes(LDAR)	Not applicable. The Scheme will not generate significant emissions of volatile organic compounds.

#### BAT 15

Kindly specify which of the following techniques shall be utilised to ensure safe use of flares, and details of how this will be monitored? Kindly provide details of the monitoring, which will be carried out during such flaring.

Technique	Yes/No
a) Correct plant design	
b) Plant management	

Not applicable. The Scheme does not include any plant requiring flaring.

#### BAT 16

How will flaring emissions be reduced? Which techniques will be applied in order to do so?

Techniques	Yes/No
a) Correct design of flaring devices	
b) Monitoring and recording as part of flare management	

Not applicable. The Scheme does not include any plant requiring flaring.



1.4 Noise and vibrations

BAT 17

How will noise and vibration emissions be mitigated? Will a noise and vibration management plan be implemented? If yes, which features will be included?

Feature	Yes/No
a) A protocol containing appropriate actions and timelines	A noise study was undertaken as part of the original IPPC application (section B3.9), and no discernible impact on the nearest receptor was identified. The study also concluded that new equipment was unlikely to have a significant impact due to its location, existing noise levels, the distance to receptors, and the noise output of other activities in the area. However, as required by the IPPC permit, another noise monitoring study will be carried out once the new equipment is operational. Should a significant impact be identified, a protocol for reducing impacts will be drawn up.
b) A protocol for conducting noise and vibration monitoring	A method statement for carrying out noise monitoring has been submitted to ERA, as required by the IPPC permit.
c) A protocol for response to identified noise and vibration events, e.g. complaints	As required by the IPPC permit, the Scheme will investigate complaints regarding emissions, and take the required actions.
d) A noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterize the contributions of the sources and to implement prevention and/or reduction measures.	As mentioned, another noise monitoring study is planned. Should a significant noise impact be identified, a noise mitigation programme will be drawn up and implemented.

The Scheme is not expected to cause vibration nuisance at sensitive receptors.

**BAT 18**

Kindly specify which of the following techniques shall be implemented to reduce emissions from noise and vibration. Details of the chosen technique are to be submitted.

Feature	Yes/No
a) Appropriate location of equipment and buildings	Yes – as described in the noise study (section B3.9 of the original IPPC application), the nearest residential area is located approximately 220 m south of the Scheme site. The area between the residential area and the Scheme site is occupied by industrial and storage uses, including buildings, which screen noise emissions from the Scheme.
b) Operational measures	Yes: (i) A maintenance plan is included in section B2.5 of the original IPPC application and section C2.5 of the variation application; (ii) Not applicable, as the only buildings on site will be for offices / staff facilities; (iii) Equipment will be operated by trained staff; (iv) The Scheme will not operate on Sundays and at night (excluding the composter, which needs to be in continuous operation; however, this is not a significant noise source); and (v) A noise study undertaken as part of the original IPPC application (section B3.9) identified no discernible impact on the nearest receptor. The study also concluded that new equipment was unlikely to have a significant impact due to its location, existing noise levels, the distance to receptors, and the noise output of other activities in the area. However, as required by the IPPC permit, another noise monitoring study will be carried out once the new equipment is operational. Should a significant impact be identified, further noise control measures will be identified.
c) Low-noise equipment	The noise study (submitted in section B3.9 of the original IPPC application) identified no discernible impact on the nearest receptor. The study also concluded that new equipment was unlikely to have a significant impact. However, another noise monitoring study will be carried out once the new equipment is operational. Should a significant impact be identified, further noise control measures will be identified.
d) Noise and vibration control equipment	The noise study (submitted in section B3.9 of the original IPPC application) identified no discernible impact on the nearest receptor. The study also concluded that new equipment was unlikely to have a significant impact. However, another noise monitoring study will be carried out once the new equipment is operational; should a significant impact be identified, further noise control measures will be identified.
e) Noise attenuation	The noise study (submitted in section B3.9 of the original IPPC application) identified no discernible impact on the nearest receptor. The study also concluded that new equipment was unlikely to have a significant impact. However, another noise monitoring study will be carried out once the new equipment is operational; should a significant impact be identified, further noise control measures will be identified. Additionally, the new shredders will be located inside a shed.

The Scheme is not expected to cause vibration nuisance at sensitive receptors.

## 1.5. Emissions to water

### BAT 19

How will wastewater volume be reduced? Moreover, which techniques will be applied to reduce emissions to soil and water? Kindly provide details of the relevant technique.

Technique	Yes/No
a) Water management	Yes – see sections B2.7 and B3.5 of the original IPPC application.
b) Water recirculation	Yes – see sections B2.7 and B3.5 of the original IPPC application.
c) Impermeable surface	Yes – see section B3.5 of the original IPPC application.
d) Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels	<p>The only overflow in place at the Scheme will be of the rainwater reservoir, whereas any potentially contaminated rainwater will have been treated before being received in the reservoir (see section B3.5 of the original IPPC application). Additionally, as required by the IPPC permit, the contents of the reservoir will be monitored.</p> <p>Bunding for fuel tanks will be in place, to which certification was provided for 1000L tank (refer to Appendix A16 in Volume 3: Response to Reviews and Regulatory Consultation.</p>
e) Roofing of waste storage and treatment areas	Yes – hazardous waste will be stored under cover. Treatment of ELVs, WEEE and composting will be carried out under cover.
f) Segregation of water streams	<p>Yes – sections B3.3 and B3.5 of the original IPPC application.</p> <p>Section B3.5 of the original IPPC application IP 001/13 stated “Clean rainwater from roofed areas will be received in the underground reservoir without pre-treatment”. This will not be the case. Rainwater from the roof surface will be diverted through downpipes to the surface gutters. In turn all water will be treated as per section 4.26 of Section B3.5. It is to be noted that roofed area represents only some 20% of the site area.</p> <p>A drainage plan showing how all effluent (both clean rainwater and contaminated effluent) will be handled can be found in Appendix B9.</p>
g) Adequate drainage infrastructure	Yes – sections B3.3 and B3.5 of the original IPPC application.
h) Design and maintenance provisionsto allow detection and repair of leaks	Yes. A maintenance programme is in place for the sitesurfacing and the surface water management system – see section B2.5 of the original IPPC application. The only underground pipes are for the surface water management system.
i) Appropriate bufferstorage capacity	The only process wastewater that may be generated is non-hazardous effluent from the composter (which may not be generated at all). This process is under operator control and so if the tank is almost full it can be easily emptied by the operator.

**BAT 20**

How will the treatment procedure for wastewater be undertaken? Which techniques will be applied?  
*Operator is to also provide justification as to the proposed abatement technique of choice. Moreover, the operator is to also indicate the expected emission limits depending on the proposed technique(s).*

The only process wastewater that may be generated is non-hazardous effluent from the composter, as described in section B3.3 of the original IPPC application. This effluent will be tested for discharge to sewer, and no treatment is envisaged as the applicable limit values are expected to be met.

Surface water will be managed as described in section B3.5 of the original IPPC application.

Technique	Yes/No
<b><i>Preliminary and primary treatment</i></b>	
a) Equalization	No
b) Neutralization	No
c) Physical separation, e.g. screens, sieves, grit separators, grease separators, oil-water separation or primary settlement tanks	Yes, as described in section B3.5 of the original IPPC application, rainwater reaching the internal roads and open storage areas will be treated in a silt- trap and oil-water interceptors before being received in a reservoir.
<b><i>Physico-chemical treatment, e.g.</i></b>	
d) Adsorption	No
e) Distillation/rectification	No
f) Precipitation	No
g) Chemical oxidation	No
h) Chemical reduction	No
i) Evaporation	No
j) Ion exchange	No
k) Stripping	No

Table 6.1 is not applicable as there are no direct discharges to a water body.

The only *indirect* discharges that might arise to a water body are of non-hazardous effluent from the composter, as described in section B3.3 of the original IPPC application; in this case the WSC limits set by the Sewer Discharge Control Regulations (S.L.545.08) or the Sewer Discharge Permit for the Scheme will apply, and if these are not met the effluent will be exported to an authorised facility. Discharges to sewer will then be abated by the Water Services Corporation's treatment plant.

