**The BSE Inquiry / Statement No 19B (supplementary)**

**Dr Alan Colchester**

**Issued 06/08/1999 (not scheduled to give oral evidence)**

# SECOND STATEMENT TO THE BSE INQUIRY

**Dr A Colchester BA BM BCh PhD FRCP**

Reader in Neurosciences & Computing, University of Kent at Canterbury;

Consultant Neurologist, Guy's Hospital London and

William Harvey Hospital Ashford

April 1999

## SECTION 1 : Introduction

1. This is my second written statement to the BSE Inquiry (1st statement reference No. 19) **(WS No. 19)** and addresses problems with the regulation of the rendering industry. Most of the material concerns the regulation of a particular rendering factory in the period up to March 1996 and how the responsible agencies handled evidence of possible non-compliance. My statement also responds to some recent published reports and papers including statements to the BSE Inquiry, and addresses points contained in them.

2. I became concerned about the activities of the rendering factory, Thruxted Mill, early in 1996, and began to make detailed inquiries about the regulations governing the rendering industry in general and Thruxted Mill in particular. I had contact with the Department of Health, The Department of the Environment, the Environment Agency, the Ministry of Agriculture Fisheries and Food, local MPs, local councillors, and other individuals and groups. Some information was initially provided on a confidential basis, but has since entered the public domain or has been released by various sources.

3. The remainder of this statement is structured as follows. Section 2 is a short summary of the geography and history of Thruxted Mill, near Canterbury, owned by Canterbury Mills Ltd. Section 3 is the main body of the statement and is a chronological description of the process of obtaining evidence. Section 4 discusses certain recent papers and reports, including submissions to the BSE Inquiry. Section 5 is a summary.

## SECTION 2 : Thruxted Mill

4. Thruxted Mill is a rendering factory which lies in a rural location 9km south west of Canterbury. On the Pathfinder Map 1211 {Appendix 1 (Intro 1)} **(M70 Tab 5)** it is shown to have an elevation of around 131m. The same map shows the position of a public water supply pumping station at Godmersham. This is 2.2km west from Thruxted Mill at an elevation of 26m. There is another pumping station at Chilham, 3.5 km away. The NRA Groundwater Vulnerability Map Sheet 47 {Appendix 2 (Intro2)} **(M70 Tab 6)** places Thruxted Mill in the second highest vulnerability class. The geological class of "Major Aquifer (Highly Permeable)" indicates that the underlying strata consists of "highly permeable formations with known or probable presence of significant fracturing. They may be highly productive and able to support large abstractions for public supply and other purposes". The soil above the chalk is shown as being of intermediate leaching potential, "soils which can possibly transmit a wide range of pollutants".

5. The direction of groundwater flow is west and then north-west from the factory, following the dry valley towards Godmersham Pumping Station. The site of the factory is within a Source Protection Zone (SPZ), in addition to being within an Aquifer Protection Zone (APZ).

6. Thruxted Mill has been processing animal remains since 1917. The current owners are Canterbury Mills Ltd, a subsidiary of Cheale Meats, who acquired the plant in 1991. The site is not connected to mains drainage. Historically, effluent received primary treatment via a three-stage sedimentation tank and was then pumped through flexible pipes before being sprayed or discharged directly onto adjacent land.

7. Even though the Control of Pollution Act 1974 had been in force for some time, Thruxted Mill first came under regulatory control in 1985 when Southern Water Authority issued a discharge consent to the owners. In 1990 the Environmental Protection Act specifically addressed rendering plants which were forced to make improvements. In 1995, after Canterbury Mills Ltd was prosecuted for non-compliance due to deficiencies at the plant, the Environment Agency drew up plans for making substantial improvements in effluent quality and the system of disposal. These were agreed with Canterbury Mills on 28th November 1995. The plans involved considerable investment in treatment plant, most of which has been completed, and the creation of a sub-surface drainage system. The Mill and the land previously used by it lies within the territory of Ashford Borough Council, but the new drainage system was planned in a new area which lies just across the border within the jurisdiction of Canterbury City Council. Planning permission was therefore sought from this Council. The Council judged that they did not have sufficient information about health risks to determine the application which went to appeal at a Public Planning Inquiry in Canterbury in February 1997.

8. On 1st May 1996 Thruxted Mill was licensed as one of the six rendering plants in England and Wales to handle Specified Bovine Material and cull cattle from the "Over Thirty Months Scheme" (OTMS). There was awareness that the rendering plant like all others had been handling a proportion of infective material amongst its inputs since the start and through the peak of the BSE crisis. The Environment Agency in January 1997 estimated that between 1988 and 1996 the plant was handling 800 to 950 tonnes of animal remains per week and generating 80 to 100 $m^3$ of effluent per day.

## SECTION 3 : Events and communications providing evidence about the regulation of Thruxted Mill

9. This section describes chronologically events and communications which provided information about the regulation of Thruxted Mill.

