

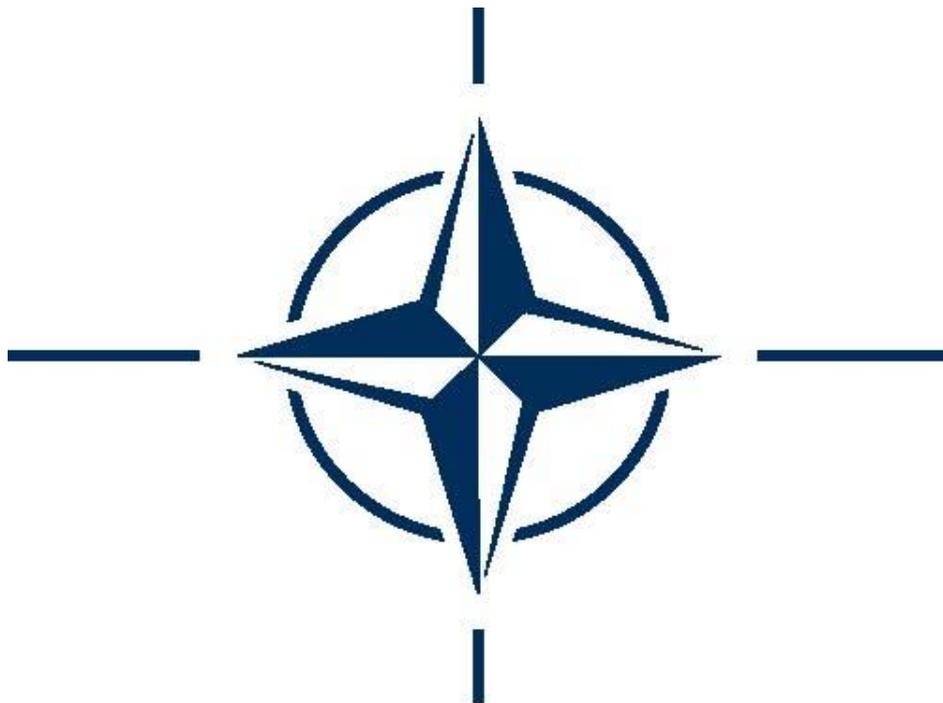
# **STANDARD RELATED DOCUMENT**

## **SRD AJMedP-4-12**

# **ENVIRONMENTAL HEALTH RISK ASSESSMENT AND SURVEILLANCE**

**Edition A Version 1**

**JANUARY 2019**



**NORTH ATLANTIC TREATY ORGANIZATION**

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**NATO STANDARDIZATION OFFICE (NSO)**

**NATO LETTER OF PROMULGATION**

14 January 2019

1. The enclosed Standard Related Document, AJMedP-4-12, Edition A, Version 1, ENVIRONMENTAL HEALTH RISK ASSESSEMNT AND SURVEILLANCE, which has been approved in conjunction with AJMedP-4 by the nations in the Military Committee Medical Standardization Board, is promulgated herewith.
2. AJMedP-4-12, Edition A, Version 1 is effective upon receipt.
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4. This publication shall be handled in accordance with C-M(2002)60.



Zoltan GULYAS  
Brigadier General, HUNAF  
Director, NATO Standardization Office

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## PREFACE

1. Occupational and environmental health (OEH) hazards are prevalent in almost all military circumstances. Short and long-term health risk may result from such hazards, not least exposure risks in urban environments.
2. OEH hazards include natural (e.g. heat, cold, sun exposure, altitude, naturally high levels of particulate matter) and man-made (e.g. noise, waste or sanitary practices), physical hazards, toxic industrial chemicals, biological and radiological substances and a variety of other factors. These hazards may be associated with acute and/or chronic effects.
3. Furthermore, mission compliance in itself, results in potential exposure to jet fuel, petrol, diesel fumes, pesticides, repellents, explosives and munitions and their emissions. Serious concerns with the potential negative effects of such cumulative exposure and stress have recently been raised within the scientific environmental and medical communities.
4. AJMedP4, Allied Joint Medical Force Health Protection Doctrine, states that identification of health hazards is a critical step of the Force Health Protection (FHP) cycle.
5. The topic of health surveillance can be found in two STANAGS:  
  
STANAG 2235 AMedP-4.8 Pre- and Post-Deployment Health surveillance  
STANAG 2535 AMedP-4.1 Deployment Health surveillance
6. This standard related document (SRD) details the recommended standards and procedures for the topic of environmental health risk assessment and surveillance. Occupational hazards are not included and will be addressed in another SRD connected to STANAG 2561 AJMedP4 Force Health Protection Doctrine.
7. The custodian for this SRD is Sweden. Point of contact is the current Swedish representative in the FHP working group.

