



Sparkes Marina Quay Wall Project

Construction Phase Environmental Management Plan



Sienna Construction Limited
14 Mitchell Point
Ensign Way
Hamble-le-Rice
Southampton
SO31 4RF



CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

PROJECT NAME:	Quay Wall Replacement Project
LOCATION:	Sparkes Marina, Wittering Road, Hayling Island, Hampshire, PO11 9SR
PROJECT NUMBER:	326
OPERATIONS DIRECTOR:	Mr E Manger
CONSTRUCTION START DATE:	19/04/2021 estimated
CONTRACT DURATION:	16 Weeks including Mobilisation period.

PROJECT DESCRIPTION (Brief)	Installation of a new steel sheet piled quayside retaining wall, concrete capping beam and tie-rod anchors to an existing section of quay wall at Sparkes Marina that has degraded. Works will involve silent piling, partial demolition of the existing seawall, excavations of quayside, and backfill to facilitate the construction design. Ground make-up on completion to provide hard-standing area for boat storage.
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Issue Control

Sienna Construction Project Manager will keep a controlled copy of this Construction Environmental Management Plan on file on site. This copy will be amended in accordance with document control procedures, by a person nominated by the Operations Manager (usually the Environmental Co-ordinator)

Only the controlled copy can be guaranteed to be the most up to date.

Named Holder Details	
Name:	Mark Collier
Position	HSEQ Manager
Location:	14 Mitchell Point, Ensign Way, Hamble, Southampton, SO31 4RF
Date of issue:	31.03.21

Non-controlled copies of the management plan will be issued to the site management team and Sub contractors.

Review of the Environmental Management Plan

In addition to the regular risk reviews, the Environmental Management Plan must be reviewed periodically or at the start of major works package and the revision number updated. The plan will reference the project Construction Phase Health & Safety Plan issued in accordance with the Construction Design and Management Regulations 2015 ensuring continuation of control and mitigation procedures throughout the lifetime of the project.

Amendment Record

The contents of this plan are subject to change.

The holders shall be responsible for ensuring that any amendments and/or new issues are incorporated into their copy, whether on computer or hard copy and that superseded sheets are destroyed as follows: -

- Complete pages will be issued to replace those that have been amended.
- Amended pages will be removed and destroyed by the holder and the amendment record updated.

Amendment Record Sheet

Issue	Page No(s).	Project Stage (tender/ design/ construction etc)	Date of Issue	Author	Reviewed by	Authorised by Project Director
00	all	Pre-construction	31.03.21	Mark Collier	n/a	Ed Manger
01	12.13	Pre-construction	28.04.21	Mark Collier	AM	Ed Manger
02	9-10	Pre-Construction	10.05.21	Mark Collier	AM	Ed Manger

1 **Introduction**

The appointed Project Team at Sienna aims to work in a manner that reduces any negative environmental impact of the demolition & construction works undertaken, in accordance with the business Environmental Policy Statement and our ISO14001:2015 accreditation.

To do this, the Project Team and all sub-contractors will comply with the requirements of the Environmental Management System ISO14001:2015 (EMS) and this Construction Environmental Management Plan (CEMP).

2 **Site Environmental Details**

2.1 **Site Environmental Obligations**

Client requirements (e.g., client CEMP)	Construction Environmental Management Plan. Environmental Risk Register
Specific Legal Requirements (for example permits, consents and licences)	Planning Approval from local Authority. Habitats Regulation Assessment. The Conservation of Habitats and Species Regulations 2010 Environment Act 1995, Environment Agency License Queens Harbour Master License Waste Regulations
Previous studies / reports, e.g. EIA etc	Ground Investigation Reports – CJ Associates Report. EA flood risk assessment

2.2 **Environmental Roles and Responsibilities & Useful contacts**

Details of the overall responsibilities for Environmental Management can be found in the relevant Section of the EMS

Project Roles

Senior Contract Manager Name: Mr E Manger Tel: 02380 452228
Project Environmental Manager/Coordinator Name: Mr M Collier Tel: 02380 452228

Useful Contacts

Environment Agency 08708 506 506 (General Enquiries) 0800 807060 (Emergencies Only)
Environmental Spill Response Advisor Tel: 023 8045 8050 / 0800 592 827

3. Training Requirements

- Specific training requirements will be identified using the EMS Environmental Training Procedure,
- Site-specific induction will include environmental information relevant to the works being undertaken and any restrictions, constraints or requirements of this project.

At the minimum, induction must include:

- Noise management including working hours, quiet times, hours of operation and seasonal timings of operation.
- Waste management including segregation and recycling
- Control of environmental incidents and response procedures
- Environmental Toolbox talks will be carried out at a minimum once per month covering salient topics.
- Records of specific environmental training are kept in the Site Environmental File.

In addition, the Site Manager or designated supervisor will conduct, record and monitor daily site environmental aspects on form HS&E-FRM-C03-08. Copies of these inspections will be filed on site for review.

4. Site Environmental Objectives and Targets

4.1 Project Specific Objectives, Targets and Environmental Management Programme

Project specific environmental objectives and targets are identified and implemented using the project environmental management programme.

