

CONSULTANTS ADVICE NOTICE

Project: GrainCorp – Port Kembla, NSW
From: Steve Sylvester

Ref No.: RCE-25357
Date: 3 March 2026
Issue: Final Revision 3

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RE: Resilience and Hazards SEPP Assessment & Gas Pipeline Risk Review

EXECUTIVE SUMMARY

Summary Results and Conclusions

A review of the application of the Resilience and Hazards State Environmental Planning Policy (RHSEPP) was conducted for the proposed repurposing of the GrainCorp Bulk Liquids Terminal (BLT) at Port Kembla, NSW. In addition to the RHSEPP assessment, a review of the impacts of the high-pressure gas pipeline, from the Port Kembla Gas Terminal (PKGT) to the Eastern Gas Pipeline, on the BLT was conducted.

The assessment identified the following:

- **Storage** - the BLT repurposing project involves the storage of combustible liquids only, which are similar in nature to the existing stored materials. Combustible liquids are not subject to the RHSEPP (Ref.1), hence, the RHSEPP does not apply to the proposed storage component of the repurposing project.
- **Transport** – the transport of materials to the BLT repurposing project involves combustible liquids only, which are similar in nature to the existing materials transported to the facility. As noted in dot point 1, combustible liquids are not subject to the RHSEPP (Ref.1), hence, the RHSEPP does not apply to the proposed storage component of the repurposing project.
- **Offensive Operation** – a review of the operations at the site identified that there is, essentially, no change to the operational functions at the BLT and, hence, there is no introduction of functions that would result in an offensive operation at the site.

Based on this assessment it is concluded that the RHSEPP does not apply to the proposed BLT repurposing project.

The review of the high-pressure gas pipeline from the PKGT onshore receipt facility to the EGP, which runs on the southern side of the BLT, identified that the risks associated with the section of pipeline adjacent to the BLT did not exceed the acceptable risk criteria published in Hazardous Industry Planning Advisory Paper No.4 – Risk Criteria for Land Use Safety Planning (Ref.7). Hence, as the risks associated with the pipeline fall within acceptable risk criteria and it is concluded that there is no risk to the BLT beyond acceptable limits.

In summary, and based on the screening assessment conducted in the document, the site is not considered to be subject to the RHSEPP and therefore a Preliminary Hazard Analysis is not required for the BLT repurposing project and the project is not considered potentially hazardous.. Further, the route location of the PKGT gas pipeline, which passes the BLT, does not result in a risk impact beyond the acceptable risk criteria published in HIPAP 4 (Ref.7) as an individual facility nor as a result of the cumulative risk in conjunction with the BLT.

1. INTRODUCTION

1.1. Background

GrainCorp Ltd. (GrainCorp) operates a bulk liquids terminal in Port Kembla, NSW. The terminal currently stores mineral oils, which are classified as C2 combustible liquids, and a single diesel tank which is classified as C1 combustible liquid. All materials currently stored are classified as non-flammable with flash points exceeding 65°C.

GrainCorp proposed to modify the existing bulk liquids storage tanks to hold tallow and used cooking oils, with the potential to store vegetable oils and similar products in the future. All products proposed for storage will be similar in nature to the existing stored materials in that they will all be combustible liquids with flash points exceeding 65°C.

As part of the development application, the Department of Planning, Housing and Infrastructure (DPHI) requires a preliminary screening assessment in accordance with the Resilience and Hazards State Environmental Planning Policy (RHSEPP, Ref.1) and “Applying SEPP33 – Hazardous and Offensive Developments” (Ref.2). In addition, the DPHI also requires consideration of risks associated with the approved and constructed, but not operational, gas pipeline for the Port Kembla Gas Terminal (CSSI-9471, as modified).

GrainCorp has engaged RiskCon Engineering to assist with the screening assessment and pipeline risk review. This document provides the results of the RHSEPP assessment and gas pipeline risk review for the Port Kembla Bulk Liquids Terminal (BLT).

1.2. Objectives

The objectives of the study are to:

- Prepare an RHSEPP screening assessment in accordance with Applying SEPP33 – Hazardous and offensive development to determine whether it is necessary to conduct a Preliminary Hazard Analysis for the BLT storage changes;
- Review the risks associated with the approved and installed, but not operational, gas pipeline for the Port Kembla Gas Terminal (CSSI-9471), as modified) to determine the potential impact to the BLT; and
- Report on the findings of the assessments for inclusion in the Development Application (DA) for the project.

1.3. Scope

The scope of work for the studies is for a RHSEPP screening assessment for the Port Kembla BLT, including assessment of the risks associated with the gas pipeline for the Port Kembla gas terminal to the Eastern Gas Pipeline (EGP).

The scope of work for this assessment is for the RHSEPP study and gas pipeline risk review only and does not include any other assessments (e.g. Preliminary Hazard Analysis) that may be required as a result of the outcomes of this study.

1.4. Qualifications of the Consultant

The study was conducted by Steve Sylvester, Technical Director at RiskCon Engineering.

Steve is a mechanical engineer with over 50 years engineering experience including 20 years in marine engineering and chemical plant operations and over 30 years in risk engineering consultancy. Steve is a founding member of the Australasian Institute of Dangerous Goods Consultants (www.aidgc.org.au) and is considered by SafeWork NSW to be a “competent person” under the WHS

Act 2011 to work in the area of Dangerous Goods (DG), as listed in the Australian Dangerous Goods Code (ADG). In his >30 years consultancy experience he has conducted over 500 risk, engineering safety and DG studies over a wide range of industries including warehousing, chemical and petrochemical, oil and gas (upstream and downstream), marine, aerospace, nuclear and mining & mineral processing. Steve is an internationally accredited Functional Safety Engineer (FSE) with TUV Rhineland (2203/10), and Electrical Engineering Hazardous Areas Engineer [EEHA] (CT05984a&b).

A full resume can be provided on request.

2. METHODOLOGY

The following methodology was applied:

RHSEPP Study -

- A list of materials was compiled for the proposed redevelopment project including –
 - Indication of material class with regards to the Australian Dangerous goods Code (Ref.3);
 - Storage and handling quantities associated with the tank repurposing project; and
 - Location of all dangerous goods and hazardous materials associated with the repurposing project;
- The HazChem & DG list was then compared to the acceptable threshold levels listed in “Applying SEPP33” to confirm the storage levels do not exceed the thresholds, which includes a layout plan assessment of the facility showing DG/HazChem locations;
- Where HazChem and DG materials are stored and handled at the site, a transport hazard assessment was prepared based on the number of HazChem & DG transport operations conducted per month, identified transport operations would then be compared to the maximum threshold levels listed in Applying SEPP33 (Ref.2);
- An offensive operations assessment was then conducted to confirm that there are no offensive operations involved in the proposed redevelopment (e.g. noise generating equipment, hazardous chemical releases to air/land/water, odour generating operations, etc.).
- A review of the risks associated with the gas pipeline from the Port Kembla Gas Terminal to the Eastern Gas Pipeline was conducted including the risks associated with pipeline failure on the BLT; and
- On completion of the assessment, a draft report was developed for review and comment by GrainCorp. A final report was then developed incorporating comments on the draft report for points of fact.

3. BRIEF DESCRIPTION OF THE BULK LIQUIDS TANKS REPURPOSING PROJECT

3.1. Location of the GrainCorp Bulk Liquids Terminal

The GrainCorp BLT is located in Port Kembla, NSW, around 2.8 kms south of the Wollongong City Centre. **Figure 3.1** shows the BLT location within the Wollongong regional Area. The BLT is located within the SP1 Special Activities area of the land zoning plan and relates to port activities located within the area.