10. In January 1996, Canterbury Mills Ltd applied for planning permission to construct a subsoil drainage system to dispose of trade effluent from Thruxted Mill on clean farmland adjacent to the Mill. In April 1996 I was asked to comment on the planning application. It was while looking into the background of the activities of this factory that I became aware of several important issues concerning the regulation of rendering factories and their enforcement. It was clear that very little experimental data were available to show the safety or otherwise of the products of rendering. Only meat and bonemeal had been the subject of any substantial study, the water-based products of rendering had not been studied at all, and tallow had been subjected to only one very cursory examination. The factory was situated above a major aquifer, 2.2km from the water extraction point. I was amazed at the apparent lack of systematic regulations to govern the disposal of **all** of the products of rendering. I was very concerned when I examined the track record of the factory, to read of its documented failure to abide by regulations. I presented my views to the Canterbury City Council Planning Committee on 21st May 1996. Furthermore, I was equally concerned that the responsible agencies 1) despite having prosecuted the owners appeared to have been largely ineffective in enforcing existing regulations and 2) did not appear, at that stage, to be aware of the potential seriousness (for human health and animal health) of the issues involved and generally appeared to deny the possibility of a serious risk.

11. On 4th June 1996 Mr C.M. Buckle of the Environment Agency (letter signed by Dr B. Buckley on his behalf) wrote to Mr J Brazier, MP for Canterbury {Appendix 3 (04/06/96)} **(YB 96/06.04/1.1-1.4)**. He stated that Canterbury Mills Ltd, a subsidiary of Cheale Meats, was one of six renderers in England and Wales authorised to render SBM. Under recent intervention measures it had been identified as a dedicated site suitable for cull cattle. He understood that Mr David Richardson, Mill Manager, served on the

than the type of treatment provided by dissolved air flotation. Secondly, there would be a need for three pumping stations which would imply a smell nuisance, there would be a lack of spare capacity at the works, and there was reluctance by Southern Water to accept this effluent upstream from the abstraction point which supplies their Thanet water supply area. Mr Buckle did not discuss any other additional options.

12. In June 1996 I received a telephone call from a contractor who had carried out ground works at Thruxted Mill over a period of many years. He told me that, through his work, he had become aware of malpractices at the plant, and had become increasingly concerned over the possible health implications - for his own health and potentially for other people. He described briefly some of the causes of his concern. He initially requested that his observations should be kept strictly confidential but left me his telephone number. While these struck me as potentially very serious, I refrained from making anything other than non-committal comments.

13. On 18th June 1996 {Appendix 4 (18/06/96)} **(YB 96/06.18/3.1-3.2)** I wrote to my MP, Michael Howard, outlining my growing concerns about the regulation of rendering, and of activities at Thruxted Mill in particular. He drew my letter to the attention of Douglas Hogg, Minister of Agriculture Fisheries and Food, and John Gummer, Secretary of State for the Environment.

14. On 22nd June 1996 an accident occurred at Thruxted Mill in which an operative was badly burned. This incident is described in a Health and Safety Executive report dated 8th November 1996 {Appendix 19 (08/11/96)} (not published by the Inquiry) which was highly critical of safety standards at the Mill. This incident and other findings in the later report showed the very poor standard of operation in the plant, contradicting assertions made by MAFF and Environment Agency officers at the Department of the Health on 12th July 1996 (see below).

15. Mr Howard later sent me a copy of Mr Gummer's reply dated 12th July 1996 {Appendix 5 (12/07/96)} **(YB 96/07.12/3.1-3.2)**.

16. My letter to Mr Howard had also been passed on to the Department of Health. On 12th July 1996 I received a telephone call from Mr Skinner, Department of Health, Skipton House. He invited me to attend a meeting at Skipton House on 18th July, which was to be chaired by Dr Eileen Rubery, Health Aspects of the Environment and Food Division, and would be attended by officials from the Department of the Environment, Environment Agency, and MAFF. At the meeting, I made detailed notes and had these typed shortly afterwards {Appendix 6 (18/07/96)} **(YB 96/07.18/3.1-3.4)**. It soon became clear to me at the meeting that the officials from the different departments were delivering prepared presentations. Dr Richard Cawthorne of MAFF summarised background facts about the Mill. He had prepared estimates of the risks that might be posed by cattle that were currently entering Thruxted Mill having not been diagnosed as suffering from BSE. He stated that the aqueous effluent discharged by the Mill was like clean water. He said he was very familiar with the Mill and had been there many times. In contrast, while acknowledging that improvements were being introduced at the Mill, I knew that for many years the discharges from the Mill had usually been brown coloured, smelled highly offensive, and had created an extensive wasteland around the factory.

17. Mr Kevin Whiteman, Regional General Manager for the Environment Agency, then took over. He referred to improvements being introduced at the factory, in particular to reduce the concentration of suspended solids in the aqueous effluent. He again repeated the statement that the liquid discharged was clear and colourless. I again pointed out that the

key issue was not only whether it was *currently possible* for the Mill to discharge a clear liquid, but also what had been discharged in the past few years and months (A soil sample obtained a few days later [25th July 1996, see below] from the current point of discharge at the Mill showed gross contamination with animal organic matter, not compatible with simple waterlogging). He then went on to state that the owners of the factory had shown themselves to be highly responsible and diligent in complying with regulations. I stated that this was at variance with recorded facts. I mentioned just one example of a recent incident that had been reported in the local press and had been confirmed to me by a local resident.

