



# **EHS Auditing**

Continuously Improving Performance in a  
Mining and Metallurgical Company



CEAA Technical Conference  
October 14, 2004

# Presentation Outline

- Historical background of the company and the audit program
- Update on EHS Assurance program
  - » Update on CEAA 2002 presentation in Halifax
- Some thoughts
  - Management system audits or reviews
  - Materials or waste management
  - Special issues
  - Risk management
  - Technical assessments
  - Safety
  - And more
- Conclusion

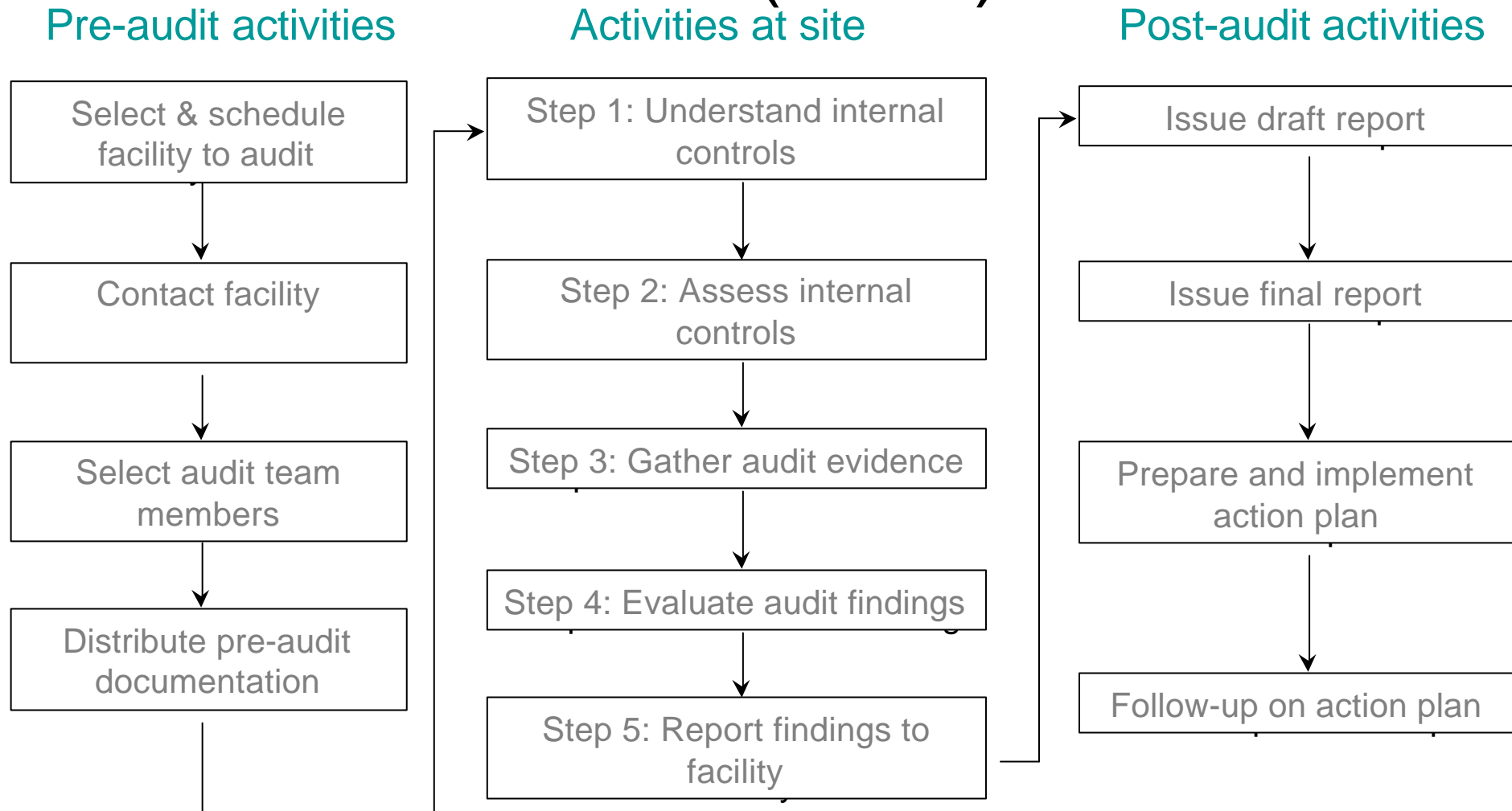
# Noranda (circa 1920 – 30)



