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ENERGY AND CLIMATE CHANGE ENVIRONMENT AND SUSTAINABILITY INFRASTRUCTURE AND UTILITIES LAND AND PROPERTY MINING AND MINERAL PROCESSING MINERAL ESTATES WASTE RESOURCE MANAGEMENT



ASCO UK LTD

**GREAT YARMOUTH SHIP TO SHORE FACILITY** 

**OPERATING TECHNIQUES** 

DECEMBER 2022





DATE ISSUED:	DECEMBER 2022
JOB NUMBER:	BM12124
REPORT NUMBER:	0004
VERSION:	V0.1
STATUS:	FINAL

#### ASCO UK LTD

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#### **OPERATING TECHNIQUES**

**DECEMBER 2022** 

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#### CONTENTS

1	INTRODUCTION	1
2	PERMITTED ACTIVITIES	2
3	SITE OPERATIONS	3
4	WASTE PRE-ACCEPTANCE PROCEDURES	5
5	WASTE ACCEPTANCE PROCEDURES	6
6	WASTE STORAGE AND CONTROL	8
7	MEASURES TO PROVIDE ENVIRONMENTAL AND AMENITY PROTECTION	9
8	ENVIRONMENTAL MANAGEMENT SYSTEM	12
9	SITE CLOSURE	13

### TABLES

Table 2.1 Waste Recovery and Disposal Operations	. 2
Table 3.1 Permitted Wastes	.4

### APPENDICES

Appendix 1	Appendix 10-F of the Guidelines For Offshore Marine Operations (GOMO)
Appendix 2	GOP-WM-046 Bulk Slops from Vessel to Onshore Storage Tanks
Appendix 3	GOP- 05 Waste Acceptance Tankers
Appendix 4	Draintector Overview
Appendix 5	LRQA Certificate of Approval

DRAWINGS	TITLE	SCALE
BM12124-001	Site Location Plan	1:20,000@A4
BM12124-002	Environmental Permit boundary and Site Layout	1:150@A3
16447-004	Storm Drainage - Layout and Emergency Procedure	1:400



### 1 INTRODUCTION

- 1.1.1 ASCO UK Ltd proposes to develop a waste storage facility (tank farm) at its 'ship to shore' site on South Denes Road, Great Yarmouth. The location of the site is shown on Drawing BM12124-001.
- 1.1.2 The facility will accept up to 20,000 tonnes per annum of hazardous and nonhazardous wastes from the oil and gas industry, including off-shore platforms and drilling rigs and onshore gas terminals.
- 1.1.3 Under the Environmental Permitting (England and Wales) Regulations 2016, the proposed storage of hazardous waste is classified as an installation activity and listed under Schedule 1, Part 2, Section 5.6 A(1), while the storage of non-hazardous waste is classified as a waste operation. The physico-chemical treatment (by gravity separation) of hazardous waste for recovery or disposal and the physico-chemical treatment of non-hazardous waste for disposal are also listed activities, falling under Section 5.3 A(1) and Section 5.4 A(1), respectively. The treatment of non-hazardous waste for recovery is classified as a waste operation. The permitted activities are discussed further in section 2.
- 1.1.4 Permitted wastes will be limited to drilling fluids contaminated with hydrocarbons, plus other liquid and slurry wastes from the oil and gas industry, including slops. No Naturally Occurring Radioactive Materials (NORM) will be deposited at the facility. All waste deliveries will be made by ship or road tanker, and all wastes will be removed from site by road tanker. Waste pre-acceptance and waste acceptance procedures are discussed in sections 4 and 5 respectively.
- 1.1.5 The facility will comprise five storage tanks with a total storage capacity of 550m<sup>3</sup>. All tanks will be located within a single bund with a capacity of c. 392m<sup>3</sup> that provides sufficient capacity for 110% of the largest tank (c. 177m<sup>3</sup>) and at least 25% of the total tank capacity (137.5m<sup>3</sup>). Incompatible wastes, including hazardous and non-hazardous wastes will not be stored in the same tank. Waste storage and control is discussed further in section 6.
- 1.1.6 The permit boundary and site layout is shown on drawing BM12124-002 and includes the tank farm, all related pipework and an area adjacent to the bund for use by road tankers when delivering or removing wastes. The wider ASCO site includes a lower tier COMAH facility which is located adjacent to the permit boundary of the ship to shore site. Environmental protection and mitigation measures are discussed further in section 7.



