DIN ISO 18400-203:2020-11 (E)

Soil quality - Sampling - Part 203: Investigation of potentially contaminated sites (ISO 18400-203:2018)

Contents

Page

National foreword ... **4**

National Annex NA (informative) **Bibliography** ... **5**

Foreword ... **6**

Introduction ... **7**

1 Scope ... **9**

2 Normative references ... **9**

3 Terms and definitions ... **9**

4 Objectives ... **10**
4.1 General ... 10
4.2 Definitions of objectives ... 10

5 General strategy of site investigation ... **11**
5.1 General ... 11
5.2 Scope of preliminary investigation ... 14
5.3 Scope of exploratory investigation ... 14
5.4 Scope of detailed site investigation ... 15

6 Preliminary investigation ... **15**
6.1 General ... 15
6.2 Development of the conceptual site model ... 16
6.2.1 Overall conceptual site model ... 16
6.2.2 Formulation of contamination-related hypotheses ... 16
6.3 Reporting the preliminary investigation and the conceptual site model ... 16

7 Design of intrusive investigations ... **16**
7.1 Overview ... 16
7.2 General aspects of field work ... 17
7.3 Overall design aspects ... 17
7.3.1 General ... 17
7.3.2 Design of site works ... 18
7.4 Sampling patterns and spacing for sampling soils ... 19
7.4.1 General ... 19
7.4.2 Judgemental sampling ... 20
7.4.3 Systematic sampling ... 20
7.4.4 Detection of hotspots ... 21
7.4.5 Depth of sampling and the strata to be sampled ... 21
7.4.6 Sample sizes ... 21
7.4.7 Sample types ... 21
7.4.8 Number of samples ... 21
7.5 Analytical and testing strategies ... 21
7.5.1 General ... 21
7.5.2 Analysis of soil samples ... 22
7.6 Quality assurance and quality control ... 23

8 Exploratory investigation **23**
8.1 General 23
8.1.1 Basis of the exploratory investigation 23
8.1.2 Steps to be incorporated 23
8.1.3 Aspects to be considered when drawing up a strategy 23
8.2 Sampling strategy 24
8.2.1 General 24
8.2.2 Sampling locations 24
8.2.3 Depth of sampling 25
8.2.4 Selection of soil samples for analysis 25
8.2.5 Selecting parameters for testing and analysis 25
8.3 Evaluation of the exploratory investigation 26
8.3.1 Testing the hypotheses formulated during the preliminary investigation 26
8.3.2 Risk assessment 26
8.3.3 Considering hypotheses by zone 26
8.3.4 Obtaining information on soil quality 26
8.3.5 Checking if investigation strategy is adequate 27
8.3.6 Re-examining the hypotheses 27
8.3.7 Examples indicating if the hypothesis should be revised or rejected 27
8.3.8 Possible actions if a hypothesis is not valid 28
8.4 Reporting the exploratory investigation 28
8.5 Determination of the need for a detailed site investigation 29

9 Detailed site investigation **29**
9.1 General 29
9.2 Objectives and scope 30
9.2.1 Objectives 30
9.2.2 Major aspects to be considered in setting the scope and determining the objectives 30
9.3 Investigation design 30
9.4 Sampling strategy 31
9.4.1 General 31
9.4.2 Sampling locations 31
9.4.3 Depth of sampling 31
9.4.4 Selecting parameters for testing and analysis 31
9.5 Evaluation of the detailed site investigation 32
9.6 Reporting 33

Annex A (informative) **Contamination hypotheses** **35**

Annex B (informative) **Methods of non-intrusive investigation** **38**

Bibliography **40**