The immediate surrounding land uses are all located within the SP1 area, with land located to the west zoned IN3 – Heavy Industrial.

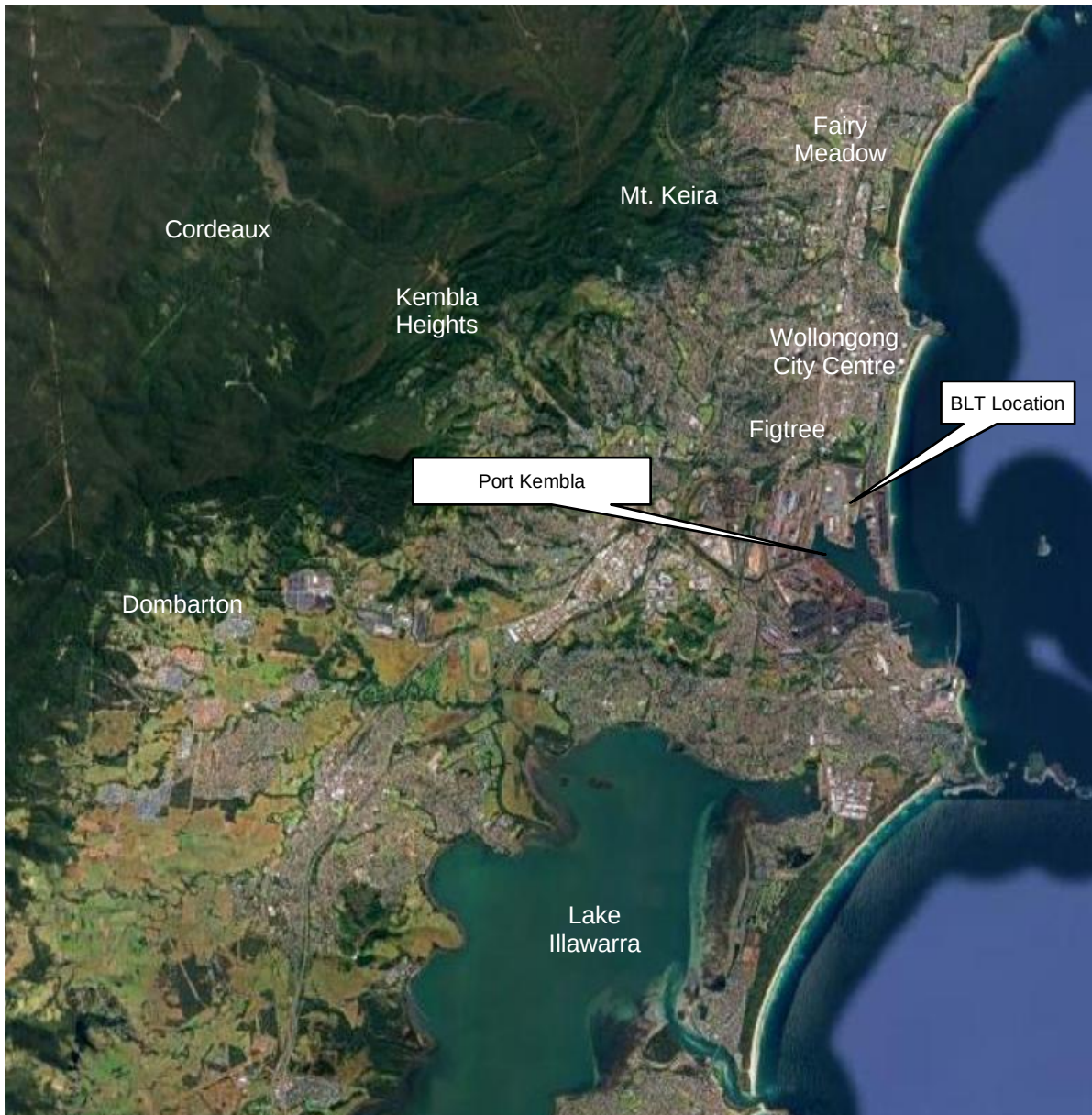


Figure 3.1: BLT Regional Location

Figure 2.1 shows the BLT location in the Port Kembla area. The BLT is located directly to the north of the grain silos (200m) and west (450m) of the Port Kembla coal terminal. The closest residential area is located 960m to the north west of the BLT.



Figure 3.2: BLT Location in Port Kembla

3.2. Brief Description of the Proposed BLT Repurposing Project

GrainCorp currently provide storage and handling of mineral oils at the BLT, however, it is proposed to provide storage and handling services for different products. The proposed repurposing of the BLT facility would involve the storage and handling of Tallow and Used Cooking Oil (UCO) and, potentially, other products of a similar nature and characteristics. To accommodate these new products, the BLT will require new functionality such as product heating and modified product reticulation. Additionally, the introduction of export capability to the BLT is included.

To implement these changes, GrainCorp has identified the project scope, which is described in **Table 2.1** and shown in **Figure 3.3**.

Table 3.1: Existing Vs Proposed BLT Facility

Item	Existing Configuration	Proposed Configuration
Products	Mineral Oils	Tallow, Used Cooking Oil
Storage Tanks	10 x 1250mT Approval for extra 6 x 1250mT	10 x 1250mT Approval for extra 5 x 1250mT
Import/Export	Import. All deliveries sent out from site via truck.	Export. All receivals via truck. (Development will retain import capability and consent)
Heat Plant	250kW diesel Boiler	2.5MW diesel boiler and 1.25 MW boiler for stage 2
Shipping Line	1 x 200nb Stainless Steel pipe Approval in place for a second line	1 x 200nb Stainless Steel pipe Approval in place for a second line
Pre-Storage Settling Tanks	None	4 x 100kL (exact sizing TBC). Tallow will be held in these tanks at temperature between 50-65degC. Purpose of the tanks is to allow water and oil to separate and then to pump water out of the product. Water pumped off will be transferred into oil water separator or sent to slops tank to be trucked off site.
Site Cleaning Methodology	Air blows to purge lines Bunds for spill containment Oil/water separator for separation of oil and water from spills. Truck off-site of any spilled oil products.	Hot water system for cleaning tanks at turnaround (infrequent). All waste to be trucked offsite. Air blows to purge lines Bunds for spill containment Oil/water separator for separation of oil and water from spills. Truck off-site of any spilled oil products.
Buildings	Boiler room/storage. Site hut.	Site hut. Laboratory and sample storage as standalone hut or extension to existing site hut.

