DANGEROUS GOODS AND CHEMICAL MANAGEMENT

PURPOSE AND SCOPE

The purpose of this Primary Standard is to eliminate or minimise the risk of environmental harm from spills of chemicals, fuels and oils. Contamination of land is addressed in **Primary Standard Soil Management**.

1.0 CRITICAL CONTROLS AND CONTROLS CRITERIA

Table 1 provides the mandatory Critical Controls and associated Controls Criteria which when implemented will reduce the risk of severe environmental impacts. The Critical Controls and associated Controls Criteria are considered operational controls and are to be included in project-specific management plans and procedures. The Controls Criteria support the successful implementation of the Critical Controls.

Table 1 Critical Controls and Controls Criteria

CRITICAL CONTROLS	CONTROLS CRITERIA
SITE ESTABLISHMENT PLAN AND SITE FACILITY DESIGN OUTLINES FUEL STORAGE/USE, CHEMICAL STORAGE FACILITIES, LOADING AND UNLOADING FACILITIES TO ENSURE PROTECTION FROM ENVIRONMENTAL DAMAGE	Designated areas for storage, unloading and loading fuels and chemicals have been identified on the site plan, Environmental Control Plan (ECP) and Construction Environmental Management Plan (CEMP).
	Chemicals, dangerous goods and fuels are to be stored a minimum of 10m from surface water and stormwater systems and 50m from sensitive areas and groundwater wells.
	Flammable and combustible materials storage areas separated from open flame or other ignition sources, are prohibited within 20m of bulk flammable storage areas, fuel dispensing vehicles or refuelling operations and activities in hazardous atmospheres.
FUEL STORAGE AREAS ARE DESIGNED AS PER LEGISLATIVE AND MANUFACTURER'S REQUIREMENTS AND WELL MAINTAINED	External bunded storage areas are to be provided for generators with fuel storage capacity of greater than 500l (minimum 120% of the stored capacity unless project specific requirements dictate additional storage capacity).
	Generator systems with external fuel storage must be installed, commissioned and tested by competent personnel.
	Chemical and fuel storage bunds must be made of impervious floor and wall materials to the specified capacity (minimum 120% of the stored capacity unless project-specific requirements dictate additional storage capacity).
	The design of the fuel (diesel) storage tanks meets environmental guidelines for the safe storage of bulk fuel (AS 1692-2006 Steel Tanks for Flammable and Combustible Liquids and AS 1940:2017: Storage and Handling of Combustible and Flammable Liquids).
	Pre-mobilisation inspection completed on all fuel storage tanks with a storage capacity greater than 1000lt must confirm compliance with AS 1940:2017.
	Operations and maintenance procedures must be available at the storage location.

CRITICAL CONTROLS	CONTROLS CRITERIA
CHEMICAL STORAGE AREAS ARE DESIGNED AND MAINTAINED	Chemical storage bunds must be made of impervious floor and wall materials to the specified capacity (minimum 120% of the stored capacity or additional as required by the local requirements).
	Fuel and chemical storage areas have been designed to maintain separation as outlined in the dangerous goods separation matrix (compatibility).
	Hazardous substances to be stored in internally bunded chemical storage containers with ventilation.
	The design of hazardous storage areas is in accordance with storage instructions provided in the Safety Data Sheet (SDS), on labels, as per regulatory requirements, and in accordance with applicable technical standards or other relevant product information.
DANGEROUS GOODS STORAGE, USE AND HANDLING	Dangerous goods licences are in place when transporting relevant quantities of dangerous goods.
	Processes have been established to store, manage and transport dangerous goods where placard and or manifest quantities are exceeded.
	Refuelling processes are developed and communicated to the site team and supply chain.
	Plant used for refuelling (e.g. mini-tankers fuel truck, fuel cart) is approved for use at site and has conducted a prestart plant check.
	When transporting dangerous goods, the activity-specific Safe Work Method Statement (SWMS) must address the requirement for licensing, placards or other specific regulatory requirements.
DISPOSAL OF DANGEROUS GOODS, CHEMICAL AND FUELS	Materials are to be stored in appropriately labelled containers with a capacity of not greater than 1,000L.
	The containers are to be removed from site by a suitably licensed contractor and delivered to a licensed depot for disposal.
	Disposal of dangerous goods, chemical and fuels is through a licensed contractor and approved facility with validation of disposal.
EMERGENCY RESPONSE PROCESS IS IN PLACE	Emergency procedures have been established, tested and communicated to project personnel.
	Trials and testing of the emergency response processes are planned and completed.
	Spill response resources and personnel have been determined and are adequate to address project risks.
SDS ARE AVAILABLE FOR THE TRANSPORT AND STORAGE OF FUELS AND CHEMICALS	Current SDS Register will be maintained and available at storage locations and the site office.
	The register must be in place and current.
FUEL STORAGE AND USE	Daily plant prestart inspections completed and include inspections for fuel, oil or hydraulic fluid leakage.
	Hydraulic lines and fuel lines found to be showing evidence of deterioration or wear are recorded as a fault and scheduled to be replaced. This includes the plant used for the refuelling.
	Outlets or drainage valves for bunded storage areas must be locked in the closed position.
	Outlets or decanting taps or valves for storage containers with a capacity of greater than 1,000Lt must be fitted with a locking mechanism and locked in the closed position when not specifically in use.
	Overflow indicators or level indicators are provided on bulk fuel storage containers.
	There is no rainwater and accumulated liquids and materials present within the bunded storage areas to maintain capacity. Any accumulated liquids are disposed to an appropriately licensed facility.
	All fuel storage containers must be labelled in accordance with the SDS.
	Relevant SDS are available at the storage facility.

