







Our Rei: POS.2693 / AS4801 131005 Your ref: L4474/1976/14

30 November 2016

Jason Banks
Director General
Department of Environment Regulation
Locked Bag 33 Cloisters Square
Perth WA 6850

Dear Mr Banks,

NOTIFICATION OF MATERIAL CHANGE - KWINANA BULK JETTY (L4474/1976/14) SILICA SAND EXPORTS

In accordance with Condition 2 and Schedule 2 of the Environmental Licence for Kwinana Bulk Jetty please accept this notification of a Material Change, specifically the export of a new commodity, silica sand.

For your information find attached the following documents:

- 1. Operation overview from berth operator LINX;
- Cargo Material Safety Data Sheet.
- 3. Job Safety and Environment Analysis (JSEA) form including risk assessment;
- 4. Diagram plan and sectional view showing single and dual ship loader; and
- 5. Aerial photograph showing typical configuration of portable loader and berth operations.

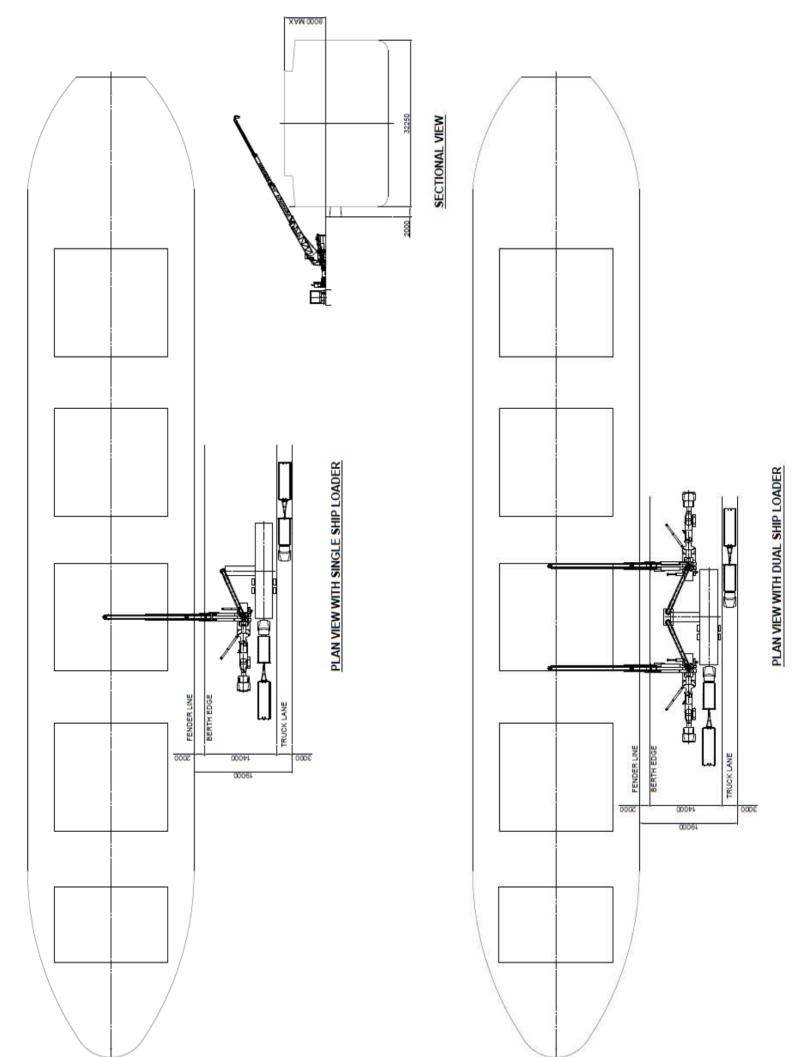
The first vessel, to be loaded with approximately 20,000 tonnes, is expected to arrive at berth on the 7 December 2016.

Please don't hesitate to contact me on assessment if you would like to discuss any aspect of this notification further.

Yours sincerely,

Denis Doak

Environmental Manager





Andrew Hathaway

1 Riseley Road

Kwinana WA 6167

27th November 2017



Alco by appoil		
Also by email:		

Dear Sir,

Re: Silica Sand Export via Mobile Loader

We refer to the correspondence with the Fremantle Port Authority (FPA) and also with the Kwinana Bulk Jetty (KBJ) management over the last month in relation to the above Project. LINX Pty Ltd (LINX), previously Patrick Stevedores has been engaged by our client to export trial shipments of Silica Sand via KBJ for export by 7th December 2017.

