

**WESTERN AUSTRALIA  
AQUACULTURE INDUSTRY  
DIVING GUIDELINES**

**AQUACULTURE COUNCIL OF WESTERN  
AUSTRALIA**

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# **AQUACULTURE INDUSTRY WESTERN AUSTRALIA**

## **INTRODUCTION**

The Western Australian Commercial Fishing Industry ( WAFIC ) has in conjunction with the Aquaculture Council of Western Australia ( ACWA) developed these diving guidelines for industry in accordance with the framework of the Occupational Safety and Health Act and relevant Australian Standards.

These guidelines contain occupational safety and health responsibilities of licencees , divers, skippers , crew and dive tenders as well as safe working practices for diving and associated activities.

Representatives from the Aquaculture Industry were involved in the development of these guidelines and their commitment to these guidelines ensured practical solutions to issues resulted.

WAFIC acknowledges the support and assistance of Worksafe Western Australia in the development of these guidelines.

## **SCOPE**

The Food and Agricultural Organisation of the United Nations has defined aquaculture , or fish farming, as “the farming of aquatic organisms, including fish, molluscs, crustaceans and plant. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators. Farming also implies individual or corporate ownership of the stock being cultivated”

In addition to the culture of edible species ( such as salmon, oysters and prawns, ) aquaculture in Australia includes:

- (2) Hatchery production of juveniles for use in grow out operations( farms), stocking private or public waterways for recreational fishing, and restocking natural waters for conservation purposes
- (3) Harvesting of eels, micro algae, zooplankton or other organisms from water bodies that are under some form of lease and / or management
- (4) Culture of aquarium and ornamental fish and aquatic plants for sale
- (5) Culture of aquatic organisms for the extraction of pigments, fine chemicals and other products such as pearls, skins and shells
- (6) Value adding of traditional wild caught species such as rock lobster and southern blue fin tuna

**INDUSTRY COMMITMENT**

The Aquaculture Council of Western Australia have acknowledged these Diving guidelines and the commitment to ensure all Members of the Aquaculture Council of Western Australia, are aware of these guidelines. All licence holders will receive a copy of these Diving Guidelines.

Signature.....

Date.....

Name.....

Executive Director  
AQUACULTURE COUNCIL OF WESTERN AUSTRALIA

Signature.....

Date.....

Name.....

Chairman  
AQUACULTURE COUNCIL OF WESTERN AUSTRALIA

**A. OVERVIEW**

The Occupational Safety and Health Act 1984 establishes the duty of care requirements on employers , contractors, employees, subcontractors, self employed persons and those in control of workplaces.

These diving guidelines have been designed to assist persons involved in the Aquaculture Industry in WA in establishing and implementing safe working procedures.

These guidelines have been developed by WAFIC and ACWA after liaison with industry members from the Aquaculture Industry in WA.

WAFIC and ACWA recommends that licensees make themselves familiar with these guidelines and the responsibilities contained within and that all persons required to dive , crew and other personnel are instructed on these guidelines.

### **A1: GENERAL PROCEDURES**

The Act imposes various duties upon three categories of person , namely:

- (a) employers;
- (b) employee;
- (c) those in control , to any extent , of a workplace.

The type of duty that the Act imposes on any one person in the industry will be determined largely by the categories ( and there can be more than one), applying to that person.

Importantly , the Act gives a very wide meaning to the word “employer” and this may be critical in many cases. Many “contractor” situations are deemed to be employer / employee relationships by virtue of the contractor(ie. in this case the diver):

- (a) working for the principal ( licence holder); and
- (b) being under the control ( partially or wholly) of the principal ( licence holder).

### **A2 LIABILITY FOR USE**

The information in these guidelines is given in good faith and is based on the knowledge and expertise of those who contributed to the document in their field of expertise.

The Western Australian Fishing Industry and the Aquaculture Council of WA shall not be liable for any loss, damages or other claim in respect of or arising from any death of or injury to or damage to property of any person which may occur while any person conducts any diving activities while using these guidelines.

These industry diving guidelines are not a complete technical guide for diving in Aquaculture operations and it should be used in conjunction with existing company procedures.

These industry diving guidelines are designed to assist in the process of understanding the responsibilities of licence holders, divers, employees, contractors with regard to occupational safety and health.

## **B. DEFINITIONS**

**Breathing gas:** the compressed gas intended for respiration by the diver.

**Bottom time :** The total elapsed time from when the diver leaves the surface to the time (next whole minute) that he begins his ascent, measured in minutes

**Compression chamber ( recompression chamber ) :** a surface chamber in which persons may be subjected to pressures equivalent to or greater than those experienced when under water, or under conditions which simulate those experienced on an actual dive.

**Decompression illness:** a generic term for acute illness resulting when pathological consequences arise from decompression. This term covers the condition known as decompression sickness ( also known as the bends) and arterial gas embolism, but does not include barotrauma of ascent.

**Decompression schedule:** a specific decompression procedure for a given combination of depth and bottom time as listed in a decompression table; it is normally described as maximum depth (m or ft) bottom time ( min).

**Dive Plan:** a procedure specific to a given diving operation

**Diver:** a person who performs diving work underwater or is exposed to pressure in association with diving work.

**Dive Site:** means the underwater location where work is performed and any surface zone used to tend or assist the diver

**Dive tender / crew member:** a person responsible for controlling work operations above the water surface , before , during and after the diver is in the water.

**Hazard:** in relation to a person , means anything that may result in: injury to the person or harm to the health of the person.

**Hookah:** a widely used term for a limited feature form of surface supply diving apparatus usually involving the supply of breathing air from a small compressor unit via a free floating air supply hose to a mouth held demand breathing gas supply device.

**Nominated diver:** a person who is licensed to dive commercially under the Fish Resources management Act and is trained in accordance with this Code.

**Occupational Diving :** diving performed in the course of employment ( irrespective of whether or not diving is the principal function of employment or merely an adjunct to it) and comprising all diving carried out as part of a business; as a service; for research; or for profit.

**Quick release mechanism:** a readily operated mechanism that enables the immediate release (e.g. of diver's equipment) from the secured position by a single operation of one hand, but which is designed to minimise accidental release.

**Risk:** in relation to any injury or harm , means the probability of that injury or harm occurring.

**Self – contained underwater breathing apparatus (SCUBA) :** open circuit diving equipment that supplies the diver with breathing gas from the cylinder(s) carried by the diver.

**Snorkelling:** For the purposes of these guidelines this term means diving on the water surface. Once the diver leaves the surface they become a diver as in the definition of a diver in this section.

**Start time:** The actual time of starting the first dive for the day i.e. 7.30am

**Surface - supplied breathing apparatus ( SSBA) :** diving equipment which supplies breathing gas at the required pressure for the depth, through a diver's hose to a diver from plant at the surface

## **C - MEDICALS**

1. A diver shall not dive or be subjected to pressure in connection with a diving operation in the use of SCUBA or surface supplied breathing apparatus unless that person possesses a valid certificate of medical fitness for diving in accordance with AS 2299 -1999 – Part 1( Appendix 1 in this document)
2. Medicals for industry divers shall be conducted by a medical practitioner competent in underwater medicine.
3. The medical examination must be carried out before a diver first uses breathing gas underwater and repeated every 12 months.
4. Divers medicals details shall be kept on file by the examining physician and copies provided to the diver.
5. The divers log book shall be presented at each medical examination.
6. A diver must be re - examined medically prior to further diving if the diver has suffered an episode of decompression illness or has suffered a significant medical illness , injury or change in health.
7. The certificate of medical fitness must record:
  - date of medical examination
  - name and address of medical practitioner conducting the examination
  - a finding of fitness , unfitness or temporary unfitness pending further examination as well as any restrictions relevant to the type of diving activity to be undertaken.
9. When a diver is classified unfit to dive by an examining physician they are required under Section 21 of the Occupational Safety and Health Act 1984 to minimise the risk to themselves and not dive and also notify the employer / licensee.

## **D. GENERAL PROCEDURES AND EQUIPMENT – applies to all diving activities**

### **1. General Procedures**



- (a) The owner of the dive equipment shall ensure that plant for use in diving operations:
  - (a) be operated in accordance with Sections E and F of these guidelines
  - (b) not be altered, modified or changed in any way that might impair the safe and efficient operation of the equipment
  - (c) not be used if it can be demonstrated that such plant or equipment is not in a safe working condition.

1.2 The owner of the diving plant and equipment shall ensure the equipment is of a type and capacity suitable for the job (i.e. Hookah or SCUBA), and complies with AS 2299-1999.