<b>1.6 Emissions from accidents and incidents</b>	
<b>BAT 21</b>	
Kindly specify how each of the following techniques shall be implemented to prevent or limit the environmental consequences of accidents and incidents.	
<b>Technique</b>	
a) Protection measures	The site will be closed after hours, and a night security guard will be employed.
	As described in section B2.8 of the original IPPC application, a fire and explosion prevention plan will be in place, and a fire detection and firefighting system will be installed. An updated Fire Prevention and Response Plan was provided as part of the variation application (section C2.8). A fire safety report was also commissioned as part of the original IPPC application (Volume 3), which indicated that access for fire services is adequate.
b) Management of incidental/accidental emissions	A Spill Prevention and Response Plan has been provided (section B2.8 of the original IPPC application).
c) Incident/accident registration and assessment system	
	Incidents will be recorded in the site diary.
	Procedures for improvements after incidents / accidents / nonconformities will be included as part of the EMS.
A reply for this with regards to temporary storage of EWC 16 01 04* and for EWC 16 01 06, can be found in Appendix A17 in Volume 3: Response to Reviews and Regulatory Consultation	
<b>1.7 Emissions from accidents and incidents</b>	
<b>BAT 22</b>	
How will the substitution of materials with waste be carried out? Where will it apply?	
While none of the waste outputs are usable for the treatment of other wastes on site, pallets that arrive with incoming waste will be reused for transportation purposes (including export).	
Additionally, clean rainwater from the larger reservoir on site will be used for irrigation and washing within the site as far as practicable.	
<b>1.8 Energy efficiency</b>	
<b>BAT 23</b>	
<b>Technique</b>	
a) Energy efficiency plan	Energy consumption estimates and measures for energy efficiency are included in section B2.6 of the original IPPC application and section C3.6 of the variation application.
	DDE Attard will undertake an Energy Audit for current operations and future plans which will be studied and recommendations made. From this energy audit, discussions will be undertaken and recommendations suggested will be assessed for applicability and implementation. Once this exercise is completed this information will be provided to ERA.
b) Energy balance record	Energy consumption records will be kept by type. No export of energy from the Scheme is currently envisaged; however, should this be proposed in the future records would also be kept.
Kindly specify how each of the following techniques shall be implemented on site.	



**1.9 Reuse of packaging**

**BAT 24**

Kindly specify how will the re-use of waste packaging shall be maximised to reduce the amount of waste sent for disposal. Kindly provide a copy of the residues management plan.

Minimal packaging waste is foreseen, however, pallets that arrive with incoming waste will be reused for transportation purposes (including export). The residues management plan describing the fate of each waste type (including maximisation of recycling / recovery) is included as part of section B3.1 of the original IPPC application and section C3.1 of the variation application.

**2. BAT conclusions for the mechanical treatment of waste**

Unless otherwise stated, the BAT conclusions presented in Section 2 apply to the mechanical treatment of waste when it is not combined with biological treatment, and in addition to the general BAT conclusions in Section 1.

**2.1 General BAT conclusions for the mechanical treatment of waste**

**2.1.1 Emissions to air**

**BAT 25**

Kindly specify which of the following technique(s) shall be used in order to reduce emissions to air of the specified parameters. Further details of the relevant techniques are to be provided in the relevant section of the application.

Technique	Yes/No
a) Cyclone	*
b) Fabric filter	*
c) Wet scrubbing	*
d) Water injection into the shredder	Yes – as described in section B3.6 of the original IPPC application.

\* The shredder includes water injection during metal shredding, as described in the IPPC application. The technical and economical feasibility of options for additional abatement is currently being investigated; the outcome of this investigation will be communicated to ERA once finalised.

**2.2 BAT conclusions for the mechanical treatment in shredders of metal waste**

Unless otherwise stated, the BAT conclusions presented in this section apply to the mechanical treatment in shredders of metal waste, in addition to BAT 25.

**2.2.1 Overall environmental performance**

**BAT 26**

Kindly specify how each of the following techniques shall be implemented in order to improve the overall environmental performance?

Technique
a) Implementation of a detailed inspection procedure for baled waste before shredding Any waste received already baled will be unpacked and checked before shredding.
b) Removal of dangerous items from the waste input stream and their safe disposal (e.g. gas cylinders, non-depolluted EoLVs, non-depolluted WEEE, items contaminated with PCBs or mercury, radioactive items) This practice will be implemented, as described in section B3.1 (Volume 2) of the original IPPC application.
c) Treatment of containers only when accompanied by a declaration of cleanliness As described in Volume 3 of the original IPPC application, LPG tanks will only be accepted on site if emptied and pre-cleaned by an authorised facility or industrial operator, and certified as such. In the case of LPG tanks in end-of-life vehicles, these will be emptied on site by vehicle idling and sent for cleaning to Liquigas Malta Ltd before being returned for shredding.

**BAT 27**

Which techniques will be used to prevent deflagrations as well as to reduce emissions from deflagrations?

Technique	Yes/No
a) Deflagration management plan	<p>Yes.</p> <p>As described in Volume 2 of the original IPPC application, various activities will be undertaken to reduce the risk of deflagration, including:</p> <ul style="list-style-type: none"><li>• Depollution of end-of-life vehicles before shredding (including removal of batteries, airbags, and flammable substances such as fuels and oils);</li><li>• Certifying LPG tanks as empty before shredding;</li><li>• Unbaling of waste received already baled; and</li><li>• Wetting of metals during shredding.</li></ul> <p>A Fire Prevention and Response Plan is included in the IPPC variation application.</p> <p>The further abatement being considered for the shredder (as per BAT 25) will also take into account the need to prevent deflagration.</p> <p>In the case of depollution of EOLVs, deflagration incidents will be prevented by: Waste is being visually inspected upon entry and determined whether these are hazardous or not. If these are not within the acceptance waste criteria these are stopped from being deposited within the facility. Metal items that derive from hazardous storage, such as gas cylinders, fuel tanks etc, are depolluted prior to entering the facility and with all the valves removed. One must keep in mind that such precaution is observed to safeguard the shredder and sorting machinery and above all the operators' safety.</p>
b) Pressure relief dampers	No (point (c) is applied).
c) Pre-shredding	<p>Yes. Metals are already shredded twice; in effect the first shredding round is acting as a pre-shredding activity.</p> <p>Additionally, a second Eddy current shredder and sorter are already installed.</p>

2.2.3 Energy efficiency

BAT 28

Kindly specify how the shredder operations shall be stabilised to ensure efficient use of energy?

The shredder is loaded using a grab excavator, which is under the control of a trained operator. In this way the feed is equalised, avoiding disruptions.

2.3 BAT conclusions for the treatment of WEEE containing VFCs and/or VHCs

Unless otherwise stated, the BAT conclusions presented in this section apply to the treatment of WEEE containing VFCs and/or VHCs, in addition to BAT 25.

2.3.1 Emissions to air

BAT 29

Kindly specify how technique a. and one or both of techniques b. and c. shall be implemented to ensure that emissions of organic compounds to air shall be prevented and reduced?

Technique	Yes/No
a) Optimized removal and capture of refrigerants and oils	
b) Cryogenic condensation	
c) Adsorption	

Kindly specify the emissions level which the proposed techniques is expected to achieve and include monitoring details as part of the monitoring programme submitted in section B3.10 of the application.

Not applicable. The Scheme will not carry out treatment of WEEE containing VFCs (volatile (hydro)fluorocarbons) and/or VHCs (volatile hydrocarbons).

2.3.2 Explosions

BAT 30

How will emissions from explosions be prevented when treating WEEE containing VFCs and/or VHCs? Which techniques will be suitable for use and application?

Technique	Yes/No
a) Inert atmosphere	Not applicable
b) Forced ventilation	Not applicable

Not applicable. The Scheme will not carry out treatment of WEEE containing VFCs and/or VHCs.

**2.4 BAT conclusions for the mechanical treatment of waste with calorific value**

In addition to BAT 25, the BAT conclusions presented in this section apply to the mechanical treatment of waste with calorific value covered by points 5.3(a)(iii) and 5.3(b)(ii) of Annex I to Directive 2010/75/EU.

**2.4.1 Emissions to air**

**BAT 31**

Kindly specify which of the following techniques shall be implemented to reduce emissions to air of organic compounds.

Technique	Yes/No
a) Adsorption	
b) Biofilter	
c) Thermal oxidation	
d) Wet scrubbing	

Kindly specify the emissions levels which the proposed technique(s) is expected to achieve and include monitoring details as part of the monitoring programme submitted in section B3.10 of the application.

Not applicable. Section 2.4 of this document applies to the mechanical treatment of waste with calorific value covered by points 5.3(a)(iii) and 5.3(b)(ii) of Annex I to Directive 2010/75/EU, i.e. pre-treatment of waste for incineration or co-incineration. The only waste with calorific value that will be treated mechanically at the Scheme is wood, which however, will not be pre-treated for incineration or co-incineration.

Additionally, wood does not release VOC when shredded.

**2.5. BAT conclusions for the mechanical treatment of WEEE containing mercury**

Unless otherwise stated, the BAT conclusions presented in this section apply to the mechanical treatment of WEEE containing mercury, in addition to BAT 25.

**2.5.1. Emissions to air**

**BAT 32**

Which measures and schemes will be implemented to reduce mercury emissions to air?

Not applicable. Mechanical treatment of WEEE containing mercury is not envisaged at the Scheme.



3. BAT conclusions for the biological treatment of waste

Unless otherwise stated, the BAT conclusions presented in Section 3 apply to the biological treatment of waste, and in addition to the general BAT conclusions in Section 1. The BAT conclusions in Section 3 do not apply to the treatment of water-based liquid waste.

3.1. General BAT conclusions for the biological treatment of waste

3.1.1. Overall environmental performance

**BAT 33**  
Kindly describe the relevant technique which will be implemented in order to reduce odour emissions and improving the overall environmental performance in relation to waste input?

As described in section B2.2.1 of the original IPPC application, incoming waste for the composter will consist of source-separated food waste (primarily from schools) and tree prunings. An educational campaign will also be run at the waste generator sites to increase awareness regarding which wastes can be placed in the bin designated for composting, and wheelie bins designated for food waste will also be appropriately labelled.

