

Specification (Measurement)

**Transport and Main Roads Specifications
MRS51 Environmental Management**

July 2020

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1 Introduction

This Specification describes Environmental and Cultural Heritage management requirements applicable to all activities relating to the Contract.

This Specification shall be read in conjunction with MRS01 *Introduction to Specifications* and other Specifications as appropriate.

This Specification forms part of the Transport and Main Roads Specifications Manual.

2 Measurement of work

2.1 Standard Work Items

In accordance with the provisions of Clause 2.1.3 of MRS01 *Introduction to Specifications*, the Standard Work Items covered by this Specification are listed in Table 2.1.

Table 2.1 – Standard Work Items

Standard Item No.	Description	Unit of Measurement
20201	Weekly Environmental Inspections	lump sum
20202	Develop Environmental Management Plan (Construction)	lump sum
20203	Implement Environmental Management Plan (Construction)	lump sum
20204	Monthly Environmental Reporting	lump sum
20205	Environmental Records Management	lump sum
20206	Approvals	lump sum
20208P	Water Quality Monitoring (Provisional Quantity)	each
20211	Cultural Heritage Management	lump sum
20212	Noise Assessment Report	lump sum
20213	Develop Noise Management Plan	lump sum
20217	Implement Noise Management Plan	lump sum
20221	Vibration Assessment Report	lump sum
20222P	Condition Surveys (Provisional Quantity)	each
20226	Develop Vibration Management Plan	lump sum
20230	Implement Vibration Management Plan	lump sum
20234P	Air Quality Monitoring (Provisional Quantity, if ordered)	each
20238P	Management of Contaminated Sites, (Provisional Quantity, if ordered)	m ³
20242P	Fauna Management (Provisional Item, if ordered)	lump sum
20246	Biosecurity Matter Control	lump sum
20250P	Investigation of Contaminated Sites (Provisional Item, if ordered)	lump sum
20254P	Complaint-related Noise Assessment and Management (Provisional Quantity, if ordered)	each
20258P	Complaint-related Vibration Assessment and Management (Provisional Quantity, if ordered)	each

2.2 Work Operations

Work Operations included in the Standard Work Items are specified in the relevant clause adjacent to each Standard Work Item listed in Table 2.1. All work items listed in this Specification are inclusive of Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*.

2.3 Standard Work Items and Work Operations

2.3.1 Administration of Environmental Management Plan (Construction)

The Standard Work Item applicable to Weekly Environmental Inspections is:

Item 20201 Weekly Environmental Inspections

Work Operations incorporated into the above item include the following:

- a) Weekly Site Inspections to:
 - i. verifying Management Measures prescribed in the EMP(C) are present, functional and adequate
 - ii. observe the Site for Environmental Harm
 - iii. identify maintenance requirements for implemented Management Measures, and
 - iv. verifying preparedness for adverse weather conditions where weather forecast.
- b) Undertake corrective actions to rectify identified omissions or non-conformances, and
- c) Management and communication of Weekly Site Inspection results and records to all relevant parties.

Adequate refers to whether the management measures employed on Site are reasonable and practicable to manage the risk of Environmental Harm occurring as a result of the Works under the Contract.

Item 20202 Develop Environmental Management Plan (Construction)

Work Operations incorporated in this item include the following:

- a) site investigations and research in the development of the Environmental Management Plan (Construction)
- b) documentation, submission and amendment (where necessary) of the Environmental Management Plan (Construction)
- c) preparation of Noise section of the EMP(C) for low noise risk contracts
- d) preparation of the vibration section of the EMP(C) for low vibration risk contracts, and
- e) preparation of Monitoring plans for each environmental element under Clause 8 of the Specification where required.

Item 20203 Implement Environmental Management Plan (Construction)

Work Operations incorporated in this item include the following:

- a) review and amend Environmental Management Plan (Construction)

- b) environmental inductions of staff
- c) undertake all Management Measures described within the Environmental Management Plan (Construction), unless covered under a separate work item
- d) maintain all Management Measures described within the Environmental Management Plan (Construction), and
- e) removal of Management Measures prior to Practical Completion or as agreed with Administrator.

Item 20204 Monthly Environmental Reporting

Work Operations incorporated into the above item include the following:

- a) preparation and submission to Administrator of the Contractor's Monthly Environmental Report in accordance with Clause 7.6.

Item 20205 Environmental Records Management

Work Operations incorporated into the above item include the following:

- a) record and collate environmental records as required by the Specification and Approvals, and
- b) submit to Administrator at practical completion the Contractor's Environmental records as per Clause 7.8 of MRTS51.

