

EnviroWales Ltd. EP3230BW

PO1- Lead melting operations at the Direct Milling building

Introduction

EnviroWales Ltd. will be installing a 15t capacity lead melting kettle in accordance with the proposal in EPR_EP3230BW V006 application, which was approved in April 2014.

This kettle will melt only lead scrap generated internally from the Jamestown Industries Ltd (JIL) Rolling Mill on the lower site within the installation boundary. The scrap is clean, uncoiled 99.99% lead.

Lead scrap is produced from the rolling mill when the tail ends (surfbords) are cut at the guillotine to achieve a square end to the lead being rolled, and also from the two finishing lines and two slitting machines. The finishing & slitting lines produce finished rolls of lead which are cut to length and the end off-cuts are scrapped. In addition the slitters generate chopped lead pieces from side trimming operations.

The lead melted within the 15t kettle will be poured or pumped into a mould to make the same 8.6t slabs that are made on the EnviroWales "top site". This facility will improve process efficiency by allowing scrap to be re-used on site. The slabs will then be rolled on one of 2 mills already present.

A Donaldson Torit hygiene bag-filter unit will service the emissions from the kettle and the burner. The burner will be a light gasoil 2-stage burner.

This document is in response to PO1 within the site permit as follows.

The Operator shall submit a written commissioning plan based on the final design to NRW, along with timescales for implementation.

The plan shall be designed to demonstrate that permit conditions will be met under all anticipated operating conditions and shall confirm the commissioning programme and plant monitoring protocols. The plan shall be implemented in accordance with NRW's written approval and commissioning shall not commence until that approval is provided.

Commissioning Plan

It is planned for the kettle and associated equipment to be installed during February 2017, with commissioning operations commencing from the 1st week of March 2017.

Week-ending	20-Jan-17	27-Jan-17	03-Feb-17	10-Feb-17	17-Feb-17	24-Feb-17	03-Mar-17	10-Mar-17
Position kettle	✓							
Install associated equipment	→		→	✓				
Install oil tank				→	✓			
Commission burner including oil tank					→	✓		
Install bag-filter unit						→	✓	
Install extraction ducting						→	✓	
Commission bag-filter						→	✓	
Complete commissioning							→	✓

The kettle and mould will be located inside the Jamestown Mill building, in the North West corner. The bag-filter unit will be located outside the rear of the building in the North West corner, between the Mill building and the banking leading up to the EnviroWales site. The extraction ducting leads from the inside of the building, out through the bag-filter unit and is returned back into the building once filtered. The bag-filter unit is a proprietary design for the flow rate and temperature required, and includes a HEPA filter prior to the fan set.

- See attached drawing 004C, (Jamestown Mill building only) with 15t kettle & equipment shown in pink.
- See attached drawing 014 (full installation) with the location of kettle edged in red indicated by text box

Compliance with Permit Conditions

Conditions of the permit will be complied with through a combination of operating techniques and plant technology as follows.

(1) Environmental Management System (EMS)

The site's EMS is certified by BSi under ISO14001:2004 (certificate no. EMS 567178) and is scheduled for full transition to ISO14001:2015 in late 2017 / early 2018.

(a) The new process will be added to the site EMS Aspects and Impacts register, and will include all operational control measures required.

Timescale: 1 month following full commissioning

(2) Energy Management

The company holds a Climate Change Agreement for the site through the Confederation of British Metalforming (CBM). Energy use is measured as kWh/t of

product and performance is checked monthly, energy used by the new kettle will automatically be incorporated into the monthly calculations.

As there is no gas supply to the area, the kettle will be heated by a Riello 2-stage light gasoil burner with an operating range of 273-534kW. This burner achieves the technical standard EN267 for emissions of CO₂, NO_x, CO and hydrocarbons.

The kettle liner is lagged with refractory and insulating wool to reduce heat losses during operation.

