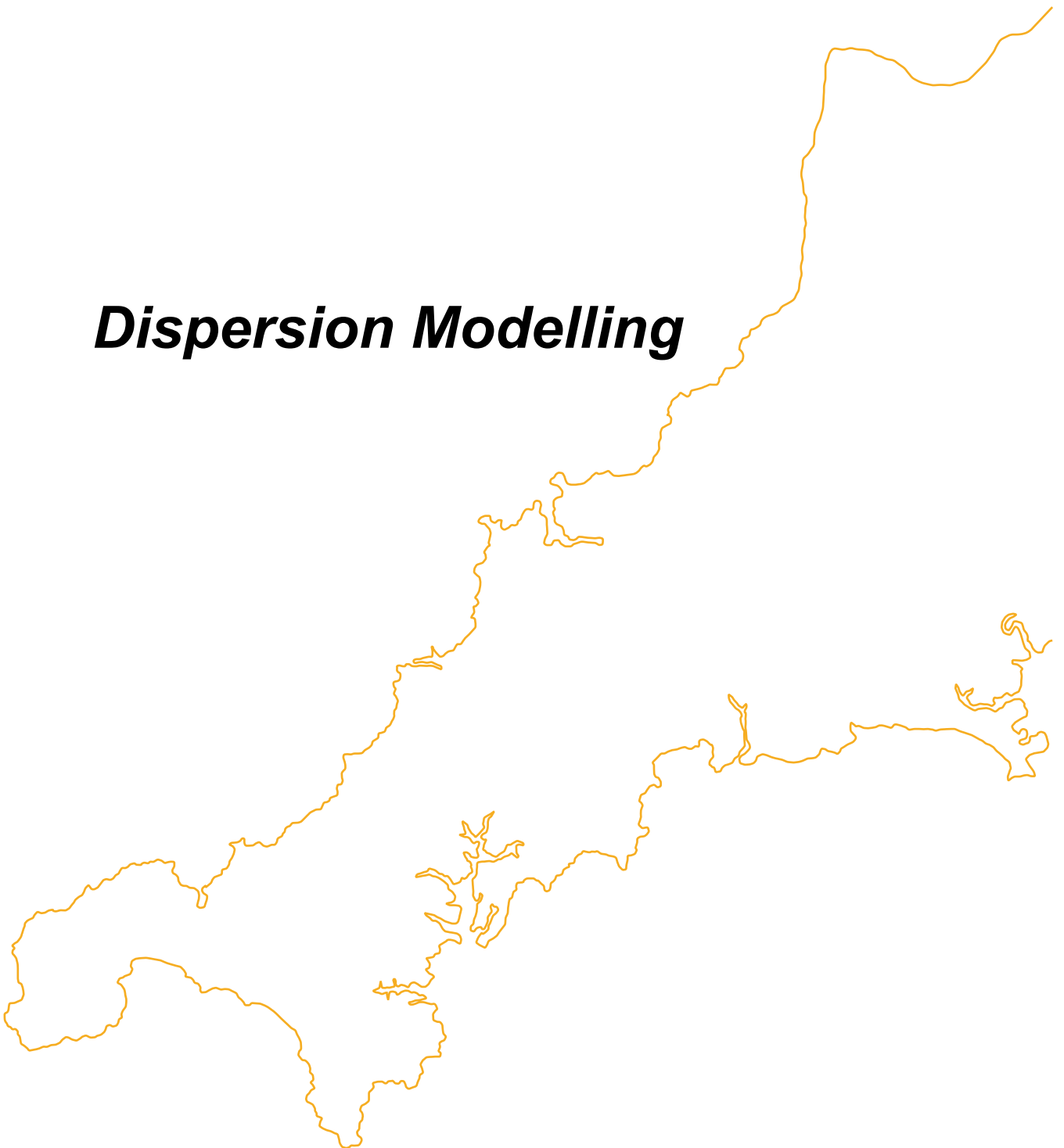




# Consultee Response to CERC Environmental Permit Application

Consultee  
St.Dennis Anti Incinerator Group (S.T.I.G.)

## *Dispersion Modelling*



**Dispersion Modelling**

# CONTENTS

KEY FAILURES.....2

RESPONSES TO VOLUME 4.....3

FURTHER QUESTIONS AND COMMENTS.....5

## Dispersion Modelling

# KEY FAILURES

SITA's application to the Environment Agency for a permit to operate a mass burn incinerator is fundamentally flawed and therefore a permit should not be issued.

The key failure areas of the application within this section are:

- SITA's modelling flawed and over-simplified.
- Use of ADMS in preference to AERMOD or other systems.
- Lack of detail regarding conversion methods.
- Use of data from outside of development area.
- Use of American lifestyles rather than rural Cornish lifestyles.
- Lack of detail for distances of emissions to land and particulate matter.
- Minimal receptors and distances used.
- Acceptability and Best Practice questioned.
- Combined exposure pathways.
- Workers at clay dryers as 'sensitive receptors'.
- Number of residents living close to site.
- All residents down-wind of stacks.
- Consumption of local produce.
- Home-grown produce.
- Home-reared poultry.
- Inadvertent soil ingestion.
- Co-mingling of clay dust and incinerator emissions.
- Local rainfall.
- Pollution in rainfall and subsequent run-off.
- Demographics and population of local parishes.
- Fish/shellfish in dietary habits.
- Safety of dairy herds.
- Dioxin contamination of food chain.
- Organic food producers (approx. 130).
- Bio-accumulative nature of dioxins.
- Organic certification and dioxins.
- Root vegetables and dietary habits.
- Operational emissions to 2042 and life time residence.
- Potential changes to local topography and impacts on dispersion.