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## **CHAPTER 1 INTRODUCTION SECTION I – AIM OF DOCUMENT, ABBREVIATIONS AND GENERAL REMARKS**

### **0101 INTRODUCTION AND AIM**

In general, environmental health data will be collected for two types of assessments: An Environmental Health Site Assessment (EHSA) and an Environmental Baseline Study (EBS). An EBS aims to provide a baseline for evaluation of the impacts NATO may have on the environment, and an EHSA is concerned with identifying potential human and animal health effects as a result of environmental exposure. The EBS is not discussed in this document, but the procedures and data collections are similar. For example, water and soil sampling are conducted for both EHSA and EBS, but the focus and interpretation of results will differ. See STANAG 6500/AJEPP-6 for a deeper understanding of the EBS and the differences between the EBS and the EHSA.

The aim of this document is to articulate the policy and procedures for EHSA and environmental health surveillance for NATO led operations and its service members. It is intended as a first general guide for assessments pre deployment and as an aid for evaluation in the field for personnel familiar to, but not experts on the subject. Assessments can be carried out during all phases of deployment but an assessment pre deployment is to be considered a minimum.

The document primarily focuses on the identification, assessment, documentation and surveillance of acute and adverse environmental health hazards and their associated health risks. Chronic (post deployment) long-term effects may also be of concern, but is regarded to be beyond the scope of this document. This subject is hence left to the individual nations as a national responsibility.

### **0102 EHSA**

The purpose of the EHSA is to identify potential exposure pathways at deployment sites that may affect the health of deployed personnel.

The exposure route has toxicological meaning, and refers to the pathway by which a contaminant makes physical contact with the body and is absorbed via ingestion, inhalation or trans-dermal absorption.

Personnel and military working animals can be deployed in environments where air, soil and /or water are contaminated. This may constitute a significant health threat to the member's or military working animal's individual health or compromise the overall success of the mission. A concise, formulated and focused environmental health site assessment will serve to provide direction to the mitigation of existing and/or perceived risks related to environmental hazards.

## 0103 TERMS

The following terms can be found in this document and are defined here to provide a short synopsis for better understanding of the terms.

### **Environmental Health Professional**

Environmental Health Professional refers to trained preventive medicine personnel as defined and designated by the Services as qualified by training and experience to perform the environmental health site assessment.

### **Environmental Health Site Assessment (EHSA)**

An Environmental Health Site Assessment (EHSA) is an iterative, scientifically defensible process used to identify potential exposure pathways that may impact the health of deployed personnel. EHSAs are completed to facilitate evidence based risk management action.

### **Environmental Health Threat**

An Environmental Health Threat is any naturally occurring or manmade substance (chemical, radiological or biological) or physical hazard such as heat or cold that can cause injury, illness, disease, adverse health conditions, or death in deployed personnel or military working animals. It does not include threats related to occupational health exposures or weapons of mass destruction.

Physical hazards such as heat or cold is not addressed in this document. The subject of heat is addressed in SRD AJMedP-04-1 Heat Stress Control and Heat Casualty Management, and cold is addressed in SRD AJMedP-04-2: Prevention and Management of Cold Weather Injuries.

## CHAPTER 2 ENVIRONMENTAL HEALTH SITE ASSESSMENT

### 0201 PRE-DEPLOYMENT - GENERAL

During this phase, relevant information and medical intelligence data are gathered from a variety of sources to evaluate the potential environmental health threats. This includes information on the specific mission as well as information on site:

Infrastructure	Population
Terrain	Climate
Weather	Current and historical use of land
Facilities in the area	Infectious diseases
Environmental contamination	Environmental sampling data
Natural disasters common in the area	Entomological hazards
Local industry and known industrial hazards	

In some circumstances, this first round of data gathering can be all that is needed to evaluate and inform command. There may be a previous reliable assessment for a specific site within an acceptable period of time, or the site could be situated in an area with reliable public health structure.

Examples of information sources:

Interviews	Databases
Maps	Theatre location reports
Background information from other organizations (government, non-governmental organizations etc.)	