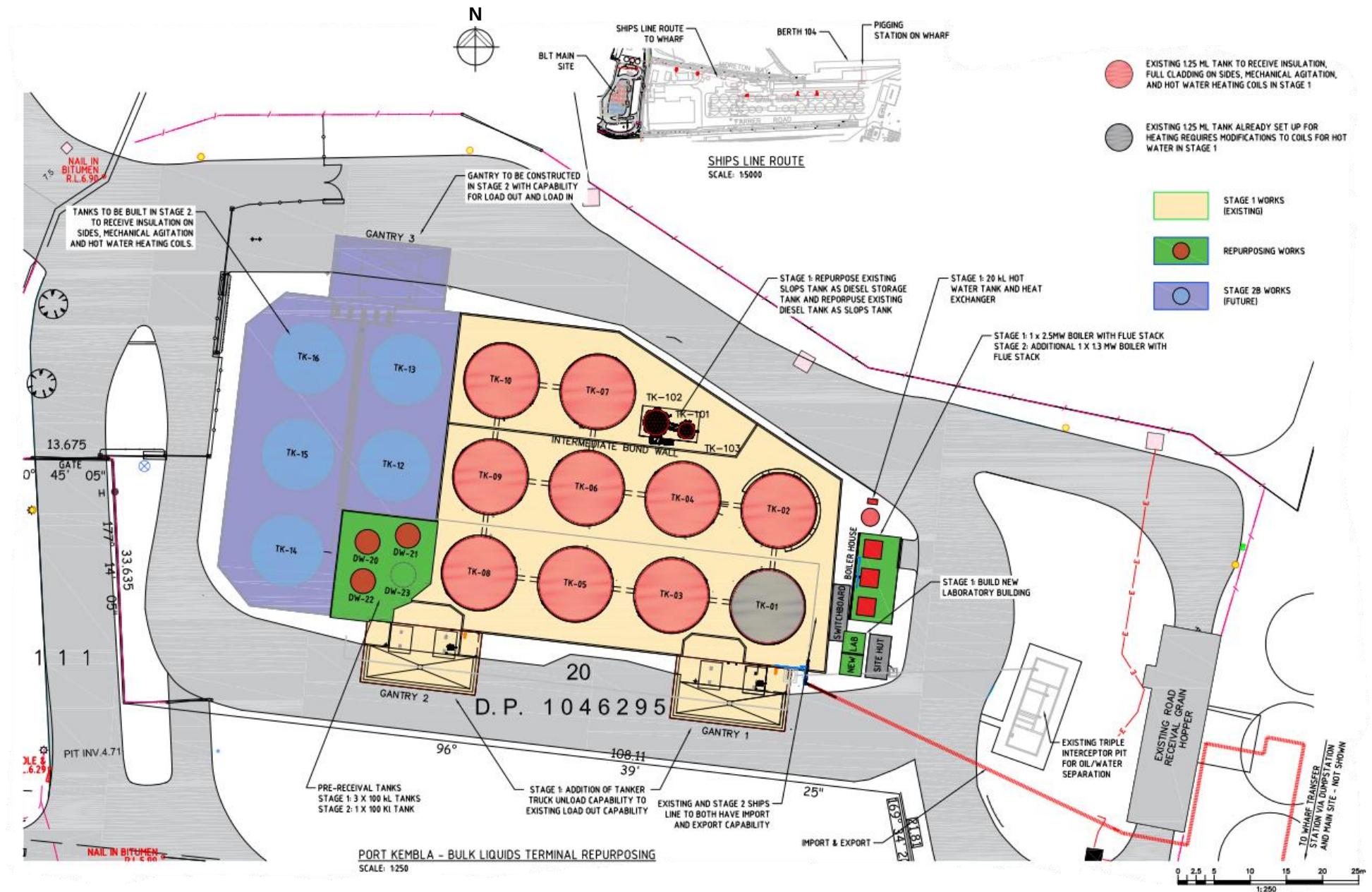


Figure 3.3: Layout Plan of the Proposed Repurposing of the Bulk Liquids Terminal at Port Kembla, NSW

3.3. Additional Heating Capacity

A number of products stored in the tanks contain fats that can cause them to solidify as they approach ambient temperature. Accordingly, the following elements are proposed to address this characteristic:

- Install hot water heating coils, external insulation & cladding, and tank agitators at tanks 02 – 10 to a similar specification to those already in tank 01. Specifically, colour and branding of the new cladding would be similar.
- Remove existing steam boiler and replace with 2 new 1.25 MW hot water boilers with provision for a 3rd equally sized boiler. The intention is to retain the existing boiler shed enclosure.
- Increase in on-site diesel storage capacity if LPG is not feasible, to service the additional energy demand.
- The addition of heat tracing wires and lagging to some minor oil pipework on the BLT site. The ship's line heading out to the wharf isn't expected to need lagging/heat tracing.

3.4. Additional Export Functionality

As tallow and Used Cooking Oil product is typically domestically made and exported, GrainCorp will need to add export capability to the terminal. This is expected to be implemented by the following:

- Modifying the manifold at each tanker truck gantry to allow receiving and pumping product in a similar manner as it is currently out-loaded, using the same types of hoses and dry-break couplings where possible.
- Minor internal changes to the BLT complex including the reconfiguration of a few non-return valves, etc.
- Adding a pump to the ships line at the main BLT complex to charge the shipping line in reverse, filling the ship by the same style of connection that is used currently.

3.5. Approved Second Shipping Line

The originally planned second ships line is not currently planned to be included as part of stage 1 of these works.

GrainCorp desire that the addition of the approved second shipping line is included in stage 2 of the works approvals (the same stage as the 5 x 1250mT tanks).

3.6. Addition of Hot Water Cleaning System

There is no planned cleaning of lines or tanks in-between products or pumping activities. All lines will be blown with compressed air to push residual oil in the lines to tank storages or the slops tank.

A hot water system will be deployed across the tank farm area to support unblocking of lines if blockages occur. Hot water will be applied to the outside of pipes and fittings to melt the oil inside. This is proposed to be implemented via the use of a hot water system which will consist of a 20 kL insulated tank, a pump, and a heat exchanger at the main BLT complex.

No allowance is made for washing out of tankers on site.

Water will be recovered through the existing stormwater system and oil/water separator. Water that can't be recovered due to not meeting the requirements of the process will be disposed of off-site.

3.7. Addition of a Receival Pre-Treatment System

Some of the products to be received require a certain level of holding time to let moisture separate out after agitation from road transport to the terminal.

This is proposed to be implemented via the use of 4 x 100 kL stainless steel holding tanks capable of receiving 2 tanker trucks and holding prior to discharging to the target bulk tank. These tanks are currently proposed to be situated on a new foundation, slab, and bunded area located in the area set aside for future tank 11, and built to a similar specification meeting the relevant Australian Standards.

It is envisioned that these tanks have a dual purpose in that they can hold cleaning water as well whilst the oils from the cleaning process are separated out to allow the water to be reused where possible.

Disposal of this treated water will be through transportation off site via road tanker truck, depending on the outcome of discussions with the EPA, NSW ports, and Sydney Water.

3.8. Brief Description of the Liquefied Natural Gas (LNG) Pipeline

A 4.1 km long DN400 LNG pipeline, wall thickness 12.7mm (the Pipeline), has been installed from the Port Kembla Gas Receival facility, at Berth 101 in the port area at Port Kembla, to the Cringila regassification facility, which is located adjacent to the Eastern Gas Pipeline (EGP) at Spring Hill.

Construction of the pipeline commenced in December 2022 with pipeline hydrotesting completed in October 2023. Pipeline commissioning was completed in November 2023, however, the pipeline is not currently in use and has been purged with Nitrogen (at a nominal 100 KPa), awaiting final system commissioning. **Figure 3.4** shows the pipeline route from the gas receival facility to the Cringila site in Spring Hill.



Figure 3.4: Location of the Gas Pipeline & Bulk Liquids Terminal at Port Kembla, NSW

4. RESULTS OF THE RHSEPP ASSESSMENTS

4.1. Background

The RHSEPP assessment uses the SEPP33 guideline “Hazardous and Offensive Development” issued by the DPHI (Ref.2). This guideline provides a threshold quantity list of Dangerous Goods (DG) above which the RHSEPP applies. The guideline also provides maximum permissible thresholds for DG transport above which the RHSEPP applies. Finally, information regarding the potential for a site to be classified as an offensive facility is provided in the guideline.

Each assessment requirement is provided in the following sub-Sections.

4.2. Bulk Liquids Terminal (BLT) Materials Storage Review

The bulk liquid terminal layout and proposed change of stored materials is provided in **Table 3.1** and **Figure 3.3**. It can be seen from **Table 3.1** that the materials proposed in the BLT repurposing project are all classified as combustible liquids Class C2, with a smaller diesel tank (Class C1) used as fuel for the boilers for tank heating.

