



THE UNIVERSITY OF
NEW SOUTH WALES

SCHOOL OF MINING ENGINEERING

Compliance Auditing

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Outline of Presentation

- What is an Environmental Audit
- Why conduct an Environmental Audit
- Types of Environmental Audits
- How to conduct an Environmental Audit
- Implementing Audit recommendations
- Outcomes of an Environmental Audit

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What is an Environmental Audit

- Definition
- Terms
- History of Environmental Auditing
- Comparison with financial auditing
- Comparison with EIA
- Evidence of 'all due diligence'

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Why conduct an Environmental Audit

- Identify potential liabilities, risks and hazards
- Companies
- Government agencies
- Risk management
- Insurance
- Public image

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Types of Environmental Audits

- Environmental management audits
- Compliance audits
- Technical audits
- Audits for acquisitions and sale
- Impairment liability audits
- Environmental impact audits
- Environmental performance audit
- Statutory audit

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How to conduct an environmental audit

- Selecting auditors
- Audit protocol
- Audit planning - pre, on-site, post
- Legal - environmental regulatory framework
- Audit site interviews
- Audit site inspections
- Audit data collection

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Figure 1: Review of Environmental Audit Activities for a large operation



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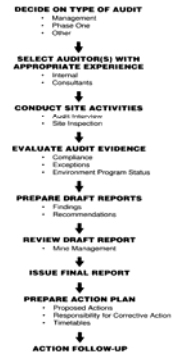


Figure 2: Overview of Environmental Audit Activities for a small mining operation

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APPENDIX A
GENERAL CHECKLIST FOR AN ENVIRONMENTAL AUDIT

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| 1. SITE | 3.4 Dangerous goods legislation compliance |
| 1.1 Position relative to environmental features and public scrutiny | 3.5 Containment of spills/leaks |
| 1.2 Location relative to usage of surrounding areas | 3.6 Storage |
| 1.3 Site history | 3.7 Documentation |
| 1.4 Chance of prior contamination | 3.8 Transportation on-site and between sites |
| 1.5 Security of site | 3.9 Raw material sources |
| 1.6 Accessibility in emergency situations | 4. PROCESSES |
| 1.7 Layout with respect to operations | 4.1 Process monitoring |
| 1.8 Housekeeping/landscaping | 4.2 Plant maintenance |
| 1.9 Presence of asbestos and asbestos content sheeting | 4.3 Process residuals |
| 1.10 Loading bays—containment of spills | 4.4 Quality control and testing |
| 2. MANAGEMENT | 5. LIQUID WASTES |
| 2.1 Environmental policy & guidelines | 5.1 Stormwater |
| 2.2 Environmental personnel | 5.1.1 Stormwater drain protection |
| 2.3 Environmental laws and procedures | 5.1.2 Vehicle and plant washdowns |
| 2.4 Environmental budget | 5.2 Sewer |
| 2.5 Environmental training | 5.2.1 Treatment systems prior to discharge |
| 2.6 Third party environmental involvement | 5.2.2 Pollution potential of corrected discharge |
| 2.7 Data collection and storage | 5.2.3 Discharge monitoring and recording |
| 2.8 Public relations on environmental matters | 5.2.4 Permits |
| 2.9 Staff suggestion schemes | 5.2.5 Visual check of sewer discharge |
| 3. RAW MATERIALS | 5.3 Tailings |
| 3.1 Pollution potential | 5.3.1 Presence of proper consent |
| 3.2 Toxicity potential | 5.3.2 Contractor licence check |
| 3.3 Quality testing | 5.3.3 Pollution/toxicity potential |
| | 5.3.4 Knowledge of quality |

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- | | |
|---|--|
| 5.5.5 Knowledge of destination | 10.4 Testing of procedures |
| 5.5.6 Knowledge of quantities, contractor & disposal | 10.5 Demographic studies |
| 5.5.7 Recycling/reuse programs | 10.6 Natural disaster planning |
| 6. SOLID WASTES | 10.7 Staff training and knowledge |
| 6.1 Presence of proper contract | 11. PRIOR CONVICTIONS AND COMPLAINTS |
| 6.2 Pollution potential | 11.1 Prior convictions by statutory authorities |
| 6.3 Segregation programs | 11.2 Any actions by environmental/community groups |
| 6.4 Recycling/reuse programs & potentials | 11.3 Customer complaints about environmental issues |
| 6.5 Knowledge of destinations | 11.4 Recording of complaints & responses |
| 7. AIR EMISSIONS | 11.5 Management structure for dealing with external bodies |
| 7.1 Visual check on air emissions | 12. TRANSPORT |
| 7.2 Pollution potential | 12.1 Servicing of vehicles |
| 7.3 CFCs, halons and use of alternatives | 12.2 Recycled oil use |
| 7.4 Cooling tower cleaning and testing | 12.3 Unleaded fuel use |
| 7.5 Complaints | 12.4 Air conditioning CFC charging |
| 8. NOISE | 12.5 Refrigerant issues |
| 8.1 Noise level at external boundaries | 12.7 Cleaning chemicals and waste water |
| 8.2 Noise monitoring, protection and abatement programs | 12.8 Catalytic exhaust on vehicles |
| 9. PRODUCTS | 12.9 Transport labelling on vehicles |
| 9.1 Transportation | 12.10 Emergency response procedures |
| 9.2 Labelling | |
| 9.3 Packaging | |
| 10. EMERGENCY RESPONSE PROCEDURES | |
| 10.1 Documentation of procedures | |
| 10.2 Scope and detail of procedures | |
| 10.3 Liaison with external authorities | |

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Implementing Audit Recommendations

- Environmental Action Plan:
 - goals
 - strategies
 - key performance indicators
 - responsibilities
 - timetable for achieving outcomes
 - cost estimates and budget

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Outcomes of an Environmental Audit

- Identification of risks
- Development of Environmental Policy
- Avoidance of financial loss
- Avoidance of legal sanctions
- Improvement in staff awareness
- Identification of cost savings
- Improvement in overall environmental management

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