

BSBWHS508

Manage WHS hazards associated with plant



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ASSESSMENT FOR BSBWHS508

Student name	MOHD NUJAIMI BIN ABU BAKAR
Date of assessment submission	21/04/2018

Trainer/Assessor's name	
Date of assessment marking	Click here to enter a date.
Outcome for unit	☐ Competent ☐ Not Yet Competent

TASK INSTRUCTIONS

- The assessment for this unit of competency consists of the following:
 - A series of activities:** Some of these activities will require you to provide a response within this document, others will require you to gather evidence to demonstrate your knowledge and skills (overview below)
 - Quiz:** You will be required to complete a series of questions to demonstrate your knowledge and skills.
 - Practical task:** You will be required to have an observer attest to your knowledge and skills and sign a report to this effect.
- At times, you will be provided with a specific business context to which you must respond, otherwise it is anticipated that you will use a workplace of your choosing (your own, or hypothetical) to provide the context to the task.
- At all times, the responses in your assessment must reference **Australian** (Queensland or Federal) documentation, including legislation, regulations, codes of practice, standards and guidance publications.

ACTIVITY OVERVIEW	REQUIRED FOR SUBMISSION
1. Legislative obligations regarding plant	Workbook response (below)
2. Identifying/assessing plant hazards and risks	a) Workbook response (below)
3. Implementation and evaluation of risk controls	b) Workbook response (below)
4. Registration, licensing and certification	c) Workbook response (below)

ACTIVITIES

For the following activities, name a workplace that you wish to examine.

Name of workplace	Refinery and Petrochemical Integrated Complex (RAPID)
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1.

Explain their duties, rights and obligations of PCBU's (and their officers) and workers regarding operation and maintenance of plant (including hazard management) as found in:

1. *Work Health and Safety Act 2011* (Qld)
2. *Work Health and Safety Regulations 2011* (Qld)
3. A code of practice relevant to your chosen workplace
4. An example of guidance material from the regulator (e.g. plant hazard checklists)
5. Organisational policies
6. Organisational procedures
7. Organisational processes
8. Organisational systems

1.	<i>Work Health and Safety Act 2011 (Qld)</i>	Division 2 Primary duty of care 19 Primary duty of care (3) Without limiting subsections (1) and (2), a person conducting a business or undertaking must ensure, so far as is reasonably practicable— (a) the provision and maintenance of a work environment without risks to health and safety; and (b) the provision and maintenance of safe plant and structures; and (c) the provision and maintenance of safe systems of work; and (d) the safe use, handling and storage of plant, structures and substances; and (e) the provision of adequate facilities for the welfare at work of workers in carrying out work for the business or undertaking, including ensuring access to those facilities; and (f) the provision of any information, training, instruction or supervision that is necessary to protect all persons from risks to their health and safety arising from work carried out as part of the conduct of the business or undertaking; and (g) that the health of workers and the conditions at the workplace are monitored for the purpose of preventing illness or injury of workers arising from the conduct of the business or undertaking.
2.	<i>Work Health and Safety Regulations 2011 (Qld)</i>	Part 2 Division 3 PCBU's accountable the duty as basically stated below: (a) the provision and maintenance of plant and systems of work that are, so far as is practicable, safe and without risks to health (b) the making of arrangements for ensuring, so far as is practicable, safety and absence of risks to health in connection with the use or operation, handling, storage and transport of plant and substances; (c) the provision of such information, instruction training and

