



WEED AND PATHOGEN MANAGEMENT PROCEDURE

GAS DIVISION

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1. PURPOSE

The purpose of this procedure is to provide ATCO Gas Australia (ATCO) workers and contractors with guidance relating to the identification and management of weeds and pathogens.

2. SCOPE

This procedure applies to any ATCO site or asset, both linear and non-linear that may require the management of potential weeds and/or pathogens.

3. OBJECTIVES

The nature of ATCO works is such that controlling the spread of existing infestations in order to avoid or minimise potential adverse environmental is the primary management objective of this procedure.

4. RESPONSIBILITIES/ACCOUNTABILITIES

Position title	Key Responsibilities Within Process
Project Engineer	<ul style="list-style-type: none"> Adhere to the requirements of this document during project assessments. Correctly reference this document within Project Advice Checklist (PAC) where required. Facilitate weed/pathogen investigations and/or site assessments required for project works where required. Ensure management plans are developed and correctly referenced where required.
Team Leaders/Managers (operations)	<ul style="list-style-type: none"> Ensure workers adhere to the requirements detailed in this procedure. Provide budget and resources to manage potential impacts in accordance with this procedure.
HSE Advisor	<ul style="list-style-type: none"> Assist with any Risk Assessments required for project works. Assist in the completion of the PAC where required. Provide general advice and assistance relating to weed and pathogen management.
Senior Advisor - Environment & Sustainability	<ul style="list-style-type: none"> Ensure procedure is current and reviewed in line with changes to legislation. Assist in the investigation and site assessment process. Review and approve any management plans required for project works. Provide general advice and assistance relating weed and pathogen management.
Workers/Contractor	<ul style="list-style-type: none"> Adhere to the requirements detailed in this procedure Adhere to the requirements of any project specific management plan.

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5. BACKGROUND

5.1 Environmental Weeds

Weeds, also known as invasive plants, are defined as any plant that requires some form of action to reduce its effect on the economy, the environment, human health and amenity. A weed can be an exotic species or a native species that colonises and persists in an ecosystem in which it did not previously exist.

Environmental weeds (as distinct from agricultural or garden weeds) are defined as those plants which invade native ecosystems and can threaten the survival of the areas indigenous flora and fauna.

For the purpose of this procedure, weed management will be focused on environmental weeds.

5.1.1 Declared Plants

To protect Western Australian agriculture the Department of Primary Industries and Regional Development regulates harmful plants under the *Biosecurity and Agriculture Management Act 2007* (BAM Act).

Plants that are prevented entry into the State or have control or keeping requirements within the State under the BAM Act are known as declared plants/pests.

The Western Australian Organism List (WAOL) contains information on the area(s) in which a plant is declared and the control and keeping categories to which it has been assigned in WA.

5.2 Pathogens (*Phytophthora Dieback*)

Dieback is a key threatening process for biodiversity of south-west Western Australia. *Phytophthora Dieback* (Dieback) refers to the disease caused by soil-borne plant pathogens from the genus *Phytophthora*. Forty-two (42) *Phytophthora* species have been identified in Western Australia.

The microscopic plant pathogens from the genus *Phytophthora* live in soil and infested plant material and can be spread by any mechanism in which infested soil, plant material or water is moved into un-infested areas.

Phytophthora dieback was listed as a 'Key Threatening Process' under the Australian Government's *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act).

For the purpose of this procedure the term 'pathogen' will be used to refer to the plant pathogens from the genus *Phytophthora*.

5.3 Activities

Although weeds and pathogens can be spread by native and feral animals or via environmental spread (air, water or soil transmission); human activities have the capacity to move them further and faster than any other means of spread.

The following ATCO activities which can potentially cause/exacerbate the spread of weeds and/or pathogens include;

- Activities involving the disturbance of vegetation or soil (including horizontal directional drilling)
- Transfer of soil for use onsite; and/or
- Travel on unsealed road (whether in vehicles or on foot)

5.4 Environmental Impacts

Weeds pose a serious threat to natural ecosystems and the native species they support. The presence of weeds may;

- Drive the loss of biodiversity through species competition and/or disruption to ecosystem processes.
- Alter fire periodicity or intensity outside the natural limits of particular species.
- Impact on cultural, social, economic, scientific and aesthetic assets/values; and/or
- Impact on native plants or animals due to toxins or excluding animals from usual habitats because of thorns or other adverse habit.

