

Procedure for personal noise exposure recordings

Feedback on the information contained in this document is welcome, and should be directed to the Senior Noise and Vibration Engineer, Resources Safety.

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Contents

Objective	4
Instrumentation	4
Interpretation of results	6
Sample size and frequency	7
Appendix 1 — Personal noise exposure recordings form.....	8
Appendix 2 — Correction factors for computing LAeq,8h from LAeq records	9
Appendix 3 — Calculation examples	10
Appendix 4 — Occupation codes	11
Appendix 5 — Location codes	18

Objective

This document has been prepared to assist approved noise officers undertaking personal noise exposure recordings of employees involved in mining and mineral processing activities in Western Australia. It should be read in conjunction with Resources Safety's *Noise Control in Mines — Guideline*.

It explains how to undertake recordings with commonly used instruments in order to minimise variations between results obtained from devices of various makes and models.

Following these procedures will help to ensure the uniformity and reliability of data collected for Resources Safety's MINEHEALTH database.

Instrumentation

The instrument used to measure personal noise exposure is commonly known as a noise dosimeter (Australian Standard AS/NZS 1269:2005 refers to a personal sound exposure meter [PSEM]). Noise dosimeters must comply with the requirements of Australian Standard AS/NZS 2399:1998 and be calibrated at least every two years.

There are several types of noise dosimeters currently available for assessment of employee noise exposure. Although their overall functions are similar, there are variations in elements such as instrument operation, battery checks and reading display. Refer to the manufacturer's user manual for the specific operational requirements of any instrument.

Some mining operations in Western Australia require the use of intrinsically safe instruments in their work environments. Always ensure that intrinsically safe instruments are used for measuring noise exposure in potentially flammable or explosive atmospheres.

Setting up measurements

Where possible, noise dosimeters should be set to A-weighting and 'S' (slow) time-weighting. This setting most closely mirrors the way ears receive perceived sound pressure.

Some instruments either do not offer variable 'slow' or 'fast' settings, or automatically default to their own sampling rate for LAeq measurements.

Taking measurements

The aim of taking a measurement with a noise dosimeter is to evaluate the average exposure of employees to noise during a normal shift.

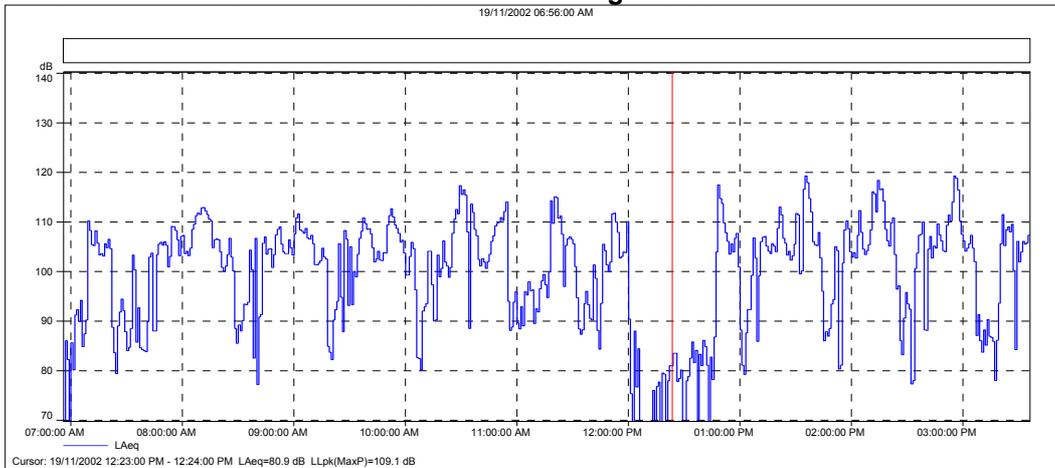
Ideally, when taking measurements the noise dosimeter should be attached to the employee at the start of a shift and collected at the end of the shift, in order to most accurately assess the employee's noise exposure over the whole shift. However, sampling for full shifts, and especially extended shifts, may not always be practical.

If a shorter period is sampled then care must be taken to ensure the result is representative of the full shift exposure. This will require the sampler to have an understanding of the tasks performed during the shift and the cycles of those tasks.

