

These tables set out the operational controls required to achieve the objectives and targets set out in Environmental Program 03 Contaminated Soil Management.

BBA will, as a minimum, implement the control activities and performance measures set out below.

Table OCO 3.1 Contaminated Soil Management

Table OCO 4.1 Acid Sulphate Coils Management

### Table OCO 3.1 Contaminated Soil Management

Ref.	Subject	Reference	Control Activity	Responsibility	Timing	Performance Measure	Audit Check
<b>INDUCTION AND TRAINING</b>							
1.	Design Consultant briefing	CEMP 10	The Design Consultants will be briefed on the design aspects of this Control Document	Design Director	Prior to start of design.	Briefing record	
2.	Project and site induction	CEMP 10 CEMP 13	All employees, consultants and subcontractors involved will be inducted into the environmental aspects and controls related to this Control Document.	Construction Director or Project Manager, as applicable Start up Manager for Early Works	Prior to personnel commencing work on site	Induction records	
3.	Staff Environmental Construction Management Plan induction	CEMP 13	All relevant staff will be inducted into the requirements of the Construction Environmental Management Plan and all associated documents.	Construction Director or Project Manager, as applicable	Prior to staff commencing work on site	Induction records	

**OPERATIONAL CONTROLS 03 CONTAMINATED SOIL MANAGEMENT**

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4.	Awareness training	CEMP 13 CEMP 14	Conduct awareness instruction of relevant BBA staff, contractors and field personnel. Objectives of Soil Contamination awareness training include: <ul style="list-style-type: none"> <li>• Identification of contamination.</li> <li>• What to do if suspected contamination is uncovered. All project personnel to be aware of their obligations to report suspect contaminated soil to supervisors.</li> </ul>	Project Manager	As per Training Plan	Training records	
5.	Briefings	CEMP 14	Environmental briefings shall emphasize site-specific control requirements.	General Superintendent	Prior to working in a specific area	Record of Briefing (eg SEP Briefing)	
<b>DESIGN</b>							
6.	Avoid disturbing contaminated soil.	Project Requirement	Where possible, minimise the effect of the project on existing contamination by considering options to avoid disturbing contaminated soil.	Design Director	Detailed design	Consideration given to alternatives	
7.	Avoid option of taking contaminated soil to landfill.	Project Requirement	Where possible, avoid the option of taking contaminated soil to landfill. Consider options to manage soil within the project alignment or divert to another beneficial use.	Design Director	Detailed design	Consideration given to alternatives	
8.	Re-use of contaminated soil.	Project Requirement	Coordinate with the Environmental Manager for the re-use of contaminated soil in the design of permanent works.	Design Director	Detailed design	Contaminated soil reused	
<b>PRE-CONSTRUCTION</b>							
9.	Identify potential natural pollutants	Project Requirement	Soil may contain naturally occurring elevated levels of pollutants. Any contamination testing program will include tests to determine the level of naturally occurring elements.	Design Manager	Detailed design	Consideration given to location and method of disposal	

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10.	Identify all potential sources of contamination	NEPM Assessment of Site Contamination Permit ES1.1, p.231	Identify and investigate all reasonably foreseeable sources of contamination within the project alignment. Develop a Contaminated Soil Register listing all suspected sites based on available information.	Environmental Manager	Detailed design	Register created	
11.	Additional soil testing	NEPM Assessment of Site Contamination	Carry out additional soil testing where recommended by the Register and updated the Register with results.	Environmental Manager	Detailed design	Register updated	
12.	Quantify volumes	Project Requirement	Quantify the volume and type of contaminated soil expected to be present.	Project Engineer	After award and during construction	Updated Contaminated Soil Register	
13.	Assess risks	LU2, Part 3, ES1.1, pg 17, (Seq pg 231)	Assess the environmental and human health risks that contaminated soil poses to project. Compare test results to published criteria and evaluate the overall risk to the environment and human health on and off the project site. If necessary, conduct a site specific human health and environment risk assessment.	Environmental Manager	After detection of contamination	Assessment report and appropriate classification	
14.	OHS risk management	LU2, Part 3, ES1.1, pg 17, (Seq pg 231)	If NEPM A criteria are exceeded then liaise with OH&S Manager to determine any occupational OH&S risks that need to be addressed. Determine specific OHS and management requirements eg. personal protective equipment.	Safety Manager	During construction	Appropriate OHS measures employed	
15.	Identify reuse opportunities	Project Requirement	If elevated levels are identified, as a first option every effort should be made to relocate/re-use contaminated soil on site, consistent with beneficial uses on and off the project land. The location and method of re-use must ensure the beneficial uses at the site of re-use are not compromised. This will be undertaken in consultation with DTAE.	Environmental Manager	Detailed design	DTAE approval of location and method of disposal	