- (a) The diver and dive tender shall know the capabilities and limitations of any equipment they use.
- (b) The diver shall check equipment incorporating essential pre-dive checks, to ensure its working efficiency before a dive commences.
- (c) The diver and dive tender shall clean and disinfect if necessary all underwater diving equipment.
- (d) The diver shall ensure all dive equipment is dried and stored in a dedicated area in such a manner as to prevent deterioration, contamination or transmission of disease.
- (e) The diver shall wear a dive computer or dive to a recognised dive table.
- (f) The diver shall ensure the “diver” down signal flag is used at all dive sites.

### **(3) Divers equipment**

#### **2.1 Divers suit and accessories**

- 2.1.1 Divers suit / wet suit shall be designed to enable the diver to be maintained at a comfortable temperature during diving operations.
  - i. Weight belt or weight harness with a quick release mechanism and when released, do not foul any other piece of divers equipment.
  - ii. Weight belt to be encompassed to eliminate entrapment points.
  - iii. Fins or suitable foot attire as appropriate.
  - iv. Diver’s knife to be carried at all times and carried in such a position that it will not obstruct any discarded equipment.
  - v. Dive computer. ( optional)
  - vi. Safety sausage ( signalling device)

#### **(b) General requirements for breathing apparatus**

- i. Apparatus shall be designed and constructed from non-toxic, corrosion resistant materials.
- ii. Provide the diver with breathing gas at the required pressure and volumetric flow rate.
- iii. Be constructed of materials suitable for the breathing gas used.
- iv. Prevent ingress of water to the breathing circuit.

- v. Prevent leakage from the breathing circuit except through the exhaust valve.
- vi. Ensure that couplings provide a secure and airtight joint.
- vii. Ensure that component parts likely to require maintenance are readily detachable without risk of accidental disconnection.
- viii. Not unduly impede the diver when swimming and working underwater.
- ix. Enable secure fastening to the diver.

**(c) Harness requirements**

The harness shall be designed and constructed so as to-

- i. provide a safe and secure means of attaching the diver's hose and other equipment as required to the diver.
- ii. Minimise the risk of accidental release
- iii. Prevent the diver falling out of the harness
- iv. Be compatible with all other equipment worn by the diver.
- v. Be strong enough to support the diver and allow the diver to be removed from the water in an emergency
- vi. Be resistant to deterioration during use and storage

**(d) Requirements for component parts of breathing apparatus**

- i. Material that is designed to be worn next to the skin or that may come into contact with the skin should :
  - (a) not restrict the diver's movement in any way
  - (b) be comfortable to wear
  - (c) be non irritant and non staining

**2.4.2 Half face mask**

- (d) shall provide a water tight and gas tight seal
  - (e) cause the least possible interference with vision
  - (f) be purgeable of water
  - (g) incorporate a means of securing the mask to the diver to minimise accidental dislodgment
- ii. Mouthpiece
    - (a) shall be designed so that when fitted correctly, the aperture of the mouthpiece cannot be closed by mouth pressure.
    - (b) Shall provide a watertight and gas tight seal when fitted correctly and held with normal mouth pressure
    - (c) Shall provide a positive means of retention by the diver to prevent accidental dislodgment or slippage from the diver's mouth.
- iii. Diver's hose
    - (a) shall be of one continuous length wherever practicable
    - (b) where hose joins are required, these shall be of such a construction to be able to hold the weight of the recovery of a diver.

- (c) be kink resistant
  - (d) incorporate a non return valve located as close as possible to the diver, eg. at the breathing medium inlet to the mask or mouthpiece .
  - (e) have a burst pressure defined as the pressure at which that hose or another identical hose has burst, when pressure tested at the maximum operating temperature.
- iv. Inlet and exhaust valves
- (a) leakage will not exceed the limits as per AS 2299.1 1999
  - (b) adequate protection is provided against mechanical damage
  - (c) capable of easy maintenance
- v. Cylinders
- (a) Breathing air cylinders shall be durably marked with the word 'AIR' in letters not less than 50mm high and in a contrasting colour to the body of the cylinder.
  - (b) Divers breathing air cylinders shall not be used for storage of any gas mixture other than air.

#### **(4) Breathing gas quality**

- (a) Breathing air used in diving operations shall:
  - a. have no objectionable or nauseous odour
  - b. contain not less than 20% and not more than 22% by volume of oxygen .
  - c. contain not more than 11mg/m<sup>3</sup> of carbon monoxide at 15°C and 100kPa (10 ppm by volume)
  - d. contain not more than 900mg/m<sup>3</sup> of carbon dioxide at 15°C and 100kpa(480ppm by volume)
  - e. for high pressure cylinders , contain not more than 100mg/m<sup>3</sup> of water at 15°C and 100kPa ( 130 ppm by volume )
  - f. contain not more than 1 mg/m<sup>3</sup> of oil at 15°C and 100kPa when sampled from a cylinder filled to a pressure of at least 12 Mp
- (b) where supplied from a compressor, not to be used for diving operations unless the compressor has undergone a test at least annually, to ensure that the compressed air satisfies the requirements specified in 3.1.1- 3.1.6.
- (c) All breathing gas testing equipment shall be installed, operated and maintained in accordance with the manufacturers instructions.

#### **(5) Organisation and planning**

- 4.1 A diving operation shall be organised and planned so as to ensure-
- a. the competence of the diver is appropriate for the task at hand;

- b. the diver is armed with all possible information relevant to the task at hand.
- c. The diver is not unnecessarily distracted from the task at hand;
- d. Adequate surface assistance is available; and
- e. Minimum exposure for the diver.

**5.0 Communications**

5.1 An efficient and reliable communication system shall be established between the diver and the dive tender for normal fishing operations

- (a) A suitable and practical means of communication for emergency purposes suitable to the diving operations shall be established.
- (b) A reliable system as far as is practicable shall be provided to reach emergency services. Where possible, provisions for on shore emergency support service shall be made prior to the commencement of diving operations.

**6.0 Diving Hand Signals**

The recommended hand signals are shown in Appendix 2 In addition to the signals there needs to be a communication system between the diver and the attendant .

**7.0 Hazard Management**

7.1. A **hazard identification , risk assessment and risk control procedure** shall be conducted prior to and during diving operations on any work day:

- (c) The person in control of the diving operations shall **assess as far as is practicable, the hazards** associated with the diving operations including the following

<p><u>Environmental conditions</u></p> <ul style="list-style-type: none"> <li>■ <i>strength and direction of the wind and the degree of influence that it may have on the diving operation and emergency response capability</i></li> <li>■ <i>current and tide</i></li> <li>■ <i>visibility</i></li> <li>■ <i>entrapment hazards</i></li> <li>■ <i>depth at the dive site</i></li> <li>■ <i>water temperature</i></li> <li>■ <i>time of day</i></li> <li>■ <i>underwater terrain</i></li> <li>■ <i>atmospheric temperature and humidity</i></li> <li>■ <i>contaminants</i></li> <li>■ <i>isolation of the dive site</i></li> </ul>
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Task related factors

*The complexity of the diving task or the presence of a component which is non - routine in nature may increase the level of risk associated with a diving operation.*

Hyperbaric / physiological factors

- *frequency of diving , including repetitive diving ; multi - day diving;*
- *depth of the dive*
- *duration of the dive*
- *breathing gas*
- *exertion required to reach the dive site or conduct the task*
- *excessive noise*
- *immediate pre - dive fitness ( prior dives , prior physical exertion , fatigue , recent illness);*

Associated activity factors

- *manual handling*
- *vessel handling*

Other hazards

- *dangerous marine animals*
- *other vessel movements*
- *water inlets*
- *hazards peculiar to the dove site*
- *use of biological pollutants*

Emergency response factors

- *location and availability of appropriate emergency systems*
- *emergency response procedures*

(d) **Any hazards that are identified above will be assessed** by the diver in consultation with the skipper / other diver to assess the risk of injury or harm to the diver.

The hazards will be assessed to determine the risk of the hazard to the diver considering the following:

- *the probability of the hazard leading to an accident and possibly injury*
- *the consequence if the hazard results in an accident*
- *has the hazard resulted in an accident or injury before*
- *what is the possibility of long term injury or illness occurring*

- (e) **Once the hazards have been assessed** the diver in consultation with the person in control / other diver, will **implement risk control** methods to ensure the risk of injury or harm to the diver is eliminated or reduced.