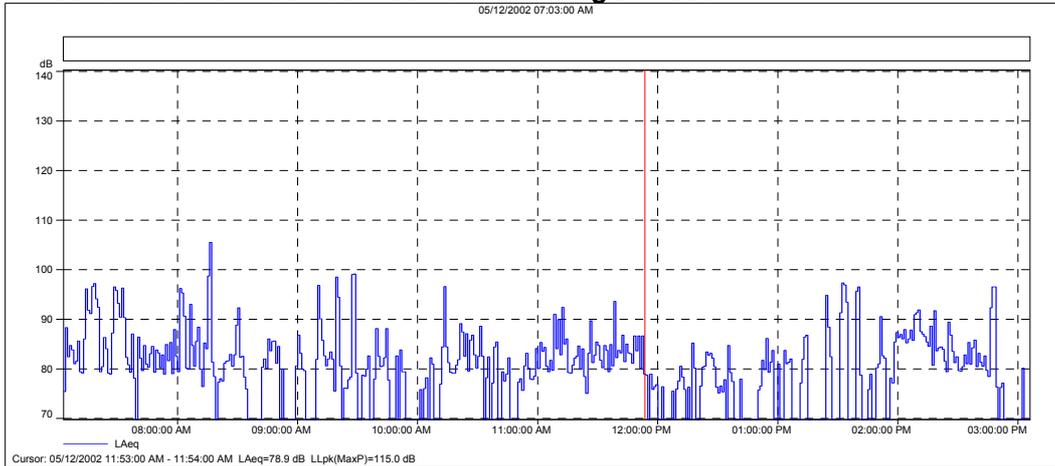
Refer to *Interpretation of results* on page 6 for calculating noise exposure values.

Figure 1 highlights the possible variation in employee noise exposure over a work cycle, confirming the need for care when selecting a representative measurement period.

A. Collected on 19 November 2002 commencing at 6.56 am



B. Collected on 5 December 2002 commencing at 7.03 am



C. Collected on 12 December 2002 commencing at 7.22 am

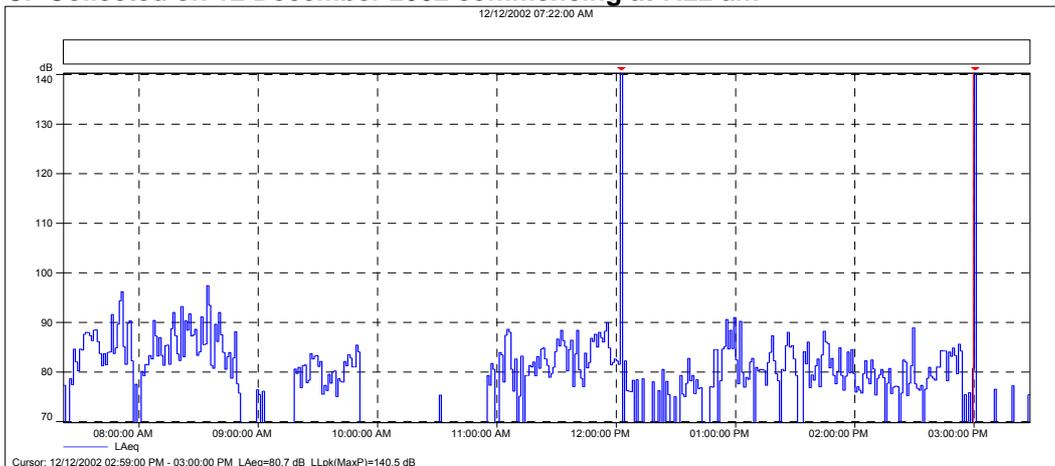


Figure 1 Sample recordings of an employee's noise exposure showing variations over a work cycle

Before performing any noise measurements, ensure that employees selected for evaluation are operating equipment or performing tasks under normal (representative) conditions, and emphasise the importance of continuing to work in their usual manner (wearing the dosimeter should not interfere with normal duties).

Explain the purpose and procedures of sampling to the employee who will be wearing the dosimeter and the importance of not touching, tapping or interfering with the microphone. Instruct the employee not to remove the dosimeter unless absolutely necessary.

The general procedure for taking measurements is as follows.

