DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
441 G Street, NW
CESO Washington, DC 20314-1000

ER 385-1-86

Regulation
No. 385-1-86

23 November 2021

Safety and Occupational Health: Dive Program
U.S. ARMY CORPS OF ENGINEERS DIVE SAFETY PROGRAM

1. This regulation prescribes guidance for policies, program responsibilities, training, and qualification of personnel involved in the U.S. Army Corps of Engineers (USACE) dive safety program.

2. Applicability. This regulation applies to all Headquarters (HQ) USACE staff elements and USACE Divisions, Districts, Centers, and Field Operating Activities (FOA).

3. Distribution Statement. Approved for public release; distribution is unlimited.

FOR THE COMMANDER:

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Summary of Changes

ER 385-1-86

United States Army Corps of Engineers (USACE)

U.S. Army Corps of Engineers Dive Safety Program

This administrative revision, dated 23 November 2021 –

- Provides additional references for the Robert Stafford Disaster Relief and Emergency Assistance Act and the National Oceanic and Atmospheric Administration Diving Medical Standards and Procedures Manual.
- Deletes the outdated Physician's Guide to Diving Medicine (1984) as a reference.
- Delineates detailed program responsibilities for the District/Lab/FOA/Center Commander and their District Dive Coordinators (DDC), Alternate Dive Coordinator (ADC), Dive Safety Representative (DSR), Dive Safety Inspector (DSI), Dive Supervisor (DS), divers, Divers-In-Training (DIT), and tenders.
- Provides for the creation of a USACE Dive Control and Safety Council and their program responsibilities.
- Summarizes minimal training and proficiency requirements in a tabular format that is concise and addresses various scenarios within USACE. Accordingly, there is a table for the following: DDC; ADC; DSR; DSI; DS; and Divers.
- Changes the PROSPECT frequency training requirement from every 4 years to every 5 years for both Diving Refresher and Dive Safety Administration Course.
- Combines the PROSPECT Dive Safety Administration Course and the Dive Safety Administration Refresher Course into a single course (Dive Safety Administration) that will fulfill the training requirement.
- Provides direction and procedures for coordination and interoperability amongst district/fleet/lab/field operating activities (FOA)/center.
- Provides direction and procedures for the utilization from other USACE dive personnel across district/fleet/ lab/FOA/center.
- Provides information and USACE policy regarding scientific diving.
- Provides standardization of various forms and disallows local forms for the following: ENG Form 6227 (USACE Diver Medical Instruction and Authorization); ENG Form 6235 (USACE Dive Operations Plan); ENG Form 4615 (USACE Dive Log); ENG Form 6226 (Diver Contractor Checklist); ENG Form (Dive Supervisor Qualification Checklist); and ENG Form 6228 (DIT and Tender-in-Training Checklist). All forms are depicted in their respective figures and internet links are also provided.
- Deletes appendix A (Diving Medical Requirements) and appendix B (Sample Dive Log) from previous ER 385-1-86. Those appendices are superseded by ENG Form 6227 and ENG Form 4615.

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1. Purpose. This regulation amplifies the requirements stated in Engineer Manual (EM) 385-1-1. More specifically, this regulation prescribes the policies, program responsibilities, and training & qualifications of U.S. Army Corps of Engineers (USACE) personnel for underwater diving operations performed by USACE employees and oversight of USACE contractor dive operations.

2. Applicability. Underwater diving operations are identified, by USACE, as hazardous work operations that require stringent and standardized program requirements and procedures in order to safeguard the health and safety of personnel involved (for example, both government and contractor operations). Accordingly, this regulation is applicable to Headquarters USACE (HQUSACE), Major Subordinate Commands (MSC), Districts, Labs, Field Operating Activities (FOA), and Centers.

3. Distribution Statement. Approved for public release; distribution is unlimited.

4. References. Technical and regulatory requirements contained in below references will be adhered to, except those specific requirements governing military personnel and military operations.

a. 29 CFR 1910, Occupational Safety & Health Standards (https://www.osha.gov/sites/default/files/enforcement/directives/CPL_02-00-151.pdf).

b. EM 385-1-1, USACE Safety and Health Requirements Manual (https://www.publications.usace.army.mil/portals/76/publications/engineermanuals/em_385-1-1.pdf).

c. Naval Sea Systems Command SS521-AG-PRO-010, U.S. Navy Diving Manual (https://www.navsea.navy.mil/Portals/103/Documents/SUPSALV/Diving/US%20DIVING%20MANUAL_REV7.pdf?ver=2017-01-11-102354-393).

d. Federal Aviation Administration Directory for Aviation Medical Examiners (https://www.faa.gov/pilots/amelocator/).

e. Robert T. Stafford Disaster Relief and Emergency Assistance Act (https://www.fema.gov/sites/default/files/2020-03/stafford-act_2019.pdf) .

f. National Oceanic and Atmospheric Administration Diving Medical Standards and Procedures Manual (https://www.omao.noaa.gov/sites/default/files/documents/Diving%20Medical%20Standards%20and%20Procedures%20Manual%2C%202010.pdf).

5. Records Management (Record Keeping) Requirements. Records management requirements for all record numbers, associated forms and reports required by this regulation are included in the Army's Records Retention Schedule. Detailed information for all record numbers, forms, and reports associated with this regulation are located in the Army's Records Retention Schedule - Army at https://www.arims.army.mil/arims/default.aspx.

6. Policy. USACE underwater diving operations are intended and restricted to USACE facilities & projects and to fulfill USACE Emergency Support Function responsibilities. In addition, at USACE projects, work involving diving operations will only be performed by USACE divers and/or approved USACE contractor divers. However, law enforcement agency divers are permitted for forensic or crime-related investigations at USACE facilities and projects. In situations involving rescue operations, at USACE facilities and projects, the use of federal, state, and local government divers is permitted.

7. Program Responsibilities.

a. USACE Commanding General (CG). The CG, through the HQUSACE Safety and Occupational Health Office (CESO), is responsible for establishing and resourcing diving safety policy for government diving activities conducted by USACE.

(1) The HQUSACE CESO Chief will designate a USACE National Dive Safety Program Manager who will promulgate and provide program requirements and training guidance to all USACE activities.

(2) USACE National Dive Safety Program Manager. This person will serve as USACE's program manager for dive safety. Their duties include:

(a) Maintain and update this regulation and associated sections and appendices of EM 385-1-1.

(b) Chair the USACE Diving Control and Safety Council.

(c) Provide program and training guidance to all USACE activities.

(d) Serve as the sole approval authority for all USACE in-house dive teams who request to use "Oxygen Enriched Air" (OEA) such as Nitrox breathing mixtures. Due to the infrequent use of OEA, the USACE National Dive Safety Program Manager will be required to consult with a government, commercial, or an accredited/licensed OEA expert, that is independent of the USACE project or dive team, who can provide independent review and advice regarding OEA dive operations.

(e) Conduct and/or coordinate inspections of any USACE dive program.

(f) Serve as approval authority for variances and waivers to this regulation.

(g) Serves as the approval authority for the use of one-atmosphere suits (for example, Newt Suits).

(h) Manage and select all members of the USACE Dive Control and Safety Council.

(i) Publish Dive Safety Advisories, as necessary, to keep the Dive Community of Practice abreast of various dive safety issues.

b. MSC/Division Commanders. The MSC commander is responsible for program management and quality assurance of all government and contractor diving activities conducted within their divisions. The Division Commander may appoint, in writing, a Division Dive Coordinator to assure appropriate division oversight of the dive safety program. The Division Dive Coordinator will:

(1) Provide any direction or advice to their District Dive Coordinators (DDC).

(2) Coordinate or resolve any diving issues within their division.

c. District/Lab/FOA/Center Commanders. These commanders are responsible for program implementation, management, and quality assurance for all government and contract diving activities conducted within their area of responsibility. Accordingly, the commander will:

(1) Appoint, in writing, a DDC to ensure appropriate implementation and oversight of their dive safety program. The term DDC is often referred to a Designated Dive Coordinator in EM 385-1-1.

