SCOPE & DEFINITIONS

This Chapter contains criteria to plan for, prevent, control, report, and clean up spills of petroleum, oils, and lubricants (POL) and hazardous substances. It is DoD policy to prevent spills of these substances due to DoD activities and to provide for prompt, coordinated response to contain and clean up spills that might occur.

Agenzia Nazionale di Protezione Ambientale (ANPA) – The Italian National Environmental Protection Agency.

Hazardous Substance – Any substance having the potential to do serious harm to human health or the environment if spilled or released in reportable quantity. A list of these substances and the corresponding reportable quantities is contained in Appendix A. The term does not include:

- Petroleum (including crude POL or any fraction thereof) which is not otherwise specifically listed or designated as a hazardous substance above
- Natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas)

Facility Incident Commander (FIC) (previously known as the Installation On-scene Coordinator) – The official who coordinates and directs DoD control and cleanup efforts at the scene of a POL or hazardous substance spill due to DoD activities on or near the installation. This official is designated by the installation commander.

Facility Response Team (FRT) (previously known as the Installation Response Team) – A team performing emergency functions as defined and directed by the FIC.

Oil – POL of any kind or in any form, including (but not limited to) petroleum, fuel POL, sludge, POL refuse, and POL mixed with wastes other than dredged spoil.

POL – Refined petroleum, oils, and lubricants.

Significant Spill – An uncontained release to the land or water in excess of any of the following quantities:

- For a dangerous waste or hazardous substance identified as a result of inclusion in Appendix A, any quantity in excess of the reportable quantity listed in Appendix A.
- For POL or liquid or semi-liquid hazardous material, hazardous substance, or dangerous waste, in excess of 400 liters (110 gallons)
- For other solid hazardous material, in excess of 225 Kg (500 pounds)
- For combinations of POL and liquid, semi-liquid, and solid hazardous materials, hazardous substances, or dangerous waste in excess of 340 Kg (750 pounds)

If a spill is contained (inside an impervious berm, or on a nonporous surface, or inside a building), is not volatilized, and is cleaned up, the spill is considered a contained release and is not considered a significant spill.

Worst Case Discharge - The largest foreseeable discharge from the facility, under adverse weather conditions, as determined using as a guide the worst case discharge planning volume criteria at Appendix C.

CRITERIA

C18.1 SPILL RESPONSE

Installations will initiate response actions in accordance with their installation Spill Prevention and Response Plan.

C18.1.1 Immediate actions will be taken to eliminate the source of and contain the spill.

C18.1.2 Any significant spill will be reported to the FIC immediately.

C18.2 PLAN REQUIREMENT

All DoD installations will prepare and maintain a Spill Prevention and Response Plan, that provides for the prevention, control, and reporting of POL and hazardous substance spills.

The plan will provide measures to prevent and, to the maximum extent practicable, to remove a worst case discharge from the facility.

The plan will be updated at least every 5 years or when there are significant changes to operations or facilities.

The plan should be kept in a location easily accessible to the FIC and FRT.

The plan will consist of:

C18.2.1 Prevention Section. The prevention section of the plan will, at a minimum, contain the following:

C18.2.1.1 Name, title, responsibilities, duties, and 24-hour telephone number of the designated FIC and an alternate.

C18.2.1.2 General information on the installation including name, type or function, location and address, charts of drainage patterns, designated water protection areas, maps showing locations of facilities described in C18.2.1.3, critical water resources, land uses, and possible migration pathways.

C18.2.1.3 An inventory of storage, handling, and transfer sites that could possibly produce a significant spill. For each listing, using maps as appropriate, include a prediction of the direction and rate of flow, and total quantity of POL or hazardous substance that might be spilled as a result of a major failure.

C18.2.1.4 An inventory of all POL and hazardous substances at storage, handling, and transfer facilities described in C18.2.1.3.

C18.2.1.5 Arrangements for Emergency Services. The plan will describe arrangements with installation and/or local police departments, fire departments, hospitals, contractors, and emergency response teams to coordinate emergency services.

C18.2.1.6 Means to Contact Emergency Services. The plan will include a telephone number or other means to contact the appropriate emergency services provider (e.g., installation fire department) on a 24-hour basis.