(3) Accident and Emergency Management

The burner is fitted with safety lock-out devices in the event of flame failure or firing failure. This prevents the flow of fuel in either of these events. Start-up and shutdown sequences are controlled electronically via PLC.

The routine burner servicing and maintenance will be included in the site preventative maintenance management system.

The kettle burner will be interlocked to prevent operation in the event of a temperature exceedence in the kettle. Kettle temperature will be controlled by thermocouple with high level set-points which will trigger a shutdown in the event of excess heat being detected. Planned preventative maintenance will include check of kettle liner thickness to assess risk of a breach of molten metal containment, the liner will be replaced in accordance with known wear-rates.

The bag-filter will be installed with high and low differential pressure alarms which will be interlocked to the kettle burner such that it cannot be operated if the filters are blocked or have breached. These also control the automated filter cleaning cycle.

There is a site-wide emergency response plan already in place which covers scenarios such as fire, flood, chemical spill and failure of key abatement equipment and the kettle system will be added into this. Specific emergency shutdown procedures will be written for the kettle and its associated equipment. The kettle will be housed in the existing Mill building and any external equipment will be banded to 110% of capacity (for liquids) or sufficient to contain water in the event of a fire.

The site operates an Emergency Response Team who are trained in emergency scenarios for all processes on site.

(a) The local Fire and Rescue service will receive updated site plans and equipment locations as a result of this new process.

(b) Procedures will be written and staff trained in the operation of the kettle and its associated equipment, these will include safe start-up and shutdown procedures and actions to take in emergency situations.

Timescale: 1 month following full commissioning

(4) Avoidance, Disposal and Recovery of Wastes

Already all process wastes are recovered throughout the installation. The purpose of the 15t kettle is to improve process efficiency by allowing localised re-use of wastes generated from the Mill rolling and finishing processes, this will provide greater capacity and flexibility for the refinery on the EnviroWales site.

Due to the purity of the feedstock, there will be minimal dross generated but any produced will be re-used as a raw material on the top site. Drosses are loaded manually from the kettle into barrels which will be allowed to cool before being sealed and transported back to the smelter raw materials area.

Dusts collected from the hygiene bagfilter unit will also be collected in a sealed barrel and sent back to recovery in the smelter.

Emissions and Monitoring

Point source emissions

There are no point source emissions to air / water / sewer from this process.

A Donaldson Torit “Dalamatric” automatic reverse pulse-jet hygiene bag-filter unit will service the emissions from the kettle and the burner. The filter bags will be constructed from Nomex® which has a high temperature resistance. The unit will be located outside the building housing the kettle but will be completely re-circulatory with no emission point to atmosphere. Dust and fume generated from the top of the kettle will be extracted via ducting, pass through the bag-filter and a final stage HEPA filter (HEPA 12 minimum) and clean air will be returned into the building.

The extraction system will be included in the site Local Exhaust Ventilation (LEV) checks and will be subject to the statutory Thorough Examination (TE) by a competent person.

Low sulphur fuel will be used in the burner. Only clean scrap from internally generated sources will be melted.

Fugitive emissions

Regular checks of the extraction system face and duct velocities will ensure that fume and dust are being captured efficiently and will minimise fugitive releases.

All movements of dusty materials such as drosses and filter dusts will be carried out within sealed barrels.

Slabs are water-cooled prior to being released from the mould. Steam generated from the evaporation process will remain within the process building.

