REPORT 5

EPS MR LTD ENVIRONMENTAL PERMIT VARIATION

EMISSIONS MONITORING PLAN

Report Number 1469r5v1d0316

Commissioned by

EPS Materials Recovery Limited
Graigola Wharf
Kings Dock
Swansea SA1 8QT

Prepared by

Geotechnology Ltd
Ty Coed
Cefn-yr-Allt
Aberdulais
Neath
SA10 8HE

March 2016

Table of Contents

List of Tables

List of Figures

List of Appendices

1 INTRODUCTION

1.1 Scope of Report

Geotechnology has been commissioned by EPS MR Ltd to prepare a Permit Variation application for their scrap metal export facility at Swansea Docks.

The variation of the existing Standard Rules Environmental Permit (Ref: EPR/JB3135RA/T001) to a bespoke Environmental Permit would help enable EPS MR to bring their current operation into regulatory compliance as they are operating outside the boundary of the current Standard Rules Permit. The Variation also enables the existing T9 Exemption held by EPS MR (Ref: EPR/AF0132VC/A001) for the recovery of scrap metal to be consolidated into a modern Permit. A separate Permit Surrender application will be submitted for the Standard Rules Environmental Permit EPR/HB3932RS/A001 for the directly adjacent Wood Export Facility.

The principle reason that a bespoke application is required is because the new proposed Permit boundary is <500m from a designated site and EPS MR proposes to discharge treated drainage to the adjacent King's Dock.

This report sets out the proposed Emissions Monitoring Plan that should be implemented to ensure the risks to the environment are reduced and the predictions of the Environmental Risk Assessment validated. The monitoring plan should be implemented as part of the Environmental Management System.

2 OVERVIEW OF OPERATIONS

2.1 Permitted Activities

Operations undertaken at the site include the receipt, inspection and storage of waste ferrous and non-ferrous metal, cutting, grinding, shearing and baling for off-site recovery, as summarised in Table 2-1.

Table 2-1 Operational Activities and Limits

Description of Activities	Limits of Activities
R13: Storage of wastes pending any of the operations numbered R1 to R12 (**excluding** temporary storage, pending collection, on the site where it is produced) **R4** Recycling/reclamation of metals and metal compounds.	Treatment consisting only of sorting, separation, grading, shearing, shredding, baling, compacting, crushing, granulating and cutting of ferrous metals or alloys and non-ferrous metals into different components for recovery. There shall be no treatment of lead acid batteries. Wastes shall be stored for no longer than 3 years prior to recovery.

2.2 Site Layout

The operational site occupies an area of ~21,000m^2, parts of which are used for storage with the rest being open for vehicle and plant movements. On the southern side of the site is a 1.5-2m high bund shielding the operation from the access road to the western part of Kings Dock. Directly to the north is Kings Dock.

2.3 Drainage

The current proposed drainage plan for the site is shown in Appendix 1. Run-off from areas not served by dedicated sealed sumps would be directed by gravity to a drainage system connected to two alarmed Class 1 full retention interceptors with silt traps. From here the treated run-off would be discharged to King's Dock.

3 SCOPE OF MONITORING PLAN

3.1 Fugitive Emissions

Emissions of substances not controlled by emission limits shall not cause pollution provided EMS MR implement the control measures detailed in the EMS.

3.2 Point Source Emissions

The only point source emission from the site is the proposed discharge to King's Dock. This will be subject to the controls detailed in the EMS, Permit and the monitoring programme set out in this document.

4 DISCHARGE MONITORING PROGRAMME

The monitoring programme is based on gathering several lines of evidence that, when combined, will enable the quality of the emission to be evaluated:

- Observational monitoring - Visual and olfactory observation of the discharge
- Physical measurement- Spot sampling and on-site real time measurement of the discharge for bulk indicators of water quality, coupled with independent laboratory analysis at a UKAS accredited testing laboratory

Monitoring the quality will allow interventions or improvements to be made where necessary.

4.1 Responsibility

The operator will be responsible for implementing the monitoring programme. The operator will ensure that only personnel trained in the task and aware of the risks will undertake the monitoring.

4.2 Records

Records are an essential part of the management system and permit compliance. They must be clear, legible, accessible and consistent.