C18.2.1.7 A detailed description of the facility's prevention, control, and countermeasures (including structures and equipment for diversion and containment of spills) for each site listed in the inventory. Measures should permit, as far as practical, reclamation of spilled substances. Chapters governing hazardous materials, dangerous waste, POL (for example, above-ground storage tanks), underground storage tanks, pesticides, and PCBs provide specific criteria for containment structure requirements.

C18.2.1.8 A list of all emergency equipment (including but not limited to fire extinguishing systems, spill control equipment, communications and alarm systems [internal and external], personal protective equipment [PPE], and decontamination equipment) at each site listed in the inventory where this equipment is required. This list will be kept up-to-date. In addition, the plan will include the location and a physical description of each item on the list, and a brief outline of its capabilities.

C18.2.1.9 An evacuation plan for each site listed in the inventory, where there is a possibility that evacuation would be necessary. This plan will describe signal(s) to be used to begin evacuation, evacuation routes, alternate evacuation routes (in cases where the primary routes could be blocked by releases of dangerous waste or fires), and a designated meeting place.

C18.2.1.10 A description of deficiencies in spill prevention and control measures at each site listed in the inventory, to include corrective measures required, procedures to be followed to correct listed deficiencies, and any interim control measures in place. Corrective actions must be implemented within 24 months of the date of plan preparation or revision.

C18.2.1.11 Written procedures for:

- Operations to preclude spills of POL and hazardous substances
- Inspections
- Record-keeping requirements

C18.2.1.12 Site-specific procedures should be maintained at each site on the facility where significant spills could occur.

C18.2.2 Spill Control Section. The control section of the plan (which may be considered a contingency plan) will identify resources for cleaning up spills at installations and activities, and to provide assistance to other agencies when requested. At a minimum, this section will contain:

C18.2.2.1 Provisions specifying the responsibilities, duties, procedures, and resources to be used to contain and clean up spills.

C18.2.2.2 A description of immediate response actions that should be taken when a spill is first discovered.

C18.2.2.3 The responsibilities, composition, and training requirements of the FRT.

C18.2.2.4 Procedures for FRT alert and response to include provisions for:

- Access to a reliable communications system for timely notification of a POL spill or hazardous substance spill
- Public affairs involvement

C18.2.2.5 A current roster of the persons (and alternates) who must receive notice of a POL or hazardous substance spill, including a DESC representative if applicable. The roster will include name, organization mailing address, and work and home telephone numbers. Without compromising security, the plan will include provisions for the notification of the emergency coordinator after normal working hours.

C18.2.2.6 The plan will provide for the notification of the FIC, installation commander, and local authorities in the event of hazard to human health or environment.

C18.2.2.7 Assignment of responsibilities for making the necessary notifications, including notification to the emergency services providers.

C18.2.2.8 Surveillance procedures for early detection of POL and hazardous substance spills.

C18.2.2.9 A prioritized list of various critical water and natural resources that will be protected in the event of a spill.

C18.2.2.10 Other resources addressed in prearranged agreements that are available to the installation to clean up or reclaim a large spill due to DoD activities, if such a spill exceeds the response capability of the installation.

C18.2.2.11 Cleanup methods, including procedures and techniques used to identify, contain, disperse, reclaim, and remove POL and hazardous substances used in bulk quantity on the installation.

C18.2.2.12 Procedures for the proper reuse and disposal of recovered substances, contaminated POL, decontamination wastes, and absorbent materials, and procedures to be accomplished prior to resumption of operations.

C18.2.2.13 A description of general health, safety, and fire prevention precautions for spill cleanup actions.

C18.2.2.14 A public affairs section that describes the procedures, responsibilities, and methods for releasing information in the event of a spill.

C18.2.3 Reporting Section. The reporting section of the plan will address the following:

C18.2.3.1 Record-keeping when emergency procedures are invoked.

C18.2.3.2 Notification of spill responders when emergency procedures are invoked.

C18.2.3.3 The FIC will immediately notify the appropriate In-Theater Component Commander and/or Defense Agency, the Environmental Executive Agent, and the Italian Base Commander and submit a follow-up written report when:

C18.2.3.3.1 The spill occurs inside a DoD installation and cannot be contained within a berm or secondary containment.