1.1.7 The facility will be operated under an Environmental Management System (EMS) accredited to ISO14001. Further information is provided in section 8.

#### 2 PERMITTED ACTIVITIES

- 2.1.1 Under the Environmental Permitting (England and Wales) Regulations 2016 (EPR 2016), the proposed storage of hazardous waste is classified as an installation activity and listed under Schedule 1, Part 2, Section 5.6 A(1), i.e. the temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2 and 5.3. The storage of non-hazardous waste is classified as a waste operation.
- 2.1.2 While being stored, the waste material will passively undergo gravity separation, allowing differential offtake of the liquid and solid (mud) component of the material. This physico-chemical process also classifies as an installation activity for both hazardous and non-hazardous waste, listed under Schedule 1 of EPR 2016 as follows:
  - Section 5.3 A(1), (a) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities (ii) physico-chemical treatment; and
  - Section 5.4 A(1), (a) Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC concerning urban waste-water treatment(4)— (ii) physico-chemical treatment.
- 2.1.3 The proposed physico-chemical treatment of non-hazardous waste for recovery classifies as a waste operation.
- 2.1.4 Recovery and disposal activities, as defined in Waste Framework Directive Annex I and Annex II, will be undertaken on site. These are listed in Table 2.1 below.

Table 2.1 Waste Recovery and Disposal Operations		
Treatment process/storage facility	Annex I/II operations	
Storage pending recovery	Annex II R13 Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced).	



Table 2.1 Waste Recovery and Disposal Operations	
Treatment process/storage facility	Annex I/II operations
Storage of wastes pending disposal	Annex I D15 Storage of waste pending any of
	the operations numbered D1 to D14 (excluding
	temporary storage, pending collection, on the
	site where it is produced)
Gravity Separation	Annex I D9 Physico-chemical treatment
	resulting in final compounds or mixtures which
	are discarded by any of the operations
	numbered D1 to D12, e.g. evaporation, drying,
	calcination

# **3** SITE OPERATIONS

- 3.1.1 The facility comprises five storage tanks with a total storage capacity of 550m<sup>3</sup>. The tanks provide the following capacities:
  - Tank ENV01 161m<sup>3</sup> (3.7m x 15m);
  - Tank ENV02 161m<sup>3</sup> (3.7m x 15m);
  - Tank ENV03 76m<sup>3</sup> (3.4m x 10m);
  - Tank ENV04 76m<sup>3</sup> (3.4m x 10m);
  - Tank ENV05 76m<sup>3</sup> (3.4m x 10m).
- 3.1.2 All tanks will be enclosed within an existing bund that has been constructed to BS8500:2015. The bund has a capacity of 392m<sup>3</sup>.
- 3.1.3 The permit boundary includes the pipework that connects ships delivering the wastes to the tanks and an area outside of the bund for the outloading of wastes into road tankers. Infrastructure external to the bund is provided with robust secondary containment.

#### 3.2 **Permitted Wastes**

3.2.1 Proposed waste types are those from the oil and gas industry and are well understood. Permitted wastes will comprise drilling muds, sludges and other similar wastes. Some of these wastes will be contaminated with hydrocarbons and will therefore be classified as hazardous. Permitted wastes are listed in Table 3.1.



Table 3.1 Permitted Wastes		
Waste EWC Code	Description of Waste	
01 05 04	Freshwater drilling muds and wastes	
01 05 05*	Oil-containing drilling muds and wastes	
01 05 06*	Drilling muds and other drilling wastes containing dangerous substances	
01 05 07	Barite-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06	
01 05 08	Chloride-containing drilling muds and wastes other than those mentioned in 01 05 05 and 01 05 06	
13 01 01*	Hydraulic oils, containing PCBs	
13 01 04*	Chlorinated emulsions	
13 01 05*	Non-chlorinated emulsions	
13 01 09*	Mineral-based chlorinated hydraulic oils	
13 01 10*	Mineral based non-chlorinated hydraulic oils	
13 01 11*	Synthetic hydraulic oils	
13 01 12*	Readily biodegradable hydraulic oils	
13 01 13*	Other hydraulic oils	
13 04 03*	Bilge oils from other navigation	
13 05 02*	Sludges from oil/water separators	
13 05 03*	Interceptor sludges	
13 05 06*	Oil from oil/water separators	
13 05 07*	Oily water from oil/water separators	
16 07 08*	Wastes containing oil	
16 07 09*	Wastes containing other dangerous substances	
16 10 01*	Aqueous liquid wastes containing hazardous substances	
16 10 02	Aqueous liquid wastes other than those mentioned in 16 10 01	