1. Check that the instrument battery life is at least double the time required for the measuring period. Some instruments will lose data recorded in the memory if the battery is removed for more than 30 minutes and, therefore, prompt downloading of data will be required.
2. Check the instrument sampling mode if applicable.
3. Check the calibration of the instrument and adjust settings if required.
4. Secure the microphone to the collar or on the shoulder of the employee selected for sampling. Refer to the manufacturer's user manual for any specific requirements regarding orientation of the microphone.
5. Start the recording session and note the start time.
6. At the end of the measurement period, stop the recording session, remove the dosimeter from the employee and record the final readings.
7. Recheck the dosimeter's calibration. If the instrument is not within the calibration limits then the results are invalid (refer to Australian Standard AS/NZS 1269.1:2005, which states that if a discrepancy is found between two successive checks of more than $\pm 0.5\text{dB}$ in the reference level, then the results of the measurements taken between the two checks should be considered invalid).
8. Record all measurement data on a personal noise exposure recordings form (Appendix 1, available from the forms section of the Resources Safety website), and ensure the form is submitted to Resources Safety for entry in the MINEHEALTH system.
9. Distribute copies of noise exposure recordings to test participants, explain the results and ensure that their hearing protection adequately protects against the recorded noise exposure levels.

Interpretation of results

To calculate the noise exposure level of an employee working shifts of more or less than eight hours, it is necessary to normalise the employee's exposure to an equivalent eight hour exposure (LAeq,8h).

The following equation is used for this purpose:

$$\text{LAeq8h} = \text{LAeq} + 10 \log_{10} [T/8]$$

where:

LAeq equals the equivalent continuous A-weighted sound pressure level occurring over the measured time; and

T represents the shift length in hours (not to be confused with the sampling time).

In addition, shifts of 10 hours or more require adjustments to LAeq,8h values, as indicated in Table 1.

Table 1 — Adjustments to normalised exposure level LAeq,8h for extended workshifts

Shift length (h)	Adjustments to LAeq,8h (dB)
< 10	+ 0
≥10 to < 14	+ 1
≥14 to < 20	+ 2
≥ 20 to 24	+ 3

Table extracted from Australian Standard AS/NZ 1269.1:2005

Providing that the measurement of LAeq is representative of the full shift, the following method is used to calculate the LAeq,8h values:

Shift length: 8 hours LAeq,8h = LAeq

Shift length: 8 –10 hours LAeq,8h = LAeq + 10 log₁₀ [T/8]

Shift length: 10 –12 hours LAeq,8h = LAeq + 10 log₁₀ [T/8] + 1

For ease of calculating LAeq,8h values from the recorded LAeq results, use the correction factors shown in Appendix 2.

Sample calculations for LAeq,8h values are shown in Appendix 3.

Sample size and frequency

In mining operations, the sample size should allow for each employee exposed to noise above the action level to be tested for noise exposure at least every five years.

Refer to the current noise report of the mine to ascertain the number of employees exposed to noise above the action level. Divide that figure by five to obtain the minimum sample size (number of samples) that must be submitted to Resources Safety annually.

Employees at higher risk, due to their exposure to elevated noise levels, need to be tested more frequently than those with lower noise exposure levels. Table 2 shows the testing intervals required for different exposure levels.

Table 2 — Frequency of testing

Noise exposure LAeq,8h (dB)	Noise dosimetry interval
Up to 90	Every 5 years
90 and 100	Every 3 years
Above 100	Every 2 years

Appendix 1 – Personal noise exposure recordings form



Department of Consumer
and Employment Protection
Government of Western Australia

Resources Safety 

Personal noise
exposure recordings

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 ResourcesSafety@docep.wa.gov.au
 www.docep.wa.gov.au/ResourcesSafety

Form to be completed by an approved noise officer

Part A — Company details

Company <input style="width: 90%;" type="text"/>	Site name <input style="width: 90%;" type="text"/>
Form completed by <input style="width: 90%;" type="text"/>	Position <input style="width: 90%;" type="text"/>
Telephone no. <input style="width: 90%;" type="text"/>	

Part B — Employee details

Surname <input style="width: 90%;" type="text"/>	Given names <input style="width: 90%;" type="text"/>
Date of birth <input style="width: 20px;" type="text"/> / <input style="width: 20px;" type="text"/> / <input style="width: 20px;" type="text"/>	Male <input type="checkbox"/> Female <input type="checkbox"/> Company employee <input type="checkbox"/> Contractor employee <input type="checkbox"/>
Contract company <input style="width: 90%;" type="text"/>	Health surveillance number <input style="width: 20px;" type="text"/>