18. At this juncture, Dr Binny Buckley joined the discussion. She asserted that she had investigated this incident in detail, and had herself established that it was a false rumour. I was astounded by this response, which indicated either that my source of information had seriously misled me or that she was seriously misinterpreting the available information. (After the meeting, I questioned the relevant individuals and confirmed that my basic information was correct). I referred during the meeting to the presence of a well in the curtilage of the Mill itself. Mr Whiteman was aware of the well and stated that he believed this well had been sealed off by the water board some time previously. I said that there was still a serious risk of liquid being discharged into this well, and that this was an important issue.

19. These developments in the meeting seriously undermined my confidence in the reliability of those responsible for regulation.

20. On 24th July 1996 {Appendix 7 (24/07/96)} **(YB 96/07.24/4.1-4.4)** the Ashford Borough Council Planning Officer sent a briefing note to Councillors (members of the Plans Subcommittee) about the planning application by Canterbury Mills Ltd to install a new subsoil drainage system. The document stated: "The applicants and the Environment Agency have been working on this problem for some time."...."The applicants have indicated that once the irrigation system is installed, the top soil will be replaced and normal agriculture will resume."...."I understand that the BSE prions which may carry the CJD disease are highly hydrophobic. They may also be killed by the high heat treatment that the animal waste receives at the plant. If, however, they do survive the various processes carried on and are discharged onto the land they would then soak away into the underlying chalk. I understand that chalk is a very effective cleansing medium and that fluids take approximately 3 years to permeate through to the aquifers from which drinking water is extracted. The Environment Agency has therefore indicated formally that they consider that there is little risk of the disease passing into the water system, however, clearly this cannot be established one way or the other for some considerable time." ...."I consider that this is a matter for other authorities to control."...."I therefore recommend that Members indicate to Canterbury City Council that they have NO OBJECTION to the works."

21. One week after the meeting at Skipton House, {Appendix 8 (25/07/96)} **(YB 96/09.13/1.1-1.2)** Mrs Anne Graham, a local resident with extensive knowledge of Thruxted Mill, arranged for a sample to be taken from soil close to the point of discharge in current use at Thruxted Mill. A later control sample was taken downhill from the factory on the west side. Analysis showed gross contamination of the first sample with organic material of animal origin, not compatible with simple waterlogging.

22. A few weeks after the meeting I had still not received a copy of the minutes of the meeting and I telephoned to request them. My understanding was that the minutes would be sent to me, but this never took place. As a result of my increasing loss of confidence in

the local Environment Agency officers I decided to make further enquiries into some of the allegations. I contacted the contractor who had previously telephoned me on 24th July 1996 and spoke on the telephone to him.

23. As a result of these contacts with the contractor I felt that I had to take further action. I wrote again to Mr Howard (25th July 1996) {Appendix 9 (25/07/96)} **(YB 96/07.25/2.1-2.3)**, explaining why I felt there were still unresolved concerns. Mr Howard passed on the letter to the relevant Ministers. I also telephoned him and asked him whether an allegation concerning illegal discharges could be investigated independently of the local inspectors. He informed me that the Environment Agency was the sole body with powers to enforce regulations. The EA itself was responsible only to the Secretary of State for the Environment.

24. On 27th July 1996 the contractor, Mr Gary Skillett, sent me a copy of a detailed diagram he had prepared. I arranged a meeting with him which took place on 29th July 1996 and asked Mrs Anne Graham, a local resident who lives near Thruxted Mill, to attend. With his permission I recorded the interview. His allegations were very detailed and appeared very consistent. I checked with him the transcript of his recorded statement and prepared a summary. One of the most serious allegations seemed to me to be that the management had constructed a drainage system which would, in certain circumstances, inevitably cause untreated as well as treated spillage and effluent to be discharged into the well within the curtilage of the factory.

25. On 29th July 1996 {Appendix 10 (29/07/96)} **(YB 96/07.29/2.1-2.2)** Mr Hogg replied to Mr Howard, referring to my letter of 18th June 1996.

26. As a result of my enquiries, I concluded that the only individuals who would be in a position to initiate an investigation of the Mill which was independent of the local officers would be senior staff in the Department of the Environment. I telephoned the Department of the Environment on 30th July 1996 and spoke to Brian Kogan and requested permission to meet senior DoE officials. Inevitably, I had to summarise the basis of my concerns in order to obtain a meeting. A meeting was agreed.

27. I later discovered that on 31st July 1996 {Appendix 28 (25/02/97)} (not published by the Inquiry) the Environment Agency contacted the Mill manager, Mr Richardson, and asked him to block the pipe running to the well with concrete. According to a later statement by Mr Gallagher, Chief Executive of the Environment Agency, the instruction was given by a local Environment Agency Officer {Appendix 29 (05/03/97)} (not published by the Inquiry). Also by 31st July 1996 Mr Richardson had been alerted to the importance of the rate of soaking away of fluid in the well. He later made reference to his daily readings of levels from that date on {Appendix 28(25/02/97)} (not published by the Inquiry).