3.2.2 The total annual throughput will not exceed 20,000 tonnes per annum.

#### 3.3 Hours of Operation

3.3.1 Due to the nature of the offshore oil and gas industry and the supply ships that service them, along with tides and departure times, the site is required to be open to accept waste at any time through the day and night. The operating hours for the site will therefore be required to be 24 hours. The site may not be open for 24 hours a day but will open at various times in a 24-hour period to service resupply ships that are returning loaded with drilling wastes.



# 3.4 Staffing and Understanding of Requirements of Permit Conditions

- 3.4.1 The site will be operated by personnel conversant with the requirements of the Environmental Permit and management system. All operatives will receive induction and other training appropriate to their roles on site.
- 3.4.2 Any contractors or other visiting personnel to the site will be made aware of the Environmental Permit and other legal requirements. This will take place alongside the site induction but will be separate to information on site practices and company policies. Aspects of their work that could affect permit and legislative compliance will be identified and specific instructions will be provided during the induction process to ensure any potential risks associated with their work are mitigated against.
- 3.4.3 Ship operatives whose work may also affect the compliance and running of the site will be trained and made aware of the permit requirements at this facility. Their work will be supervised during offloading so that any issues are identified early and non-compliance is avoided.
- 3.4.4 A Technically Competent Manager will be present at the site for the purposes of supervision of the day-to-day operations of the permitted facility. This manager will be present for at least the minimum time required under Environment Agency guidance.

#### 4 WASTE PRE-ACCEPTANCE PROCEDURES

- 4.1.1 Pre-acceptance procedures will ensure that only compliant waste types are accepted from both off-shore and on-shore sources. All waste arriving on site will have been pre-approved and checked against the site's Environmental Permit and legislative requirement. Off-shore platforms serviced by the facility will have made their waste arisings known to site management before delivery commences. This will include characterisation of the wastes.
- 4.1.2 All wastes received on site will be from the oil and gas sector, and will be from known single sources and producers that are working in a clearly defined sector. This provides a high degree of confidence in the waste types to be accepted. The facility's operation is tailored to the needs of the oil and gas sector and so the nature of the wastes produced are well understood.
- 4.1.3 The pre-acceptance characterisation information will be provided to the operator by the waste producer, including the results of chemical testing and analysis, ensuring



the waste is described and its properties known before arrival at the tank farm. This characterisation will be provided to the facility management to ensure that the waste falls within the permitted waste types and there is adequate space to accept it within the tanks.

- 4.1.4 Producers of wastes from offshore facilities will be expected to operate in accordance with Appendix 10-F of the Guidelines For Offshore Marine Operations (GOMO), which is provided as Appendix 1; these guideline set good practice for waste transfer from offshore industries and set out procedures for offshore facilities to test wet bulk waste whenever possible prior to backload.
- 4.1.5 Transfer notes (or consignment notes, as appropriate) will be prepared by the waste producer. All necessary information and associated documentation to satisfy the requirement of the Waste (England and Wales) Regulations 2011 and the conditions of the Environmental Permit will be provided with the waste deliveries. The results of any testing will be requested as part of pre-acceptance checks.
- 4.1.6 Where analysis is not available, there remains a high degree of confidence that the facility can safely accept the resulting waste types in accordance with the permit, due to the material arising from single sources in a clearly defined sector. Acceptance checks will be carried out on the arriving wastes, as described below. Once the facility staff are satisfied that the waste is consistent with pre-acceptance checks and compliant with the permitted wastes it will be accepted and offloaded.

#### 5 WASTE ACCEPTANCE PROCEDURES

- 5.1.1 On arrival, the material to be transferred from road tankers and ships will be subject to waste acceptance procedures to check and verify their acceptance on site. Any specific handling or storage requirement for individual wastes arriving will have been established at the waste pre-acceptance stage from the duty of care documentation that will be raised on arrival at the facility. ASCO's written procedure for the verification and offloading of wastes from ships to onshore tanks is provided as Appendix 2 and its procedure for offloading road tankers is provided in Appendix 3.
- 5.1.2 Once waste acceptance checks have confirmed the waste is acceptable and pipe connections have been confirmed as correctly fitted, then waste will be discharged from the ship or the road tanker to the designated tank. Each waste type will be



separately offloaded, to ensure there is no accidental mixing of individual waste streams.