The risk control steps for control of hazards to the diver are:

- (6) *if the risk is too high, no diving takes place*  
(7) *Where the swell or waves are such that the risk of an accident is increased , the dives should be aborted.*  
(8) *where the risk is able to be managed, safe working procedures will be followed*  
(9) *any additional training or instruction required for the day will be provided to the diver*  
(10) *any additional personal protective equipment required for the day will be provided to the diver.*

## **8.0 Vessel Diving**

8.1 A vessel, boat or floating structure used as a dive platform shall have the following:

- anchor for mooring in close reef work or in case of emergency
  - adequate secure storage space for dive equipment and first aid kits etc.
  - where required ,medical oxygen , stored in a secure , protected, clean and well ventilated position away from ignition sources and flammable materials
  - easy diver access back into the vessel
  - all dive vessels shall have a ‘diver down” signal
- (a) The diver shall ensure that the personnel in control of the vessel are aware of wind and swell direction and therefore how and where to position the vessel in relation to the diver.

8.3 When diving operations are in conjunction with the diver and the dive tender, the diver(s) shall train the dive tender to ensure:

- a safe distance between the vessel propeller and the air line when travelling
- a safe distance between the vessel propeller and the diver(s) during operations
- that dive team members ensure the vessel stays in range of the diver

## **9.0 Emergency Equipment / Procedures**

### **9.1 Pre-diving emergency plans and equipment**

- i. All work sites shall ensure emergency procedures are in place prior to diving, in case of a serious accident eg. Radio procedures, mobile phone procedures, hospital contact.

- ii. All sites shall have a list of names and radio frequencies or phone numbers for contact in the case of emergency.
- iii. All dive vessels shall carry the emergency equipment required by the Department of Transport.
- iv. All dive sites shall have an adequate first aid kit .
- v. Where the dive site is in a remote location the medical kit can be supplemented with additional items subject to a medical officers approval and instruction.
- vi. All dive sites shall have a ‘Divers Medical Companion’ book or similar for reference in the case of an incident.
- vii. All dive sites shall have the ‘Dive Accident Medical Information Forms’ to be completed in the case of an incident and transmitted to shore to allow a medical Officer to assess the seriousness of the accident , provide advice and make preparations for receiving the patient. See Appendix 4.
- viii. At least two persons at the work site ( one not in the water), shall hold a current diving first aid qualification to ensure they are trained to control bleeding, take care of an unconscious patient and carry out cardiopulmonary resuscitation (CPR)

9.1.9 Where the possibility exists of oxygen being required for a medical emergency and shore based medical facilities , cannot be accessed within 15 minutes , medical oxygen shall be provided on board the vessel.

- ix. here the vessel is in close proximity to the shore, access to emergency facilities with oxygen shall be arranged prior to work operations commencing.
- x. There shall be a suitable plan for the retrieval of the diver in case of an emergency.

## **9.2 Accident procedures**

9.2.1 When the diver needs to ascend for emergency purposes, all diving gear such as weight belts, harnesses etc. can be discarded as long as the diver maintains their emergency air supply.

- xi. Procedures for any accident that occurs should follow:

- a. Recover and/ or place accident victim in a comfortable position and apply first aid treatment according to the situation.
- b. Complete 'Diving Accident Medical form' especially if it is a diving accident , as it will assist with the radio communications to a medical officer.
- c. Radio or phone emergency contacts to speak with a Medical Officer for advice and transport protocol.
- d. Once evacuation / pick up procedures have been established , secure all equipment on and into the vessel and proceed to shore or if on land to the designated meeting point
- e. Ensure that the following information accompanies the accident victim to hospital:
  - divers log with the day's dive's records
  - diving accident medical information form
  - other information as required

## **10.0 Formalised Records**

### **10.1 Diving records**

- a. Records are to be completed for all dive operations
- b. The diver shall keep a record of each dive after each dive or at the end of each days diving.
- c. Every diver shall keep a record of all dives , times and depths of dives. A sample dive record is shown in Appendix 4.
- d. All dive accident medical forms shall be kept for reference.

### **10.2 Company records**

- a. The following shall be maintained by each company or business:

- (11) Diver qualifications
- (12) Boat handling qualifications
- (13) Divers medical
- (14) Engagement contracts or agreements including acknowledgement of these guidelines
  - Induction records
  - Emergency procedures
  - Equipment maintenance and testing

- (a) The following additional records shall be maintained for all SSBA diving operations:
  - Divers name
  - Nature of task



- Maximum depth of dives
- Decompression profile if utilised

## **11.0 Accident Reports**

11.1 All accidents as per the Occupational Safety and Health Regulations 1996 shall be reported. See Appendix 1 of the general section of the Aquaculture Code.

(a) A serious diving related accident needs to be investigated and the following points noted for reference:

- complete the diving accident medical information form - Appendix5.
- relevant divers logs and profiles
- relevant equipment maintenance records
- relevant medical history reports
- details of the possible causes
- details of diving experience of the diver
- details of diving equipment and the air supply system

**NB. All equipment is to be secured as it was at the time of the accident.**

## **E PROCEDURES FOR SELF CONTAINED UNDERWATER BREATHING APPARATUS DIVING OPERATIONS ( SCUBA )**

### **1.0 RESPONSIBILITIES**

**This section applies where the following criteria are satisfied:**

**(a) The licensee is the diver.**

- (b) The licensee provides the vessel or platform and diving equipment.**  
**(c) The licensee has significant control over the day to day operations.**  
**(d) The licensee employs all other personnel at the work site.**

## 1.1 Licensee

1. The licensee shall ensure they meet the following criteria:
  - (a) be a minimum of 16 years of age
  - (b) possess a current industry diver's medical as per Section C above.
  - (c) possess the necessary qualifications for the vessel they are operating where applicable
  - (d) possesses a relevant industry diving course certification
  - (e) has attended a general industry induction program or can acknowledge in writing they are proficient in the items listed in the induction as per appendix .
  - (f) hold a current diving first aid qualification to ensure they are trained to control bleeding, administer 100% oxygen, care of an unconscious patient, carry out cardiopulmonary resuscitation (CPR)
2. The licensee should ensure they have read and understood the requirements of the Aquaculture Industry Diving Guidelines.
3. The licensee shall ensure that another person on the vessel or platform have completed a diving first aid course and are trained to control bleeding, care of an unconscious patient, carry out cardiopulmonary resuscitation (CPR)
4. Where the licensee is not the skipper of the vessel, the licence holder shall ensure the skipper has the necessary qualifications for the vessel.
5. The licensee shall formalise agreements with all employees / contractors prior to diving operations commencing.
6. The licensee shall ensure that emergency drills are conducted with all employees / contractors twice yearly.
7. The licensee shall conduct the company induction with all new employees / contractors and with existing employees / contractors on an as needs basis. The induction should include the following:
  - vessel handling
  - daily pre- dive check
  - SCUBA apparatus
  - Divers signals
  - Diving procedures
  - Emergency procedures and first aid
  - Dive tables /computer as appropriate
  - Hazards involved in diving operations
  - Divers records

8. The licensee shall provide the necessary training and instruction with employees / contractors where hazards exist in the operations and advise and supervise on safe working practices in those areas.
9. The licensee shall ensure that all employees / contractors are suitably trained as to the work they are being engaged to do with respect to diving operations, including:
  - physics of diving
  - diving plant and equipment
  - hazard assessment
  - underwater work
  - signals in use
  - communication
  - equipment storage and maintenance
  - decompression procedures
  - current diving first aid qualifications to ensure they are trained to control bleeding, administer 100% oxygen, care of an unconscious patient, CPR
10. The licensee shall ensure that all diving gear is designed in accordance with AS 2299 –1999 – Part1, and maintained in safe working order in accordance with these guidelines.
11. Where the licensee owns the dive equipment, the licensee shall ensure all tanks are filled according to the Australian Standard 2030.1 - 1999 and 2299 – 1999.
12. Shall ensure a suitable means of communication exists between the work operations and emergency assistance.
13. Shall ensure a hazard management system exists for dive activities and vessel activities considering:
  - a. identification of hazards on board and under water ( as far as is practicable ) that those in the fishing operations may be exposed to.
  - b. assessing the risk of injury or harm to a person on board that could result from each hazard.
  - c. Implementing systems to look at the way risks may be reduced and hazards eliminated.
14. The licensee shall in respect of the vessel or dive platform:
  - ensure the vessel or dive platform meets all safety requirements
  - do all that is reasonably practicable to ensure any hazardous situation on the vessel is rectified

## **1.2 Employees / Contractors**

1. Employees / contractors shall formalise an agreement with the licensee or whomever is the employer.
2. Employees shall participate in all induction sessions appropriate to the operations.
3. Employees assisting the licensee during diving operations shall maintain a constant vigil during diving.
4. Employees / contractors shall participate in discussions with the licence holder concerning operations involving diving.
5. Employees / contractors shall when operating a vessel , possess a the relevant certificate of proficiency.