Objective	Target	Action	Action By	Resources Required	Time scale Approx.
Maximise the amount of waste that is recycled	Reuse or recycle at least 75% of waste produced on site	Waste minimisation plans identify reuse / recycling routes in line with the Hierarchy of Control for Waste Streams.	Project team / Environmental Advisor, designers, construction team.	Training, space, selection of waste/recycling contractors.	Duration of Project works
Protection of Solent Maritime Special Area of Conservation (SAC) and the Chichester and Langstone Special Protection Area (SPA) and Ramsar Sites. The site is within an area of Site Special Scientific Interest.	No environmental incidents for duration of contract. Compliance with all statutory legislation and stipulations of all licences from the Marine Management Organisation, Environment Agency and Planning Authority.	Adhere to all statutory legislation carefully, correct any non-conformance with immediate effect, and compile, maintain, update the project Environmental Risk Register to ensure all practicable actions are completed.	Project team / Environmental Advisor/Site Management Team	Training, time, information	Pre-Construction, Duration of Project.
Raise awareness of environmental waste issues	Reduce waste streams produced in line with Sienna EMS requirements and statement.	Encourage waste segregation and reuse/recycling. Record data in waste management system	Waste co-ordinator, licensed waste contractor.	Training, time, information, approved waste contractor.	Duration of project
Reduce potential environmental incidents	No environmental incidents for duration of contract from our works.	Adhere to all procedures carefully, correct any non-compliances with immediate effect, compile an Environmental Risk Register with suitable control mechanisms implemented to achieve objective.	Project team/ Environmental advisor.	Time, training, licensed incident response contractor appointed.	Duration of project

Objective	Target	Action	Action By	Resources Required	Time scale Approx.
No environmental impact on the surrounding wildlife and marine habitats	Ensure compliance with The Conservation of Habitats and Species Regs 2010.	Client commissioned pre-construction surveys, reports and analysis to provide adequate information for a Habitat Regulation Assessment to be undertaken by the local Authority. It has been assessed that the existing wildlife will be 'Habitualised' due to the nature of existing boat yard operations, the construction phase will not increase environmental impacts on these sensitive receptors at the distances outlined. The use of construction techniques that by their nature reduce noise. In this case, the use of Push-In piling technology that removes the noise of vibration or percussion	Consulting engineers, Sub-contractors specialists and historical documentation.	Time, information	Pre-construction, Construction Phase
Reduce operations generating high noise and vibration levels possibly affecting sensitive receptors in the immediate and wider surrounding areas of the marina.	Reduction in noise and Vibration nuisance to surrounding areas, habitats and wildlife during the works.	Early Procurement of suitable contractors. Source machinery with noise suppression and low vibratory impacts. Design for piling works is zero percussive piling with soft pile initiation at each location, pushed into position using hydraulic pressure applied. Contractor assessment of piling noise levels shows circa 30dB at 50m from work site. This is the point at which the sensitive receptors have been identified. It has been assessed that the existing wildlife will be 'Habitualised' due to the nature of existing boat yard operations, the construction phase will not increase environmental impacts on these sensitive receptors.	Project Team/Designers Environmental advisor Site management team, Piling Contractor.	Time, information, monitoring regime at point of receptors for noise levels, recorded during operation to ensure compliance.	Pre-construction/ Duration of project, during all piling operations.
Objective	Target	Action	Action By	Resources Required	Time scale Approx.
Introduce mitigating controls to planned works to reduce environmental impacts.	100% of inert waste material to be reused on the project reducing landfill. Breakout of existing concrete slabs within project areas to be	Stockpiling of small quantities of as-dug materials for reuse in designated areas away from drainage systems. All stockpiled concrete materials to be	Design team, Project team/Site management team. Waste contractors.	Space, Supply chain contractors.	Duration of Project

	recycled off site by licensed contractor. Boatyard surface materials to be reused in existing locations. No escape of contaminates from concrete washout activities. Limit potential disturbance of contaminated ground	transported off site by licensed waste carrier to recycling facility within 1 week. No long-term storage of stockpiles to be undertaken. Designated area for stockpile away from water courses or drainage entry points. All material to be in area of origin and not moved around boatyard. 6yd metal skip lined with 1200DPM membrane to be used for all wash out of readymix deliveries. Once dried out remove and add to recycled material for removal from site. Use of zero percussive piling generates no arisings during operation reducing potential for disturbance and spread of contaminated ground.			
Objective	Target	Action	Action By	Resources Required	Time scale Approx.
Protection of surrounding habitats from construction dusts and debris.	Complete dust suppression on all works preventing airborne particles collecting on mass in adjacent habitats	Installation of dust suppression 'misting' system during dry weather periods. All stockpiled materials to have suitable dust netting covering while stored on site. Stockpiles to be removed from site as soon as practicable to reduce potential drying out and dust build ups. Cutting operations to have water suppression system fitted to reduce dust generation. Risk assesses all operations with potential to create dusts and mitigate with suitable controls implemented, checked for efficiency during project. The designated sensitive receptors are located significantly away from all construction operations. Implement control and mitigation strategy as outlined in statements above.	Project Team Environmental advisor, site management team.	Equipment, monitoring, assessment.	Duration of project

Objective	Target	Action	Action By	Resources Required	Time scale Approx.
Protection of surrounding habitats from construction noise.	Reduce the amount of noise produced by construction activities to protect adjacent habitats	Complete construction activities in the seasonal windows defined by the Marine Management Licence, Planning Approval and Environment Agency Licence. The use of construction techniques that by their nature reduce noise. In this case, the use of Push-In piling technology that removes the noise of vibration or percussion. The first 3 sheet piles will be installed using a 'reaction stand' or through traditional vibratory methods. The 'Reaction stand' is a weighted steel platform which the Silent Piler operates from to install the 3 piles. The weighted steel platform provides the reaction force to the piler that is usually sourced from the previously installed sheets. Alternatively, traditional vibratory methods will be used for this short duration which is permitted for use between April and September as detailed in the planning permission and Marine Licence. Works requiring vibration will be short in duration. Complete construction activities between the hours of: Monday to Friday: 08:00 to 18:00, Saturday: 08:00 to 16:00.	Project Team Environmental advisor, site management team.	Training, time, information, monitoring, assessment.	Duration of project
No environmental incident from hazardous materials, liquids	100% compliance with statutory regulations.	Composure of a Site spill response plan/emergency plan and briefed at inductions. Designated re-fuelling area for all plant with spill response equipment. All fuels maintained in bunded bowers with 110% capacity. Reduced quantities of fuels/chemicals stored on site. Open entry points to drains to be protected by absorbent pillows/covers. Daily inspection regime of	Project Team Site management Team Environmental advisor Procurement dept, appointed contractors	Time, information, supply chain Training Drip trays, plant nappies, gully covers. Spill response contractor appointed.	Duration of project.