28. My meeting with senior officials of the DoE was held on 1st August 1996. I attended with Mrs Anne Graham. The Chairman was Dr Neil Summerton, Director of the Water and Land Directorate. Also present were Mr Paul Britton, Director of the Environment Protection Strategy and Waste Directorate, Mr Paul Bristow, Divisional Manager for Water Quality (under Neil Summerton), and Brian Kogan who works under Mr Paul Bristow. At the meeting, I described the detailed allegations made by the contractor who had worked at Thruxted Mill, and showed the diagram prepared by the contractor to those present. I explained that I had lost confidence in local officers of the Environment Agency, and that I had sufficient confidence in the reliability of the witness to feel that a high-level and completely independent investigation of the Mill was essential.

29. As agreed at the meeting, I wrote a letter to Dr Summerton summarising my concerns (3rd August 1996) {Appendix 12 (03/08/96)} **(YB 96/08.03/1.1-1.2)**. One of the allegations by the witness was that the management of the Mill specifically commissioned drain construction that would lead to spilled raw material directly by-passing the cooking and processing, to mingle with post-treatment liquid. Furthermore, they specifically commissioned construction of surface and underground drains which would inevitably lead to contaminated surface water emptying into the well. The Mill managers had a standard operational procedure which was to re-direct the flow of contaminated surface liquid directly into the well at times of high rainfall. At least as recently as mid-1995, large flexible pipes carrying effluent were sometimes led to the top of the well and effluent was pumped directly into it. Groundworks of the type carried out by the contractor making the allegations, Mr Skillett, would normally be inspected by building regulation or planning officers of Ashford Borough Council. Mr Skillett said that on none of the contracts on which he had worked had he ever met a building inspector on the site or been given 'tickets' of approval. In my letter I also explained why I had felt it essential to take steps to bring about an immediate investigation into these very serious allegations. I pointed out that the allegations implied a failure of supervision and enforcement of regulations by the relevant staff of the Environment Agency, Ashford Borough Council, and MAFF. I expressed my view that it was therefore essential that an immediate, unannounced, full, thorough and high level investigation should be initiated, which would guarantee the preservation of evidence. I requested that an observer independent of the Department of the Environment or Environment Agency should be allowed to be present to observe the thoroughness and impartiality of the inspection. I was informed that an unannounced inspection, carried out by officers who would not normally have responsibility for Thruxted Mill, was to be carried out.

30. The inspection took place on 9th August 1996 {Appendix 13 (09/08/96)} **(YB 96/08.09/2.1)**. I requested a copy of the report, which I appreciated would be confidential. I was informed that no detailed report had been written, and that the only pictures that had been taken were some amateur video of the top of the well. I was also informed that substantial contamination of the well had been noted. A copy of the one-page official "Premises Searched Record" raised by the Environment Agency was later made available {Appendix 13 (09/08/96)} **(YB 96/08.09/2.1)**. This recorded that the officer in charge was Dr Stearn, and that other officers present were Dr Tingley, Dr Litten, Mr Davies, Mr Holmes and Mr Hammond. It was noted that the Manager of the Mill, Mr Richardson, was present, as were several employees. It was stated that the extent of the search was "throughout premises". It was also stated that no samples were taken.

31. A report dated 27th August 1996 {Appendix 14 (27/08/96)} **(YB 96/08.27/1.1-1.4)** was later released which showed that samples of liquid were taken on 20th August 1996, from different depths in the well, and showed heavy contamination. Furthermore, a thick crust of accumulated organic material was present at the top of the well.

32. On 6th September 1996 the contractor, Mr Skillett, received a telephone call from Dr Tingley of the Environment Agency, asking permission to arrange for the two investigating officers to visit him. Mr Skillett was concerned that he himself should have some legal representation, because he believed that there was a risk that an attempt might be made to discredit his evidence. He was later contacted by Mr Harvey Bradshaw of the Environment Agency. Mr Bradshaw offered to interview Mr Skillett with a solicitor employed by the Environment Agency, and an official from Ashford Borough Council. Mr Skillett stated that this would not address his own concerns, because officials from Ashford Borough Council would be bound to observe that the allegations implied a

criticism of themselves, because they had in his opinion failed to carry out adequate inspections previously. Mr Skillett was later rung by Dr Tingley, who informed him that an attempt had been made to obtain permission to cover the expenses of a legal representative of Mr Skillett's choice, but there was no precedent for this, and it was not possible for it to be authorised.

33. In a telephone conversation with Dr Tingley on 9th September 1996, I was told that Environment Agency officers were satisfied that the inspection came as a surprise, and that the response of the staff did not raise any suggestion of collusion.

34. On 9th September 1996 {Appendix 15 (09/09/96)} **(M70 Tab 7)** Mr Skillett, the contractor who had previously worked at the plant signed an affidavit, which was legally witnessed, affirming the truth of detailed allegations in a statement which had been prepared earlier.