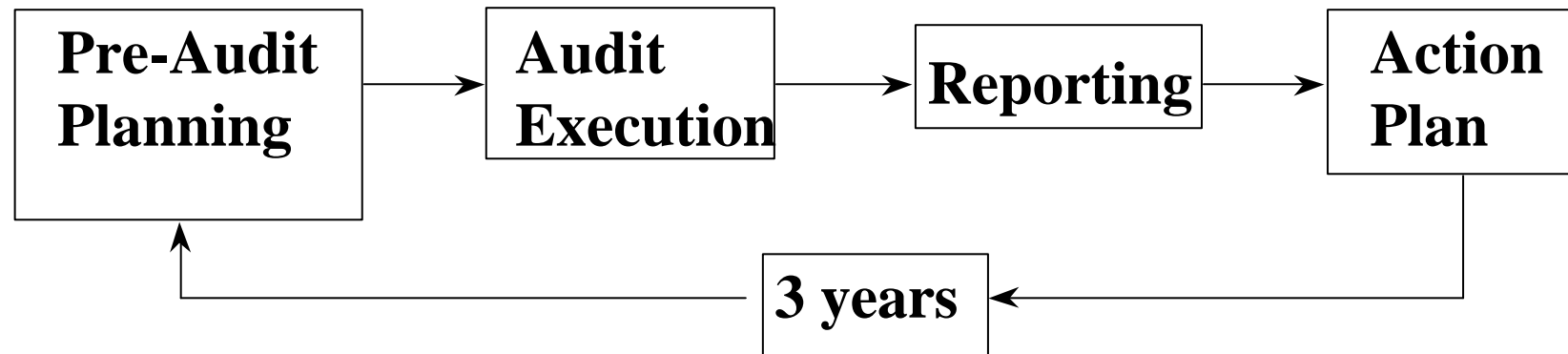
# Highlights of Noranda's Environmental Audit Program

- ☐ 1980 Safety Audits (ILCI 5-Star)
- ☐ 1986 Beginning of Environmental audits
  - Emergency Preparedness
  - total of eight audits
- ☐ 1987 Program extended to:
  - External Environment
  - Industrial Hygiene
  - Occupational Health
- ☐ 1991 First Environment & Land Management Review
- ☐ 1992 First closure audit for mining operations
- ☐ 1996 Revised protocol and new Safety audit format
- ☐ 1997 Audit tracking software “Audit for Windows” implemented

# Basic Steps of an Environmental Audit (1986)



# NORANDA AUDIT PROGRAM: Pre-1998



- All corporate audits
- Many findings
- Unclear action plan objectives and priorities
- Voluntary follow-up on action plans
- No assessment of continual improvement

# 1998 – A Year for Changes

## EHS Team

- **The role:** Be the “conscience” of Noranda’s senior management and the Board regarding its environment, health, safety and social responsibilities. Published Code of Ethics and introduced **EHS Assurance**.
- **Purpose:** Ensure that Noranda’s EHS vision, values and expectations are an integral part of the way all its operations conduct their business.
- **Mandate:** Provide Noranda Inc. and its Board with the necessary EHS and social information needed to make the best business decisions in keeping with Noranda’s core values and beliefs.
- **Operating principles:**
  - non-bureaucratic
  - simple and practical approach
  - ability to act quickly, efficiently and correctly

# EHS Assurance

- **Tools:**

- Management system framework
- Audit process
- Six Sigma
- Environment 2000 PLUS
- Information technology (Internet and intranet)
- Formal and informal, external and internal, regional, national and international networks
- Benchmarking
- Zero-base budgeting for EHS
- Etc...

- **Resources:**

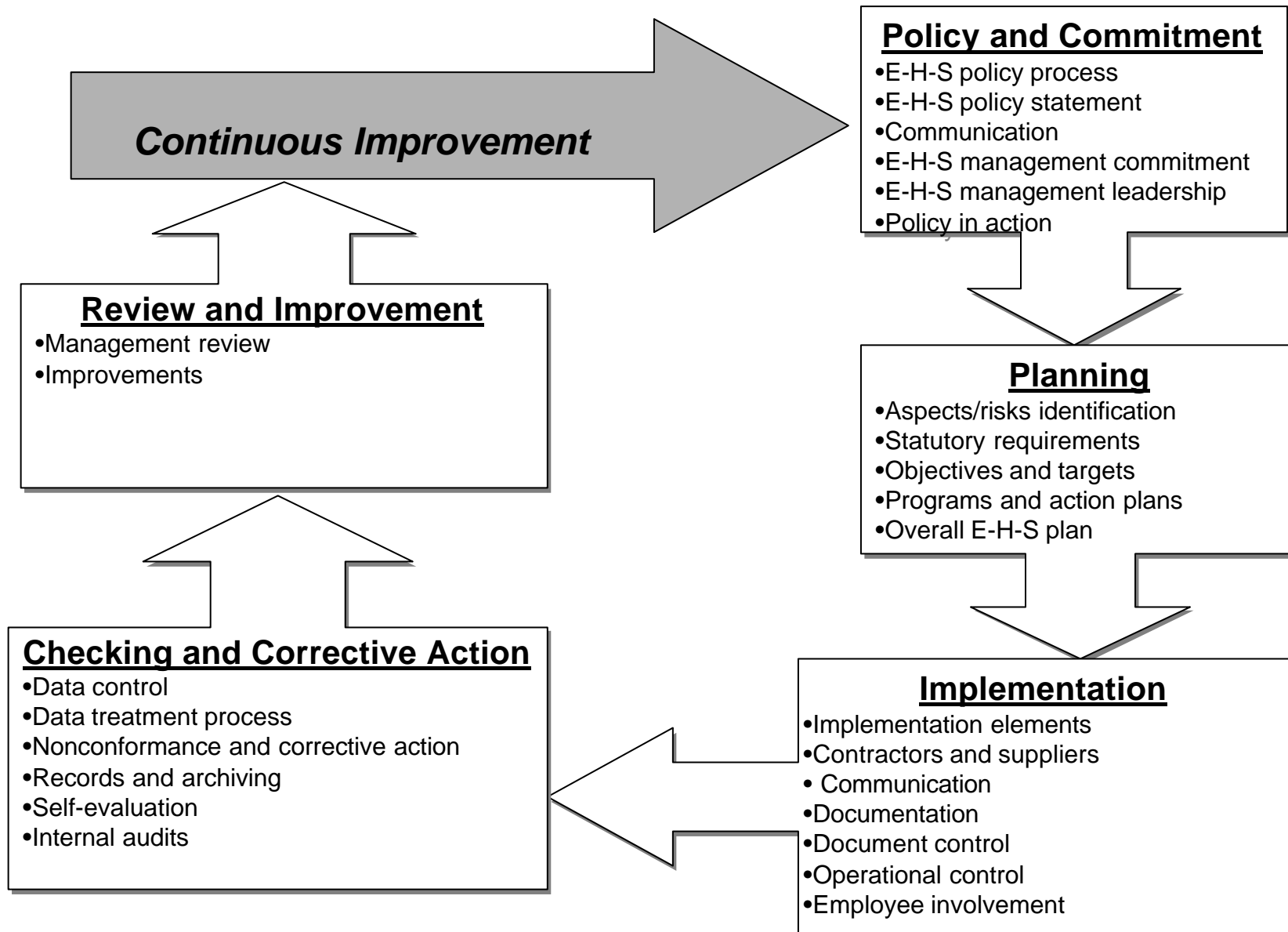
- Significantly reduced!!!!