**Dispersion Modelling****RESPONSES TO VOLUME 4**

1. The modelling used to predict the effect of pollutants within the SITA Environmental Permit Application Volume 4 Section G is both flawed and over simplified. SITA have used an American data source and adapted it for the ADMS Pollution Model.

Is this an acceptable practice?

Where are the details of how they did this?

Why have SITA not run more suitable models?

Would the use of data that is from another area be best practice?

Is it right to use American lifestyles on a Cornish population?

2. They claim that all the particulate matter will fall very close to the stack.

How close to the stack?

How far from the stack?

Where exactly will the particulate matter fall?

3. The model they used for dispersal was flawed. This is why EA are redoing it all again.

4. SITA have only used 5 receptors, living within a 1 kilometre radius of the site.

Why has such a small sample of receptors been used?

Why only a 1 kilometre radius?

Should they be looking at the widest variety of receptor living in the area and from the widest radius i.e. a 30 kilometre plume radius?

Should they be looking at the whole of Cornwall?

After all this incinerator will serve the whole of Cornwall !

## Dispersion Modelling

### G1 2.2 *Potential Exposure Pathways*

*There are two primary exposure 'routes' where humans may come into contact with chemicals that may be of concern:*

- *Direct, via inhalation; or*
- *Indirect, via ingestion of water, soil, vegetation and animals and animal products that become contaminated through the food chain.*

*There are four other potential exposure pathways of concern following the introduction of substances into the atmosphere:*

- *Ingestion of drinking water;*
- *Dermal (skin) contact with soil;*
- *Incidental ingestion of soil; and*
- *Dermal (skin) contact with water.*

#### 5. Direct Inhalation:

If the premise that particulates only fall in close range of the stack is true:-

Why have the employees of the clay dryers next to the site, who work 24 hours, not been taken into consideration?

What of the villagers living closest to the site and down wind of the plume?

#### 6. Indirect Ingestion:

The national trend towards buying and eating LOCAL produce and the movement towards organic has not been considered. In the St Dennis village, alone, you have a butchers shop selling local meat poultry, eggs, milk and vegetables. This could increase the risk of ingestion.

What of the people who grow their own vegetables, using rainwater to tend them?

There are people who keep their own chickens for eggs. What is their risk?

#### 7. Dermal soil contact:

Direct Soil Ingestion: both adults and children continuously ingest small amounts of soil through inadvertent hand-to-mouth activities. Children who spend a great deal of time outdoors have been observed to contact and ingest soil. Adults are also subject to inadvertent soil ingestion through activities such as gardening, outdoor labour, and cleaning.

## Dispersion Modelling

Can SITA guarantee that those tending gardens on Robartes Road, Hendra Road, Treviscoe, and Trerice will always use gloves?

Can SITA guarantee that very young children at play, will wash their hands before putting them in their mouths?

Will the clay dust that falls in the area of the adjacent dryers, not have particulates in it also?

### 8. Dermal water contact:

Has enough attention been given to the average rain fall of the local area and it's clay dust content?

There have been no satisfactory answers to the question of particulates attaching themselves to clay dust. This will always be a risk and could change the rate of absorption in the receptors

## FURTHER QUESTIONS AND COMMENTS

9. Data has been extracted from Cornwall County Councils own database regarding the demographic breakdown and concentration of population in the parishes around the proposed site. Taking into consideration traditional lifestyles and general lifestyles of the 2000's it leaves the SITA model woefully inaccurate.

10. In accordance with government dietary advice, weekly consumption of fish is 2 portions a week. There are at least 3 fish and chip shops and a wet fish shop within a 5 kilometre radius of the proposed site, yet fish has been disregarded

Are these outlets shipping in their customers?

Has the tradition of fish on Friday died?

What of local shell food sold in Padstow, to the north east of Cornwall?

11. The destruction of dairy herds in the vicinity of incinerators is well publicised and documented.

What safeguards are there?

Are they robust?

Would SITA compensate for loss of livelihood if dioxins are ingested by cattle

## Dispersion Modelling

and passed to the milk and the food chain?

How safe are organic producers in the same area?

Once dioxins are in the soil they stay there.

12. Looking at figures from the Organic Food Directory, there are approximately 130 Organic producers within the Cornwall area.

Will they be able to keep their certification if a dairy herd was found to contain dioxins?

What would this mean to the Cornish tourist industry or the families that grow their own vegetables?

13. Cornwall has a traditional food, the Cornish Pasty, the main ingredient of which being root vegetables.

Root vegetables are not included in the receptors diet, why?

14. It states in the report

*'the possibility of all high end exposure assumptions accumulating in one individual is, for practical purposes, never realised. Therefore, intakes presented here should be regarded as an extreme'*

The inhabitants of the clay area are not transient. It is not beyond the realms of possibility that the children living in the villages today will be living here in 30 years time.

It is reasonable to extrapolate a constant and high exposure for a receptor.

St Dennis and the surrounding area is a living, working landscape, it changes on a daily basis.