North Wales Technical Divers
Risk Assessment and Emergency Action Plan
Dorothea Quarry

This risk assessment and emergency action plan is not intended to replace a divers own written and/or dynamic risk assessment/plan which should be regularly reviewed before each dive.

We recognise that technical dives will vary in their planning, equipment, gases and execution and therefore individual risk assessments/plans should consider personal capabilities and environmental factors. Divers should always question whether they are fit to dive prior to diving and stay on the side of caution.

In all cases, divers should follow their training and agency guidelines for their diving and adhere to BSAC and NWTD Policies and Practices. Shore cover with emergency response training and capability is highly encouraged.

All divers and those that accompany them visit and access Dorothea Quarry at their own risk. No liability is accepted by the committee or landowners for injury, illness, death of persons or loss or damage to property.

RISK ASSESSMENT

Hazard	Likely-hood	Severity	Risk Evaluation	Mitigation	Immediate Measures to Deal with Consequences if Risk Does Occur
Unexplained Chest Pain and/or Cardiac / Medical Incident	Rare	Fatal	Low	Medical self-declaration and referral to Medical Referee if required. Divers should follow any medical advice and take prescribed medication in accordance with prescriber's instructions	Safely abort dive immediately. Assistance/rescue by buddy if required. Basic Life Support including Oxygen and Automated External Defibrillator by First Responder if required and available. Emergency Services activation at soonest opportunity.
Pressure injury i.e., ears or sinuses	Occasional	Moderate injury	Low	Divers must not dive when suffering from a cold or medical condition that makes equalisation difficult.	Safely abort dive if equalisation painful or unsuccessful. Assistance from buddy if required.
Injury from falling cylinders	Rare	Moderate injury	Low	Divers must not leave upright cylinders unattended.	First Aid by First Responder.

Hazard	Likely-hood	Severity	Risk Evaluation	Mitigation	Immediate Measures to Deal with Consequences if Risk Does Occur
Running out of breathing gas	Rare	Fatal	Low	All cylinders fitted with pressure gauges. Gas usage estimated before the dive. Divers must have a method of monitoring gas cylinder contents. Divers to monitor their gas supply regularly. Turn points / pressure and suitable reserve gas volumes pre-agreed between divers.	Alternative breathing gas available from a redundant cylinder or from a buddy's redundant cylinder or Alternative Air Source.
Entanglement in nets/lines/ under water obstructions	Rare	Fatal	Low	All divers should carry appropriate cutting implement, such as filament line cutter, wire snips, diving knife, etc. Divers to make dynamic risk assessment before entering any overhead or other environment that may have obstructions.	Assistance from buddy

Hazard	Likely-hood	Severity	Risk Evaluation	Mitigation	Immediate Measures to Deal with Consequences if Risk Does Occur
Rapid ascent	Rare	Fatal	Low	Correct weighting of all divers. Visual datum used for ascents where appropriate. Follow training agency/dive computer ascent rate guidelines.	Administration of the highest oxygen concentration breathing gas available by First Responder. Emergency Services activation if any signs or symptoms of decompression injury are experienced. If asymptomatic but risk factors of the rapid ascent are high, such as if decompression has been omitted then emergency services should be activated immediately.
Diver Separation	Occasional	Fatal	Low	Follow training agency recommendations on the dive team size and buddy separation procedures. Diving must be planned and conducted with a buddy; solo diving is not permitted. Contact to be maintained throughout the dive. Strobes or buddy lines to be carried where appropriate.	Divers to conduct a time limited search if contact not re-established then surface safely and re-establish contact. Render assistance as required. Apply first aid or activate Emergency Services as required. If Diver is over their planned time and not immediately located, contact the Dive Officer on 07787 974953 and Chairman on 07515 447165.

Hazard	Likely-hood	Severity	Risk Evaluation	Mitigation	Immediate Measures to Deal with Consequences if Risk Does Occur
Reduced underwater visibility	Occasional	Major Injury	Low	Dive planning to take into consideration underwater visibility. Strobes or buddy lines to be carried where appropriate.	Dive to be abandoned in the event of adverse reduced visibility. Divers to safely return to the surface and exit.
Trips/Slips & Falls	Rare	Minor Injury	Low	Advise all divers to care on loose surfaces.	Remove casualty from danger and provide appropriate first aid. Emergency Services activation if required.
Decompression Illness	Occasional	Major Injury	Medium	Dives planned and conducted in accordance with Decompression Tables or dive computer. All divers equipped with depth gauges and watches and/or dive computers.	Administration of the highest oxygen concentration breathing gas available by First Responder. Emergency Services activation if any signs or symptoms of decompression injury are experienced. If asymptomatic but risk factors of the rapid ascent are high, such as if decompression has been omitted then emergency services should be activated immediately.