All materials are classified as combustible liquid with no flammable liquids or other DGs stored within the tanks. The new materials are commensurate with the existing stored materials, which are also classified as combustible liquids.

A review of the Australian Dangerous Goods Code (ADG, Ref.3) identified that Class C2 combustible liquids are not classified as Dangerous Goods and the guideline (Ref/[Hold]) states the following:

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- If combustible liquids of class C1 are present on site and are stored in a separate bund or within a storage area where there are no flammable materials stored they are not considered to be potentially hazardous. If, however, they are stored with other flammable liquids, that is, class 3PGI, II or III, then they are to be treated as class 3PGIII, because under these circumstances they may contribute fuel to a fire.

(Ref.2)

As the diesel fuel (Class C1) is not stored with flammable liquids, based on this assessment, the materials stored are not subject to the RHSEPP.

4.3. Bulk Liquids Terminal (BLT) Materials Transport Review

The transport threshold quantities are based on the number of vehicle transporting DGs and quantity of DGs transported. As noted above, all materials are classified as combustible liquids C2 (non-DG), with the only exception being diesel fuel for the heating of tanks. Hence, based on the extract from the guideline (Ref.2), there are no DGs listed within the transport thresholds transported to and from the site.

Based on this assessment, the materials transported are not subject to the RHSEPP.

4.4. Bulk Liquids Terminal (BLT) - Potential Offensive Operations

The guideline indicates that the potentially for offensive operations can arise from a number of operations at the site, these include:

- Air pollution;
- Noise Pollution;

- Water Pollution; and
- Other emissions that could result in potential for pollution.

Each point above has been assessed in the following sub-sections.

4.4.1. Air Pollution

There are no changes to the current site storage material class (i.e. combustible liquid). The flash point of all Class C2 materials stored exceed 150°C and materials are heated well below this level to maintain a lower viscosity such that the combustible liquid can be pumped. Hence, there will be no potential for vaporisation of the stored Class C2 materials.

Diesel fuel will not be heated and is stored at ambient temperature. The flash point of diesel fuel is >60°C. As the ambient temperature will not exceed 60°C, there will be no potential for vaporisation of the stored diesel fuel.

The EPA license includes conditions regarding the operation of the boiler system, which will be implemented as part of this repurposing project. The EPA will monitor and control the implementation of conditions and confirm these before operations can commence. Hence, by meeting the required conditions air pollution from this source is not considered to be an offensive operation.

In summary, operations at the site are not considered to generate additional air pollution over and above the EPL conditions and, hence, air pollution is not considered an offensive operation at the repurposed BLT site.

4.4.2. Noise Pollution

The repurposed operations introduce a number of noise emitting sources to the facility, including pumps and agitators. A detailed study of these noises (Ref.11) has been conducted and there are no significant impacts from the proposed works. As such, noise is not considered to be an offensive product of operations at the site.

4.4.3. Water Pollution

Water pollution may occur as a result of releases from tanks within the BLT. However, there is, essentially, no change to the storage designs at the site. All storage tanks are located within bunded areas, which comply with AS 1940 (Ref.4), providing spill retention capacity to hold 110% of the largest storage tank within the individual tank storage compounds. Hence, in the event of a full tank contents release, there would be no escape of liquids beyond the spill retention bunds within the BLT.

The existing storage design and the proposed storage design remain unchanged and, hence, impacts from the proposed repurposing project is not considered to result in an offensive operation with regards to water pollution.

4.4.4. Update of the Environmental Protection Licence (EPL)

The BLT currently holds an EPL, which will be updated based on the proposed materials to be stored at the site. The Environmental Protection Authority has been contacted and licence updates are currently being prepared for the repurposed site. The EPL will be completed and approved prior to commencement of operations at the site. Hence, any potential offensive operations will be covered by the updated EPL.

In summary, with the preparation of an updated EPL and the above pollution preventative measures in place, the repurposed BLT storage is not considered to be an offensive development under the provisions of the RHSEPP.

4.5. High Pressure Gas Pipeline Review – Onshore Gas Receiveal to EGP

As described in **Section 3.8**, a high pressure liquefied natural gas (LNG) pipeline has been designed, approved and installed between the onshore LNG receiving facility and the Eastern Gas Pipeline (EGP). The pipeline is owned by Squadron Energy and Jemena, with Squadron Energy owning the pipeline section from the PKGT to western side of Springhill Road and Jemena owning the remaining section west of Springhill Road. The pipeline is currently in “storage” and is resting on nitrogen to prevent corrosion and potential pipeline degradation whilst not in use.

Squadron Energy and Jemena were contacted to provide information regarding the pipeline details and current operational status. Both organisations confirmed the status and ownership details provided above. Documentation regarding approvals and hazard/risk assessments were provided including Preliminary and Final Hazard Analyses (PHA & FHA) and Environmental Impact Statements (EIS). These documents were reviewed and the assessment results summarised in this RH SEPP and pipeline assessment.

A final hazard analysis (FHA) prepared and approved for the pipeline (Ref.5), demonstrating the risks associated with the pipeline operation. **Figure 4.1** shows the overall fatality risk contours for the pipeline.



Figure 4.1: Pipeline Fatality Risk Contours for the Area of Pipeline Adjacent to the BLT

Table 4.1, which has been extracted from the Final Hazard Analysis, shows the results of the assessment against the risk criteria published in Hazardous Industry Planning Advisory Paper No.4 – Risk Criteria for Land Use Safety Planning (HIPAP 4).

It can be seen from this table that all fatality risk criteria published in HIPAP 4 is met and, hence, the impact of the pipeline on the BLT does not exceed acceptable risk criteria.

4.6. Construction of Approved Second Shipping Line

It is understood that a second shipping pipeline has been approved to be constructed in Stage 2 and will be installed within the conveyor tunnel, which is constructed under Tom Thumb Road and under the existing Squadron Energy Pipeline. The only point where the second shipping pipeline and Squadron Energy Pipeline intersect is at Tom Thumb Road (see **Figures 4.2 & 4.5**). As the installation of the approved second shipping pipeline will not require any excavations in the vicinity of the Squadron Energy Pipeline, there will be no interaction with, or impact to, the existing LNG pipeline as a result of the installation of the approved second shipping line from the BLT.