C18.2.3.3.2 The FIC determines the spill meets the definition of “significant”. A “significant spill” (as defined in this Chapter) is an uncontained release to the land or water in excess of any of the following quantities:

- For a dangerous waste or hazardous substance identified as a result of inclusion in Appendix A, any quantity in excess of the reportable quantity listed in Appendix A.
- For POL or liquid or semi-liquid hazardous material, hazardous substance, or dangerous waste, in excess of 400 liters (110 gallons)
- For other solid hazardous material, in excess of 225 kg (500 pounds)

- For combinations of POL and liquid, semi-liquid, and solid hazardous materials, hazardous substances, or dangerous wastes, in excess of 340 kg (750 pounds)

Note: If a spill is contained (inside an impervious berm, or on a nonporous surface, or inside a building), is not volatilized, and is cleaned up, the spill is not considered a significant spill.

C18.2.3.3.3 A water resource has been polluted.

C18.2.3.3.4 The FIC has determined that the spill is significant.

C18.2.3.4 When a significant spill occurs inside a DoD installation, the appropriate In-Theater Component Commander and/or Defense Agency, the Environmental Executive Agent, and Italian Base Commander will be notified immediately.

For spills that cannot be fully addressed during the initial response and that result in soil or groundwater contamination exceeding or likely to exceed the concentrations listed in Table 18.1, written notification to the Italian Base Commander must be made within 24 hours of the spill and must include the following information:

- The type of contaminant and quantity that was spilled
- The sequence of events that caused the spill
- The danger of causing pollution
- The anticipated impacts to soil, water, flora, or fauna
- The estimated size of population that could be at risk from the spill (if it is not possible to estimate this, some information on the urban characteristics must be submitted)

Within 48 hours after the first notification of a spill, written follow-up notification must be provided to the Italian Base Commander regarding the safety measures and emergency actions that were adopted after the spill to prevent further pollution and minimize risks.

The Italian Base Commander may submit the initial notification and follow-up notification to the following Italian authorities: Municipality, Province, and Region.

C18.2.3.5 If a significant spill occurs outside of a DoD installation, the person in charge at the scene will immediately notify the authorities listed in C18.2.3.4, and additionally will notify the local fire departments and obtain necessary assistance.

C18.3 TRAINING

Installations will provide and document necessary training and spill response drills to ensure the effectiveness of personnel and equipment. The training should include the following elements:

- FIC Notification Exercise
- Emergency Procedures Exercise
- Spill Management Team Tabletop Exercise
- Equipment Deployment Exercise

C18.4 FURTHER ACTIONS

After completion of the initial response, any remaining free product and/or obviously contaminated soil will be appropriately removed and managed. Further action will be coordinated and managed via the Component chain of command and the Italian Base Commander in accordance with this chapter, DODI 4715.8, and EUCOM Directive 80-2. If after the initial response contaminant levels exceed or are likely to exceed the levels in Table 18.1, the Installation shall consult with the Environmental Executive Agent via the Component chain of command and, in coordination with the Italian Base Commander, shall seek to engage the cognizant local or regional authority in a continuing dialogue to determine the appropriate cleanup response. The Installation shall develop a site characterization plan (C18.4.1) for submittal to the Italian Base Commander within 30 days after the spill event. Installations will carry out the site characterization after approval of the plan by the cognizant local or regional authority. Installations shall prepare for the development of a Preliminary Project Plan (C18.4.2) and a Final Project Plan (C18.4.3) and shall submit these plans according to a schedule coordinated with the Italian Base Commander and cognizant local or regional authority. The cleanup procedures of this section may only be applied to environmental contamination cause by spills for which spill response measures did not achieve the levels in Table 18.1. Preexisting environmental contamination, which may be commingled with or in the vicinity of contamination caused by the spill, caused by the past practices of the Department of Defense will be addressed in accordance with Department of Defense Instruction 4715.8 and EUCOM Directive 80-2.

C18.4.1 Site Characterization Plan. Generally, the site characterization plan will describe the spill site, including past and present activities; the location and extent of possible contamination; environmental characteristics at and influenced by the spill site; the necessary conditions for the protection of human health and the environment; and a plan to acquire sufficient information on the extent and character of the contamination.