The product to be bulk exported will be an inert Silica Sand from a quarry in Gaskell in Perth's North East (SDS previously submitted). These Silica Sand exports, if approved and successful will enable Western Australia to recommence bulk Silica Sand exports which are currently exported via the same methods as being proposed below to Asia and America via Eastern Australian States. Potential annual export volumes are estimated to range from 400,000 tonnes to 1Million tonnes. The trial being proposed would see three shipments, with the first commencing 7th December 2017 via KBJ, in shipment sizes of 20,000 tonnes and two of approximately 40,000 tonnes.

The method being proposed for export; would be bulk load out via a mobile ship loader at an average rate of 350 tonnes per hour with loading operations over 20hours per day. It is estimated that to allow this load rate, approximately forty two (42) single semi trailers would be engaged in a transport supply loop between Gaskell near Ellenbrook in Perth's North East to KBJ.

The mobile loader being utilised will consist of two loading arms and dual truck tipping receivers to allow the Sand to be sequentially tipped into the mobile loader conveyor. Sand moisture content of approx. 5%, wind guards and out loader sleeves on each conveyor will be utilised to mitigate any dust issues, along with Team Leader supervision of wind conditions.

Other environmental considerations have been made in our Risk assessment, previously submitted and in the event of major equipment failure bobcats and vacuum trucks will be on call out to clean up the Silica Sand.





The entire load out will be managed by the onsite Team Leader an Operations Management with Pre and Post Operational meetings involving the client, Transport provider, and Stevedore/Mobile Loading supervisor.

Please do not hesitate to contact us if you require any additional information to provide final written approval for this trial.

Kind regards,

Nick Ryder

Customer Manager

Linx



Safety Data Sheet

Section 1: Identification of the Material and Supplier

Company Details Hanson Construction Materials Pty Ltd

ABN 90 009 679 734

Address Level 10, 35 Clarence Street

Sydney 2000

Tel: +61 2 9323 4000 Fax: +61 2 9323 4500

Emergency 1800 882 478

Contact No

Product SILICA SAND

Other Names/ Quartz sands, Wash concrete sand, Packing sand, Concrete sand, Foundry Synonyms sand, Fine sand, Medium sand, Manufacturing sand, Fine white sand, Wash

pit sand, Bricklayers sand

Use Quartz sands are used in building construction and other civil engineering

activities such as road building

Other Information NA

Section 2: Hazards Identification

HAZARDOUS SUBSTANCE NON-DANGEROUS GOODS

This product contains crystalline silica. Crystalline silica dust is classified as Hazardous

(Australian Safety and Compensation Commission ASCC (formerly NOHSC) Approved Criteria for Classifying Hazardous Substances [NOHSC:1008] 3rd Edition)

- ☐ The solid product as supplied is classified as non-Hazardous
- □ Dust in/on the supplied product or created when the product is cut, abraded, or crushed contains crystalline silica some of which may be respirable (particles small enough to go into the deep parts of the lung when breathed in)
- ☐ A proportion of the fine dust in/on the supplied product may be respirable crystalline silica

The following Risk and Safety phrases apply to this product:

Risk Phrases:	Safety Phrases:
R20: Harmful by Inhalation (Applies to dust)	\$22 : Do not breathe dust
R22: Harmful if Swallowed	
R48 : Danger of serious damage to health by prolonged exposure through inhalation (Applies to dust)	

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Section 3: Composition / Information On Ingredients

All significant constituents are listed below:

Major Ingredients

Name	CAS	Proportion		
Sand				
Containing Crystalline Silica (Quartz)	14808-60-7	>50 - 100 %		
Mineral and organic impurities	NA	Balance		

Section 4: First Aid Measures

Swallowed Rinse mouth and lips with water. Do not induce vomiting. If symptoms persist,

seek medical attention

Eye Flush thoroughly with flowing water, while holding eyelids open, for

15 minutes to remove all traces. If symptoms such as irritation or redness

persist, seek medical attention

Skin Remove heavily contaminated clothing. Wash off skin thoroughly with water.