The operator will maintain records of all monitoring and maintenance to the system including records of the taking and analysis of samples, instrument measurements, calibration, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

The operator will ensure that records are stored either electronically or in paper format and ensure that any amendments are made in a way so that the original is still accessible. All records will be retained for a minimum of six years.

4.3 Emission Sampling Points

Discharge sample points must be at a location that ensures the sample is truly representative of the discharge. End of pipe monitoring at the point the discharge enters King's Dock would require safe access to the sample point. On this basis, under normal operating conditions once the drainage system is agreed and operational, monitoring of the surface water emission is to be carried out at the final drainage sump (inspection chamber) as indicated by SW1 on Figure 1. This location follows the oil/ water interceptor and is representative of a point where emissions leave the site. The sampling point location will be permanently labelled SW1.

Sample point SW2 will be a grab sample of surface water in the King's Dock taken directly in-front of the end of pipe discharge. The sample will be collected from approximately 1m from the Dock wall on each occasion using an extendable sampling pole.

Prior to the drainage system being finalised, the monitoring programme will initially focus on characterising run-off water quality so that the design of the drainage system can be finalised. At this stage, monitoring is to be scheduled so that samples enable the characteristics of first flush events to be better understood. As the first flush is the initial

surface runoff following rainfall, the samples should capture the worst case discharge, in terms of likely potential pollutant load. At the same time, samples will also be collected from SW2.

4.4 Monitoring Frequency

Site drainage is likely to have a low contamination potential under normal operating conditions as:

- the source of waste will be inspected by the operator and the waste will always be under the control of the operator
- the site benefits from a documented management system including waste acceptance and inspection procedures
- a preventative maintenance programme will be implemented
- site drainage will pass through an alarmed full retention Class 1 oil water interceptor.

In this context, a series of observational and physical measurements are proposed at different frequencies as follows:

- Daily Monitoring: visual check of the discharge (if flowing), waste storage area and sediment traps (if flowing)
- Weekly Monitoring: on-site measurement of bulk water quality indicators
- Monthly: independent laboratory analysis of measurement of discharge quality and dock water quality.

The interim monitoring of run-off and dock water quality will be scheduled following rainfall events.

4.5 Monitoring Parameters

4.5.1 Daily Checks

Undertake visual and olfactory assessment and recording of drainage system to ensure there is no obvious significant gross contamination or malfunction of the waste storage area, drainage system and receiving water body. Particular attention will need to be made to identifying high turbidity and visual oil and grease.

4.5.2 Weekly Monitoring

Sample discharge at SW1 and SW2 for bulk indicators of water quality – pH and electrical conductivity.

4.5.3 Monthly

Sample discharge at SW1 and SW2 and measure additional indicators of water quality listed in Table 4-1 at a UKAS accredited laboratory.

Table 4-1 Monthly Monitoring Parameters

Parameter	Units	LOD
pH	pH Units	<1
Dissolved Organic Carbon	mg/l	
Water hardness as CaCO3	mg/l	<2
Mercury (diss.filt)	µg/l	<0.01
Arsenic (diss.filt)	µg/l	<0.12
Silver (diss.filt)	µg/l	<1.5
Cadmium (diss.filt)	µg/l	<0.1
Chromium (diss.filt)	µg/l	<0.22
Copper (diss.filt)	µg/l	<0.85
Lead (diss.filt)	µg/l	<0.02
Nickel (diss.filt)	µg/l	<0.15
Zinc (diss.filt)	µg/l	<0.41
TPH / Oil & Greases	mg/l	<1

4.5.4 Interim Run-off Monitoring

The parameters listed in Table 4-2 will be monitored on the samples of run-off and dock water.

Table 4-2 Run-off Monitoring Parameters

Parameter	Units	LOD
pH	pH Units	<1
Water hardness as CaCO3	mg/l	<2
Mercury (diss.filt)	µg/l	<0.01
Arsenic (diss.filt)	µg/l	<0.12
Silver (diss.filt)	µg/l	<1.5
Cadmium (diss.filt)	µg/l	<0.1
Chromium (diss.filt)	µg/l	<0.22
Copper (diss.filt)	µg/l	<0.85
Lead (diss.filt)	µg/l	<0.02
Nickel (diss.filt)	µg/l	<0.15
Zinc (diss.filt)	µg/l	<0.41
TPH / Oil & Greases	mg/l	<1

4.6 Monitoring Procedures

Sampling staff should be aware that manholes/inspection chambers and similar confined spaces are dangerous and must not be entered unless in accordance with a safe system of work and after appropriate training. **There should be no need for sampling personnel to enter the inspection chamber identified as SW1 during any checks or monitoring.**

Similarly, working close to the Dock wall will require all personnel to be trained in the risks and appropriate working practices put in place.