## **2.0 RESPONSIBILITIES**

**This section applies where the following criteria are satisfied:**

- (a) The licensee is not the diver and engages another qualified person to conduct diving activities as part of business operations.**
- (b) The licensee owns the vessel or platform where diving activities may be conducted.**
- (c) Either the licensee or the person who conducts diving activities as part of their work owns the diving equipment and / or tanks.**
- (d) The licensee employs all personnel on site.**
- (e) On some work sites a farm manager may be employed.**

***NB. WHERE APPLICABLE THESE RESPONSIBILITIES MAY BE SHARED / DELEGATED BETWEEN THE LICENSEE AND THE FARM MANAGER. WHO HAS RESPONSIBILITY IS DETERMINED BY THE LEVEL OF CONTROL EACH PERSON HAS OVER EACH OF THESE POINTS BELOW.***

### **2.1 The licensee / farm manager :**

**2.1.1** Shall ensure that all agreements are finalised in writing with the employees/ contractors.

**2.1.2** Shall ensure all divers involved in the fishing operations meet the following requirements:

- be a minimum of 16 years of age , however desirable age is 18 years
- possess a relevant industry diving course certification

- possess a current industry divers medical certificate .
  - holds a current diving first aid qualification to ensure they are trained to control bleeding, administer 100% oxygen, care of an unconscious patient, carry out cardiopulmonary resuscitation (CPR)
- have attended an induction program that includes items listed in .

2.1.3 The licensee shall conduct the company induction with all new employees / contractors and with existing employees / contractors on an as needs basis for diving operations. The induction should include the following:

- vessel handling as applicable
- SCUBA apparatus
- Divers signals
- Diving procedures
- Emergency procedures
- Dive tables /computer as appropriate
- Hazards involved in diving operations
- Divers records

2.1.4 Shall ensure that the skipper of the vessel or the person in control of operations has a basic knowledge of diving requirements, including divers tables as appropriate. Where there is a minimum of 2 crew on the vessel both need to be qualified.

- i. Shall where the licensee owns the dive equipment, ensure all tanks are filled according to the Australian Standard 2030.1 - 1999 and 2299 – Part 1 - 1999.
- ii. Shall where the licensee owns the dive equipment, ensure that all dive equipment is correctly maintained and serviced.
- iii. Shall ensure a hazard management system exists for dive activities and vessel activities considering:
  - (3) identification of hazards on board and under water ( as far as is practicable ) that those in the fishing operations may be exposed to.
  - (4) assessing the risk of injury or harm to a person on board that could result from each hazard.
  - (5) implementing systems to look at the way hazards may be eliminated and risks reduced.
- i. Shall ensure the skipper / person in control of dive operations complies with the requirements to display the dive flag when diving is in progress.
- ii. Shall ensure that at least two persons at the work site ( one not in the water), holds a current diving first aid qualification to ensure they are trained to control bleeding, take care of an unconscious patient and carry out cardiopulmonary resuscitation (CPR)

- iii. Shall ensure that there is a suitable plan for the work site for retrieval of the diver in case of an emergency.
- iv. Shall ensure there is a suitable means of access to and egress from the vessel after diving operations are completed.
- v. Shall ensure emergency procedures for the work site are in place in case of a serious accident with the diver eg. Radio procedures, hospital contact and that emergency drills are conducted at regular intervals.
- vi. Should ensure the skipper / person in control understands the need to secure the vessel when all members on the vessel are in rescue procedure and that the vessel stays with the diver while diving is in progress.
- vii. Shall ensure that employees / contractors who are not trained in diving procedures , have a knowledge of rescue procedures and a basic understanding of dive procedures.
- viii. Shall ensure a suitable means of communication exists between the work operations and emergency assistance

## **2.2 Employees / Contractors / Divers**

### **2.2.1 The employee/ contractor/ diver :**

- a. Who are required to dive as part of their work shall ensure they have the necessary requirements as per Section 2.1.2 above.
  - a. Shall formalise an agreement in writing with the licence holder.
  - b. Shall participate in all induction sessions appropriate to the operations.
  - c. When assisting the diver during diving operations shall maintain a constant vigil during diving.
  - d. Shall participate with discussions when the licensee concerning operations involving diving.
  - e. Shall where the diver owns the dive equipment , ensure all tanks are filled according to the Australian Standard 2030.1 - 1999 and 2299 –Part 1 - 1999.
  - f. Shall where the diver owns the dive equipment , ensure that all dive equipment is correctly maintained and serviced.
  - g. Shall follow the company system for hazard management.

- h. When in control of the work operations shall ensure the dive flag is displayed when diving is in progress.
- i. Shall follow the emergency procedures plan for the work site.
- j. The vessel is secured or under control, when in rescue procedure.
- k. The skipper or person in control shall ensure the vessel is operated in a safe and seaworthy manner.

**(b) Duty To Volunteers To The Work Site**

2.3.1 The licensee shall ensure that as far as is practicable, people who are not their employees are not harmed as a result of the work being carried out by the licensee or his/ her employees / contractors.

- I. The licensee shall ensure:
  - (a) the volunteers know how to carry out their activities safely
  - (b) ensure the work areas under the control of the employer are safe
  - (c) adequate supervision is provided.
  - (d) ensure the work of the employees / contractors does not harm the safety and health of the volunteers.
  - (e) All volunteers have an appropriate diving certification relevant to the needs of the diving activities.
  - (f) the means of access and egress to the work site are safe
  - (g) the employees / contractors are aware of their responsibility to ensure their activities do not harm the safety and health of volunteers
  - (h) training is provided to the volunteers relevant to the tasks and safety requirements
- ii. Employees / contractors shall ensure their activities do not harm the safety and health of volunteers.
- iii. The licensee shall ensure:
  - (a) hazards are identified that the visitor may be exposed to
  - (b) the hazards are assessed
  - (c) control measures put in place for all areas where visitors may attend.
- iv. The licensee or the person in control shall ensure restriction of volunteers from high risk areas in the workplace.

**3.0 PROCEDURES FOR SCUBA DIVING OPERATIONS ( SCUBA)**

### 3.1 General

- a. Any tools or equipment used by the diver using SCUBA are of such a type, size and dimension as can be manually handled and controlled by the diver.
- b. The diving operation does not require the use of cranes, plant or surface controlled equipment.
- c. The diver is not required to do work that involves prolonged physical exertion.
- d. The diver must be able to have direct access to the surface at all times.
- e. Sufficient breathing air is available in the cylinder to permit the diver's projected bottom time plus a 25% safety margin.
- f. The dive shall not involve decompression stoppages.
- g. The maximum dive depth shall be in accordance with the industry qualification.
- h. Air from a divers SCUBA supply is not to be used for any purpose other than support of the diver.

### 3.2 Equipment

3.2.1 The SCUBA diving equipment shall include the items in section D.

3.2.2 The SCUBA equipment shall include the following requirements for component parts:

- (c) Cylinder valves : Cylinder valves shall be operated by a hand control distinguishable by touch from any other handwheel of the apparatus. It shall not be possible to completely unscrew the spindle from the valve body. The valve assembly should be designed to prevent foreign particles from entering the circuit from the cylinder.

- Gas supply safety warning system: A warning device shall be fitted which shall be capable of warning the wearer when the air in a cylinder has been reduced to not less than 20% of its describe working pressure. A pressure gauge may act as a warning device if it is visible to the diver.

- i. The gas from the divers SCUBA supply shall be of a purity complying with section D3 of these guidelines.