Use a mild soap if available. Shower if necessary. Seek medical attention for

persistent redness, irritation or burning of the skin

Inhaled Remove the source of contamination or move the victim to fresh air. Ensure

airways are clear and have a qualified person give oxygen through a face mask

if breathing is difficult. If irritation persists seek medical attention

First Aid Facilities Eye wash and normal washroom facilities

Advice to Doctor: Treat symptomatically or consult a Poisons Information Centre

Section 5: Fire Fighting Measures

Flammability Not flammable or combustible

Hazards from combustion products None

Suitable extinguishing media Not applicable

Special protective precautions and

equipment for fire fighters None

Hazchem code None allocated

Section 6: Accidental Release Measures

Spills

Dust is best cleaned up by vacuum device to avoid making dust airborne. Wetting down before sweeping up dust may be a useful control measure

☐ Recommendations on Exposure Controls / Personal Protection (see Section 8 below) should be followed during spill clean-up if conditions are dusty

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Section 7: Handling And Storage

Storage Precautions No special storage requirements

Transport Not classified as a Dangerous Goods, according to the Australian Code

for the Transport of Dangerous Goods by Road and Rail (6th Edition)

Proper Shipping Name None Allocated

Section 8: Exposure Controls / Personal Protection

The following applies to dust from this product:

Exposure Limits

■ National Occupational Exposure Standard (NES) Australian Safety and Compensation Commission ASCC (formerly NOHSC)

☐ Exposure to dust should be kept as low as practicable, and below the following NES:-

Crystalline silica (quartz): 0.1 mg/m3 TWA (time-weighted average) as respirable dust. Total dust (of any type, or particle size): 10 mg/m3 TWA

Engineering Controls

All work should be carried out in such a way as to minimise dust generation, and exposure to dust.

Mechanical ventilation: Dust extraction and collection may be used, if necessary, to control airborne dust levels.

☐ Work areas should be cleaned regularly.

Personal Protection:

Skin

Eyes

Ensure a high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet. Remove all contaminated clothing. Wash gently and thoroughly with tepid water and non-abrasive soap. If irritation develops and persists seek medical attention Safety glasses with side shields or safety goggles (AS/NZ 1336) or a face

shield should be worn

Respiratory

Where engineering and handling controls are not enough to minimise exposure to total dust and to respirable crystalline silica, personal respiratory protection may be required.

The type of respiratory protection required depends primarily on the concentration of the respirable crystalline silica dust in the air, and the frequency and length of exposure time. Amount of exertion required during the work, and personal comfort are other considerations in choice of respirator. A suitable P1 or P2 particulate respirator chosen and used in accordance with AS/NZS 1715 and AS/NZS 1716 may be sufficient for many situations, but where high levels of dust are encountered, more efficient cartridge type or powered respirators or supplied-air helmets or suits may be necessary. Use only respirators that bear the Australian Standards mark and are fitted and maintained correctly.

For dust levels approaching or exceeding the NES (see above) a more effective particulate respirator providing a greater protection factor should be worn. Procedures for effective use of respirators should be applied and supervised.

Do not contaminate the home environment with dusty work clothes and shoes. Do not shake out work clothes before laundering.



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Section 9: Physical And Chemical Properties

Appearance Fine to coarse grains varying in colour from white to yellow.

Odour None
Ph 7.4

Vapour Pressure

Vapour Density

Boiling Point/range

Freezing/melting point

Solubility

Not determined

Not determined

Not determined

Not soluble.

Specific gravity 2.0- 2.7 (water=1)

Flash Point Not applicable

Upper and lower Not applicable

flammability Limits

Ignition Temp Not applicable

Particle Size A proportion of the dust may be respirable (below 10 microns) and if it becomes airborne constitutes an exposure if inhaled.

Section 10: Stability And Reactivity

Chemical Stability: Chemically Stable
Condition to avoid: Dust generation

Incompatible materials:

Hazardous Decomposition Products:

None

Hazardous Reactions:

None

Crystalline silica is stable, compatible with other materials, does not polymerise, and will not decompose into hazardous by-products.