(2) A USACE District/Lab/FOA/Center with limited or no expectation of diving operations may utilize the diving operations capabilities of another USACE District/Lab/FOA/Center activity in lieu of developing their own qualified personnel. These arrangements must be documented in writing and will define responsibilities and adequate resourcing.

d. DDC/Alternate Dive Coordinator (ADC). DDC/ADC exists at the District/Fleet/Lab/FOA/Center echelons. DDC ensures the appropriate oversight of their dive safety program. The ADC performs the DDC's duties when the DDC is absent or unavailable. Each District/Fleet/Lab/FOA/Center Commander will designate, in writing, only one DDC. Their duties include:

(1) Develop, implement and oversee local dive program policies and procedures to ensure compliance with this regulation and EM 385-1-1.

(2) The DDC will maintain a file of completed USACE Diver Medical Authorization forms for all of their respective USACE divers. The DDC will also receive and review physician's certification for contractor divers. DDC will not accept or maintain any medical records. If there is a serious diving injury or illness, the DDC will ensure that a diver is re-examined by a licensed physician who completed a Diving Medical Officer course, hyperbaric fellowship, or a Federal Aviation Administration (FAA) Aeromedical Examiner with diving medicine experience.

(3) Prior to performing their duties, the DDC must approve (in writing by the district commander) and maintain a listing of personnel assigned as an ADC, Dive Safety Representative (DSR), Dive Safety Inspector (DSI), Dive Supervisor (DS), divers, Divers-In-Training (DIT),

and tenders. The DDC will verify that these personnel have the required certifications, qualifications, and proficiency.

(4) The DDC will appoint, generate and maintain a "letter of authorization" for ADC, DSR, DSI, DS, and each dive team member. This letter of authorization will outline the duties each individual is authorized to perform. Prior to commencement of dive operations, the DDC will ensure that the dive team members are on DDC's approved listing of personnel.

(5) Review dive contractor submittals and provide acceptance/non-acceptance to the Government Designated Authority.

(6) Review and approve the following documentation prior to any USACE in-house dive operation or documentation acceptance for contractor dive operation: safe practices manual; dive operations plan(s); dive equipment certifications; activity hazard analysis (AHA) to cover all aspects of the job; emergency management plan; dive personnel qualifications; and additionally documentation affecting the dive operations (i.e., critical lift plans, underwater welding certificates, lockout/tagout plans, etc.).

(7) Prior to the initial work on each contract dive operation, a Pre-Dive Conference will be held with key personnel designated by the DDC to discuss the dive operations plan, AHA, critical lift plans, emergency management plan, and hazardous energy control program procedures. Any and all modifications to any of the above documents require the approval/acceptance of the DDC.

(8) The DDC will designate a DSI qualified person to attend the initial contractor pre-dive meeting. On every new dive contract and prior to commencement of the first contract dive, the DDC will assign a DSI to conduct a complete inspection of contract operations. Results of the inspection will be recorded on the Contractor Diving Operations Quality Assurance Checklist. Based on this inspection, job complexity, contractor performance and degree of hazards found in the dive plans and AHA, the DDC will determine whether the DSI will conduct continuous or intermittent monitoring of contract dive activity.

(9) If for any reason the dive mission is altered, the DDC will review and approve any revisions to the dive plan prior to continuing or commencing dive operations.

(10) To ensure compliance, the DDC and/or DSR will have a documented annual review their USACE dive team operations.

(11) Oversee USACE in-house dive operations in the field through on-site evaluations and/or reports from ADC's, DSI's, Safety Office representatives, DSR's, or DS's.

(12) Coordinate all dive program activities with the appropriate district Safety & Occupational Health Office (SOHO).

(13) Cease any USACE and/or contractor dive operations when deemed unsafe.

(14) Review all USACE dive logs after the completion of dive operations.

(15) Review all snorkeler's annual physician certifications, AHAs, and snorkeling plans for those operations involving scientific snorkeling.

(16) Serve as the approval authority for the use of OEA, by contractors, in their respective area of responsibility. The DDC will ensure that the contractor meets the EM 385-1-1 requirements prior to the commencement of OEA diving operations.

e. The DSR is assigned by the DDC and is normally the District Safety and Occupational Health Office representative who is assigned the responsibility of dive safety, provides dive safety advice, actively participates in the review and comment process for diving plans and hazard analyses, and on-site monitoring of diving operations. Their duties include:

(1) Review and provide comment on dive program procedures to the DDC.

(2) The DSR will conduct annual inspections of USACE dive teams during dive operations. Additionally, the DSR will perform on-site assessments and monitoring of diving operations to evaluate effectiveness of safety controls and procedures. The DSR will report all findings from inspections, on-site assessments, and monitoring to the DDC and the SOHO.

(3) Have the ability to serve as a reviewer and one-of-two approval/acceptance authorities for the dive planning documentation required by the EM 385-1-1 and this regulation.

(4) When directed by the DDC, review all snorkeler's annual physician certifications, AHAs, and snorkeling plans for those operations involving scientific snorkeling. Determine if additional on-site personnel are required where scientific snorkeling operations occur.

f. The DSI is the on-site government representative of the DDC for contractor or USACE in-house diving operations. Accordingly, DSI duties will not be delegated or deferred to any non-government entity (to include contractors). The DSI will ensure dive team safety through coordination with the contractor and provide recommendations to correct deficiencies in the dive plan, AHA, or observed diving procedures. Their duties include:

(1) Attend and participate in the contractor on-site pre-dive meetings. The DSI will conduct a walk-through of dive operations to evaluate staging areas, equipment condition and setup.

(2) Review and confirm that Hazardous Energy Control Procedures are followed as required by EM 385-1-1, Engineer Regulation (ER) 385-1-31, and applicable site-specific policies. The DSI will not have clearance responsibilities, as outlined in ER 385-1-31, unless they are a qualified and authorized clearance holder at the specific facility.

(3) Conduct quality assurance inspections and monitoring for contractor scientific snorkeling operations.

(4) Use of qualified Rehired Annuitants (RA) to perform DSI duties is permitted. In order to qualify, these RA's must provide verified proof that they served as a USACE in-house DS for a minimum period of 5 years. Because of their previous knowledge in USACE dive operations, training requirements for RA's listed below are waived. Finally, the use of RA's will not be substitute for developing in-house assets to fulfill DSI duties.

g. The DS is the primary authority on any USACE in-house dive team's operation. DS's are required to be an active or former USACE diver. Each USACE dive team will have a designated DS to manage all aspects that affect the safety and health of dive team members. Their duties include:

(1) Verify dive team qualifications and training prior to any dive operation.

(2) Be involved in the development of the dive operations plan(s), dive site coordination, set-up of both the staging and equipment areas, pre-dive meeting/conferences, personnel duty assignments for each dive team, and selection & inspection of diving equipment. The DS will also provide and sign that day's or work shift dive operations plan & equipment checklist and brief this plan to the assigned dive team prior to entering the water for that day or shift. The DS will use appropriate high altitude tables that compensate for the increased elevation.

(3) Identify and mitigate external hazards (for example, environmental, navigation, equipment operation, invasive species, etc.) at the dive location.

(4) Supervise the entire dive operation to include: safe & efficient diver rotation; job planning; execution of emergency response procedures; and demobilization of the dive site.

(5) Serve as the sole permission authority for the movement and/or operation of any facility equipment, cranes, vessels, etc. that may impact dive operations at the dive site. This sole permission authority will remain in effect for the entire duration of the active dive operation, as determined by the DS.

(6) Physically verify a project's Hazardous Energy Control Plan (HECP) implementation when the operation of machinery or release of hazardous energy will or could affect the safety of the diver or dive team. This verification will include physical examination of each lock, tag, and controllers to ensure they are in the proper position. When diving at a facility with an existing HECP, the DS will review the facility's plan and establish positive control procedures with the facility responsible official.

(7) Continuously monitor dive team members' physical & mental fitness and their ability to perform their assigned tasks. When in doubt, the DS will cease all operations. Operations will re-start only after the DDC/ADC and/or DS has determined that appropriate corrective action(s) have been accomplished.

(8) When dives will take place in an area or facility where potential or actual pressure differentials exist (locks, dams, spillways, powerhouses, etc.), the DS will develop specific plans

and procedures, in coordination with the facility operator, that meet the facility's HECP to prevent diver exposure to pressure differentials.