Hazard	Likely-hood	Severity	Risk Evaluation	Mitigation	Immediate Measures to Deal with Consequences if Risk Does Occur
Missed Decompression Stops	Rare	Major Injury / Fatal	Low	Dives monitored with dive computer or dive tables and timer. Good buoyancy control to avoid rapid uncontrolled ascents. Ensure there is sufficient breathing gas to complete the planned dive including decompression stops. If dives are planned with a long decompression stops consideration should be given to whether surface cover and an oxygen kit is appropriate.	Follow training agency/dive computer guidelines for missed decompression stops. If insufficient breath gas available to conduct emergency decompression exit the water and treat as Decompression Illness. Administration of the highest oxygen concentration breathing gas available by First Responder. Emergency Services activation if any signs or symptoms of decompression injury are experienced. If asymptomatic but risk factors of the rapid ascent are high, such as if decompression has been omitted then emergency services should be activated immediately.
Nitrogen Narcosis	Occasional	Fatal	Medium	Progressive work-up dives for all divers who are going beyond their most recent diving experience. Use an appropriate breathing gas for the planned depth.	Assistance from buddy. Ascend to shallower depth until symptoms resolve.

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Approach Road Damage to vehicles with low ground clearance.	Occasional	Damage to vehicles	Low	Car owners with low ground clearance warned to take care. Entry is at own risk. No liability is accepted.	Temporary repairs to vehicles.
Walk to Entry Platform Steep concrete ramp to water's edge. Risk of slipping.	Occasional	Minor Injury	Low	Warning that care is needed and not to rush. Make multiple trips rather than risk slipping. Entry is at own risk. No liability is accepted.	First Aid by First Responder.
Water Entry. Water is too shallow to jump into from the concrete platform.	Occasional	Minor Injury	Low	Controlled seated entry or entry by the platform steps or divers ladder. Entry is at own risk. No liability is accepted.	First Aid by First Responder.
Risk of entrapment inside metal boxes, cars or blast houses.	Occasional	Major Injury/ Fatality	Medium	Divers should not go inside metal box or cars or blast houses. Entry is at own risk. No liability is accepted.	Rescue by suitably equipped dive teams. If Diver is over their planned time and not immediately located, contact the Dive Officer on 07787 974953 and Chairman on 07515 447165. Alert emergency services.
Access to deep water up to 100m.	Frequent	Major Injury/ Fatality	Medium	Divers are required to dive within their certification limits. Entry is at own risk. No liability is accepted.	See Decompression Illness and Nitrogen Narcosis.

Hazard	Likely-hood	Severity	Risk Evaluation	Mitigation	Immediate Measures to Deal with Consequences if Risk Does Occur
Water Exit Steep concrete ramp to water's edge. Risk of slipping.	Frequent	Minor Injury	Low	Use the platform steps or divers ladder. Entry is at own risk. No liability is accepted.	First Aid by First Responder.
Walk from Entry Platform to Car Park Steep concrete ramp from water's edge. Risk of slipping and over exertion that could provoke DCI.	Occasional	Minor/Major Injury	Medium	Warning that care is needed and not to rush. Make multiple trips to recover equipment rather than over exerting. Entry is at own risk. No liability is accepted.	First Aid by First Responder. Administration of the highest oxygen concentration breathing gas available by First Responder. Emergency Services activation if required.
Insufficient Surface Cover	Rare	Major Injury/ Fatality	Low	Consideration should be given to whether surface cover is appropriate for the dives being conducted. Dives that accumulate significant decompression stops can have higher risk factors than dives with a limited or no decompression stops. If there are no other divers or dedicated surface cover at the site and the number of divers in the group is large enough it may be possible to split the group in to two and one group provides surface cover for the other and vice versa.	Follow Emergency Action Plan. First Aid by First Responder. Administration of the highest oxygen concentration breathing gas available by First Responder. Emergency Services activation if required.