Part C — Results

Monitoring duration (min) <input style="width: 90%;" type="text"/>	
Shift length (hours) <input style="width: 90%;" type="text"/>	
Shift pattern (days on) <input style="width: 90%;" type="text"/>	(days off) <input style="width: 90%;" type="text"/>
Noise exposure ¹ / _{Aeq,8h} <input style="width: 90%;" type="text"/> dB(A)	— rounded up to the whole decibel — adjusted to AS1269.1—Table 2 if required
Peak noise level/LPeak/ <input style="width: 90%;" type="text"/> dB(lin)	— rounded up to the whole decibel
Hearing protection: Worn <input type="checkbox"/> Not worn <input type="checkbox"/>	
Type: Ear muffs <input type="checkbox"/> Ear plugs <input type="checkbox"/> Both <input type="checkbox"/>	Make/model <input style="width: 90%;" type="text"/>
Date of recording <input style="width: 20px;" type="text"/> / <input style="width: 20px;" type="text"/> / <input style="width: 20px;" type="text"/>	Instrument make/model <input style="width: 90%;" type="text"/>
Occupation code <input style="width: 20px;" type="text"/>	Location code <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
Comments <input style="width: 90%;" type="text"/>	
<input style="width: 90%;" type="text"/>	

Part D — Noise officer details

Name and initials <input style="width: 90%;" type="text"/>	Approval no. <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
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RSD0005_411

Note: Occupation and location codes are listed in Appendices 4 and 5, respectively.

Appendix 2 – Correction factors for computing LAeq,8h from LAeq records

Shift length T (hours: minutes)	Correction factor (dB)
8:00	0
8:15	+0.13
8:30	+0.26
8:45	+0.39
9:00	+0.51
9:15	+0.63
9:30	+0.75
9:45	+0.86
10:00	+1.97
10:15	+2.08
10:30	+2.18
10:45	+2.28
11:00	+2.38
11:15	+2.48
11:30	+2.58
11:45	+2.67
12:00	+2.76

} Includes additional 1 dB for extended shifts

Appendix 3 – Calculation examples

Example 1

A personal noise dosimeter is placed on an employee for a representative period of six hours. At the end of the six hours, the LAeq reading is 93 dB(A). The employee works a 10 hour shift.

$$LA_{eq,8h} = LA_{eq} + 10 \log_{10} [T/8]$$

where shift length, T = 10 hours

$$\begin{aligned} LA_{eq,8h} &= 93 + 10 \log_{10} [10/8] \\ &= 93 + 0.97 = 93.97 \text{ dB(A)} \end{aligned}$$

for shifts between 10 and 12 hours add 1 dB(A)

$$\begin{aligned} \text{therefore } LA_{eq,8h} &= 94.97 \text{ dB(A)} \\ &\text{rounded to } 95 \text{ dB(A)} \end{aligned}$$

or using the correction factor from Appendix 2 for a shift length T = 10 hours

$$\begin{aligned} LA_{eq,8h} &= LA_{eq} + \text{correction factor} \\ &= 93 + 1.97 = 94.97 \text{ dB(A)} \\ &\text{rounded to } 95 \text{ dB(A)} \end{aligned}$$

Example 2

A personal noise dosimeter is placed on an employee for a representative period of four hours. At the end of the four hours, the LAeq reading is 95 dB(A). The employee works an eight hour shift. Therefore:

$$LA_{eq,8h} = 95 + 0 = 95 \text{ dB(A)}$$

Example 3

A personal noise dosimeter is placed on an employee for a representative period of 11 hours. At the end of the 11 hours, the LAeq reading is 85 dB(A). The employee works a 12 hour shift.

$$\begin{aligned} LA_{eq,8h} &= 85 + 10 \log_{10} [12/8] \\ &= 85 + 1.76 = 86.76 \text{ dB(A)} \end{aligned}$$

for shifts between 10 and 12 hours add 1 dB(A)

$$\begin{aligned} \text{therefore } LA_{eq,8h} &= 87.76 \text{ dB(A)} \\ &\text{rounded to } 88 \text{ dB(A)} \end{aligned}$$

or using the correction factor from Appendix 2 for a shift length T = 12 hours

$$\begin{aligned} LA_{eq,8h} &= LA_{eq} + \text{correction factor} \\ &= 85 + 2.76 = 87.76 \text{ dB(A)} \\ &\text{rounded to } 88 \text{ dB(A)} \end{aligned}$$

