



# **Towards Sustainable Mining: Pulling up our socks!**

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So why are we here?



# The Beginning

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## Why Towards Sustainable Mining?

- The status quo simply wasn't sustainable
- Our social license was at risk
- The bar keeps rising
  - We must improve our performance, both operational and social
  - We must improve stakeholder judgment of our industry by taking action collectively

# Background: 1998 - 2000

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March 2000, Task Force Mandate:

“To continue to earn the opportunity to thrive and contribute by demonstrating the social relevance and value of our industry through a stewardship process that aligns with evolving priorities of our stakeholders”

2000 Objectives:

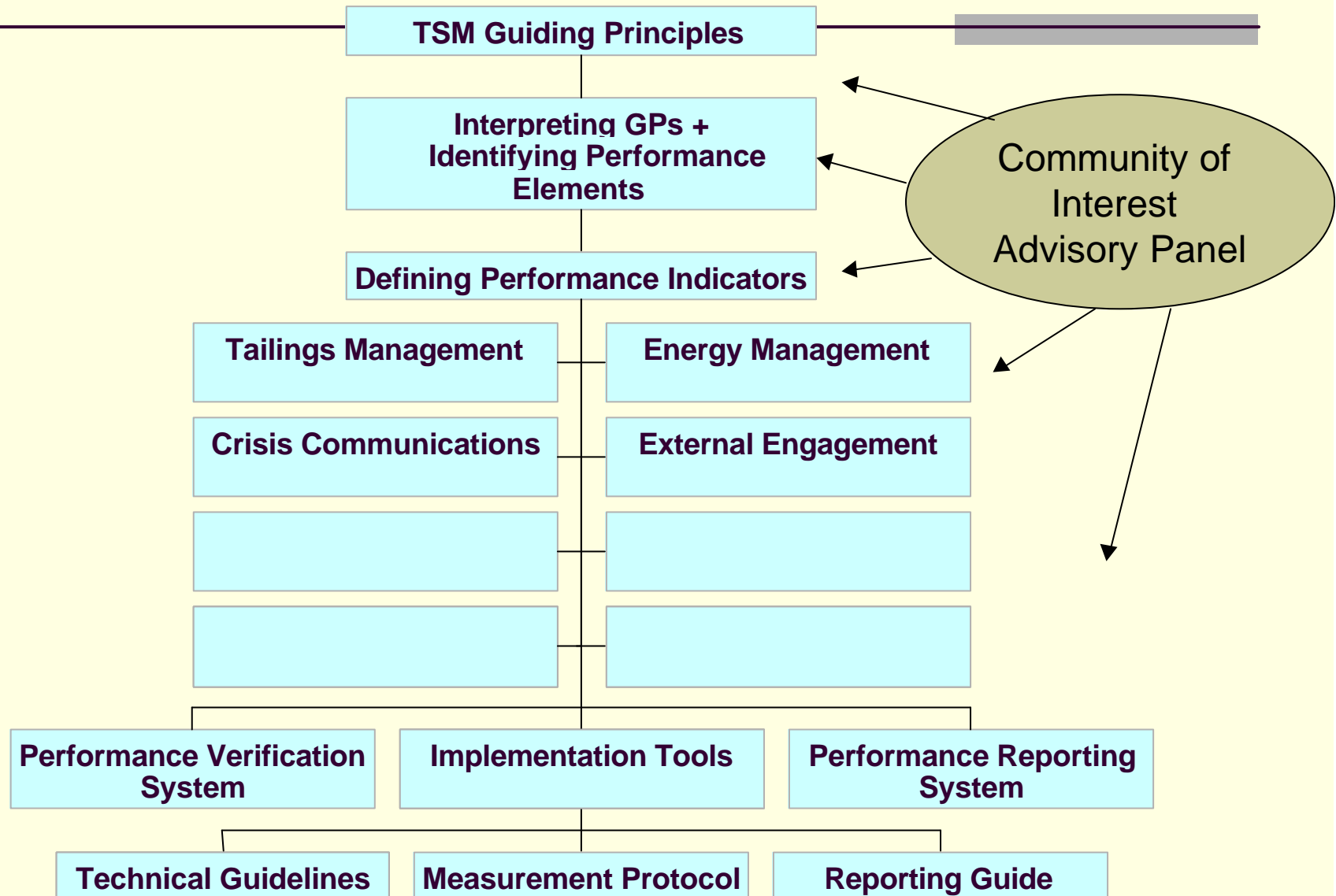
- Develop a research-based initiative
- Ensure a consistency and alignment with similar initiatives
- Recommend strategy to Board in November 2000