35. On 2nd August 1996, Dr Buckley of the Environment Agency at East Malling, had written to Mr Brazier {Appendix 11 (02/08/96)} **(YB 96/08.02/1.1-1.3)** to answer questions he raised about the Environment Agency's decision to grant on 19th December 1996 a variation of the discharge consent to the Mill. Careful analysis of this letter by Mrs Anne Graham showed that it was misleading on some important points and she wrote to Mr Brazier on 12th September 1996 {Appendix 16 (12/09/96)} **(YB 96/09.12/2.1-2.4)** about this. She made a strong case that there had been maladministration by the Environment Agency and urged Mr Brazier to put the matter before the Parliamentary Commissioner for an objective opinion.

36. On 18th September 1996 I spoke on the telephone to Mr M. Baker, of the Environment Agency at Worthing. He stated that it had been known to the Environment Agency for a long time that the method of discharging effluent onto the surface of the land around the plant was actually technically illegal, and in fact the Agency had the power to stop the discharge immediately. I believe this admission indicated that Mrs Graham's conclusions {Appendix 16 (12/09/96)} **(YB 96/09.12/2.1-2.4)** were substantially correct. He stated that Dr Slater and Mr Whiteman of the Environment Agency had discussed this matter, and had decided to alter the discharge consents so that the current practice would become legal.

37. On 24th September 1996 {Appendix 17 (24/09/96)} **(YB 96/09.24/2.1-2.2)** a letter was sent to me by Dr Summerton of the Department of the Environment. He referred to the unannounced inspection which took place on 9th August 1996. An expert in plant drainage systems was present. He stated that he had written to MAFF and to Ashford Borough Council, to let them have the information I had provided, so that they could consider whether there was any enforcement action that they ought to take. He stated that the Environment Agency was continuing its investigation and was considering what action, if any, it should now take.

38. On 27th September 1996 {Appendix 18 (27/09/96)} **(YB 96/09.27/2.1-2.2)** Mr Hogg wrote to Mr Howard, in response to the list of concerns I had raised in my letter of 25th July 1996 to Mr Howard. Mr Hogg stated that the Environment Agency had carried out a complete investigation of all waste water streams and had sought advice from independent consultants, who had endorsed the agency's opinion that the risk of groundwater contamination from the discharges was not a matter for concern. Drainage from raw material and product areas was routed through the rendering process through

subsurface effluent traps, and drainage from the treatment plant area was routed through the treatment plant and sand filters. Mr Hogg also made the following point: "On his fourth point about the possibility of surface water leaking into the old well, Dr A Colchester will wish to note that the well has been partially backfilled and is inspected regularly. Recent inspections by the agency indicate that the well shaft terminates some thirty metres above groundwater". He went on to say that the plant met the processing standards required by MAFF and he was progressing an action plan agreed by the Environment Agency to meet environmental requirements. He stated that senior MAFF veterinary staff had visited the plant and were content that there was no cause for enforcement action under animal health legislation.

39. On 26th October 1996 I met Mr Julian Brazier, MP for Canterbury, and Mr Damian Green who represented Sir Keith Speed, MP for Ashford. I briefed them on the sources of evidence about malpractices at Thruxted Mill. I explained my reasons for concluding that the allegations needed to be taken seriously. I stressed the shortage of experimental data to provide reliable reassurances that there could be no health risk.

40. On 1st November 1996 an inspection of Thruxted Mill was carried out by Mr Sandhu of the Health and Safety Executive. His report was dated 8th November 1996 {Appendix 19 (08/11/96)} **(YB 96/11.13/1.1-1.2)**. The report was severely critical of health and safety provision at Thruxted Mill. There was poor guarding of apparatus. Hygiene facilities were grossly deficient. Two unreported accidents were noted, on the 22 June 1996 to Mr Simmons and on the 10th October 1996 to Mr Rhodes. One of the accidents was thought to have been due to blockage of a discharge pipe. One of the staff described how it was that the discharge pipes could become blocked. Apparently, "Steam from the cookers condenses in several ‘drop out’ pots and drains away as water from the discharge pipe of each pot. Deposits of fat and offal sometimes accumulate, blocking the discharge pipe" (this is revealing, for it shows that solid organic material will always be carried over in the condensate). There was no available policy for health and safety, and no written risk assessment had been carried out. Failure to report accidents and the absence of risk assessment are prosecutable offences.

41. On 13th November 1996 {Appendix 20 (13/11/96)} Dr Buckley of the Environment Agency, East Malling, wrote to me **(YB 96/11.13/1.1-1.2)**. She stated that a prohibition notice dated 6th November 1996 had been issued to the factory to reduce the effluent discharge by 20% with effect from February 1997, and also imposed a deadline of March 1998, after which the discharge at the current location will be absolutely prohibited. She said that the purpose of this was to maintain pressure on the operators to move the discharge to the new location (subsoil piping). She stated that the agency was also currently investigating a number of matters relating to standards at Thruxted Mill which had given cause for concern. She stated that the prohibition notice did not preclude any legal action which the agency might take in the future.

