



HORNET DRILLING

Exploration Dieback Management Plan:

Project Programme of Works Application.

Project Owner: **Owner**

Tenement/s: **Tenement**

Date: **Date**

Author: Richard Stockwell, BSc (Hons.) Geol., MAIG.



1.0 Introduction

1.1 What is dieback?

Phytophthora dieback is an introduced plant disease common throughout the whole of Southern Australia. In the south-west of WA it is found in areas receiving more than 400 mm annual rainfall between Jurien and east of Esperance (DWG, 2014). It is caused by the growth of fungus in and around plant roots (DMP, 2006). The pathogen thrives in warm, moist environments, which provide ideal conditions for the production of fungal spores (DWG, 2014). These spores move through soil water to plant roots, where they cause root rot in susceptible plants, preventing water and nutrient uptake (DWG, 2014). In the dry summer months, the pathogen survives within plant roots (DWG, 2014).

There are over 50 species of Phytophthora (pronounced Fy-tof-thora - meaning plant destroyer in Greek) currently identified but the species that causes the most severe and widespread damage to native plants in Western Australia is *P. cinnamomi* (DWG, 2014). Over 40% of Western Australian native plant species are susceptible to Phytophthora dieback, which results in permanent declines in bushland diversity and changes in species composition (DWG, 2014).

1.2 Dieback spread

Phytophthora dieback spreads quickly down slopes in surface and subsurface water. Up-slope or on flat ground it travels more slowly as it relies on movement by root-to-root contact (DWG, 2014).

Human activity can result in significant, rapid and widespread distribution of the pathogen through the movement of soil on vehicles, equipment, shoes and stock (DWG, 2014). It is therefore important to apply strict hygiene measures when entering and leaving dieback infested or dieback free areas to prevent further spread.

1.3 Programme of Works application (Tenid)

Programme of Works application on **Owner** tenement **Tenid** involves **Number** of drill lines on **describe layout, drill areas and drill purpose briefly**.

The region in which drilling is to be completed is **semi-arid/arid/temperate** and records **average annual** rainfall per year (long term average for nearby **Town**). There **are/are no** recorded dieback occurrences listed on the Dieback Working Group website for the area and ground conditions will be dry during the drilling campaign.

Drilling will be conducted using a small RC rig, involving the injection of water (only) into the drill hole to remove a moist sample. Vehicles will be clean on entry and will remain on existing firebreaks and tracks to obtain access to drill lines. The risk of dieback introduction or spread as a result of the drilling programme is very low.

The programme **does/does not** involve any vegetation clearing and there will be no movement of vehicles off the **existing firebreak tracks or drill lines, etc.** The programme will be conducted during **summer/spring/autumn** so that tracks and drill sites are dry. The risk of dieback spread as a result of the programme is therefore **very low**.

Hornet's standard exploration dieback management practices will be employed during this programme as outlined in Section 2.0. These management actions have been designed to fulfil the requirements of the DMP Guideline *Management of Dieback Disease in Mineral Exploration* (DMP, 2006) and Hornet's internal requirements. The objective of these management actions is to prevent the spread of Phytophthora dieback and resultant impacts to the surrounding environment, rehabilitated landscape, people and land uses.

2.0 Management

Hornet has a strong commitment to the prevention of spreading Phytophthora Dieback from infected areas to non-affected areas. The following practices are a company standard for addressing the management of Phytophthora Dieback:

1. Prior to field activities commencing, the potential for dieback occurrences will be identified through review of tenement conditions and endorsements, available dieback maps or reports.
2. For high risk sites, a hygiene management plan will be developed in consultation with the Department of Environment and Conservation, which will detail requirements for documentation and reporting of movements between infected and non-infected areas, signage, inspections, access protocols and incident management. Where a hygiene management plan exists and the requirements differ to those outlined below, the hygiene management plan shall prevail.
3. Where dieback occurrence is unknown, it is assumed that all native vegetation is at risk and preventative measures are adopted (as per DMP guideline, 2006).
4. Prior to field activities commencing, field crews will be informed of the Exploration Dieback Management Plan and why it is required, and of the requirement to strictly adhere to the plan.
5. All exploration activities will occur in dry soil conditions. Activities will cease after significant rainfall (dependant on advice and ground conditions) and will not occur in the vicinity of, or through, standing water bodies or pooled water.
6. Clean on entry:
 - It will be ensured that all vehicles are free of soil build-up and plant material prior to entry into the work area, by:
 - a. Visual inspection;



- b. Brushing down;
 - c. Air blowing; and/or
 - d. Washing down with high pressure water (scheme water or sodium hypochlorite solution can be used as advised).
- All other equipment which has been in contact with soil will be cleaned prior to entry into the work area. This includes hand tools, storage containers, buckets, boots/clothing and sample equipment.
 - Wash-down is usually done at designated wash-down bays, but if wash-down is required in the field, it will be done on flat, cleared ground to prevent run-off into vegetation or waterways.

The approximate clean on entry check point is shown on **Figure 1**.

7. Cleaning during programme:

- In dieback risk areas, drilling equipment will be flushed out and accumulated sample washed down, before moving to the next hole.
 - When moving from a known or suspected dieback infected area to a known or suspected dieback free area, vehicles and equipment will be clean on entry as per item 6.
 - If working in a known or suspected dieback infected and a known or suspected dieback free area, a single clean-on-entry point will be established for the dieback free area and the work programme will be split into dieback and non-dieback areas.
 - When moving from an agricultural or cleared farmland area (assume infected) to a native vegetation area (assume un-infected), vehicles and equipment will be clean on entry as per item 6.
 - After passing through muddy sites, the vehicle will be inspected to ensure that soil has not adhered, and if required, the soil will be removed.
8. If excessive surface water is generated by exploration activities, it will be contained within sumps.
9. Clean on exit: After the work is completed, it will be ensured that all vehicles and other equipment are free of soil build-up or plant material by the same methods used for entry. The approximate clean on exit check point is shown on **Figure 1**.
10. Post-drilling audits are completed to ensure rehabilitation is appropriate. Dieback assessment can be included if requested by the DEC.



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3.0 References

Department of Mines and Petroleum (2006) *Management of Dieback Disease in Mineral Exploration*. Government of Western Australia.

Dieback Working Group (2014): What is Dieback. Retrieved from: <http://www.dwg.org.au/what-is-phytophthora-dieback>. 26 June 2014.