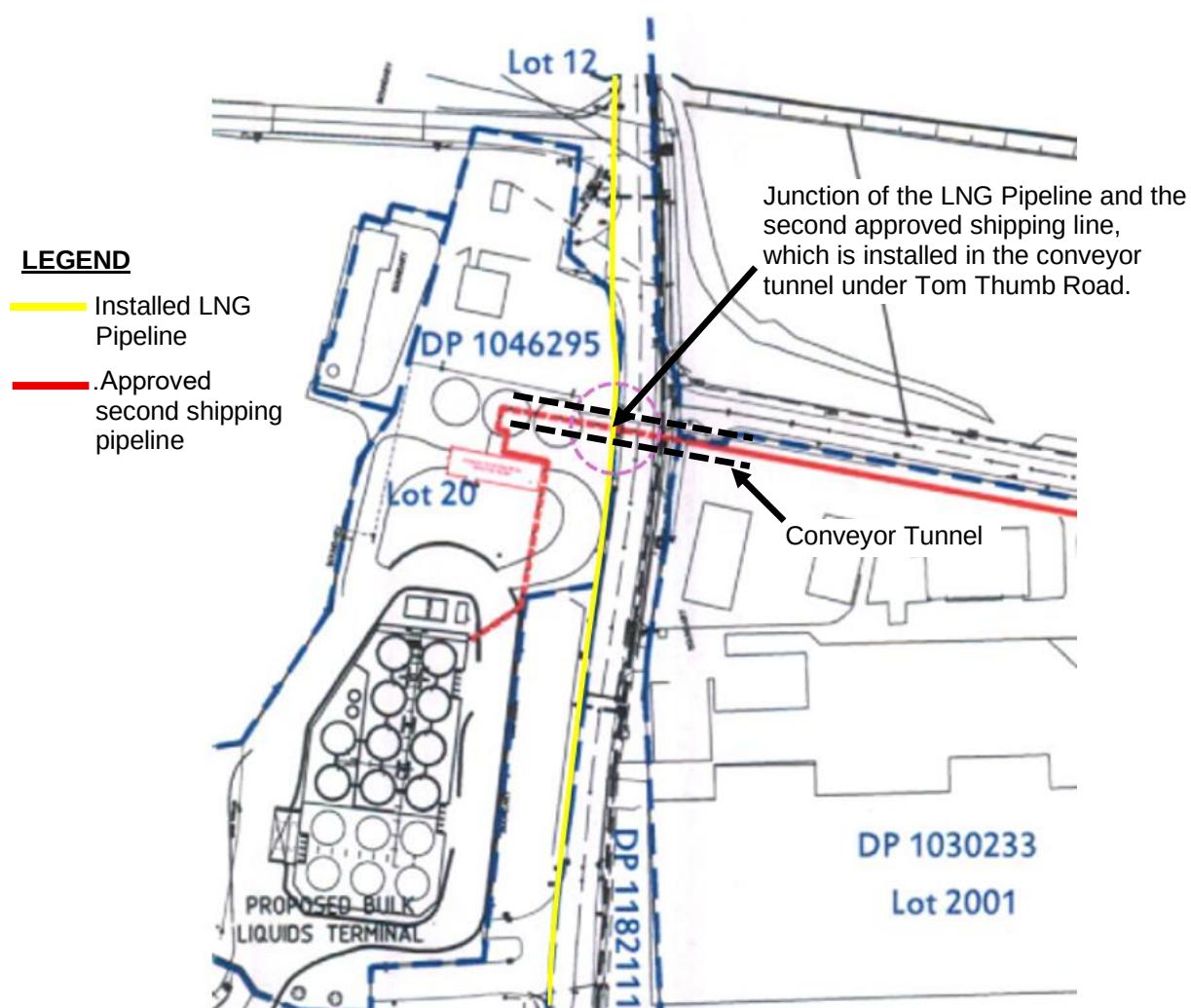


Figure 4.2: Location of the LNG Pipeline (installed) and Second Approved Shipping Line

Table 4.1: Gas Pipeline Fatality Risk Results Compared to the HIPAP 4 Criteria

Risk (pa)	Land Use	Criteria Met
5E-07	Hospitals, schools, child-care facilities, old age housing	Yes There are no hospitals, schools, child-care facilities, or old age housing within the contour area.
1E-06	Residential, hotels, motels, tourist resorts	Yes There are no residential developments, hotels, motels, tourist resorts within the contour area.
5E-06	Commercial developments including retail centres, offices and entertainment centres	Yes There are no commercial developments including retail centres, offices and entertainment centres within the contour area. The BlueScope Steel visitors centre located in the vicinity of 'Segment 1.1' has been considered to be equivalent of a commercial development and is outside the associated risk contour.
1E-05	Sporting complexes and active open space	Yes The 1E-05 pa risk contour does not reach any active open spaces (i.e. Seawall Road)
5E-05	Industrial	Yes The 5E-05 pa risk contour remains within the site boundary

In addition to the assessment of fatality risks, the FHA (Ref.5) also assessed injury and propagation risk for the pipeline section passing the BLT. The risk criteria published in HIPAP 4 for injury risk is as follows:

- Propagation Risk from Fire – exposure to 4.7 kW/m^2 heat radiation does not exceed a frequency of 5×10^{-5} p.a. at residential areas.
- Injury Risk from explosion - exposure to 7kPa overpressure does not exceed a frequency of 5×10^{-5} p.a. at residential areas.
- Toxic concentrations in residential and sensitive use areas should not exceed a level which would be seriously injurious to sensitive members of the community following a relatively short period of exposure at a maximum frequency of 10 in a million per year

Noting that the BLT is not a residential location, this criteria is not applicable to the BLT.

The risk criteria published in HIPAP 4 for propagation risk is as follows:

- Injury Risk from Fire – exposure to 23 kW/m^2 heat radiation does not exceed a frequency of 5×10^{-5} p.a. at adjacent industrial areas.
- Propagation Risk from explosion - exposure to 14 kPa overpressure does not exceed a frequency of 5×10^{-5} p.a. at adjacent industrial areas.

The FHA reports that the pipeline assessment for heat radiation and explosion overpressure, in the section of pipeline adjacent to the BLT, did not exceed the risk criteria published in HIPAP 4.

As part of the FHA approval letter (Ref.6), the installation of an emergency shut down (ESD) function is required at the onshore gas receipt facility at the Port Kembla Gas Terminal (PKGT). **Figure 4.3** shows the PKGT shut down hierarchy installed at the onshore gas receipt facility. It can be seen from this figure that the ESD function has been installed at the facility.

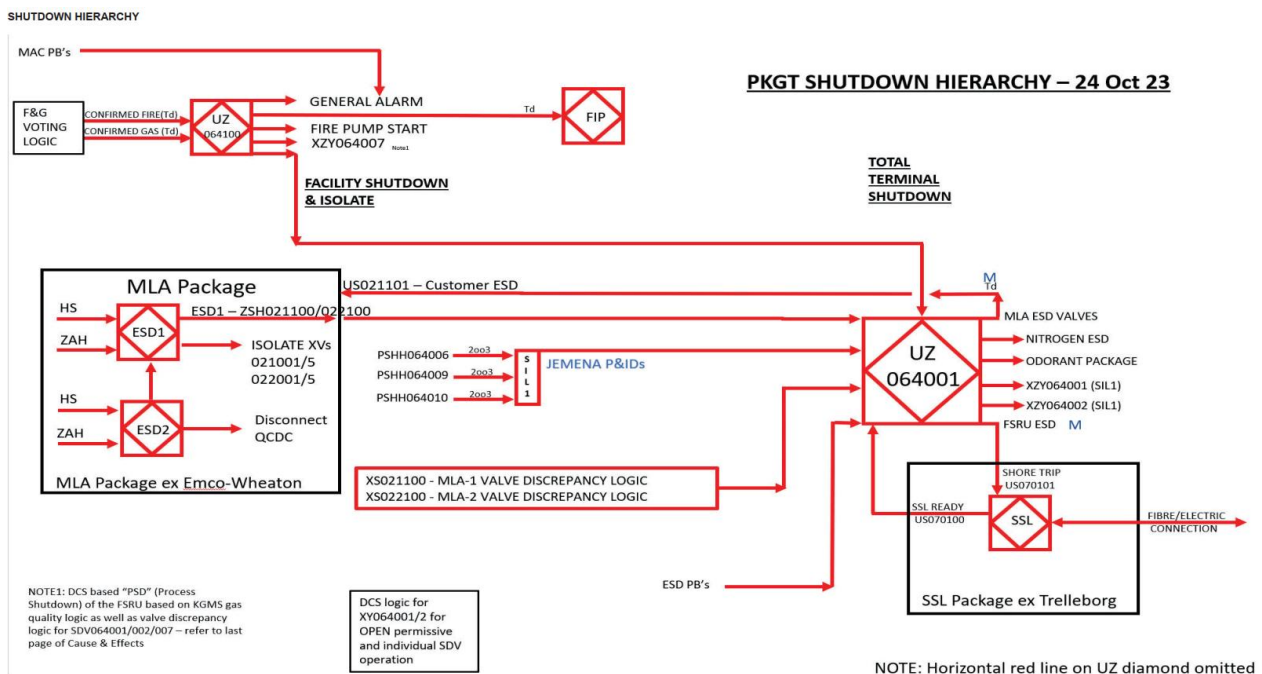


Figure 4.3: PKGT Emergency Shut Down Hierarchy

In summary, the pipeline design and installation has implemented appropriate safeguards such that the risks associated with the operation of the pipeline do not exceed the acceptable risk criteria at the BLT.