CRITICAL CONTROLS	CONTROLS CRITERIA
REFUELLING ACTIVITIES ARE MANAGED EFFECTIVELY	Fuelling activities are never left unattended.
	Delivery drivers must be escorted on-site or the works completed by a fully inducted and appropriately responsible person.
	Where applicable, plant, equipment and vehicles must be refuelled within designated refuelling area.
	Where practical, refuelling areas must not be located within 20m of any drainage inlet or open drain/drainage line. Where this separation distance cannot be maintained, appropriate controls must be in place (i.e. spill tray or drain seal).
CHEMICAL STORAGE AND USE	Outlets or drainage valves for bunded storage areas must be locked in the closed position.
	Outlets or decanting taps or valves for storage containers with a capacity of greater than 1,000l must be fitted with a locking mechanism and locked in the closed position when not specifically in use.
	Rainwater and accumulated liquids and materials present will not exceed the bunded storage areas capacity.
	Accumulated liquids are disposed of at an appropriate licensed facility.
	All chemicals to be kept in the original manufacturer's container with a legible label.
	Segregation matrix is located within the facility and chemicals are stored as per the matrix.
	Chemical storage and location is in accordance with the SDS (separation, ventilation, bunding, refrigeration).
	Storage facilities have signage that indicates chemical classification types and is legible.
	There are no visible signs of damage, leakage or spills from chemicals.
	Frequent chemical use, decanting and handling areas must be located on an impervious hardstand with bunding so any spills can be confined and cleaned up.
EMERGENCY RESPONSE FACILITIES ARE AVAILABLE	Spill kits are available and adequate to the type and quantity of the stored product.
	Spill kits are maintained and include the minimum contents specified.
	Emergency washdown facilities (eye wash/shower) are installed and maintained.

2.0 STORAGE

The following are the general storage requirements (including bunding) for fuel, chemicals and oils for implementation on projects and at our workplaces:

- Minimise the amount of chemicals stored on-site.
- Check chemical storage areas weekly using site environmental inspection forms and repair any damage.
- Review the Critical Controls outlined above during Severe Environment Risk (SER) reviews as necessary and in accordance with the project's health safety and environmental (HSE) activity schedule.
- Include a sump in the storage bunds to remove any build-up of liquids at the lowest point (sump cannot be connected to the stormwater system).
- Cover bunds to prevent rainwater entering the bund area. Ingress of rain to bunded storage area reduces its capacity and leads to the generation of problematic liquid waste.
- Use a licensed waste contractor to clean out the contents of a bund and dispose of to a licensed facility. Records of lawful disposal must be maintained.
- Storage sites are to be > 20m away from operational facilities, drainage lines and areas prone to flooding or on slopes > 1V:10H.
- Bunding of static equipment to 120% of the total fuel tanks connected to equipment (including external tanks - if connected)
- All fuel storage systems must comply with AS 1940:2017: Storage and Handling of Combustible and Flammable Liquids). Operations and maintenance procedures must be established for fuel storage systems with a storage capacity greater than 1000lt. Training in the operations and maintenance procedures to be provided to the operators and end users of the systems. A premobilisation

inspection must be completed on each fuel storage system to ensure it meets the requirements of AS 1940:2017: Storage and Handling of Combustible and Flammable Liquids~~)~~ and **PS Plant & Equipment**.