The site characterization plan will be prepared in three sections (presentation of existing data, characterization of site and preliminary conceptual model, and plan of initial investigation) and will contain at least the following information:

- A summary report evaluating the data provided in the plan.
- A description of the contaminated media needing clean up, permanent safety measures, and/or environmental recovery.
- A detailed historical study describing the activities, production processes, and accidents that have occurred in the area and led to pollution of the site.
- Identification of the possible substances present, the areas most likely to be contaminated, and possible migrations routes.
- A description of the current and envisaged usage of the site.
- A description of completed and ongoing emergency actions such as removal of waste or dangerous substances and restriction of access to the site, and a description of the monitoring systems adopted to verify the effectiveness of the emergency actions.
- A detailed description of the site, the area possibly contaminated, and the migration pathways. The detailed description should included site geology and hydro-geology, surface water bodies, relevant environmental components, surrounding areas, and climate.
- A general characterization of the site and the preliminary presentation of the conceptual model, in particular the description of possible contaminant contribution from industrial activities both within and outside the site.
- Results of chemical, physical, or other testing performed.
- A preliminary description of the ultimate area of contamination.
- A description of the proposed geologic, hydro-geologic, or other research to be carried out to verify the site characterization and conceptual model.
- A detailed sampling and analysis plan.
- A description of additional safety measure to be implemented prior to cleanup.
- A discussion of the relationship or interaction of the proposed research with the surrounding environment, industrial activities, and/or processes in progress.
- A discussion describing how the proposed cleanup meets legal requirements.

The site characterization plan will be supported by maps and drawings of the site showing:

- The site and surrounding area (preferred scale of 1:5,000).
- The site showing past and present industrial activities, drains, storage locations, dumps, waste accumulation areas, etc. (preferred scale of 1:1,000).
- The extent of contamination.
- Results of chemical analyses (preferred scale 1:500 to 1:5,000).

- The hydrologic and hydro-geologic characteristics of the site (preferred scale 1:5,000).
- Wells and piezometers on the site (preferred scale 1:500 to 1:1,000) and in the area (preferred scale 1:5,000).
- Results of any geophysical or geological investigations.
- Proposed sampling points annotated to describe analyses (preferred scale 1:500 or 1:1,000).
- Schematic of emergency safety measures implemented or proposed.

C18.4.2 Preliminary Project Plan. This section is intended to provide the reader with an understanding of the scope and complexity of the preliminary project plan and is not a complete list of requirements. Consult the Environmental Executive Agent via the Component chain of command for more complete information. The preliminary project plan:

- Presents and evaluates the site characterization including an analysis of the contamination levels at the site
- Qualitatively defines the objectives of the clean up or the permanent safety measures given the explicit conditions of the site and surrounding area, with explicit reference to legal restraints and projected land use
- Analyzes potential clean up technologies and the corresponding achievable residual contamination levels
- Presents the risk analysis
- Analyzes and selects the best clean up technologies for the site
- If the clean up will not achieve the levels of Table 18.1, describes the safety measures proposed to protect human health.
- Describes tests necessary verify the effectiveness of the proposed clean up actions
- Fully describes the required work based on the technologies selected
- Fully describes the work and necessary conditions to achieve and guarantee permanent safety measures and instruments of control
- Describes the conduct of the environmental impact analysis, where proposed

The work proposed in the preliminary project will be sufficient to allow preliminary calculations of the engineering and other work required to achieve the clean up objectives. If the cognizant local or regional authority approves the presentation of project planning in phases, the preliminary project report will provide the above listed information for each phase for which a final project report will be presented.

C18.4.3 Final Project Plan. This section is intended to provide the reader with an understanding of the scope and complexity of the final project plan and is not a complete list of requirements. Consult the Environmental Executive Agent via the Component chain of command for more complete information. The final project plan will describe in full detail the work to be performed and the associated costs. The final project plan will include maintenance plans for the clean up work, permanent safety measures, security measures, and instruments of control. It also describes the engineering measures necessary to achieve the proposed actions. The final project plan will provide:

- A detailed description of selected technologies, engineering measures, and safety measures
- A project schedule and management plan
- Design of principal structures and plant.
- An engineering cost estimate.
- A description of measures to protect the health and safety of workers and the general population.
- A description of controls and measures to verify attainment of clean up objectives.
- Interventions to be carried out to achieve clean up objectives and site limitations
- Control plans describing procedures to operate, monitor, and maintain clean up actions and safety measures.

