S&TA comments on 'An Appraisal of the Options for Responding to the Risks and Impacts Associated with Sheep Dip Products' Draft.

General points.

We are disappointed with the short time frame and desk-top study approach being used to evaluate the serious, pervasive and lasting impacts from sheep dip pollution. This approach does not leave enough time to adequately take into account all of the relevant issues on this topic, and thus there is not the opportunity to comment on them and have the concerns raised addressed. Additionally, the S&TA has concerns that relevant stakeholders have not been consulted.

However, this opportunity to comment on the final draft is useful, but, it would have been appropriate to have had a greater length of time to review it, and more time for the study author to address the points raised by S&TA and other organisations reviewing the document.

With regards to the 'options appraisal' study, the S&TA would have liked to have been part of the study design and project team. Additionally, as we are concerned about the environmental impacts of both synthetic pyrethroid and organophosphate sheep dips, we would have liked the study to look at the impacts of sheep dips, and note, as an example of the weakness of the approach used, the serious omission on the synergistic effects of both sheep dips when found in rivers together.

The PRP set out the original brief for the project to include two aspects that do not appear to have been reviewed adequately or incorporated into the body of the report. Lacking are the alternatives to sheep dipping in the UK and abroad; and relevant world-wide research on antiparasitic treatments for sheep.

As a result the assessment lacks a sound international perspective, and is not as strong as it would be otherwise. This creates two major problems:-

- Alternative treatments in use or in development elsewhere are not considered as part of the mix in the options assessment.
- The risks of resistance per sae and under different scenarios appear to be highly speculative.

The reports brief states that any option that would lower animal welfare should not be considered. The report does not suggest how lower animal welfare would be determined. Section 3.2.2 in the report does suggest widespread misidentification of sheep health problems, for example, mistaking louse for sheep scab, and consequent misuse of treatment options. This lends doubt to the results of the postal survey results reported in section **figures of xxx**.

We believe that any option that would result in increased pollution and damage to the environment should be considered unacceptable given the statutory duties to maintain and enhance the environment, fisheries and now ensure good ecological status.

As cypermethrin sheep dips have not been as readily available since their ban in February 2006, we would need evidence of change of animal health and welfare.

Additionally, we were disappointed that the EA and VMD did not provide the consultants with the full range of documents published under their direction, and instead relied on other organisations to provide these documents.

Resistance
The report should further develop and integrate the points made on resistance and other control options. While chemical treatment methods are addressed throughout the report, the issue of increasing resistance and the option of other control methods are mentioned in isolation. The options appraisal tables do not include other (non chemical) control methods. This inclusion should be done, as without it the reports suggests that the solution to sheep dip pollution is to continue to rely on chemical methods. These methods are either serious pollutants, unlicensed or with little or no environmental impact research.

A key assumption in the report is that a ban on cypermethrin sheep dips would result in the increased use and resistance to other sheep parasites chemical products. That assumption appears to assume that other control methods will not be used.

In section 3.5.1, page 36 it is recognised that "With fewer chemical options farmers would have to spend more on better flock management options, with implications for capital and labour costs". Later in section 3.6 page 37, it is noted that a large proportion of the national flock (lowland and uplands) could be protected from parasites if sheep farmers adopted certain flock management options. These options are already widely used, but there is a varying level in standards of practice."

is not sufficiently backed by evidence and case studies from other countries.

We understand that, as stated on page resistance is associated with overuse and misuse, and that it is possible and likely that given the current practices in the UK, resistance could continue to develop for all licensed products regardless of a ban on one type of application of one type of product. The evidence for resistance development needs to be more clearly set out, how much of this is fear, how much predictable outcome and what is the real risk? There is a stark contrast between the evidence presented on this issue and the evidence presented of environmental damage.

p.6 ***Increasing resistance to treatments***
This analysis seems to assume that:-
1 – no new treatment chemicals or practices will be developed
2 – that option 3 will be unsuccessful

The section should be rewritten taking these potential outcomes into account.
Table 4. *If SPs are not being used so extensively then resistance to these chemicals will be less likely to develop, hence the use of SP as a pour on will remain an option and if resistance to MLs and OPs develop then it is more likely that SP pour ons will still be effective, hence the claim that Option 4 increases the risk of universal resistance above the other options is highly debatable. (I see this is dealt with to some extent on page 10). This is also supported by the text in section 3.5 on page 35.*

Should be an obligation to take non-chemical measures to reduce risk of infection, endemic diseases as from UK Sustainable Farming Strategy, and the option and need for this is should be echoed throughout the report.

A note on language, is that report refrains from noting useful imformation …

And using appropriate adjectives that would give a clear picture of the devastation caused by sheep dip pollution.