		plant items with recorded report.			
Objective	Target	Action	Action By	Resources Required	Time scale Approx.
No Contamination of the surface water drainage system from our works	No silts or water run off entering the marina surface water system during operations or the natural water environment surrounding the work sites.	Full site survey to locate existing drainage openings. Full assessment of site location to ensure the Protection of drains and watercourses by locating stockpiles away from areas of natural drainage, gullies and open grates. Silt recovery plan to be actioned on site to enhance existing drainage with temporary installed silt containment traps located before waters enter drainage system thus providing a 3 rd layer of filtration before water is released into the natural environment. 6yd metal skip lined with 1200DPM membrane to be used for all wash out of readymix deliveries. Once dried out remove and add to recycled material for removal from site.	Site Team. Environmental advisor	Time, Space, Equipment, training and implementation. silt control measures to add 3 rd dimension to existing surface drainage system on site. Gully covers to prevent ingress into drainage system at boat storage yard. Reference to supplied drawing showing existing surface water drainage system for the gully/trap located within the boat storage area.	Duration of project.
No Light pollution from construction works	Zero additional lux increase during works.	All site operations are to be planned and carried out during daylight hours only thus no increase of lighting levels on sensitive receptors in adjacent areas.	Project team, site management	Time, planning	Duration of project works.

Regulatory Requirements relating to Licenses and Planning Consent.

This section relates directly to the project applications made by MDL to the relevant statutory holders to comply with current regulations and legislation for the proposed development and is annexed to the Environmental Objectives and Targets as identified in table above.

- Planning application APP/20/00610 Havant Borough Council.
- Marine License L/2020/00238/1 Marine Management Organisation
- Environmental License EPR/FB3892JD Environmental Agency

Regulatory Requirement/Condition	Project Detail	Stage
A suitably qualified ecologist will be appointed as an Ecological Clerk of works (ECOW) to overlook the works and supervise on site from 01 October to 31 March inclusive.	Phase I works to be undertaken between 24/05/2021 and 02/08/2021. If subsequent phases are to be completed within the October to March period a suitably trained Ecological Clerk of works will be appointed to oversee the works. They will be picked from a shortlist that includes: David Archer Associates Ecology Co-op	Construction

	Any appointment will be made prior to the subsequent phases of works and will be dependent on quote submitted at the time. The ECoW will report directly to the client and contractor. They will have the power to stop the works if they deem any of the stopping conditions within the MMO Licence are met.	
Notification of the extent of the ECoW attendance on site will be submitted to the MMO at least five days prior to the commencement of works. Written approval must be received from the MMO prior to the commencement of works.	The notification to the MMO is not required for phase I works as being undertaken outside of the specified timeline for ecological watch. If an ECoW is required in future phases the notification will be submitted by the client.	Pre-Construction
If percussive piling is required, soft-start procedures must be used to ensure incremental increase in pile power over a set time period until full operational power is achieved. The soft-start duration must be a period of not less than 20 minutes. Should piling cease for a period greater than 10 minutes, then the soft start procedure must be repeated.	Phase 1 works to be installed with a 'silent' pile process using reaction pressure to push sheet piles into position. This is non- percussive method of installing piles. If required in future phases the methodology will be managed by the contractor.	Construction
Vibratory or Percussive piling must not be undertaken during the period of between October and March inclusive (MMO).	Phase 1 works to be completed outside of the specified date line. Future phases will not involve vibratory or percussive piling between October and March inclusive.	Construction
Sheet piling (works generating above water noise) shall not take place during the overwintering period from October to March inclusive. (Planning Authority)	Phase 1 works to be completed outside of the specified date line. Future phases will not be undertaken in this period.	Construction
The licence holder must submit information on the expected location, start and end dates of impact (percussive) pile driving to the Marine Noise Registry, in order to satisfy the 'Forward Look' requirements of the Registry, prior to the commencement of the licensed activities. The licence holder must notify the MMO of the successful submission of 'forward look' data within 7 days of the submission. https://mnr.jncc.gov.uk/	Phase 1 works to be installed with a 'silent' pile process using reaction pressure to push sheet piles into position. This is non- percussive method of installing piles. If future phases require percussive piling the notification will be submitted by the client.	Pre-Construction
The licence holder must submit the exact locations and dates of impact (percussive) pile driving to the Marine Noise Registry, in order to satisfy the 'Close-out' requirements of the Registry, every year by the 25 March detailing any impact pile driving/detonation of explosives carried out in the previous year within 12 weeks of completion of impact pile driving/detonation of explosives. The licence holder must notify the MMO of the successful submission of 'close out' data within 7 days of the submission. https://mnr.jncc.gov.uk/	Phase 1 works to be installed with a 'silent' pile process using reaction pressure to push sheet piles into position. This is non- percussive method of installing piles. The client is to clearly understand their duties under the MMO license L/2020/00238/1 and fulfil all requirements within the specified time lines. If future phases require percussive piling the notification will be submitted by the client.	Pre-Construction, Post-Construction Phase.
Where the temperature is 0 degrees C or lower at Sparkes Marina for 5 consecutive daytimes (but allowing short periods of thaw of one or two days), the licence holder must not undertake piling activity until the temperature increases above 0 degrees C for 5 consecutive days.	Project phase schedule working May-August 2021, unlikely to encounter any temperatures producing freezing conditions. The requirement as stated is noted by Principal Contractor and will be actioned across the project should this be encountered. Planning conditions that do not allow piling works between October to March inclusive mean that this condition is unlikely to be met.	Construction

5 Project Environmental Aspect/Risk Register

The project activities and associated environmental risks have been assessed using the EMS procedure Identifying Significant Environmental Aspects.