### 0202 PRE-DEPLOYMENT – SITE RECONNAISSANCE

The objective of site reconnaissance is to validate the gathered information, and to obtain additional information about potential exposure pathways associated with the deployment site. An exposure pathway is incomplete if any of the following elements are missing:

- a) The presence of a health threat that can be encountered by deployed personnel or military working animals

- b) A transport mechanism leading to exposure pathway completion (inhalation, ingestion or dermal contact) is present, and
- c) A point of potential contact of deployed personnel or military working animals with the environmental health threat.

It is preferred that an environmental health professional is present during reconnaissance so that the site and on-site structures may be visually observed. Prior site assessments may be used for guidance but should not be relied upon without new site reconnaissance, since conditions may have changed. If it is not possible for the environmental health professional to visit the site and conduct interviews, other individuals may perform the reconnaissance under supervision.

### **Interior and exterior observations – infrastructures**

The periphery of the deployment site shall be visually observed, as well as the periphery of all structures on the deployment site. The deployment site should be viewed from all adjacent public thoroughfares. If roads or paths with no apparent outlet are observed on the deployment site, the use of the road or path should be investigated to determine whether it likely that it has been used as an avenue for handling or disposal of hazardous materials. The interior of structure on the deployment site, including all reasonably accessible common areas (such as lobbies, hallways, utility rooms, recreation areas, etc.), maintenance and repair areas, boiler rooms and a representative sample of occupant spaces should be visually observed. It may be necessary to look under floors, above ceilings or behind walls. The report shall generally describe the structures or other improvements on the deployment site, for example : number of buildings number of stories each, approximate age of buildings, ancillary structures if any, etc. the source of potable water, the sewage disposal system and other solid/medical waste disposal for the deployment site shall be identified in the report.

### **Current use of adjoining properties**

To the extent that current uses of adjoining properties are visually and/or physically observed during the site visit, or are identified in the interviews or pre-deployments activities, they shall be identified in the report. Current uses shall be described in the report if they are likely to indicate complete or potentially complete exposure pathways in connection with adjoining properties or the site.

### **Interviews**

Interviews with credible knowledgeable individuals are conducted when appropriate to obtain historical information that may not be available from other sources and to further

refine medical intelligence and information gained by reviewing information sources during pre-deployment activities and/or inappropriate. The environmental health professional should attempt to identify credible knowledgeable individuals before the site visit. For example, the host nation representative may be asked to identify a person with good knowledge of the uses and physical characteristics of the deployment site. Such individuals can be the property manager, health or safety official or maintenance person responsible for the site.

### **Identifying Environmental Health threats**

Environmental health threats (chemical, biological, radiological) should be identified in the ground water, surface water, soils, sediments, biota and air. Environmental health threats related to geographic setting (e.g. altitude, heat, cold, water quality, entomological) should also be evaluated. Consideration should be given to contaminant transport mechanism (e.g. volatilization, leach, food chain bioaccumulation).

(1) Water

Ground water should be considered if it will be used as a potential drinking water source or may be contacted as a part of another potential exposure pathway. If personnel will have contact with the water, surface water should be investigated in the following situations:

A body of water (river, lake, continuous stream, drainage ditch etc.) when in direct contact with, or potentially contaminated by an environmental health threat or an upstream contaminated area.

Contaminated ground water or surface water runoff is known or suspected to discharge to a surface water body, and

Under conditions in which seasonal or storm related flow may convey environmental health threats to downstream points of exposure.

If the body of water will be used as a drinking water source, the water should be analyzed for microbiological, physical and chemical parameters in accordance to AMedP-4.9 Requirements for water potability during field operations and in emergency situations.

(2) Soil

Soil should be evaluated if environmental health threats from dermal absorption or radioactively contaminated soil may come into direct contact with deployed personnel.

(3) Air

Air should be evaluated for environmental health threats in the surface soil, subsurface soil, surface water or other media capable of releasing gases, particulate matter or other agents to the air. Consideration of environmental health threats from adjacent sites (e.g., refineries, smelters or mining operations) that emit dust, fumes, gases or particulates, which may present threats from dermal contact, hand to mouth transfer, inadvertent ingestion and/or inhalation, should be evaluated on a case-by-case basis.

## (4) Vector hazards

The primary concern is vector-borne disease, or those disease which are carried by arthropods (insect, ticks and mites). Also of concern are zoonotic disease carried by vertebrate pests, such as leptospirosis and Hantavirus. Entomological hazards also include those hazards associated with biting and stinging arthropods (fire ants, spiders and scorpions), animals (rodents, birds, bats and snakes), poisonous plants (poison ivy, oak, sumac) and pesticide exposure (depending on application method and amount). These “non-disease” hazards can be important in any geographical area and should not be ignored.