Item 20206 Approvals

Work Operations incorporated in this item include the following:

- a) research, prepare, and consult Administrating Authorities regarding applications to obtain licences, permits and approvals
- b) reimbursement of fees charged by Administering Authorities and other expenses associated with acquiring Approvals, and
- c) notifications for applicable Self-Assessable Codes.

NOTE: Costs incurred in complying with the condition of Approvals are incurred in Work Item 20203.

2.3.2 EMP(C) Specific Element Requirements

Item 20208P Water Quality Monitoring (Provisional Quantity)

Work Operations incorporated in the above item include the following:

- a) Undertake water quality monitoring as outlined in Clause 8.2.3 of MRTS51 and Clause 2 of Annexure MRTS51.1 based on water quality risk of the Contract:
 - a) Low risk – visual monitoring.
 - b) Medium and high risk including:
 - i. undertake field water quality monitoring and sampling
 - ii. testing in NATA laboratory (if required)
 - iii. recording, reporting and analysing water quality monitoring results
 - iv. undertake Monitoring in accordance with Clause 8.2.3 of MRTS51 of water discharged to land where applicable, and

- v. investigation of any results that exceed criteria outlined in Table 8.2.2 of MRTS51.

Item 20211 Cultural Heritage Management

Work Operations incorporated in this item include the following:

- a) notifying the Administrator within agreed timeframes (unless otherwise agreed, seven days) prior to working in known areas of cultural heritage significance
- b) carrying out site inductions for cultural heritage personnel
- c) scheduling and co-ordinating cultural heritage management activities
- d) unexpected finds management
- e) cultural heritage induction of staff and contractors
- f) compliance with cultural heritage approval conditions in accordance with Clause 1 of Annexure MRTS51.1
- g) implementing contract specific cultural heritage requirements as outlined in Clause 3 of Annexure MRTS51.1, and
- h) removal of Management Measures prior to Practical Completion or as agreed with Administrator.

For contracts where noise is identified as medium or high risk, the Noise Work Items are now Standard Work Items (that is they are not Provisional Items). These work items can be omitted from Contracts where noise is categorised as low risk. Noise is then managed under Work Items 20202 and 20203.

For Contracts where it is not certain whether a Noise Assessment Report or Noise Management Plan is required, these items (20212, 20213 and 20217) can be made Provisional on a contract-specific basis in accordance with MRS01 Clause 2.1.7.

Item 20212 Noise Assessment Report

Work Operations incorporated in this item include the following:

- a) undertake noise assessment of potential impacts from construction prior to commencement of Works as outlined in Clause 8.5.2.2 of MRTS51 and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration* and Clause 4.3 of Annexure MRTS51.1
- b) preparation of Noise Assessment Report in accordance with Clause 8.5.2.2 MRTS51 and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*
- c) review and acceptance of the Noise Assessment Report by a Registered Professional Engineer of Queensland with suitable qualifications and experience, and
- d) submit to the Contract Administrator and obtain deemed suitability prior to commencing noise generating activities on Site.

Item 20213 Develop Noise Management Plan

Applicable to medium and high-level noise risk contracts.

Work Operations incorporated in this item include the following:

- a) development of a standalone Noise Management Plan prior to commencement of Works as outlined in Clause 4.3 of Annexure MRTS51.1 and in accordance with the *Transport Noise Management Code of Practice: Volume 2 – Construction Noise and Vibration*
- b) submit to the Contract Administrator and obtain deemed suitability prior to commencing noise generating activities on Site, and
- c) update the Noise Management Plan where required.

NOTE: Costs incurred in implementing the Noise Management Plan are incurred in Work Item 20217.

Item 20217 Implement Noise Management Plan

Work Operations incorporated in this item include the following:

- a) Implementation of the management measures prescribed in the Contractor's Noise Management Plan.
- b) Where required by the Noise Management Plan, the Contractor shall:
 - i. undertake planned and trial noise monitoring during the Work under the Contract in accordance with Clause 8.5.3 MRTS51 and Section 4.3 of the *Transport Noise Management Code of Practice: Volume 2*
 - ii. prepare Construction Stage Noise Assessment Report (for the trial and planned monitoring), and
 - iii. review and acceptance of the Vibration Assessment Report by a suitable Registered Professional Engineer of Queensland.