# Changing Industry Culture

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- Board leadership
- Company champions (Initiative Leaders)
- Top to bottom across the country
- Development of Guiding Principles
- Performance objectives and indicators
- Stronger criteria for MAC membership

# TSM – Building the Architecture





# Implementing TSM 2004

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- TSM Guiding Principles
- Performance Elements and Indicators
  - Crisis communications
  - External Outreach
  - Tailings management
  - Energy management
- Performance manuals, guides
- Reporting
- Communities of Interest Advisory Panel

# TSM Indicators

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- In addressing the TSM Guiding Principles, MAC developed performance indicators to:
  - respond to critical performance areas
  - demonstrate performance;
  - facilitate continuous improvement toward recognized best practices; and,
  - build credibility and trust with communities of interest.



# Crisis Communications/External Outreach

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- Management Process Indicators:
  - A statement describing policies, procedures or systems in place to manage a performance element.
  - Based upon MAC's *Guidelines for Corporate Crisis Management Planning and Outreach and Dialogue – A Field Guide for Sustainable Mining*

# The MAC Guide

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- Guidelines for Corporate Crisis Management Planning
  - How to guide – critical steps in developing and maintaining effective crisis management plan
  - Key Ingredients:
    - CEO endorsement
    - Identify risks
    - Build team
    - Identify communities of interest
    - Training
    - Ongoing review

# Crisis Communications

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- Four Management Process Indicators:
  - For Companies
    - Corporate Crisis Management Preparedness
    - Annual Review
    - Training
  - For MAC
    - Adhering to Best Practices
- Annual Reporting – Yes/No

# The MAC Guide

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- Outreach and Dialogue – A Field Guide for Sustainable Mining
  - How to guide – Critical steps in developing and maintaining capacity for company/COI dialogue
  - Tools for:
    - Setting up team
    - Identifying COI
    - Researching COI concerns
    - Pre-testing
    - Conducting Dialogue (methods and skills)
    - Measuring Outcomes and Follow-Up

# External Outreach Indicators

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- **Four Management Process Indicators**
  - Community of Interest (COI) Identification Process
  - Effective COI Communications and Engagement Processes
  - COI Response Mechanism
  - Reporting Performance

# The MAC Guide

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- Strategic Planning and Action on Climate Change: A Guide for Canadian Mining Companies
  - How to Guide – Critical steps in developing and implementing a climate change strategy
    - Establish a basic inventory of GHGs
    - Estimate emission changes for specific projects
    - Report on annual and projected emissions

# Energy and GHG Management

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- **Four Management Process Indicators**
  - Energy use and GHG management systems
  - Energy use and GHG emissions reporting systems
  - Energy intensity performance
  - GHG intensity performance



# The MAC Guides

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- *A Guide to the Management of Tailings Facilities*
- *Developing an Operation, Maintenance and Surveillance Manual for Tailings and Water Management Facilities*
  - “How to” Guides – for managing and operating tailings and water management facilities safely and responsibly
    - Practice continual improvement
    - Demonstrate due diligence
    - Implement effective management controls and oversight

# Tailings Management

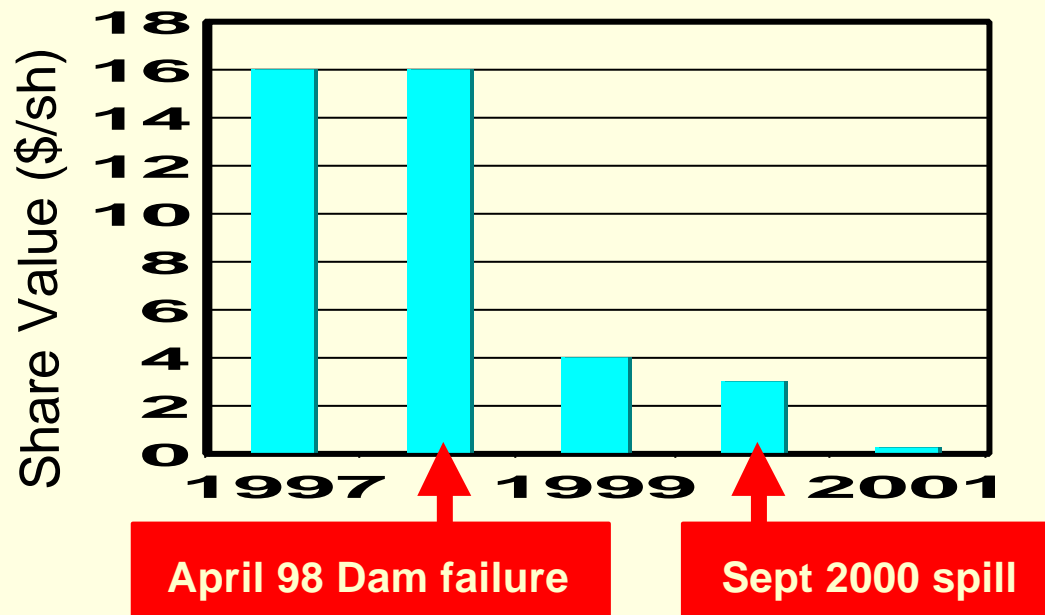
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## ■ Five Management Process Indicators