## (5) Building materials

Bulk samples of building materials may be required to determine if potentially harmful construction materials (e.g., lead, PCB or asbestos) are present within the infrastructure occupied by deployed personnel.

## 0203 PRE-DEPLOYMENT – SAMPLE COLLECTION

Environmental sampling for environmental health risk assessment is conducted for one of two purposes.<sup>1</sup>

The first is to confirm the presence of a potential exposure pathway by sampling locations where the activities of deployed personnel or military working animals may bring them in contact with specific environmental health threats completing the exposure pathway.

The second is associated with a monitoring program to document that conditions have not significantly changed over time. For this purpose, a plan for repeated surveillance sampling should be produced.

An example would be the monitoring of a water supply or ambient air monitoring. Sampling for environmental health threats at areas of concern may be accomplished by employing a variety of direct reading and/or field portable analytical instruments, collecting samples that are returned to a laboratory for analysis, or any combination of these approaches. The number and types of samples collected and the type of analysis performed on the samples will vary and are not specifically detailed in this document.

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<sup>1</sup> Environmental sampling for the protection of the environment – Environmental Baseline Studies (EBS) should also be conducted. The sampling is described in STANAG 6500/AJEPP-6, NATO Camp Environmental file during NATO-led operations, Annex G: Environmental Baseline Study and Environmental Health Site Assessments

The requirement to sample can be eliminated if the exposure pathway(s) are prevented. For example relocation of proposed facilities or denying use of restricted areas may eliminate the need to sample because physical or administrative steps have removed the exposure pathway.

**Data quality**

The reliability of the results is related to the data quality level of the utilized method. Selection of field or laboratory analytical methods should be based on the environmental health threat, the intended use of data and the capability of the method.

For example – lower quality methods (often called field-screening methods) may be used for source identification, while higher data quality methods should be used to delineate environmental health threats at lower detection limits. Both quantitative and qualitative field analytical methods can be used to acquire data necessary to evaluate a site or to develop future action plans. All analytical methods and instruments have limitations that may affect results. These limitations include the effect of temperature or humidity, cross-sensitivity issues and masking of certain constituents. In addition, the operational expertise of the person performing the analysis may also affect the results. These limitations should be considered when selecting analytical methods or instruments.

**Method protocol and Quality Assurance/Quality control (QA/QC)**

Before performing the analysis, procedures should be developed and documented in a plan that specifies the following:

instrument calibration procedures	generation of calibration curves
preparation and analysis of field standards	analysis of matrix spikes
matrix spike duplicates	blanks and control samples
frequency for instrument calibration	quality control sample analysis
criteria for acceptable instrument calibration	quality control samples
instructions on sample collection, transport and preparation	

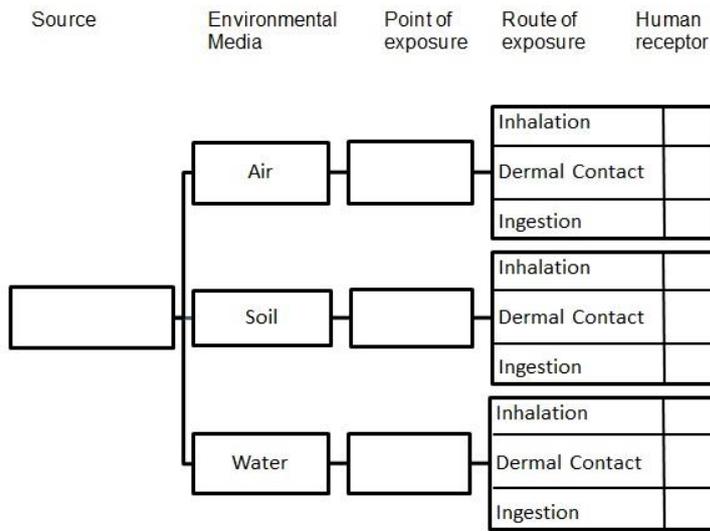
Field generated data will typically have less rigorous requirements than listed above. As part of the quality review, field generated data should also be evaluated.