	supervision as is necessary to ensure, so far as is practicable, the safety and health at work of his employees; (d) so far as is practicable, as regards any place of work under the control of the employer or self-employed person, the maintenance of it in a condition that is safe and without risks to health and the provision and maintenance of the means of access to and egress from it that are safe and without such risks; (e) the provision and maintenance of a working environment for his employees that is, so far as is practicable, safe, without risks to health, and adequate as regards facilities for their Welfare at work.
3. Code of practice	Managing Risk Of Plant In The Workplace Code Of Practice 2013 A person with management or control of plant at a workplace must manage risks to health and safety associated with the plant. In order to manage risk under the WHS Regulations, a duty holder must: - identify reasonably foreseeable hazards that could give rise to the risk - eliminate the risk so far as is reasonably practicable - if it is not reasonably practicable to eliminate the risk, minimise the risk so far as is reasonably practicable by implementing control measures in accordance with the hierarchy of control - maintain the implemented control measure so that it remains effective, and - review, and if necessary revise, risk control measures so as to maintain, so far as is reasonably practicable, a work environment that is without risks to health and safety.
4. Guidance material	Importing And Supplying Safe Plant Of Guidance Material Importers and suppliers have a duty to ensure, so far as is reasonably practicable, the plant is imported or supplied without risks to the health and safety of people who: - assemble the plant - use the plant - store the plant - decommission, dismantle or dispose the plant, or - are exposed to the plant in a workplace or affected by its use. Importers and suppliers must, so far as is reasonably practicable, eliminate or minimise risks to health and safety regarding the plant being supplied, where the manufacturer has not already done so. This may be necessary where the importer has no direct connection to an overseas designer or manufacturer. To help importers and suppliers comply with their obligations they should confirm they are being provided with safe plant. Any imported plant must be inspected having regard to information provided by the manufacturer. If this information requires the plant to be tested then the importer must undertake this testing.
5. Organisational policies	Technip HSE policy stated the commitment of top management and objectives of overall operation including but not limited to the following: - To provide safe system of work in preventing incident at workplace. - To comply with all legislative requirements and industry best practices. - To promote behaviours and attitudes that underpin a positive

	workplace culture that supports injured workers Policy being displayed on notice board and offices, email to all workers, and include in the HSE induction for all new comers, contractors and clients.
6. Organisational procedures	HSE plan rules out the PCBU's and workers responsibilities in managing HSE at workplace. According to HSE policy, while PCBU is responsible to provide and maintain safe system of work, workers are obliged to comply and cooperate with the OSH instruction as instructed by PCBU's. The ultimate responsibilities of PCBU, Project Manager shall plan to segregate HSE responsibilities among his subordinate effectively. This includes planning on how to execute the safe system of work effectively by establishing procedures, policy and work instructions. For instance, Manager to plan all his workers entering confined space is being trained. On the other hand, workers shall have the knowledge that only competent personnel could enter the space. Managers shall also monitoring the process to ensure it implemented as per planned. This requires Manager to establish assurance program. Lastly the result of the assurance program shall be discussed to understand the strength and improvement required for the program.
7. Organisational processes	In confined space, before entering the confined space, Authorized Gas Tester shall perform gas test and ensure the space is free from any form of hazardous atmosphere. Entry Supervisor will ensure every possible control measures are in place before allowing only his trained and fit workers to enter the space. This will be confirmed through PTW and Job Hazard Analysis (JHA) approval by Permit Issuer. HSE personnel shall perform Confined Space audit throughout the activity. Upon job completion, an inspection shall be conducted to ensure the area left in safely manner.
8. Organisational systems	In confined space, organisational has setup a hierarchy system to comply with PTW system. Entry Supervisor is directly responsible for his workers shall apply PTW and verified by Permit Issuer who also a competent person. The PTW then will be approved by Construction Manager who will ensure no incompatible works in the area. HSE personnel shall perform Confined Space audit throughout the activity. In the event of hotwork performed, Fire watch shall be made available.

Outcome for Activity 1	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

2.

