

3. Contaminated Water Ops

3.1 3.1 Introduction

The ERDI Diving in Contaminated Water Ops Component is one of the most challenging public safety diver training programs. Students must demonstrate proficiency of all contaminated water skills and techniques, a high level of awareness and a proper attitude prior to certification. Dives incorporate hazard recognition and handling, use of specialized equipment; helmets and surface supplied air delivery systems require additional training.

3.2 Student Prerequisites

1. ERD I or equivalent.
2. Minimum age 18.
3. SDI/ERDI Dry Suit Diver or equivalent.
4. SDI/ERDI Full Face Mask Diver or equivalent.

3.3 Qualifications of Graduates

Upon successful completion of the ERDI Contaminated water Component, students will have developed the knowledge and skills necessary to plan and execute contaminated water diving operations.

3.4 Who May Teach

An active ERDI Instructor that has been certified to teach this ops component.

3.5 Administrative Requirements

Administrative Tasks:

1. Collect the course fees from all the students.
2. Ensure that the students have the required equipment.
3. Communicate the schedule to the students.
4. Have the students complete the:
 - a. *ERDI Liability Release and Express Assumption of Risk* Form.
 - b. *ERDI Medical Statement* Form.

Upon successful completion of an ERDI course the instructor must issue the appropriate ERDI certification and submit the registration form to ERDI:

1. Complete and submit the appropriate registration form to ERDI Headquarters.
2. Upon successful completion of an ERDI course the instructor must issue the appropriate ERDI certification by submitting the ERDI Diver Registration form to ERDI Headquarters or registering the students online through member's area of the ERDI website. Awareness level will receive a certificate upon completion if the online course was taken or a certificate can be requested if a traditional course was taken. Operations and Technician levels will receive a certification card and wall certificate.

3.6 Training Materials

Required Materials:

1. *ERDI Contaminated Water Diving Operations* Student Manual (or online equivalent)
2. *ERDI Contaminated Water Diving Operations* Knowledge Quest
3. *ERDI Contaminated Water Diving Operations* Instructor Guide

Optional materials:

1. *SDI Rescue Diver* Slate with five-minute neurological exam
2. *ERDI Line Tender* Slates
3. *ERDI Contaminated Water Diving Operations* Instructor Resource CD.

3.7 Student to Instructor Ratio

Academic:

1. Unlimited, so long as adequate facilities, supplies and time are provided to ensure comprehensive and complete training of subject matter.

Confined Water (swimming pool-like conditions):

1. A maximum of 6 students per ERDI Instructor.
2. ERDI Instructors have the option of adding 2 additional students with the assistance of an active ERDI Supervisor.
3. The maximum number of students an ERDI Instructor may have in confined water is 8 with the assistance of active ERDI Supervisors.

Open Water (ocean, lake, quarry, spring, river, or estuary):

1. A maximum of 2 dive teams per ERDI Instructor.
2. It is the instructor's discretion to reduce this number as conditions dictate.

3. The ERDI Instructor has the option of adding 2 more students with the assistance of an active ERDI Supervisor.
4. The total number of students an ERDI Instructor may have in the water is 10 with the assistance of 2 active ERDI Supervisors.

3.8 Course Structure and Duration

Course Structure:

1. ERDI allows instructors to structure courses according to the number of students participating and their skill level.

Duration:

1. Classroom and briefing: Approximately 3 hours.
2. Two open water dive operations (required). One decontamination dive with a total bottom time of 20 minutes. Air supply limited to 1/3 of a single cylinder and a maximum depth not to exceed 15 Metres/45 Feet. Dive operations are not required for non-diving students taking the course.

3.9 Required Equipment

1. Same equipment as required for ERD I Diver.
2. Dry suit with inflator hose.
3. Full face mask.
4. Environmentally sealed first stage.
5. Gas switching block.

3.10 Approved Outline

Instructors may use any additional text or materials that they feel help present these topics. The following topics must be covered:

Reality of it All:

1. Water Transition from Recreational Environment to Hostile Work Arena.
2. How Early Humans created water pollution.
3. How the maritime Industry created a Hostile Environment for Divers.
4. Agricultural Effects which Aid in creating risks for Divers.
5. Industrial Discharge into the Waterways.