## **0204 PRE-DEPLOYMENT AND DURING MISSION – CONCEPTUAL MODEL AND REPORTING**

The outcome from the process of identifying potential environmental health threats, source areas, environmental media, points of exposures, potential exposure routes are to be presented in a Conceptual Site Model (CSM). The development is an iterative process. The performance of the EHSA refines and validates the CSM. Change in the mission or conditions at the deployment site may also require re-evaluation and adjustments to the CSM. Development of this model is critical for determining potential exposure routes and for suggesting the possible impact on the health of deployed personnel. Early iterations are usually based on limited or incomplete information and shall identify and emphasize the uncertainties that require further evaluation.

The environmental health professional shall periodically interpret analytical data collected during the field investigation. Compilation of the data into simple graphics is essential for on-site data interpretation. This can be done by updating the maps or diagrams to develop the initial CMS. Using the field-generated graphics, the environmental health professional directs the investigation to fill in data gaps or resolve differences between anticipated and actual results, or both. As new data are collected and the assessment proceeds, variances between the initial CSM and the data obtained can be used to adjust the sampling and analysis program in an iterative, scientific manner. This should occur until there is sufficient information about the environmental health threats in air, soil and ground or surface water to resolve the concerns regarding potential exposure pathways.

During initial or short-term deployments, there may be very little actual site information upon which to base a sampling collection activity. Sampling in this situation might be used to provide basic information to construct or possibly validate a CSM draft. In figure 1, a blank suggested EHSA CSM template is illustrated.



**Figure 1: Blank EHSA CMS template. Each potential source of contamination should be considered; verified through site observations and sampling. The template is a suggestion – there are other ways of reaching the same objective.**

The initial CSM will go through several iterations if significant environmental health threats are discovered or as the size or duration of the deployment increases. In situations more typical of a periodic/on-going deployment, there may be significant information on the environmental health threats and prior use of the site. The sampling in these cases is simply to refine the CSM; evaluate potential exposure pathways, vectors or transport mechanisms and to develop an appropriate risk management plan.

Upon completion of the EHSA, the environmental health professional shall evaluate all information obtained in a report and distribute the information through the chain of command. Four key elements shall be considered in the evaluation process: findings, conclusion, discussion and recommendations. These four key elements shall be supported by documentation. If certain documentation is excluded in the report, the rationale behind the decision must be explained. Supporting documentation shall be included in order to facilitate a fundamental understanding of the assessment. Sources that revealed nil findings shall be included.

## CHAPTER 3 ENVIRONMENTAL HEALTH SITE SURVEILLANCE

### 0301 PRE-DEPLOYMENT

It is a national responsibility to maintain and update the EHSA, and to keep the chain of command informed. With the EHSA as a guide, the environmental health professional shall develop

- operation-specific pre-deployment and deployment countermeasures
- surveillance requirements, plan monitoring and procedures for record keeping
- pre-deployment training designed to clearly articulate health risks
- anticipate medical follow-up post-deployment

### 0302 DURING DEPLOYMENT

Locations and activities posing health threats from environmental exposure must be identified, assessed and monitored. (See 0201 Pre-deployment General)

An environmental health professional will assess the need to collect environmental samples and evaluate environmental exposures at deployment locations (base camps, outposts etc.) based on available data and the EHSA. Unless adequate data is available, field sampling must be conducted. Laboratory and/or analytical techniques must be conducted as soon as possible to ensure these risk assessments.

For rapid health risk assessment purposes, concerning potential high risk situations, an assessment will be conducted as soon as possible using readily available site field sampling techniques followed by confirmatory sampling and laboratory analysis.

Potential moderate risk situations may be assessed by collection of samples for off – site analysis or the use of more sophisticated instrumentation, with rear area laboratory support. Low risk situations may be addressed off-site, using mathematical models to assign risks, with sampling and rear area laboratory support as operational resources allow.

The environmental health hazards posing the greatest potential risk to deployed forces include, but not limited to (not in order of importance)

- Health hazards due to deteriorated or damaged infrastructure such as water and wastewater treatment, electrical power generation, transportation and disturbed industrial sites
- Accidental or deliberate release of bulk stored hazardous chemicals at industrial sites or transport of hazardous/dangerous goods.
- Contaminated surface and groundwater resources from raw sewage discharges, agricultural runoff and industrial effluents.
- Significant localized air pollution from coal-fired power plants and factories operating with inefficient or no pollution control technologies.
- Soil contamination with residues of heavy metals, pesticides and/or other toxic industrial materials.
- Improper waste disposal practices for solid, hazardous and medical wastes.
- Poor indoor air quality caused by inadequate ventilation, residual contamination from prior facility usage, deteriorated or damaged infrastructure.
- Presence of disease transmitting vector.
- Heat, cold and altitude stress.
- Noise

### **0303 SURVEILLANCE DURING DEPLOYMENT**

The threats identified in the EHSA must be monitored during deployment to catch and assess changed conditions.