High environmental risks are also listed in the Project Risk Register. The risk register is supplemented with a number of Standards (STD-No2) which are referenced throughout, these standards are the control policies of the ISO14001:2015 accreditation and provide guidance on the mitigations to be implemented to address risk areas where identified in the register.

Note:

1. Any site-specific environmental requirements set by the client or other stakeholders must be listed in this register.
2. Controls are required if the RISK is considered to be High or Medium. Control details are in section 6; 'Management Controls'

Construction Environmental Management Plan

Contract Name:		MDL Sparkes Marina Sea Wall Project										Contract Number:		326				
Prepared By:		Name / Position: Mark Collier HSEQ Manager										Regional Environmental Advisor:						
Date Prepared / Reviewed:		31.03.21	28.04.21															
Ref	Activity		Environmental Aspect															
	DESCRIPTION		NUISANCE						DISCHARGES & EMISSIONS				LAND & RESOURCES				GENERAL	
	Significant Risk	S	Noise	Odour	Dust	Traffic	Visual Impact	Vibration / Light	Surface Water	Ground Water	Solid Waste(s)	Liquid Waste(s)	Cultural Heritage	Land Use Management	Materials, Energy & Water Conservation	Ecological Management	Environmental Incident	Other
	Medium Risk	M																
	Low Risk	L																
	Not Applicable to Project	N/A																
	Reset Selection	Applicable?	Notes	Notes	Notes	Notes	Notes	Notes	Notes	Notes	Notes	Notes	Notes	Notes	Notes	Notes	Notes	N/A
1	Abstraction of Water	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Boring and Bored Tunnelling	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	Brick / Blockwork	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Building Refurbishment	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	Concrete Batching	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Concrete Pours & Washout	Y	L	L	L	STD-N02	L	L	L	N/A	STD-W01	STD-W01	N/A	L	STD-R02	STD-E03	STD-E04	N/A
7	Crushing, Screening & Material Reuse	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	Demolition Works	Y	L	L	L	L	L	L	L	L	L	N/A	L	L	L	L	L	N/A
9	Dewatering / Overpumping	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	Dredging	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11	Earthworks	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Excavation	Y	L	L	L	L	L	L	L	L	L	N/A	N/A	L	STD-R02	L	L	N/A
13	Exposed Structural Element Repair	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Grouting	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	Internal Fit-out	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16	M&E Work	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17	Microtunnelling	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18	Office Maintenance	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19	Permanent Office Set-Up & Operation	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	Piling	Y	L	L	L	STD-N02	L	L	L	L	L	L	L	L	L	L	L	N/A
21	Plant & Vehicle Maintenance	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22	Procurement of Materials & Services	Y	L	N/A	N/A	STD-N02	L	L	L	N/A	L	L	L	L	L	L	L	N/A
23	Roadworks	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
24	Site Access / Egress	Y	L	L	L	STD-N02	L	L	L	N/A	N/A	N/A	L	L	L	L	L	N/A
25	Site Clearance	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26	Site Drainage	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
27	Site Office Set-Up & Operation	Y	L	L	L	STD-N02	L	L	L	N/A	L	L	L	L	L	L	L	N/A
28	Steelwork Erection	Y	L	N/A	L	N/A	L	L	L	L	L	N/A	N/A	L	L	L	L	N/A
29	Storage / Use of Hazardous Materials	Y	N/A	L	N/A	L	N/A	N/A	L	L	L	L	L	L	L	L	L	N/A
30	Temporary Works	Y	L	N/A	L	STD-N02	L	L	L	L	N/A	N/A	L	L	L	STD-E03	L	N/A
31	Transportation - materials / wastes	Y	L	L	L	STD-N02	L	L	L	N/A	L	L	L	L	L	L	L	N/A
32	Use of Plant & Vehicles	Y	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	N/A
33	Use of sub-Contractors	Y	L	N/A	L	L	L	L	L	L	L	L	N/A	L	L	L	L	N/A
34	Vegetation Clearance	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35	Washdown Activities	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36	Working in Tidal Waters	Y	N/A	N/A	N/A	N/A	L	L	L	L	STD-W01	STD-W01	L	L	L	STD-E03	STD-E04	N/A
37	Working in, near or over Water	Y	N/A	N/A	N/A	N/A	L	L	L	L	L	L	L	L	L	STD-E03	STD-E04	N/A
38	Working with Groundwater	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Construction Environmental Management Plan