At some points in the report there seems to be confusion with regards to the extent of Options 2 and 4. In some places it is assessed as the options related to any use of Cypermethrin for treating sheep, in other places it is assessed as if SP pour ons will still be permitted. This should be made consistent.

The **unlicensed use of jetting and showering** is also not addressed in the report, but given full consideration in the appraisal options. The widespread unlicensed usage is an issue that the steering group should take a view on. Additionally, given that these uses are unregulated, untested with no environmental impact assessements, the environmental impacts of these treatments needs to be considered with greater caution.

Similarly there is no evidence presented of real health risks, yet the appraisal creitera notes the 'perceived' health risks and makes judgements based on perceptions. If there is no discernable difference then we must assume that this is in effect a level playing field and one chemical is no more or less damaging to the health than another. Pure speculation should be avoided. My understanding from the H&S executive is that Diazanon sheep dip has not caused any health problems in recent years, but that there is greater concern about Cypermethrin in this context. Where is the evidence? H&SE must keep a record of incidents? The World Health Organisation evidence of the risks to operators using cypermethrin should be taken into account, as it has been shown to cause endocrine system abnormalities that can be passed on to the next generation.

Feel more needs to be said about scab eradication…Does paper discuss probability of scab eradication programme being successful?

More detailed comments

The summary of the report does not place enough emphasis on the impacts of the four different options on biodiversity and angling. These factors should get a greater profile in the first chapter.

This report is meant to follow the principles of a Regulatory Impact Assessment, however, we find that the full range of potential impacts has not been considered, particularly with regards to the economics of the issue. This requires fuller consideration and elaboration.

In **Table 1**, the appraisal criteria, the amenity value of a healthy environment is considered in 2.5.3, but it is not included in the social category of the appraisal criteria summarised in Table 1. This should be included.

we are uncertain as to why the costs to anglers are limited to the economic value of fishing property rights and direct and indirect impact on the "fishing industry". Fishing industry should more accurately read as the "angling industry" to distinguish it from commercial net fishing industry.

The comparative value of individual sheep farmer and the economics of fishing and tourism are not examined.

While in xxx the report does examine in brief, the costs to the hospitality industry, local tourism, natitional economy, landowners, local employment, these should be more fully included in the appraisal criteria.

In environmental impacts, the aquatic and terrestrial impacts should consider the risks to aquatic invertebrates and soil organisms as well as the risks to species dependent on these organisms. For example, in 2.4.1 the impact of sheep dip pollution on soil invertebrate dependent wading birds is mentioned, however, these ecological chain impacts are not included in the appraisal criteria.

Alternative treatment methods
Throughout the report the range of alternative treatment methods is primarily limited to chemical treatment methods, and the stock management methods, including quarantines, movement, and fencing need to be taken into consideration starting in Table 2 and then continued throughout in all appraisal option tables.

Table 2 The summary of policy options and alternative treatment methods should include stock management methods as complementary to the chemical treatments methods. The costs of these preventative measures require better analysis. **xxx**

We are disappointed that rather than using 'number of cases' for human health impacts, the summary relies on perceived impacts. We do not doubt the impacts of human health, and animal health, from the use of sheep dips, but feel this should be evidence based.

A qualification should always be made that **showers and jets** are not licensed for use. As they are untested and unlicensed, the environmental impacts are not known.

All tables showing appraisals
Environmental impacts from SP pour ons are poorly understood, and I believe poorly tested. Thus, the environmental impact should reflect this lack of understanding in the ranking. We suggest changing the ranking to medium? to better clarify this uncertainity.

Page 6, aquatic impacts – would be useful to mention here that the costs of chemical treatments are currently transferred at no or low cost from the farming industry to the environment. That costs is lowered biological diversity and productivity, which depresses the amenity values, wildlife values, angling values and leads to the failure to meet statutory obligations.

Page 6, discussion on increasing resistance to [chemical] treatments assumes that farmers will rely solely on chemical treatments and not take additional stock management measures.

Table 4 Summary of the Appraisal of Other Policy Options
The assumption that Option 2 (increased regulatory controls) will reduce the environmental impacts is not consistent with the evidence of environmental damage. Within the body of the report, the conclusion from the pollution cases states that good or bad practice is not responsible for pollution.

Thus, following this conclusion and the evidence, the impact of regulatory controls, if funding made these possible, in reducing pollution is doubtful. The same would follow for Option 3 (increased controls but for short time).

