



TSM VERIFICATION OVERSIGHT

Report on 2023 Verification Activities

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1. Methodology

Direct Oversight Process

The direct oversight process is structured to ensure that each active verifier is reviewed every three to five years. Twenty-two (22) external verifications were conducted in 2023 involving ten verification firms. ERM reviewed the list of verifiers who conducted external verifications in 2023 and chose a sample of three (3) verification teams and reports for review, which is a sample size of 25% of the verifiers and 14% of verification reports. The sample included both experienced and newer TSM verifiers, as well as stand-alone and integrated verifications (i.e., verifications that included both TSM and other mining standards).

The direct oversight process was completed by Glenn Keays, an experienced audit professional who holds a designation as an Environmental Professional, a qualified VSP, as well as other audit designations. He has not, however, engaged either directly or indirectly in any of the verifications completed in 2023, ensuring that any assurance activities undertaken by ERM and this verification process, remain independent and free of bias and conflict of interest.

Direct oversight involved the following:

- Review of verifier credentials, the verification plan and the sampling strategy to determine conformance with the requirements of the Terms of Reference for Verifiers.
- Review of the Verification Report and a sample of completed checklists for a sub-set of protocols. In 2023, the review focused on the Climate Change protocol (a newer protocol that was undergoing external verification for the first time in 2022) and the Tailings Management Protocol (a more established protocol).
- Discussion with each verification team to ask questions and collect additional information to determine if TSM protocol requirements have been consistently interpreted and applied.

2. Summary of Verifications in 2023

2023 Verifications Reviewed

Facility	Verification Service Provider	Facility	Verification Service Provider
Niobec	EEM Gestion ESS Inc.	Teck Resources Limited Carmen de Andacollo, Quebrada Blanca, Red Dog Operations	PWC
Arch Resources Leer Mine	Rubinoff Environmental Inc.		
Graymont Bedford & Marbleton Operations	WSP Canada Inc.	New Gold Inc. Rainy River Mine	Envirochem Services Inc.
Glencore Nickel Raglan Mine	Deloitte LLP	Suncor Energy Syncrude Operations	Safety Science Management Consulting Inc.
Canadian Natural Upgrading Limited Albion & Horizon Operations	Envirochem Services Inc.	Eldorado Gold Corporation Kassandra Mine	PWC
Pan American Silver Dolores, La Arena & Shahuindo Operations	ERM	Baffinland	ERM
		Barrick Hemlo Mine	Apex Companies, LLC
Glencore Copper CCR Refinery & Horne Smelter	EEM Gestion ESS Inc.	Rio Tinto Iron Ore Company of Canada Corporate office	EEM EHS Management Inc.
De Beers Canada Inc. Gahcho Kue Mine	Blue Heron Environmental		

3. VSP Questionnaire

SUMMARY OF INFORMATION OBTAINED FROM VSP
QUESTIONNAIRE PROVIDED IN EARLY 2024

VSP Questionnaire

General Information

		ERM Observations
Number of survey responses	12 (all VSPs involved in a verification in 2023 participated)	
Number of integrated verifications using one or more additional standards	4 of 13 verifications involved other standards - ICMM Performance Expectations - TSM Responsible Sourcing Supplement	Not a significant uptake of integrated verifications to date
Site-based verifications	6 were site-based 7 were desktop based	Specific comments from some VSPs who stated a site visit was not necessary (noted that there is already a procedural change requiring site visits)
Amount of time on site	3 to 5 days	Level of effort did not seem to align to site complexity or other determining factors

VSP Questionnaire

COI Interview Process

		ERM Observations
Number of COI interviews	• Employees ranged from 0 to over 40, with average around 10 • Contractors ranged from 0 to over 15 with most responding around 2 • External COI ranged from 0 to 12. From the 12 survey respondents, two indicated they did not interview external COI (conformed during VSP interview)	• Highly variable as to how number of interviews are determined
Process for determining COI interviews	• Focus on protocol owners at site • Employees and contractor interviews were opportunity based if VSP was on site • Site provided COI list which VSP selected from • Reliance on 2020 external COI interviews • Reliance on client to schedule interviews • Sampling without specifying the process employed • One VSP used a statistical approach	• Highly variable as to how COI interviews are determined

VSP Questionnaire

Tailings Management Protocol

		ERM Observations
Tailings Management Protocol Observations	• Level of rigour in reviewing Table of Conformance appeared to variable – from a completion check to a more detailed testing of responses through observations and document review. • Guidance on verification vs. audit of tailings management system. Noted variability in level of comprehensiveness of internal and external audits. • Need to have clarification that an audit does not automatically guarantee an AA or AAA rating – nonconformities have to corrected with supporting evidence. • Lack of guidance on gaps in protocol and Table of Conformance that should be considered significant • Not sure how to address ERP and EPP requirements with legacy tailings facilities • Acceptable gaps in conformance generally limited to system elements such as communication, completion of planned activities • Recommended improvements to ToC limited to simplification	• There may some confusion over how the Table of Conformance is to be verified in conjunction with the Tailings Management Protocol. VSPs may assume the ToC includes all Tailings Protocol content.

