



Tidal Lagoon Swansea Bay

Construction Environmental Management Plan Appendix K

Pollution Prevention Plan

DCO Requirement 5

Works 7a

May 2020

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Table of Contents

1	Introduction	4
1.1	DCO Requirement	4
2	Ancillary civils – Works 7a Internal access road	5
2.1	Introduction	5
2.2	Containment and Mitigation Plan	6
2.3	Control of concrete contaminated runoff into surface and ground water:	6
2.4	Control of hydrocarbons and chemicals into surface and ground water:	7
2.5	Construction vehicle emissions.....	9
2.6	Construction dust and vehicle tracks.....	9
2.7	Demolition works	10
2.8	Communication and Reporting	10

1 Introduction

1.1 DCO Requirement

- 1.1.1 The development of a Pollution Prevention Plan is a Requirement of the DCO, Requirement 5 and as such has been prepared by TLSB for approval by the relevant planning authorities in consultation with Natural Resources Wales, in accordance with the DCO. This document only covers pollution prevention in relation to initial phase of construction i.e. Works 7a (Internal Access Road) and associated initial further development that is proposed.
- 1.1.2 DCO Requirement 5 Construction Environmental Management Plan
- 5.—(1) No authorised development are to commence until a CEMP substantially in accordance with the outline Construction Environmental Management Plan, has been submitted to and approved by the relevant planning authorities in consultation with Natural Resources Wales*
- 1.1.3 The Pollution Prevention Plan has been produced to satisfy DCO Requirement 5 in accordance with the Construction Phasing Scheme (DCO Requirement 3). The plan only covers elements of the project that are relevant to Phase 1 construction activity i.e. works element 7a and in connection with Work 7a (with reference to Part 1A) a), temporary construction works, including workshops and stores, working areas, laydown areas, construction sites, and vehicle parking facilities; f) to the extent shown on the demolition plan, the alteration, removal, clearance, refurbishment, reconstruction, decommissioning and demolition of any buildings and structures within the Order limits; h) lighting columns and lighting; i) safety / emergency points.
- 1.1.4 This document will be updated, as appropriate, at the relevant phases of construction to include details relevant to later phases of the DCO Works.

2 Ancillary civils – Works 7a Internal access road

2.1 Introduction

Pollution Prevention Guidelines: PPG1

- 2.1.1 The land based civil works associated with TLSB will adopt the guidelines and principles set out in Environment Agency document PPG1.

Source-Pathway-Receptor Model

- 2.1.2 By considering the life cycle of pollution of various types using the source-pathway-receptor model, as shown in Figure 2.1, measures will be devised to break the links and mitigate the pollution impact on the environment.

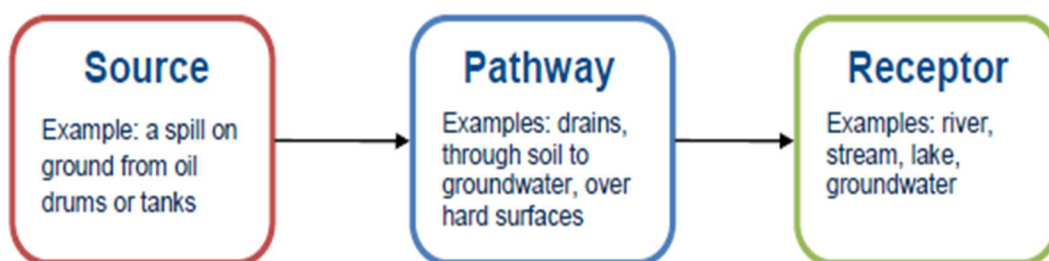


Figure 2.1 Source-Pathway-Receptor-Model

Liaison with NRW and Swansea Bay Port Health Authority

- 2.1.3 Particular attention will be paid to the prevention of pollution of the shellfish harvest areas within Queen's Dock and maintaining both the waters of the dock and foreshore in their existing condition. Early liaison with NRW and Swansea Bay Port Health Authority (SBPHA) before commencement will confirm the condition of the existing waters, the location of any existing outfalls and the location of proposed pollution prevention measures. Both NRW and SBPHA will be immediately informed of any spills by the Incident Controller together with proposed mitigating measures.