- 5.1.3 An appropriately trained member of staff will ensure that the appropriate tank is predefined and has capacity available for the wastes before pumping commences.
- 5.1.4 Supervising staff and automatic sensors will ensure that overfilling does not occur and any leaks and spillages of the wastes are identified immediately, if they occur. Upon completion of discharge of the waste from the road tanker or ship, supervising staff will confirm the volume of wastes received against that on the transfer note.
- 5.1.5 Waste will not be accepted if for any reason there is insufficient storage capacity available or if the site is inadequately manned. Any damage or breakdown of equipment that could potentially cause a non-compliance at the site will also mean that waste acceptance would cease. In this case, the incoming supply ships would be redirected to the nearest facility that could accept the wastes on board, or the waste would be offloaded by road tanker with the waste sent to an appropriately permitted facility.
- 5.1.6 All incoming wastes will by sampled by the site chemist to ensure it conforms to the expected waste characteristics. Checks will include simple visual checks, pH, odour, appearance, COD, miscibility and flash point
- 5.1.7 Records of incoming wastes will be kept and retained at the facility and these will be made available for inspection to officers of the Environment Agency. Incoming wastes will be measured based on volume, which will be measured from road tanker's volume gauge and/or the ship's waste-holding tanks and vessels, as well as the site tanks' volume gauges. The tonnage can then be confirmed based on standard densities for the waste received.
- 5.1.8 Incoming and outgoing waste tonnages and volumes will be recorded so that there is full oversight of the current volumes of wastes held on site, allowing the annual throughput to be tracked against the permit limits.

#### 5.2 Non-conforming wastes

5.2.1 Should any non-conforming waste be identified, wastes will either be returned to the producer/previous holder or re-directed to an appropriate authorised facility. Any non-conforming waste arriving by ship will not be able to be reloaded into the ship due to the nature of the offshore resupply business, however a suitable road tanker(s) will be arranged and the waste will be directly loaded into this from the ship. In the



event that any non-conforming wastes have already been off-loaded into site tanks, the relevant tank will be drained into a road tanker for removal off site to an appropriately permitted facility as soon as possible and the Environment Agency will be notified.

- 5.2.2 The producer of the waste will also be informed, and a record of the occurrence will be made in the site diary, along with actions taken and a record of review will be handled in accordance with the Environment Management System (EMS).
- 5.2.3 Waste materials dispatched off site to an authorised facility, will be removed in accordance with the The Waste (England and Wales) Regulations 2011. A registered waste carrier will be used.
- 5.2.4 A site log will be maintained in a dedicated office on site to record details of any incidence of non-conforming wastes and its resolution.
- 5.2.5 Acceptance receipts, transfer notes and consignment notes (either hard copy or digital) will be kept by ASCO UK Ltd.

### 6 WASTE STORAGE AND CONTROL

- 6.1.1 Compatible wastes with similar properties or recovery/disposal routes will, as far as practicable, be stored together, with the exception of storing hazardous and non-hazardous wastes separately.
- 6.1.2 All storage will be in tanks and vessels that are suitably constructed to withstand the pressures and properties of the wastes in question. These tanks are located on impermeable surfaces with secondary containment. This will minimise the risk of tank failure or contain any spillages that did occur. The bund has a capacity of 391.90m<sup>3</sup> and is regularly inspected for its condition.
- 6.1.3 Storage volumes will be monitored through the use of ultrasonic measurement gauges. Both the weight and volume of the waste in each tank will be measured.
- 6.1.4 Storage will be for adequate lengths of time to allow for appropriate volumes of material to be bulked up for onward disposal or treatment, and to allow the solid component to settle out of the liquid component through gravity separation. This will not necessarily mean that extended storage periods are required, but storage times may vary to optimise the efficiency of onward transport.