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Ref.	Subject	Reference	Control Activity	Responsibility	Timing	Performance Measure	Audit Check
16.	Identify disposal classification	Vic EPA Bulletin 878 and DTAE Bulletin 105 Classification for Contaminated Soil	Where soil cannot be relocated on site - Identify, manage and transport soil in accordance with regulations and good practice. Compare analytical results to DTAE Bulletin 105 criteria to classify soil as one of (Level 1) Fill Material; (Level 2) Low Level Contaminated Soil; (Level 3) Contaminated Soil; or (Level 4) Contaminated Soil for Remediation.	Environmental Manager	Prior to removal from the site	FM, LLCS or PW classification	
17.	Develop plan	Project Requirement	Develop a Contaminated Soil Management Plan for contaminated areas. Evaluate aesthetic and other factors associated with permitting reuse of soils.	Environmental Manager	During construction	Plan approval by DTAE	
18.	Minimise environmental effects of identified contamination	Project Requirement	Maintain and where appropriate and practical, improve condition of land to protect current and future beneficial uses of land from detrimental affects of contamination.	Project Managers	Throughout project	Identified contamination managed properly	
19.	Prevent offsite contamination	Project Requirement	Prevent, to the extent practicable, contamination migrating from the site and polluting adjacent segments of the environment.	General Superintendent	Ongoing	No fugitive emissions	
<b>CONSTRUCTION</b>							
20.	Manage in accordance with approved method.	Project Requirement	Place soil within works area in accordance with the Contaminated Soil Management Plan and record the final location on the soil tracking plan.	General Superintendent	During construction	Finalised soil tracking plan	
21.	Track contaminated soil	Project Requirement	Implement a thorough soil tracking system for identification and movement of soil, whether for temporary storage on site, or permanent removal off the site.	Project Engineer	During construction	Soil tracking system developed and implemented	
22.	Segregate contaminated soil	Project Requirement	Demarcate affected soil, separate, stockpile and cover as necessary to prevent fugitive emissions.	General Superintendent	During construction	Soil tracking system	
23.	Additional testing	Project Requirement	Perform any additional testing on subject soil.	Project Engineer	Ongoing	Test results	

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Ref.	Subject	Reference	Control Activity	Responsibility	Timing	Performance Measure	Audit Check
24.	Obtain disposal approval	Necessity	Obtain appropriate approvals from facility accepting waste prior to removal from the alignment.	Environmental Manager	Prior to removal from the site	Approvals in place	
25.	Remove unsuitable soil from the project area to a licensed waste receiver.	EMPC Act 1994	Load licensed (Waste Transport Business Environmental Protection Notice) waste transport business trucks with soil and accompany each load with a fully completed waste transport certificate according to their WTB-EPN obligations.	General Superintendent	Day of soil transport	Each truck has completed certificate. Updated soil tracking system.	
26.	Cover loads	Project Requirement	Cover loads to limit fugitive emissions.	Truck Driver	During transport	Loads covered	
27.	Record keeping	Project Requirement	Provide appropriate copies of certificates to DTAE and BBA.	Waste Receiver	Ten working days after landfill receipt	DTAE and BBA both have completed copies of all certificates	
28.	Report new findings	Project Requirement	Site personnel are to report any suspected contamination to their supervisor immediately upon discovery.	Site Personnel	Immediately upon discovery	Suspected contamination reported immediately	
29.	Investigate new findings	Project Requirement	BBA will investigate any newly discovered contamination to determine its nature and extent.	Environmental Manager	Within 3 business days	Nature and extent of contamination determined.	
30.	Notify DTAE of new findings	EMPC Act 1994	Inform DTAE of newly discovered contamination as soon as possible but within five business days.	Environmental Manager	Within 5 business days	Official notification within time	
31.	Identify fate pathways	Project Requirement	BBA to ensure potential sources, transport pathways and fate of contamination are identified when practicable.	General Superintendent	On notification	Stockpiles of soil are well marked and secure	
32.	Evaluate options	Project Requirement	Newly found contaminated soil will be evaluated in accordance with this plan for retention onsite or disposal offsite	Environmental Manager	On receipt of lab results	Evidence of considering use	