Appendix 4 – Occupation codes

100000	Management and supervisory
110000	General management occupations
	Financial manager
	Personnel manager
	Sales manager
	Purchasing manager
120000	Engineering occupations
121000	Mining engineer
122000	Mechanical engineer
123000	Civil engineer
124000	Chemical engineer
125000	Metallurgical engineer
126000	Petroleum engineer
129000	Engineer NOC
130000	Professional and related occupations
131000	Chemist
132000	Geologist or geological assistant
133000	Metallurgist
134000	Environmental scientist or assistant
135000	Surveyor
136000	Draftsman
137000	Health or medical occupations
	- Doctor
	- Occupational health nurse
	- First aid attendant
138000	Industrial hygienist
139000	Professional and related NOC
140000	Management or administration services
141000	Security officer
142000	Safety officer
143000	Training officer
144000	Personnel officer
145000	Clerical or secretarial occupations
146000	Township or accommodation occupations
	- Caretaker
	- Housekeeper or cleaner
	- Handyman
	- Gardener
	- Groundsman
	- Township or accommodation occupation NOC
147000	Catering occupations
	- Cook
	- Catering assistant
	- Kitchen hand
	- Canteen attendant
	- Catering occupations NOC

148000 Cleaning or laundering occupations
 149000 Management or administrative services
 occupations NOC

150000 Mine management occupations

151000 Mine manager
 152000 Underground manager
 153000 Assistant underground manager
 154000 Under manager
 155000 Mine management occupations NOC

160000 Supervisory occupations

161000 Deputy (coal)
 162000 Foreman or shift boss underground
 163000 Foreman or shift foreman surface
 164000 Overman (coal)
 165000 Supervisor

200000 Underground production and services

210000 Miners production or development (underground)

211000 Contract miner
 212000 Coal miner (underground)
 213000 Non-contract miner (underground)
 214000 Trainee miner
 215000 Miner NOC
 216000 Miner's assistant

220000 Long hole drill and blast occupations (underground)

221000 Long hole drill operator
 222000 Long hole driller's assistant
 223000 Shotfirer
 224000 Shotfirer's assistant (charging)

230000 Diamond drillers or raiseborers

231000 Diamond drill operator
 232000 Diamond driller's assistant
 233000 Raiseborer operator
 234000 Raiseborer's assistant

240000 Loading or transport occupations (underground)

241000 Diesel loader operator
 242000 Mechanical bogger driver
 243000 Scraper operator
 244000 Locomotive driver
 245000 Truck driver
 246000 Plant operator
 247000 Underground personnel transport driver
 248000 Conveyor attendant or operator
 249000 Trucker

250000 Ground or roof support occupations (underground)

251000 Timberman
 252000 Roofbolter
 253000 Hydraulic fill operator

260000 Services occupations (underground)

- 261000 Ventilation occupations
- 262000 Tracklayer or platelayer
- 263000 Pipefitter
- 264000 Pumpman or pump attendant
- 265000 Nipper, salvageman or utilityman
- 266000 Underground crushing operator
- 266100 Grizzlyman or pass runner
- 267000 Underground labourer or tool carrier
- 268000 Sanitaryman
- 269000 Underground services occupations NOC

270000 Underground winding and hoisting occupations

- 271000 Winding engine driver
- 272000 Hoist driver
- 273000 Platman
- 274000 Skipman
- 275000 Braceman
- 276000 Brakeman
- 277000 Onsetter
- 279000 Winding and hoisting occupations NOC

300000 Mining production and services (surface)

310000 Blast hole drilling surface

- 311000 Blast hole drill operator
- 312000 Blast hole drill operator's assistant
- 313000 Air track or crawl air driller
- 314000 Sniper drill operator (rubber tyred)

320000 Charging and blasting (surface)

- 321000 Powder monkey, leading hand or shotfirer
- 322000 Powder truck driver
- 323000 Powder crew labourer

330000 Exploration drilling (surface)

- 331000 Driller
- 332000 Driller's assistant

340000 Excavation equipment operators (surface)

- 341000 Bucketwheel operator
- 342000 Bucketwheel operator's assistant
- 343000 Dragline operator
- 344000 Rope shovel operator
- 346000 Hydraulic excavator operator
- 347000 Dredge operator
- 348000 Front end loader operator
- 349000 Excavation equipment operator NOC

350000 Mobile plant operator (surface)

- 351000 Bulldozer operator
- 352000 Grader driver
- 353000 Backhoe operator
- 354000 Scraper driver
- 359000 Mobile plant operator NOC

