ISO/TR 24419-2:2023-10 (E)

Mine closure and reclamation - Managing mining legacies - Part 2: Case studies and bibliography

Contents

Page

Foreword ..... **vi**

Introduction ..... **vii**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Design engagement process for the Giant Mine remediation project, Yellowknife Northwest Territories, Canada **1**
4.1 Aspect of managing mining legacies 1
4.2 Recognition of a problem that needed to be resolved 1
4.3 Steps involved and expertise/stakeholders involved 2
4.4 Evaluation of performance of this initiative 2
4.5 Key learnings for others 2

5 Mining legacy program performance evaluation and reporting — British Columbia (BC) Canada **2**
5.1 General 2
5.2 Recognition of a problem that needed to be resolved 3
5.3 Steps involved and expertise/stakeholders involved 3
5.4 Evaluation of performance of this initiative 3
5.5 Key learnings for others 3

6 Remediation of the abandoned mines in the South Alligator uranium field, Northern Territory, Australia **3**
6.1 Aspect of managing mining legacies 3
6.2 Background 4
6.3 Recognition of a problem that needed to be resolved 4
6.4 Steps involved and expertise/stakeholders involved 4
6.5 Evaluation of performance of this initiative 4
6.6 Key learnings for others 4

7 Valuing traditional knowledge within the Rum Jungle rehabilitation project, Northern Territory, Australia **5**
7.1 Aspect of managing mining legacies 5
7.2 Recognition of a problem that needed to be resolved 5
7.3 Steps involved and expertise/stakeholders involved 5
7.4 Evaluation of performance of this initiative 5
7.5 Key learnings for others 6

8 Difficulties encountered during the closure of mines prompted improvements to legal instruments, Mali **6**
8.1 Context of case study 6
8.2 The Kalana Mine 6
8.3 The Syama Mine 7
8.4 The Morila Mine 7
8.5 Key learnings from these examples for others 7

9 Government strategy for rehabilitation of abandoned asbestos mines in South Africa **7**
9.1 Context of case study 7
9.2 National strategy for derelict and ownerless mines 8

9.3 Progress and challenges implementing national strategy ... 8
9.3.1 Legislative challenges ... 8
9.3.2 Process challenges ... 8
9.3.3 Technical challenges ... 8

10 Managing biodiversity offsets and mining legacy rehabilitation and care, South Africa ... 9
10.1 Recognition of a problem that needed to be resolved ... 9
10.1.1 Opportunity for biodiversity offsets ... 9
10.2 Existing tools and concepts for biodiversity offsets for mining legacies ... 9
10.3 Application of tools and concepts as funding mechanisms ... 10
10.4 Application challenges ... 10
10.5 Industry and society benefits ... 11

11 Potential limitations of mechanisms used to fund mining legacy programs, Western Australia, Australia ... 11
11.1 Aspect of managing mining legacies ... 11
11.2 Background ... 11
11.3 Unanticipated low interest rates ... 11
11.4 Key learnings for others ... 11

12 Long term financing of the perpetual obligations resulting from hard coal mining in Germany ... 12
12.1 Historic context ... 12
12.2 Origin of RAG-Stiftung (RAG Foundation) ... 12
12.3 The tasks of RAG-Foundation ... 12
12.4 Financing perpetual mine management obligations ... 12
12.5 Building up the foundation's assets ... 13
12.6 Supporting education, science and culture ... 13
12.7 The foundation's model for the future ... 13
12.8 Extract of statutes of relevance to RAG ... 13

13 Organising post-mining in France ... 13
13.1 Background ... 13
13.2 Introduction to post-mining legal arrangements ... 14
13.3 The French Mining Code ... 14
13.4 Progression toward mine closure and lease relinquishment ... 15
13.5 Mining risk prevention plans ... 15
13.6 Post mining management by the state ... 15
13.7 Conclusion ... 16

14 National review of abandoned mine land (AML) programs, United States of America ... 16
14.1 General ... 16
14.2 Review of hardrock AML programs ... 16
14.3 Partnerships ... 17
14.4 Cost challenges ... 17

15 Funding and resourcing legacy nickel mine rehabilitation, New Caledonia ... 17
15.1 General ... 17
15.2 Establishment of the Nickel Fund to rehabilitate legacy mines ... 17
15.3 Estimating the needs of the Nickel Fund ... 17
15.4 Management of the Nickel Fund ... 18
15.5 Illustrating key challenges with reference to the Thio Valley area ... 18
15.6 How the Thio valley community were engaged ... 18
15.7 Benefits from the program in the Thio valley ... 18
15.8 Progress so far in the Thio valley ... 19
15.9 Evaluating performance ... 19
15.10 Maintenance of rehabilitated sites ... 19

16 Reopening the Otanmäki Mine, Finland ... 19
16.1 Aspect of managing mining legacies and source ... 19
16.2 Recognition of a problem that needed to be resolved ... 19
16.3 Steps involved and expertise/stakeholders involved ... 20
16.4 Evaluation of performance of this initiative ... 20
16.5 Key learnings for others ... 20

17 Online monitoring and early alert system for tailings storage facilities (TSF), Chile ... 21

17.1 Background 21
17.2 Transparent tailings initiative 21
17.3 Purpose of initiative 21
17.4 System design 22

18 Public private partnership funding mode of legacy Green Golden Lake coal mining rehabilitation program, China 23
18.1 Introduction of China managing mine legacy 23
18.2 Green Golden Lake coal mining rehabilitation program 23
18.2.1 Background 23
18.2.2 Recognition of a financial problem that needed to be resolved 23
18.2.3 Evaluation of performance of this initiative 24
18.2.4 Key learning for others 24

19 Structured case studies 24

Bibliography 37