- Generator systems with external fuel tanks where the external fuel storage capacity is greater than 500L are to be installed and operated within a bunded area. The intent is to prevent a significant spill from the failure and total loss of the contents of the generator and external storage tank through hose failure, connection or equipment malfunction. The bunded area is to have the capacity to contain 120% of the stored volume. The stored volume includes the volume within the generator and the external fuel tank. The bund must ensure that hoses and connections associated with the generator and fuel tank system drain to the bund should there be a spill. Bunded areas for the generator and external fuel tanks systems do not need to be covered to prevent the ingress of rain. These bunded areas need to be monitored to ensure that any rainfall ingress is managed to prevent the reduction in storage capacity. Alternatives may be proposed, however they must prevent a major spill from through hose failure, connection failure or equipment malfunction.

3.0 TRANSPORT OF DANGEROUS GOODS

When transporting dangerous goods, there are specific requirements outlined in the Dangerous Goods Code. The SER Critical Controls above provide the specific controls to prevent environmental impacts; however, prior to transporting dangerous goods, the code must be reviewed to ensure all of the administrative requirements have been addressed. Other requirements include:

- Transport information/manifest must be included with any quantity of dangerous goods transported by Laing O'Rourke.
- Vehicles transporting dangerous goods must have appropriate placards, licences and emergency equipment and procedures.
- Dangerous goods to be transported in receptacles greater than 500l/kg may require specific licences and must not be transported by Laing O'Rourke without the Project Leader's/Workplace Manager's approval.
- Where dangerous goods are transported by Laing O'Rourke, a SWMS must be developed and include the relevant dangerous goods requirements.

Transport of dangerous goods is to be carried out in accordance with **PS Chain of Responsibility and PS Hazardous Substances.**

4.0 SPILL KITS

The following are the requirements for spill kits and absorbent materials:

- The contents must be regularly inspected for suitability before and following incidents.
- A fully stocked spill kit is to be accessible and adjacent to chemical storage areas and at construction activities where there is the potential for spills.
- The size and quantity of spill kit materials must be sufficient for the store volume of materials on site
- Where the is a risk of spills to waterways, floating booms are required to be located in close proximity to the storage area
- Training is to be provided to the workforce in the application and the use of spill kits.

5.0 REFUELLING

The following are the requirements for refuelling:

- On-site refuelling is to be undertaken within an area approved by Laing O'Rourke and documented on the ECP as necessary.
- Projects need to review their relevant project conditions to ensure there are no additional restrictions for on-site refuelling.
- Refuelling activities over water require the preparation of a specific SWMS or Environmental Work Method Statement (EWMS).
- Nominate points for refuelling away from watercourses and stormwater entry points.
- Storage of small fuel containers will be in a designated bunded fuel storage area in accordance with any project requirements when these materials are not specifically in use.
- Funnels and filler nozzles must be used to refuel smaller plant and equipment such as pumps, flex drive motors, welders and generators.
- Absorbent materials are to be available at all times during any fuelling activity. At a minimum, materials are to include absorbent pads and socks.

6.0 SERVICING AND MAINTENANCE

The following are the requirements for the service and maintenance of plant and equipment:

- On-site servicing is to be undertaken within an area approved by Laing O'Rourke and greater than 20m from the nearest watercourse or drainage line.
- The servicing SWMS must include the proposed environmental controls and are to be reviewed and approved by Laing O'Rourke prior to servicing.
- Ground protection measures such as drip trays and plastic sheeting must be installed prior to commencement of servicing.
- All leakages must be repaired before the plant or equipment is permitted to be used again on-site.
- All plant and equipment are to be inspected prior to mobilisation. Hydraulic lines and fuel lines found to be showing evidence of deterioration or wear are to be replaced prior to mobilisation.
- All plant and equipment must be inspected daily for fuel, oil or hydraulic fluid leakage. Hydraulic lines and fuel lines found to be showing evidence of deterioration or wear are to be replaced.
- Any spill quantity that has potential to harm humans or the environment must be reported to the supervisor and/or Project Environmental Manager and entered in Intelex.

Servicing and Maintenance activities are to be carried out in accordance with **PS Plant & Equipment**.

7.0 PLANS, FORMS AND TEMPLATES

For relevant plans, forms and templates see the Laing O'Rourke HSEMS at www.lorhsems.com.