42. On 23rd November 1996 I received a telephone call from Mr Brazier, following consultations he had had with the Environment Agency and others. He stated that he was convinced that most of the allegations were true, and that this reflected badly on the Environment Agency as well as on the Mill. He stated that the Environment Agency’s view was that because the well was sealed at the bottom it may have done no harm of any sort. He had met Dr Buckley and Mr Buckle with Mr Damian Green. The Environment Agency Officers said that they had found drains leading to the well, and that the well was severely polluted. The officers told the MPs that Mid-Kent Water had carried out an annual inspection for years. Mr Brazier mentioned that the offensive odour from the

factory appeared to have been less noticeable in the previous few months.

43. In November 1996 the Environment Agency made arrangements to take a more detailed formal statement from Mr Skillett. Mr Skillett himself could not afford to appoint a lawyer to act on his behalf. He continued to feel vulnerable, because the Environment Agency investigating Officers included those with previous responsibility for inspecting the Mill. His allegations implied criticism of the Environment Agency. He therefore requested that I should be present at the interview. In addition, a retired barrister with an interest in environmental matters, Mr Derek Willmott, also offered to be present to provide any support for Mr Skillett that might be necessary.

44. The meeting to take a further statement from Mr Skillett took place on the 28th November 1996. Dr Arthur Tingley, Mr Bob Curtis and Mr Colin Buckle of the Environment Agency were present, in addition to Mr Skillett, Mr Willmott and myself. Most of the questioning was carried out by Mr Colin Buckle. He went through the history of work carried out by Mr Skillett at the factory. Mr Skillett described how he was carrying out work at the plant in October 1995 when he was instructed to rebuild a damaged gully and to connect it into the well. In the interview Mr Skillett confirmed and extended information that had been contained in his affidavit. Mr Skillett was repeatedly asked whether he had himself seen the direct connection between the gully he was working on and the well. He repeated several times that he knew they were connected, but that he was not sure he had seen the complete exposed pipe. My main reaction to this line of questioning was surprise that the Environment Agency officers should be labouring this point. The existence or not of a connection between the gully and the well should have been established incontrovertibly by the Environment Agency during the "unannounced" inspection carried out on the 9th August 1996 by the inspectors themselves. If there was to be a prosecution concerning the connection of the drain to the well, it seemed likely that it would rest on the outcome of this site inspection, not on the memory of Mr Skillett. I did not at that time know that the existence of the drain was known to the Environment Agency and that they had issued instructions to the management on 31st July 1996 that it should be blocked off, 9 days before the "unannounced" inspection.

45. Mr Skillett stated that he had personally observed flexible pipes being dragged to the rim of the well and liquid being discharged through them, on more than one occasion. Mr Buckle asked how quickly the water soaked away. Mr Skillett was sure that liquid did soak away, or the pipes would not have been led to the well and the pumps turned on. He was repeatedly questioned about this, and was asked to estimate the frequency with which the operation was repeated. He reiterated the basic observation of having witnessed a flexible hose being dragged to the well and the pumps being turned on; he was less confident about the frequency of repetition. Mr Skillett asked his interviewers why they were labouring certain points which he had already covered.

46. After Mr Skillett's evidence had been recorded, Mr Willmott (the barrister) asked if he could comment on the law relating to it and was allowed to do so. He refers to this in his later letter dated 3rd February 1997 {Appendix 27 (03/02/97)} **(YB 97/02.03/2.1-2.3)**. The legal point he made was that the Water Resources Act 1991 S.85 created a general offence of causing or knowingly permitting any poisonous noxious or polluting matter to enter controlled water. Mr Buckle pointed out to him that his difficulty was the defining of "controlled waters". In response to this Mr Willmott read out the definition given in Environmental Law by Ball and Bell where S.104 Water Resources Act 1991 was quoted. It stated that the term included ground waters i.e. any waters contained in

Mr Buckle said that the well mentioned in the evidence was not really a well because it had been found to be only 50m deep, while the water table was said to be at a depth of 85m at that point.

47. The Environment Agency officers then answered further questions put by Mr Willmott, myself and Mr Skillett. They said that in their view the technical interpretation of the "well" on the site was critical from the point of view of the prosecution. If it was a well, then there was a prima facie case for a criminal prosecution. If it was merely a simple hole in the ground, then the offence implied by any discharge of treated and untreated effluent into the hole became one of surface water contamination, a less serious offence for which there was already abundant evidence from various sources.

48. I then asked Mr Buckle if the Environment Agency had investigated the nature of any obstruction in the well, to establish the age of the material, and to identify the levels at which the liquid was leaving the shaft and soaking into the strata. He stated that no investigations had been made to establish the route of soaking away of liquid in the well (i.e. whether this was partly downwards through the obstruction at the bottom of the well, laterally near the bottom of the open shaft, or laterally at high levels of the shaft). I suggested that such basic investigation should surely be a fundamental part of establishing the fate of liquid put in the well shaft, and would have an important bearing on analyses of the pathway and speed of transit to the aquifer. I went so far as to say that I could not see how the Environment Agency could claim they were carrying out a serious investigation if they had not carried out such tests.