For contracts where vibration is identified as medium or high risk, the vibration work items are now Standard Work Items (that is they are not Provisional Items). These work items can be omitted from Contracts where vibration is categorised as low risk and vibration is managed under work items 20202 and 20203.

For Contracts where it is not certain whether a Vibration Assessment Report or Vibration Management Plan is required, these items (20221, 20222P and 20226) can be made provision on a contract-specific basis in accordance with MRS01 Clause 2.1.7.

Item 20222P Condition Surveys (Provisional Quantity)

Work Operations incorporated in this item include the following:

- a) prior to commencing Work under the Contract, condition survey of premises, buildings and structures listed in Clause 5.5 of Annexure MRTS51.1
- b) post construction condition survey undertaken, signed by RPEQ and submitted to Administrator

- c) building contents investigation where required as per *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*, and
- d) undertake other investigations such as building contents investigations and infrastructure, services and utility investigations as determined in the Vibration Assessment Report.

Item 20221 Vibration Assessment Report

Work Operations incorporated in this item include the following:

- a) undertake vibration assessment of potential impacts from construction prior to commencement of Works as outlined in Clause 8.6.2.3 of MRTS51 and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*
- b) preparation of Vibration Assessment Report in accordance with Clause 8.6.2.3 of MRTS51 and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*
- c) review and acceptance of the Vibration Assessment Report by a Registered Professional Engineer of Queensland with suitable qualifications and experience, and
- d) submit to the Contract Administrator and obtain deemed suitability prior to commencing noise generating activities on Site.

Item 20226 Develop Vibration Management Plan

Applicable to medium and high vibration risk contracts.

Work Operations incorporated in this item include the following:

- a) development of a standalone Vibration Management Plan prior to commencement of Works as outlined in Clause 5.3 of Annexure MRTS51.1 and in accordance with *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*, and
- b) submit to the Contract Administrator and obtain deemed suitability prior to commencing noise generating activities on Site, and
- c) update the Vibration Management Plan where required.

NOTE: Costs incurred in implementing the Vibration Management Plan are incurred in Work Item 20230.

Item 20230 Implement Vibration Management Plan

Work Operations incorporated in this item include the following:

- a) Implementation of the management measures prescribed in the Contractor's Vibration Management Plan.
- b) Where required by the Vibration Management Plan, the Contractor shall:
 - i. undertake planned or trial vibration monitoring during the Work under the Contract in accordance with Clause 8.6.3 of MRTS51 and Section 4.3 of the *Transport Noise Management Code of Practice: Volume 2*
 - ii. prepare a Construction Stage Vibration Assessment Report (for the planned and/or trial monitoring), and

- iii. have the report reviewed and accepted by a suitable Registered Professional Engineer of Queensland.

Item 20234P Air Quality Monitoring (Provisional Quantity, if ordered)

Work Operations incorporated in this item include the following:

- a) air quality monitoring as outlined in Clause 6.3 of Annexure MRTS51.1
- b) where required by Clause 6.3 of Annexure MRTS51.1, air quality impact assessment in accordance with Chapter 6 of the Transport and Main Roads' *Road Traffic Air Quality Management Manual*, and
- c) air quality monitoring in response to complaints received during Works under the Contract, completed in accordance with the Transport and Main Roads' *Road Traffic Air Quality Management Manual*.

Item 20238P Management of Contaminated Sites (Provisional Quantity, if ordered)

Work Operations incorporated in this item include the following:

- a) preparation of Contaminated Site Management Plan where required in Clause 7.3 of Annexure MRTS51.1
- b) consultation and negotiation with administrating authority to obtain endorsement from administrating authority for the Contaminated Site Management Plan in accordance with *Environmental Protect Act 1994*
- c) treatment and/or encapsulation and/or removal and disposal of known contaminated material and backfilling in accordance with the approved Contaminated Site Management Plan
- d) documentation of treatment, transport and/or disposal of the contaminated material in accordance with local and state government regulations, and
- e) documentation, consultation and application to administrating authority to have contaminated site removed from the Environmental Management Register or Contaminated Land Register.

Item 20242P Fauna Management (Provisional Item, if ordered)

Work Operations incorporated in this item include the following:

- a) pre-clearing inspections, monitoring, recovery and relocation of fauna undertaken by a spotter-catcher
- b) management, removal, relocation or destruction of animal breeding place(s) undertaken by a spotter-catcher under an applicable Species Management Program
- c) installation of temporary fauna fencing to design standard specified in Clause 8.3 of Annexure MRTS51.1, and
- d) installation, maintenance, decommissioning and removal of temporary fauna fencing, and
- e) fauna monitoring as stipulated in Clause 8.4 of Annexure MRTS51.1.