	Activity	Aspect	Potential Environmental Impact?	Construction Stage	Risk Reduction Control(s) to be Used	Method Statement Required?	By Who?	Date Completed?	Comments
1	Concrete Pours & Washout	Traffic	Higher volume of traffic enteing the Marina through the residential street adjacent	Construction	Pre-planning of all deliveries to avoid congested times around the surrounding roads	No			
8	Concrete Pours & Washout	Solid Waste(s)	Excess volume of concrete materiel ordered leading to wastage on site, washout of plant and equipment using large volumes of water	Construction	QS/Site manager to carefully cube all pours and order only required amounts for each planned pour	No			
9	Concrete Pours & Washout	Liquid Waste(s)	excess volume washout of plant and equipment using large volumes of water	Construction	Site manager to arrange washout in lined skip allowing recovery of water for re-use.	No			
15	Concrete Pours & Washout	Ecological Management	Concrete materials leaking from formwork into the harbour waters effecting the environmental balance of the waters leading to ecological disruption off eco systems around the natural harbour.	Construction	All formwork to be installed using a proprierty system on the water side ensuring a tight fit against steel pile profile. All gaps to be filled with expanding foam prior to pour being carried out. Site manager to inspect works and sign off QA forms correctly	Yes	PC		Site Manager to oversee all aspects with recorded inspections for each pour using correct QA forms.
14	Concrete Pours & Washout	Environmental Incident	Concrete materials leaking from formwork into the harbour waters effecting the environmental balance and altering the PH levels of the immediate waters	Construction	All formwork to be installed using a proprierty system on the water side ensuring a tight fit against steel pile profile. All gaps to be filled with expanding foam prior to pour being carried out. Site manager to inspect works and sign off QA forms correctly	Yes	PC		Site Manager to oversee all aspects with recorded inspections for each pour using correct QA forms.
2	Concrete Pours & Washout	Materials, Energy & Water Conservation	Excess volume of concrete materiel ordered leading to wastage on site, washout of plant and equipment using large volumes of water	Construction	QS/Site manager to carefully cube all pours and order only required amounts, washout in lined skip allowing recovery of water for re-use.	No	PC		All washout to be into lined skip, remove when solid to recycling
4	Excavation	Materials, Energy & Water Conservation	Removing of as-dug materials from site to landfill	Construction	Hierarchy of Waste control to be implemented reducing amounts of materail sent to landfill. Re-use materials as backfill on site, recycling off site of waste materials by licensed facility	No	PC		Waste Transfer documented
5	Piling	Traffic	Higher volume of traffic enteing the Marina through the residential street adjacent to deliver piling equipment and materials.	Construction	Pre-planning of all deliveries to avoid congested times around the surrounding roads, loads to be planned to use smaller vehicles as far as practicable	Yes	Piling Contractor		
6	Procurement of Materials & Services	Traffic	Higher volume of traffic enteing the Marina through the residential street adjacent	Design	Pre-planning of all deliveries to avoid congested times around the surrounding roads	No	PC		
7	Site Access / Egress	Traffic	Higher volume of traffic enteing the Marina through the residential street adjacent	Construction	Contractors to avoid congested times around the surrounding roads, work hours avoiding known busy times	No	PC		
10	Site Office Set-Up & Operation	Traffic	Large vehicle traffic entering the Marina through the residential street adjacent to marina to deliver welfare cabins and site them	Construction	Pre-planning of deliveries to avoid congested times around the surrounding roads, ensure contractor is aware of restricted access for large vehicles.	Yes	PC		
11	Temporary Works	Traffic	Traffic flows higher around delivery of materials for temp works portions of project	Construction	Pre-planning of all deliveries to avoid congested times around the surrounding roads	No	PC		Temp works register maintained
12	Temporary Works	Ecological Management	Aspects of the temporary works leading to ecological incident during project works affecting the surrounding habitat and SSSI area.	Construction	Site Manager to oversee all aspects with recorded inspections for each aspect using correct QA forms.	No	PC		
13	Transportation - materials / wastes	Traffic	Higher volume of traffic enteing the Marina through the residential street adjacent	Construction	Pre-planning of all deliveries to avoid congested times around the surrounding roads	No	PC		
16	Working in Tidal Waters	Solid Waste(s)	Construction materials entering the tidal waters during project works leading to possible contamination of the waters and surrounding habitat being removed by tidal swings to further areas of the natural environment.	Construction	Daily environmental inspections of all activities and storage facilities to ensure compliance undertaken by site manager. Ensure all materials are stored so as not enter waters during works. Control of contractors undertaking formwork ensuring all wastes are removed to skips. Retrieval of items from waters as far as practicable if safe to do so.	Yes	PC		Housekeeping Risk Assesment
17	Working in Tidal Waters	Liquid Waste(s)	Construction materials entering the tidal waters during project works leading to possible contamination of the waters and surrounding habitat being removed by tidal swings to further areas of the natural environment.	Construction	Control of liquids stored in bunded containers at all times away from the waters edge. Plant working on the piling to have hydraulic oil changed to Bio oil reducing impact if leaks. All refuelling to be in designated areas with spill response.	Yes	PC		Spill response plan to be implemented across site, specialist contractor to be appointed for emergency clean up operations.
18	Working in Tidal Waters	Ecological Management	Aspects of the works leading to ecological incident during project works affecting the surrounding habitat and SSSI area, increased through tidal flows affecting other areas of the harbour	Construction	Site Manager to oversee all aspects with recorded daily inspections for each aspect. Stop works to rectify any potential incident immediately and report findings to HSEQ manager	No	PC		HSEQ Manager to conduct regular audits
19	Working in Tidal Waters	Environmental Incident	Construction materials entering into the harbour waters effecting the environmental balance and altering the PH levels of the immediate waters and further afield through tidal impacts	Construction	Site Manager to oversee all aspects with recorded daily inspections for each aspect. Stop works to rectify any potential incident immediately and report findings to HSEQ manager	No	PC		HSEQ Manager to conduct regular audits
20	Working in, near or over Water	Ecological Management	Aspects of the works leading to ecological incident during project works affecting the surrounding habitat and SSSI area, increased through tidal flows affecting other areas of the harbour	Construction	Site Manager to oversee all aspects with recorded daily inspections for each aspect. Stop works to rectify any potential incident immediately and report findings to HSEQ manager	No	PC		HSEQ Manager to conduct regular audits
21	Working in, near or over Water	Environmental Incident	Construction materials entering into the harbour waters effecting the environmental balance and altering the PH levels of the immediate waters and further afield through tidal impacts	Construction	Site Manager to oversee all aspects with recorded daily inspections for each aspect. Stop works to rectify any potential incident immediately and report findings to HSEQ manager	No	PC		HSEQ Manager to conduct regular audits