The terrestrial environmental impact appears underestimated and does not follow the results from the report 'Effects of Sheep-Dip Disposal on Terrestrial Invertebrates' (2004 Technical Report P2-250/1/7/TR EA. EN, CCW) and this summary does not capture the distinction that SPs were shown to have a more damaging impact on invertebrates than Ops. made in this report between the impact of SPs vs OPs.

The impact of dripping from treated sheep on terrestrial wildlife has not been studied. However, the evidence would indicate that it is highly likely that the dripping of SP onto pasture would be more damaging that the dripping of OP. Thus the lowest risk option for terrestrial wildlife is clearly Option 4.

It is not true that Option 4 = only use of OPs and MLs because the use of SP as a pour on will still be permitted (see table 5.1).

Table 5
This table should include Option 1.

Table 6 Economic costs to the farmer
This table should include option 1. It was impossible to evaluate given the difficulty of reading the symbols. However, given there is a closer look at the economic costs to the individual farmer, it is difficult to compare with the wider costs on the environment, the communities and individuals dependent upon a healthy environment. This strikes us an unequal evaluation and treatment of economic costs.

This table ignores the wider costs of the options, including the impacts to fishing and recreation. These costs should also be included in the risk assessment.

p. 9 first para
We feel that the report is right in bringing up the consideration of a complete permanent withdrawal of all forms of dipping, including OP dips, but there is not enough evidence presented to draw the conclusions made in this paragraph. Additionally, once again, the alternative treatment option neglects to take into account flock management measures that can be used to prevent scab, and the transmission of scab.

p.9 3rd to last para
Again, the issue of resistance comes up and is inadequate addressed.

P11 1.2 first para
This para should also refer to the damage to terrestrial ecosystems from disposal of sheep dips taking into account evidence presented in 2004 Technical Report P2-250/1/7/TR EA. EN, CCW.

p. 12, 4th para
should include the proportion farm incomes contributes to rural economies, as from the UK Sustainable Farming and Food strategy to provide an indication of the relative value of farming to local communities. Farming provides at the most 15% of the rural income, and thus the environment needs to be looked after for the remaining 85%.

Methods p. 13
After reading the report, we are uncertain as to the weighting of the criterion and their relative importance to the decision.

P17 2.4.1
Point 4 should read:-
'damage to terrestrial ecosystems and groundwater; and,'

There is concern about dripping of chemicals from dipped sheep as well as disposal

2nd to last paragraph.
Add another few sentences explaining the problems resulting from the two chemicals found together in tributaries during the salmon spawning season.
xxxx
Delete "predecessor" as organophosphate are still licensed and still used.

Last para
It would be useful to indicate the scale of the problem resulting from disposed dips by including the volume thought to be disposed each year – 100 million tonnes.

p.18
while the three most frequent causes of pollution are noted, sheep fleece processing plants should be added to this list. While they weren't picked up in recorded pollution incidents, when the EA has tested the sewage treatment works which receive sheep fleece outputs, they exceed the EQS in 100% of the cases.
It should also be noted that in 2005 and 2006 the cause is not found in over 50% - 87% of the cases.

p19 2.4.2
There are more serious incidents that could be included in this section – and more serious exceedences of the EQS. See **attached summary from CEFAS**

P20 Policy review
This should contain sections on the following policy areas:-

Biodiversity
Reference to relevant sections of the UK Biodiversity Action Plan, the England Biodiversity Strategy and the EU 2010 target to halt biodiversity loss. BAP species affected include the White clawed crayfish and pBAP species include Glossosoma intermedium.

SSSI Condition
Reference to the Government's objectives to get 95% of SSSIs into Favourable Condition.

Fisheries
There must be objectives for inland fisheries and recreation that are relevant to this section.

Page 23 2.6
Surely another key objective is not to damage or risk the recreational and economic benefits of fishing.

Chapter 3
Page 26

Prior to section 3.2 Treatment Strategies, suggest adding section called “Prevention Strategies” and include here the last paragraph of 3.2 overview - the means of preventing transmission. Using this approach would be more consistent with the prevent/protect approach. Suggest including the range of flock management options and not limiting discussion to chemical options.

Page 27 Blowfly, 3rd para, 1st sentence
One to two percent of the national flock (of 35.5 million sheep and lambs) would result in 355,000 to 710,000 animals struck, not 1 million, as stated.

Suggest adding the non-chemical alternative management methods for Blowfly. The S&TA understands that in New Zealand these measures include the mandatory mid-season sheering of the breech area of sheep; and in Australia, research trials to remove wool in the breech area using high energy electrons; and breeding sheep without wool in the breech area.