The introduction and/or spread of pathogens has the potential negatively impact the environment in the following ways;

- Loss of biodiversity and key understory species
- Extinctions of threatened plant and animal species that rely on susceptible plants for food and habitat
- Disruption to woodland vegetation structure; and/or
- The increased dominance of resistant plants such as grasses, rushes and sedges, or introduced weeds.

6. IDENTIFICATION OF RISKS

The potential for ATCO works to cause/exacerbate the spread of weeds and/or pathogens is required to be identified during the planning stage of construction or maintenance project work, facilitated by the Project Advice Checklist (PAC) desktop assessment.

The desktop assessment should consider the following environmental sensitivities when determining the inherent risk in the immediate works area;

- Threatened or Priority Flora
- Threatened or priority ecological communities
- Geomorphic wetlands
- Ramsar sites
- Redbook Conservation Reserves
- Native vegetation extent
- Environmentally sensitive areas

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The assessment should also consider;

- Weed occurrences
- Forest disease risk area; and
- Dieback Information Delivery and Management System (DIDMS) review.

Where the desktop assessment indicates areas of environmental sensitivity or the presence of weeds and/or pathogens, the assessment should also take into account the following;

- Rainfall forecast for the timeframe of the proposed works
- Soil moisture conditions likely to be present at the time of proposed works (given the rainfall forecast and soil type)
- The type and scale of disturbance
- Access to and from the work area
- Need for import and or removal of soil/fill material; and
- Complexity of the works

Where the desktop assessment deems the ATCO work to be at high risk of contributing to the spread of weeds and/or pathogens, a risk assessment must be conducted for the work. Where the risk assessment deems appropriate, a project specific management plan may be required for the work.

7. MANAGEMENT

Where investigations indicate the risk of weed and/or pathogen spread, or the works are being conducted in an area of identified environmental sensitivity, the following management strategies must be considered.

7.1 Avoidance Strategies

In order to ensure ATCO works do not contribute to the spread of weeds and/or pathogens in areas of potential risk or environmental sensitivity identified during the desktop assessment, the following avoidance strategies should be applied;

- Work is not to be conducted in known weed infestation and/or pathogen areas where possible
 - Where it is unavoidable a project specific risk assessment or management plan (where applicable) must be conducted and controls identified and implemented
- Consider the use of Remotely Piloted Aircraft (RPA) where access is required in known weed infestation and/or pathogen areas

7.2 Minimisation Strategies

In order to ensure ATCO works do not contribute to the spread of weeds and/or pathogens in areas of potential risk or environmental sensitivity identified during the desktop assessment, the following minimisation strategies should be applied;

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- Works identified as being likely to impact weed and/or pathogen spread are to be scheduled during dry months
- Ground disturbing works must not be conducted during or within 72 hours after sufficient rain has fallen to leave the soil surface wet or damp in identified risk areas unless required for emergency repair or in response to an emergency situation
- All ATCO workers must adhere to any signage (ATCO or otherwise) that informs of known weed and/or pathogen affected areas
- Vehicle and worker access must to be kept to designated roads and access tracks
- All soil/fill and plant materials required for works must be certified weed and pathogen free
- Excavated soil or plant materials are not to be transported out of known contaminated/infested areas; and
- Works identified as being within or located immediately adjacent to areas of high environmental sensitivity must adhere to vehicle and worker hygiene practices detailed in this procedure (Section 8)

8. HYGIENE PRACTICES

Hygiene is a series of practices that help prevent weed and pathogen spread, especially through general cleanliness. The following hygiene practices apply to the management of both weed and pathogens.

Hygiene practices must be applied;

- On entry to areas with identified environmental sensitivity; and
- Upon both entry and exit (clean on entry, clean on exit) of known weed and/or pathogen infested areas or where signed.

8.1 Wet Hygiene Practices

The wet hygiene practices listed in table 1 apply to both vehicle and worker hygiene in relation to weed and pathogen management.