#### **Air**

Possible airborne contaminants should be fully characterized prior to establishment. The aim is to catch changing conditions in weather, season or increased industrial activities. Special consideration should be noted when industries are located near the base camp and effort should be made to determine industry type and characterize materials used. Identification of potential local or regional sources of air pollution and potential hazardous material/waste storage or manufacturing operations that could be deliberately targeted to release hazardous constituents should be performed.

As minimum, specific methods to quantify airborne concentrations of organic compounds, pesticides, metals, radiation particulate matter and gaseous pollutants should be determined.

Sampling other airborne contaminants presenting a health risk will be added as necessary. These potential contaminants include military smokes and obscurants, riot control agents and other compounds.

### **Water sampling**

All potable and non-potable water sources should be identified and be assessed prior to use as either potable or non-consumptive sources. Throughout the operation, the sources must be reassessed to assure that the initial hazard profile has not changed. A drinking water surveillance program shall be established. The program needs to contain physical, chemical and microbiological parameters. Water vulnerability assessments should be performed to identify the requirements in maintaining a potable water source and essential non-potable water availability (sanitary, firefighting). Furthermore, the vulnerability of the entire water system (source, transport, storage, transmission) must be assessed and controlled. Contaminated surface water that potentially could contaminate drinking water sources should also be assessed.

### **Soil Sampling**

General soil sampling has a place prior to camp establishment as a basis for the initial assessment. During deployment, samples should be collected in areas where there are visible signs of contamination or areas where contamination is suspected (e.g. dead or dying vegetation, landfill and waste storage areas) and prior to closure of the site and troop withdrawal to document final conditions. Past and present waste handling practices should be evaluated for their soil contamination potential, concentrating on current and future inhabited or farmed areas. Past and/or present pesticide or herbicide application and radiation exposure through the soil should also be evaluated.

### **Radiological monitoring/sampling**

Battle damage of the site should be identified. The site should be surveyed for radiation contamination. Results from the sampling should be reported to the medical personnel in the theatre of operations. Acceptable exposure levels should have been set for the theater of operations.<sup>2</sup> All ionizing and non-ionizing radiation sources with potential to negatively impact human health must be assessed.

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<sup>2</sup> NATO ACE Directive 80-63 Policy for Defensive Measures against Low Level Radiological Hazards during Military Operations.

### **Noise measurements**

Noise generating operations should be identified. An environmental noise assessment should be performed if industrial or other noise producing hazards exists that could adversely affect personnel. Noise measurements should be performed when there are indications that noise levels will potentially cause hearing loss.

### **Bulk sample of hazardous materials**

Personnel or military working animals may come across hazardous materials remaining from industrial or other operations, and material that cannot be identified. These materials should be avoided if possible, unless dictated by operational necessity. If the area must be used by personnel, the site should be surveyed by trained personnel equipped with appropriate personal protective equipment and samples collected and analyzed by a facility capable of characterizing unknown materials.

### **Biological hazards**

Medically important biological and entomological hazards within the camp must be identified (vectors, venomous animals, poisonous plants). Also, if the property has been subject to pesticide applications in the past, there could be pesticide residues present which could pose additional risks and need to be addressed. Likewise all pesticide applications need to be documented.

## **0304 POST-DEPLOYMENT – DATA MANAGEMENT**

The documented reports, investigations and assessments are prepared and distributed in accordance with national regulations. Any medically relevant, actual or presumptive environmental exposure will be documented in individual medical records and/or data repository in accordance with national policies. Appropriate medical follow-up to address health concerns will be a national responsibility.

## ANNEX A REFERENCES

### Allied Joint Publications

AJP 3.14 Allied Joint Doctrine for Force Protection  
AJP-4.10(B) Allied Joint Medical Support Doctrine  
STANAG 3680 NATO Glossary of Terms and Definitions (AAAP-6)

### Allied Joint Environmental Protection Publications

STNAG 2510/AJEPP-5 Joint NATO Waste Management Requirements during  
NATO-led Military Activities  
STANAG 6500/AJEPP-6, NATO Camp Environmental file during NATO-led  
operations, Annex G: Environmental Baseline Study and Environmental Health Site  
Assessments

### Allied Joint Medical Publications

AJMedP-4 Force Health Protection Doctrine  
AJMedP-3 Allied Joint doctrine for Medical Intelligence