Potential pollution sources

- Concrete contaminated runoff into surface and ground water
- Hydrocarbons and chemicals into surface and ground water
- Construction vehicle emissions
- Construction dust and vehicle tracks
- Demolition works
- Earthworks
- Noise from land-based activities

2.2 Containment and Mitigation Plan

Prevention and control of silt contaminated runoff into surface and ground water:

2.2.1 Risks:

- Silt contaminated water flowing into controlled waters;

2.2.2 Pathways:

- Silt contaminated water flowing directly into controlled waters;

2.2.3 Controls:

- To prevent silt being mobilised and site runoff becoming contaminated, the following good practice will be employed where appropriate:
- All works to cease during periods of heavy rainfall likely to result in silt disturbance by moving plant and vehicles.
- Ground investigation indicates that the site is generally built up of sand and gravel and due to its porosity ponding of rainwater and consequent silt migration is unlikely.
- A borehole (BH9) in the vicinity of Inset A (drawing TLSB-ATK-HGN-XX-SK-D- 000006 indicated a Ground Water Level (GWL) approx. 3.5m below ground level, which is not influenced by tidal conditions.
- Soakaway tests (S15 and S16) in the vicinity of Inset A were undertaken in accordance with BRE Digest 365 (Soakaway Drainage). These indicate a soakage rate of approximately 4×10^{-5} m/s (based on the worse case of the tests undertaken).
- Confine site traffic to dedicated hard surfaced haul roads. These haul roads are to be maintained clear of loose material;
- Damping down for dust suppression to be carefully coordinated to ensure excessive volumes of water are not sprayed onto areas, mobilising suspended solids. Haul roads to be cleared of all loose material prior to damping down;
- Any material that is identified as contaminated and needs to be stockpiled during the Phase 1 works will be placed on an impermeable membrane and capped so that it is isolated and does not generate any contaminated runoff.
- No additional or revised drainage is proposed within the laydown or stockpile areas during Phase 1 works.

2.3 Control of concrete contaminated runoff into surface and ground water:

2.3.1 Risks:

- Concrete delivery vehicles washing out at uncontrolled locations;

2.3.2 Pathways:

- Cement contaminated water entering existing surface drainage; and
- Cement contaminated water flowing directly into watercourses or groundwater.

2.3.3 Controls:

- Dedicated concrete washout skips to be located at all kerb laying locations and at the gatehouse base where concrete is to be poured. Washouts to be signed and site operatives to be instructed to guide vehicles to them.

2.4 Control of hydrocarbons and chemicals into surface and ground water:

2.4.1 Definitions:

- **Double skinned tank** – twin walled tank where there is a small gap between the inner skin and the outer skin. All ancillary equipment i.e. inlet outlet pipes, sight glasses etc. fall outside the second skin.
- **Secondary Bund** – bunded area around an oil, fuel or chemical container which encompasses all of the ancillary equipment from the containers i.e. inlet/outlet pipes, sight glasses etc.
- **Integrally Bunded Tanks** – These are purpose-built storage units whereby the tank is situated within a liquid tight steel container. All gauges and ancillary equipment are also located within the container. The containers are lockable to prevent tampering.

2.4.2 Risks:

- Leakage of fuels and oils from plant and machinery;
- Leakage/spillage of fuels, oils and chemicals from containers;
- Spillage of fuel during refueling;
- Runoff from excessive use of shuttering oil; and
- Hydrocarbons washed out from un-cured bituminous paints and sealants.

2.4.3 Pathway:

- Hydrocarbons and chemicals entering existing site drainage;
- Hydrocarbons and chemicals entering watercourses or groundwater; and
- Hydrocarbons and chemicals entering drainage from site offices, canteen, storage units.

2.4.4 Controls:

- Re-fuelling of plant and machinery shall not take place within 10m of a watercourse or 50m of a borehole. Fuelling will only be carried out by appropriately trained personnel, issued with appropriate PPE.
- The re-fuelling of static and small items of plant shall be carried out by a suitably trained, designated person using fuel cans with spouts which can be inserted into re-fuelling apertures of the plant being re-fuelled. If such fuel cans are not available a funnel will be used.
- Bowsers used for the re-fuelling of plant shall not be left full overnight or at the end of the working shift. If bowsers are to be left full overnight, they shall

be stored in a secure bunded area and the bund shall have a capacity of 110% of the bowser.