- 6.1.5 Once gravity separation has completed, the liquid component and the mud are each sampled and tested to ensure the appropriate recovery/ treatment route is selected. Liquids are sent to a suitably licenced facility for treatment, and muds are sent to a permitted facility for recovery and/or disposal as appropriate.
- 6.1.6 Where necessary, pipework will be cleansed by blowing of clean air through the pipes. The waste to be accepted at the site will have a high water content, so cleaning of the inside of the tanks will not usually be necessary. If it is necessary at any point to flush tanks or pipework with water, resultant wash waters will be sent to a permitted facility for treatment.
- 6.1.7 Other periodic cleaning of waste storage areas and facilities will be carried out. All cleaning effluents will be placed within an appropriate container at the facility for removal by road tanker.
- 6.1.8 There will be an automatic shut off procedure for the outloading of outbound tanker vehicles removing waste from the site. This will include automatic shut off if a leak is detected or the tanker is filled.
- 6.1.9 Trained operatives will oversee and control this process during loading/offloading.
- 6.1.10 Should there be any power failure then waste will not be accepted at the site unless this can be done in such a way that it does not allow non-compliance with the permit or other environmental legislation, on site.

# 7 MEASURES TO PROVIDE ENVIRONMENTAL AND AMENITY PROTECTION

- 7.1.1 The Accident and Amenity Risk Assessment has considered the necessary and appropriate measures to prevent or minimise environmental and amenity impacts that may result from the site.
- 7.1.2 The main risk from the facility is to surface waters and groundwaters. Appropriate measures are provided to control these risks.
- 7.1.3 In addition, pressure relief valves are provided on storage tanks to allow for the displacement of air during filling. These will not be a source of continuous point emissions to air.

#### 7.2 Surface Water and Groundwater Protection

7.2.1 Secondary containment is provided for the tanks by the bunded area. Tertiary containment is also provided through the wider site surface water drainage system



which will provide a sealed drainage system. This also effectively provides secondary containment for the reception point (pipe connection) and outloading areas of the facility.

- 7.2.2 The surface water drainage system is shown on Plandescil Drawing 16447-004. Automated shut off valves (see Appendix 4) were installed at all discharge points which engage if hydrocarbons are detected in the runoff from site, preventing contamination entering the River Yare.
- 7.2.3 Water accumulating in the bund (or drainage system during emergency use) will be tankered off to an appropriately permitted facility for treatment.
- 7.2.4 The area is identified as having a high risk of flooding due to the proximity of the North Sea and tidal River Yare. The Flood Risk Assessment included in the Accident and Amenity Risk Assessment identifies appropriate measures for the prevention of pollution due to flooding.

#### 7.3 **Control of Odours**

- 7.3.1 The risk of wastes being malodorous is considered to be very low however, the following measures will be in place to minimise the potential for odour from the permitted activities:
  - waste loads delivered directly into enclosed tanks from ships and road tankers, and will be dispatched in enclosed tankers. The material will not be exposed to the open air at any point;
  - site operatives will undertake olfactory monitoring at the site during their work;
  - in the very unlikely event that odour nuisance is detected at the site boundary, an investigation will be undertaken to determine the cause;
  - any incidence of odour nuisance will be recorded in the site log, together with details of the cause and actions taken to resolve the situation;
  - the site log will be made available for inspection to authorised officers of the environment agency; and
  - in the event of any odour complaints from the public or local businesses, an investigation will be undertaken to determine the cause and mitigation measures implemented as appropriate. Details will be recorded in the site diary and reported through the EMS.



### 7.4 **Control and Monitoring of Noise**

- 7.4.1 The nature of the site means that there will be elements of noise during the site activities, primarily during waste deliveries and offtake. However, the harbour area is an industrial location and there are several similar other businesses at the same location, meaning that there is a lack of nearby receptors sensitive to noise.
- 7.4.2 The wider site already carries out various activities associated with the resupply of offshore platforms. Ships dock and are loaded and unloaded of various cargoes from these facilities. It is therefore not expected that the inclusion of offloading of waste will contribute any additional noise to the area given that the waste is carried on existing ship movements.
- 7.4.3 Site staff will be trained to ensure that the site activities do not cause excessive or unreasonable noise, especially at night.
- 7.4.4 If any complaints are received, then they will be investigated and any remedial actions or repairs will be carried out and noted in the site diary.
- 7.4.5 All equipment is modern and under a preventative maintenance regime, meaning that the risk of noise is extremely unlikely in excessive or inappropriate quantities.