4.6.1 Daily Checks

Visually assess waste storage area and sediment traps for signs of heavy or unusual contamination such as highly turbid water with high suspended solids content, visual oil or malodour. Record observations on Form **EMP1.** (See Appendix 2). The infrastructure should also be assessed.

4.6.2 Weekly and Monthly Monitoring

When sampling from chambers (for example manholes), avoid contamination of the discharge/sample by the disturbance of deposits from the cover when the cover is lifted and prevent contamination of the sample from the chamber walls and any bottom deposits.

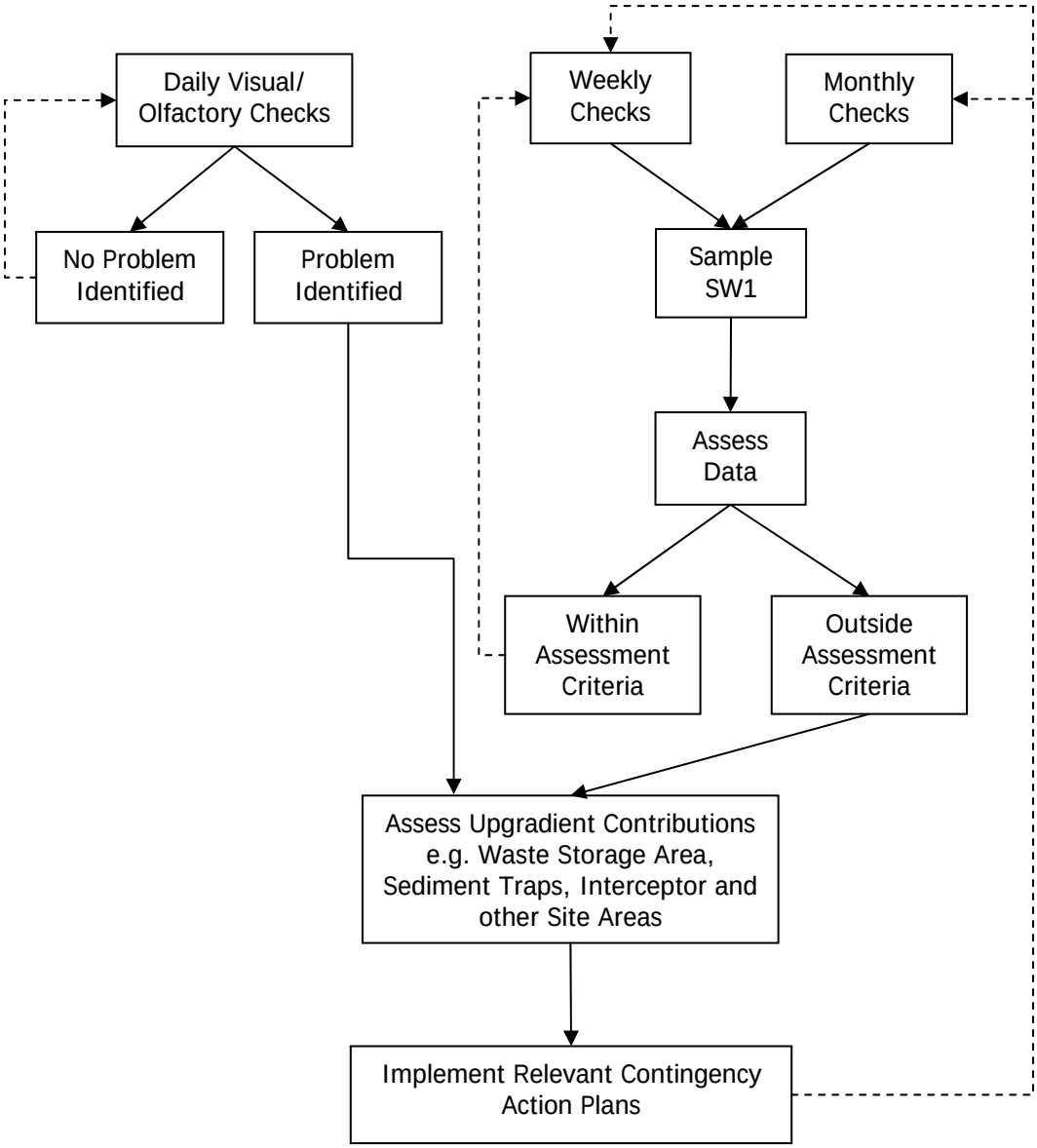
1. Avoid collecting larger objects and floating matter that is not representative of the discharge.
2. Visually examine the discharge for signs of heavy contamination. Note observations on Form **EMP2** (see Appendix 2).
3. Ensure all testing equipment is calibrated as per manufacturers recommendations.
4. For weekly monitoring, collect a sample of the discharge and then measure and record field parameters (pH and electrical conductivity) on **EMP2.** The dock water will need to be collected using an extendable sampling rod.
5. For monthly monitoring, collect samples of discharge and dock water as per the weekly routine but decant sample from the collection device into sample bottles provided by the laboratory. Rinse the sample bottles and lids (provided they do not contain any preservatives) with the water to be sampled, taking care to discard the wash water away from the sampling position. Fill each bottle to the brim to avoid entraining air.
6. Label all sample bottles with sample position ID (e.g. SW1, SW2), date, time and site name and complete the Chain of Custody which the independent laboratory will provide.
7. Store the samples in a cooler box where provided by the laboratory.
8. Despatch samples to the laboratory as soon as possible.