The food waste received at the Scheme will consist of vegetable and fruit remains, bread / pastries, eggshells, teabags, paper napkins, etc. Meat and fish derivatives will be excluded from the accepted waste streams, to minimise the potential for odours and attraction of rodents. However, the inclusion of cooked animal by-products is typically important to ensure that the compost has a good nitrogen content, and this issue may need to be revisited and discussed with ERA once the results of the first analysis are available.

Waste loading into the composter will be carried out by trained Scheme operators. These operators will carry out visual inspections of the waste before it is tipped into the composter. Any waste identified as not suitable for composting will be removed manually prior to tipping.

Waste will be collected and transported to the Scheme in 120 L wheelie bins, and will not be compacted so as to minimise the generation of leachate. An agreement will be in place with the waste generators for delivery of the waste according to an established schedule. Waste will only be accepted if it can start to be processed within 48 hours.

3.1.2. Emissions to air

**BAT 34**  
Kindly specify which technique shall be implemented to reduce channelled emissions to air of dust, organic and odorous compounds be reduced?

Technique	Yes/No
a) Adsorption	No
b) Biofilter	Yes
c) Fabric filter	No
d) Thermal oxidation	No
e) Wet scrubbing	No

Kindly specify the emissions level which the proposed technique(s) is expected to achieve and include monitoring details as part of the monitoring programme submitted in section B3.10 of the application.

Considering that the technique used for reducing emissions to air is identified as BAT, it is envisaged that the following emission levels can be met:

- NH3: 20 mg/Nm<sup>3</sup>;
- Dust: 5 mg/Nm<sup>3</sup>; and
- TVOC: 40 mg/Nm<sup>3</sup>.

In accordance with the IPPC permit, emissions to air of the following parameters will be monitored every 6 months when the composter is in use:

- NH3;

- H<sub>2</sub>S;
- Dust; and
- TVOC.

3.1.3. Emissions to water and water usage

**BAT 35**  
Kindly provide a description of how each of the following techniques shall be implemented to reduce the generation of waste water, as well as water usage?

Technique
a) Segregation of water streams
The compost is dry and will be in a covered shed; it is not expected that leachate will be generated from the compost, as the water content in the composter is regulated and any excess water will be collected.
b) Water recirculation
Not applicable. The composter does not require addition of water, and there will be minimal (if any) wastewater generated by the composter.
c) Minimization of the generation of leachate
Water content inside the composter will be monitored and regulated. If the water content is high, shredded tree prunings / paper / cardboard are introduced into the vessel to reduce the water content.

**BAT 36**  
How will emissions to air be reduced? Which strategy will be utilized to improve the overall environmental performance? Which of the following waste and process parameters will be monitored?

The following responses apply to the composter:

Parameters	Yes/No
a) Waste input characteristics (e.g. C to N ratio, particle size)	Yes – the measures taken to control the waste input characteristics are described in section B2.2.1 of the original IPPC application, and include an educational campaign at the waste generator sites, and visual inspection of the waste before tipping. The composter also contains a waste shredder at the input stage, to ensure that the food components inputted have efficient surface area for bacterial action.
b) Temperature and moisture content at different points in the windrow	The composter maintains a constant temperature of around 65 °C as the composting process generates heat. Moisture content is controlled automatically; however, operators can also carry out manual intervention if necessary.  It is noted that composting is carried out inside a closed composter, and not using an open windrow system.
c) Aeration of the windrow (e.g. via the windrow turning frequency, O <sub>2</sub> and/or CO <sub>2</sub> concentration in the windrow, temperature of air streams in the case of forced aeration)	Each chamber is fitted with paddles fixed to a horizontal axle that rotate every 3-8 minutes to oxygenate the microbes, whilst ensuring even heat distribution. Oxygen content is controlled automatically. The composter maintains a constant temperature of around 65 °C as the composting process generates heat.  It is noted that composting is carried out inside a closed composter, and not using an open windrow system.
d) Windrow porosity, height and width	Not applicable – composting will be carried out inside a composter and not using an open windrow system.

**3.2.2. Odour and diffuse emissions to air**

**BAT 37**

How will diffuse emissions to air of dust, odour and bioaerosols be reduced from open-air treatment steps? Will the following techniques be used in order to do so?

Technique	Yes/No
a) Use of semipermeable membrane covers	
b) Adaptation of operations to the meteorological conditions	

If none of the above techniques is currently being implemented, kindly provide aproposal including timeframs of the technique which shall be implemented.

Not applicable. Composting will not be taking place.

**3.3 BAT conclusions for the anaerobic treatment of waste**

Unless otherwise stated, the BAT conclusions presented in this section apply to the anaerobic treatment of waste, and in addition to the general BAT conclusions for the biological treatment of waste in Section 3.1.

**3.3.1. Emissions to air**

**BAT 38**

How can a reduction in emissions to air be achieved along with improvements in theoverall environmental performance? Which of the following key waste and process parameters will be monitored?

Parameters	Yes/No
a) pH and alkalinity of the digester feed	
b) digester operating temperature	
c) hydraulic and organic loading rates of the digester feed	
d) concentration of volatile fatty acids (VFA) and ammonia within the digester and digestate	
e) biogas quantity, composition (e.g. H2S) and pressure	
f) liquid and foam levels in the digester	

Not applicable. Anaerobic treatment of waste is not envisaged at the Scheme.

3.4 BAT conclusions for the mechanical biological treatment (MBT) of waste

Unless otherwise stated, the BAT conclusions presented in this section apply to MBT, and in addition to the general BAT conclusions for the biological treatment of waste in Section 3.1. The BAT conclusions for the aerobic treatment (Section 3.2) and anaerobic treatment (Section 3.3) of waste apply, when relevant, to the mechanical biological treatment of waste.

3.4.1. Emissions to air

BAT 39

Kindly provide details of how each of the following techniques is or will be applied?

Not applicable. Mechanical biological treatment (MBT)<sup>45</sup> of waste is not proposed at the Scheme.

Technique
a) Segregation of the waste gas streams
b) Recirculation of waste gas

4. BAT conclusions for the physico-chemical treatment of waste

Unless otherwise stated, the BAT conclusions presented in Section 4 apply to the physico-chemical treatment of waste, and in addition to the general BAT conclusions in Section 1.

4.1 BAT conclusions for the physico-chemical treatment of solid and/or pasty waste

4.1.1 Overall environmental performance

BAT 40

Kindly describe how waste input will be monitored and for which parameters?

Not applicable. Physico-chemical treatment of solid or pasty waste is not envisaged at the Scheme.

4.1.1 Overall environmental performance

BAT 41

How will emissions of dust, organic compounds and NH<sub>3</sub> be reduced? Which technique(s) shall be implemented to mitigate such emissions?

Technique	Yes/No
a) Adsorption	
b) Biofilter	
c) Fabric filter	
d) Wet scrubbing	

Kindly specify the emission limit which shall be achieved by the selected technology.

Not applicable. Physico-chemical treatment of solid or pasty waste is not envisaged at the Scheme.

<b>4.2 BAT conclusions for the re-refining of waste oil</b>										
<b>4.2.1 Overall environmental performance</b>										
<b>BAT 42</b> Kindly specify how monitoring of the waste input in terms of chlorinated compounds will be carried out.  Not applicable. Physico-chemical treatment of waste is not envisaged at the Scheme										
<b>BAT 43</b> How can the quantity of waste be reduced to minimize amounts sent for disposal? Will the following techniques apply? <table><tr><th>Technique</th><th>Yes/No</th></tr><tr><td>a) Material recovery</td><td></td></tr><tr><td>b) Energy recovery</td><td></td></tr></table> Not applicable. Physico-chemical treatment of waste is not envisaged at the Scheme	Technique	Yes/No	a) Material recovery		b) Energy recovery					
Technique	Yes/No									
a) Material recovery										
b) Energy recovery										
<b>BAT 44</b> Kindly specify which of the following techniques shall be applied in order to reduce emissions of organic compounds to air. <table><tr><th>Technique</th><th>Yes/No</th></tr><tr><td>a) Adsorption</td><td></td></tr><tr><td>b) Thermal oxidation</td><td></td></tr><tr><td>c) Wet scrubbing</td><td></td></tr></table> Kindly specify the emission limits (in relation to the BAT AELs set in section 4.5) which can be achieved through the implementation of the proposed technique(s).  Not applicable. Re-refining of waste oil is not envisaged at the Scheme.	Technique	Yes/No	a) Adsorption		b) Thermal oxidation		c) Wet scrubbing			
Technique	Yes/No									
a) Adsorption										
b) Thermal oxidation										
c) Wet scrubbing										
<b>4.3 BAT conclusions for the physico-chemical treatment of waste with calorific value</b>										
<b>4.3.1 Emissions to air</b>										
<b>BAT 45</b> Kindly specify which of the following techniques shall be applied in order to reduce emissions of organic compounds to air. <table><tr><th>Technique</th><th>Yes/No</th></tr><tr><td>a) Adsorption</td><td></td></tr><tr><td>b) Cryogenic condensation</td><td></td></tr><tr><td>c) Thermal oxidation</td><td></td></tr><tr><td>d) Wet scrubbing</td><td></td></tr></table> Kindly specify the emission limits (in relation to the BAT AELs set in section 4.5) which can be achieved through the implementation of the proposed technique(s).  Not applicable. Physico-chemical treatment of waste with calorific value is not envisaged at the Scheme.	Technique	Yes/No	a) Adsorption		b) Cryogenic condensation		c) Thermal oxidation		d) Wet scrubbing	
Technique	Yes/No									
a) Adsorption										
b) Cryogenic condensation										
c) Thermal oxidation										
d) Wet scrubbing										



4.4 BAT conclusions for the regeneration of spent solvents

4.4.1 Overall environmental performance

BAT 46

Kindly specify which of the following techniques shall be applied in order to improve the environmental performance of the regeneration of spent solvent.