3.2.4 There should be suitable and adequate storage space for all diving gear on the vessel or work platform.

### 3.3 Diving Operations

3.3.1 The diver, employee, contractor, dive tender shall follow the following pre dive procedures:



- a. dive plan in conjunction with the dive tender and / or diver's tender / crew
  - b. when diving with computers, the dive tender / crew shall be informed of a maximum dive time so they are aware of the 'at latest' surfacing time
  - c. all possible factors that could affect the days diving including any additional hazards in or at the dive site area
  - d. a hazard identification, risk assessment, risk control procedure is conducted on any possible hazards to the diving operation
  - e. where a diver believes they are not in a fit state to dive, all dives for that day should be aborted
  - f. a suitable plan for the diver to safely re-enter the vessel is in place
  - g. the following items shall be checked prior to diving operations commencing:
    - follow the hazard management procedure as in this document
    - all air hoses and fittings for damage or obstructions
    - the demand valve is functioning properly
    - hose connections secure
    - emergency air supply
    - correct function of air regulator
    - diver to ensure all equipment as per these guidelines is available
    - put the 'diver down' signal flag in an appropriate position
- ii. The diver, employee, contractor, dive tender shall follow the following dive procedures are followed:
- a. the diver shall ensure they have all equipment for the dive
  - b. diver to check the dive computer is functioning correctly prior to descending and as he descends
  - c. dives shall be done to the recognised dive tables or dive computer
- (d) diver and divers attendant to set his watch to monitor the bottom time of the dive

**3.3.3** The diver shall ensure they follow the hazard management procedure as per D76 whilst diving.

**3.3.4** The diver , employee, contractor, dive tender shall ensure the following post dive procedures are followed:

- a. on completion of each dive ,the diver shall fill in his diver log accurately to the nearest minute of time. Record any dive related incidents or defects and any identified hazards from the dive.
  - b. assess the records on the dive computer as appropriate
  - c. attend to required maintenance and washing of equipment before securely stowing dive equipment
  - d. stow dive computers out of the direct sunlight to prevent the equipment becoming inaccurate
- (6) where the dive gear is owned by another person other than the diver, problems with the gear and any repair work required must be attended to by the owner of the equipment
- (7) clean all diving gear

**F. PROCEDURES FOR SURFACE SUPPLIED AIR SUPPLY DIVING OPERATIONS ( SSBA )**

**1.0 RESPONSIBILITIES**

**This section applies where the following criteria are satisfied:**

- (a) The licensee is the diver**
- (b) The licensee owns the vessel or platform**
- (c) The licensee owns the diving equipment.**
- (d) The licensee has significant control over the day to day operations.**
- (e) The licensee employs all other personnel at the work site.**

**1.1 The licensee :**

1.1.1 Shall ensure they meet the following criteria:

- (a) be a minimum of 16 years of age however desirable age is 18 years
- (b) possess a current industry divers medical .
- (c) possess the necessary qualifications for the vessel they are operating where applicable.
- (d) possess a relevant industry diving course certification.
- (e) be proficient in the items listed in the induction
- (f) hold a current diving first aid qualification to ensure they are trained to control bleeding ,administer 100% oxygen, care of an unconscious patient, carry out cardiopulmonary resuscitation ( CPR)

1.1.2 The licensee should ensure they have read and understood the requirements of the Aquaculture Industry Diving Guidelines.

- i. Shall ensure that another person on the vessel or platform holds a current first aid qualification to ensure they are trained to control bleeding ,administer 100% oxygen, care of an unconscious patient, carry out cardiopulmonary resuscitation ( CPR)
- ii. Where the licensee is not the skipper of the vessel, the licensee shall ensure the skipper of the vessel has the necessary qualifications for the vessel.
- iii. Shall formalise agreements with all employees / contractors prior to diving operations commencing.
- iv. Shall ensure that emergency drills are conducted with all employees / contractors twice yearly.

1.1.7 Shall conduct the company induction with all new employees / contractors and with existing employees / contractors on an as needs basis. The induction should include the following:

- vessel handling
- daily pre dive checks
- SSBA apparatus
- Diving procedures
- Divers signals
- Emergency procedures
- Dive tables /computer as appropriate
- Hazards involved in diving operations
- Divers records

1.1.8 Shall ensure that all employees / contractors are suitably trained as to the work they are being engaged to do with respect to diving operations , including:

- physics of diving
- diving plant and equipment
- hazard assessment
- underwater work
- signals in use
- communication
- equipment storage and maintenance
- decompression procedures
- current diving first aid qualifications to ensure they are trained to control bleeding, administer 100% oxygen, care of an unconscious patient, CPR

- i. The licensee shall provide the necessary training and instruction with employee / contractors where hazards exist in the operations and advise and supervise on safe working practices in those areas.

- ii. here the licensee owns the diving equipment the licensee shall ensure that all diving gear is maintained in safe working order in accordance with Australian Standard 2030.1 – 1999 and 2299 .1 1999
- iii. Shall ensure a suitable means of communication exists between the work operations and emergency assistance.
- iv. The licensee shall ensure that all diving records are maintained.
- v. Shall ensure a hazard management system exists for dive activities and vessel activities considering:
  - a. identification of hazards on board and under water ( as far as is practicable ) that those in the fishing operations may be exposed to.
  - b. assessing the risk of injury or harm to a person on board that could result from each hazard.
  - c. implementing systems to look at the way risks may be reduced and hazards eliminated.
- vi. Shall when diving with a buddy, ensure all dive operational plans are established prior to entering the water.
- vii. The licensee shall in respect of the vessel or dive platform:
  - ensure the vessel or dive platform meets all safety requirements
  - do all that is reasonably practicable to ensure any hazardous situation on the vessel is rectified

## **1.2 Employees / Contractors**

1.2.1 Employees / contractors shall formalise an agreement with the licensee or whomever is the employer.

- i. Employees shall participate in all induction sessions appropriate to the fishing operations.
- ii. Employees assisting the licence holder during diving operations shall maintain a constant vigil during diving.
- iii. Employees / contractors shall participate in hazard management with the licence holder concerning operations involving diving.

1.2.5 The dive tender shall:

- a. holds a current diving first aid qualification to ensure they are trained to control bleeding ,administer 100% oxygen, care of an unconscious patient, carry out cardiopulmonary resuscitation ( CPR)
- a. gained a Department of Transport certificate of proficiency for small craft handling

- b. have a working knowledge of diving, and of the system of hose and hand signals
- c. if tending a hookah hose maintain the ability to communicate with the diver by means of the hookah hose at all times
- d. give all necessary attention to tending the diver while the diver is in the water
- e. if a compressor is in use , operate the equipment in a safe manner as instructed.
- f. follow all instructions as given by the diver

## 2 RESPONSIBILITIES

**This section applies where the following criteria are satisfied:**

- (a) The licensee is not the diver and engages another qualified person to conduct diving activities as part of business operations.**
- (b) The licensee owns the vessel or platform where diving activities may be conducted.**
- (c) Either the licensee or the diver owns the diving equipment .**
- (d) The licensee employs all personnel on site.**
- (e) On some work sites a farm manager may be employed.**

### 2.1 The licensee :

2.1.1 Shall ensure all divers involved in the fishing operations meet the following requirements:

- be a minimum of 16 years of age, however desirable age is 18 years
  - possess a current industry divers medical
  - possess a relevant industry diving certification
  - they are proficient in the items listed in the induction.
  - holds a current diving first aid qualification to ensure they are trained to control bleeding ,administer 100% oxygen, care of an unconscious patient, carry out cardiopulmonary resuscitation ( CPR)
- i. Shall ensure the diver has read and understood the requirements of the Aquaculture Industry Diving Guidelines
  - ii. Shall ensure that the skipper of the vessel , possesses the necessary qualifications for the vessel they are operating.
  - iii. Shall ensure that an induction is conducted for all divers . The induction will include the following and shall be formalised in writing.
    - vessel handling as applicable

- daily pre- dive check
- SSBA apparatus
- Divers signals
- Diving procedures
- Emergency procedures and first aid
- Dive tables /computer as appropriate
- Hazards involved in diving operations
- Divers records

iv. Shall ensure that all employees / contractors are suitably trained as to the work they are being engaged to do with respect to diving operations , including:

- physics of diving
- diving plant and equipment
- hazard assessment
- underwater work
- signals in use
- communication
- equipment storage and maintenance
- decompression procedures
- current diving first aid qualifications to ensure they are trained to control bleeding, administer 100% oxygen, care of an unconscious patient, CPR

2.1.6. Shall ensure that the skipper of the vessel or the person in control of operations has a basic knowledge of diving requirements, including divers tables as appropriate. Where there is a minimum of 2 crew on the vessel both need to be qualified.

2.1.7 Shall where the licensee owns the dive equipment, ensure all tanks are filled according to the Australian Standard 2030.1 - 1999 and 2299 – Part 1 - 1999.

2.1.8 Shall formalise agreements and responsibilities with the nominated diver and crew.

2.1.9 Shall ensure the diver is aware of all records to be kept for dive and associated activities.

2.1.10 Shall ensure that a suitably trained and experienced dive tender and/or crew member are provided to assist the diver.

2.1.11 Where the vessel is owned by the licence holder and is operated by a diver apply the following:

- The owner of the vessel shall ensure that the vessel meets all safety requirements and is in a seaworthy condition.

- The owner shall establish an appropriate procedure for rectifying hazards on the vessel that can not be addressed by the diver at the time when fishing operations are in progress. eg. Diver advises the owner of the vessel where repairs or changes are required.

2.1.12. In accordance with the Occupational Safety and Health Regulations 1996 , the owner shall ensure a system exists for dive and vessel activities where the following is addressed :

- Identifying hazards on board and under water that those in the fishing operations may be exposed to.
- Assessing the risk of injury or harm to a person on board that could result from each hazard.
- Implementing systems to look at the way risks may be reduced and hazards may be eliminated.