- Tailings management policy and statement of commitments
- Tailings management system
- Responsibility for tailings management
- Annual senior management review
- OMS manual

# Tailings are a business risk

- Tailings are a business risk which needs to be managed
- Failures cost money. Direct cost of a tailings dam failure averages \$70 to \$150 Million USD
- Overall cost to company & shareholders can be many times more than the direct costs



# Notes from international incidents mid-1990's

- **Merriespuit**, South Africa  
death of 17 people, no management framework to ensure safe operation of tailings dams in the long term
- **OMAI** tailings dam, Guyana  
\$11M cleanup + \$10M lost production, failure preventable if existing design and construction technology applied
- **MarCopper**, Philippines  
\$70M cleanup, unclear identification of roles and inadequate inspection procedures
- **Las Frailes**, Spain  
\$100 M+ cleanup, foundation failure



# MAC Response

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- **Established the MAC Tailings Working Group  
1996**
  - **Contributed to CDA Dam Safety Guidelines**
  - **Initial Tailings Management and Risk Management Workshops** 1996-1997
  - ***A Guide to the Management of Tailings Facilities***
    - **Developed** May 1997 – Sept 1998
    - **Published (in English, French & Spanish)** September 1998
  - **“Lessons Learned” Workshop** February 2000
    - **Identified need for guidance in preparing OMS Manuals**
  - ***Developing an Operation, Maintenance and Surveillance Manual for Tailings and Water Management Facilities***

# Industry Challenge

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- Industry must deliver on commitments
- Maintain a clean record
  - Report minor spills, upsets
  - Prevent major incidents at all costs
- Address deficiencies without hesitation
- Engage stakeholders and industry to find fiscal and environmental balance
- Provide flexibility for innovation and improvements
- Balance fiscal responsibility with environmental stewardship

# TSM Reporting

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- Measured on a five-level scale
  1. No action has been taken; activities purely reactive, no systems in place.
  2. Some actions, but sporadic and not fully documented; systems/processes planned and being developed.
  3. Systems/processes are developed and implemented.
  4. Integration into management decisions and business functions.
  5. Excellence and leadership.



# Tailings Management Performance Indicators

Levels of Performance	Not on the Scale	Under Development	Implemented	Implemented and Verified	External Consultation
	1	2	3	4	5
Assessment Indicators of Performance	Recognition, but little or no action	Documentation prepared, or in preparation	Effective implementation	Formal verification	External COI review
Tailings management policy and statement of commitments					
Tailings management system					
Responsibility for tailings management assigned to Sr. Official					
Annual senior management review					
OMS manual					