- All fuels, oils and chemicals to be stored in suitable containers within controlled secondary bunded enclosures such as concrete bunds or drip trays. These shall be fenced enclosures positioned remote from surface water drainage.
- Bulk diesel and oils to be stored in a double skinned tank sited within an impervious bund or in an integrally bunded tank. Any valve, filter, sight gauge, vent pipe, or other related equipment (not including a fill pipe or draw off pipe) should be situated within the secondary containment system. The outlet from the tank shall be lockable and shall be locked off at the end of the working shift.
- Suitable security shall be provided for fuel and chemical storage areas.
- The secondary containment system must provide storage for at least 110% of the tanks maximum capacity. If more than one container is stored, the system must be capable of storing 110% of the biggest container's capacity or 25% of the capacity of all of the containers within the bund, whichever is the greater, refer to Figure 2.2 for typical arrangement.
- Drip trays and bunds shall not be penetrated by any valve or pipe used for draining the bund.
- If possible, bunds shall be covered to prevent the ingress of rainwater entailing the necessity to remove contaminated water from site. Contaminated rainwater shall be removed and placed into a sealed hazardous waste container or removed by tanker. Water contaminated with oil is Hazardous Waste. This shall be disposed of by a registered waste company. Many companies now collect this water and recycle the oil content, although this still requires a hazardous waste transfer note to be in place prior to uplift.
- All tanks shall be labelled to show their contents, volume, refill procedure and spill response procedure.
- The tank shall be dipped on a weekly basis to confirm the reading on the gauge with any unusual reading on the gauge reported to the store's manager. If the gauge is faulty the tank could be overfilled causing an overflow of fuel or oil.
- Plant and vehicles shall be inspected for oil and fuel leaks prior to the start of each shift.
- All static plant shall be placed within a drip tray which more than covers the footprint of the plant with a capacity of 25% of the fuel or oil capacity of the plant. Drip trays will be fitted with integral oil traps to allow them to drain or provision will be made for the removal of water during wet weather.
- All containers of hydrocarbons or chemicals used out on site shall be placed in a drip tray as above.
- All plant and equipment shall be removed from excavations at the end of each shift.
- COSHH and Environmental Hazard data sheets shall be obtained for all chemicals bought to site and copies shall be kept at the same location as the chemicals are stored. Attention shall be paid to instruction for environmental

conditions in which chemicals are to be stored i.e. temperature, humidity, expose to ultraviolet light, etc.

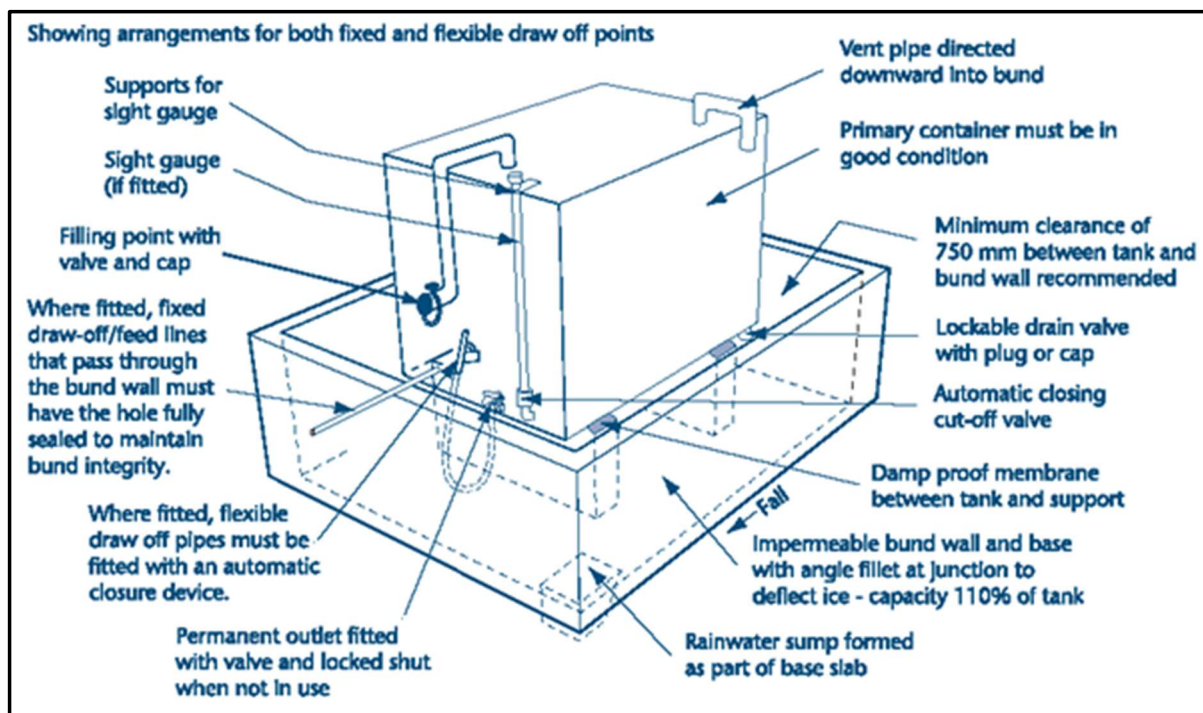


Figure 2.2 Secondary bund around a fuel tank

2.5 Construction vehicle emissions

2.5.1 Emissions will be managed via the following control measures:

- i. Use of catalytic converters and other emissions control devices and regular maintenance of vehicle engines;
- ii. Where possible, all vehicles will switch off engines when not in use, i.e. minimise idling vehicles; and
- iii. All employees will have received tool-box talks on the requirements to maintain the site free of vehicle and dust emissions wherever possible.