49. After the end of the meeting Mr Skillett told me that he remained very doubtful about the true motivation of the Environment Agency investigating officers.

50. On 2nd December 1996 {Appendix 21 (02/12/96)} (not published by the Inquiry) a draft statement for Mr Skillett, prepared by Mr Curtis, was sent to Mr Skillett and a copy was sent to me. This was in the form of a statement that could be signed by the witness or edited as necessary.

51. I telephoned Dr Tingley on 5th December 1996, specifically to ask if the Environment Agency had indeed checked the points I had raised over investigating the route of soaking away from the well. Dr Tingley stated that it was well known that the well had been partially backfilled by the water company many years previously. He then stated that the well had now been filled up to the brim with a hard setting material like concrete. I asked when this had been carried out and I established that it was on the second working day after the interview with Mr Skillett. In response to my asking him how he would be able to carry out further investigations about the nature of the material in the well and the routes of exit of liquid, he pointed out that the Environment Agency would be able to dig holes and take further samples if ever that were to become necessary.

52. Later on the same day (5th December 1996) I was telephoned by Mr Skillett. I had had no contact with him since the interview on the 28th November 1996. I did not initially tell him that the well had been filled in with a concrete material and from his comments it seemed that he was unaware of this. I did not pass comment about the draft statement prepared for him by Mr Curtis. He told me that he had just received the draft witness statement and that he was very dissatisfied with it. He felt it was poorly structured and unclear. He felt that it was much less clear than the affidavit he had already signed. He said that he could not possibly endorse this document as it did not represent clearly

enough what he observed. He was firm in his opinion that the Environment Agency was not really trying to put together a serious prosecution. I asked him if these opinions were as a result of talking to anyone else, such as Mr Willmott or other concerned local people, and he stated he had not discussed these views with any of these individuals. I advised him that he would have to write to the Environment Agency to record his reasons for his dissatisfaction, because if he did not state his reasons it might give the impression that he lacked confidence in his evidence. After these discussions I then told Mr Skillett that I had learnt that the Environment Agency had filled the well with a concrete material immediately after the interview on 28th November 1996. Mr Skillett was incredulous as he believed more detailed examination of the well contents was necessary. He observed that if you wanted to prove something, you do not cover the vital evidence up with concrete.

53. On 17th December 1996 {Appendix 22 (17/12/96)} **(YB 96/12.17/1.1-1.3)** Dr Buckley of the Environment Agency wrote to Mrs Graham responding to questions about Thruxted Mill. She confirmed that the Environment Agency had issued a Prohibition Notice on 6th November 1996, identifying 31st March 1998 as a date on which the discharge of effluent at the existing location had to cease. She stated that the Environment Agency did not have powers to restrict future use of land above the subsoil drainage system. She stated that the Environment Agency had "been in touch with retired officers from the Southern Water Authority (the previous regulator) and Mid-Kent water who were involved in the decision to backfill the well in 1978". She then stated that "a surface drain to the upper well shaft was sealed by the operators on an instruction from the Agency as soon as the presence of this drain was made known at a meeting with Dr A Colchester on 18th July". She did not disclose the date that the drain was sealed, and in particular did not make it clear that this preceded the so-called surprise visit to the Mill on Friday 9th August 1996. She went on to say: "The well has subsequently been drained and further backfilled with concrete".

54. On 23rd December 1996 {Appendix 23 (23/12/96)} **(YB 96/12.23/1.1-1.2)** Dr Stuart Stearn, branch head, IPC Strategic Policy, Environment Agency, Marsham Street, wrote to Mr Stirzaker, Deputy Borough Health Officer, Environmental Health and Leisure Services, Ashford Borough Council. He described the inspection of Thruxted Mill which was carried out on Friday 9th August 1996. He stated that complete surprise was achieved. He said that they noted the existence of a pipe leading to a well blocked off at the time of inspection. He did not disclose that at least one of these pipes had been blocked off by the Mill staff on the instruction of the Environment Agency nine days before the "surprise" inspection. He stated that the effluent at the time of inspection was visibly clear and that subsequent analysis showed that the solid loading was within the conditions set in the consent. He noted that the operating procedures at the Mill would allow storm water to be discharged from the site without further treatment. He stated that the position was being reviewed, "the better to ensure that untreated material does not leave the site by this route".

55. On 6th January 1997 {Appendix 24 (06/01/97)} **(YB 97/01.06/2.1)**, Mr Skillett wrote to Dr Tingley. I received a copy some time later. In the letter he explained his reasons for feeling unable to sign the draft summary statement prepared by Mr Curtis. He stated that the interpretation of his statement was very disjointed, did not appear to follow any logical sequence, and contained many inaccuracies. The interpretation also seemed rather brief considering the length of time during which he was questioned.