2.1.13 Shall ensure the skipper / person in control of dive operations complies with the requirements to display the dive flag when diving is in progress.

- shall ensure that there is a suitable plan for the work site for retrieval of the diver in case of an emergency.
- shall ensure there is a suitable means of access and egress to the vessel for the diver after diving operations are completed.
- Shall ensure emergency procedures for the work site are in place in case of a serious accident with the diver eg. Radio procedures, hospital contact and that emergency drills are conducted at regular intervals.
- Should ensure the skipper / person in control understands the need to secure the vessel when all members on the vessel are in rescue procedure and that the vessel stays with the diver while diving is in progress.
- Shall ensure that employees / contractors who are not trained in diving procedures , have a knowledge of the rescue procedures and a basic understanding of diving procedures.
- Shall ensure a suitable means of communication exists between the work operations and emergency assistance

## **2.2 Employee/ Contractor/ Diver**

### **2.2.1 The diver shall:**

- All ensure all agreements are formalised with the licence holder, prior to diving operations commencing.

- b. Shall participate in the company induction with the licence holder.
- c. In situations where the diver is engaging the diver's tender /crew , formalise agreements with the diver's tender / crew.
- d. Shall ensure that shall ensure that emergency drills are conducted with diver's tender / crew members at regular intervals.
- e. Shall discuss with diver's tender/ crew where hazards exist on the vessel and fishing operations and discuss safe working practices in those areas.
- f. Shall ensure that all dive and associated records are kept.
- g. Shall ensure they operate the vessel in a safe manner at all times.
- h. Shall ensure the vessel is maintained and operated in a safe and seaworthy manner during fishing operations
- i. Shall ensure that they and the dive tender / crew follow the company hazard management system as in point 11 above.
- j. Shall notify the licensee if there is a safety issue concerning the vessel as soon as is practicable.

**2.2.2 The employees / contractors will:**

- a. Shall formalise all agreements with either the licensee or the diver as applicable.
- b. Shall participate in all induction sessions appropriate to the fishing operations.
- c. Shall maintain a constant vigil during a dive.
- d. The dive tender / crew , shall:
  - holds a current diving first aid qualification to ensure they are trained to control bleeding ,administer 100% oxygen, care of an unconscious patient, carry out cardiopulmonary resuscitation ( CPR)
  - gained a certificate of proficiency for small craft handling
  - have a working knowledge of diving, and of the system of hose and hand signals
  - if tending a hookah hose maintain the ability to communicate with the diver by means of the hookah hose at all times
  - give all necessary attention to tending the diver while the diver is in the water
  - if a compressor is in use , operate the equipment in a safe manner as instructed.
  - follow all instructions as given by the diver



## **2.3 Diving Equipment**

### **2.3.1 Equipment**

a. For all SSBA diving operations , the underwater equipment used shall include the following

- divers suit and accessories
- general requirements for breathing apparatus
- a body harness to secure the equipment to the diver
- a half - face mask
- a demand air supply device, incorporating a mouthpiece
- divers hose
- a demand breathing gas supply device
- inlet and exhaust valves
- emergency air supply
- A submersible depth gauge/ timing device.

#### **(a) Compressed breathing gas supply**

##### **a. Sources**

- The compressed gas used for breathing in SSBA diving operations shall be of a purity in accordance with D3.1 of these guidelines and shall be available at all times from a primary and secondary supply .Each source may be either a power driven compressor or compressed air cylinders.
- **NB. THE EMERGENCY AIR SUPPLY CANNOT BE USED AS THE SECONDARY AIR SUPPLY.**

##### **b. Working pressure**

- The working pressure required to be delivered to the diver's breathing apparatus will depend on the type of breathing apparatus used by the diver and the depth of the dive.
- Where a free flow system is used, the pressure of the gas shall not be less than 350kPa or the diver's working depth in metres multiplied by 15kPa , whichever is the greater.
- Where a demand gas supply device is used, the minimum pressure shall be 700kPa plus 10kPa for every metre of the diver's working depth.

##### **c. Breathing gas supplies**

- Each diver shall breathe from a primary gas supply that is backed up by a secondary breathing gas supply of the same composition. In the event of failure of the primary supply, the secondary supply shall enable the diver to be brought back to the surface, taking into account any decompression schedule that may be required.
- Suitable secondary stages can include pressure cylinders.

**d. Emergency gas supply**

- Each diver shall carry an emergency gas supply (commonly known as a bail out cylinder) with them while diving.
- The emergency gas supply shall be the same composition as the diver's primary and secondary breathing gas supplies, of sufficient capacity to enable the diver to return to the surface or a place of safety.
- The emergency gas supply shall not be used as a secondary gas supply.

**i. Air compressor systems**

**a. General**

- Where breathing air in SSBA diving operations is supplied from a power-driven compressor, the following shall apply:
- The compressed air shall be delivered via a receiver and a cooling/drying/filtration system to ensure the purity requirements of G3 are applied to.
- A non-return valve shall be fitted between the compressor and the receiver, and located adjacent to the receiver wherever possible.
- The intake of the compressor shall be located or fitted with an extension pipe or hose as to prevent contamination of the supplied breathing air by dust, engine gases or fumes from any source ( particularly from welding, painting or cleaning operations) or from any other internal combustion machinery running in the vicinity of the compressor.
- The intake hose shall be routed, positioned and secured to ensure that there is no possibility of contact with hot or moving components.
- Any sections of the intake pipe or hose which could possibly be crushed, melted or otherwise damaged whilst in use shall be constructed of suitable metal pipe or tube.

- The exhaust and any other hot components shall be shielded to prevent contact by diving equipment, including hoses.
- The compressor shall be located so as to prevent the contamination of the breathing air.
- The compressor should be securely fastened when in use on the vessel.
- A typical layout for the air supply system is as follows:

**ii. Cylinder gas systems**

- a. Where breathing gas for SSBA diving operations is supplied from compressed gas cylinders, the following requirements apply:
- Cylinders shall comply with AS 2030.1 and where appropriate AS3848.2, as appropriate.
  - Industrial or medical gases used or stored at the site of diving operations, shall be colour coded in accordance with AS 4484 and systems shall be established to prevent any misuse or cross – contamination between these gas cylinders and cylinders containing breathing gas for divers.
  - Cylinders shall be appropriately marked with the word AIR in letters not less than 50mm high and in a contrasting colour to the cylinder. The cylinder should be colour coded in accordance with the identification colour coding for medical air in AS 4484.
  - Divers breathing air cylinders shall not be used for the storage of any gas mixture other than air.

**2.5 Diving Operations**

**a. The diver(s) shall ensure that a pre dive plan is in place addressing the following:**

- emergency procedures
- dive plan in conjunction with the other diver and / or diver’s tender/ crew.
- nominated dive site
- if diving to tables , the dive tender ( as applicable ) / crew shall be informed of the planned dive time so as they are aware of surfacing time
- if diving with computers, the dive tender ( as applicable ) / crew shall be informed of a maximum dive time so they are aware of the ‘ at latest’ surfacing time
- all possible factors that could affect the days diving including any additional hazards in or at the dive site area

- a hazard identification , risk assessment and control procedure is conducted on any possible hazards to the proposed diving operations
- where a diver believes they are not in a fit state to dive , all dives for that diver should be aborted

**(b) The diver(s) and dive tender / crew shall ensure the following pre dive procedures are established and followed :**

- Shall **assess as far as is practicable, the hazards** associated with the diving operations including the following
- Shall **assess the risk of injury or harm to the diver(s)** of any of the factors listed in 2.1 together or in isolation
- Shall **implement risk control methods** to ensure the risk of injury or harm to the diver (s) is minimised, using the following:
  - Where the level of risk cannot be controlled to an acceptable level , no diving should take place
  - Where the risk can be controlled by performing the task using alternative methods of diving , consideration should be given to using these alternative methods
  - Diving equipment and procedures should be used to minimise risk
  - Persons should be isolated from the hazards as far as is practicable

**c. Pre dive Procedures to follow**

- sufficient fuel mixture in the compressor motor fuel tank
- compressor and its engine are in good condition and lubricated for the days work duties
- test run the compressor and engine
- drain residual water from air reservoir under pressure
- drain residual water from the water tap under pressure
- check all air hoses and fittings for damage , or obstructions
- check the demand valve is functioning properly
- check hose connections are secure
- check air supply filters
- check air intake snorkel is connected and in good repair
- check secondary air supply cylinders are filled to a minimum of 90% of rated capacity
- check correct function or air regulator
- diver(s) to ensure they have all necessary dive equipment
- put the ‘diver down ‘ signal flag in an appropriate position
- diver(s) shall ensure they wear full protective gear on all dives from marine creatures and hypothermia as appropriate

**d. The diver(s) and dive tender (as applicable) / crew shall ensure the following dive procedures are followed:**

The following procedures shall be followed:

- the diver(s) shall ensure they have all equipment for the dive
- diver(s) to check the dive computer is functioning correctly prior to descending and as he descends
- dives shall be done to the relevant dive tables or dive computer
- diver(s) to set his watch to monitor the bottom time of the dive
- diver(s) to ensure the dive tender has set or noted the time on his own watch
- on reaching the bottom , the diver(s) shall check the depth and orientate himself prior to commencing underwater work activities.
- diver(s) shall check bottom time and , if using one , a dive computer to keep track of dive time

I The diver(s) **shall be aware of the hazards** as listed in 2.1 whilst diving:

II The diver(s) **shall assess the risk of injury or harm** to himself of the hazards identified in 3.2

III The diver(s) **shall ensure that appropriate control measures** are implemented to minimise the risk of injury or harm to himself.