#### 7.5 **Control of Vermin, Insects and Scavenging Birds**

- 7.5.1 By their nature, the wastes accepted at this facility are will not attract or encourage pests or vermin. Strict waste acceptance procedures and good housekeeping measures will be employed to ensure risk of attracting pests and vermin is kept to a minimum.
- 7.5.2 Should vermin, pest or insect infestations (or signs of their presence) be detected during routine inspection or through a complaint, action will be taken to secure the attendance of a suitably trained operative or professional pest control contractor.

#### 7.6 Control of Litter

- 7.6.1 The incoming waste is not capable of causing litter problems given its nature and composition. Mitigation measures to prevent litter will include regular site checks by staff and dedicated litter bins for staff waste, along with covered waste containers for canteen and other general waste produced on site and are awaiting collection.
- 7.6.2 Site personnel will carry out visual inspection of the operational areas, the site entrance, the public highway and adjacent land as they carry out their duties. In the



event that litter from the site is found in these areas, the affected areas will be tidied as soon as possible.

#### 8 ENVIRONMENTAL MANAGEMENT SYSTEM

- 8.1.1 An Environmental Management System (EMS) will be implemented that is compliant with the requirements of ISO14001. This includes:
  - Quality Management;
  - Environmental Management;
  - Health and Safety Management;
  - Training;
  - Maintenance;
  - Permit requirements; and
  - Other environmental legislation and requirements.
- 8.1.2 The EMS provides a mechanism for the environmental management of all areas and departments of the site and allows ASCO UK Ltd to manage and control the environmental impacts of its activities, products and services.
- 8.1.3 The Quality, Environmental and Health and Safety Policies will be communicated to all employees. Implementation of the system will involve:
  - initial Environmental Awareness Training for all employees;
  - introduction and implementation of the system; and
  - identification of any environmental impacts, which is the most significant part of the system and involves a process of identifying key activities, products and services and the associated environmental aspects.
- 8.1.4 The EMS includes a plan to prevent or remediate the environmental impacts, along with targets, which are agreed and implemented through site review meetings and ongoing site controls.
- 8.1.5 Staff at the facility will be trained to carry out checks during their work to spot any actual or potential occurrences of spillages, leaks or other events, malfunctions and the like that could cause emissions to air, water or ground. These will be immediately reported to site management and appropriate remedial action carried out.



- 8.1.6 An annual audit will be undertaken to cover legal compliance (both environmental and health and safety), environmental improvements and systems compliance. This will be achieved by:
  - establishing compliance with legal commitments, e.g. Environmental Permit and Planning Permission;
  - establishing compliance with relevant legislation, e.g. Waste Regulations 2011;
  - reviewing Environmental Management Programmes;
  - confirming commitment to continual improvement; and
  - Working with the Environment Agency during compliance visits.
- 8.1.7 An Audit Report will be produced and will contain the following information:
  - Site Inspection and Health & Safety Audit;
  - Incident Reports Summary and Review;
  - Environment Agency Inspection Summary and Review;
  - Review of Environmental Objectives and Performance; and
  - Audit findings, conclusion and recommendations.
- 8.1.8 Evidence of ASCO's EMS is attached as Appendix 5 'LRQA Lloyds Register Certificate of Approval', to this report.

#### 9 SITE CLOSURE

- 9.1.1 On completion of operations at the site, the facility will be closed in a controlled manner to prevent any contamination of the surrounding land or air.
- 9.1.2 Measures will ensure that there is no dust, noise or odour nuisance associated with site closure.
- 9.1.3 All tanks will have their contents removed to an appropriately permitted facility and the tanks and pipes will be cleansed to ensure no residues remain.
- 9.1.4 Site infrastructure will be dismantled if there is no further use for it. It is expected that the tanks and pipework, along with the bunding and surfacing will remain and can be utilised for another purpose following site closure.



- 9.1.5 Any dismantling of tanks or other infrastructure will be done so that the wastes produced from these can be recycled, reused or recovered fully, wherever possible.
- 9.1.6 No further deliveries of wastes will be permitted at the site following closure. Customers will be informed of this with a sufficient lead-in time to make arrangements with alternative facilities.
- 9.1.7 The Environmental Permit will be surrendered following the closure of the facility.

APPENDICES

Appendix 10-F of the Guidelines For Offshore Marine Operations (GOMO)

GOP-WM-046 Bulk Slops from Vessel to Onshore Storage Tanks

**GOP- 05 Waste Acceptance Tankers** 

**Draintector Overview** 

LRQA Certificate of Approval

DRAWINGS

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