4.7. Cumulative Risk – BLT and Pipeline

Whilst the assessment of risks associated with individual operations may result in the assessed risk being below the acceptable criteria, the cumulative effects of the risks associated with two adjacent operations may result in the overall risk exceeding the acceptable risk criteria.

The screening assessment conducted in this RHSEPP assessment has identified that the liquids stored at the BLT are the same materials class (i.e. combustible liquids), hence, based on the criteria published in the risk screening guideline (Ref.2), the BLT is not subject to the RHSEPP.

Notwithstanding this, a Preliminary Hazard Analysis was prepared in October 2013 which identified that the risks associated with the facility were below the acceptable risk criteria. Noting the material characteristics associated with the proposed operational changes at the BLT, and the number of bulk liquid tanks are reduced, the original risk contours are applied as a conservative guide.

Figures 4.4 and 4.5 have been developed to show the risk contours for both the BLT (from the PHA study, Ref.8) and the high-pressure gas pipeline superimposed over each other. **Figure 4.4** shows a detailed contours around the immediate area of the BLT, **Figure 4.5** shows the location of the BLT with regards to the Port Kembla port property on which the BLT is located.

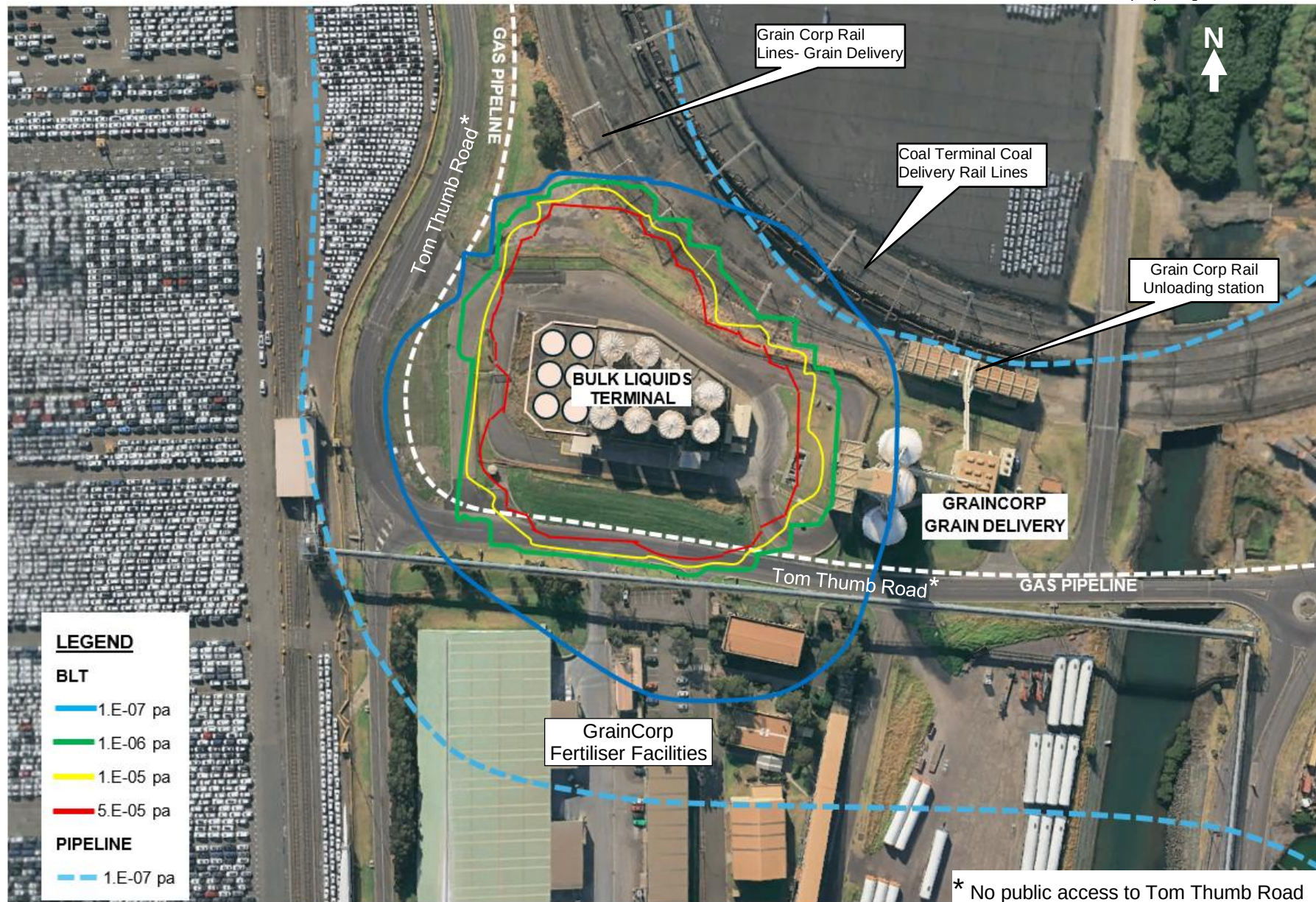


Figure 4.4: BLT and Gas Pipeline Risk Contours Overlaid on the Site Layout



Figure 4.5: Port Kembla Port Area showing Port Boundary

It can be seen from **Figure 4.4** that the pipeline fatality risk (shown in the blue dotted line) does not exceed 1×10^{-7} p.a. Hence, if this value was added to the BLT risks (shown in the solid coloured lines), to provide an overall risk value for the site, there would be no change to the red, yellow and green lines and the solid blue line would extend to the location of the blue dotted line. In this case, the risk would not exceed the acceptable criteria of 5×10^{-5} p.a. in the adjacent industrial areas to the Port area shown in **Figure 4.4**. It is noted that a section of the 5×10^{-5} pmpy contour projects partly into Tom Thumb Road. This road runs through the GrainCorp site, which is within the Port Kembla Port property and is not subject to public access as the road is under port authority control. The 5×10^{-5} pmpy contour to the north, east and west do not extend beyond the GrainCorp operational areas.

Noting also that the gas pipeline is located underground at a depth of between 1.3m and 1.9m, there would be no impact to the pipeline from incidents at the BLT.

In summary, the cumulative risk does not exceed the acceptable risk criteria in accordance with HIPAP 4 (Ref.7) with regards to impact beyond the Port Kembla Port area. Note that the contours (Red, Yellow, Green and Blue (solid line)) shown in **Figure 4.4** are extracted from the approved BLT expansion project. These contours are unchanged from the approved Final Hazard Analysis study prepared for the site (Ref.6). The original risk contours prepared for the BLT are provided in **Appendix A**, demonstrating that the current contours presented in **Figure 4.4** are commensurate with those provided in the original approved study.