Section 11: Toxological Information

Health Effects: Acute (short term) -

Swallowed Unlikely under normal industrial use. Mildly abrasive to mouth and

throat if swallowed

Eyes Dust is irritating to the eyes. Exposure to dust may aggravate pre-existing

eye conditions

Skin Dust may be mildly irritating and drying to the skin due to its physical

characteristics

Inhaled Dust is mildly irritating to the nose, throat and respiratory tract and may

cause coughing and sneezing. Pre-existing upper respiratory and lung

diseases including asthma and bronchitis may be aggravated

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Chronic (long term)-

Skin

Inhaled

Dust may cause irritation and inflammation of the eyes and aggravate pre-existing eye conditions

Repeated heavy contact with the dust may cause drying of the skin and can result in skin rash (dermatitis) typically affecting the hands. Over time this may become chronic and can also become infected

Repeated exposure to the dust may result in increased nasal and respiratory secretions and coughing. Inflammation of lining tissue of the respiratory system may follow repeated exposure to high levels of dust with increased risk of bronchitis and pneumonia. Long term occupational over-exposure or prolonged breathing-in (or inhalation) of crystalline silica dust at levels above the NES carries the risk of causing serious and irreversible lung disease, including bronchitis, and silicosis (scarring of the lung), including acute and/or accelerated silicosis. It may also increase the risk of other irreversible and serious disorders including scleroderma (a disease affecting the skin, joints, blood vessels and internal organs) and other auto-immune disorders. Inhalation of dust, including crystalline silica dust, is considered by medical authorities to increase the risk of lung disease due to tobacco smoking.

The product contains a proportion of respirable free crystalline silica in the quartz component. Crystalline silica (inhaled in the form of quartz or cristobalite from occupational sources) has been classified by The International Agency for Research on Cancer (IARC) as carcinogenic to humans (Group 1). However (in the view of CC&AA) the research on this is inconclusive and ASCC/NOHSC has not classified crystalline silica as a carcinogen.

The most current research indicates no excess risk of lung cancer or other cancers from using these products

Inhalation of airborne particles from other sources in the work environment, including those from cigarette smoke, may increase the risk of respiratory diseases. It is recommended that all storage and work areas should be smoke-free zones and that other airborne contaminants should be kept to a minimum

Section 12: Ecological Information

Silica Sands

Dust

Other information

Ecotoxity Silica sands pose no ecology risk. They are non-toxic to aquatic and

terrestrial organisms and are not biodegradable.

Persistence and Degradability Product is persistent and is non-degradable

Mobility Low mobility would be expected in a landfill situation

Crystalline silica is non-toxic to aquatic and terrestrial organisms; is not biodegradable; is insoluble and is expected to have low mobility in landfill

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SECTION 13: Disposal Considerations

- Crystalline silica itself in all common forms can be treated as a common waste for disposal or dumped into a landfill site in accordance with local authority guidelines
- Measures should be taken to prevent dust generation during disposal and exposure and personal precautions should be observed (see above)
- ☐ Wear sufficient respiratory protection. Dampen spilled material with water to avoid airborne dust, then transfer material to a suitable container for reuse
- ☐ May be disposed in local landfill

Section 14: Transport Information

UN Number None Allocated
UN proper Shipping name None Allocated
Class and subsidiary risk None Allocated
Packing Group None Allocated
Hazchem Code None Allocated
Special precautions for user
DG class None Allocated

SECTION 15: Regulatory Information

- Crystalline silica is classified as non-Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail
- ☐ Crystalline silica in the form of respirable dust is classified as Hazardous according to the Australian Safety and Compensation Commission ASCC (formerly NOHSC) Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3rd Edition
- Exposures by inhalation to high levels of dust may be regulated under the Hazardous Substances Regulations (State and Territory) as they are applicable to Respirable Crystalline Silica, requiring exposure assessment, and control of inhalation exposure below the NES
- ☐ Persons who have potential for exposure above the NES may be required by Regulations to have periodic health surveillance including Chest X-ray (see relevant State Government Regulations and ASCC/NOHSC documentation)

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Section 16: Other Information

Emergency Contact No (All hours)

1800 882 478

Emergency Contact No (Office Hours)

Contact For further information contact the Risk Manager at your nearest Hanson office;

New South Wales & ACT

Level 18, 2-12 Macquarie St Parramatta, NSW, 2150 Ph: (02) 9354 2600 Fax: (02) 9354 2699

Northern Territory

Winnellie Road Level 1 Winnellie, NT, 5789 Ph: (08) 8984 4266 Fax: (08) 8984 3717

Queensland

Level 11, Toowong Tower 9 Sherwood Road Toowong, Qld, 4066 Ph: (07) 3246 5500 Fax: (07) 3246 5533