Page 27 Ticks
Suggest adding at the end of this 1st paragraph, “Concerns have been expressed about how this practice of using insecticides on sheep as a “tick mop” to try to reduce the tick population impacting wild grouse may be contributing to a increase in tick resistance to synthetic pyrethroids, as shown on table 10.3.6a in Annex 4.”

Page 28 Ticks, last sentence
Suggest changing “exists” to “is a significant problem for sheep”

Page 28 Table 3.1
While the table gives the main reason for the scab outbreak, in the order of probability, it does not address alongside the risks, the management measures that can be taken to prevent scab outbreaks from spreading to the rest of the flock. These methods, such as isolating newly purchased sheep, should be included.

Page 29 Section 3.2.4 and Table 3.2
There should be a mention that the survey reports on suspected outbreaks that have not been clinically proven.

Page 30 Section 3.2.5
In Synthetic pyrethroids section the human toxicity information from the World Health Organisation should be included as currently it concludes that they have low mammalian toxicity, without mentioning the human health problems associated with SP use.

Page 37 3.5.3
Rather than resign to this outcome surely an education campaign on the risks associated with different chemicals could shape use patterns (also SPs will still be used as pour ons).

Table 3.3
For ML, suggest changing from “no environmental risks” to environmental risk from active chemicals present in the feces and urine, which impact the terrestrial and aquatic areas ‘hit’ as well as dung eating beatles.

Page 24 section 3.5 Resistance
Section 3.5.2
To OP resistance exists in the UK, add “and SP” after OP, as SP resistance exists in the UK, and is increasing, as shown in Annex 4.

Page 39 Table 3.6
Given the research by CEFAS noted in Annex 4, and the EA's water pollution results, the impact of OP dips is not low and there is evidence to show that its impact on aquatic, fishing and water pollution should be high.
ML injectable is only very low and low for aquatic, fishing and water pollution if the sheep are kept out of the water

Page 40, section 4.2,
1st sentence
Remove "potential"
2 point (factor)
Change "permanent" to "temporary"

Page 41 Figures 4.1 and Table 4.1
The calculated sheep dip treatments in Figure 4.1 and Table 4.1 are weakened by not showing each year and the years ending in 2002. As the S&TA Figure 1 inserted shows, the year 2002 was a low year of OP and SP use.

What these results do show is that there is a lack of year by year data, and that the use of sheep dips varies by year.

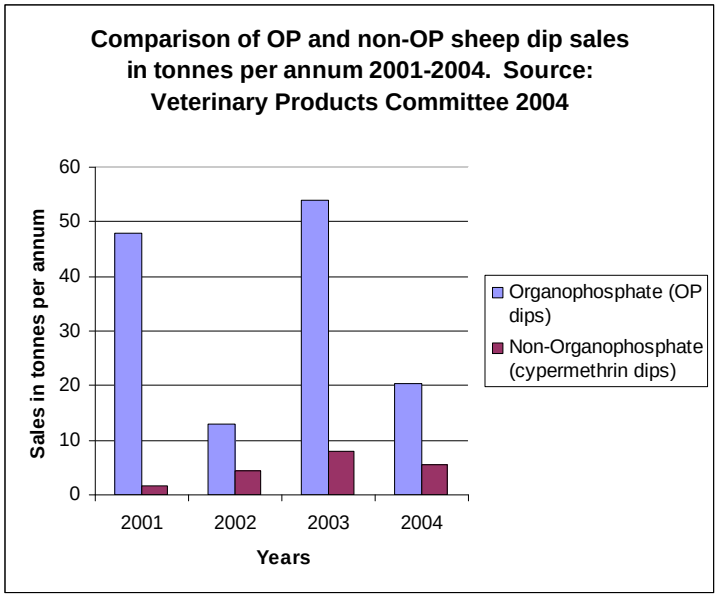

Figure 1. Comparison of Organophosphate and non-Organophosphate sheep dip sales in tonnes per annum 2001-2004. Source: Veterinary Products Committee 2004.

From the S&TA

Thus the conclusion in the report that calculated sheep dip treatments have dropped by 68% since 1999 cannot be taken to show an overall trend, but only results from 2002 compared with results from 1999.

Interestingly, Figure 3 in page 135 of Annex 4 appears to indicate that 2002 was a year of a much lower scab outbreak (by as much as 60%) compared with 1999. It would be helpful if Figure 3, page 135 and Figure 10.4 page 135 had explanatory text. Without it, the inconsistencies between the reported results in the two figures

are difficult to understand. It would be also useful to comment on the disappearance of scab outbreaks in the late 1980's and early 1990's, and the massive jump in scab outbreaks in 1993.