(9) When water traffic, land-based traffic, industrial operations, heavy equipment operation, or other operations exists that present a hazard to the diver or dive team, the DS will coordinate with the controlling authorities to ensure the hazards are mitigated.

(10) Perform pre-dive checks (per EM 385-1-1) prior to the dive.

(11) Will remain topside, on-site, and in overall control of the diving operation. The DS will not assume duties of divers or standby diver during this period. The DS may rotate into a diver or standby diver status only when their supervisory duties have been clearly and completely transitioned to another qualified DS as outlined in the dive operations plan.

(12) Report all hazardous conditions/events, mishaps, incidents, accidents, injuries, and other lessons learned to the DDC, ADC, and SOHO.

(13) Conduct a dive team debriefing upon completion of each diving operation or at the conclusion of each day.

(14) Record and maintain a dive log for each diver. Ensure that completed dive logs and after-action reports (if applicable) are submitted to the DDC.

(15) When qualified by the DDC, DS are permitted to serve as a DSI. The DDC will issue a letter of authorization stating that the DS is qualified to serve as a DSI.

(16) In order to avoid any circumstances that would compromise any dive team's safety and health, all USACE activities will establish policies and procedures to prevent operational supervisory pressure on the DS. Other than the DDC and/or ADC, the DS will have absolute control of the entire dive operation.

(17) There will be only one DS for any one dive site at any given time. In no instance will a DS be permitted to serve as the same Dive Supervisor for multiple dive sites.

(18) Use of qualified RA to perform DS duties is permitted. In order to qualify, these RA's must provide verified proof that they served as a USACE in-house dive supervisor for a minimum period of 5 years. Also, training requirements for RA's listed below are waived. Finally, the use of RA's will not be substitute for developing in-house assets to fulfill DS duties.

h. USACE Divers and DIT responsibilities include:

(1) Submit to and receive a periodic diving physical and fitness for duty letter by a licensed physician who completed a Diving Medical Officer course, hyperbaric fellowship, or a FAA Aeromedical Examiner with diving medicine experience. If any serious dive related injury or illness occurs, the diver(s) will submit to and receive an examination by a licensed physician

who completed a Diving Medical Officer course, hyperbaric fellowship, or a FAA Aeromedical Examiner with diving medicine experience.

(2) Follow and demonstrate all prescribed safety procedures including the use of all equipment and/or tools necessary to safely perform their assigned tasks.

(3) Monitor their own personal physical and psychological health and report any known or suspected limitations or abnormalities or serious medical conditions (for example, pregnancy, surgery, etc.) to the DS.

(4) Avoid distractions, follow the dive operations plan and all directions of the DS.

(5) Will wait at least 12 hours before flying after any dive. This interval is extended to 24 hours following multiple days of repetitive dives.

i. USACE Tenders and other Dive Team Members. Their responsibilities include:

(1) Be trained, fully knowledgeable, follow, and demonstrate all prescribed safety procedures, including the use of all equipment and/or tools necessary to safely perform their assigned tasks.

(2) Monitor their own personal physical and psychological health and report any known or suspected limitations or abnormalities or serious medical conditions (for example, pregnancy, surgery, etc.) to the DS.

(3) Avoid distractions, follow the dive operations plan, and all directions of the DS.

j. USACE Dive Control and Safety Council. This council's responsibilities include:

(1) Serve as voting members on all Board of Investigations (BOI) involving USACE in-house or contractor diving operations. A minimum of two USACE Dive Control and Safety Council members will be assigned to any dive related BOI.

(2) Review diving mishaps and incidents to determine any corrective application.

(3) Reviews, revises, and develops policies, curriculum, and standards/requirements for the USACE Dive Program.

(4) Perform and/or assist in any Headquarters directed dive audit, review, and/or assessment of any dive program.

(5) Perform and/or assist in the instruction and/or proponent oversight of any USACE Learning Center PROSPECT dive course.

8. Training and Proficiency. Diving is a hazardous operation that requires specialized training. Accordingly, it is essential that personnel are qualified to perform their assigned duties. The

following provides the minimal training and proficiency requirements necessary to achieve qualification for duties which they are assigned.

a. The following matrix applies to personnel assigned as the USACE DDC.

Table 1
DDC (Both In-House USACE Dive Operations and Contractor Diving Operations) Training Matrix

Requirement	**Frequency**
3 years experience as an USACE Dive Supervisor	Initial
Dive Safety Administration or Dive Refresher Course	Initial and every 5 years
Working Diver Course	Initial
Appointment by the Commander	Initial and upon change of commander

Table 2
DDC (Contractor Diving Operations Only) Training Matrix

Requirement	**Frequency**
3 years experience as an USACE DS / USACE DSI / or USACE DSR	Initial
Dive Safety Administration Course	Initial and every 5 years
Appointment by the Commander	Initial and upon change of commander

b. The following matrix applies to personnel assigned as the ADC.

Table 3
ADC (Both In-House USACE Dive Operations and Contractor Diving Operations) Training Matrix

Requirement	**Frequency**
2 years experience as an USACE DS	Initial
Dive Safety Administration or Diving Refresher Course	Initial and every 5 years
Working Diver	Initial
Authorized by the DDC	Initial

Table 4
ADC (Contractor Diving Operations Only) Training Matrix

Requirement	**Frequency**
2 years experience as an USACE DS / USACE DSI / or USACE DSR	Initial
Dive Safety Administrator Course	Initial and every 5 years
Authorized by the DDC	Initial

c. The following matrix applies to personnel assigned as a DSR.

Table 5
DSR Training Matrix

Requirement	**Frequency**
Dive Safety Administrator Course	Initial and every 5 years
Authorized by the DDC	Initial

d. The following matrix applies personnel assigned as a DSI.

Table 6
DSI Training Matrix

Requirement	**Frequency**
Dive Safety Administration or Working Diver or Diving Refresher Course	Initial and every 5 years
Authorized by the DDC	Initial

e. The following matrix applies to personnel assigned as a DS.

Table 7
DS Training Matrix

Requirement	**Frequency**
First Aid, CPR and AED	Initial and every 2 years thereafter
Diver specific emergency oxygen administration	Initial and every 2 years thereafter
Working Diver Course	Initial
Plan, execute, and supervise 3 dive operations	Annual
Authorized by the DDC	Initial
USACE training standards for DS[1]	Initial and every 5 years after initial designation as a DS

[1]DS will be trained by their respective DDC/ADC and will complete the "Dive Supervisor Qualification Check." At any time, a DDC may revoke or suspend a DS's qualifications. However, if that DDC wishes to reinstate that individual's DS qualifications, that individual will be required to repeat the "Dive Supervisor Qualification Check." Additionally, every 5 years, the DDC/ADC will require each DS to maintain their qualification by repeating the "Dive Supervisor Qualification Check."

f. The following matrix applies to personnel assigned as a USACE Diver:

Table 8
Diver Training & Proficiency Matrix

Requirement	**Frequency**
U.S. Army Corps of Engineers Diver Medical Authorization[2]	Initial and periodic thereafter
Accredited Diving certification[3]	Initial
First Aid and CPR	Initial and every 2 years thereafter
Diver specific emergency oxygen administration	Initial and every 2 years thereafter
Working Diver Course	Initial
Diving Refresher Course	Upon completion of Working Diver course, Diving Refresher course will be completed every 5 years thereafter
9 Working/training dives[4]	Annual
Authorized by the DDC	Initial

[2]All Divers are required to meet diving medical qualifications. However, tender (who are no longer in a diving status) are not required to meet diving medical qualification.
[3]Accredited diving certification can be achieved by a U.S. military diving school, Professional Association of Diving Instructors (PADI), National Association of Underwater Instructors (NAUI), or other recognized sources.
[4]Divers who have not completed the mandatory 9 working/training dives per year will have USACE Diver certification suspended. They will be categorized as a Diver-in-Training and will be provided six months to complete the necessary number of working/training dives. Upon completion of the necessary working/training dives, the DDC may reinstate their certification as a USACE Diver. If the required number of working/training dives are not completed in that additional six month period (total 18 month period), that Diver-in-Training will be required to take the Diving Refresher Course before they can be eligible to be certified as a USACE Diver.

g. A USACE DIT is a process to determine the suitability of an individual for eventual certification as a USACE Diver. Accordingly, all DDC will ensure that DIT's will adhere to the following:

(1) All DIT's must be certified as a self-contained underwater breathing apparatus (SCUBA) diver by a national recognized SCUBA certification organization (for example, military diving school, PADI, NAUI, etc.) prior to being placed in a USACE DIT status.