Ref.	Subject	Reference	Control Activity	Responsibility	Timing	Performance Measure	Audit Check
<b>INCIDENTS</b>							
33.	Potential environmental harm	CEMP incident response procedures	<p><i>Class 1: An actual adverse effect on the health or safety of human beings that is of a high impact or on a wide scale; an actual adverse effect on the environment that is of a high impact or on a wide scale; an actual loss or property damage of an amount, or amounts in aggregate, exceeding ten times the threshold amount (\$5,000); an environmental nuisance of a high impact or on a wide scale; an actual adverse effect on the health or safety of human beings that is not negligible; an actual adverse effect on the environment that is not negligible - cease relevant activities across all sites until the problem is fully understood and rectified; follow incident response procedures</i></p> <p><i>Class 2: The emission of a pollutant that unreasonably interferes with, or is likely to unreasonably interfere with, a person's enjoyment of the environment; any emission specified in an environment protection policy to be an environmental nuisance; an actual loss or property damage of an amount, or amounts in aggregate, exceeding the threshold amount (\$5,000) - cease relevant activities at the site of occurrence until the problem is rectified; follow incident response procedures</i></p>	Environmental Manager	Ongoing	Incident response records	

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Ref.	Subject	Reference	Control Activity	Responsibility	Timing	Performance Measure	Audit Check
34.	Potential permit breach	CEMP incident response procedures	<p>Class A: <i>A permit condition has been breached and either the environmental consequences are significant or the breach is due to a wilful or negligent failure to attempt to satisfy the condition – cease relevant activities across all sites until the problem is fully understood and rectified; follow incident response procedures</i></p> <p>Class B: <i>A permit condition has been technically breached but the intent of the condition has been or will be achieved and environmental consequences of the breach are not significant – cease relevant activities at the site of occurrence until the problem rectified; follow incident response procedures</i></p> <p>Class C: <i>Compliance with the permit has been raised as an issue but the intent and requirements established by the permit condition have been met – examine the significance and potential for corrective action; follow incident response procedures</i></p>	Environmental Manager	Ongoing	Incident response records	
<b>EVALUATING PERFORMANCE</b>							
35.	Comply with all statutory authority requirements and avoid regulatory action.	Project Requirement	As applicable, DTAE shall review relevant sections of the works and approve the nominated solutions.	Environmental Manager	Ongoing	DTAE approval	
36.	Inspections	CEMP 17	Inspect the condition of protection and control measures and arrange maintenance, as required.	Site Environmental Officer	Daily	Weekly checklist	
37.	Reporting	CEMP 19	Report on the implementation of this EP in the environmental section of the monthly Project Report.	Environmental Manager	Ongoing	Monthly Report	
38.	Assess monitoring results	CEMP 19	Evaluate and assess monitoring results against specified targets	Environmental Manager	Ongoing	Reports	

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39.	Corrective action	CEMP 19	Take corrective action, where required	Project Manager	As required	Action taken	

**Revision Status**

Revision	Date	Revision Description	Prepared	Reviewed	Approved
A0	27 April 2007	Draft for BBA review	IW		
A1	9 May 2007	Draft for DTAE review	IW		
B0	22 October 2007	Revised for submission to DTAE following auditor's comments	IW	JD	JC
B3	7 Jan 2007	Revised following DTAE comments	IW	JD	JC
B4	30 Jan 2008	Revised to include inspection frequency	JRD	JD	CF