2.6 Construction dust and vehicle tracks

- 2.6.1 Machinery and dust-causing activities will be located away from sensitive receptors where possible and/or mobile booths for cutting and grinding will be adopted if work cannot be undertaken away from sensitive receptors.
- 2.6.2 All cutting equipment i.e. disc cutters, road saws will have water feed attachment to blade.
- 2.6.3 Construction of site roads will be carried out early enough to avoid the use of haul roads on site, where possible.
- 2.6.4 The speeds of vehicles tracking across unmade surfaces will be reduced to 10mph.

- 2.6.5 Water bowser with spraying equipment will be used as a dust-suppressant on haul routes, where appropriate, during dry weather. Lay-down areas and car parks will be provided with hose connection points at suitable locations in order that all areas may be damped down as required during periods of dry weather.
- 2.6.6 Drop heights will be minimised for delivery of aggregates and loading/offloading of on- site transport.
- 2.6.7 Regular vehicle cleaning will be carried out and, where appropriate, all delivery vehicles carrying materials likely to generate dust during transport to, from or on site shall be securely sheeted.
- 2.6.8 Mud tracked onto the public highway will be cleaned by lorry mounted road sweepers where necessary. Internal tarmacadam delivery access roads will also be maintained by regular sweeping with lorry mounted sweeping equipment together with damping down during periods of dry weather.
- 2.6.9 A programme of wheel washing of vehicles will be instituted.

2.7 Demolition works

- 2.7.1 Agree lines of communication between local authority Pollution control officer and contractor(s) prior to commencement of works and procedure for reporting dust events or complaints from local residents.
- 2.7.2 All demolition will be undertaken in a phased and controlled manner.
- 2.7.3 Regular inspections of works will be undertaken for visible signs of emissions of dust and early application of measures to minimise emissions at source.
- 2.7.4 Considerate location of temporary storage of dusty materials and material transfer operations on land that is not between site access and nearest receptors.
- 2.7.5 Any plant used for the crushing of materials will be issued with a Permit by the Principal Contractor (PC) under the Pollution Prevention and Control Regulations 2000. All work will be carried out in accordance with the conditions of the Permit.
- 2.7.6 Where plant is used to recycle materials, the appropriate license from NRW shall be obtained.

2.8 Communication and Reporting

- 2.8.1 In all cases the incident to be reported to the Site Manager/Incident Controller by the Site Foreman after he has inspected the site of the incident and ensured whatever mitigating measures are undertaken. The Incident Controller shall coordinate resources to ensure implementation of further containment and mitigation actions. The Environmental Coordinator and Health and Safety Manager shall be informed immediately and shall assist in the supervision of containment and mitigation actions as necessary.
- 2.8.2 All environmental incidents will be reported to TLSB within 24 hours and an incident report will be issued within 5 working days

- 2.8.3 The Environmental Clerk of Works (ECoW) shall assist in post incident training, incident reporting/monitoring and preparing documentation for the Environmental Management System (EMS). The EMS document for the site will outline the way in which environmental aspects will be managed and recorded. The EMS will be compiled in accordance with the criteria set out in ISO:14001.
- 2.8.4 The action details for the key staff responsible for emergency spill response are summarized in Table 2.1 and their contact details will be displayed in prominent locations around the site and be included in the Environmental section of the site induction.

Table 2.1 Emergency pollution incident response team and key actions

Title	Responsibilities
General Foreman (Griffiths)	Receives initial report of incident from site, visits location of incident to ensure all actions taken to stop the source and contain pollution. Reports incident and actions taken to Incident Controller
Site Manager (Incident Controller) (Griffiths) Deputy Site Manager (Incident Controller in the absence of Site Manager) (Griffiths)	Receives report from General Foreman and coordinates resources to undertake further actions in accordance with the appropriate Response Plan. Informs Contract Manager and Local Authorities Pollution Control Officer, NRW or Swansea Bay Port Health Authority (SBPHA) of incident as appropriate and agrees mitigating measures.
Environmental Co-ordinator (TLSB)	Incident Controller informs Environmental Coordinator and Health and Safety Manager who assist in supervision of the mitigating actions.
Health & Safety Manager (Griffiths)	
Environmental Clerk of Works (Griffiths)	Undertakes post incident training and carries out incident reporting/monitoring and completes documentation for the Environmental Management System
Contract Manager and Local Authorities Pollution Control Officer	Incident Controller provides written confirmation that mitigating actions complete and incident closed out.