# **Good EHS = Good Business**

- **A Shift in priorities:**
  - **From an emphasis on the number and type of training activities to stressing competency;**
  - **from number of inspections to % completion of action plans;**
  - **from the number of samples taken to the implementation of statistically valid sampling strategies;**
  - **from % compliance to overall performance ratings;**
  - **from the number of employees using PPE to the % reduction in the use of PPE;**
  - **from the cost of health and safety to the value added of health and safety activities;**
  - **from ??? to becoming a 6 Sigma company**

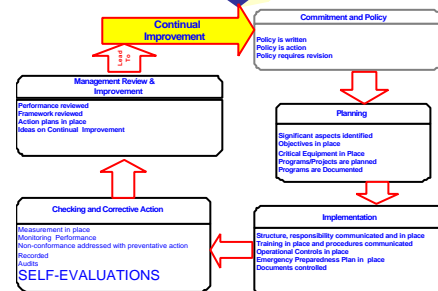
# EHS MANAGEMENT SYSTEM



# SPRING 2002



## Integration



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# Sustainable Development Performance Objectives

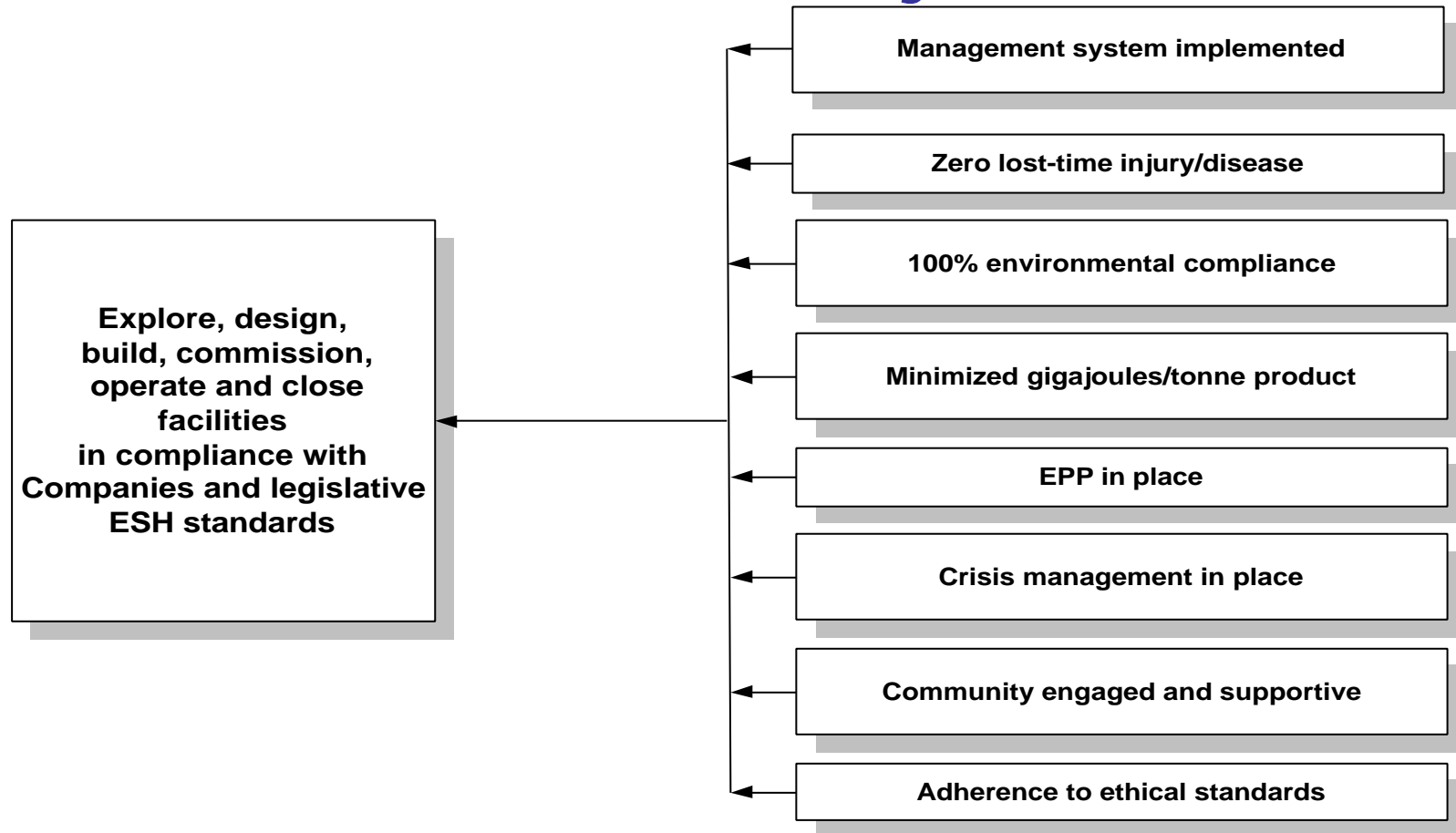
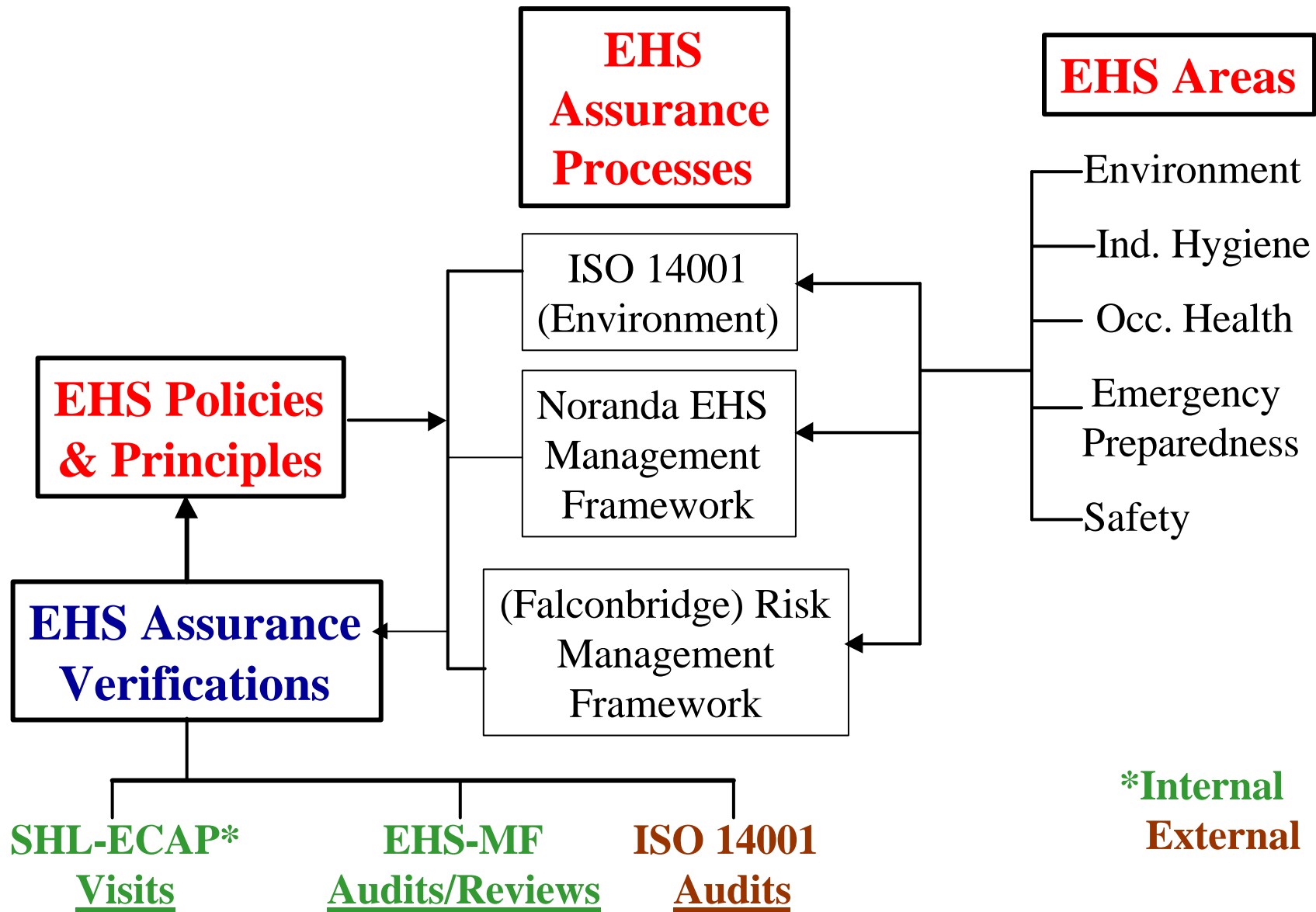