IV When ascending the diver shall signal his intent to the dive tender and then do so at the recommended rate of the dive tables or dive computer he is diving to

**e. The diver(s) shall ensure the following post dive procedures are followed:**

- on completion of each dive ,the diver shall fill in his diver log accurately to the nearest minute of time. Record any dive related incidents or defects
- assess the records on the dive computer
- on completion of the dive , the air pressure from the air lines must be vented at the air reservoir, to blow out any moisture that has condensed inside
- required maintenance and washing of equipment to be done before storing gear.
- securely stow all dive equipment
- stow depth gauges and dive computers out of the direct sunlight to prevent the equipment becoming inaccurate

- exhaust air pressure from the system at the end of each working day by using the pressure relief valve / drain cock

**f. The diver(s) shall ensure the following maintenance procedures for portable compressor air systems are followed:**

- Prior to each days diving the compressor and motor shall be checked for sufficient lubricants
- Lubricating oils in the compressor and motor are to be changed regularly. Oils shall not be used beyond the manufacturers recommended hours.
- Drive belt tension is to be maintained and worn belts to be replaced. Care should be taken to replace drive belt guards immediately after all maintenance and service work
- Defects and faults such as oil in the air lines must be reported via the daily dive log for repair.
- Air supply systems are to be covered. when not in use
- Breathing air supplied from a compressor is to be tested at the start of each season and thereafter every three months. NB If the breathing air was a possible factor contributing to any dive accident / incident , a sample shall be laboratory analysed.
- Check filters every day to ensure the automatic condensation drains are working
- Check filters regularly under pressure to ensure that the differential pressure gauge is not indicating blocked filter elements
- Check all connections in systems for leaks and damage
- Flush the system with the recommended disinfectant and then clean water prior to the start and at the end of each season or if the unit is to be stored for one week or more

## **APPENDIX 1 - AQUACULTURE DIVER MEDICAL**

The Aquaculture Industry of Western Australia recommend that all divers undergo medicals for the following reasons:

1. Occupational diving is a high risk occupation and due to the nature of the tasks it is essential that all divers have regular medicals to ensure their fitness to dive.
2. Divers can be aware of their condition of health and fitness and can make informed decisions on their diving future
3. Any physiological changes from year to year come to their attention and intervention or remedial action can be decided upon.
4. To ensure there is a medical record of the diver available in case of an accident / emergency.

The recommended medical form for divers in the aquaculture industry is attached which is consistent with AS/NZS 2299.1: 1999 Appendix L, Occupational Diving

APPENDIX J  
 HAND SIGNALS FOR SCUBA DIVING OPERATIONS  
 (Informative)

Figure J1 illustrates the hand signals most commonly used in SCUBA diving operations.

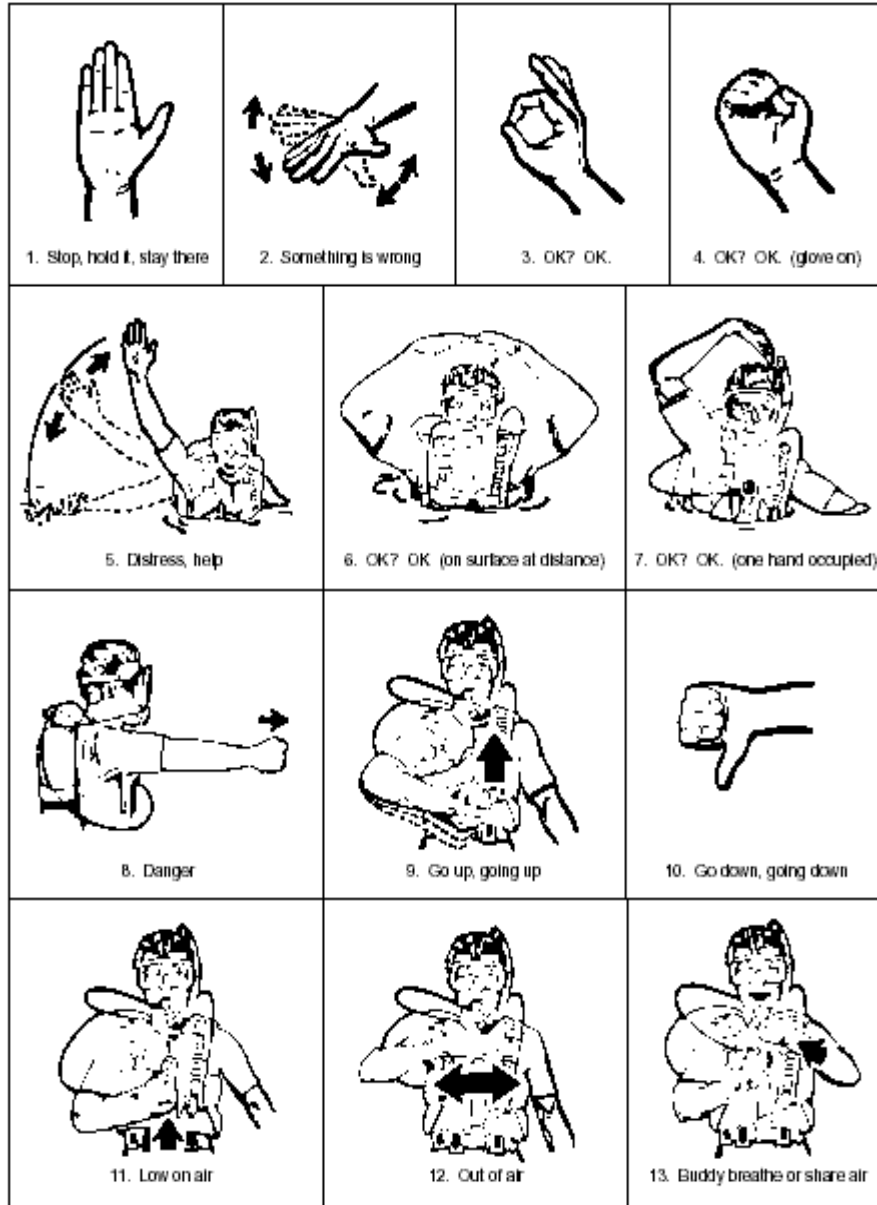


FIGURE J1 (in part) HAND SIGNALS FOR SCUBA DIVING OPERATIONS

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**APPENDIX 3 - DIVE RECORD FORM – EXAMPLE ONLY**

DIVER’S LOGBOOK ( Person to whom this log book relates)

Name: \_\_\_\_\_ Date of Birth \_\_\_\_\_

Adress: \_\_\_\_\_

Change of address: \_\_\_\_\_

Change of address: \_\_\_\_\_

**RECORD OF DIVE**

Date   /  /   Vessel Name \_\_\_\_\_

Geographic location \_\_\_\_\_

Current \_\_\_\_\_ Visibility \_\_\_\_\_ Water Temp \_\_\_\_\_

Maximum depth of dive \_\_\_\_\_

Number of dives \_\_\_\_\_

Left Surface \_\_\_\_\_ Bottom Time \_\_\_\_\_

Breathing Medium: Air \_\_\_\_\_

Surface supplied: \_\_\_\_\_ SCUBA: \_\_\_\_\_ Other \_\_\_\_\_

Decompressions procedure followed \_\_\_\_\_ Table/ computer used \_\_\_\_\_

**WORK DESCRIPTION**

.....  
.....  
.....

**Remarks , including any unusual aspects of dive , incidence of decmpression, illness,areas affected, treatment.**

.....  
.....

Diver name.....Diver signature.....

Skipper/..... Signature.....