(2) Dives made by DIT's are restricted to a maximum depth of 32 feet.

(3) After the initial equipment training, the DIT may perform underwater training as a second diver when accompanied by a qualified diver. This must be performed using the same equipment as the diver.

(4) The DIT will be in direct communication with the DS at all times. The qualified diver will enter the water first and exit only after the DIT is safely topside.

(5) The DIT will not be used to fulfill the minimum manning requirement for dive teams. Instead the DIT will be considered an additionally member to the minimum manning requirements listed in EM 385-1-1.

(6) Successful completion of the Working Diver course is required before the Diver-in-Training is eligible to be certified as a USACE Diver by the DDC. The respective DDC will be final approval authority for USACE Diver designation.

9. Medical Qualifications. All USACE will meet medical requirements outlined by the USACE Command Surgeon. All waivers to these medical requirements will be submitted to the USACE

Dive Medical Officer/Command Surgeon for adjudication. All medical waivers must be signed by the USACE Dive Medical Officer/Command Surgeon.

10. Coordination and Interoperability: To ensure coordination, any district/fleet/lab/FOA/center may work collaboratively with any district/fleet/lab/FOA/center where diving is being performed. There are two main scenarios where coordination and interoperability would take place. Accordingly, the following procedures will be adhered to:

a. When a DDC requests dive services from another DDC, the following procedures will be adhered to:

(1) The servicing DDC will submit all documents (similar to a contractor) to the requesting DDC for validation.

(2) Both DDC's are required to concur and sign all dive operations plans for approval.

b. There are also situations where diving is being performed in another DDC's geographic area but not at the request of that geographic DDC. Most common reason include perform work associated with ordnance or bridge inspections for the Department of Defense. This work may involve a USACE in-house dive team or contractor/military dive team. Accordingly, the following procedures will be adhered to:

(1) The servicing DDC will notify the geographic DDC of the specifics of dive operation (for example, who, what, when, how, and requesting customer (such as, garrison, etc.)).

(2) Approval and/or concurrence with the geographic DDC is not required. However, the geographic DDC may halt diving operations if the servicing DDC fails to provide notification prior to the commencement of the servicing DDC's diving operations.

11. Utilization of USACE Dive Personnel across District/fleet/lab/FOA/center. There may be situations where additional divers are needed to supplement dive operations. Accordingly, the DDC may reach out to other DDC's for assistance. When these situations arise, the following procedures will be adhered to:

a. The requesting DDC will make their requests to an individual DDC.

b. The individual DDC will make a determination if they can fulfill the request while ensuring that their district/fleet/lab/FOA/center dive mission requirements are met.

c. If the individual DDC does provide divers to assist the requesting DDC, the individual DDC will provide all diver documentation to the requesting DDC for validation. Meanwhile, the individual DDC will keep their chain of command informed.

d. Additionally, for those cases where long term use of divers are involved (for example, 3 times per year), the individual DDC will provide a memo of authorization to the requesting DDC stating that the individual diver may participate with the requesting DDC's dive team. In

addition, the requesting DDC will ensure that the divers meet all requirements and issues a letter of authorization to be a member of their dive team.

e. In all cases, the requesting DDC is prohibited from contacting individual divers without the first contacting that diver's DDC for any particular dive operation.

12. Scientific Diving. USACE may be involved with scientific diving utilizing contractor and/or USACE in-house dive teams. Accordingly, the following provides a scientific dive definition and USACE policy involving USACE in-house dive teams:

a. The Occupational Safety and Health Administration (OSHA) defines scientific diving as:

(1) "Diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks. Scientific diving does not include performing any tasks usually associated with commercial diving such as but not limited to: placing or removing heavy objects underwater; inspection of pipelines and similar objects; construction; demolition; cutting or welding; or the use of explosives."

(2) Additionally, OSHA states, "Scientific divers, based on the nature of their activities, must use scientific expertise in studying the underwater environment and, therefore, are scientists or scientists in training." In addition, "The tasks of a scientific diver are those of an observer and data gatherer."

(3) Those non-USACE entities that met the above definition, and demonstrate other OSHA scientific diving requirements, can seek an exemption to OSHA.

b. Given the above OSHA requirements, minor work could be construed as that associated with commercial diving and would therefore not qualify for the OSHA scientific diving exemption. Although not an exhaustive list, this could include work involving rigging, placement and maintenance of instrumentation, and trouble-shooting. As a result, all USACE in-house divers, who may be involved in any form of scientific diving, are required to meet all USACE diver requirements set forth in this regulation.

13. Standardization: In order to improve interoperability (especially during contingency operations), it is essential that USACE standardize certain functions. Accordingly, all USACE in-house dive teams will utilize the specific standardized forms listed below. All other local or district/fleet/lab/FOA/center forms are void and disallowed. Below is a listing of all standardized USACE dive program forms:

a. ENG Form 6227 - USACE Diver Medical Instruction and Authorization (https://www.publications.usace.army.mil/Portals/76/Users/182/86/2486/Eng_Form_6227_2021Jun%20(002).pdf): This form will be utilized to as a diver's fit to dive statement by the appropriate medical authority listed above (see Figure 1).

b. ENG Form 6235 – USACE Dive Operations Plan (https://www.publications.usace.army.mil/Portals/76/Eng_Form_6235_2021Mar.pdf?ver=XycjXmvNX40096cxPhCBcA%3d%3d): This form will be utilized for all diving performed by USACE in-house dive teams. Additional and amplifying details may also be attached to this form (see Figure 2).

c. ENG Form 4615 - USACE Dive Log (https://www.publications.usace.army.mil/Portals/76/Publications/EngineerForms/Eng_Form_4615_2021Feb.pdf?ver=-3Q2ulx4aLVHP8d6vBdurg%3d%3d): This form will be utilized for all diving performed by USACE in-house dive teams (see Figure 3).

d. ENG Form 6226 - Diver Contractor Checklist (https://www.publications.usace.army.mil/Portals/76/Eng_Form_6226_2021Feb.pdf?ver=CeWnnVx-rWDLRCUANvoguw%3d%3d): DDC's, ADC's, and DSI's will utilize this form to inspect all new contract diving operations. Based on these results, complexity of the dive operations, etc., the DDC will determine how often contract dive operations are to be monitored/inspected (see Figure 4).

e. ENG Form 6229 - Dive Supervisor Qualification Checklist (https://www.publications.usace.army.mil/Portals/76/Eng_Form_6229_2021Feb.pdf?ver=C-MrEKrxGFvoTI7VHZCKBg%3d%3d): The DDC will utilize this form to qualify their Dive Supervisors of their in-house dive teams (see Figure 5).

f. ENG Form 6228 - Diver-in-Training & Tender-in-Training Checklist (https://www.publications.usace.army.mil/Portals/76/Eng_Form_6228_2021Feb.pdf?ver=NFRYAlGb19edWmhpSbNhLg%3d%3d): The DDC will utilize this form to qualify their Diver-in-Training. This form will be required to be completed and submitted prior to attending the USACE Working Diver Course.

14. Waivers and Variances: All requests for waivers and variances to this regulation must be submitted in the following manner. All requests will be on command letterhead. The requesting DDC will state: the purpose of the request and the applicable paragraph regulating the issue; background and necessity for the request; requested time period needed; local mitigation to be taken in the interim; any supporting documentation justifying the request; and date & signature of requesting DDC. All requests will be sent to the USACE National Dive Safety Program Manager for adjudication.

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U.S. Army Corps of Engineers (USACE)

DIVER MEDICAL INSTRUCTIONS AND AUTHORIZATION

For use of this form, see ER 385-1-86; the proponent agency is CESO.