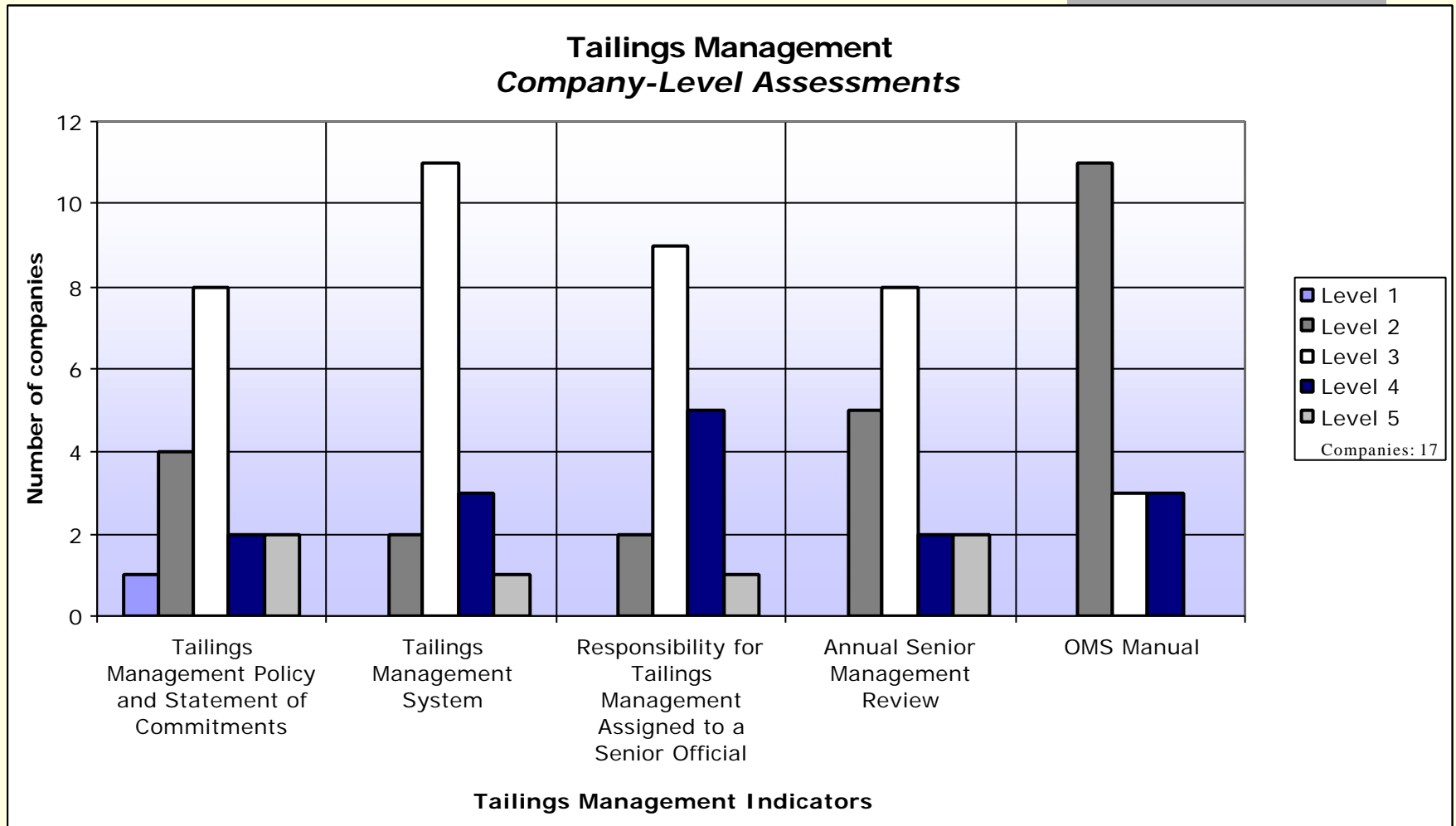
# Tailings Verification Protocol

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- MAC Tailings Working Group is developing a Tailings Management Verification Protocol
  - Will build on
    - The Tailings Management Framework
    - The *Guide to the Management of Tailings Facilities*
    - *Developing an OMS Manual for Tailings and Water Management Facilities*
  - To measure the tailings management performance against the best practices contained in the *Guides*
    - Site specific
    - Step-by-step process
  - Initially targeted to internal verification and benchmarking
  - Ultimately will provide for external verification

# Company-Level Performance

## *Tailings Management*



# Experience with 1<sup>st</sup> year Reporting

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- Indicators proving to be a useful tool to assess performance and focus on improvements
  - Several companies have taken steps already to address gaps
- Reporting guides were simple, quick to complete
- Indicator criteria need refinement – some unclear
- More guidance needed to aid consistency:
  - Assessing each performance element
  - Corporate roll ups
  - Verification program to help address

# The Results

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- Tailings management strongest performance area, reflecting several years of focused action
  - Still room for improvement
  - Some aspects need further attention
- Crisis communications very strong but
  - Should be stronger
  - Expectation for all companies to have plans fully in place
- External outreach mixed but encouraging results
  - Room for improvement
  - A range of practice levels exist among companies
- Energy, GHG management weakest performance area
  - There are some leaders but half assessed at 2 or lower
  - MAC guidance still less specific than other elements
  - Member companies face difficulties in assessing performance

# TSM Reporting 2004

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- 20/24 potential MAC member companies are reporting corporate level results for all 4 TSM elements – excellent results for 1<sup>st</sup> year compared to past experience
- 5-8 have reported both corporate and facility data (depending on the elements)
- TSM report will include aggregate results for all 4 TSM elements developed to date – company + facility data
- One company reported results for international + closed properties; another for closed properties
- One company confirmed it will voluntarily publish individual company results in TSM Progress Report
- Company results to be shared by MAC members to encourage sharing of best practices and foster peer pressure