4.8. Wharf Transfer Operations

Bulk liquids (mineral oils) are currently transferred from Berth 104 to the BLT using ships pumps, which transfer the liquid to the designated tank. Tallow and used cooking oils would be transferred in the same manner as current operations, but in both directions, which will require new pumps at the BLT. In the event of a loss of containment, there is a potential for environmental impact as a result of the liquid release entering the waterways in the port.

Discussion with the operations personnel at BLT indicates that control of loss of containment would be to control releases as close as possible to the source by using oil-spill containment plugs in the scuppers on the ship's deck, preventing localised spills releasing to harbour. This is also repeated at the wharf, where wharf scuppers are covered during the transfer operations. Noting that the transfer operation is conducted in the presence of an operator throughout the whole transfer operation, the operator can activate the emergency stop functions (e.g. E-Stop button to stop the liquids transfer) in the event of a release, minimising the quantity of liquid escaping a loss of containment event. However, larger releases may result in liquids exceeding the deck containment capacity and discharge over the side of the vessel into the harbour.

In the event of a release of liquid beyond the deck spill containment and into the harbour, GrainCorp will implement the current spill containment procedure, which includes the deployment of oil-spill containment and collection booms. The booms are held in the wharf during the transfer operation and deployed in the event of a release beyond the ship/wharf area. Noting that the liquids transferred between the BLT are not miscible with water and are less dense than water, they will float on the water surface in the harbour. Containment booms for spill retention and collection in harbours are common practice and a well proven method of minimising impacts from releases of oils in waterways. **Figure 4.6** shows the boom deployment plan around the ship and wharf to contain any releases that may enter the harbour. As noted above, the transfer operation is attended by a ship's operator, who can raise the alarm to initiate boom deployment.

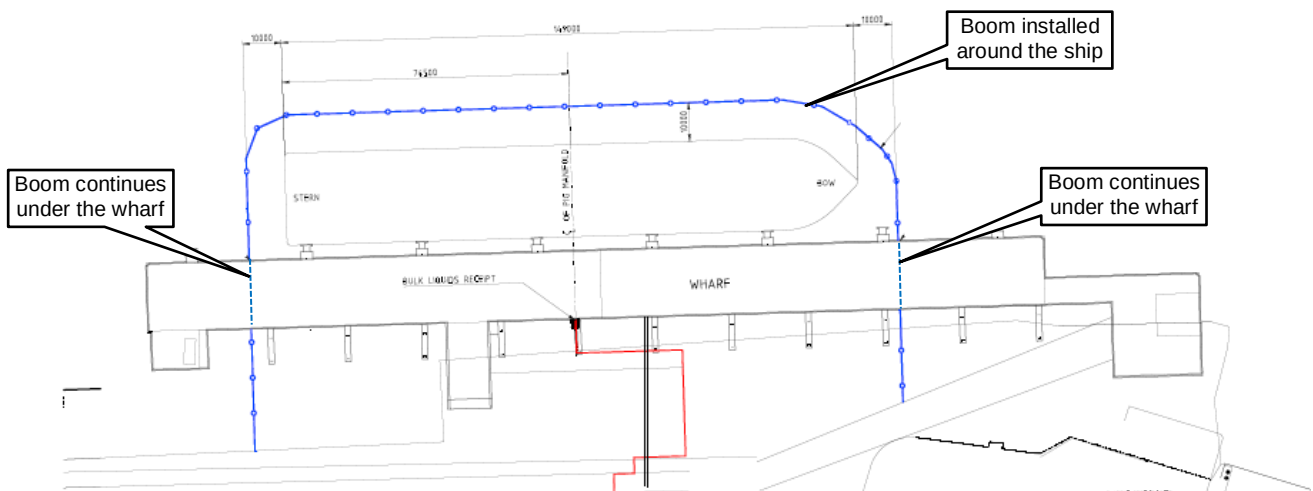


Figure 4.6: Spill Retention Boom Deployment – Berth 104, Port Kembla Harbour

The BLT Emergency Response Plan (ERP) contains a spill response procedure (No. 13-208, Ref.9), key instructions from the procedure have been extracted and included below:

In the event of a hydrocarbon release from the ship or wharf, during the liquids transfer, the following steps are to be implemented -

- *Notify the Control Room Operator (26407 internal phone) and give the following details;*
 - *Location of the spill;*
 - *Size and extent of the spill – what material is involved;*
 - *If employees are in danger;*
 - *Your name.*
- *Alert others in the immediate area of the spill.*
- *Attempt to turn off any pumps that may be transferring liquids. (Cease any liquids transfer as per Shipping Procedures);*
 - *For truck loading, activate the e-stop;*
 - *In the event of ship unloading, radio the vessel captain or chief “**Stop, Stop, Stop**”;*

Note: Never close the valves against the ship pumps whilst in operation.
- *Close the main stormwater control valve on the Baldwin Interceptor to isolate the site;*
 - *Ensure that the diaphragm pump is manually off;*
 - *Ensure that the outlet from the interceptor pit is closed.*
- *Place barriers/spill kit booms around stormwater drain points.*
- *Contain and control the spill if possible and safe to do so.*
- *Remove or isolate any ignition sources in the vicinity of the spill area.*
- *Assess the spill and evaluate method for spill clean-up.*

- *Clean up the spill using the designated oily waste bins.*
- *Do not enter the affected areas unless involved in the spill response or until advised by the Site Manager, or Maintenance Supervisor.*
- *Refer to the Site Pollution Incident Response Management Plan (PIRMP) for further actions.*

Note: where a spill enters the harbour, it will be contained by the booms already in place.

In addition to the ERP, the BLT also operates a Pollution Incident Response Management Plan (PIRMP, Ref.10), as part of its Environmental Protection Licence (EPL). The PIRMP has been approved by the Environmental Protection Authority (EPA) as part of the granting of the EPL. The PIRMP requires the bulk liquid unloading procedure to be implemented which, as noted above, includes the requirement for the installation of a spill containment boom around the ship within the harbour, when unloading activities occur, to contain any bulk liquid spills in the water around the ship. Any spills on the berth are contained in bunded areas on the wharf. Pipelines and other equipment are maintained and tested to the equipment's specifications. The unloading activity is supervised constantly by GrainCorp personnel on the berth and a ship's operator.

In summary, the potential for loss of containment at the wharf has been identified and spill containment procedures (both on the ship and in the harbour) have been implemented and will be continued as part of the BLT repurposing project. A review of oil spill retention practices in harbours confirms the spill retention methods used at Berth 104 are common practice in harbour spill management. Notwithstanding this, it is recommended that the existing procedures are updated to reflect the proposed loading and unloading procedure.

5. SUMMARY RESULTS AND CONCLUSIONS

A review of the application of the Resilience and Hazards State Environmental Planning Policy (RHSEPP) was conducted for the proposed repurposing of the GrainCorp Bulk Liquids Terminal (BLT) at Port Kembla, NSW. In addition to the RHSEPP assessment, a review of the impacts of the high-pressure gas pipeline, from the Port Kembla Gas Terminal (PKGT) to the Eastern Gas Pipeline, on the BLT was conducted.

The assessment identified the following:

- **Storage** - the BLT repurposing project involves the storage of combustible liquids only, which are similar in nature to the existing stored materials. Combustible liquids are not subject to the RHSEPP (Ref.1), hence, the RHSEPP does not apply to the proposed storage component of the repurposing project.
- **Transport** – the transport of materials to the BLT repurposing project involves combustible liquids only, which are similar in nature to the existing materials transported to the facility. AS noted in dot point 1, combustible liquids are not subject to the RHSEPP (Ref.1), hence, the RHSEPP does not apply to the proposed storage component of the repurposing project.
- **Offensive Operation** – a review of the operations at the site identified that there is, essentially, no change to the operational functions at the BLT and, hence, there is no introduction of functions that would result in an offensive operation at the site.