4.6.3 Runoff Monitoring

Samples of flowing run-off will most likely need to be collected by carefully placing a clean and rinsed syringe into the flowing water and slowly sucking up the water before decanting it into the dedicated sample containers. Some of the containers will need to be filled following filtration of the water through a 0.45 micron filter attached to the discharge point of the syringe.

4.7 Monitoring Assessment Criteria

Data gathered during the monitoring programme should be evaluated within a transparent framework to enable the correct records to be maintained and contingency actions to be implemented when required. An overview of this process is provided in the flowchart below.



4.7.1 Daily Checks

Being intimately familiar with the nature of the waste and the process, the operator will be able to quickly identify when there is gross contamination present during the daily checks. If this is found the contingency action plans should be implemented. Triggers that would prompt the operator to consider further action may include malodour associated with the waste and significantly elevated levels of suspended solids or hydrocarbons passing through the sediment traps and interceptor.

4.7.2 Weekly and Monthly Monitoring

During the weekly and quarterly monitoring, measurements will be made and data gathered and recorded on Form **EMP2.**

4.8 Contingency Actions

The operator shall notify NRW without delay following the detection of:

- any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution.
- the breach of an emission limit.
- any significant adverse environmental effects.

5 PREVENTATIVE MAINTENANCE

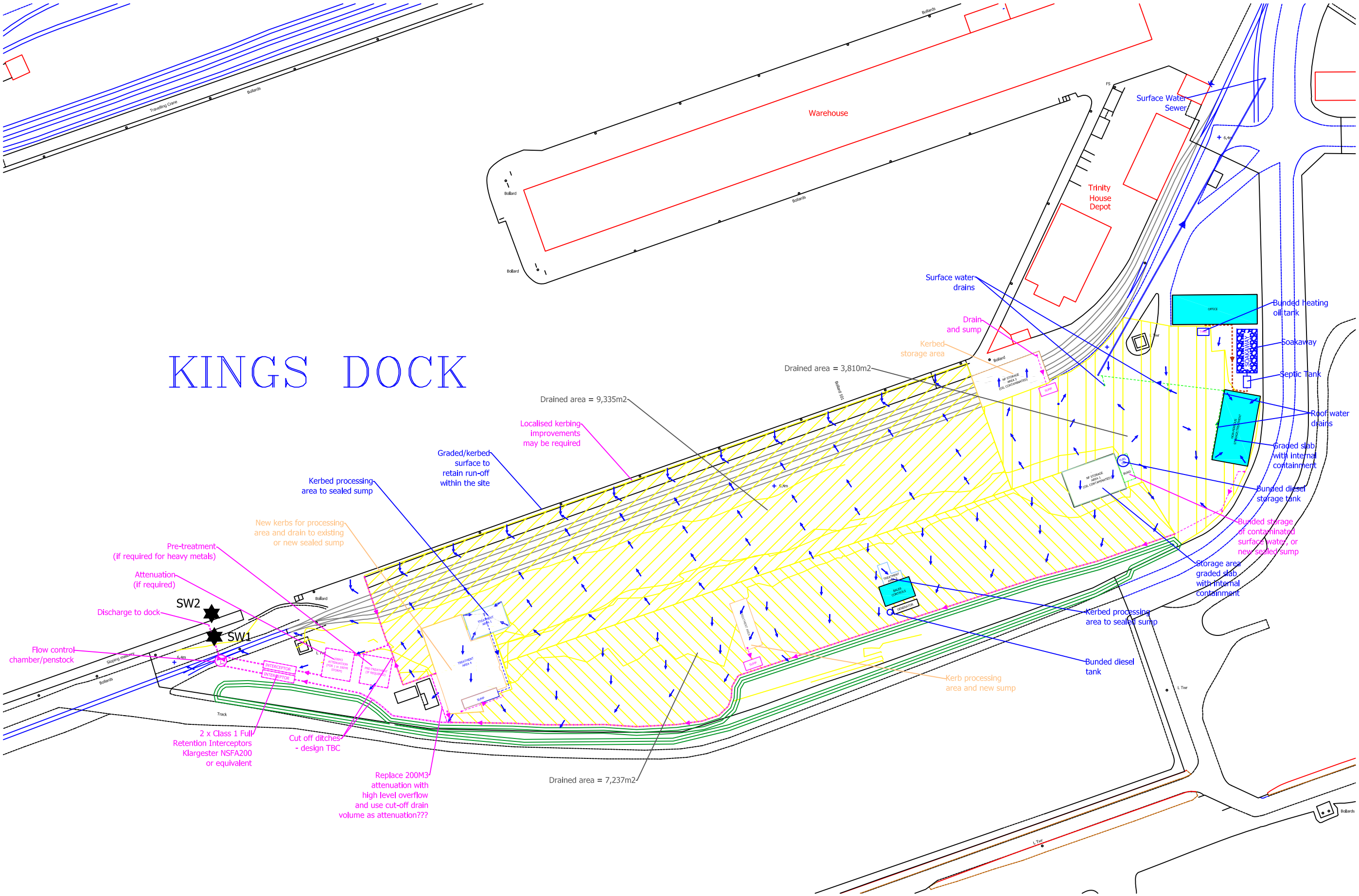
