



2025 MSHA Silica Audit Survival Guide

Operational Readiness for the New 50 µg/m³ Rule & Action Level Triggers

(Updated for 2025/2026 Compliance Cycles)

1. THE NEW REALITY: IT'S NOT JUST ABOUT THE PEL

The 2024/2025 MSHA Final Rule (*Lowering Miners' Exposure to Respirable Crystalline Silica*) has fundamentally changed the audit landscape. It is no longer enough to just "monitor" dust. You must demonstrate **control**.

⚠ THE FINANCIAL RISK:

- **Standard Citation:** Up to \$16,550 per violation.
- **"Flagrant" Violation:** Up to \$332,376 (e.g., knowing failure to correct).
- **The Trap:** If you hit the **Action Level (25 µg/m³)**, you enter a mandatory quarterly sampling loop that consumes resources and invites scrutiny.

Metric	Old Standard (MNM)	New Final Rule (2025)	Operational Impact
PEL	100 µg/m³	50 µg/m³	Hard limit. Exceeding this requires immediate corrective action.
Action Level	None	25 µg/m³	THE TRIGGER. Hitting this forces mandatory quarterly sampling.
Primary Control	PPE Accepted	Engineering Controls	Respirators are now a "last resort" only.

2. THE INSPECTOR'S "FIRST HOUR" CHECKLIST

When an MSHA inspector arrives, they will ask for these documents immediately. Have them ready in a dedicated "Silica Compliance Binder."

- [] **Written Exposure Control Plan (WECP):** Must specifically list the engineering controls (e.g., "TeraFil Haul-Loc applied weekly") used to maintain compliance.
- [] **Sampling Records (Last 2 Years):** Sorted by "Similar Exposure Group" (SEG). Must show dates, occupations, and results.
- [] **Medical Surveillance Roster:** Proof that **all** eligible miners were offered a free medical exam (Chest X-ray/Spirometry). *Required for MNM mines as of 2024/2026.*
- [] **Calibration Logs:** Proof that sampling pumps were calibrated *before* and *after* every sampling shift.
- [] **Training Records:** Verification that miners were trained on the *specific* health hazards of silica (not just general dust).

3. MONTHLY FIELD AUDIT: THE "ACTION LEVEL" DEFENSE

Use this checklist monthly to catch issues BEFORE they become citations.

Audit Item	Verification Criteria	Status	Red Flag (Requires Action)
Sampling Results	Review latest lab data against the Action Level .	<input type="checkbox"/> Pass / <input type="checkbox"/> Fail	> 25 µg/m³: You are now in the "Quarterly Sampling Loop." Schedule re-test.
Haul Roads	Visible dust behind trucks (Opacity Check).	<input type="checkbox"/> Pass / <input type="checkbox"/> Fail	Opacity > 10%: Water is failing. Polymer application required immediately.
Drill Shrouds	Integrity of skirting and vacuum lines.	<input type="checkbox"/> Pass / <input type="checkbox"/> Fail	Visible Plumes: Replace skirt rubber or check vacuum pressure.
Crusher Sprays	Nozzle pressure and spray pattern.	<input type="checkbox"/> Pass / <input type="checkbox"/> Fail	Clogged Nozzles: Switch to surfactant-treated water (Activate) to prevent clogs.
Cab Filtration	Positive pressure in control rooms/cabs.	<input type="checkbox"/> Pass / <input type="checkbox"/> Fail	Door Seals: If dust is on the dashboard, the seal is broken. Citation risk.

4. ENGINEERING CONTROLS: MOVING BEYOND WATER

MSHA prioritizes engineering controls. Documenting "water truck usage" is often insufficient if opacity issues persist. Upgrade your WECP with these specific technologies.




High-Risk Zone	The Compliance Problem	The TeraFil Solution (WECP Update)
Haul Roads	Water evaporates in <45 mins, creating intermittent non-compliance and road degradation (potholes).	TeraFil Haul-Loc: Hygroscopic polymer that eliminates visible dust for 72+ hours, reducing grader maintenance by 40%.
Drilling	Hydrophobic silica particles repel plain water, allowing fine dust to escape the shroud.	GRT: 12X: Super-activates drill water to capture respirable dust <i>at the bit</i> before it becomes airborne.
Crushers / Belts	High-volume dust overwhelms standard sprays; adding more water blinds screens.	GRT: Activate: Reduces water surface tension by 300%, capturing dust without drenching the material.
Stockpiles	Wind erosion carries fines across property lines (environmental citation).	TeraFil DC-Binder: Creates a non-transferable surface crust that withstands wind and rain for months.

5. MEDICAL SURVEILLANCE TRACKER (MNM SPECIFIC)

For Metal/Non-Metal mines, this is a NEW requirement. Failure to offer exams is an automatic citation.

- ☐ **Baseline Exam Offered:** Was a free exam offered to every miner within 180 days of the rule's effective date (or their start date)?
- ☐ **3-Year Follow-Up:** Is the schedule set for the next round of exams?
- ☐ **15-Day Notification:** Did the miner receive their result notification within 15 days of the operator receiving it?
 - *Note: Operators do NOT see specific health data, only the pass/fail status.*

6. READINESS SUMMARY: TRAFFIC LIGHT SYSTEM

-  **RED (Critical Risk):** Sample > 50 µg/m³ OR Engineering Controls failing (visible dust). **STOP & FIX.**
-  **YELLOW (Caution):** Sample 25–49 µg/m³. You are compliant but triggered for mandatory quarterly sampling. **OPTIMIZE CONTROLS.**
-  **GREEN (Audit Ready):** Sample < 25 µg/m³ AND WECP is fully updated. **MAINTAIN.**

Produced by TeraFil | Environmentally Friendly Dust Suppression Solutions

Helping mines and quarries reduce airborne dust, conserve water, and maintain MSHA compliance.

Need a Site-Specific Dust Control Plan?

Contact us at info@terafil.com or visit [TeraFil.com](https://www.terafil.com) to schedule a consultation.