

Compliance priority report

Pressure vessels

Metalliferous and extractives mines

February 2023 to June 2023



Published by the Department of Regional NSW

Title: Compliance priority report – pressure vessels – metalliferous and extractives mines – February 2023 to June 2023

First published: August 2023

Department reference number: RDOC23/167041

More information

Amendment schedule		
Date	Version	Amendment
August 2023	1	First published

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Executive summary

A crucial part of the NSW Resources Regulator’s Incident prevention strategy involves compliance priority programs for mines and petroleum sites. This involves proactively assessing a topic that is an emerging risk across the industry, predominantly determined from incident data or other evolving industry trends. Although these topics may also be contained within the Regulator’s planned inspection programs, the aim of compliance priority programs is to gather further information and knowledge about how the industry is managing and controlling an issue which may not be related to a specific principal hazard.

This program was initiated to review how operators of surface and underground metalliferous and surface extractives mines were responding to the management of their mechanical engineering control plans dealing with legislative compliance with pressure vessel design and item registration and the general management and maintenance of pressure vessels at mine sites.

This report summarises the assessment findings from the compliance priority program that targeted mine operator’s management of pressure vessels at mine sites between February 2023 and June 2023 at:

- 7 surface metalliferous mines
- 13 underground metalliferous mines
- 19 extractives mines

Assessment criteria

Several key elements (referred to as criteria) were assessed as part of this program and included:

Table 1. Compliance Priority Program Criteria

Criteria number	Criteria
1	Did the mine have a procedure on how they manage pressure vessels onsite?
2	Did the mine have a list of all pressure vessels onsite, their category and last inspection date?
3	Were all pressure vessels design registered in accordance with Work Health & Safety Regulation (WHSR)?
4	Were all pressure vessels item registered in accordance with WHSR?

Findings

Overall, the findings were:

- 39 site assessments reviewed for this report
- 156 individual findings
- 32 notices issued under the program

The overall assessment compliance % rating (refer Figure 1) for the 4 assessed criteria ranges from:

- Criteria 3 and 4 findings were assessed at 48% compliance (lowest compliance finding)
- Criteria 1 and 2 findings were assessed at 81% compliance (highest compliance finding)

Two assessed criteria questions assessed rating in the ‘red colour category’ less than 65% compliance, were:

- Criteria 3: Are all pressure vessels design registered in accordance with WHSR assessed at 48% compliance
- Criteria 4: Are all pressure vessels item registered in accordance with WHSR assessed at 48% compliance

(WHSR = clause 243 and 246 of the Work Health and Safety Regulation 2017)

The assessment compliance % rating for each assessed criteria is summarised in Figure 1:

Figure 1. Summary assessment findings overall results by element

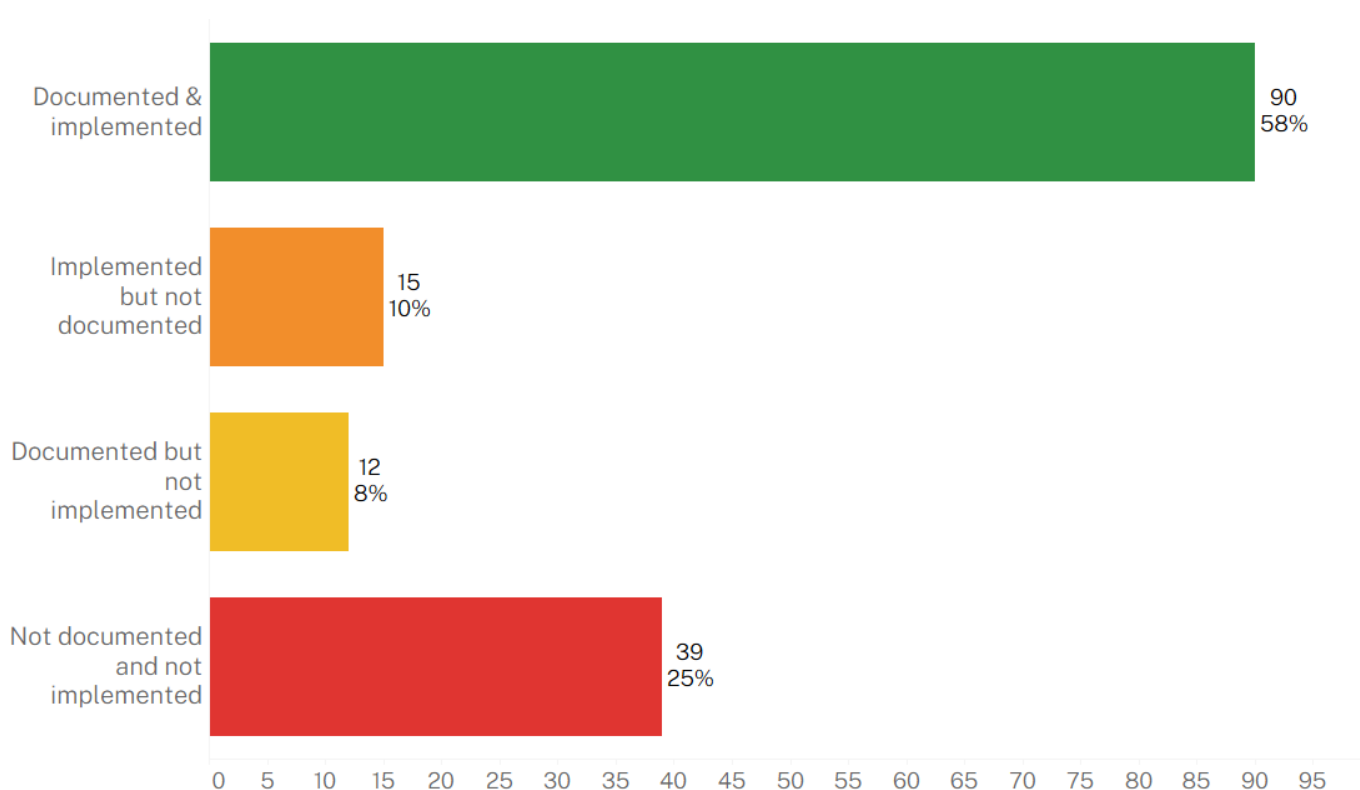
Q1	Q2	Q3	Q4	Grand Total
Does the mine have a procedure on how they manage pressure vessels onsite?	Does the mine have a list of all pressure vessels onsite, their category and last inspection date?	Are all pressure vessels design registered in accordance with WHSR?	Are all pressure vessels item registered in accordance with WHSR?	
 81%	 81%	 48%	 48%	 64%