360000 Driving occupations (surface)

361000 Haulage truck driver
362000 Water truck driver
363000 Explosives truck driver
364000 Fuel, grease or service truck driver
365000 Hiab truck driver
366000 Passenger vehicle driver or bus driver
367000 Equipment transport driver
369000 Driver NOC

370000 Open cut service occupations

371000 Greaser or oiler
372000 Quarry labourer or labourer
373000 Fuel and lubrication serviceman
374000 Wash bay operator
375000 Dump spotter
376000 Weighbridge operator

400000 Ore treatment occupations

410000 Processing plant occupations

411000 Processing plant operator
412000 Processing plant serviceman
413000 Processing plant utility worker

420000 Mobile plant occupations

421000 Front end loader operator
422000 Mobile plant operator NOC

430000 Final product handling or transport occupations

431000 Final product packer, loader or dumper operator
432000 Final product warehouse operator
433000 Final product handling or transport NOC

440000 Sampling, assay, laboratory occupations

441000 Laboratory technician, assistant or analyst
442000 Sample preparation operator
443000 Sampler or sample plant operator

500000 Railway operations occupations

510000 Railway operator NOC

520000 Locomotive crews

521000 Locomotive driver
522000 Observer
523000 Trainee observer
524000 Shunter locomotive driver

530000 Track laying or maintenance

531000 Ganger
532000 Platelayer
533000 Track maintenance machine operator
534000 Track labourer

600000 Metal working processing trades

610000 Sheet metal trades

611000 Metal patternmaker
612000 Sheet metal worker
613000 Coppersmith
614000 Guillotine operator
615000 Millwright

620000 Metal machining trades

621000 Metal machinist
622000 Fitter or turner

630000 Fitter mechanical

631000 Fitter
632000 Fitter — welder
633000 Fitter — diesel
634000 Fitter — pipe

640000 Structural steel trades

641000 Boilermaker or welder
642000 Boilermaker
643000 Welder

650000 Metal trades apprentices

651000 Sheet metal apprentice
652000 Metal machining apprentice
653000 Fitter's apprentice
654000 Boilermaker's apprentice
659000 Apprentice NOC

660000 Trades assistant

690000 Metal trades

691000 Tool and dye setter
692000 Saw setter
693000 Electroplater
694000 Blacksmith
695000 Shipwright
696000 Instrument artificer
697000 Lamp room mechanic or assistant
698000 Toolmaker
699000 Drill doctor

700000 Electrical or electronic trades

710000 Electrical trades

711000 Linesman
712000 Electrical fitter
712100 Cable splicer
713000 Electrical mechanic
714000 Automotive electrician
715000 Refrigeration mechanic
716000 Air conditioning mechanic
717000 Electrical installer

	718000	Lift mechanic
	719000	Electrician NOC
720000		Electronic trades
	721000	Radio technician
	722000	Telecommunication technician
	723000	Telecommunication trainee
	724000	Signals technician
	725000	Instrument technician
730000		Electrical or electronic apprentices
	731000	Electrical apprentice
	732000	Electronic apprentice
790000		Electrical trades assistant
800000		Miscellaneous trades or utilities
810000		Construction trades
	811000	Bricklayer
	812000	Carpenter or joiner
	813000	Painter
	814000	Plasterer or tiler
	815000	Plumber or drainer
	816000	Rigger or ropesplicer
	817000	Scaffolder
	818000	Construction trades assistant
820000		Conveyor belt repair occupations
	821000	Belt repairer
	822000	Belt repairers assistant
	823000	Trainee belt repairer
	824000	Rubber repairer NOC
830000		Motor or engine trades
	831000	Motor mechanic
	832000	Diesel motor mechanic
	833000	Brake mechanic
	834000	Tyre fitter
	835000	Panel beater
	836000	Spray painter
	837000	Mechanic NOC
	838000	Trades assistant
	839000	sand blaster
840000		Power plant operators
	841000	Power plant engine driver
	842000	Power plant trainee engine driver
	843000	Power plant greaser
	844000	Boiler attendant
	845000	Fireman
850000		Water treatment plant operator
860000		Waste disposal equipment operator

	870000	Gas supply service operator
	890000	Utility operator NOC
900000		Material handling – stores or warehouse occupations
	910000	Crane driving occupations
	911000	Mobile crane driver
	912000	Tower crane driver
	913000	Overhead crane driver (cabin controlled)
	914000	Crane driver NOC
	915000	Dogman or cranechaser
	920000	Fork lift operator
	930000	Storemen NOC
	931000	Toolstore attendant