Figure 4.3
It is disappointing that there are not more recent figures on product sold. These should be provided. Without it we do not have recent information on the market situation. Also, the value sold of Figure 4.3 and the quantities sold of the S&TA Figure 1 (based on VPC data) do not match as closely as we might expect them to. What might the reasons for this?

Page 45 Table 4.3
OP dips environmental impact on aquatic, fishing and water pollution should be high.
SP pour on environmental impact should be qualified with question mark - unless there are environmental impact studies to suggest otherwise.
Showers/jetters – agree these require a question mark for environment impact

Page 48 Table 4.4
The above report does also show that OP dip disposal damages invertebrate populations – this is sufficient evidence.
Environmental impact of sheep dip pollution on coarse fish, such a invertebrate dependent Dace, has not been researched to my knowledge.
Water pollution –this impact considered should also look at cost of infractions for not meeting the WFD requirements for good ecological status due to sheep dip pollution.
Economic – MAC EQS exceedences are "commonplace" and when EA tested occurred in 27 of 27 sewage treatment works tested that received fleece inputs. This should be included, and the doubt expressed in "Whether these breaches are due to scour company discharges or to other industrial/agricultural discharges" should be deleted.

Page 49 Table 4.5
Include also damage to biodiversity as a negative impact of Cypermethrin e.g. near extinction of Glossosoma intermedium and destroyed populations of White clawed crayfish. Thus failure to protect endangered and protected species such as Atlantic salmon.

'Introduced due to the minimal human health impacts' how is this an advantage? Delete unless there is evidence that there have been fewer impacts in comparison with Diazanon. If there is insert "perceived" in front of human health impacts.

Page 51 Table 5.1
Do not understand differences for Option 2 and Option 3.

Page 51, 1st para
Substitute "advice" for "Code of Practice"

Page 53
"Annual inspection process" is mentioned. The EA is also supposed to inspect a percentage of sheep farms each year. There is no mention of this or report on the EA inspection process. The report requires substance on this note, and should include how many farms with dipping facilities are inspected each year. It should also include information on the results of the inspections and what the follow up is for the suspected 25% of farms with, for example, dipping facilities that discharge to

soakaways (as noted in page 52) contrary to the Code of Practice, which is now mandatory to follow to receive the Single Farm Payment.

Page 53
Para beginning “There is increasing evidence that farmers are using incorrect treatment methods …” This information is relevant to concerns about increasing resistance, as it could be a contributing factor, and this should be mentioned, where appropriate in the report, both here in the resistance section(s).

Page 56 Table 5.2 Option 2
The conclusions here presumme that the implementation of control on use of SP dips would lower the environmental impacts are overly optimistic and not grounded in evidence presented in Annex 4 and the CSL studies of 2007, nor consistent with the uncertainities expressed on pages 51 and 52. The CSL studies show that drops of cypermethrin dip do enter rivers even in somewhat optimal conditions.

Additionally, there is an assumption that the control measures, as yet still undetermined if they would be implemented separately or in combination, would be sufficient.

As stated earlier, SP pour on environmental impact is not properly understood and should be expressed with a question mark.

Page 57 Table 5.3
The disadvantage of “Organic farmers cannot use OPs and thus have to bear the extra control costs in order to use SP dips” does not take into account the other measures that Organic farmers can use, and that the licensing authority for organic farmers may review this position.

Page 62 Table 5.4
The same comments for Table 5.2

Page 67
Rather than limiting the discussion to human health risk to OP dips, it should be recognised that the use of chemical treatments, in general, continue to pose a human health risk.

Page 68 Table 5.8
SP pour on – these would not be banned under Option 4 as we understand it.
Again comments from earlier tables apply.

Page 69 Table 5.9
Add the following to the lists of advantages:-
Less damage to terrestrial ecosystems.
Less damage to biodiversity.

The disadvantages due to possible increased resistance are speculative and this should be reflected in the final table i.e. ‘may accelerate’
The disadvantage on expense should be qualified. It should read “More expensive treatment option for some farmers”
The disadvantages for organic farmers should be qualified as earlier stated.

Page 70
‘In extreme cases, the farmer may have to give up sheep farming altogether.’

This emotive statement links the banning of SP dips with increased resistance and thus an end to sheep farming. However, Annex 4 shows resistance is on the increase for SPs, OPs and MLs without a ban. Using this emotive statement displaces the cause of resistance and unsustainability from where it belongs , which is with overuse and misuse.

The advantages should be more clearly stated.

Page 71
It is odd that costs to individual farmers comes out as one of the four highest priorities, surely protecting rural incomes and rural economies is a higher priority. *Hence 'fisheries income' should be considered separately from 'Aquatic Ecosystem impacts'.*

11 March 2007