Tasmania

114 Gormandston Road Moonah, TAS, 7009 Ph: (03) 6272 6796 Fax: (03) 6272 1714

Victoria

601 Doncaster Road Doncaster, VIC, 3108 Ph: (03) 9274 3700 Fax: (03) 9274 3794

South Australia

55 Galway Avenue Marieston, SA, 5033 Ph: (08) 8292 5950 Fax: (08) 8292 5995

Western Australia

35 Great Eastern Highway Rivervale, WA, 6103 Ph: (08) 9311 8811 Fax: (08) 9470 2793

Authorised by: David Pallot

Date of issue information 1-7-2015 (Replace version dated 1-11-2010)

Notice: We believe the information contained in this Safety Data Sheet is accurate and is given in good faith, but no warranty expressed or implied is made. The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance. Users are advised to make their own independent determination of suitability and completeness of information at their own risk, in relation to the particular purposes and specific circumstances.

Since the information contained in this document may be applied under conditions beyond our control, no responsibility can be accepted by us for any loss or damage cause by any person acting or refraining from action as a result of any information contained in this Safety Data Sheet. Where the information provided herein disclosed a potential hazard or hazardous ingredient, adequate warning should be provided to employees and users and appropriate precautions taken

END OF SDS





Date ATW Number Work order No Emergency Pick up											
Description of work Load ship with Silica Sand with mobile loading equipment											
Isolation											
Responsible person Graeme Cooney Ph Assembly Area Location .											
Use following chart to rate hazard before and after control measure Rating Chart 1 2 3 4 5											
Multiple Fatalities	1	Common Occurrence	1	Risk	Level	1	1	2	4	7	11
				1-8	2	3	5	8	12	16	
Lost Time Injury 3 Could Happen 3 Medium			Medium	9-15	3	6	9	13	17	20	
Medical Treated Injury 4 Not Likely 4		4	Low	16-20	4	10	14	18	21	23	
First Aid Injury									25		

Task procedure step No	Job Steps	Hazards (with each step)	Rating	Control measures for each hazard	New Rating	Responsible Person/Date when will happen
1	Transport equipment to berth,	Vehicle interactions Interaction on the berth	Н	Driver must have completed a General & Road induction. Contact Port Authority before entering the berth	L	Float driver
2	Unload equipment	Interaction with people and mobile equipment	Н	Clear area have watchers while unloading equipment	L	MCS Supervisor
3	Set up equipment on the berth & starting / moving	Interactions- ship / structure	M	Truck unloader (Ashross) Setup • Ashross must be setup in operating position use spotter to guide, connect	L	MCS Supervisor





	Emergency Phone Number 1300		
		generator to ashross ensure isolation	
Step 3		switch is on prior to connection.	MCS
Cont		Startup	Supervisor
		 Check the isolation switch is in the off 	
		position on the generator, proceed to	
		power the generator on after pre start	
		check.	
		 Check the isolation switch is in the off 	
		position on the Ashross, proceed to turn	
		the Ashross hydraulic system on after pre	
		start check.	
		 End ramps must be lowered and bolted 	
		firmly in place, done using hydraulic	
		controls.	
		 Self cleaning ramps to be lowered to top 	
		of ramps.	
		 Unfurl top fold conveyor to the fully 	
		extended position, pin lock when required	
		to the out position.	
		 The end chute must be installed for 	
		feeding onto additional conveyors	
		Moving	
		To move the machine it must be	
		walked with self propelled wheels.	
		• Ensure that you use a spotter to assist in	
		the final placement of the unit.	
		Using machine to receive loads.	
		• Ensure the machine is set up in its optimal	
		operating position, turn belts on at control	
		panel.	
		Horn will sound prior to starting the	





Emergency Phone Number 1300 665 409 or from Mobile						
	conveyor belts (Automated).					
	The unit is now ready to accept loads.					
	Note:					
	Ensure that spillage is immediately rectified and regular checking is undertaken while operating the machine.					
	Please refer to the user manual for any technical specifications. Only suitably trained operators are allowed to operate this equipment.					