Construction Environmental Management Plan

6 Environmental Management Controls

Note: controls have not been ordered in degree of significance

Ref	Item	Management Control
A	Noise	General Noise Issues - It is important to maintain good relations with the neighbours of the site to avoid conflict. We will aim to reduce and avoid noise by: - Control at Source e.g. silencers, vibration dampers, enclosure, construction method/piling method. - Control along path of noise from source to receiver e.g. barriers, screening, location of plant; - Control at receiver e.g. noise refuges, ear defenders monitoring at sensitive receptors. - Adequate maintenance of plant and equipment
B	Vibration Control	We aim to avoid and reduce vibration by: - Evaluate the potential for vibration and thereby damage. - Monitor conditions before works start. - Inform neighbours. - Minimise effects during works- Select appropriate piling techniques that reduces/removes vibration. - Monitor vibration levels during the works - Monitor conditions after works are completed - Adequate maintenance of plant and equipment
C	Waste	Project Waste Management Plan Reconciliation of waste transfers and end destinations.
D	Dust	Where it is not possible to eliminate or reduce dust/odour/fume emissions then use the following guidelines: - a means of containment must be put in place for example enclosing the areas where dust is created. - dust suppression measures e.g. damping down, misting. - maximum 5 mph speeds on roads. - installing a wheel wash during periods when dust transfer potential is high. - minimising grinding. - using Local Exhaust Ventilation systems which filter pollutants out of the air; - covering waste skips if there is a likelihood of dusts etc. escaping - Maintenance of plant and equipment with regular servicing and report any dark smoke coming from vehicle/plant exhausts.
E	Storage of Oils and chemicals	Oils and oil type substances are covered by The Control of Pollution (Oil Storage) (England) Regulations 2001. (Refer to PPG01Oil Storage Guidelines for further details). Ensure the following: - The bund must be sufficient to contain 110% of the maximum contents of any oil container of 200 Litres or more. - Tanks, drums or other containers must be strong enough to hold the oil without leaking or bursting. - The oil container must be positioned away from any vehicle traffic to avoid damage from collision. - A bund or drip tray must be provided to catch any oil leaking from the container or its ancillary pipework and equipment.

Construction Environmental Management Plan

Ref	Item	Management Control
		- Where more than one container is stored, the bund should be capable of storing 110% of the largest tank or 25% of the total storage capacity, whichever is the greater. - The bund base and walls must be impermeable to water and oil and checked regularly for leaks. - Any valve, filter, sight gauge, vent pipe or other ancillary equipment must be kept within the bund when not in use. - An above ground oil store or filling location must not be located within 10 metres of a watercourse or 50 metres of a well or borehole. - Drip trays must be used and spill kits and drain covers kept in close proximity
F	Refuelling plant	Refuelling must only take place in a designated area where the risk of contamination to watercourses (including mains and foul sewers) can be minimised. Drip trays must be used and spill kits and drain covers kept in close proximity
J	Visual Intrusion	Lighting should be designed to provide for efficient working of the site but also to prevent or minimise light spillage into the neighbouring buildings and sensitive receptors. Consideration must be given to:- - No additional lighting will be used during construction, daylight working hours only. - The site perimeter should be suitably defined by barriers to reduce any negative visual impact of the site for the site neighbours
K	Traffic	See site traffic management plan in Project Plan
L	Water contamination	Options for de-watering are:- - Pump to foul sewer – contact Sewage Undertaker for consent. - Pump to tanker – contractor has waste carrier licence Ensure spill kits and drain covers are available whilst construction work is undertaken.
O	Selection of subcontractors	For selection of subcontractors an Environmental Questionnaire has to be sent out with the enquiry in line with Sienna Construction management systems ISO9001:2015
P	Procurement of materials	All materials should be procured through the procurement department. Subcontractors supplying their own materials have to provide Sienna with details to ensure they are not using materials from the Red List. Subcontractors should also ensure they are sourcing any timber required from a sustainable resource which is either FCS or PEFC certified.
Q	General Material Storage	- When storing materials on site, choose a location that minimises the risk of your materials being damaged by plant or pedestrian traffic, stolen or vandalised - Protect materials from being damaged by the elements i.e. cover wood and plasterboard. - Ensure that there is good access to the storage area. This will aid in minimising damage caused to materials from mechanical handling equipment and people climbing over materials trying to get what they need as well as being a Health and Safety issue. - Make sure the storage area is kept clear. Remove all waste packaging and redundant material etc.

Waste Management Plan

7. Waste Management Plan

Sienna project Team intends to minimise waste being generated and disposed of by suitable storage of materials, reuse and where possible segregation of waste materials.

This management plan should be used in conjunction with waste management control procedures and identification guides found in the Environment Section of the EMS.

Specific Relevant Legislation

Environmental Protection Act 1990	• Section 33 (waste management licences) describes the offences of unauthorised storage, treatment and disposal. • It is an offence to deposit or knowingly permit controlled waste to be deposited without a waste management licence. • It is an offence to treat, keep or dispose of controlled waste other than in accordance with a waste management licence. • It is an offence to treat, keep or dispose of controlled waste in a manner likely to cause environmental pollution or harm to human health. • Section 34 (duty of care) creates a duty of care on all whom import, produce, carry, keep, treat and dispose of controlled waste.
Environmental Protection (Duty of Care) Regulations 1991	• Controlled waste can only be transferred to an authorised person i.e. the local Authority, registered carrier or licensed disposer. • Feltham Data Centre project team must check the licences, destination and disposal method. • Transfer notes have to include; description of the waste, quantity, types of container, time and place of transfer, name and address of producer, transferor and transferee. These have to be kept for a minimum of 2 years.
Hazardous Waste Regulations 2005	• Controls the movement of the most dangerous wastes. • The premises is to be registered with the EA prior to hazardous waste disposal • A Consignment note is needed which will be used to track the waste movements. • Consignment notes have to be kept for a minimum of 3 years. • Hazardous waste is only to be disposed of at facilities that can handle specific wastes. • Hazardous wastes are listed in the hazardous waste lists.