# Next (or current) Steps

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- **Existing indicators are being:**
  - Refined with a view to providing greater clarity
    - Fully engage operations level (those doing the assessments)
    - Refine or modify criteria that are overly subjective or too difficult to measure
    - Have “audit expert” critique indicators and assist in addressing points above (to determine measurability)



# MAC TSM Public Reporting

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- Public reporting of MAC member responses on tailings and other performance indicators
  - Beginning in 2004
  - Through MAC's TSM report (formerly the MAC Environmental Progress Report), scheduled for release January 2005
- Ultimately the public reporting will include some form of verification

# TSM Verification System

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- TSM Goal - To improve the reputation of MAC members by improving their sustainability performance
- TSM aims to sustain the industry's role as a leading economic player by increasing public trust in its ability to manage the environmental and social issues important to Canadians
- Part of that public trust is derived from public reporting and transparency
- Verification is a tool to help achieve TSM objectives

# TSM Verification System

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## ■ Key Characteristics

- Building on the internal audit and verification systems that MAC members already have in place,
- Using a phased approach that recognizes it takes time for TSM to be fully implemented
- Needs to evolve into an effective and comprehensive approach that will meet the full range of MAC members' needs and stakeholders' expectations

# TSM Verification System

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## ■ Organization and Responsibility

- The MAC Board has ultimate responsibility for TSM policy and oversight.
- Member companies have responsibility for facility and corporate level verification activities.
- The Governance Team, supported by MAC staff and the Initiative Leaders, has responsibility for:
  - planning how the TSM verification program should work
  - for overseeing data collection and reporting on performance.

# TSM Verification System

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## ■ Basic Approach

- Year 1 (2004) – Members submit available TSM performance data to MAC for inclusion and reporting at the aggregate level in the 2004 TSM Progress Report.
- Year 2 (2005) – Signed CEO or authorized officer “Statement” that information provided on TSM elements reflects the company’s performance against TSM criteria (posted on MAC web site)
- Assess progress (2005).
- Year 3 (2006) – Signed CEO or authorized officer “Letter of Assurance” that information provided on TSM elements reflects the company’s performance against TSM criteria, and has been verified by an external verifier
- Review by MAC to determine if adjustments required (2006).

# TSM Verification System

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## ■ Next Steps

- For review and comment at COI Panel meeting (Sept)
- IL Review Oct/Nov teleconference
- Governance Team recommendations to Board (Nov with recommendations on the scope and timing of the TSM Verification Program.
- Draft verification protocols to ILs for review January 2005, to GT and Board March 2005

# Work in Progress

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- Completion of TSM Verification Program
  - Framework completed
  - Audit protocols by January 2005
- Additional performance indicators
  - Community Development and Aboriginal Relations
    - Community investment
    - Aboriginal employment
    - Aboriginal business procurement
  - Biodiversity Guidelines
  - Environmental Management Systems
  - Closure and Reclamation



# COI Advisory Panel

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- ToR
  - Help MAC members, COIs improve industry performance
  - Two-way dialogue
  - Input to and support for TSM goals
- Report on issues, recommendations to MAC Board and COI's
- Participation
  - 14 external interests
  - 5 MAC Board Members
  - 1 junior mining industry representative
- Meets twice per year (March 10-11, Sept. 22)
- Work of panel posted on MAC web site (summary minutes, etc.)

# COI Advisory Panel

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- Providing advice on:
  - TSM Guiding Principles
    - Input incorporated
  - Reporting content and quality
  - New performance indicators and criteria
  - Verification system
  - MAC membership criteria
- Establishing work plan
  - Development on consultation guidelines
  - Update on NOAMI

# TSM 2005 Workplan

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- Continuing COI Panel
- Completion of 2004 indicators (March) and development of closure and reclamation indicators
- Initial implementation of verification system (subject to Board approval)
- Development of final position of membership criteria
- Communications plan ongoing
- Support to membership on TSM implementation

# Benefits of TSM Performance Measurement

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- Driving performance
- Refocusing and stimulating activity on performance gaps
- Drawing attention to goals and targets
- Creating a culture of achievement
- Identifying trends and comparing with others (peer pressure)
- Transparency
- Earning our social license



***For more information...***

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[www.mining.ca](http://www.mining.ca)