Technique	Yes/No
a) Material recovery	
b) Energy recovery	

Not applicable. Regeneration of spent solvents is not envisaged at the Scheme.

4.4.2 Emissions to air

BAT 47

Kindly specify which of the following techniques shall be implemented in order to reduce emission of organic compounds to air.

Technique	Yes/No
a) Recirculation of process off-gases in a steam boiler	
b) Adsorption	
c) Thermal oxidation	
d) Condensation or cryogenic condensation	
e) Wet scrubbing	

Kindly specify the emission limits (in relation to the BAT AELs set in section 4.5) which can be achieved through the implementation of the proposed technique(s).

Not applicable. Regeneration of spent solvents is not envisaged at the Scheme.

4.5 BAT-AEL for emissions of organic compounds to air from the re-refining of waste oil, the physico-chemical treatment of waste with calorific value and the regeneration of spent solvents

Table 6.9 BAT-associated emission level (BAT-AEL) for channelled emissions of TVOC to air from the re-refining of waste oil, the physico-chemical treatment of waste with calorific value and the regeneration of spent solvents

Parameter	Unit	BAT-AEL <sup>(46)</sup> (Average over the sampling period)
TVOC	Mg/Nm <sup>3</sup>	5-30
Kindly specify the emission limit for TVOC which can be achieved using theproposed technology. Not applicable. Re-refining of waste oil, the physico-chemical treatment of waste with calorific value and the regeneration of spent solvents are not envisaged at theScheme.		

4.6 BAT conclusions for the thermal treatment of spent activated carbon, waste catalysts and excavated contaminated soil

**BAT 48**  
Kindly specify how each of the following techniques is or shall be implemented in order to improve overall environmental performance.

Not applicable. Thermal treatment of spent activated carbon, waste catalysts or excavated contaminated soil is not envisaged at the Scheme.

Technique
a) Heat recovery from the furnace off-gas
b) Indirectly fired furnace
c) Process-integrated techniques to reduce emissions to air

4.6.2. Emissions to air

**BAT 49**  
Kindly specify which technique(s) shall be implemented to reduce emissions of HCl, HF, dust and organic compounds to air.

Technique	Yes/No
a) Cyclone	
b) Electrostatic precipitator (ESP)	
c) Fabric filter	
d) Wet scrubbing	
e) Adsorption	
f) Condensation	
g) Thermal oxidation	

Not applicable. Thermal treatment of spent activated carbon, waste catalysts or excavated contaminated soil is not envisaged at the Scheme.

4.7 BAT conclusions for the water washing of excavated contaminated soil

4.7.1. Emissions to air

BAT 50

Kindly specify which of the following techniques shall be implemented in order to reduce emissions of fust and organic compounds to air together with details of the associated monitoring in line with BAT 8.

Technique	Yes/No
a) Adsorption	
b) Fabric filter	
c) Wet scrubbing	

Not applicable. Water washing of excavated contaminated soil is not envisaged at the Scheme.

4.8 BAT conclusions for the decontamination of equipment containing PCBs

4.8.1. Overall environmental performance

BAT 51

Kindly specify how the following techniques shall be implemented in order to improve the overall environmental performance and reduce channelled emissions of PCBs and organic compounds to air? Kindly specify associated monitoring details in line with BAT 8.

Not applicable. Decontamination of equipment containing PCBs is not envisaged at the Scheme.

Technique
a) Coating of the storage and treatment areas
b) Implementation of staff access rules to prevent dispersion of contamination
c) Optimized equipment cleaning and drainage
d) Control and monitoring of emissions to air
e) Disposal of waste treatment residues
f) Recovery of solvent when solvent washing is used

5. BAT conclusions for the treatment of water-based liquid waste

Unless otherwise stated, the BAT conclusions presented in Section 5 apply to the treatment of water-based liquid waste, and in addition to the general BAT conclusions in Section 1.

5.1 Overall environmental performance

**BAT 53**  
Kindly specify what type of monitoring will be carried out for the waste input.

Technique	Yes/No
a) Adsorption	
b) Biofilter	
c) Thermal oxidation	
d) Wet scrubbing	

Not applicable. Water-based liquid waste will not be accepted for treatment at the Scheme.



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## **Annex 3: Risk Assessment Methodology**



## Risk Assessment Methodology

### Source-Pathway-Receptor Linkage

1. An environmental risk occurs when there is a means by which a hazard can result in a deleterious impact on the surrounding environment, i.e. receptors. The presence of a hazard alone does not constitute a risk. A risk is only present if there is a pathway which links the source (hazard) to the receptor. This is known as the source-pathway-receptor linkage.
2. Environmental risk assessment is the process by which source-pathway-receptor linkages are identified and evaluated. If any of the three elements are absent then there is no complete linkage and thus no unacceptable risk.

### Risk Assessment Criteria

3. If a source-pathway-receptor linkage is found, the magnitude of a risk is a function of the consequences of pollution and the likelihood that such pollution will occur.
4. The risk criteria being applied to this assessment are based on a matrix consistent with ISO 31010: Risk management: Risk assessment techniques.
5. Table 7 presents criteria for assessing environmental consequences, whereas Table 8 presents criteria for assessing the likelihood of the event occurring.

**Table 7: Criteria for assessing environmental consequences**

Severity level	Effects on natural environment
1: Insignificant	Limited damage to minimal area of low significance.
2: Minor	Minor effects on biological or physical environment. Minor short/medium-term damage to small area of limited significance.
3: Moderate	Moderate effects on biological or physical environment (e.g. air, water) but not affecting ecosystem function. Moderate short/medium-term widespread impacts (e.g. significant spills).
4: Major	Serious environmental effects with some impairment of ecosystem function. Relatively widespread medium-long term impacts.
5: Catastrophic	Very serious environmental effects with impairment of ecosystem function. Long term, widespread effects on significant environment (e.g. national park).



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**Table 8: Measure of Likelihood**

Level	Descriptor	Description	Guideline Frequency
A	Almost certain	Consequence is expected to occur in most circumstances	Occurs more than once per month
B	Likely	Consequence will probably occur in most circumstances	Occurs once every 1 month – 1 year
C	Occasional	Consequence should occur at some time.	Occurs once every 1 month – 10 years
D	Unlikely	Consequence could occur at some time.	Occurs once every 10 year – 100 years
E	Rear	Consequence may only occur in exceptional circumstances.	Occurs less than once every 100years

6. The overall risk level is then determined by combining the two factors, using the matrix in Table 9.

**Table 9: Risk Matrix**

Likelihood	Environmental Consequence					No pollutant linkage
	1: Insignificant	2: Minor	3: Moderate	4: Major	5: Catastrophic	
<b>A: Almost Certain</b>	Low	Moderate	Extreme	Extreme	Extreme	None
<b>B: Likely</b>	Low	Moderate	High	Extreme	Extreme	
<b>C: Occasional</b>	Very Low	Moderate	High	High	Extreme	
<b>D: Unlikely</b>	Very Low	Low	Moderate	High	High	
<b>E: Rare</b>	Very Low	Low	Moderate	Moderate	High	



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## **Annex 4: Fire Prevention and Response Plan**

# Fire Prevention and Response Plan



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## Fire Risks

1. The Scheme includes storage of various flammable materials, such as fuel, tyres and wood, and sources of sparks (such as during hot working of metal) that could start a fire or cause an explosion.
2. In this situation, the presence of a large quantity of flammable material would also facilitate the spread of a fire.
3. It is noted that tyres do not ignite easily, however, once they catch fire the development of the fire is rapid, reaches high temperatures, and is difficult to control. Therefore the best means of reducing the risks of tyre fires is to reduce the possibility of a fire starting, and to limit the spread of a fire if it occurs.

## Fire Precautions

### Maintenance

4. Regular checks will be carried out on the following, in accordance with the maintenance programme of the facility; repairs will be carried out when necessary:
  - Equipment (whether electric or running on fuel), including shredders;
  - Vehicles;
  - Surface water / wastewater management system;
  - Storage containers;
  - Smoke / fire detection units and firefighting equipment; and
  - Security fences.