ADMINISTRATIVE ITEMS

1. Written notification of the Italian Base Commander must be made within 24 hours for spills that cannot be fully addressed during the emergency response and that result in soil or groundwater contamination exceeding the concentrations listed in Table 18.1. The notification must include the following information:

- The type of contaminant and quantity that was spilled
- The sequence of events that caused the spill
- The danger of causing pollution
- The anticipated impacts to soil, water, flora, or fauna
- The estimated size of population that could be at risk from the spill (if it is not possible to estimate this, some information on the urban characteristics must be submitted)

2. Within 48 hours of the first notification of a spill, written follow-up notification must be provided to the Italian Base Commander regarding the safety measures and emergency actions that were adopted after the spill to prevent further pollution and minimize risks.

The Italian Base Commander may submit the initial notification (Item 1) and follow-up notification (Item 2) to the following Italian authorities: Municipality, Province, and Region.

3. If after the initial response contaminant levels exceed or are likely to exceed the levels in Table 18.1, the Installation shall consult the Environmental Executive Agent via the Component chain of command and seek to engage the Italian Base Commander and the cognizant local or regional authority in a continuing dialogue to determine the appropriate cleanup response. The Installation shall develop a site characterization plan (C18.4.1) for submittal to the Italian Base Commander within 30 days after the spill event. Installations will carry out the site characterization after approval of the plan by the cognizant local or regional authority. Installations shall prepare for the development of a Preliminary Project Plan (C18.4.2) and a Final Project Plan (C18.4.3) and shall submit these plans according to a schedule coordinated with the Italian Base Commander and cognizant local or regional authority.

Table 18.1 Acceptable Contaminant Concentrations for Soil and Groundwater by Site Use

Parameter		Soil		Groundwater
		Recreation, Private, and Residential Use	Commercial and Industrial Use	
Units		(mg/kg)	(mg/kg)	(μ/L)
Metals				
Aluminum		NA	NA	200
Antimony		10	30	5
Arsenic		20	50	10
Beryllium		2	10	4
Cadmium		2	15	5
Chromium (Total)		150	800	50
Chromium VI		2	15	5
Cobalt		20	250	50
Copper		120	600	1,000
Iron		NA	NA	200
Lead		100	1,000	10
Manganese		NA	NA	50
Mercury		1	5	1
Nickel		120	500	20
Selenium		3	15	10
Silver		NA	NA	10
Thallium		1	10	2
Tin		1	350	NA
Vanadium		90	250	NA
Zinc		150	1,500	3,000
Inorganic Compounds				
Boron		NA	NA	1,000
Cyanides (Total)		1	100	50
Fluorides		100	2,000	100
Nitrites		NA	NA	500
Sulfates		NA	NA	250,000
Organic Aromatic Compounds				
A	Benzene	0.1	2	1
B	Ethylbenzene	0.5	50	50
C	Styrene	0.5	50	25
D	Toluene	0.5	50	15
E	para-Xylene	0.5	50	10
	Sum of Aromatic Compounds B-E	1	100	NA
Polycyclic Aromatic Compounds [1]				
F	Benzo(a)anthracene	0.5	10	0.1
G	Benzo(a)pyrene	0.1	10	0.01
H	Benzo(b)fluoranthene	0.5	10	0.1
I	Benzo(k)fluoranthene	0.5	10	0.05
J	Benzo(g,h,i)perylene	0.1	10	0.01
K	Chrysene	5	50	5
L	Dibenzo(a)pyrene	0.1	10	NA