- Green (=100%)
- Yellow (>= 80% and <100%)
- Orange (>= 65% and <80%)
- Red (<65%)

The overall analysis of assessment findings ratings were found to be documented and implemented assessed at 58%. Implemented but not documented assessed at 10%. The lowest category not documented and not implemented was found to be 25% (Figure 2).

The analysis of the assessed criteria documentation and implementation is summarised in Figure 2:

2023 Figure 2. Overall assessment findings ratings



Notices issued

Of the 39 sites assessed under the inspection program, 27 separate mines were given 32 notices relating to compliance with pressure vessels, while some mine received multiple notices related to the program.

The notices issued for compliance with pressure vessels were examined in detail and Table 3 below lists the notices issued by type.

Table 3: Notices issued for the planned inspection program – pressure vessels

NOTICE TYPE	TOTAL ISSUED	NUMBER OF MINES
s.23 notice of concerns	6	6
s.191 improvement notice	26	26
Total	32	27

Of the combined **32** notices issued, there were some common themes that were apparent throughout the program plan.

- Pressure vessels on fixed and mobile plant were not design registered in accordance with the requirements of clause 243 of the Work Health and Safety Regulation 2017,
- Pressure vessels on fixed and mobile plant were not item registered in accordance with the requirements of clause 246 of the Work Health and Safety Regulation 2017,
- The assessments found evidence of less than adequate management and maintenance of pressure vessels at site as per the legislative requirements of the mechanical engineering control plan, Schedule 2 - Principal Control Plans WHS(MPS) Regulation 2022

Recommendations

Based on the findings outlined in the report identifying the compliance ratings for each assessed criteria for pressure vessels and the significant number of compliance notices issued during the program.

Mine operators should consider the following recommendations:

- Review the site mechanical engineering control plan to ensure pressure vessels are adequately managed as per legislative requirements.
- Review the site mechanical engineering control plan to ensure that pressure vessels are identified, categorised and maintenance inspections are conducted as per manufacturers recommended service intervals.
- Review pressure vessel design registration is maintained in accordance with clause 243 of the Work Health and Safety Regulation 2017.
- Review pressure vessel item registration is maintained in accordance with clause 246 of the Work Health and Safety Regulation 2017.

Further information

For more information on safety assessment programs, the findings outlined in this report, or other mine safety information, please contact the NSW Resources Regulator:

CONTACT TYPE	CONTACT DETAILS
Email	cau@regional.nsw.gov.au
Incident reporting	To report an incident or injury call 1300 814 609 or log in to the Regulator Portal
Website	www.resourcesregulator.nsw.gov.au
Address	NSW Resources Regulator 516 High Street Maitland NSW 2320

Appendix A – Assessment criteria rating

Each assessed criteria is rated from 1 through 4 based on evidence supporting the expected control supports identified at the mine site:

Evidence supporting expected control supports

Expected control supports	Rating	Evidence supporting rating / comments				
	<table border="1"> <tr> <td>4</td> <td>3</td> </tr> <tr> <td>2</td> <td>1</td> </tr> </table>	4	3	2	1	
4	3					
2	1					

Assessment findings results are calculated based on the total points allocated to the assessed ratings as a percentage of the maximum possible points for each criteria group, and any findings rated as ‘Not applicable’ were excluded from the calculation.

Criteria assessed ratings and points

Assessed as	Rating	Points
Documented & implemented	4	4
Implemented but not documented	3	2
Documented but not implemented	2	1
Not documented and not implemented	1	0
Not applicable		

Findings results (points) with colours assigned as follows:

- Green (=100%)
- Yellow (>= 80% and <100%)
- Orange (>= 65% and <80%)
- Red (<65%)