### ELV Processing

5. Several precautions will be followed during ELV depollution and dismantling (both in temporary and permanent area), to reduce the risk of fire / explosion. These are described below.
6. The following general precautions are applicable, in accordance with the ELV Depollution and Dismantling procedure (section B2.2.1 of the original IPPC application):
  - Training will be given to the employees working on vehicle depollution and dismantling;

- Vehicles arriving at the site will be checked for any fluid leaks, including fuel;
- The battery will be removed first; batteries will be removed as soon as practical after vehicles arrive on site, to reduce the risk of electrical short-circuits. When handling batteries, the terminals are not to be touched with metal objects (such as jewellery), which can cause short-circuits;
- Depollution will be carried out using a dedicated vehicle depollution system. Firesafety signage such as “No Smoking or Naked Lights” will be put up at this work station, and the correct fire extinguishing medium will be stored in the vicinity;
- The vehicle will be earthed during depollution reduce further the risk of sparks or explosion;
- Fuel will be removed by suction (except when the tank is damaged), to reduce the release of vapour;
- Fuels and hazardous oils collected during depollution will be stored separately in labelled containers integrated within the depollution equipment;
- Airbags will only be removed after 30 minutes have passed from battery removal;
- No vehicles will be shredded unless they have been properly depolluted.

7. The depollution of LPG vehicles is subject to the following additional precautions:

- Only employees certified as competent in such operations will be allowed to work on LPG vehicles;
- LPG tanks will be emptied by running the vehicle. LPG will not be vented directly to the atmosphere;
- The vehicle will be checked for any gas leaks with proper detection equipment prior to removing the battery; the battery not disconnected without this process, especially if the battery is located close to the LPG tank;
- The vehicle will stored in a separate area in the open, away from other vehicles until the LPG tank is removed. This avoids the accumulation of vapours that might occur if the LPG tank is



removed in an enclosed area; and

- The empty LPG tank must be sent for cleaning (and certified as such) before being shredded.

8. The following precautions are applicable to the processing of end-of-life hybrid vehicles:

- The high-voltage system must be isolated and the high-voltage battery removed before depollution commences; and
- High-voltage batteries should be stored separately and under cover, and should not be exposed to high temperatures, thus reducing the risk of fire / explosion.

9. It is important for core storage areas to be checked regularly to ensure that fluids are not leaking, which may cause a fire hazard. A weekly inspection will be carried out of core storage areas and containers.

10. The area where the containers will be held will be appropriately labelled and the appropriate fire signage such as “No smoking or naked lights” will be put up.



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## Storage and Handling



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11. Tyres will be stored in designated areas (as shown in Figure 2); the storage quantity will be kept to the minimum practicable, and tyres will be shipped as soon as practicable after receipt.
12. Where possible a separation distance of 6 m between the stockpile of tyres and other waste streams, machinery and vehicles will be maintained. When this separation distance cannot be achieved, such as due to a delay in locating a receiving facility abroad, the Operator will create a fire wall with the use of temporary concrete blocks.
13. Diesel will be stored inside a dedicated and bunded 8,000 L tank. Firefighting equipment will be stationed near this container and appropriate safety and firepreventive signage will be put up.
14. Any spills on site, for instance of fuels and hazardous oils, will be immediately collected in accordance with the Spill Prevention and Response Plan.
15. Batteries will be stored in closed metal or plastic leak-proof containers in the covered shed, away from flammable liquids or gases.
16. Cylinders containing acetylene or LPG used for hot cutting will be stored vertically, using cylinder stands or other methods to secure them. Cylinder carriages / trolleys will be used to transport gas cylinders around the site. Cylinders will not be lifted by their valve or valve guard.
17. These cylinders will be stored upright in a lockable cage / cabinet inside the well-ventilated shed, in order to ensure safety and reduce abuse. This storage facility will be constructed in a way that ensures that no water can accumulate at the bottom and possibly cause corrosion.
18. Acetylene and LPG cylinders will:
  - Be kept away from direct sunlight and from other objects that could fall on them;
  - Have the appropriate gas pressure regulators that have passed inspection;
  - Be segregated according to their contents, and according to whether they are full or empty;

- Be stored with their valve cover, if so equipped;
- Any damaged cylinders will be isolated and removed from site as soon as possible;
- Be properly marked and labelled. A Safety Data Sheet will be available for every gas and gas mixture, and the caged area will be labelled with the hazard symbol to reflect gas under pressure and any other relevant hazard;
- Moved in a controlled manner, secured to avoid accidents or damage;
- Stored upright in lockable cages in well ventilated areas; water will not be allowed to collect in the cage; and
- Stored least 6 metres away from any potential sources of ignition, such as batteries and electrical equipment

19. Cylinders should not be stored:

- Inside buildings;
- Near easily ignited materials such as wood, paper, oil and grease;
- Near ignition sources; or
- Near an emergency exit area.

## Hot Work

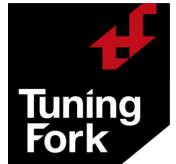
20. A Standard Operating Procedure (SOP) will be established for hot working. Employees doing hot works will be required to follow this SOP, and to have a firewatch equipped with the correct fire extinguishing medium to assist them whilst carrying out such work.
21. No hot works will be permitted to take place within 6 metres of flammable materials such as tyres. Severe Weather
22. Electrical (lightning) storms can cause a fire hazard at the Scheme site due to the presence of flammable materials on site. Severe wind storms can also damage electrical structures, in addition to being a safety hazard.
23. The Technically Competent Person (TCP) will monitor weather information (including warnings issued by the Meteorological Office), especially during wet periods, where thunderstorms or severe winds might hit the island. The Meteorological Office (tel: 5230 2021) will be contacted to check for predicted severe

weather.

24. In such severe cases, the management will inform those on site through the alarm / notification system and will also prohibit any operation in the yard until the weather conditions improve or are declared safe to work in. Employees will be directed to a safe area away from metal heaps and flammable equipment until the TCP gives the all clear. The TCP will also assess whether any structure has been damaged by the storm, and ensure that appropriate actions are taken.

### **Signage**

25. Due to the fire load that will exist within the Scheme site, the entire site will be designated as a non-smoking zone. The company will designate and label smoking zones outside the premises and inform all staff of such locations.
26. Safety signs will be located around the site, including no smoking / naked flames notices, and signs marking the location of fire hydrants and the fire extinguisher stations. Signs will also identify the type of fire that each fire extinguisher can be used for.
27. The telephone numbers of key site personnel and emergency services will be also placed at easily accessible locations on site to ensure a speedy response in case of an emergency.



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## Protection against Arson

28. The site will be surrounded by a steel fence, and access to the site will be through gates, which will be closed outside operating hours.
29. A security guard is employed to guard the site during non-operational hours; this facilitates a quicker response in case of a fire incident outside operating hours.

## Training

30. Emergency response training will be part of the Scheme's ongoing training programme and will include:
  - The location of the fire fighting equipment;
  - Employee roles and responsibilities;
  - Known threats and hazards;
  - Raising the alarm, notification and communications procedures;
  - Emergency response procedure;
  - Location of assembly point;
  - Location of emergency exits or shelters; and
  - Emergency shutdown procedure.
31. Specialised training will also be given to employees assigned specialised duties under this Plan, such as on coordinating the evacuation procedure, fire fighting and first aid.
32. Training will be given when:
  - This Plan is initially developed;
  - When a new employee is recruited;
  - Whenever an employee is assigned a new task;
  - Whenever an employee's responsibilities or designated actions under the Plan change;
  - Whenever new equipment, material, or processes are introduced into the workplace;
  - Whenever the layout of the site is changed; and
  - Whenever this Plan is updated.



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33. The TCP will also organise regular safety meetings with employees and carry out regular demonstration of general safety with employees, to ensure that employees are aware of what actions to take during emergencies.
34. Fire drills will be held at least once every six months as per the Work Place (Minimum Health and Safety Requirements) Regulations, S.L.424.15. Drills will provide essential feedback on the effectiveness of the Emergency Response Plan training and highlight areas where further training is required.
35. Records of fire drills will be maintained as part of the Health and Safety documentation, and will include the following information:
  - Identity of the person conducting the drill;
  - Date and time of the drill;
  - Notification method used;
  - Number of staff members participating;
  - Number of occupants evacuated;
  - Any special conditions simulated;
  - Any problems encountered;
  - Weather conditions when occupants were evacuated; and
  - Time required to accomplish the complete evacuation.
36. Once the Scheme is fully operational as proposed, the Civil Protection Department will be invited to carry out familiarisation visits and carry out fire drills with employees (including those having special duties under this Plan).