NOC = not otherwise classified

Appendix 5 – Location codes

100 Underground workplaces

110 Access, travelling or haulage ways

- 111 Brace or winder building
- 112 Shaft
- 113 Plat
- 114 Decline, adit or drift
- 115 Haulroad or level
- 116 Conveyor road
- 117 Ladderway
- 118 Return airways

120 Underground production or development areas

- 121 Underground face area (coal)
- 122 Underground stope
- 125 Loading pocket
- 126 Raise (development)
- 127 Decline or winze (development)
- 128 Level (development)
- 129 Capital (development)

130 Underground workshop

140 Pump chamber

150 Underground storage areas

- 151 Fuel storage
- 152 Explosives magazine
- 153 Underground stores — general

160 Underground ore or waste dumping

- 161 Ore or waste tip or pass area
- 162 Grizzly
- 163 Millhole

170 Underground crushing area

180 Ancillary locations

- 181 Crib room
- 182 Latrine

190 Underground

200 Open pit production or development areas

210 Face loading area

220 Bench areas not haul road

- 221 Drill pattern area
- 222 Heavy vehicle park up area

- 230 Haul road**
 - 231 Haul road — level
 - 232 Haul road — ramp or incline
- 240 Waste dump area**
- 250 Ore tipping area**
- 260 In pit crushing**
 - 261 In pit crusher area
 - 262 In pit conveyors
- 270 Stockpile — run of mine**
- 280 Salt production areas**
- 290 Open cut NOC**
 - 291 Dredge
- 300 Surface work areas — general**
 - 310 Mine access road (not haul road)**
 - 320 Park up area, heavy vehicles or plant**
 - 330 Warehouse or stores**
 - 340 Explosives magazine**
 - 350 Fuel storage area**
 - 360 Laboratory**
 - 370 Storage yard or rebuild area**
 - 380 Lube bay or service bay**
 - 381 Wash down area
 - 390 Surface general area**
- 400 Treatment plant or ore processing**
 - 411 Process control room**
 - 413 Crushing, screening or conveyor**
 - 416 Heap, vat or insitu leaching**
 - 419 Grinding or classification**
 - 422 Gravity concentration or magnetic separation**
 - 425 Flotation**
 - 428 Leaching**
 - 431 Solvent extraction, scrubber or stripper**
 - 434 Filter, press or wet screening**
 - 437 Thickening or clarification**

- 439 **Crystallisation, nucleation or ion exchange**
- 441 **Electrowinning or cell house**
- 444 **Smelter, roaster or furnace area**
- 447 **Gold room and elution facility**
- 451 **Tailings storage facility**
- 454 **Product packaging or storage**
- 457 **Sample plant or station**
- 461 **Reagent or raw material storage area**
- 464 **Reagent or raw materials preparation plant**
- 467 **Water treatment plant**
- 471 **Processing plant other**

- 500 **Crushed ore areas**
 - 510 **Stockpiles**
 - 511 Stockpile access road
 - 520 **Train loading or unloading**
 - 521 Train loader or loading area
 - 522 Train unloader or tippler area
 - 530 **Stacker reclaimer area**
 - 540 **Stacker or reclaim conveyor**
 - 550 **Wharf area**
 - 551 Shiploader wharf
 - 552 Conveyors wharf

- 600 **Workshop surface**
 - 610 **Workshop heavy equipment**
 - 620 **Workshop elect or instruments**
 - 630 **Workshop railway**
 - 640 **Workshop auto or light vehicles**
 - 650 **Workshop boilermakers**
 - 660 **Workshop painters or carpenters**
 - 670 **Workshop tyre fitting**
 - 680 **Workshop belt repairs**
 - 690 **Workshop NOC**

- 700 Railways
 - 710 Main lines
 - 711 Main line — on track
 - 712 Main line — off track
 - 720 Sidings
 - 721 Siding — on track
 - 722 Siding —off track
 - 730 Railway access road
 - 740 Railway yard

- 800 Power generation plant
 - 810 Control room
 - 820 Distribution or sub-station
 - 830 Engine room

- 900 Administration areas
 - 910 Offices or administration building
 - 920 Crib room, canteen or mess
 - 930 Showers or change room
 - 940 Lamproom
 - 950 Car park
 - 960 Pathways
 - 970 Gardens
 - 990 Administration NOC

NOC = not otherwise classified