VSP Questionnaire

Other Information

		ERM Observations
Recommended program improvements	• More guidance on COI selection for interviews • More outreach by MAC to announce verifications with COI	• Reliance on site to identify COIs may be creating bias • COI availability and willingness to participate is a challenge
	• Member sites are pushing back on increased costs of verifications as additional requirements and level of rigour in verification and reporting processes have increased	• May need to clarify with members the requirements for verification and associated expectations. Mandatory site visits will help alleviate these concerns, but the additional effort for COI interviews can be further explained.

4. Analysis of Selected Verifications

ERM REVIEWED THE VERIFICATION PUBLIC SUMMARY REPORTS FROM 2023. THE FOLLOWING PROVIDED A SUMMARY OF GENERAL OBSERVATIONS FROM THIS REVIEW.

General Observations

From a review of the published 2023 reports

Completeness of Verification Summary Reports

- All reports generally followed the report template provided for 2023 verifications in the Verification Guide (2021 version)
- Information on the mine / refinery site was consistent
- Inclusion of roads, rail, ports was included where relevant
- Verification firm was always identified
- Confirmation that all verifiers involved in the verification were accredited TSM verifiers was provided – ***names of verifiers was not required so it was not possible to confirm if all VSPs were on the approved list (this has been added to the 2024 verification methodology)***
- ***Applicability of protocols was not required to be disclosed in the report template*** – not all firms provided this information
- Ratings were provided for all criteria across the applicable protocols
- **Commentary on why ratings were assigned was provided – level of detail was variable, and arguably insufficient in some cases**
- ***Some firms identified where rating were adjusted from self-assessed ratings; others did not***
- Generally, no details on steps being taken by sites that had not achieved an A rating on a criterion (***this has been added to the 2024 verification methodology***)

Summary of Observation from VSP Interviews

- Given there was no COI interviews conducted at one site, and the verification report was published, it suggests there needs to be amendments to the report template to make it clear that COI interviews are necessary (**Review of Verification Plans by TSM prior to completion of verifications, which is in place for 2024, will allow this to be flagged if absent from planning**).
- It was unclear how information provided by COI was considered and whether it influenced potential adjustments to indicator scoring.
- Given VSPs struggled with determining sample size, making contact with COI, and assuring confidentiality, further guidance may be necessary to establish minimum requirements and for exceptions to the verification process.
- Guidance is needed on interpreting the results of internal and external audits in consideration of assessing indicator scoring in light of identified nonconformities. How significant does an audit finding need to be to downgrade an indicator to B?
- Determination of levels of effort to complete a site verification and gaining acceptance by the facility has been identified as a challenge. Clarity of minimum requirements may be needed.
- Assessing legacy tailings sites needs clarification in terms of access, safety, and related exemptions.
- Clarity on what constitutes a climate change management system audit is required – GHG report verification is insufficient.

5. Recommendations

THE FOLLOWING RECOMMENDATIONS ARE BASED ON THE INFORMATION REVIEWED AND INTERVIEWS HELD DURING THE OVERSIGHT PROCESS. IT IS ACKNOWLEDGED THAT TSM HAS ADDRESSED SEVERAL ISSUES THROUGH MORE RECENT TRAINING AND ADJUSTMENT TO VERIFICATION GUIDANCE.

Reporting Template

1. Mandate that all personnel engaged in the verification be identified by name in the report to enable verification that qualified VSPs were engaged by the Client.
2. Add a section defining specific actions to identify COI, contact COI, engage with COI, and consideration of the information gained from them during the verification.
3. Provide additional clarity on the expected level of detail to be provided in the report. Consider providing an example of an acceptable summary statement on conformity.
4. Stipulate that rationale on why a site identified a protocol as not applicable shall be provided, verified and included in the report.
5. Require that the report clearly identify where an indicator score was adjusted during verification with associated rationale.

COI Interviews

Provide examples of an acceptable identification and sampling methodology (consider ISO 19011, Annex A.6 on Sampling).

6. Stipulate requirements to engage with site employees and contractors.
7. Require that COI shall have the opportunity to present their points of view to the VSP in confidence.
8. Provide guidance on how information and opinions given by COI are to be evaluated objectively and meaningfully, and to the extent possible, corroborated from a second source.
9. Consider a more direct method of notifying COI of an upcoming verification. The VSP names and contact information posted on the TSM website are not easily found, and not always present well in advance of a verification. A minimum of six weeks is suggested. The requirement in the Verification Guide and Verifier Terms of Reference for the Client to provide advance notice to COI may not be undertaken as specified. Stipulate that this should be included as a step in verification planning.

Protocol Clarifications

Tailings Management Protocol

10. Clarify through annual training, that the Table of Conformance does not mirror the content of the Protocol and represents different source material.
11. Clarify the requirements for acceptable conformance levels identified during internal and external audits to warrant an AA or AAA rating.
12. Provide information on verification of legacy sites noting the challenges with gaining access, and provide a process for exempting a site from verification.

Climate Change Protocol

13. Provide clarity in FAQ 22 on what is acceptable as an external audit, stipulating that a GHG verification report is not equivalent to an external audit.

Thank you

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