### **Responsibilities**

37. The TCP or his representative will have overall responsibility for this Plan. His role is to:
  - Develop and maintain written standard operating procedures for regular and silent hours;
  - Review and update this Plan as necessary;
  - Take security measures to protect the employees and the site;

- Integrate this Plan with any existing emergency plan covering the site or workarea;
  - Inform employees of the location of the emergency exits and evacuation routes;
  - Conduct fire drills and judge the effectiveness of the Plan;
  - Organise training for employees in emergency response;
  - Ensure that the fire fighting equipment or any other safety equipment is maintained, that records are kept, that fire extinguishers are stored appropriately, and that water levels in the reservoir are checked weekly; and
  - Ensure that the Scheme site meets Health and Safety Regulations.
38. During an emergency situation, the TCP (or another manager if the TCP is unavailable) is responsible to:
- Notify emergency service providers in the event of an emergency affecting the facility;
  - Decide whether the emergency requires evacuation of the site, whether full or partial;
  - Ensure that evacuation has commenced when initiated;
  - Direct the shutdown of any machines;
  - Supervise all efforts to control the fire and prevent its spread to other nearby areas, with the assistance of the emergency personnel; and
  - If the emergency involves the release of a toxic agent, take the necessary safety precautions.
39. One employee will be designated and trained as the evacuation coordinator, with another employee having the role of substitute coordinator. They will be responsible for:
- Providing guidance and instructions during an emergency on site;
  - Directing and assisting all employees and visitors during an evacuation, to ensure evacuation is carried out in a safe and orderly manner;
  - Knowing the area well in order to avoid potential hazards during evacuation;

- Being aware of any employees who need extra assistance;
  - Teaching and implementing the buddy system, to facilitate the identification of any employees who have not evacuated the site;
  - Picking up the Log Book on the way out during evacuation;
  - Carrying out a roll call at the assembly point and ensuring that all employees and visitors are accounted for;
  - Issuing instructions to those at the assembly point;
  - Informing first responders / emergency services whether all employees and visitors are accounted for, and of any known hazards at the site; and
  - Assisting the emergency responders if asked to.
40. One or more employees will be trained as fire marshals. Their role is to extinguish small and controllable fires, if safe to do so, while waiting for the emergency services to arrive.
41. One or more employees will be trained as a first aider.

### **Fire Response Procedure**

42. In the event of a fire, the following procedure must be followed, as appropriate depending on the nature and extent of the fire:
- Raise the alarm;
  - Evacuate and limit the spread of the fire (where possible);
  - Notify the emergency services; and
  - Extinguish the fire.

### **Raising the Alarm**

43. The person discovering the fire must immediately:
- Alert nearby workers / visitors; and
  - Notify their supervisor and management, via radios or verbally.
44. Management will decide whether to evacuate the site, activate the fire alarm, and call the emergency services, depending on the location and size of the fire.
45. Management will also determine whether the entire site or part of it should be evacuated, or whether it will be safer for the employees to

remain indoors or in a safe pre-defined location.

46. The buildings and shed on site also will be equipped with smoke / fire detection units, which will be connected to an alarm system. Activation of the alarm will initiate the evacuation procedure.
47. The alarm can also be activated manually through one of a number of manual callpoints to be located around the site.
48. If an evacuation is initiated, management will also inform neighbouring companies of the emergency, so that they will also activate their internal emergency response plan if need be.
49. Key management personnel and important telephone numbers will be kept at the main office in order to facilitate and speed up the response. These include the site telephone number, and contact numbers for the following staff members:
  - Yard supervisor;
  - Fire marshal;
  - First aider/s;
  - Evacuation coordinator;
  - Health and Safety officer; and
  - TCP contact number after office hours.
50. The site telephone number as well as the after-hours TCP contact number will also be fixed to a notice at the main gate.

### **Evacuation and Limiting the Spread of the Fire**

51. The Scheme site will have two entry / exit gates, either of which can be used during an emergency evacuation. The site will also be equipped with a wind direction indicator such as a wind sock, to help the evacuation coordinator identify which emergency exit should be used.
52. The following signage will be installed to facilitate the safe evacuation of employees and visitors:
  - Signs marking the evacuation route; and
  - A sign marking the assembly point (shown in Figure 12) outside the premises.
53. When the alarm is sounded, all employees should follow these steps:



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- Stop working and make all equipment or machinery they are working with safe, if possible. Critical equipment is to be shut down when possible;
  - Proceed, in an orderly manner, to the nearest or available fire exit leading to the assembly point;
  - Employees and site management should assist each other and ensure that all visitors or fellow workers follow them to the evacuation area;
  - Before leaving their work station, employees should ensure that other workers working near them are aware of the situation;
  - Before leaving their work station employees should also ensure that the area is checked and that no person is left in enclosed or confined spaces that could entrap them; and
  - Once at the assembly point, employees are to wait for a roll call and further instructions from the designated evacuation coordinator.
54. The evacuation coordinator will carry out a roll call immediately once evacuation is complete, so as not to delay the rescue of any missing persons who might be trapped in the premises.
55. If any person is injured or contaminated, the Scheme's internal rescue and first aid operating procedure will be followed.
56. Only trained and designated fire marshals are to remain on site to tackle the fire. This is only applicable if the fire is perceived as small and controllable, and the fire marshal is not putting his / her life at risk to extinguish it. The fire marshal will attempt to extinguish the fire only if:
- The fire is small and is not spreading to other areas;
  - Escaping the area is possible by backing up to the nearest exit; and
  - The firefighting system is in working condition.
57. If safe to do so, a designated person will move any flammable materials (e.g. bales of tyres) in the vicinity of the fire away from the fire by means of a grab excavator, to avoid them catching fire.
58. If the fire is too large, the fire marshal will not attempt to extinguish it, but will evacuate the site. This principle also applies to the movement of

flammable materials.

59. It is noted that the compartments of the sheds on site (excluding the composting shed) will have walls that are 60-minutes fire rated; this will help reduce the spread of a fire occurring in these areas.

### **Notifying Emergency Services**

60. Emergency services will be contacted by the TCP (or one of the other managers if the TCP is unavailable). The person making the call will:
- Give clear details about the situation, including the address, the nature and location of the fire;
  - Report on any casualties or persons that need to be rescued; and
  - Provide details on known hazards at the Scheme, such as flammable materials.
61. The relevant emergency telephone numbers for use in case of a fire are:
- Emergency services: 112
  - Civil Protection Department: 2393 0000
  - General hospital: 2545 0000 / 2545 4030 / 2545 4184
  - ERA: 2292 3500
  - Police headquarters: 2122 4001 / 9
62. For ease of reference, these emergency telephone numbers will be placed at callpoints, notice boards or in other locations where deemed necessary.
63. Emergency services will be notified even if the emergency can be contained by the Scheme's trained personnel.

### **Fire Fighting by Emergency Respondents**

64. When emergency respondents arrive at the site, the evacuation coordinator will inform them of any known hazards at the site, such as the location of tyres, flammable liquids, metals, fuel, oil and pressurised gas cylinders. The evacuation coordinator will also inform respondents of any missing or injured persons.
65. The Scheme site will be equipped with a number of portable fire extinguishers (water and foam) placed in stations at various locations around the site, depending on the type of fire load, and indicated by



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proper signage (Figure 13).

66. A dedicated firefighting reservoir with a capacity for 175 m<sup>3</sup> of water will be constructed. A fire pump will be connected to this reservoir, located away from any fire hazards and feeding into a ring main (Figure 14) that will be constructed around the site. The ring main will have strategically located double headed fire hydrant outlets conforming to CPD connections. The fire pump will be capable of delivering 3,000 L per minute at a pressure of 8 bar. As a temporary measure before the firefighting reservoir is constructed, a dedicated 5,000 L capacity water bowser, with pump and dispenser will be stored on site for use in the event of a fire.
67. The reservoir will hold not less than 175,000 L of water for use by the CPD. It will be filled by bowser and kept full for emergency purposes.
68. There will be two access gates for CPD vehicles. All roads inside the DDE Attard premises will be wide enough for CPD vehicles to navigate and operate from.
69. The site's wind direction indicator will also help respondents identify the best direction from which to tackle a fire.

### **Collection of Used Extinguishant**

70. Used extinguishant will be collected through surface gutters, and treated in a silt-trap and oil-water interceptors before being received in an underground 800 m<sup>3</sup> reservoir. Two interceptors will be installed, each covering approximately half of the site catchment area; these will be placed side-by-side in the same location.
71. A hardstanding surface is also being installed throughout the entire site. This includes an underlying impermeable membrane and reinforced concrete layer to ensure impermeability.