Table 1: Wet Hygiene Clean Down Practices

Type	Method	Application	Standard	Notes
Wash-down	High pressure water	Suitable for large carriers and all types of soil	The carrier is completely free of clods of soil, mud, and vegetative material	Wash-down to standard is difficult in the field.
Wash	Footbath, hand sprayers	Suitable for small carriers, and all types of soil		Disinfectant may be used after soil and organic matter has been removed. Wet clean-down produces potentially infested effluent that should not be disposed of into intact native vegetation

Disinfectants suitable for use include diluted methylated spirits and Phytoclean®. Other suitable options may also be considered.

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All chemicals used by ATCO workers or contractors must comply with the Chemical Management Guide.

8.2 Dry Hygiene Practices

The dry hygiene practices listed in table 2 apply to both vehicle and worker hygiene in relation to weed and pathogen management.

Table 2: Dry Hygiene Clean Down Practices

Type	Method	Application	Standard	Notes
Blow-down	Compressed air (available on trucks with air brakes, low loaders)	Suitable for large and small carriers.	The carrier is completely free of clods of soil and vegetative material	These methods will result in an accumulation of potentially infested waste material which should be disposed of appropriately
Brush-down	Broom, brush or cloth	Suitable for slightly moist soil, sand, dry clay.		
Shakedown	Agitation	Not suitable for mud, slurry, compacted soil or trapped vegetation		
Pick-off	Tools (e.g. crowbar or spike)	Suitable for large and small carriers to remove dried/compacted soil or trapped vegetation		Generally used in conjunction with other clean-down methods

9. REPORTING

Suspected weed and/or pathogen infestations must be reported in accordance with the Incident Reporting and Investigation procedure.

The report must include;

- Location (in GDA coordinates)
- Type of incidence (weed or pathogen)
- Photographic evidence
- Estimated coverage (total area impacted in m²); and
- General topography of infected area

Weeds and pathogens can be identified in the field by ATCO workers or contractors using the Department of Primary Industries and Regional Development (DPIRD) [MyPestGuide](#) application.

10. DEFINITIONS

Term	Definition
ATCO	ATCO Gas Australia Pty Ltd
Carrier	Equipment which carries potential weed and/or pathogen materials
Clod	A lump of soil, mud and/or clay
Dieback	Refers to the disease caused by soil-borne plant pathogens from the genus <i>Phytophthora</i>
Environmental Sensitivity	Areas of environmental importance defined by either state or federal legislation, where the environmental values are sensitive to potential weed and pathogen impacts
GDA Co-ordinates	Geometric datum of Australia coordinate system
Phytoclean®	Phytoclean® is a disinfectant cleaner, sanitiser, micro biocide, algaecide & fungicide for the control of <i>Phytophthora Cinnamomi</i> and similar organisms
Ramsar	The Ramsar Convention encourages the designation of sites containing representative, rare or unique wetlands, or wetlands that are important for conserving biological diversity.

11. REFERENCES

Supporting Documents	<ul style="list-style-type: none"> • AGA-ENG-PL02-FM01 Project Advice Checklist • HSE GL0003 RF01 Project Environmental Checklist • HSE-GL0003 Project Environmental Checklist Guideline • HSE PL00001 Operational Environmental Management Plan • AA-HSE-PR20 Incident Reporting and Investigation Procedure • HSE-GL0002 Chemicals Management Guide
Legislation and Standards	<ul style="list-style-type: none"> • Centre for Invasive Species Solutions - Weeds Australia • Biosecurity and Agriculture Management Act 2007 (BAM Act) • Environment Protection and Biodiversity Conservation Act, 1999 (EBPC Act) • DBCA - How to Identify Weeds • DPIRD – MyPestGuide • Project Dieback • DPIRD - Western Australian Organism List

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12. DOCUMENT APPROVAL

	Title	Name	Date
Owner:	Senior Advisor – Environmental & Sustainability	Brad Wallace	03/08/2020
Reviewer:	General Manager HSE	Leonard Santana	04/08/2020
Approver:	General Manager HSE	Leonard Santana	04/08/2020

13. DOCUMENT HISTORY

Rev	Date	Amended By	Reason for Change
0	04/08/2020	Brad Wallace	Supersedes HSE PL00001 GL0001 Weed and Pathogen Management and Vehicle Hygiene, change from Guideline to Procedure

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