Identify two (2) plant-related hazards (one relating to pressurised fluid, one relating to moving machinery parts) that may occur in your workplace. For each hazard identified, find information to explain:

1. The nature and scope of the hazard, including the incidents/injuries it can cause
2. Determine the level of risk for the hazard within your workplace
3. Name and justify at least two (2) risk controls that may be implemented to address the hazard and risk assessment results
 - d) Explain which of these risk control options would be the most suitable, following the hierarchy of control
4. Who you would consult as part of hazard identification/risk assessment

Name hazard relating to pressured fluid

Hydrotest activity – hazard
 Pressurized fluid inside pipeline
 Dropped Object
 Loose pipes

Nature and scope of hazard

Hydrostatic test is used for confirming mechanical integrity of installed pressure vessels and pipe lines. It has to be completed before putting the pressure vessels and pipe lines in use.. Hydrostatic testing may also be conducted during the service life of the pipeline to evaluate its operational integrity. The hydrostatic test consists of pumping water into the pipeline, "pressuring up" the line to specified test pressures, and holding that pressure for a discrete period of time in accordance with applicable regulations and guidelines. After completion of the hydrostatic test, the pressure is relieved and the water is removed from the pipeline (de-watering).

The use of high pressure is the main source of hazards associated with hydrostatic pressure test. Hydrostatic test stores energy. High pressure could damage the facilities and endanger worker's safety.

<https://www.osha.gov/dts/shib/shib062104.html>

<http://www.chemicalplantsafety.net/hazard-control/hydrostatic-pressure-test-safety-checklist/>

Source of information (e.g. website address):

Determine the level of risk

Matrix	A: Death or permanent disability	B: Serious injury	C: Lost time injury	D: Casualty Treatment	E: First Aid
1: Very Likely	E	E	H	H	M
2: Likely	E	H	H	M	M
3: Possible	H	H	M	M	L
4: Unlikely	H	M	M	L	L
5: Very Unlikely	M	M	L	L	L

E: Extreme	H: High	M: Medium	L: Low
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Level of risk: Severity – C, Likelihood – 3, Risk level is Medium (C3)

Risk controls

Establish test package – Engineer to establish procedure of testing by identifying the line, markup in the drawing, identifying the package equipment rating and submit for approval. The test package should be specific for each package.

Team Walkthrough – Verify the information in the test package with the equipment on site. Pipe and fittings connection shall be inspected. All affected parties to be notified prior commencing the activity in the coordination meeting.

Setup signage and exclusion zone – Unauthorized personnel shall not be allowed to enter the testing affecting area during pressurization. This shall be part of PTW and JHA requirements.

Pressurization – Pressure gauge to be monitored constantly and the pressure to be increase gradually. In the event of leak, the line shall be depressurized.

Training – The test only to be conducted by competent personnel.

Anchor the de-watering lines. It is accepted industry practice to adequately anchor or secure de-watering piping to prevent movement and separation of the piping.

Source of information (e.g. website address):

<http://www.ingaa.org/file.aspx?id=18981>

Consulting others

A Job Method Statement shall be established and a meeting to be conducted to discuss the Job Hazard Analysis in accordance to Job Method Statement. Engineers, HSE, Supervisors shall be involved in the meeting. All parties shall also review the test package.

Name hazard relating to moving machinery parts

Mobile operating plant i.e. crane, forklift, cherry picker operating in congested area within the area interfacing with people.

Nature and scope of hazard

Falling object while lifting.

Mobile plant struck equipment/people while operating or travelling.

Toppled while traveling on uneven/weak ground.

Vibration for operator due to long hours inside the mobile plant.

Source of information (e.g. website address):

<https://www.worksafe.qld.gov.au/construction/workplace-hazards/mobile-plant>

Determine the level of risk

Matrix	A: Death or permanent disability	B: Serious injury	C: Lost time injury	D: Casualty Treatment	E: First Aid
1: Very Likely	E	E	H	H	M
2: Likely	E	H	H	M	M
3: Possible	H	H	M	M	L
4: Unlikely	H	M	M	L	L
5: Very Unlikely	M	M	L	L	L

E: Extreme	H: High	M: Medium	L: Low
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Level of risk: Severity – B, Likelihood – 3, Risk level is High (B3)

Risk controls

Operators shall be competent and only competent personnel are allowed to operate the machine.
 Ensure load lifted within Safe Working Load.
 While travelling/lifting in congested area, operator to get assistance from signalman.
 Setup signage and exclusion zone while working.
 Spotter to be in front of mobile plant while travelling. Any uneven/weak ground shall be supported with plates or use another path.
 Limit the operating hours for operators. Provide shock absorber chairs for operator to reduce vibration.