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Figure 13: Assembly point





Figure 14: Location of firefighting equipment

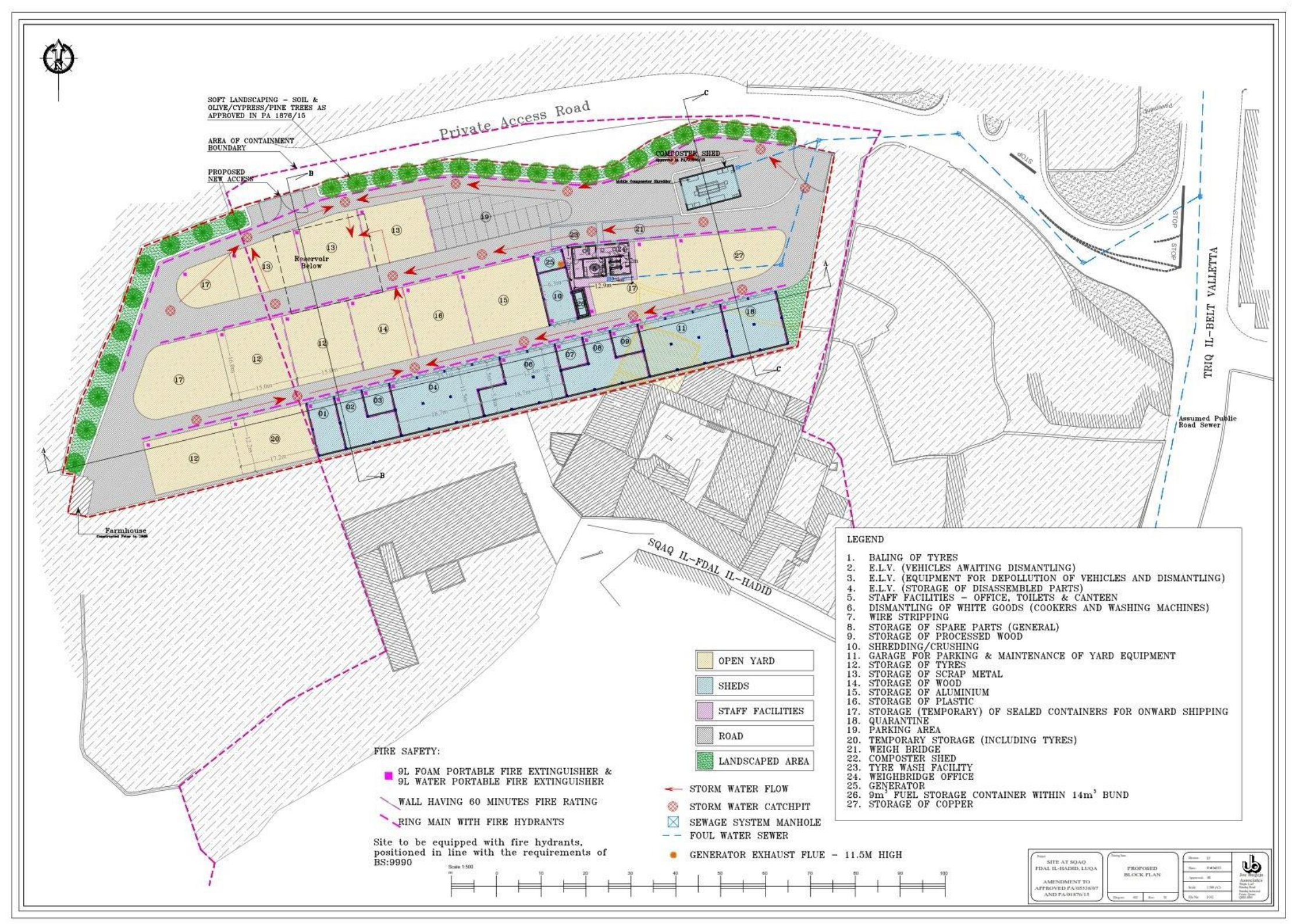
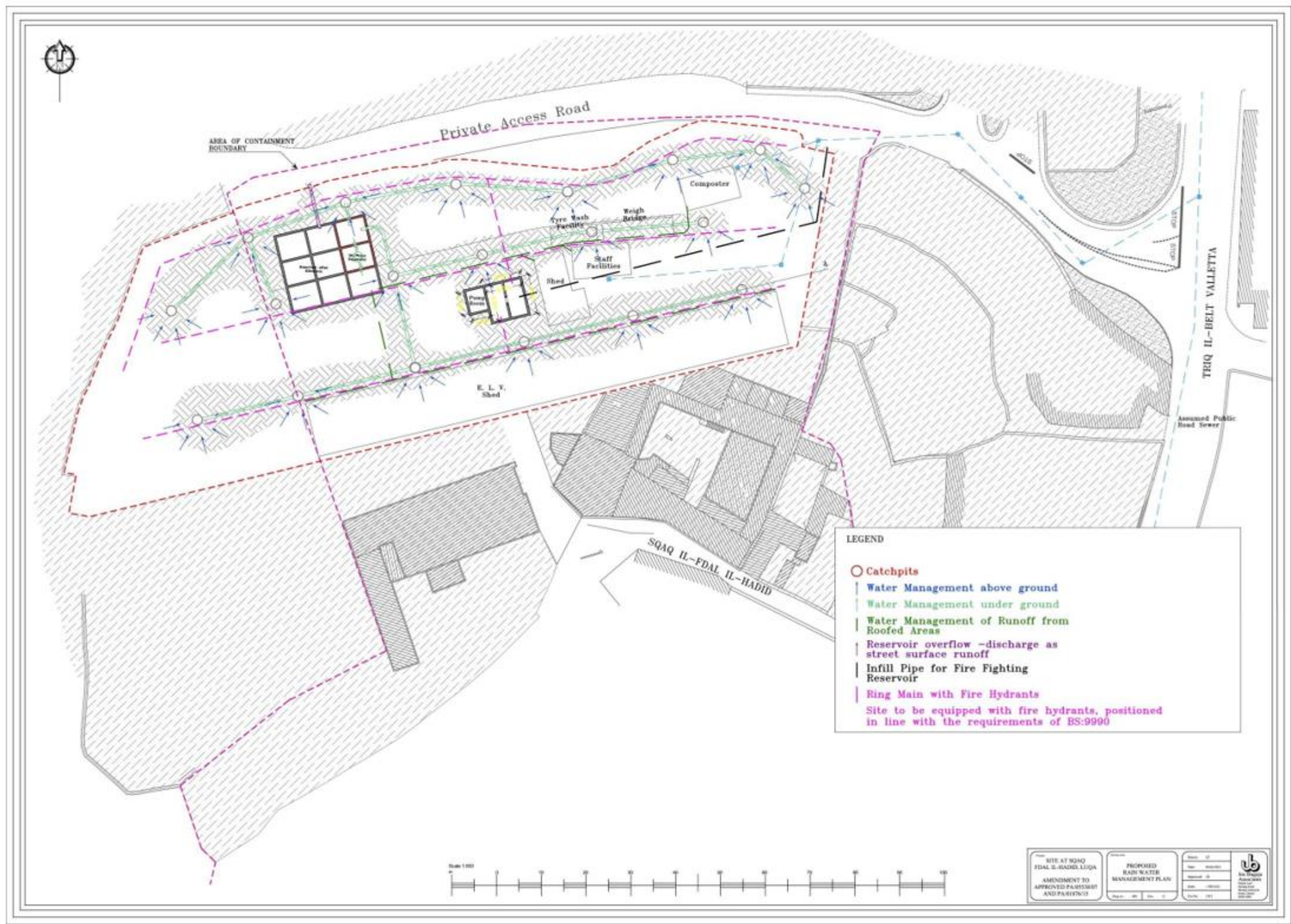




Figure 15: Ring main connections to firefighting reservoir



(The ring main and its connections to the firefighting reservoir are shown in pink in the above drawing).



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## **Annex 5: Spill Prevention and Response Plan**

# Spill Prevention and Response Plan

## Spill Risks

1. Various liquid hazardous substances and wastes are stored and used at DDE Attard Ltd. Examples include:
  - Diesel stored in the diesel tank and the generator day tank;
  - Containerised liquid waste; and
  - Waste generated from vehicle depollution, such as oils, coolants, and batteries containing acid.
2. Spillages may arise from accidental damage / wear and tear of a container or pipework, tipping over of a container, or due to poor operational practices (such as careless dispensing of fuel, or storage of hazardous materials outside designated areas). Leaks may also arise from the equipment and vehicles used on site.
3. If hazardous materials / waste are spilled, without proper safeguards they can contaminate the land and groundwater in the surroundings.

## Spill Precautions

4. The site at DDE Attard Ltd is being upgraded with the installation of an impermeable surface, a system of gutters in the outside areas, and oil-water interceptors to collect oily spills; an engineer's report on the interceptors is included in Volume 3. Any water-based spills are collected in the reservoir.
5. Additionally, the diesel tank and the generator day tank include integrated containment, and the depollution equipment includes containers built into the system to collect the fluids removed from the ELV, and includes underlying containment.
6. The following procedural precautions should also be followed to minimise the risk of a spill:
  - Store all other liquid hazardous substances and waste indoors (in a contained area or using temporary containment), in labelled and closed containers;
  - Use drip trays when dispensing fuel or filling up the diesel tank;
  - Inspect containers / drums containing liquid hazardous substances / waste according to the maintenance schedule, and repair / repackage as necessary;
  - Inspect the site surfacing according to the maintenance programme and carry out repairs as required; and



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- Inspect the gutters, silt trap and interceptor according to the maintenance programme and clean up as necessary.
- 7. Any minor drips, for example from vehicles, are to be seen to quickly before they increase.
- 8. Staff will also receive training on spill prevention and response to minimise the likelihood of a spill, and the environmental consequences of a spill if it occurs.

### **Spill Kits**

- 9. Two sets of spill kits are available on site:
  - A sawdust spill kit is stored next to the diesel tank and is intended to service any spills arising from diesel tank and leaks from vehicles, equipment and maintenance; and
  - A commercial spill kit that includes absorbent pads and booms is stored in the shed and is aimed at servicing any spills in the shed (including spills from the ELV depollution facility, and spills of hazardous wastes) and spills from containerized waste.