6. Initial Assessment of what task the Diver is performing.
7. Beginning to address Mitigation Strategies.

History:

1. Cousteau: The Father of Diving in Polluted Waters.
2. Unknown Long-Term Risks.
3. CWD Operations Equipment Selection.
4. Rumors of Health Issues for Divers Operating in CWD Campaigns.
5. US Navy's Commitment to CWD Standards and Protocols.
6. PSD Health Survey.

What is Contaminated Water:

1. Definition of Contaminated water.
2. Levels of Contamination.
3. All Water is Contaminated.
4. US Navy Water Classification Levels.
5. Types of Contaminants.

How Contaminated Water Affects the Team:

1. Contaminated Water Affects Everyone.
2. Planning is a Key Role.
3. Locard's Theory.
4. Exposure Recognition.

How Exposure Can Occur:

1. Absorption.
2. Inhalation.
3. Ingestion.
4. Injection.

Targets:

1. Victim Recoveries.
2. Vehicle Recoveries.
3. Item Recoveries.

Dive Planning:

1. Duties Upon Arriving at the Scene.

2. Dealing with the Public.
3. Establishing Perimeter and Area of Operations.
4. Performing a Site Assessment.
5. Establishing a Staging Area.
6. Choosing a Dive Mode.

Equipment for Contaminated Water Diving:

1. Exposure Control for CWD.
2. Full Face Mask and Helmets.
3. Air Delivery Systems.
4. Buoyancy Control Devices.
5. Specialized Equipment.

Decontamination:

1. Communal Rinse Tank Questions.
2. Water Quality Levels.
3. Differing Decontamination Beliefs.
4. Multi Phases Aspects of Decontamination.
5. Decontamination Practices.
6. Suggested Equipment for Decontamination Personnel.
7. Finite Cleaning and Equipment Inspection.

Record Keeping:

1. Importance for Developing a Recordkeeping Protocol.
2. Formation of Documentation for Statistical Recordkeeping.
3. How to Research Local Water Body History.
4. Assistance with Water Quality Testing and Reports.
5. Need for Medical Screening.
6. Exposure Control Recommendations.
7. Post Dive Follow-up.

3.11 Required Skill Performance and Graduation Requirements

Confined water training is not required but highly recommended. It would consist of:

1. 1. Pool Session One:
 - a. Plan dive.
 - b. Enter water.
 - c. Buoyancy check.
 - d. Get comfortable.
 - e. Descend.
 - f. Proper attitude utilizing a full-face mask.
 - g. Demonstrate proper buoyancy and trim (ability to maintain thorough the dive).
 - h. Ascend and exit.

Students are required to successfully complete the following in open water:

1. Land Drills:
 - a. Establish scene parameters.
 - b. Perform scene assessment.
 - c. Staging decontamination area.
 - d. Demonstrate adequate pre-diving planning.
 - e. Demonstrate proper scene recording and log information.
 - f. Lost diver procedure.
 - g. Scenario briefing.
 - h. Risk assessment.
 - i. Communication use.
2. Open Water Dive 1:
 - a. ERDI recommends that the first dive be no deeper than 6 Metres/20 Feet.
 - b. Plan dive.
 - c. Enter water from back of boat or shore entry.
 - d. Buoyancy check.
 - e. Get comfortable.
 - f. Descend.
 - g. Proper attitude utilizing a full-face mask.
 - h. Demonstrate proper buoyancy and trim (ability to maintain thorough the dive).
 - i. Ascent with safety stop.

- j. Exit/log dive.
- 3. Open Water Dive 2:
 - a. Plan dive.
 - b. Enter and descend.
 - c. Practice dry suit skills.
 - d. Inflating and deflating suit.
 - e. Roll from inverted position.
 - f. Emergency procedures for dry suit malfunctions.
 - g. Enjoy the sites.
 - h. Ascend w/ safety stop.
 - i. Exit/log dive.
- 4. Post Dive Drills and demonstrations:
 - a. Proper decontamination of diver exiting water.
 - b. Proper undressing of diver.
 - c. Proper equipment inspection.
 - d. Neurological assessment of the diver.
 - e. Proper finite cleaning.

In order to complete the course the students must:

- 1. Satisfactorily complete the ERDI Contaminated Water Diving Operations written exam with a minimum score of 80 percent and 100 percent remediation.
- 2. Perform all land, pre-dive, in-water and post-dive drills correctly and efficiently.
- 3. Demonstrate mature and sound judgment concerning dive planning and execution.
- 4. Maintain an appropriate level of awareness and respect for the contaminated water environment.
- 5. Log all dives.