Source of information (e.g. website address):

www.ohsbok.org.au/wp-content/uploads/2013/12/29-Hazard-Mobile-plant.pdf

Consulting others

A Job Method Statement shall be established and a meeting to be conducted to discuss the Job Hazard Analysis in accordance to Job Method Statement. Lifting Engineers, HSE, Supervisors, Equipment Specialist, Signalman and Rigger shall be involved in the meeting. All parties shall also review the lifting plan.

Outcome for Activity 2	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

3.

For the two (2) risks (and associated risk controls) identified in Activity 2:

1. Explain how you would contribute to implementing the risk control
2. Describe how you would evaluate the effectiveness of risk controls that had been implemented
 - e) Consider how you would monitor the risk controls
 - f) How often would you undertake a review of the risk controls?
3. Identify how organisational behaviour and culture may impact on the effectiveness of these controls.
 - g) Identify improvements that could be made to organisational policy, procedures, processes and systems to address these barriers.
 - h) Who would you report your findings and suggested improvements to?

Hazard/Risk 1**Implement risk control**

Participate in Risk Assessment process. Review the job sequence, hazard and control measures in a meeting via consultation. Establish documents i.e. Test Package, Job Method Statement and Job Hazard Analysis.

Verify Permit to Work system. Check on team training and competency.

Participate in Daily Tool Box Talk.

Conduct walkabout at the working area.

Ensure sign are available and exclusion zone is established.

Inspect equipment, hose, pipe fittings and connection prior to start the job.

Established line of communication throughout the task.

Evaluation of risk control

Perform audit to review the implementation on site.

Interview workers if there are any changes/additional risk associated with the job/location.

Conduct post mortem during daily toolbox talk to highlight any hazard/control effectiveness.

Third eye review party to assess the job.

Addressing barriers

Language and literacy to be addressed before the job commences to ensure everybody understand their roles and responsibilities. Spokesperson to be appointed to translate the requirement. Assessment to be conducted to test their understanding.

Any shortfall violating to the procedure to be addressed accordingly by the team. A review to session to be conducted to discuss the safest way to move forward.

Hazard/Risk 2**Implement risk control**

Participate in Risk Assessment process. Review the job sequence, hazard and control measures in a meeting via consultation. Establish documents i.e. Lifting Plan, Job Method Statement and Job Hazard Analysis.

Verify Permit to Work system. Check on team training and competency for operators, signalman and riggers.

Participate in Daily Tool Box Talk.

Conduct walkabout at the working area.

Ensure sign are available and exclusion zone is established.

Inspect mobile plant equipment including sign of leak, chart, safety features and functional test.

Established line of communication throughout the task.

Evaluation of risk control

Perform audit to review the implementation on site.

Interview workers if there are any changes/additional risk associated with the job/location.

Conduct post mortem during daily toolbox talk to highlight any hazard/control effectiveness.

Third eye review party to assess the job.

Addressing barriers

Language and literacy to be addressed before the job commences to ensure everybody understand their roles and responsibilities. Spokesperson to be appointed to translate the requirement. Assessment to be conducted to test their understanding.
Any shortfall violating to the procedure to be addressed accordingly by the team. A review to session to be conducted to discuss the safest way to move forward.

Outcome for Activity 3

- ☐ Satisfactory
☐ Not satisfactory

Trainer/Assessor comments

4.