### Allied Medical Publications

AMedP-3.2 Medical Information, collecting and reporting  
AMedP-4.1 Deployment Health Surveillance  
AMedP-4.2 Deployment Pest and Vector Surveillance and Control  
AMedP-4.8 Pre- and Post-Deployment Health Surveillance  
AMedP-4.9 Requirements for Water Potability during Field Operations and in  
Emergency Situations  
AMedP-13 MNATO Glossary of Medical Terms and Definitions

### SRDs

SRD AJMedP-04-1: "Heat Stress Control and Heat Casualty Management" –  
Custodian: USA  
SRD AJMedP-04-2: "Prevention and Management of Cold Weather Injuries" –  
Custodian: USA  
SRD AJMedP-04-3: "Prevention and Management of High Altitude Injuries" –  
Custodian: USA  
SRD AJMedP-04-4: "Essential Field Sanitary Requirements" – Custodian: USA

SRD AJMedP-04-8: “Protection of Hearing” – Custodian: NLD.

SRD AJMedP-04-9: “Preventive Measures for an Occupational Health Program” – Custodian: POL.

SRD AJMedP-3-1: Guide to Medical Intelligence Handbook, Custodian: MedIntel panel

**Other publications**

ASTM Designation E 2318-03 – Standard Guide for Environmental Health Site Assessment for Military Deployments. July 2003

United States Army Public Health Command. 2013. Technical Guide 230 – Environmental Health Risk Assessment and Chemical Exposure Guidelines for Deployed Military Personnel

Final report of NATO SPSC Project on Environmental Impacts on Soldiers (NFA.W.984053), 2013

(US Army) Field Manual (FM) 5-19, Composite Risk Management, 21 August 2006

Swedish Armed Forces, Environmental Guidebook for Military Operations (M7739-350027), 2010

**ANNEX B: ENVIRONMENTAL HEALTH SITE ASSESSMENT STANDARD  
FORMAT/SHELL**

The following is both an example format with explanation as well as a shell for documenting an Environmental Health Site Assessment (EHSA)

ENVIRONMENTAL HEALTH SITE ASSESSMENT  
CAMP WHATEVER, WHEREVER, COUNTRY  
DATE OF ASSESSMENT

UNIT

IN SUPPORT OF THE DEPLOYED FORCES OF

OPERATION  
COUNTRY

SURVEY CONDUCTED BY

UNIT  
ADDRESSES

ENVIRONMENTAL HEALTH SITE ASSESSMENT  
CAMP WHATEVER, WHEREVER, COUNTRY  
DATE OF ASSESSMENT

**1. Executive Summary**

- Stand-alone document/Prepared in Issue/Point Paper format
- Includes prioritized list of health/mission issues from site assessment
- Contains a preferred and secondary remedial alternative for each issue.

**EXECUTIVE SUMMARY  
ENVIRONMENTAL HEALTH SITE ASSESSMENT  
CAMP WHATEVER, WHEREVER, COUNTRY  
INCLUSIVE DATES OF ASSESSMENT**

1. The (UNIT/TEAM/ASSESSOR) completed and Environmental Health Site Assessment of Camp WHATEVER; WHEREVER; COUNTRY from INCLUSIVE DATES. The survey team consisted of TEAM COMPOSITION. A prioritized list of findings follows.
2. Conclusion
3. Finding 1
  - a. Finding. Most significant health/mission issue.
  - b. Recommendations. Preferred remedial alternative. Alternate remedial alternative.
4. Finding 2
  - a. Finding. Most significant health/mission issue.
  - b. Recommendations. Preferred remedial alternative. Alternate remedial alternative.
5. Finding 3
  - a. Finding. Most significant health/mission issue.
  - b. Recommendations. Preferred remedial alternative. Alternate remedial alternative.

## II. EHSA Report Main Body

EXECUTIVE SUMMARY  
ENVIRONMENTAL HEALTH SITE ASSESSMENT  
CAMP WHATEVER, WHEREVER, COUNTRY  
INCLUSIVE DATES OF ASSESSMENT

### 1. Introduction.

- a. Purpose. State the purpose of the EHSA, requirement, tasking etc.
- b. Methodology. State the methodology used (i.e. applied protocol XX etc.)
- c. Limitations of assessment. List anything that limited the assessment such as time on site, weather conditions, pending laboratory results etc.