Item 20246 Biosecurity Matter Control

Work Operations incorporated in this item include the following:

- a) management and control of biosecurity matters within the Site

- b) installation of clean down facility and clean down of vehicles and plant
- c) management of biosecurity matter carrier movements across biosecurity management zones applicable to the contract, and
- d) reporting of biosecurity matters and treatments.

Item 20250P Investigation of Contaminated Sites (Provisional Item, if ordered)

Work Operations incorporated in this item include the following:

- a) in accordance with the requirements of Clause 7.3 of Annexure MRTS51.1, preparation of Contaminated Site Investigation Plan by a suitably qualified person in accordance with legislative requirements
- b) implementation of the Contaminated Site Investigation Plan including laboratory analysis costs
- c) where required, engagement of an independent auditor.

Item 20254P Complaint-related Noise Assessment and Management (Provisional Quantity, if ordered)

Work Operations incorporated in this item include the following:

- a) manage and respond to noise complaints in accordance with Clause 7.3 of MRTS51, the Contractor's Noise & Vibration Management Plan, and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration* including undertaking Complaint Assessment
- b) undertake complaint-related noise assessment during the Work under the Contract in accordance with Clause 7.3 of MRTS51 and Section 4.3 *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*, and
- c) reporting of complaint-related noise assessments undertaken during Works under the Contract in accordance with Clause 7.3 of MRTS51 and *Transport Noise Management Code of Practice: Volume 2 -Construction Noise and Vibration*.

Item 20258P Complaint-related Vibration Assessment and Management (Provisional Quantity, if ordered)

Work Operations incorporated in this item include the following:

- a) manage and respond to vibration complaints in accordance with Clause 7.3 of MRTS51, the Contractor's Noise & Vibration Management Plan, and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration* including undertaking Complaint Assessment
- b) undertake complaint-related vibration assessment during the Work under the Contract in accordance with Clause 7.3 of MRTS51 and Section 4.3 *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*, and
- c) reporting of complaint-related vibration assessments undertaken during Works under the Contract in accordance with Clause 7.3 of MRTS51 and *Transport Noise Management Code of Practice: Volume 2 -Construction Noise and Vibration*.

2.4 Payment

2.4.1 Weekly Environmental Inspections

Where an environmental or cultural heritage inspection demonstrates a non-conformance with the EMP(C), the Contractor shall be responsible for costs of further investigation and all associated remediation costs.

2.4.2 Contaminated Sites

Item 20238P relates to requirements to undertake remediation and management in accordance with *Environmental Protection Act* 1994. Investigation and management of additional contaminated sites discovered during the construction shall be undertaken as a variation to the contract unless the Contractor is found to be the cause of the contamination.

2.4.3 Environmental Nuisance and Environmental Harm

The Contractor shall pay all costs associated with remediation of Environmental Nuisance and Environmental Harm that results from Works under the Contract. This may include contamination resulting from spills and leaks of chemicals and fuels, ground disturbance and/or vegetation clearing beyond the Limits of Clearing, offsets payable due to Environmental Nuisance or Environmental Harm that occurred.

2.4.4 Payment for installation, maintenance and removal of Management Measures

Unless otherwise stated or negotiated, payment for Items 20203, 20217 and 20230 related to implementation of Management Plans shall be:

- a) 80% of tendered amount on installation of prescribed Management Measures to appropriate standard, and
- b) the balance of monies owed to the Contractor (20%) is payable on removal of the prescribed Management Measure and making good the area.

2.4.5 Work Item 20208P Water Quality Monitoring (Provisional Quantity)

Each is defined as each water quality location defined in the Contractor's Environmental Management Plan (Construction).

2.4.6 Work Item 20222P Condition Surveys (Provisional Quantity)

Each is defined as an individual premises, building or structure.

2.4.7 Work Item 20234P Air Quality Monitoring (Provisional Quantity, if ordered)

Each is defined as each air quality monitoring location defined in the Contractors Air Quality Monitoring Plan.

2.4.8 Work Item 20254P Complaint-related Noise Assessment and Management (Provisional Quantity, if ordered)

Each is defined as each compliant triggered-noise assessment location.

2.4.9 Work Item 20258P Complaint-related Vibration Assessment and Management (Provisional Quantity, if ordered)

Each is defined as each compliant triggered vibration assessment location.