Consider the registration, licensing and certification issues associated with plant:

1. Identify two (2) types of plant requiring registration
 - i) How should registration compliance be monitored and documented?
 - j) Which individuals/parties need to be informed about this information?
2. Identify two (2) workplace tasks which require operator licensing and/or certification (e.g. high risk work)
 - k) How should licensing/certification compliance be monitored and documented?
 - l) Which individuals/parties need to be informed about this information?
3. Identify the training requirements necessary to meet registration, licensing and certification requirements (i.e. for new plant and/or new operating methods).
 - m) What methods would you use to determine training needs?
 - n) Which individuals/parties need to be involved in this process (i.e. involved in training, ensuring that training is undertaken and completed prior to commencement of work)?
 - o) How should training compliance be documented/recorded?

	Explanation
1.	Plant requiring registration – Crane and Pressure Vessel All plant shall submit the engineering drawing and inspected to obtain registration certificate. The plant shall be inspected by competent inspector prior to mobilize on site to ensure the condition maintain as per registration condition. The registration certificate to be submitted and documented and incorporated into the register. Register should be reviewed periodically. Equipment inspector, operator, HSE and user to be informed about this operation. Register shall be made available in the event WSH Regulator asking for it.
2.	A register of plant and equipment to be established. The register shall include its unique identification number, registration number, type of equipment, inspection date, expiry date, operator and record of maintenance. The register shall be reviewed on monthly basis. Any new information shall be updated accordingly. Inspection to be conducted on site to verify the information in the register. The valid certificate shall also be displayed on the plant body for immediate referral on site. Equipment inspector, operator, HSE and user to be informed about this operation. Register shall be made available in the event WSH Regulator asking for it.
3.	Training need analysis to be conducted to identify the training required for the plant. The training need analysis to be translated to training matrix. Training matrix to be communicated to all respective department. Training matrix shall reflect the name of personnel vs the training required for him/her. Training department shall establish a yearly training plan to address the training need from the matrix. Prior to commence the training, communication shall take place in advance to identify the participants, venue, equipment required and etc. Participants shall be informed on the training details. Managers to support the training by authorizing the participants to attend the training. On site, Supervisor and HSE shall ensure only competent operators are allow to operate the plant. Any unauthorized operator shall be penalized. The training need to record the attendance which signed by the workers it self. Identified training plan and the management approval of the training plan shall be also kept well for record purpose. Matrix shall be updated after each training.

Outcome for Activity 4	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

QUIZ

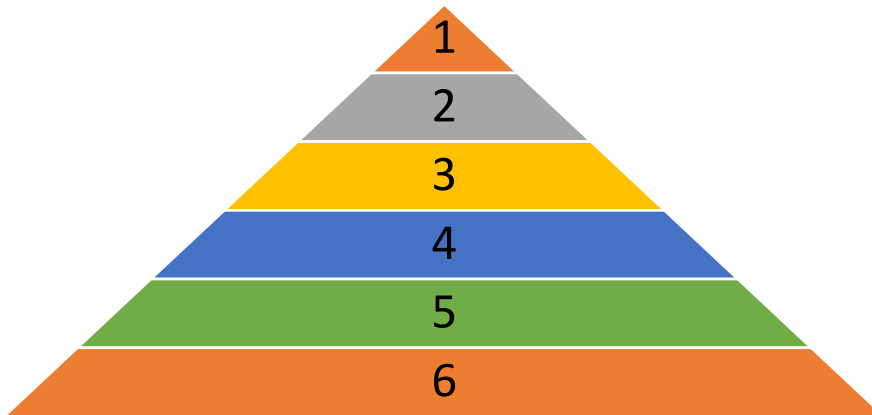
QUESTIONS	CORRECT
1. Which of the following may impact on WHS risk and the management of WHS? Select all that apply. ☒ Workplace culture towards WHS ☒ Language, literacy and numeracy levels of the workforce ☒ Training being too long and boring ☒ Consistency in the workplace (e.g. shift regularity)	☐
2. Which documents would reflect training requirements of plant operators? Select all that apply. ☒ Training Needs Analysis ☐ WHS regulator website ☒ Professional Development portfolio ☒ Logbook of operational experience	☐
3. A high pressure fluid injury could result from which of the following? Select all that apply. ☒ A leaking hydraulic hose or fitting ☒ A split in an air pipe ☒ A grease gun ☒ Opening a bottle of replacement brake fluid	☐
4. What should be considered when developing strategies for guarding moving parts in machinery? Select all that apply. ☒ Anticipated work practices (e.g. maintenance requirements, workers reaching into machines to free jams or to retrieve things) ☒ Implementing fences or guards that are kept in position while the machinery or plant is operated ☒ Training workers to change practices (e.g. use guards, change dangerous practices such as reaching across moving parts) ☒ Locating lubrication points away from moving parts, if possible ☒ Reported hazards and risk assessments regarding machinery in question	☐
5. According to the <i>Managing risks of plant in the workplace Code of Practice 2013</i>, when isolating an energy source so that multiple people can work on plant, which of the following is best practice? Select your response. ☒ A lock that allows one or more padlocks to be fitted (i.e. one for each person working on the plant) ☐ One padlock for all users ☐ One tag for all users ☐ Multiple tags for each user, no locks	☐