Sub contractors

Sienna will provide skips for waste removal from site during the works. However, where Sub contractors are removing their own waste it will be a requirement to collect, store, segregate and dispose of all waste materials in line with current legislation, ensuring all waste carriers and disposal sites hold current and valid licences for the type of waste being disposed of.

Sub contractors will provide the Project Team with copies of valid licences for the waste management contractor(s) they are intending to use.

Sub contractors will ensure all documentation (transfer notes, consignment notes) is correctly completed and retained on file for the appropriate period of time. Two years for transfer notes and three years for consignment notes (Hazardous/special waste). These have to be available on demand for inspection by Sienna Project Management and handed over at the end of the contract

Sub contractors will provide monthly figures of all waste removed from site to the Project Team. This will include; type of waste, volume of waste were applicable.

Waste Management Plan

Waste Materials	Planned Actions			
	Waste Minimisation Opportunities (prefabrication, material selection etc)	On-site recycling / reuse (specify method and use and if waste processing licence or exemption held)	Offsite recycling / reuse (specify recycler and recycling outlet)	Disposal (specify transfer station/landfill site)
Concrete	Prefabrication off site, plan pours (use surplus for blinding etc)	Excess material can be dried and reused as backfill	Segregate, land reclamation, re – processed and reused in the construction industry	Transfer station, exempt site, land fill
Rubble (hard core)	Using part of existing structure in original form within completed construction	Use as hard core on site	Segregate, land reclamation, re – processed and reused in the construction industry	Transfer
Sub soil	Store on site	Re use in landscaping, use as back fill	Land reclamation	Transfer
Steel	Prefabrication, correct ordering,	Large RSJ s can be used as a barrier on haul routes	Segregate waste and send to scrap merchant	N/A
Timber	Use steel shuttering, reuse all shuttering, use another product	Reuse for shuttering and general carpentry (steps etc)	Segregate, chip for composting or furniture manufacture	Transfer
Packaging	Request minimal packaging, suppliers to take back their packaging	Segregate streams for recycling as applicable, arrange for supplier to collect and remove all packaging, pallets etc from site.	Segregate cardboard, pallets and plastic for recycling	Transfer Station/Landfill
Mixed waste	Preassembly and prefabrication off site		Send to transfer station for further segregation	Transfer
Office	Photocopies are double sided, instead of reissuing a whole document, only issue the relevant pages, only use china cups	Reuse paper for note pads	Segregate, recycle white paper	Transfer
Pallets	Return pallets to supplier	Pallets can be used to store materials on for easy manoeuvring	Segregate for reuse, damaged broken non-returnable chip pallets for compost or furniture	Transfer
Green waste	Excavate and replant larger specimens (trees)	Chip on site, compost, for landscaping	Segregate, send for composting, spread on land (improvement)	Transfer/Biomass
Top soil	Store on site turn regularly	Reuse in landscaping	Sell top soil, land reclamation	Capping
Hazardous waste (asbestos)	N/A	N/A	N/A	Landfill
Hazardous waste (contaminated land)	Contain in situ	Remediate on site and reuse material	Remediate off site	landfill
Hazardous waste (paint tins, mastic etc)	use solvent free paints that are not disposed of as special waste	USE A SEPARATE, SECURE, COVERED CONTAINER FOR STORAGE		Incinerator, landfill

8. Project Environmental Inspection

Agree with the project manager the frequency of environmental inspections – usually weekly. If help is required contact the environmental advisor.

The project team will carry out combined Health, Safety & Environmental site inspections weekly. Environmental Advisor will visit site as agreed with the Project/Site Manager. A more detailed checklist may be used for this inspection. Completed inspection checklists will be held in the Site Safety Inspections File.

9. Corrective and Preventative Action and Environmental Audit.

Formal environmental management audits will be carried out in accordance with the Environmental Corrective and Preventative Action and Audit Procedure, approximately every 6 months.

10. Documentation and Record Keeping

The Environmental Management Plan and the documentation arising from the procedures in the environment section of the EMS are to be kept in the Site Environmental File(s) or on the electronic document management system.

11. Emergency Preparedness and Response

In the event of an environmental incident, the Environmental Incident Plan and Emergency Procedures should be followed. Details of incident control can be found in the environment section of the EMS. These may be linked with the Health and Safety, Fire and Emergency Plan.

A specialist Spill Response and Incident contractor will be appointed at the outset of the project in line with the project environmental risk profiling, spill response plan and emergency procedures.

