



Environmental Risk Assessment (ERA)

for

EV Recycling Ltd.

Site Location:

**EV Recycling,
Unit 12, Llanelli Gate,
Dafen,
Llanelli,
United Kingdom,
SA14 8LQ**

Overview

This Environmental Risk Assessment has been conducted for EV Recycling Ltd, by EV Recycling Ltd. The site/location being assessed is intended to be used by the business for recycling activities and processing of lithium ion battery cells. This involves a mechanical crushing process for the battery cells, separation of processed material and storage of outputted products (including precious metals).

Document Revision History			
Date	Author	Version	Notes
09/05/2019	Sam Joseph	1	Report
03/09/2019	Sam Joseph	2	Page numbers added, section 4 added & other content updated
15/01/2020	George Chamberlain	3	Address
05/02/2020	Sam Joseph	4	Address Updated, Dates Updated
16/03/2020	Sam Joseph	5	Confidentiality Review

Assessment Part 1	
Date of Assessment: 05/02/2020	
Hazard:	Dust
Reason for Hazard:	The crushing process for the lithium ion battery cells could generate some dust, which would be formed of metallic particles (cobalt, nickel, graphite, lithium oxide, etc.)
Possible Pathways:	Air
Possible Receptors:	Workforce Nearby businesses Local flora/fauna
Consequences:	- Nuisance to local environment if dust is not contained. - In the long term, dust has the potential to cause respiratory issues in workforce or people at nearby businesses
Control Measures:	- Contain dust by carrying out activities indoors and enclosing the area during crushing process (keep doors shut). - Use air filtration system to remove dust from the air. - Handle materials in a suitable manner to prevent extra dust - PPE for workforce (Health & Safety measures)
Likelihood of Hazard:	Very likely that some dust will be produced, however it is also likely to be in small quantities
Level of Risk to Receptors:	Very low when control measures are applied
Further notes:	

Assessment Part 2	
Date of Assessment: 05/02/2020	
Hazard:	Noise & Vibrations
Reason for Hazard:	The mechanical crushing process will generate some noise and also vibrations as a result
Possible Pathways:	Air, Ground
Possible Receptors:	Workforce Nearby Businesses
Consequences:	<ul style="list-style-type: none"> - Nuisance to local businesses if there is too much noise - Compromise workforce safety (ear damage)
Control Measures:	<ul style="list-style-type: none"> - Adhere to local noise constraints (decibels reading, frequency of activities) - Maintain machinery so that no excess noise/vibration is produced - Locate crushing machinery at furthest away point from offices and apply screening (indoor activity, and near trees to absorb noise) - PPE for workforce (Health & Safety measures)
Likelihood of Hazard:	Certain - noise will be produced
Level of Risk to Receptors:	Low - the noise level will adhere to limits and the frequency of activities producing noise will be limited to a few times per month
Further notes:	

Assessment Part 3	
Date of Assessment: 05/02/2020	
Hazard:	Battery cell fluid / liquid (electrolyte)
Reason for Hazard:	During the crushing process, small quantities of electrolyte fluid (liquid and/or slurry and/or powder) may be exposed to the environment
Possible Pathways:	Surface water drains and ground
Possible Receptors:	Nearby streams, rivers and watercourses Aquatic life Workforce
Consequences:	If it escapes to the environment, electrolyte fluid may be harmful to aquatic life through pollution of water courses
Control Measures:	<ul style="list-style-type: none"> - Ensure crushing activities are carried out on impermeable surfaces - Install a 'catch-tray' under the machinery to prevent escape of fluid - Safeguard the process by keeping a 'spill kit' nearby and make certain that it is accessible at all times - Post-activity checks for leaks - Prevent workforce contact with electrolyte (PPE, Health & Safety)
Likelihood of Hazard:	Likely - at present, it can be assumed that all lithium ion battery cells have at least a small quantity of electrolyte solution type inside of them
Level of Risk to Receptors:	Very low if control measures are adhered to
Further notes:	Electrolyte solutions are composed of organic solvents, LIPF6 salt and various additives, and vary depending on battery type

Assessment Part 4	
Date of Assessment: 05/02/2020	
Hazard:	Fire
Reason for Hazard:	The potential for fire from materials stored on-site if proper handling is neglected, and in the event of a fire the firewater run-off could be contaminated and cause harm to the environment if measures are not put in place
Possible Pathways:	Air/wind & materials can spread fire, and firewater run-off can transport potentially contaminated water via watercourses
Possible Receptors:	Workforce Nearby businesses Local flora/fauna Local watercourses
Consequences:	- Nuisance to local environment if dust is not contained. - In the long term, dust has the potential to cause respiratory issues in workforce or people at nearby businesses
Control Measures:	- Separation of incompatible / combustible materials and ignition sources to remove potential ignition sources - No smoking policy on-site - Minimise stockpile, incorporate fire-breaks in material storage - Fire training and emergency drills - Provision of fire extinguishers and fire safety equipment - Store materials on an impermeable surface within a bunded area in close proximity to foul drainage in order to prevent firewater run-off reaching the environment
Likelihood of Hazard:	Highly unlikely
Level of Risk to Receptors:	Very low when control measures are applied
Further notes:	See the fire procedure in Section 5 of the EMS (Environmental Management System)

Overall Risk:	Low; if control measures and management techniques are applied
Date of Assessment:	05/02/2020
Assessed By (Name):	Sam Joseph
Checked by:	George Chamberlain