6. Which of the following tasks require a permit to work? Select all that apply.

- ☒ Removal of asbestos
☒ Concreting
☒ Confined space entry
☒ Excavation and demolition
☒ Isolation of energy, plant and equipment
☐ Working at heights

☐

7. Identify the elements of the hierarchy of control, using the labels 1 – 6 below.



Label (1 – 6)	Element
3	Isolate the hazard
6	Provide and use Personal Protective Equipment (PPE)
1	Eliminate the hazard
4	Control the hazard by engineering means
5	Control the hazard by administrative means
2	Substitute the hazard

☐

8. Match the following terms and definitions by placing the corresponding term number next to each definition.

Label	Term
1	Causation
2	Hazard
3	Prevention
4	Risk
5	Foreseeability

Label (1 – 5)	Definition
3	The action of stopping something from happening.
5	That which is seen as the natural result of action/inaction.
4	A measure of the possibility of harm, considering seriousness of injury and likelihood of occurrence.
2	Something which has the potential to harm people.
1	The relationship between conduct and the resulting effect (e.g. injury)

☐

9.	According to the WHS regulator, which of the following activities require a licence? Select all that apply. ☒ Operating cranes and hoists ☒ Rigging and dogging ☒ Scaffolding ☐ Driving plant on the road	☐
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Outcome for Quiz	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	

PRACTICAL TASK

You are required to have a suitable observer verify your ability to complete the following tasks. These tasks may be simulated or real.

TASKS		VERIFIED
1.	In a small group, show leadership while conducting a safety audit of plant used in high-risk work that requires a permit. p) Check fluid measurements and guards, as required q) Check logbook and maintenance records r) Observe isolation and tag out systems	☒
2.	In your small group, document potential hazards and their causes in a risk register, identifying: 1. Possible injuries/damage 2. Required control measures (referring to legislative and organisational requirements) 3. Risk assessment results	☒
4.	Collaborate with others to consider current organisational policies/procedures and offer recommendations for the following areas: 5. Hazard management 6. Monitoring and reporting compliance with regulatory requirements for registration, licensing and certification (including organising training)	☒
7.	Electronically and orally present findings to appropriate persons (e.g. PCBU, Trainer/Assessor). As part of the presentation: 8. Identify the duties, rights and obligations of individuals/parties based on findings of audit 9. Identify factors that will impact on WHS risk management 10. Explain how control measures will be implemented, monitored and reviewed for effectiveness	☒
Name of observer	Norezam A Manan	
Role of observer (Confirm their suitability to sign)	☐ Trainer/Assessor ☒ Other (specify):	
Phone number of observer	+6012 647 7089	
Email address of observer	Norezam.manan@rapid-ipmt.com	
Signature of observer		
Date	1/05/2018	
Comments	All tasks are successfully completed.	

Outcome for Practical Task	☐ Satisfactory ☐ Not satisfactory
Trainer/Assessor comments	