Figure 1: Noranda Inc. and Falconbridge Limited ESH Performance Objectives

# EHS ASSURANCE

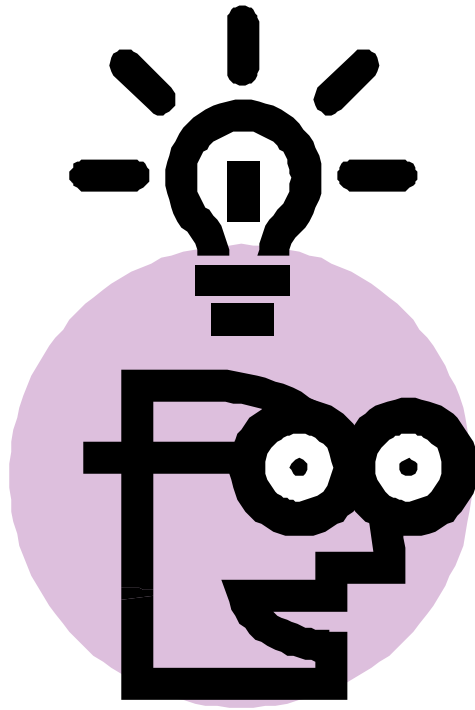


# **EHS Assurance**

## **Some accomplishments – since 2002**

- Rolled out integrated NRD/FL EHS Assurance program.
- Conducted EHS-MS management system reviews
- Support to facilities preparing for ISO 14001 registration
- Obtained ISO 14001 registration according to plan
- Screening Level Risk Assessments completed
- Integrated Noranda/Falconbridge Sustainable Development Policy
- Noranda/Falconbridge Sustainable Development and Management System, EHS Operating Manual.
- Detailed review of management systems associated with recycled materials with a focus on hygiene issues relate to Beryllium.
- Review of contractor EHS management programs

# Some Thoughts



# EHS Auditing

- A science?
- A management process?
- An art?

**All of the above and more => JAZZ**

- Technically challenging
- Competency a must
- Ability to improvise without deviating from the goal
- Therefore:

**An audit program should be flexible because:...**





# Sometimes

**Management System Reviews  
(Improving EHS performance  
through improved EHS  
management)**

# EHS Management Review

## ENVIRONMENT

### EHS Management Framework Screening

Location/Date:

Place an "X" where appropriate

YES

NO

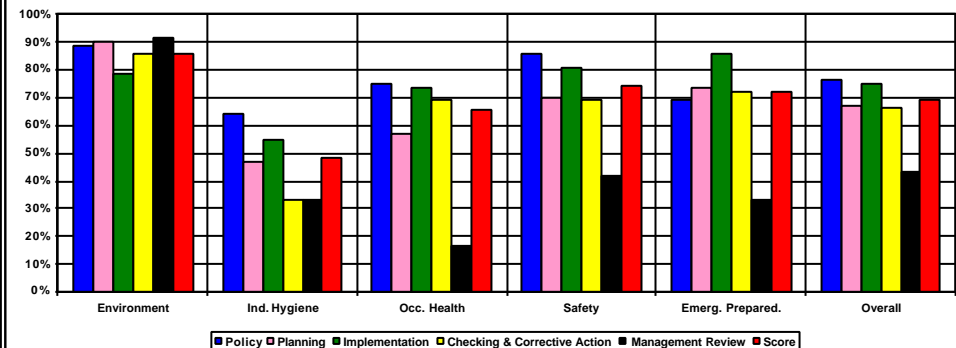
Element #1: Policy and Commitment			
Question #			
1.1	Does the facility utilize a systematic process for developing and/or reviewing their EHS policy?		
1.2	Has the facility defined its EHS policy according to EHS management framework requirements?		
1.3	Is the EHS policy communicated and understood by all employees and made available to stakeholders?		
1.4	Do management's actions clearly demonstrate a firm commitment to EHS ?		
1.5	Does management explicitly demonstrate EHS leadership?		
1.6	Do management and employees take EHS matters into consideration when making decisions?		
	COUNT		
Element #2: Planning			
Question #			
2.1	Has the facility applied a rigorous process for identifying significant EHS aspects/risks?		

#### EHS Management System Screening Summary by Element

Location/Date: Falconbridge operations 2003

ELEMENT	Environment	Answers % Ind. Hygiene	Occ. Health	Safety	Emerg. Prepared.	Overall
Policy	89%	64%	75%	86%	69%	77%
Planning	90%	47%	57%	70%	73%	67%
Implementation	79%	55%	74%	81%	86%	75%
Checking & Corrective Action	86%	33%	69%	69%	72%	66%
Management Review	92%	33%	17%	42%	33%	43%
Score	86%	49%	65%	74%	72%	69%