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority	ER 385-1-86, EM 385-1-1, and OSHA subpart T.
Principal Purpose	To communicate the authorization of divers for duty.
Routine Uses	Information will be shared with the Division/District/Center/Lab Diving Coordinator.
Disclosure	Voluntary, however an incomplete form will prohibit the employee from diving.

DO NOT include medical information on this document - Document in accordance with Privacy Act

Last Name	First Name	Middle Name

Home District	Duty Station Location

Type of Examination - Cross out non-applicable sections

☐ Initial	☐ Periodic (all ages)
If New, or Break In Service	Annually
Complete Sections 1 and 2	Complete Sections 1

Diving Physician Instructions: If you have any reservation about the fitness of the candidate/diver to perform rigorous work underwater at depths of up to 110 FSW, please order the medically appropriate tests and specialist consultations to provide data for your clinical fitness for duty decision.

SECTION I - All INITIAL AND PERIODIC EXAMINATIONS (*DO NOT INCLUDE REPORT RESULTS*)

Report of Physical Examination: **Please complete a vital sign, cardiovascular, neurology, vision, musculoskeletal, EENT, behavioral, GI, and wellness examination.**
Report of Medical History
Body Mass Index >30 or Framingham Risk category of Moderately Above-Average Risk or High-Risk - complete cardiac treadmill, a nuclear, or echocardiographic stress test to 13 METs using Bruce protocol. A stress test is valid for 5-years unless there is a change in the cardiac status.
Lab: Complete Blood Count (CBC)
Lab: Complete Chemistry (CMP) with HbA1C
Lab: Complete urinalysis
Lab: Lipid screening
Spirometry or Pulmonary Function Test
Audiogram
12-Lead resting EKG

SECTION II - All INITIAL EXAMINATIONS (must include these additional test results)

Sickle Cell screening (only once)
Chest x-ray report

APPLICANT CERTIFICATION:
I will notify my Diving Physician of any changes to my health status that are frequent or last over 8 days and will notify my District Diving Coordinator of temporary conditions (<7 days) that require me to be unfit for diving

Applicant Name	Date	Applicant Signature

DIVING PHYSICIAN: I certify I am a Licensed Physician and:

☐ **Completed USN or UHMS Diving Medical Officer Course**

☐ **Current FAA Aeromedical Examiner with hyperbaric medicine experience**

I have reviewed the attached medical information and have found the applicant named above to be:

☐ Medically cleared for full working diving duty

☐ NOT Medically cleared for diving duty. **Please specify the reason(s) in a sealed medical note to the employee.**

DO NOT PROVIDE THE MEDICAL NOTE TO YOUR DISTRICT DIVING COORDINATOR

Diving Physician Name (*Required*)	Date	Diving Physician Signature

ENG FORM 6227, JUN 2021 Page 1 of 2

Figure 1. ENG Form 6227 (USACE Diver Medical Instruction and Authorization)

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USACE EMPLOYEE INSTRUCTIONS:
Medically Cleared: I will retain a copy of this document and provide it to my Designated Diving Coordinator.

Medically NOT Cleared: I may submit a letter to request an exception to policy in writing within 30 days of the determination by the Diving Physician to USACE Headquarters at hqmedical@usace.army.mil

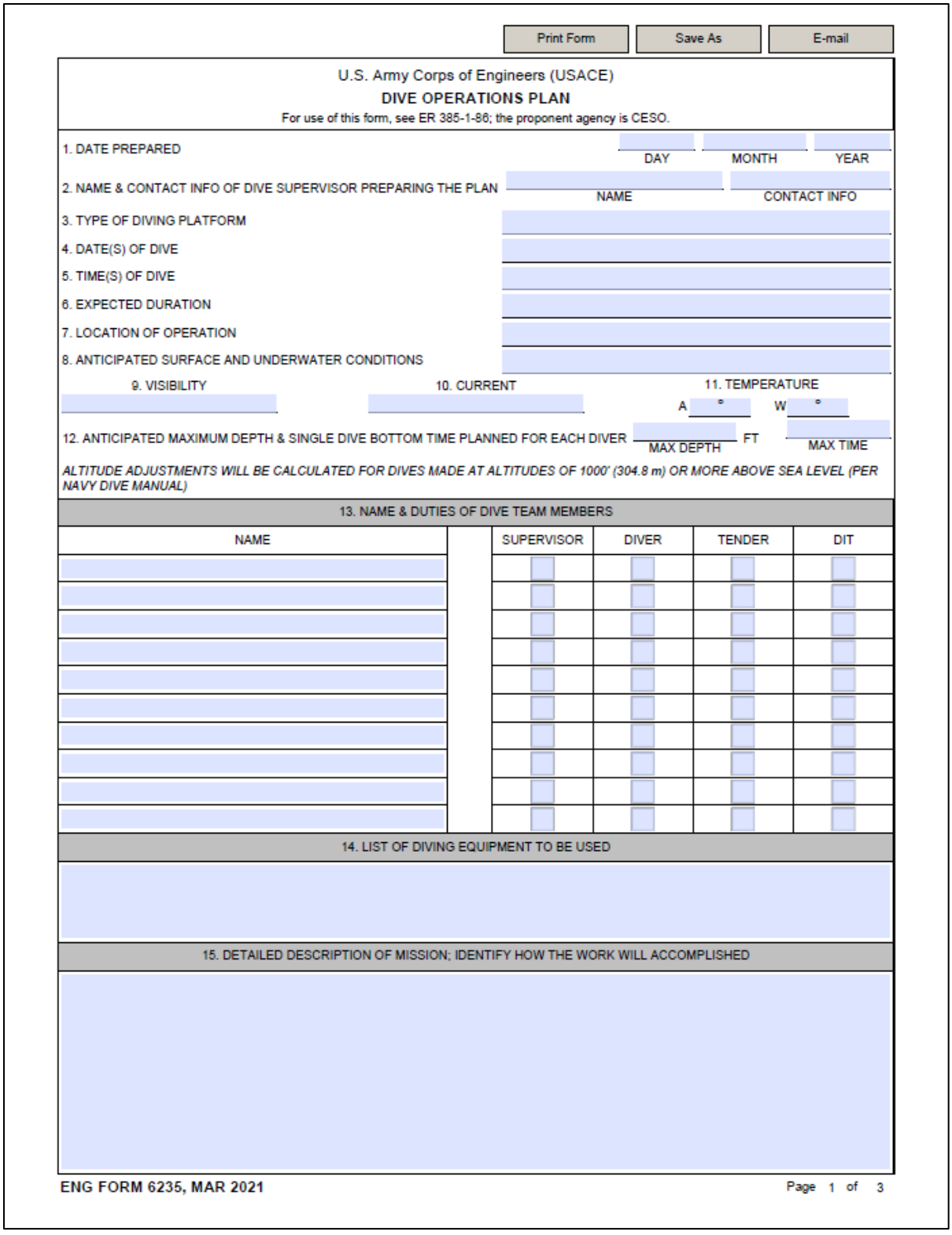
U.S. ARMY CORPS OF ENGINEERS
WORKING DIVER
MEDICAL STANDARDS SUMMARY

Diving Physician: Thank you for the examination and medical recommendation for fitness of the U.S. Army Corps of Engineers employee to successfully work in a working dive environment. This is **NOT A SCUBA DIVER** examination but an examination to assess the fitness of the candidate to dive using a hardhat surface supplied air system and perform rigorous work underwater in cold temperatures. **If you have any reservations about the fitness of the candidate to perform rigorous work underwater, please order the medically appropriate tests and specialist consultations to provide data for your fitness for duty decision.**

Medical Risk to Working Diving Operations:
Certain conditions are considered to potentially disqualify working diving based on the excessive risk to the diver, the team, and/or the mission. Included here are the general medical conditions that affect the ability to dive in a safe manner. The list is not intended to be all-inclusive, and failure to specify a particular condition under this section does not imply the condition is compatible with safe diving. This is a summary, if you wish to have a copy of the full medical standards or have a question email hqmedical@usace.army.mil.