### **Spill Response Procedure**

- 10. In the event of a spill being detected, the following procedure must be followed. This is based on the 3C programme, i.e.:
  - Control the spill;
  - Contain the spill; and
  - Clean up the spill.

#### **Control the Spill**

- 11. Attempt to identify the nature (e.g. fuel, coolant) and source of the spill (e.g. a damaged drum, a container that has tipped over).
- 12. If you can identify the source of the spill and can control the flow of the material being spilled, do so quickly (e.g. put a drip tray beneath the container). The aim of this step is to stop any further release of the substance.

#### **Contain the Spill**

- 13. The aim of this step is to avoid the further spread of spilled material.
- 14. For spills of diesel, or leaks from vehicles and equipment, the sawdust spill kit is to be used. First place the sawdust around the spill and then place sawdust on top of the spill, allowing it to absorb the spill material.
- 15. For spills in the shed and from containerised waste, absorbent pads and

booms are to be used. Use the socks to contain the spill, by placing one or more socks around the spill as necessary. Then place the absorbent pads on top of the spill to absorb it.

### Clean up the Spill

16. Collect and place the used sawdust / absorbent pads in a heavy-duty plastic disposal bag, and close the bag. Ensure no visible residue is left on the ground.
17. Once you are certain the source is no longer leaking, collect and place the used socks into a separate plastic disposal bag, and close the bag.

### **After the Spill**

18. The used absorbent pads / sawdust are to be considered hazardous waste (EWC 15 02 02\*) and disposed of at a facility licensed to receive such waste (such as the Marsa Thermal Treatment Facility or Waste Oils Co. Ltd). The consignment note procedure for transfer of hazardous waste is to be followed.
19. If the socks are heavily contaminated they are also to be disposed of as hazardous waste.
20. Any use of spill kit contents is to be reported to the office administrator, who will make arrangements for purchasing material to replenish the spill kit as necessary, in consultation with the Managing Director.
21. The oil-water separators are to be inspected following any large oily spill that reaches the separator, to establish whether they need to be emptied. The underground reservoir will be emptied following any large water-based spill that reaches the reservoir.
22. All spills will be recorded in the site diary. Significant spills will also be reported to ERA.



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## **Annex 6: Environmental Management System**

# Environmental Management System

## Terms of Reference

1. The requirements for an Environmental Management System were described in ERA's application form; these are reproduced below:

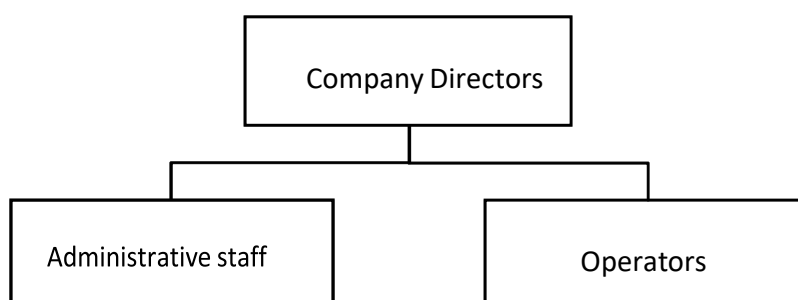
*Provide details of your proposed management techniques and environmental management system (EMS). An EMS can take the form of a standardised system (e.g. EN ISO 14001:1996; EMAS) or a non-standardised ("customized") system, provided that it is properly designed and implemented.*

2. Additionally, the BREF for Waste Treatments Industries includes recommendations regarding the establishment of an EMS.

## Management and Reporting Structure

Figure 15 shows the organisational chart for DDE Attard Ltd. The company is owned by four Directors. Disma Attard is the Managing Director and is responsible for oversight of operation and the company's strategic direction. Daniel Attard is the Technically Competent Person (TCP) for the Scheme and is responsible for day-to-day supervision and environmental matters. Information regarding Daniel qualifications, experience and contact details is included in section B8 of this original IPPC Application.

**Figure 16: DDE Attard Organisational Chart**



3. Administrative staff are responsible for record-keeping and administrative aspects.
4. Operators take care of waste processing activities, including operating machinery and vehicles, maintenance, and so on.

5. Both administrative staff and operators report directly to the Managing Director.

### **Environmental Policy**

6. The Scheme's Environmental Policy is included in Annex 2 of the original IPPC application.

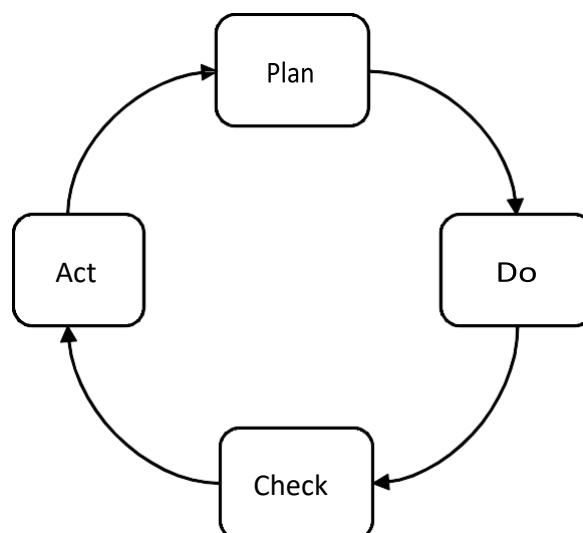
### **Environmental Management Programme**

7. An environmental management programme (EMP) for the first year of operation after the issue of the IPPC permit has been prepared (Table 10). This programme follows from a review of all operations and processes, and takes into account the objectives identified in DDE Attard Ltd's Environmental Policy.
8. The achievement of each of the targets set out in the EMP will be documented. At the start of each year, the TCP will review DDE Attard Ltd's achievement of the targets set in the previous year's EMP. New targets will be set for the forthcoming year as appropriate, and if necessary, the environmental policy will also be updated. This process also ensures that the company's aim for continual improvement is met.

### **Control of Operation**

9. The strategy for controlling operations on site is based on the Plan-Do-Check-Act (PDCA) approach (Figure 16).

Figure 17: PDCA Cycle





**Table 10: Environmental management programme (first year after IPPC permit variation issue)**

<b>Objective</b>	<b>Target</b>	<b>Target Date</b>	<b>Responsible Person</b>	<b>Environmental Performance Indicator</b>
To upgrade the installation to minimise the risk of land and groundwater contamination	Installation of impermeable hardstanding in areas indicated in Phase 2 and area of ELV storage of disassembled parts indicated in Phase 3 of this variation.	As per phasing plan indicated within this variation	Managing Director	Impermeable hardstanding installed.
	Installation of a temporary reservoir and oil-interceptor as per Phase 2 of this variation.	As per phasing plan indicated within this variation	Managing Director	Impermeable hardstanding installed
To minimize the facility's impact on air quality in the surroundings	Minimising dust emissions from site through the installation of site surfacing in area indicated in Phase 2 and area of ELV storage of disassembled parts indicated in Phase 3 of this variation.	As per phasing plan indicated within this variation	Managing Director	Impermeable hardstanding installed
To maximise the proportion of waste prepared for reuse and sent for recovery	At least 75% waste processed on site will be prepared for reuse, recycling or recovery	Within 12 months of permit issue	TCP	Waste reuse, recycling and recovery data.
Train all staff on the environmental aspects relevant to their duties	Deliver environmental training to all staff	Within 1 year of the permit issue	TCP	Staff Training records

10. The following activities are included in the planning stage:
  - Defining the operating procedures for each of the proposed activities: Procedures are defined in section B2.2 of the original application;
  - Setting environmental targets for the forthcoming year: these are included in the EMP presented in Table 10;
  - Staff training: A training programme is included in section B2.9 of the original application, and an objective to train staff is included in the EMP
  - Maintenance: A maintenance programme is included in section B2.5 of this original application
  - Emergency preparedness and response: A risk assessment and emergency response plans are included in section B2.8 of this original application.
11. These procedures will be implemented as planned, under the supervision of the Technically Competent Person (TCP) for the site.
12. Checking of environmental performance will be carried out through monitoring, measurement and record-keeping, as follows:
  - A monitoring programme is included in section B3.10 of the original application (Chapter 4). Any additional monitoring arising from the IPPC permit will also be implemented;
  - Keeping records of the company's performance using the environmental performance indicators included as part of the EMP
  - Keeping staff training and equipment maintenance records;
  - Supervision of site activities by the TCP, and
  - Analysis of inspection reports issued by ERA's environmental officers following a site visit.
13. In the event of a nonconformity with a permit condition, legal requirement, or if the targets set in the EMP are not achieved, the TCP will:
  - Investigate the cause of the nonconformity;
  - Identify what corrective action needs to be undertaken to mitigate the environmental damage caused, if any; and
  - Set out what action needs to be taken to prevent a recurrence of the incident, and communicate this to the relevant staff. Such action may include retraining of staff, updating operational procedures, setting

- of new environmental targets, and updating the maintenance programme.
14. Additionally, the EMP will be reviewed annually to ensure continual environmental improvement.



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