NICNAS DIRECTOR'S DECISIONS ON REQUESTS FOR VARIATION OF THE DRAFT PHOSLOCK SECONDARY NOTIFICATION ASSESSMENT (SNA) REPORT

2. NEW SOUTH WALES ENVIRONMENT PROTECTION AUTHORITY

Request 2.1

Page x

"*Since Phoslock™ is used* ***exclusively*** *to treat environmental water bodies susceptible to blooms of cyanobacteria, the sources of environmental exposure mainly comes from direct releases into these environmental waters*."

Suggested change:

Amend "exclusively" to "primarily"

Reason:

"primarily" might be a more appropriate word PWS website mentions Blue Green algae but also mentions excess algal growth in a general way.

NICNAS Response 2.1

Variation approved.

Decision 2.1

Text will be amended to delete the word "exclusively" and replace with "primarily" in the report.

Request 2.2

Page 26

The cladoceran acute toxicity test by ESA (2008) used Phoslock™ slurry added to test waters with mixing by inversion at the start of the test. The samples were not stirred during the tests. ***It is uncertain whether inversion mixing enhances release of lanthanum over*** *what might occur in a naturally settling Phoslock™ application."*

Suggested change:

Current application methods may be classed as high energy mixing – much more so than laboratory glassware inversion mixing. It is possible that application methods that combine Phoslock and high energy mixing result in higher peak dissolved La concentrations. It is recommended that any site specific pre-testing (for analytical or DTA) be carried out using a similar mixing energy as will be used in actual application (eg in Tables 11.2, 11.3, 11.4 etc).

Reason:

The Deep Creek application involved spraying *Phoslock™* slurry over the bow and then mixing it through outboard propeller wash. Similar application methods are displayed in videos on the PWS website. This would be classed as high energy mixing – much more so than laboratory glassware inversion mixing. It is possible that application methods that combine Phoslock™ and high energy mixing result in higher peak dissolved La concentrations. It is recommended that any site specific pre-testing (for analytical or DTA) be carried out using a similar mixing energy as will be used in actual application (eg in Tables 11.2, 11.3, 11.4 etc).

NICNAS Response 2.2
Variation approved.

Decision 2.2
The recommended framework for the management of risks to Phoslock™ application outlines the procedures that can be implemented by the states and territories as applicable to their assessment. The framework will be amended to state that *"The application of the framework should take account of the types of procedures, such as mixing methods, to be applied in the proposed field application."*

Request 2.3

Page 74, paragraph 2

The acute toxicity studies (ESA, 2008 and NSW DECC, 2008) involving C. dubia dosed with the ***much*** *recent China granular formulation of Phoslock™ showed comparable results which gave lower EC50 values than the D. magna study by Watson-Leung (2009) using the same formulation in high alkalinity pond waters.*

Suggested change:
Consider changing "much" to "more"
Reason:
More appropriate description

NICNAS Response 2.3
Variation approved.

Decision 2.3
Text will be amended to replace the word "much" with "more" in the report.

Request 2.4

Page 78

The Australian and New Zealand Guidelines for Fresh and Marine Water Quality („Water Quality Guidelines": ANZECC/ARMCANZ, 2000a) presented guidance for the derivation of guideline trigger values for toxicants in aquatic ecosystems. ***The guideline trigger values are taken as the unacceptable contaminant levels in the aquatic ecosystem****. The determination of these values is classified into high, moderate or low reliability based on the availability and quality of toxicity tests. The trigger values can be taken as comparable to PNECs and has been adapted in this assessment.*

Suggested change:
Change Guideline "trigger values" to "impact concentrations".
Reason:
TVs are taken as values which if exceeded "trigger" further response, e.g. field investigations, Direct Toxicity Assessments etc. They are not "impact" concentrations.

NICNAS Response 2.4
Variation approved.

Decision 2.4
This will be amended in the report in the highlighted sentence only.

Request 2.5

Page 79 Table 8.3

Suggested change:

The table needs to be reviewed as it implies "Assessment Factors" are the standard method utilised in the generation of TVs.

Reason:

The Statistical distribution method is the basis of high quality TVs (see Vol 2 Section 8.3.3 and Fig. 8.3.2 ANZECC/ARMCANZ 2000).

NICNAS Response 2.5

Variation not approved.

Decision 2.5

The Table demonstrates the indicative data requirements for estimating the trigger values (TVs). Due to the limited studies for this chemical and the associated uncertainties, it is assumed that the reliability would fall in the lower tier..

Request 2.6

Page 97-98 Table 11.2 (and also Tables 11.3 and 11.4)

Test species Selection:

Aquatic species selected should be endemic to the water body being tested but species with economic relevance (e.g. recreational purposes) could also be chosen, with consideration of the sensitive life stages. Testing on at least three taxonomic levels: 1 aquatic plant or algae, 2 invertebrates (1 Daphnis and 1 sediment-dwelling species), and 1 fish.

Suggested change:

Requiring use of endemic species may not be practical in all situations. Suggest rewording to allow option of "standard" test species if endemic species are not available in suitable numbers/quality.

Reason:

There are typically two types of sediment dwelling organisms commercially tested – amphipods and chironomids – the latter are invariably much more tolerant to most contaminants and are likely to be the default choice by industry.

NICNAS Response 2.6

Variation not approved.

Decision 2.6

Note that the water quality managers in the states and territories can vary the technical recommendations as they see fit, subject to Decision 1.126. The framework is presented here as a flexible approach to managing the risks to Phoslock application.

Request 2.7

Page 98 Table 11.2

Test/biological endpoints

Acute lethality test for algae or plant species; acute and/or chronic immobilisation test for daphnid; chronic reproduction or growth rate test for sediment-dwelling invertebrate; and sub-acute lethality for fish.

Suggested change:

Change-acute lethality test for algae to "growth end point test for algae.

Reason:
Algal or Aquatic Plant tests typically have a growth endpoint not “acute lethality”

NICNAS Response 2.7
Variation approved.

Decision 2.7
This will be amended in the report.