Functional requirements for working diving:
1. Consideration shall be given to the individual's fitness for duty in terms of the function required prior to the diving operations, during the diving operations, and after the diving operations.
2. The individual must be able to perform all functions required by a working diver, to include:
    a. the ability to use all fine motor skills required for small/delicate tool work;
    b. the ability to use all gross motor skills required for large/heavy took work;
    c. the ability to communicate effectively using hand signals/rope signals/verbal commands;
    d. the ability to safely wear all diving garments/gear for hardhat diving operations;
    e. the ability to safely and quickly swim 550 yards uninterrupted within 15 minutes;
    f. the ability to safely work in no-light/low-light conditions and confined spaces;
    g. the ability to have equilibrium sufficient for safe walking, swimming, and working diving;
    h; the ability to withstand hyperbaric environment (not prone to barotrauma of ear, lung, GI);
    i; the ability to withstand the decompression environment (not prone to gas embolism/DCS);
    j; the ability to have full consciousness at all times (not prone to loss of consciousness);
    k; the ability to be in full health (not having diseases that diving could worsen);
    l; the ability to be mentally resilient, highly adaptable to change, and calm under pressure.

General Medical Conditions that warrant disqualification:
1. Any chronic or acute medical condition or medication that treats a medical condition, which affects the physical performance, adaptability to the depth environment, sound judgment, is progressive in its course, is unpredictable, or may be worsened by the individual's dive activities.
2. Any condition, which poses a potential threat to the health and safety of the individual, their dive team, or the mission.
3. Any condition, which could potentially require any medical management or medical treatment that is beyond the capabilities of a person trained in basic first aid.



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U.S. Army Corps of Engineers (USACE)

DIVE OPERATIONS PLAN

For use of this form, see ER 385-1-86; the proponent agency is CESO.

1. DATE PREPARED — DAY / MONTH / YEAR

2. NAME & CONTACT INFO OF DIVE SUPERVISOR PREPARING THE PLAN — NAME / CONTACT INFO

3. TYPE OF DIVING PLATFORM

4. DATE(S) OF DIVE

5. TIME(S) OF DIVE

6. EXPECTED DURATION

7. LOCATION OF OPERATION

8. ANTICIPATED SURFACE AND UNDERWATER CONDITIONS

9. VISIBILITY

10. CURRENT

11. TEMPERATURE — A ° W °

12. ANTICIPATED MAXIMUM DEPTH & SINGLE DIVE BOTTOM TIME PLANNED FOR EACH DIVER — MAX DEPTH FT / MAX TIME

ALTITUDE ADJUSTMENTS WILL BE CALCULATED FOR DIVES MADE AT ALTITUDES OF 1000' (304.8 m) OR MORE ABOVE SEA LEVEL (PER NAVY DIVE MANUAL)

13. NAME & DUTIES OF DIVE TEAM MEMBERS

NAME		SUPERVISOR	DIVER	TENDER	DIT

14. LIST OF DIVING EQUIPMENT TO BE USED

15. DETAILED DESCRIPTION OF MISSION; IDENTIFY HOW THE WORK WILL ACCOMPLISHED

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Figure 2. ENG Form 6235 (USACE Dive Operations Plan)

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16. DIVING MODE USED (SCUBA, SSA, & SNORKELING), INCLUDING A DESCRIPTION OF THE BACKUP AIR SUPPLY, AS REQUIRED

DIVING MODE			BACKUP AIR SUPPLY		
SSA	SCUBA	SNORKELING	CASCADE	SCUBA BOTTLES	BAILOUT BOTTLES
☐	☐	☐	☐	☐	☐

17. NATURE OF THE WORK TO BE PERFORMED BY THE DIVER(S)

18. TOOLS AND MATERIAL TO BE HANDLED OR INSTALLED

19. IDENTIFICATION OF TOPSIDE ASSISTANCE/SUPPORT TO THE DIVE TEAM (E.G., CRANE OPERATOR, LOCK OPERATOR ETC...)

20. MEANS OF DIRECT COMMUNICATIONS BETWEEN THE DIVE SITE AND THE DDC, PROJECT OFFICE, LOCKMASTER OR USACE PROJECT MANAGER

RADIO ☐ CHANNEL

LAND LINE ☐ PHONE NUMBER(S)

MOBILE PHONE ☐ PHONE NUMBER(S)

IF FOR ANY REASON THE DIVE PLAN IS ALTERED IN MISSION, DEPTH, PERSONNEL, OR EQUIPMENT, THE DDC WILL BE CONTACTED IN ORDER TO REVIEW AND ACCEPT THE ALTERATION PRIOR TO ACTUAL OPERATION.

21.APPROVED BY

PRIMARY DS SIGNATURE	ALT DS SIGNATURE
DDC SIGNATURE	ADC/DSR SIGNATURE

ENG FORM 6235, MAR 2021

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USACE DIVE PLAN INSTRUCTIONS

BLOCK	DESCRIPTION
1	Record the date the dive plan was prepared
2	Record the name and contact information for the Dive Supervisor that prepared the plan
3	Record the diving platform that will be used (e.g., lock wall, barge, watercraft or beach etc.…)
4	Record the date that the planned dive will occur
5	Record the time that the planned dive will start
6	Record the anticipated duration of the diving operations
7	Record the location of the dive operation (e.g., facility, geographic location etc.……)
8	Record the surface and underwater conditions expected (concrete, silt, river bottom, mud etc.…)
9	Record the visibility expected in feet
10	Record the anticipated current in knots (MPH x 1.15 = knots)
11	Record the anticipated air and water temperatures in Fahrenheit
12	Record the maximum single bottom time in minutes and the greatest depth in feet (per Navy No Decompression Limit Table)
13	Record the names and check the duties of all Dive Team Members
14	Record all of the dive equipment that will be used during the dive
15	Record a detailed description of the dive mission outlined in the dive plan
16	Check the mode of diving that will be used as well as the back up air supply
17	Record the nature of work to be performed by the diver(s)
18	Record any and all tools or material that will be used or installed during the planned dive
19	Record the names and duties of any support personnel to the diving operations
20	Check the communication box the dive station will use (include number(s) and/or channel(s) at the dive station)
21	Signatures of approval authorities (DS/ADC/DSR & DDC) Added in an ALT DS for those that fill in or replace the PRIMARY DS

*If additional details are needed for any block, provide and reference additional sheets

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U.S. Army Corps of Engineers (USACE)

DIVE LOG

For use of this form, see ER 385-1-86; the proponent agency is CESO.

Log Number

1. Primary Diver	1a. Last Dive in 24 Hrs: Date / Time	2. Fit To Dive: ☐ Yes ☐ No	3. Date and Time of Dive
4. Standby Diver	4a. Last Dive in 24 Hrs: Date / Time	5. Fit To Dive: ☐ Yes ☐ No	6. Location of Dive
7. Dive Tender	8. Weather Conditions: ☐ Clear ☐ Cloudy ☐ Freezing/Ice ☐ Wind ☐ Hot/Humid ☐ Drizzle ☐ Rain ☐ Snow ☐ Sleet ☐ Other	☐ H. W. Suit ☐ Dry Suit ☐ Wet Suit	10. Current / 11. Bottom Type

12. Dive Mode		13. Air Supply			14. Backup			15. Temperature	
SSA ☐	Scuba ☐	Compressor ☐	Cascade ☐	Other ☐	Cascade ☐	Bailout ☐	Other ☐	Air °	Water °

DIVES

	1	2	3	4	5	6
16. BAILOUT BOTTLE PRESSURE						
17. TIME IN/LEAVE SURFACE						
18. LEAVE BOTTOM						
19. TIME OUT/REACH SURFACE						
20. ACTUAL BOTTOM TIME						
21. RESIDUAL NITROGEN TIME						
22. TOTAL BOTTOM TIME						
23. DIVE DEPTH						
24. SEA LEVEL EQUIVALENT						
25. TABLE AND SCHEDULE						
26. REPETITIVE GROUP						
27. SURFACE INTERVAL						
28. NEW REPETITIVE GROUP (Altitude Dive see note on page 2)						
29. AIR IN						
30. AIR OUT						
31. TOTAL AIR USED						