#### Summary by Scores



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# Other times

**Material management in relation to  
waste management  
(Improve efficiencies and reduce  
risks)**

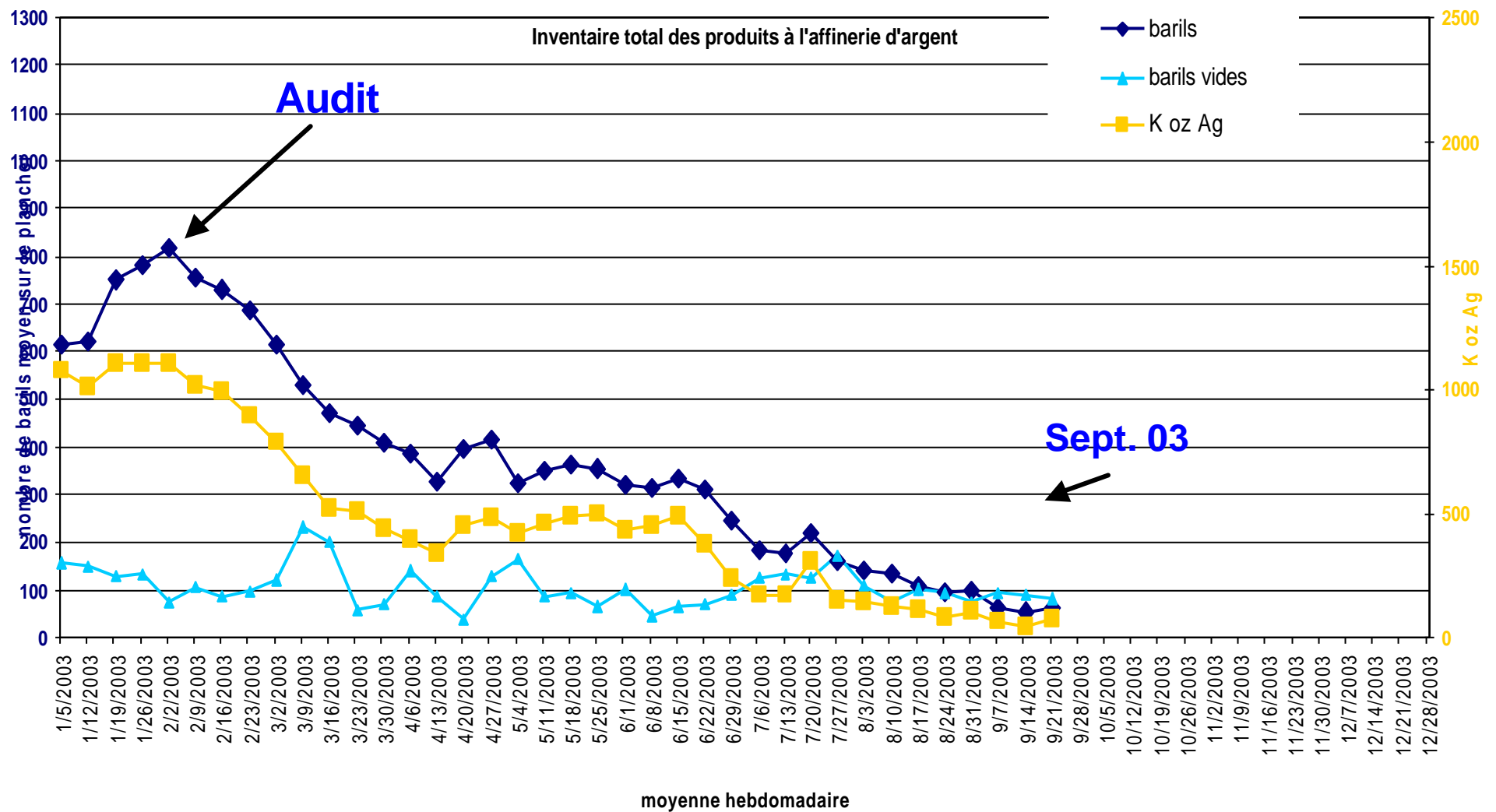
# Material handling (safety)



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# CCR – Barrel Inventory

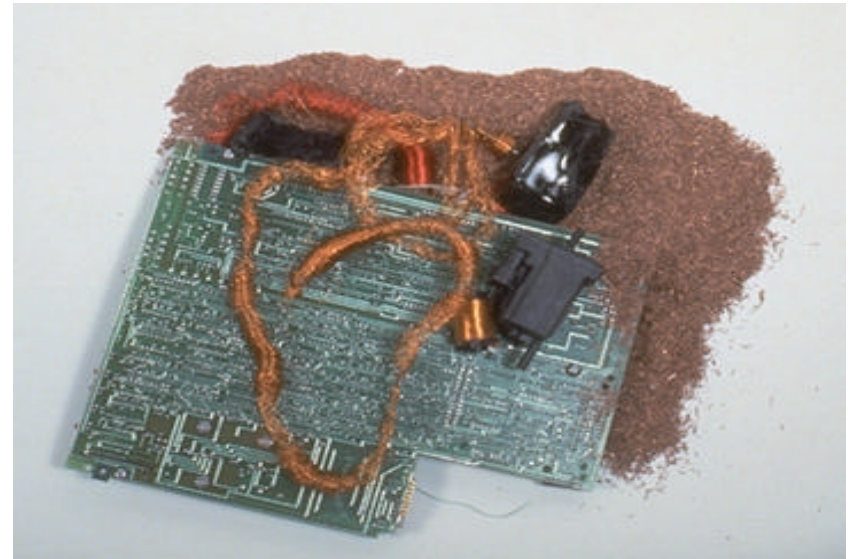
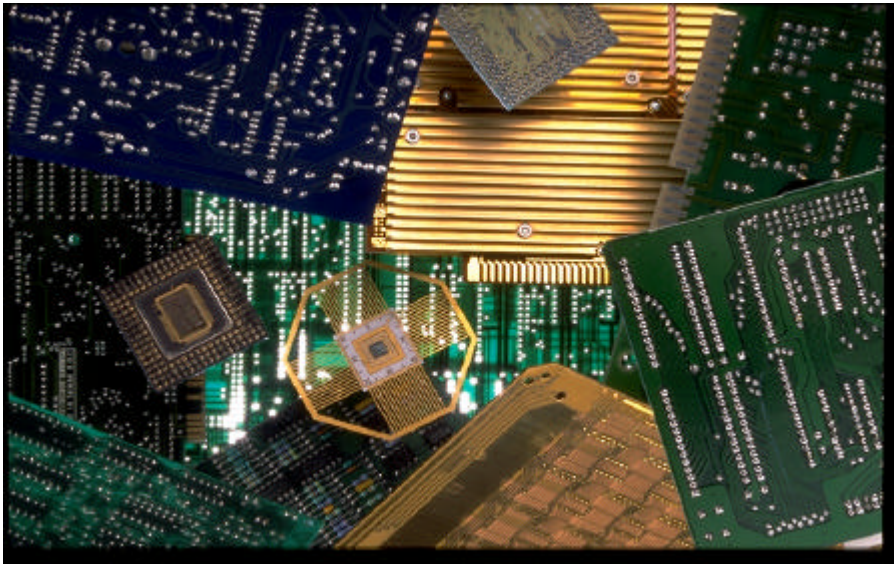