Hazard	Likely-hood	Severity	Risk Evaluation	Mitigation	Immediate Measures to Deal with Consequences if Risk Does Occur
Equipment Malfunction/Failure	Occasional	Minor/Major Injury/ Fatality	Medium	All divers select suitable equipment for the planned dive and any reasonable contingency. Divers should consider redundancy in all of their equipment choices. Thorough pre-dive equipment checks as recommended by your relevant training agency and/or manufacturer for the equipment you are using on the dive.	Self-rescue/resolution using own redundant equipment and/or assistance from buddy. Dive plans should be modified in accordance with the equipment available at the time of the dive. Dive to be abandoned in the event the malfunction/failure cannot be resolved during the dive.
Fitness to Dive	Rare	Major Injury/ Fatality	Low	Complete medical declaration and seek a medical referee sign off if required. Only dive if in good physical and mental wellbeing. Evaluate fitness to dive on the day and confirm to the dive team before entering the water. Any diver can call off any dive at any time for any reason without fear of recourse. If in doubt do not dive.	Follow Emergency Action Plan. First Aid by First Responder. Administration of the highest oxygen concentration breathing gas available by First Responder. Emergency Services activation if required.

Emergency Assistance Plan

Dorothea Quarry

- **Situation:** Illness Injury Immersion/Drowning Death
- **Magnitude:** Minor Incident* Major Incident *Minor incidents may not require immediate assistance.
- **Appoint somebody to take charge. Locate all persons involved and brief of next steps/actions.**
- **Request Emergency Assistance via 999 without delay and provide relevant info as requested. If coverage from the mobile provider is poor use the 999 SMS service. To use this service phones will need to be registered by texting register to 999.**
- **Identify casualties and remove any persons from the water. Utilise assistance that may be present**
- **Assess / triage all casualties and prioritise first aid by need - Guidance notes below. If dive related, prepare/give O_2 or the highest oxygen concentration breathing gas available.**
- **Follow any instructions given by 999, manage the situation, consider the welfare of all involved / present**
- **Locate casualty's diving equipment and dive computer (if worn) and make available to emergency services**
- **Record dive details, casualty details and aid given. Inform Diving Officer 07787 974953 and Chairman 07515 447165.**
- **Clear immediate area and make ready for casualty evacuation. If a helicopter is expected, secure all loose items!**

First Aid Procedure

A **Assess the scene and determine responsiveness level of the casualty – Alert, Verbal, Pain and Unresponsive (AVPU)**

Apply Barriers. Are there any Life Threatening Bleeds? If so, manage them immediately.

Airway Open. Use head tilt and chin lift or jaw thrust if injured/injury suspected.

Alert Emergency Services on 999 if not breathing **or if injury is serious.**

B **Breathing Check. Look, Listen and Feel for Breathing (no more than 10 secs)**

- **Not Breathing? Don't check for pulse, proceed to CPR NOW.**
- **Breathing? If so, and dive related give O_2 or the highest oxygen concentration breathing gas available then proceed to S**

C **Chest Compressions and Rescue Breaths (30:2) Do the compressions first! Use a Bag Valve Mask and O_2 or the highest oxygen concentration breathing gas available**

D **Defibrillation (if available)**

S **Serious Bleeding. Apply pressure, elevate wound if possible. Don't remove bloody dressings. Overlay new on old.**

Shock

-Comfort and keep warm. Lie down and elevate feet if no spinal injury suspected. Lay flat if suspected DCI.

Spinal Injury Management

-Keep person still, warm and calm. Only move if life at risk or conditions require moving the casualty.

SECONDARY CARE - SIGNS/SYMPTOMS ALLERGIES MEDICATION PRE-EXISTING LAST MEAL EVENTS

Continue to monitor the casualty and prepare casualty and area for evacuation

CASUALTY MONITORING - Record at regular intervals depending on the situation and the resources that you have.

TIME	RESPONSIVENESS (AVPU)	BREATHING RATE (MIN)	CAPILLARY REFILL (secs)	NOTES

Secondary Care:-

Signs / Symptoms	
Allergies	
Medication	
Pre-Existing Conditions	
Last Meal	
Events	