32. WORK ACCOMPLISHED/REMARKS/DECOMPRESSION STOP DEPTH & DURATION/UNDERWATER/SURFACE CONDITIONS

33. SIGNATURES

Diver's Name		Dive Supervisor's Name		Reviewer's Name	
Date	Diver's Signature	Date	Dive Supervisor's Signature	Date	Reviewer's Signature

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Figure 3. ENG Form 4615 (USACE Dive Log)

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INSTRUCTIONS FOR COMPLETING THE USACE DIVE LOG

BLOCK	DESCRIPTION
1	Full name of primary diver
1a	Date and Time of last dive if within the last 24 hours for primary diver
2	Check Y or N if primary diver is fit to dive
3	Date and Time of Dive - Day/Month/Year/ Time (military)
4	Full name of standby diver
4a	Date and Time of last dive if within the last 24 hours for standby diver
5	Check Y or N if standby diver is fit to dive
6	Location of dive (name of facility/project)
7	Full name of dive tender
8	Describe current weather conditions
9	Check the type of suit used
10	Current in knots
11	Bottom type (concrete, silt, lake/river bottom, etc...)
12	Check SSA "Surface Supplied Air" or Scuba "Self Contained Underwater Breathing Apparatus" Check Air
13	Supply compressor, cascade or other
14	Check Backup cascade, bailout or other
15	Record both air and water temperatures in Fahrenheit
16	Record bailout bottle pressure in PSI prior to each dive
17	Record the time the diver descends from the surface
18	Record the time the diver leaves bottom
19	Record the time the diver reaches the surface
20	Record the actual bottom time (block 18 - block 17)
21	Record RNT residual nitrogen time from the Navy *Dive* Tables using block(s) 20 & 24 Record Total
22	Bottom Time (block 20 + block 21)
23	Record deepest depth obtained
24	Record altitude corrected deepest dive, Navy Dive Manual Rev 7, Table 9-4
25	Table and Schedule from dive table Navy Dive Manual Rev 7, 9-7
26	Record repetitive dive group from Navy Dive Tables using block(s) 22 & 24
27	Record the surface interval between dives
28	Record new repetitive group from the Navy Dive Tables using block(s) 26 & 27. When diving at altitude be sure to re-calculate your repetitive group designator. Refer - Navy Dive Manual Rev 7, Tables 9-4, 9-5, 9-6, 9-7 and 9-8 .
29	Record the air in
30	Record the air out
31	Record the total air used during this dive
32	Record actual work accomplished and note any significant items as remarks
33	Electronic or sign and print name of the Diver, Dive Supervisor and Reviewer (DOC, AOC or OSR)

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DIVING CHECK SHEET

ADMINISTRATION

- ☐ DIVE PLAN
- ☐ PRE DIVE MTG
- ☐ AIR TEST DATES
- ☐ CPR CERTIFICATION
- ☐ LOCK OUT/TAG OUT
- ☐ EMERGENCY NUMBERS
- ☐ DIVE FLAG

EQUIPMENT

DIVER	STAND-BY	SAFETY
☐ BAILOUT	☐ BAILOUT	☐ EMERGENCY O_2
☐ FITTINGS	☐ FITTINGS	☐ BACK BOARD
☐ ON/OFF	☐ ON/OFF	☐ FIRST AID KIT
☐ KNIFE	☐ KNIFE	
☐ COMM	☐ COMM	
☐ BC	☐ BC	
☐ CHECK VALVE	☐ CHECK VALVE	
☐ AIR ON	☐ AIR ON	

SITE CONDITIONS

- ☐ DIVE AGAINST HEAD
- ☐ DIVE BELOW 33-FT
- ☐ DIVE IN CURRENT
- ☐ LOCK OUT/TAG OUT
- ☐ USING ELECTRICAL EQUIPMENT
- ☐ USING HYDRAULIC EQUIPMENT
- ☐ WORKING WITH CRANES
- ☐ WEATHER CONDITIONS

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U.S. Army Corps of Engineers (USACE)

DIVER CONTRACTORS CHECKLIST

For use of this form, see ER 385-1-86; the proponent agency is CESO.

Project	
Contractors Number	Date

If for any reason the dive mission is altered, the District Diving Coordinator (DDC) shall be contacted and a revised dive plan will be reviewed and accepted by the DDC prior to continuing the operation. This review may be conducted electronically and confirmed in writing after completion of the dive operation.

A. General Checks

Does the dive supervisor have the following documents that have been accepted by the DDC on the dive site?	YES	NO
a. Safe Practices Manual	☐	☐
b. Dive Operations Plan	☐	☐
c. Activity Hazards Analysis	☐	☐
d. Emergency Management Plan	☐	☐
e. Dive Personnel Qualifications	☐	☐

B. Dive Team Members Checks	YES	NO
1. Are the dive team members of the same personnel specified in the accepted Dive Operation Plan?	☐	☐
2. Does the dive team meet the minimum manning levels as required in the EM 385-1-1	☐	☐
3. Does each dive team member have the following:	☐	☐
a. CPR certification	☐	☐
b. First aid certification	☐	☐
c. Emergency oxygen systems certifications	☐	☐
d. Licensed physician letter certifying diving fitness	☐	☐
e. Driver training certification	☐	☐

C. Equipment Checks

SSA equipment components shall be type specifically designed to be used in diving support systems

1. Does each diver have three sources of air as follows?	YES	NO
a. A primary air supply (i.e. cylinder or compressor)	☐	☐
b. A reserve breathing air supply integral or in-line with the primary air	☐	☐
c. A bailout bottle with no less than 30ft^3 that can be turned on by the diver	☐	☐
d. Does the bailout bottle have a minimum of 90%pressure capacity available	☐	☐
2. Does each tank and bailout bottle meet the following requirements?	YES	NO
a. Seamless steel or aluminum that meet DOT 3AA and DOT 3AL specifications	☐	☐
b. An identification symbols stamped into the shoulder of the tank	☐	☐
c. A hydrostatically test stamp in the shoulder of each tank, which is no older than 5 years	☐	☐
3. Does each diving helmet have the following?	YES	NO
a. Two-way electronic communication system and does the surface unit have a **required external speaker**?	☐	☐
b. A check valve in the primary air line and an exhaust valve?	☐	☐
c. Connections for a bailout bottle, which can be immediately turned on by the diver in event of loss of air	☐	☐

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Figure 4. ENG Form 6226 (Diver Contractor Checklist)

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4. Does each diver umbilical have the following?		YES	NO
a. Connections made of corrosion resistant material, that are not easily disconnected		☐	☐
b. Markings in 10 ft. increments to 100 ft. (beginning at the divers end) and in 50 ft increments thereafter		☐	☐
c. Umbilical's shall have a nominal breaking strength of 1000 lb (453.6 kg) and shall be made of kink resistant materials.		☐	☐
d. When hoses are not in use, are their opens ends closed by trappings or by other means?		☐	☐
5. Does each diver have a wet suit or dry suit with gloves and booties,if in cold water or other environmental hazards exist.		☐	☐
6. Does each diver have a safety harness with the following		YES	NO
a. A positive buckling device with leg straps		☐	☐
b. Attachment point for the safety line		☐	☐
c. A lifting point that keeps the diver's head up		☐	☐
7. Air Compressor Systems		YES	NO
a. Is the compressor's supply intake located away from the exhaust or other contaminants?		☐	☐
b. Does the compressor have a volume tank with a check valve on the inlet side, a pressure gauge, a relief valve, and a drain valve?		☐	☐
c. Does the compressor have approved regulator, in-line Sorbent beds, and filters in the supply line?		☐	☐
d. If it is an oil lubricated compressor, does it have high-temperature, equipment failure, and carbon monoxide continuous monitoring alarm systems?		☐	☐
e. Can the dive supervisor see and/or hear the alarms while in the diving mode?		☐	☐
f. Are all the systems being calibrated daily or before use if not used daily?		☐	☐
g. Are records of the testing being maintained?		☐	☐
h. Are the results of the mandatory six-month air purity test available?		☐	☐
F. Safety and Emergency Checks		YES	NO
1. Is a first-aid kit meeting the requirements of EM 385-1-1 on the dive site?		☐	☐
2. Is an oxygen resuscitation system capable of delivering oxygen for a minimum of 30 minutes on the dive site?		☐	☐
3. Is a stokes litter or backboard, with attached flotation device on the dive site?		☐	☐
4. Are both dive flags, international alpha code and recreational with minimum dimension of 23 inches square, displayed at least 3ft above the water?		☐	☐
G. Pre-Dive Actions Checks		YES	NO
1. Did the dive supervisor conduct a pre-dive conference with all the dive team present?		☐	☐
2. Was a responsible employee of the floating plant or facility present at the pre-dive conference?	N/A ☐	YES ☐	NO ☐
3. Were the following discussed as a minimum?		YES	NO
a. The mission or scope of work.		☐	☐
b. The location		☐	☐
c. Drawing and/or photographs	N/A ☐	YES ☐	NO ☐
d. Equipment and materials that are to be installed as part of the mission.	☐	☐	☐
e. Diving apparatus/equipment and craft to be used		☐	☐
f. Diving procedures		☐	☐
g. Maximum working depth with estimated bottom times		☐	☐
h. Water temperatures		☐	☐