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Or

**Improved problem solving with  
better information**





# Materials Recycled

Scrap from these industries & more:

Computer/IT

End of Life Electronics

Photographic

Automotive

Spent Catalysts

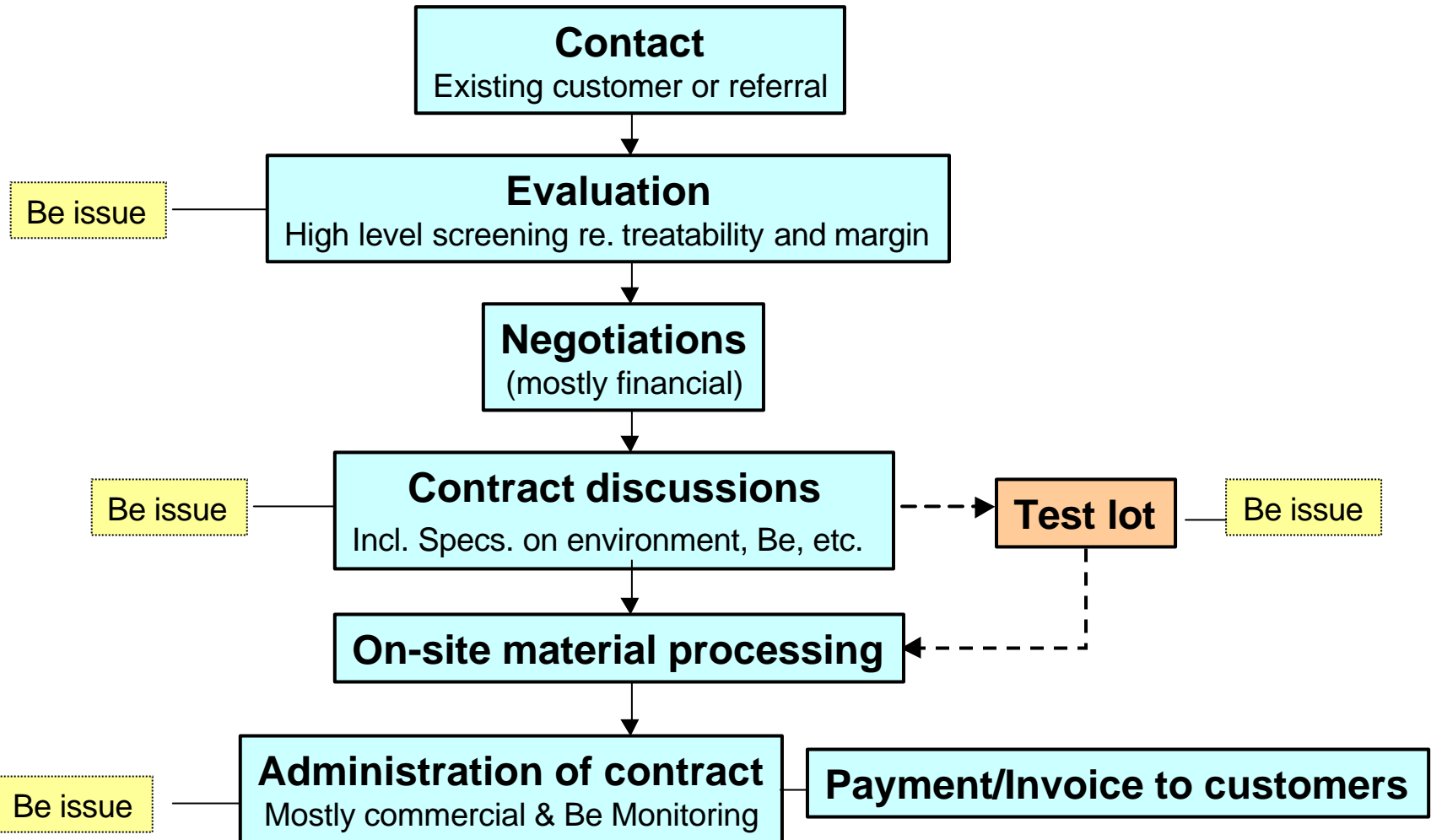
Copper Manufacturing

(All these and more may contain varying concentrations of Be)