A fully documented management system is in place and the operator will implement a proactive maintenance programme. The measures detailed below specifically refer to the drainage system and particularly the oil/water interceptor. As this is a key item of drainage infrastructure, the operator will ensure that the interceptor is operated and maintained in accordance with the manufacturer's procedures.

- make sure that surfaces and containment or drainage facilities are adequate for all operational areas, taking into consideration collection capacities, surface thicknesses, strength/reinforcement, falls, materials of construction, permeability
- ensure there is adequate resistance to chemical attack
- have an inspection and maintenance programme for impervious surfaces and containment facilities
- establish and record the routing of all site drains and subsurface pipework
- identify all sub-surface sumps and storage vessels
- empty the separator as soon as a significant quantity of oil and/or silt has built up. The retained waste, including the silt, will be removed and the separator must be refilled with clean water before being put back into service to prevent damage and to prevent oil passing through it. In addition to normal emptying of the separator, it will also need to be emptied if oil or silt levels exceed 90 per cent of the storage volume of the separator and the alarm is activated.

6 SUMMARY AND CONCLUSIONS

To assist with control of the proposed emissions, the operator will install integrated pollution control measures which include sealed sumps, sediment traps and Class 1 oil water interceptors. In combination with pre-construction and operational monitoring, documented proactive waste management controls and site maintenance, several lines of evidence will gathered that will help demonstrate emissions to surface water have been monitored and managed. The monitoring will be in accordance with the Permit.