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G. Pre-Dive Actions Checks (*Continue*)		YES	NO
i. Water velocity, currents		☐	☐
j. Visibility		☐	☐
k. Names and duties of personnel on the dive team		☐	☐
4. Were the following operational procedures discussed?	N/A	YES	NO
a. All dives shall be terminated if voice communications are lost		☐	☐
b. That each diver should have a tender		☐	☐
c. Will there be an underwater tender/diver stationed at the underwater point of entry for enclosed or physically confining spaces?	☐	☐	☐
d. Is there a standby diver for each diver?		☐	☐
NOTE: A standby dive will be dressed out and readily available when a diver is in the water (the standby diver may remove his or her head gear after it is tested for proper operations)			
5. Was the Activities Hazards Analysis discussed?		☐	☐
6. Was the Emergency Management Plan discussed?		☐	☐
7. Were the following pre-dive checks performed?	N/A	YES	NO
a. Were lockout/tagout procedures discussed and followed and was the clearance holder identified and was a copy of the clearance/permit signed that identified the hazards.		☐	☐
b. Crane signals or radio communication with the crane operator are reviewed	☐	☐	☐
c. Welding or cutting procedures are reviewed	☐	☐	☐
d. Blasting procedures are clearly reviewed	☐	☐	☐
e. All diving equipment was checked for proper functionn prior to diver entry		☐	☐
8. Do the dive logs on site contain the following information?		YES	NO
a. Full Name		☐	☐
b. Date and location of dive		☐	☐
c. Maximum depth and bottom time		☐	☐
d. Surface interval between dives		☐	☐
e. Breathing medium and type of equipment used		☐	☐
f. Group classification at the beginning and end of each interval		☐	☐
g. Water and ambient air temperature		☐	☐
h. Depth(s) and duration(s) of any decompression stops		☐	☐
i. Date and time of last previous dive		☐	☐
j. Name of Dive Supervisor(s) during dive;		☐	☐
k. General description of work performed		☐	☐
H. Post Dive Action Checks			
1. Did the dive supervisor have a dive team debriefing that covered the following as a minimum?		YES	NO
a. The location of the nearest recompression chamber (if not located on site)		☐	☐
b. A discussion of post dive activities including repetitive dives and flying?		☐	☐
c. Location, directions to and phone number(s) of nearest hospital(s) or available physicians capable of treating dive injuries;		☐	☐
d. Location and phone number of nearest USCG Rescue Coordination Center, where appropriate;		☐	☐
e. Description of an emergency victim transport plan including phone numbers of appropriate emergency transport services;		☐	☐

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1. Did the dive supervisor have a dive team debriefing that covered the following as a minimum? (*Continue*)	YES	NO
f. Procedures and phone numbers or other means of communications to activate emergency services at the facility where the work is being performed;	☐	☐
g. Diver rescue procedures conducted by the dive team, including responsibilities of team members, best location(s) where injured divers may be removed from the water, and best location(s) for performing first aid/ stabilization prior to emergency medical assistance arrival.	☐	☐

***NOTE*: *Divers will wait at least 12 hours before flying after any dive*: this interval should be extended to 24 hours following multiple days of repetitive dives**

2. If decompression sickness and/or pulmonary barotraumas are suspected or symptoms are evident, were the following recorded and maintained?	YES	NO
	☐	☐
3. Were copies of Diving Operations Plan, AHA, Emergency Management Plan, and dive logs submitted to the DDC and placed in the project file?	☐	☐

IF THE ANSWER TO ANY OF THE ABOVE QUESTIONS IS NO, SUSPEND THE DIVE OPERATION AND RESOLVE THE ISSUE BEFORE PROCEEDING

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Dive Inspector	Date
Project	
Dive Contractor	Contractor Number
Pre-dive Meeting Comments	
Dive Team Debriefing Comments	

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U.S. Army Corps of Engineers (USACE)

DIVER SUPERVISOR QUALIFICATION CHECK

For use of this form, see ER 385-1-86; the proponent agency is CESO.

District	
Dive Supervisor	Date Started

All Dive Supervisors that are no longer "Fit to Dive" and/or have elected on their own accord to not dive are authorized to perform the duties of a Dive Supervisor as long as they meet the mandatory minimum requirements identified below. Three (3) supervised dives within the calendar year is the minimum requirement to maintain Dive Supervisor status. This form will be completed in its entirety, signed by the Dive Supervisor, ADC, DDC and the record maintained.

1. Supervised Dive	Identify the specific dive supervised and date(s)
2. Supervised Dive	Identify the specific dive supervised and date(s)
3. Supervised Dive	Identify the specific dive supervised and date(s)
4. Comments	
Date Completed	
Dive Supervisor Signature	
ADC Signature	
DDC Signature	

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Figure 5. ENG Form 6229 (Dive Supervisor Qualification Checklist)

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U.S. Army Corps of Engineers (USACE)

DIVER IN TRAINING & TENDER IN TRAINING CHECKLIST

For use of this form, see ER 385-1-86; the proponent agency is CESO.

District	
Trainee	Date Started

All new divers and tenders approved for the program must review all the following documents, and be able to perform certain key elements of the job before being authorized by the DDC to attend the Diving Courses.

Each element will need to be checked as completed by the trainee and initialed by either the District Dive coordinator (DDC), Alternate Dive Coordinator (ADC), or the Dive Supervisor (DS).

Once all elements have been completed and approved, a Letter of Authorization will be generated, distributed and maintained by the DDC.

Tenders shall have training as a USACE Diver, Dive Supervisor or locally trained as a Dive Tender. Districts/FOA/Labs will provide formalized training for dive tenders who have not completed a Dive Safety Course as a Diver or Dive Supervisor. All tenders who will become Divers in Training shall have received basic SCUBA certification from a nationally accredited diving course. The local training will encompass all pertinent aspects of tending in order to provide safe and efficient support to divers. Tenders receiving on the job training shall be utilized only under the supervision of a trained and qualified dive team member. Tender training duties will be documented and consist of at least the following;

	Complete	Initials
1. Have Basic Scuba Certification		
2. Licensed physician letter certifying diving fitness		
3. CPR, First Aid, O2 and AED certified		
4. Supervisor approval letter sent to DDC		
5. Understands the hazards associated with Diving		
6. Review Districts Safe Practices Manual		
7. Review ER 385-1-86		
8. Review EM 385-1-1 Safety Manual Sec. 30		
9. Review the Navy Diving Manual Rev. 7		
10. Review OSHA 29 CFR 1910 Subpart T		
11. Review and understand Dive Operations Plan		
12. Review Activates Hazards Analysis		
13. Review Emergency Management Plan		
14. Line pull signals		
15. Emergency Response for Diving injuries		
16. Surface Supplies Gear Setup and Maintenance		
17. Radio Communication Procedures		
18. Dive Related Documentation i.e. Dive logs		
19. Repetitive dive time calculations		
20. Underwater tools and safety procedures		
21. Perform 4 supervised in water dives		

Date Completed	Approved By DDC	Approved By ADC	Approved By DS	Trainee Signature

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Figure 6. ENG Form 6228 (Diver in Training & Tender in Training Checklist)