

Superseded

**Specification (Measurement)**

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

**April 2017**

Superseded

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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
1330	Weekly Environmental Inspections	lump sum
1331	Develop Environmental Management Plan (Construction)	lump sum
1332	Implement Environmental Management Plan (Construction)	lump sum
1333	Approvals	lump sum
1334	Environmental Records Management	lump sum
1335	Monthly Environmental Reporting	lump sum
1336P	Water Quality Monitoring (Provisional Quantity, if ordered)	lump sum
1351	Cultural Heritage Management	lump sum
1355P	Implement Noise Management Plan (Provisional Quantity, if ordered)	lump sum
1361P	Condition Surveys, if ordered (Provisional Quantity)	each
1362P	Implement Vibration Management Plan (Provisional Quantity, if ordered)	lump sum
1365P	Air Quality Monitoring (Provisional Quantity, if ordered)	each
1371P	Management of Contaminated Sites, if ordered (Provisional Quantity)	m <sup>3</sup>
1375P	Fauna Management, if ordered (Provisional Quantity)	lump sum
1381P	Biosecurity Matter Control, if ordered (Provisional Quantity)	lump sum
1382	Noise Assessment Report	lump sum
1383P	Develop Noise Management Plan, if ordered (Provisional Quantity)	lump sum
1384	Vibration Assessment Report	lump sum
1385P	Develop Vibration Management Plan, if ordered (Provisional Quantity)	lump sum

### 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 1330 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 1335 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 1334 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 MRS51.

#### **Item 1331 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 1332 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 1333 Approvals**

Work Operations incorporated in this item include the following:

- a) research, prepare, and consult Administering 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 1332.

**2.3.2 EMP(C) Specific Element Requirements**

**Item 1336P Water Quality Monitoring (Provisional Quantity, if ordered)**

Work Operations incorporated in the above item include the following:

- a) Undertake water quality monitoring as outlined in Clause 8.2 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 field testing 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.

#### **Item 1351 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.

#### **Item 1382 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 of MRTS51 and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*
- b) preparation of Noise Assessment Report in accordance with Clause 8.5.2 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 1383P Develop Noise Management Plan, if ordered (Provisional Quantity)**

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 1355P.

**Item 1355P Implement Noise Management Plan, (Provisional Quantity, if ordered)**

Work Operations incorporated in this item include the following:

- a) implementation of the management measures prescribed in the Contractor's Noise Management Plan
- b) undertaking of planned noise assessment during the Work under the Contract in accordance with Clause 8.5.2 of MRTS51 and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*
- c) preparation of Noise Assessment Report during Works under the Contract in accordance with Clause 8.5.2 of MRTS51 and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*
- d) review and acceptance of the Construction Noise Assessment Report by a Registered Professional Engineer of Queensland (RPEQ)
- e) manage and respond to noise complaints in accordance with Clause 8.5.2 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, and
- f) undertake Trial Assessment where required under the Noise Management Plan.

**Item 1384 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 8.5.2 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 8.5.2 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 1361P Condition Surveys, if ordered (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 5.1 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 1385P      Develop Vibration Management Plan, if ordered (Provisional Quantity)**

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 4.3 of Annexure MRTS51.1 and in accordance with *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*, and
- b) update the Vibration Management Plan where required.

NOTE: Costs incurred in implementing the Noise Management Plan are incurred in Work Item 1332.

**Item 1362P      Implement Vibration Management Plan (Provisional Quantity, if ordered)**

Work Operations incorporated in this item include the following:

- a) implementation of the management measures prescribed in the Contractor's Noise Management Plan
- b) manage and respond to vibration complaints in accordance with Clause 8.5.2 of MRTS51, the Contractor's Vibration Management Plan and *Transport Noise Management Code of Practice: Volume 2 - Construction Noise and Vibration*
- c) where required by the Vibration Management Plan, undertake vibration monitoring during the Work under the Contract in accordance with Clause 8.5.2 MRTS51 and Noise Code of Practice: Volume 2, preparation of Vibration Assessment Report in accordance with Clause 8.5.2 of MRTS51 and Noise Code of Practice: Volume 2, and review and acceptance of the Vibration Assessment Report by a Registered Professional Engineer of Queensland, and
- d) undertake Trial Assessment where required under the Vibration Management Plan.

**Item 1365P      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 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 1371P      Management of Contaminated Sites, if ordered (Provisional Quantity)**

Work Operations incorporated in this item include the following:

- a) preparation and implementation of Contaminated Site Investigation Plan and Contaminated Site Management Plan where required in Clause 7.3 of Annexure MRTS51.1
- b) treatment and / or encapsulation and / or removal and disposal of known contaminated material and backfilling as outlined in Clause 7.2 of Annexure MRTS51.1, and

- c) documentation of treatment, transport and / or disposal of the contaminated material in accordance with local and state government regulations.

**Item 1375P Fauna Management, if ordered (Provisional Quantity)**

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 8.2 of Annexure MRTS51.1, and
- d) installation, maintenance, decommissioning and removal of temporary fauna fencing.

**Item 1381P Biosecurity Matter Control, if ordered (Provisional Quantity)**

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.

## **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 1371 relates to requirements to undertake remediation and management in accordance with *Environmental Protection Act 1994*. Remediation 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 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 1361P Condition Surveys**

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

#### **2.4.6 Work Item 1365P Air Quality Monitoring**

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

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