Supervisor name

**APPENDIX 4 - DIVE ACCIDENT MEDICAL INFORMATION FORM**

**Part 1**

Essential information for transmission ashore in event of an emergency:

PATIENT NAME:.....

COMPANY:.....

GEOGRAPHICAL WORK LOCATION:.....

DATE OF INCIDENT:..... TIME OF INCIDENT.....

TYPE OF INCIDENT:.....

IS THE GENERAL CONDITION OF THE PATIENT:

GOOD..... FAIR..... CRITICAL.....

**Part 2**

Information about the dive related to the incident ( if illness or injury not related to diving , go to Part 3).

Dive number:.....

Type of work performed.....

Adverse conditions: (tides , hard work , disorderly ascent.....  
.....

Did the incident begin: in the water.....on the surface.....

At the time of onset of symptoms , was the patient:

- descending.....
- on the bottom.....
- ascending.....
- on the surface.....

If symptoms developed on the surface , how long after surfacing:

Onset of first symptoms at time:.....hrs.....min.

Does the diver have any of the following symptoms:

- Niggles
- Pain in joints ( state location)
- Pain in muscles ( state location)
- Pains and needles ( state location)
- Patches of numbness or tingling ( state location)
- Muscle weakness or paralysis ( state location)
- Difficulty in urinating

Pain in the lumbar region , around waist or in the abdomen  
Standing upright difficult or impossible  
Nausea  
Vomiting  
Dizziness , loss of balance  
Ringing in the ears  
Deafness  
Speech problems  
Visual problems  
Drowsiness, confusion  
Loss of consciousness  
Paleness, anxiety, sweating, collapse  
Cyanosis ( blue skin)  
Breathlessness, painful breathing  
Blood stained froth in airways  
Respiratory distress worsening with decompression  
Others ( specify)

**Part 3:**

Information for accidents or illnesses not related to diving.

Nature of illness:.....

Does the diver have difficulty or pain with breathing?.. Yes/ No

Is the diver bleeding? Yes / No

If bleeding , is it controlled? Yes / No

State of consciousness:

- fully alert and orientated
- drowsy
- confused
- unconscious but responds to stimuli
- unconscious and unresponsive

Detail symptoms:

.....  
.....

**Part 4:**

Detail all treatment given , initially and , if relevant , during transport to hospital.

Oxygen:.....  
Fluids:.....  
Pain relief:.....  
Other:.....

## **APPENDIX 5. INDUCTION ITEMS FOR THE AQUACULTURE DIVER**

The induction outline is provided as a guide for all new divers to the Aquaculture industry. In the case of experienced divers being within the Aquaculture industry, the diver should acknowledge in writing that they have the necessary skills as listed in the induction outline.

The diver induction shall include:

<i>Induction item</i>	<i>Date checked</i>	<i>Induction performed by who</i>
Recognise requirements of the Aquaculture industry Diving Guidelines		
Recognise the company diving policy's and procedures		
Competent in boat handling		
Maintenance of surface supply breathing system ( as applicable)		
Maintenance of SCUBA gear		
Maintenance of diving equipment		
Dive log procedures and log completion		
Diving incident report completion		
Standard diving signals		
Emergency procedures		
Dive table / computers		
First aid certification		
Oxygen administration ( as applicable)		
Hazard management procedures		

## **APPENDIX 6 - WORKSAFE WA ACCIDENT REPORT FORM**

### **OCCUPATIONAL SAFETY AND HEALTH REGULATIONS 1996 NOTIFICATION UNDER SECTION 19 OF CERTAIN INJURIES**

- 2.4 (1) For the purpose of the section 19(3) of the Act, the kinds of injury incurred by an employee to be notified by an employer to the Commissioner are –
- (2) a fracture of the skull, spine or pelvis
  - (3) a fracture of any bone-
    - (a) in the arm, other than the wrist or hand;
    - (4) in the leg, other than a bone in the ankle or foot;
  - (5) an amputation of an arm, a hand, finger, finger joint, leg, foot, toe or toe joint;
  - (6) the loss of sight of an eye;
  - (7) any injury other than an injury of a kind referred to in paragraphs (a) to (d) which, in the opinion of a medical practitioner, is likely to prevent the employee from being able to work within 10 days of the day on which the injury occurred.
- (2) Notification of an injury to which section 19(3) of the Act applies is to be made -
- (8) in the form of Form 1 in Schedule 2; or
  - (9) by telephone
- (3) The prescribed particulars for the purpose of the notification of an injury to which section 19(3) of the Act applies are -
- (a) name and business address of the employer;
  - (b) name, sex and occupation of the employee;
  - (c) address of the place at which the injury was incurred;
  - (d) date and time the injury was incurred;
  - (e) brief description of how the injury was incurred and the type of machine or equipment, if any, was involved;
  - (f) nature of the injury or, where applicable, report of death;  
and
  - (g) the place to which the employee has been taken

# FORM 1 – NOTIFICATION OF INJURY

[Regulation 2.4(2)]

## *Occupation Safety and Health Act 1984*

WorkSafe Western Australia Commissioner  
 PO Box 294  
 WEST PERTH WA 6872  
 Phone: (08) 9327 8777 Fax: (08) 9321 8973

INJURY REPORTING TELEPHONES  
 (08) 9327 8800  
 (1800) 198 118

### Section 1: Employer Details

Employer Name:		Date of Injury:
Workplace Name:		-- / -- / ----
Address:		
	Suburb/ Town:	
	Postcode:	
	Phone Number:	Time of Injury:
	Fax Number:	-- : -- am
	WorkCover Number:	-- : -- pm

Address of workplace Where injury occurred:		
Phone Number:	Suburb/Town:	Postcode:
Fax Number:		
Type of workplace Where injury occurred: (eg. Construction site, panel beating shop, etc)		

### Section 2: Details of injured person

Surname:	
Given Names:	
Occupation:	
Date of Birth: -- / -- / --	Age: --
Sex: Male: <input type="checkbox"/>	Female: <input type="checkbox"/>

Estimated time person is unable to work: \_\_\_ days

**Section 3: Injury Details**

Nature of injury:  
Brief description of how the  
injury occurred:


Place the injured person was  
removed to:

Name of person reporting  
accident:  
Position:  
Phone Number:


Person for liaison:  
Phone Number:


**2.5 NOTIFICATION UNDER SECTION 19 OF CERTAIN DISEASES**

(1) For the purpose of section 19(3) of the Act, the kinds of disease affecting an employee to be notified by an employer to the Commissioner are the diseases set out in column 1 of the Table to this regulation that have been contracted in the course of the kind of work set out opposite that disease in column 2 of the Table.

DISEASE	WORK
<b>1. Infectious diseases:</b>	
Tuberculosis Viral hepatitis Legionnaires diseases HIV	Work involving exposure to human blood products, body secretions, excretions or other material which may be a source of infection
<b>2. Occupational zoonoses:</b>	
Q fever Anthrax Leptospiroses Brucellosis	Work involving the handling of or contact with animals, animal hides, skins, wool, hair, carcasses or waste products

- (2) Notification of a disease to which section 19(3) of the Act applies is to be made-
- (3) in the form of Form 2 in Schedule 2; or
  - (4) by telephone
- (5) The prescribe particulars for the purpose of the notification of a disease to which section 19(3) applies are-
- (a) name and business address of the employer;
  - (b) name, sex and occupation of the employee;
  - (c) name address of the workplace where the employee works;
  - (d) name of the disease; and
  - (e) date of diagnosis of the disease.



## FORM 2 – NOTIFICATION OF DISEASE

[Regulation 2.5(2)]

### *Occupation Safety and Health Act 1984*

WorkSafe Western Australia Commissioner  
PO Box 294  
WEST PERTH WA 6872  
Phone: (08) 93278777 Fax: (08) 93218973

DISEASE REPORTING TELEPHONES  
(08) 93278800  
(1800) 198 118

#### Section 1: Employer Details

Employer Name:		
Workplace Name:		
Address:		
	Suburb/ Town:	Postcode:
Phone Number:		WorkCover Number:
Fax Number:		

#### Section 2: Details of Person

Surname:		
Given Names:		
Occupation:		
Date of Birth:	__/__/__	Age: __-__
Sex:	Male: <input type="checkbox"/>	Female: <input type="checkbox"/>

#### Section 3: Diagnosis Details

Name of Disease:		
Date of Diagnosis:		
Name of Medical Practitioner:		
Address:		
	Suburb/ Town:	Postcode:
Phone Number:		
Fax Number:		

**Section 4: Description of work done by affected person**


**Section 5:**

Name of person reporting  
disease:

--

Position:

--

Phone Number:

--

Person for liaison:

--

Phone Number:

--