# Material Sourcing

## Summary of Process





**Or Involved with**

**Enterprise Risk Management  
(ERMP). Contributing to a process  
with systems experience.**

# Why are we doing ERMP now?

- SOx is US corporate legislation in response to a number of major corporate accounting scandals involving some of the world's most prominent companies (Enron, Worldcom).
- Section 302 of SOx establishes compliance standards for corporate public disclosure statements.
- ERMP plays an important role.



# What does ERMP include?



# **Special Technical Assessments**

## **Mine Tailings Dams**

**Applying auditing skills to identify  
and reduce potential of failure**

# Tailings Dam Safety



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# **Safety and Bill C-45**

**Audits conducted are both planned  
and requested**

**Reduce accident frequency and act  
diligently**

# What is required

- **The organization must:**
  - Ensure authority for health and safety is delegated from the Board of Directors down to individual employees.
  - Design and implement a **sustainable** health and safety management system which includes:
    - review of operational processes and risk assessments,
    - safety practices, procedures and equipment aligned with the operational processes, and based on a “best practices” approach,
    - employee training on safety practices and procedures.
    - identified responsibilities and accountabilities for safety procedures and safe operations,
    - all relevant documentation,
    - **an audit function to ensure compliance,**
    - a feedback loop to ensure deficiencies are addressed and corrected.

# Focused Safety Audit - Prototype

- **Part 1: Safety Management**
  - Policy
  - Planning and Training
  - Implementation and Contractor management
  - Performance measurement and tracking
  - Corrective action management and reporting
- **Part 2: Prevention Activities**
  - Risk identification and control
  - Inspections
  - Job observation
  - Accident/Incident investigation
  - Safety promotion and communication
  - Safety meetings
  - Rules and procedures
  - Lock-out/Tag-out procedures
  - Preventive maintenance
  - Personal Protection
  - Emergency measures





**May even address**

**Special issues requiring a  
systematic evaluation to  
identify possible solutions**

# Contractor Safety Management

CONTRACTOR EMS EHS Management Framework Screening			
Location/Date:		YES	NO
Place an "X" where appropriate			
<b>Element #1: Policy and Commitment</b>			
Question #			
1.1	Has the facility ensured that its EHS policy adequately covers contractors working on site?		
1.2	Has the site defined specific policy requirements for contractors?		
1.3	Is the EHS policy communicated to contractors?		
1.4	Does site management explicitly demonstrate EHS leadership in dealing with contractors?		
1.5	Do management and contractors take EHS matters into consideration when making decisions?		
COUNT			
<b>Element #2: Planning</b>			
Question #			
2.1	Has the site ensured that the contractors working on site have completed the pre-qualification form, have been approved to work on the property and that the significant EHS aspects/risks associated with their work have been clearly identified, prioritized and documented?		



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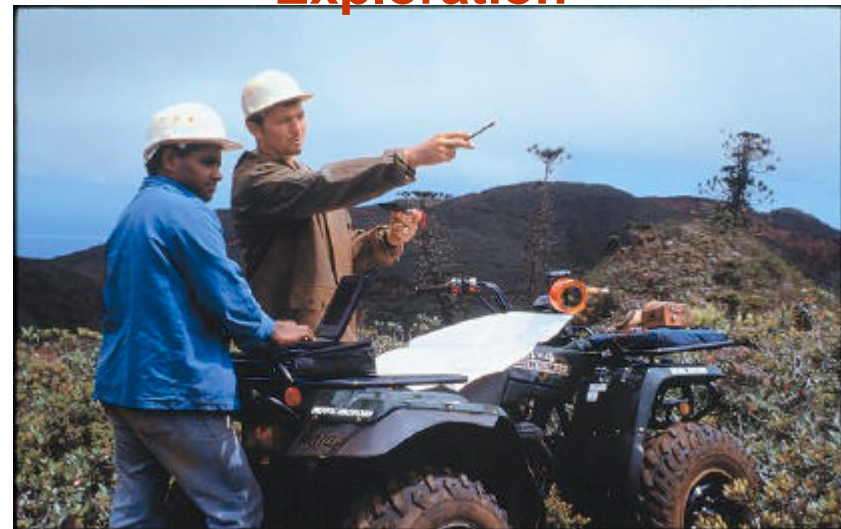
# Special issues

## Northern environments



## Exploration

## Security





# Aircraft Safety



# Conclusion

- **Improving performance means EHS Auditors must be prepared to:**
  - Apply various technical skills
  - Work with different criteria
  - Know the audit tools and how to use them
  - Ability to react quickly when needed
  - Improvise (sometimes)
  - Be skilled players
  - Work with a team
  - Respect the requirements of their Code of Ethics
  - Much more.

# Thank You