Figure 1 Monitoring Location Plan



Revision 0

1469r5v1d0316 Figure 1

Scale as shown

REPORT 5

EPS MR LTD ENVIRONMENTAL PERMIT VARIATION

EMISSIONS MONITORING PLAN

Appendix 1 Indicative Drainage Plan

Report Number 1469r5v1d0316

LEGEND

- EXISTING/NEW DRAIN
- EXISTING/NEW CUT-OFF DITCH/DRAIN
- EXISTING/NEW UNDERGROUND PIPE
- EXISTING/NEW KERB
- EXISTING/NEW BUND
- EXISTING/NEW SOAKAWAY
- RUN-OFF DIRECTION
- EXISTING/PROPOSED TREATMENT/STORAGE (SUMP)
- FOUL DRAIN
- SURFACE WATER SEWER
- DRAINED AREAS

KINGS DOCK

KINGS DOCK QUAY

Warehouse

Trinity House Depot

Surface Water Sewer

Surface water drains

Drain and sump

Kerbed storage area

Drained area = 3,810m2

Drained area = 9,335m2

Localised kerbing improvements may be required

Graded/kerbed surface to retain run-off within the site

Kerbed processing area to sealed sump

New kerbs for processing area and drain to existing or new sealed sump

Pre-treatment (if required for heavy metals)

Attenuation (if required)

Discharge to dock

2 x Class 1 Full Retention Interceptors Klargester NSFA200 or equivalent

Cut off ditches – design TBC

Replace 200M3 attenuation with high level overflow and use cut-off drain volume as attenuation???

Drained area = 7,237m2

Kerb processing area and new sump

Bunded heating oil tank

Soakaway

Septic Tank

Roof water drains

Graded slab with internal containment

Bunded diesel storage tank

Bunded storage of contaminated surface water, or new sealed sump

Storage area graded slab with internal containment

Kerbed processing area to sealed sump

Bunded diesel tank

EQUIPMENT STORAGE

FERROUS STORAGE

NON-FERROUS STORAGE

NF STORAGE AREA 1 (OIL CONTAMINATED)

NF STORAGE AREA 2 (OIL CONTAMINATED)

TREATMENT AREA 1

TREATMENT AREA 2

TREATMENT AREA 3

TREATMENT AREA 4

ER TREATMENT AREA

BALER CONTROLS

GENERATOR

OFFICE

SUMP

INTERCEPTOR

INTERCEPTOR

PRE-TREATMENT (IF REQUIRED)

Bollards

Track

Shipping marker

This drawing is not intended to represent detailed design

AMENDMENTS

REV REF	DETAILS	DATE	MADE BY	CHKD BY
A	FOR PERMIT VARIATION. UPDATED BOUNDARY AND LAYOUT. PROPOSED DRAINAGE SCHEME ADDED (SUBJECT TO DETAILED DESIGN)	20/02/16	SCW	AS

TECHNIA ENVIRONMENT AND PLANNING
SUITE 4, ST. MARGARET'S PARK
PENGAM ROAD, ABERBARGOED, CF81 9FW
TEL: 01443 821619
EMAIL: PLANNING@TEPL.EU

EPS MR LTD	Drawn	SW	Scale
	Ch'kd	BS	1:1,250
DRAINAGE PLAN (PROPOSED)	Appr'd	BS	@A3
	Date	08/12/15	
Job No. EPS	Drg No.	10934 - 000 - D (Rev. A)	

REPORT 5

EPS MR LTD ENVIRONMENTAL PERMIT VARIATION

EMISSIONS MONITORING PLAN

Appendix 2
EMP Forms

Report Number 1469r5v1d0316

Daily Inspection Sheet

Date	Nasty Odour?	Visible Oil?	High Suspended Solids?	Other Comments

Record of Weekly and Monthly Monitoring

	Weekly		Monthly		
Date	**pH**	**EC**	**Dissolved Metals**	**Oil and Grease**	**Other Observations**

Geotechnical &
Environmental Services

Ty Coed
Cefn-yr-Allt
Aberdulais
Neath SA10 8HE

T 01639 775293
F 01639 779173

enquiries@geotechnology.net
www.geotechnology.net