Based on this assessment it is concluded that the RHSEPP does not apply to the proposed BLT repurposing project.

The review of the high-pressure gas pipeline from the PKGT onshore receival facility to the EGP, which runs on the southern side of the BLT, identified that the risks associated with the section of

pipeline adjacent to the BLT did not exceed the acceptable risk criteria published in Hazardous Industry Planning Advisory Paper No.4 – Risk Criteria for Land Use Safety Planning (Ref.7). Hence, as the risks associated with the pipeline fall within acceptable risk criteria and it is concluded that there is no risk to the BLT beyond acceptable limits.

A second pipeline is approved for installation from the BLT to the wharf area. The pipeline will be installed from the BLT to the grain delivery silos and then through the existing grain conveyor tunnel. There is no requirement to excavate in the area of the Squadron Energy Pipeline and, hence, there is no interaction between the two pipelines during installation of the second shipping pipeline. Based in this there is no potential for impact to the Squadron Energy Pipeline as a result of the installation and operation of the approved second shipping pipeline.

In summary, and based on the screening assessment conducted in the document, the site is not considered to be subject to the RHSEPP and therefore a Preliminary Hazard Analysis is not required for the BLT repurposing project. Further, the route location of the PKGT gas pipeline, which passes the BLT, does not result in a risk impact beyond the acceptable risk criteria published in HIPAP 4 (Ref.7) as an individual facility nor as a result of the cumulative risk in conjunction with the BLT.

6. REFERENCES

1. State Environmental Planning Policy (Resilience and Hazards) 2021 Current version for 4 August 2023 to date), Part 3 – Hazardous and Offensive Development, NSW Department of Planning, Housing and Infrastructure,
2. Applying SEPP 33 (2011), “Hazardous and Offensive Development Application Guidelines”, NSW Department of Planning, Housing and Industry (DPHI).;
3. “The Australian Code for the Transport of Dangerous Goods by Road and Rail”, known as The Australian Dangerous Goods Code or ADG, ed. 7.8, 2023, Federal Office of Road Safety, Canberra, ACT
4. AS1940-2004, “The storage and handling of flammable and combustible liquids”, Standards Australia, Sydney
5. Port Kembla Gas Terminal Project – Final Hazard Analysis Report – Worley Industrial Energy, Document No. Rev 3: 411010-00417-SR-REP-0008, 15 September 2023
6. Department of Planning, Housing and Infrastructure – Final Hazard Analysis Approval Letter, S. O’Donoghue, Director Resources Assessment (Ref.: SSI-9471-PA-105), 6 October 2023.
7. Hazardous Industry Planning Advisory Paper No.4 (2011) – Risk Criteria for Land Use Safety Planning, NSW Department of Planning, Industry & Environment, Sydney
8. Port Kembla Bulk Liquids Terminal – Hazard Analysis, Arriscar Pty Limited Document No. J-000048-AU-01 (Revision 0), 29 October 2013.
9. GrainCorp Procedure 13-208 – Bulk Liquids Wharf Unloading Procedure, Revision 19 December 2014.
10. Pollution Incident Response Management Plan (PIRMP – Port Kembla Terminal (GrainCorp), Revision 29 May 2025.
11. Port Kembla Bulk Liquids Tanks Repurposing – Noise and Vibration Impact Assessment, Accoustic Logic (Mascot NSW), Project No. 20250730.1., 2026.

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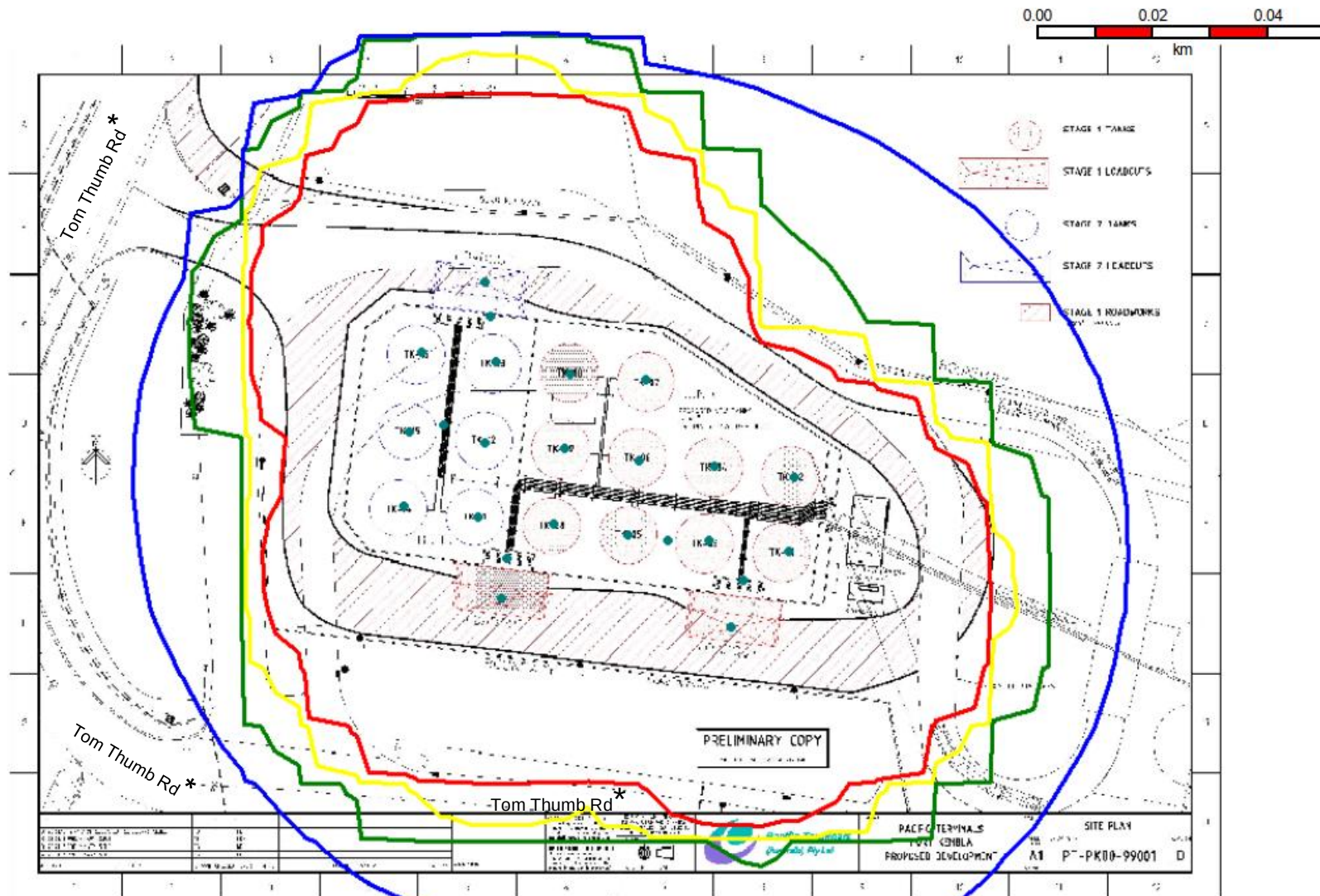
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BEng., P.Grad.Dip.Bus., FSE(TUV 2203/10), EEHA-CR05984a&b/CT16285

Technical Director – Risk Engineering

RiskCon Engineering Pty Ltd

RHSEPP – Repurposing of the BLT, Port Kembla
APPENDIX A



* Tom Thumb Road is not accessible to the public and is under the Port Authority control

(Ref.8)