the generator on after pre start check. Check the isolation switch is in the off position on the 600, proceed to turn the 600 hydraulic system on after pre start check, horn alarm will sound automatically on start up. Engage the remote control Ensure outriggers are fully lowered and extended. Raise the boom to the desired angle and extended the conveyor over vessel as required with the remote control. Ensure spotter on vessel is being used Operation of machine The machine can be operated with or without remote control. Start the conveyor belts. Slewing and jibbing of machine as required, please use spotter whilst doing either action. Trimming of vessel to be done at direction of stevedore and/or chief officer of vessel. Moving To move the machine turn the belts off
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]	Emergency Phone Number 13	00 66			
				And retract the boom into its cradle position, raise and retract the outriggers and drive the machine with into desired position. • Ensure that you use a spotter to assist in the final placement of the unit. • Note: • Please refer to the user manual for any technical specifications. Only suitably trained operators are allowed to operate this equipment.		
4	Running equipment / maintaining and cleaning	Pinch points, slip trips falls Noise	Н	All equipment to be guarded and area kept clean free of any sand. When the truck unloader has to be lifted, use the hydraulic legs. Insert safety pins when required. Isolate the machine as per the isolation procedure. Hearing and eye protection is to be worn when in close proximity to the truck unloader & conveyors. Cleaning equipment will completed in situ, in consultation with the Fremantle Port Authority. Wash down will occur and sump tanks will be vacuum trucked as required. Berth will be regularly cleaned by road sweeper.	L	MCS Supervisor
5	Trucks unloading in the truck loader/hopper	Interactions with people, equipment and incorrect loading	Н	Truck drivers to be instructed by MCS or the stevedore's while tipping. Trucks are NOT to TIP until instructed.	L	Truck drivers





ſ	6	Trucks entering on and	Interaction collision with	Н	Truck drivers are to drive over the truck unloader	L	Truck drivers
		off the truck	equipment		ramps and hopper slowly. They must enter the		
		loader/hopper			hopper straight and not to deviate.		
		area					





]	Emergency Phone Number 13	600 66			
7	Trucks loading at the hopper	Interaction with the equipment	Н	Truck drivers are to stay in their truck at all times	L	Truck drivers
8	Travelling to the berth from stockpile and back from the berth to the stockpile	Trucks to obey all speed limits while working on berth site.	Н	Truck drivers must have berth and Port road and rail inductions Traffic management plan will be communicated to all stakeholders utilizing radios as needed to manage truck movements.	L	Truck driver ALL
9	Loading of trucks	Over loading of trucks	Н	Loader driver not to over load (Over fill) the trucks there will be 20t and 30t ensure no sand on top combing rail of the truck. Follow loading procedures.	L	Loader driver
10	Loading of trucks	Interaction with other mobile equipment	Н	Communication between each other on CB radio while in the stockpile yard and on the berth	L	Loader driver and truck drivers
11	Dusty environment / spillage on berth	Dust from loading trucks and tipping off at the hopper	M	To be conditioned at Gaskell Load point to mitigate dust during loading at KBJ. Spillage on the berth will be regularly monitored and a road sweep needs to be used to clean any excess spillage. Product water content which will reduce dust. Shroud will be placed around ship loader exit to reduce dust. Bobcat, shovels as well as road sweeper will be present to contain and clean up any spillage.	L	ALL





12	Adverse weather events	Damage to equipment or spillage	M	Weather will be constantly monitored using BOM (Garden Island data). Shroud will be placed on ship loader. Severe weather – operations will cease until all clear.	L	ALL
13	Trimming vessel	Damage to ship or berth	M	Ensure that the machine is setup with the pivot base away from the edge of the berth. Take direction from the stevedore for trimming Only MCS trained and certified operator to operate ship loader. Ship loader will maintain a clearance of one metre over vessel edge.	L	MCS

Check the following to ensure all possible hazards have been controlled

Asbestos		Hot work (metal/surface)		Chemical & toxic materials		Proximity to water	<
Biological		Excavation		Underground services		Slips, trips and falls	$\overline{\ }$
Confined space		Fire		Working at height		SPECIAL CAUSES	
Dangerous goods		Flooding		Traffic & vehicles	Х	Overhead pipes	
Dust	Х	Gas, fumes		Moving machinery	Х	Equipment protection	
Electricity, access to live parts & gas		Hazardous equipment		Noise	Х	ANY OTHER RISKS	
Temperature		Materials handling	Χ	Overhead hazards		L	





Emergency Phone Number 1300 665 409 or from Mobile Lighting x Hydraulic & pneumatic pressure x Multiple contractors										
Comment										
Special PPE Long pants & sleeves, safety footwear, safety helmet, high visibility clothing, eye protection, gloves, hearing protection										
Written By: Print Name: Michael Santomaur	ro R	eviewed By: Print Name	Graeme Cooney							
Signature: Team members	Si	gnature:								
	Date/Sign			Date/Sign						