### 2. Site Description

- a. Location. Geographic location including MGRS or latitude/longitude of the outside corners of camp.
- b. Site and Vicinity characteristics including the physical setting. Is the camp sited in an urban area, farm fields, swamp, etc.
- c. Description of structures, roads, drinking water source, waste disposal, other improvements.
- d. Current and past uses of property.
- e. Current and past uses of adjoining properties.

### 3. Information sources

- a. Pre-deployment information sources were consulted.
- b. Sources were consulted during site reconnaissance (who did you interview, what records were reviewed, etc.)

### 4. Information from Site Reconnaissance

- a. Hazardous/unidentified substances present (storage, handling, disposal)
- b. Potential radioactive sources present.
- c. Storage tanks (contents, storage volumes, past releases, potential for release).
- d. Evidence of other hazardous material use/release.
- e. Indications of solid waste disposal.
- f. Migration of hazardous materials release on or off site.
- g. Presence of friable asbestos.
- h. Industrial operations in surrounding environs with potential site impacts.
- i. Site map and photographs.
- j. Presence of animals.

- k. Agricultural fields in the surrounding area.
- l. Other environmental pollutants.

5. Environmental sampling data (if done)

- a. Sampling and analysis plan. Justify what type of samples collected, number of samples collected and location of samples.
- b. Sample results tables.

6. Conceptual site models

7. Conclusion

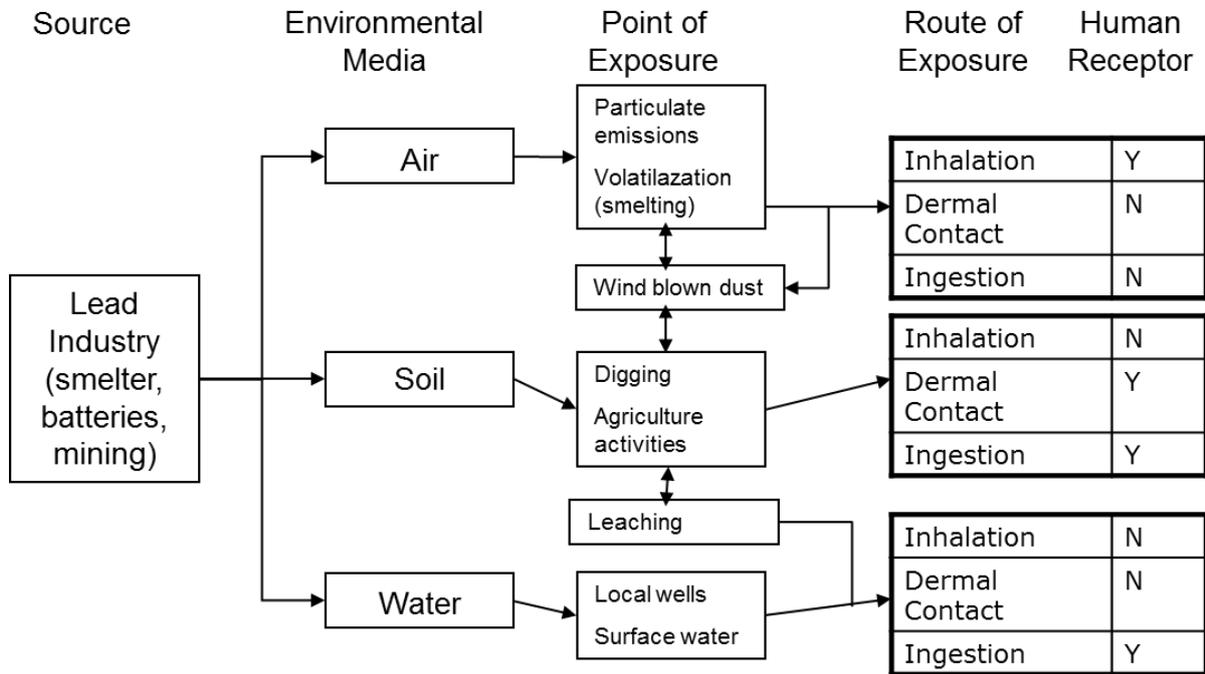
8. Findings and recommendations

- a. Finding 1
  - (1) Finding
  - (2) Recommendation

9. Point of contact/Technical assistance

10. REFERENCES for the report.

Example EHSA CSM for a point source (industry) in an area of operation.<sup>1</sup>



<sup>1</sup> Bosetti T. (2009) Demystifying the Environmental Health Site Assessment. The United States Army Medical Journal – Force Health Protection journal April-June 2007.