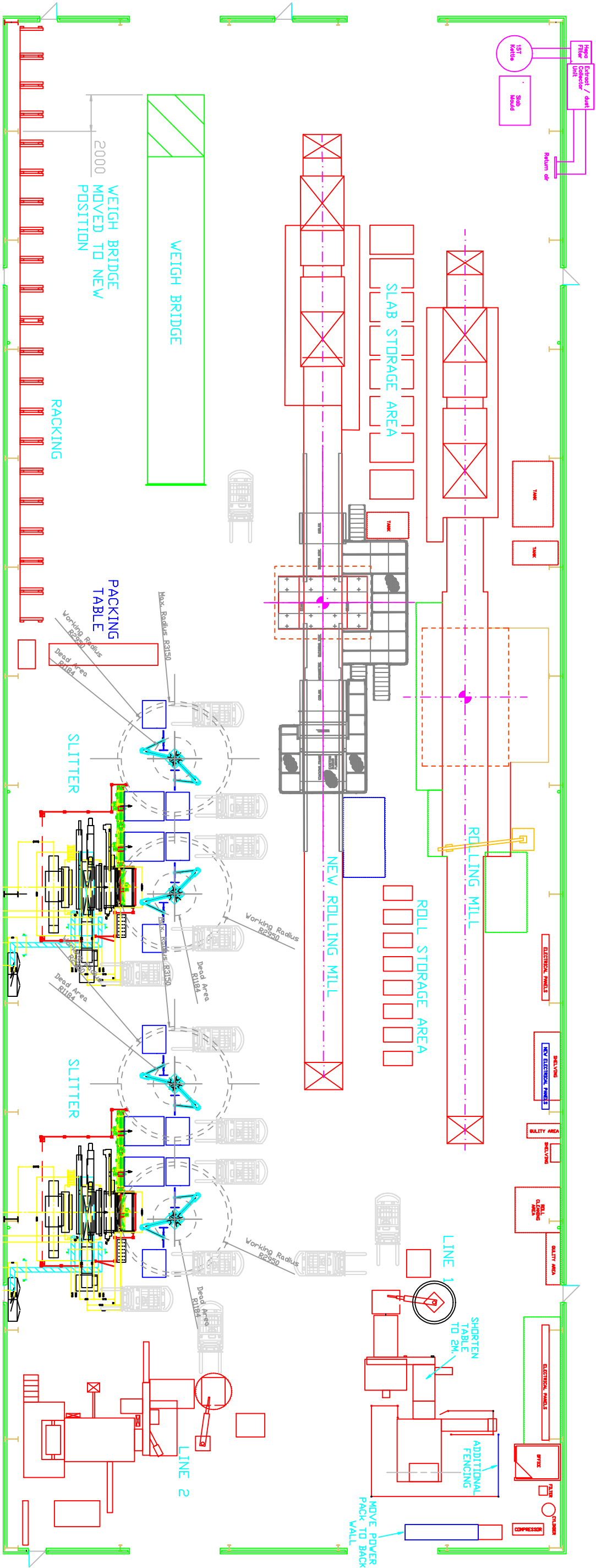
Any water collected within bunded areas around the external bagfilter unit will be tested for metals and pH prior to being disposed of – any contaminated water will be pumped into an IBC or similar receptacle before being treated via the EnviroWales effluent treatment system and then to sewer. The fuel tank will be purchased self-bunded to 110% capacity but will not be open to the elements, in addition it will be located on an impermeable concrete surface.

Noise & vibration

The only additional potential noise source from this process is the bagfilter fan. This will be located between the mill building and the EnviroWales site and is shielded from sensitive receptors by the Mill building on one side (South) and a tall bank to the North.

The bagfilter has a sound pressure level of 80dBA.

Lead scrap movements will all be indoors, in addition, lead metal does not have a reverberatory sound when moved compared to ferrous metals.



REV.	DATE	AMENDMENT	INITIALS
2	03/04/12	LATEST EIT LAYOUT ADDED	RG
1	30/03/12	REVISED LAYOUT	RG
0	NOV 11	REVISED LAYOUT	RG

CLIENT: ALEXIA LTD			
PROJECT: ENVIROWALES, RASSAU IND. EST., EBBW VALE.			
DRAWING: MILL LAYOUT DRAWING REVISED EQUIPMENT LAYOUT			
SCALE: 1:110 @ A1		DATE: NOV 2011	DRAWN BY: RG
DRAWING NO. 004C		DRAWING STATUS: PRELIMINARY	
REVISION NO. 2		FOR APPROVAL: FOR CONSTRUCTION	