Parameter		Soil		Groundwater
		Recreation, Private, and Residential Use	Commercial and Industrial Use	
Units		(mg/kg)	(mg/kg)	(μ/L)
M	Dibenzo(a,h)anthracene	0.1	10	0.01
N	Indeno(1,2,3-c,d)pyrene	0.1	5	0.1
O	Pyrene	5	50	50
	Sum of Polycyclic Aromatic Compounds F-O	10	100	NA
	Sum of Polycyclic Aromatics Compounds H, I, J, and N	NA	NA	0.1
Carcinogenic Aliphatic Chlorinated Compounds (1)				
Chloromethane		0.1	5	1.5
1,2-Dichloroethane		0.2	5	3
1,1-Dichloroethylene		0.1	1	0.05
Dichloromethane		0.1	5	NA
1,2-Dichloropropane		0.3	5	0.15
Esachlorobutadiene		NA	NA	0.15
1,1,2,2-Tetrachloroethane		0.5	10	0.05
Tetrachloroethylene (PCE)		0.5	20	1.1
1,1,2-Trichloroethane		0.5	15	0.2
Trichloroethylene		1	10	1.5
Trichloromethane		0.1	5	0.15
1,2,3-Trichloropropane		0.1	1	0.001
Vinyl Chloride		0.01	0.1	0.5
Sum of Organohalogenated Compounds		NA	NA	10
Non-Carcinogenic Aliphatic Chlorinated Compounds				
1,1-Dichloroethane		0.5	30	810
1,2-Dichloroethylene		0.3	15	60
1,1,1-Trichloroethane		0.5	50	NA
Carcinogenic Aliphatic Halogenated Compounds				
Bromodichloromethane		0.5	10	0.17
Bromoform		0.5	10	0.3
Dibromochloromethane		0.5	10	0.13
1,2-Dibromoethane		0.01	0.1	0.001
Nitrobenzene Compounds				
Chloronitrobenzenes (each)		0.1	10	0.5
1,2-Dinitrobenzene		0.1	25	15
1,3-Dinitrobenzene		0.1	25	3.7
Nitrobenzene		0.5	30	3.5
Chlorobenzene Compounds				
1,2-Dichlorobenzene		1	50	270
1,4-Dichlorobenzene		0.1	10	0.5
Esachlorobenzene		0.05	5	0.01
Monochlorobenzene		0.5	50	40
Pentachlorobenzene		0.1	50	5
1,2,4,5-Tetrachlorobenzene		1	25	1.8

Parameter	Soil		Groundwater
	Recreation, Private, and Residential Use	Commercial and Industrial Use	
Units	**(mg/kg)**	**(mg/kg)**	**(μ/L)**
1,2,4-Trichlorobenzene	1	50	190
Non-Chlorinated Phenols [(1)]			
Methylphenol (o-,m-,p-)	0.1	25	NA
Phenol	1	60	NA
Phenols and Chlorinated Phenols			
2-Chlorophenol	0.5	25	180
2,4-Dichlorophenol	0.5	50	110
Pentachlorophenol	0.01	5	0.5
2,4,6-Trichlorophenol	0.01	5	5
Aromatic Amines			
Aniline	0.05	5	10
Diphenylamine	0.1	10	910
p-Toluidine	0.1	5	0.35
m-Anisidine	0.1	10	NA
p-Anisidine	0.1	10	NA
Sum of Aromatic Amines (73-77)	0.5	25	NA
Pesticides			
Alachlor	0.01	1	0.1
Aldrin	0.01	0.1	0.03
Atrazine	0.01	1	0.3
Chlordane	0.01	0.1	0.1
DDD, DDT, DDE	0.01	0.1	0.1
Dieldrin	0.01	0.1	0.03
Endrin	0.01	2	0.1
α-Lindane	0.01	0.1	0.1
β-Lindane	0.01	0.5	0.1
γ-Lindane	0.01	0.5	0.1
Sum of Pesticides	NA	NA	0.5
Dioxins and Furans			
PCBs	0.001	5	0.01
Sum of PCDD and PCDF (TEF conversion)	1×10^{-5}	1×10^{-4}	4×10^{-6}
Hydrocarbons			
C<12	10	250	NA
C>12	50	750	NA
Other Compounds			
Asbestos (Fibers A > 10 mm)	1,000*	1,000*	TBD*
Acrylamide	NA	NA	0.1
n-Hexane	NA	NA	350
para-Phthalic Acid	NA	NA	37,000
Phthalic Acid Ester (each)	10	60	NA

Notes:

* Corresponding to the analytical method detection limit.

1 The table includes compounds that are frequently encountered at contaminated sites. For those compounds not specifically included in this table, the maximum concentration limits are derived by comparison with the compound more similar toxicologically.

TBD* To be determined. The only available data indicate a value of 0.7 million fibers/L. This value has been recognized by both the Italian National Environmental Protection Agency (ANPA) and the Italian Superior Institute of Health (ISS) as being too high. The new value will be established by ANPA in coordination with the Regions.