Emergency Response Contractor	Adler + Allen Dominion House Copse Lane, Southampton Hants 023 8045 8050
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12. Public Relations and Complaints

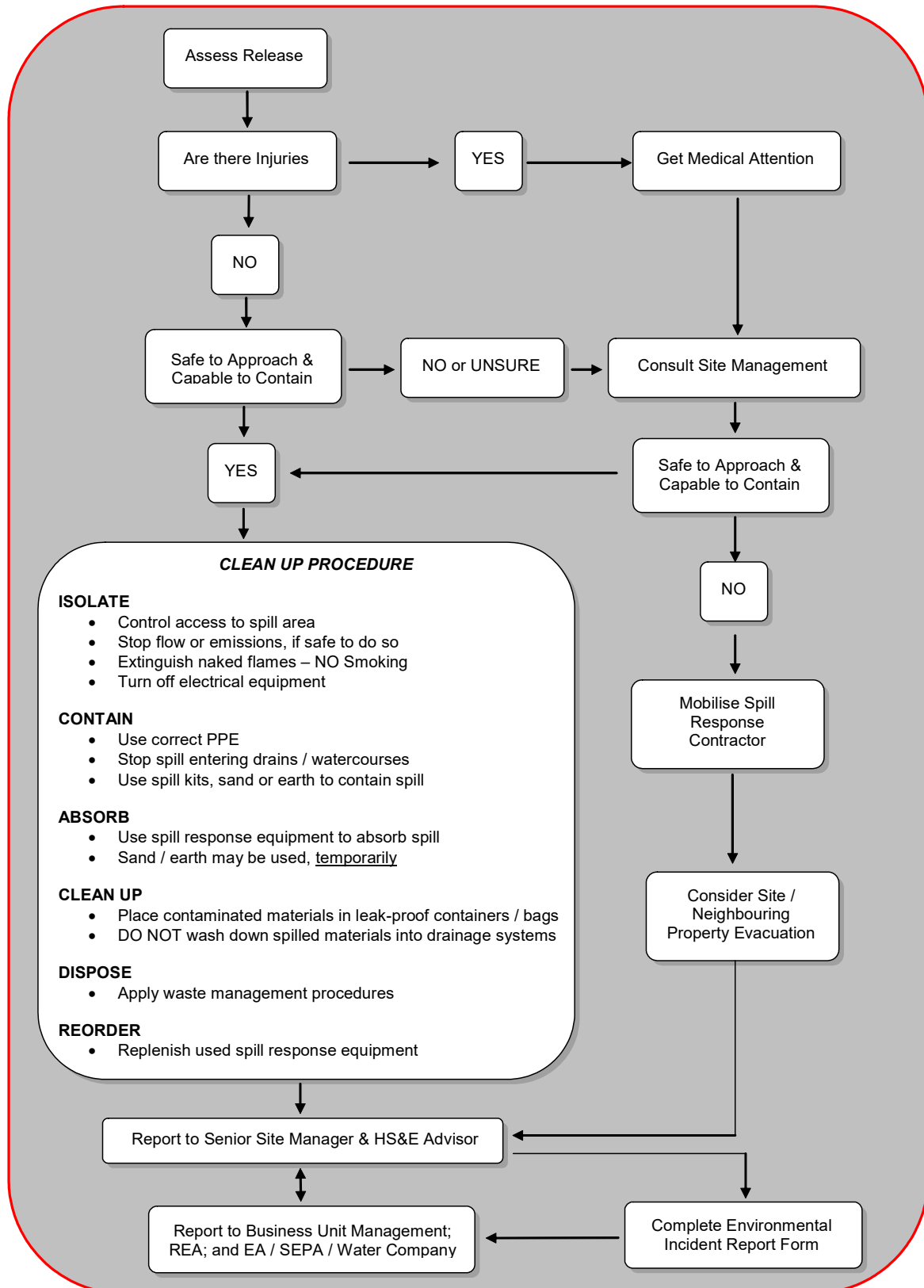
Public relations will be managed using the Communication, Public Relations and Complaints Procedure found in the Communication section of the EMS.

Main Project Site Contact	Name: TBC	Tel:
Complaints documented and filed on site within (Location):	Construction Phase Health & Safety File.	
Client Representative Contact	Name: Mr Alex Beere	Tel: 02380 450226

Construction Environmental Management Plan

Appendix 1 - Environment Incident Response Plan

IF IN DOUBT OR YOU REQUIRE ASSISTANCE CONTACT YOUR ENVIRONMENTAL ADVISOR



Construction Environmental Management Plan

Assess Release – Determine the size of the spill and whether there are any injuries to any person(s) involved.

- If there are injuries medical attention should be sought and the most senior person on site informed
- If there are no injuries, an assessment should be made as to whether the spillage is safe to approach and contain. If there is doubt, the most senior person on site should be consulted
- Consideration should be given of the need to evacuate the site and / or neighbouring buildings. If necessary, the police and / or fire service should be contacted
- If the competent or trained person cannot handle the hazardous material spill then the Company's spill response contractor should be contacted.

- **Isolate**

- Control access to spill
- Do not allow unauthorised access to spillage area
- Identify the source of pollution and stop the flow or emissions as quickly as possible, if it does not endanger the health and safety of people
- Switch off or suppress any potential sources of ignition
- Extinguish naked flames and ensure there is no smoking
- Turn off electrical equipment.

- **Contain**

- Ensure the correct PPE is used
- If the incident involves liquids, steps should be taken to stop it spreading, using earth, sand, or impervious material such as polythene
- If the incident involves liquids, the flow should be diverted from drains and / or watercourses
- Consideration should be given to the use of absorbent materials and / or booms, as a precaution, in environmentally sensitive locations
- Use absorbent materials (sand or earth, as an alternative) to assist spill containment.

- **Absorb**

- Spill response pads, sheets, booms and granules should be used to absorb the spilt material
- Sand and earth may be used, as a temporary alternative.

- **Clean Up**

- Contaminated sand, earth or absorbent materials should be placed into sacks or leak-proof containers, as appropriate
- Spilled materials should **not** be washed into the drainage system.

- **Dispose**

- Waste contaminated materials should be disposed of appropriately, refer to [HS&E-STD-W01](#); Waste Management
- All used absorbent materials are classified as hazardous waste.

- **Reorder**

- Replace used spill response equipment supplies.

Client specific spill response procedures should be adhered to when working on client site(s) or when stipulated in the contract.