56. On 15th January 1997 Dr Buckley, Environment Agency Kent Area Manager, gave a

briefing to Ashford Borough Councillors concerning the allegations of malpractice at Thruxted Mill. Present were Councillors English, Wells and Marriott. Typed notes of the briefing were prepared {Appendix 25 (15/01/97)} **(YB 97/01.15/1.1-1.4)** and the following comments are statements from that report. Dr Buckley indicated that the possibility of infective material bypassing the works treatment plant had been taken into account in risk assessments carried out on behalf of the Environment Agency. Dr Buckley quoted a MAFF officer as stating that there was no evidence of cross-contamination between "clean" and "dirty" liquid streams, even in conditions of heavy rainfall. She went on to state "the person making the allegations indicated that it was not always apparent visually that a particular drain discharged to the well because the contents of the well obscured the drainage inlet. Some evidence of unclean material was found in the well but there was no direct evidence to support the view that it had been deliberately used for waste disposal. The witness had reported during interview that he had seen incidents. The well had now been pumped empty and sealed". The briefing note also stated "the next allegation related to deficiencies in building regulations and these have been investigated by the Borough Planning Officer. The Chief Building Control Officer was currently in contact with Cllr Marriott." Cllr Marriott apparently "asked whether the Environment Agency intended to provide a response to the allegations which had been made. Dr Buckley indicated that this was unlikely, partly because of the unreliability of the witness, and also because to establish an offence under current legislation, it would be necessary to demonstrate that an action of the current mill ownership had caused contamination of the "wet" part of the aquifer. There was no current or recent evidence in that regard" {Appendix 25 (15/01/97)} **(YB 97/01.15/1.1-1.4)**. Dr Buckley later stated that the estimated half-life of prions is considered to be 28 weeks (I would comment that this is <u>not</u> established) and there is no evidence that their effect is cumulative. She talked about alternative options for effluent disposal which had been considered. She also said that there was evidence "that virus particles discharged onto chalk were dealt with in the upper layers and organic material within 10 metres". Cllr Wells indicated at the meeting that whoever had made the allegations should come forward. "He felt that the fact that this had not happened probably indicated that they had little foundation". (I note that it was not explained that the witness had indeed come forward and had initially agreed to testify in court). Dr Buckley related an account of investigations into alleged surface spreading of works effluent by Canterbury Mills Ltd in the late summer of 1996. She stated that they were comprehensively investigated and appeared to be unfounded. Cllr English emphasised that allegations regarding spillage on highways had some foundation and these had been observed by herself and council officers.

57. On 16th January 1997 {Appendix 26 (16/01/97)} **(YB 97/01.16/1.1-1.2)** Dr Tingley wrote to Mr Skillett. He accepted that there might well need to be several edits of a statement, but that it was important that it was very concise. He also reassured Mr Skillett that the recent filling in of the well had nothing to do with the prosecution, and that a decision had been taken to clear out and backfill the well prior to the meeting. He stated that the objective was to further reduce the existing pollution potential of the well, and to eliminate the possibility of future pollution via that route.

58. On 3rd February 1997 {Appendix 27 (03/02/97)} **(YB 97/02.03/2.1-2.3)** Mr Willmott wrote to Dr Tingley to record his own views about the interview with Mr Skillett. He also expressed dissatisfaction with the Environment Agency's interpretation of a well. In his opinion, if the hole in the ground was a true well, there was a prima facie case for a criminal prosecution. If the well was interpreted merely as a hole in the ground, then the offence implied by the discharge of treated and untreated effluent into the well became

one of surface water contamination, a relatively minor offence for which there was already abundant evidence from various sources. He accepted that this important point had a profound bearing on the nature of Mr Skillett's evidence, and he would have expected those providing support for the witness (such as his legal representative) to be informed of the position before the main part of the interview was undertaken.

59. **Background To The Public Planning Inquiry and pre-Inquiry Meeting of 19th December 1996.** As part of their plans to improve effluent disposal, Canterbury Mills Ltd had, on 31st January 1996, applied to Canterbury City Council for planning permission to develop a sub-surface disposal system. On 26th March 1996 the Council deferred the decision pending consultation on safety issues and in July 1996 Canterbury Mills Ltd lodged an appeal on grounds of non-determination. This led to the setting up of a Public Planning Inquiry which took place in February 1997. A pre-Inquiry meeting was held on 19th December 1996, one of the aims of which was to brief participants on documentation. The local residents considered that the past record of compliance by Canterbury Mills Ltd was important as the safety or otherwise of the disposal process was dependent on adherence to very high standards of operation. The Environment Agency was asked to put before the Inquiry the report of the 9th August site inspection. Counsel for the Environment Agency declined, arguing the material was irrelevant to the Inquiry.

60. The Public Planning Inquiry, presided over by Mrs Norah Ball, was held in Canterbury between 11th and 28th February 1997. I submitted a proof of evidence on behalf of the local residents' group which was coordinated by Mrs Anne Graham. The main body of this proof was included as an appendix to my statement to Part 1 of the BSE Inquiry (Statement No. 19) **(WS No. 19)**. In section 2.5, on reliability of operation, I summarised the evidence of poor compliance with regulations by the current owners. This included several prosecutions. I also made reference to the recent serious allegations which cast further doubt on the reliability of the Mill operatives, and enclosed as an appendix 2 to my proof of evidence the statement by Mr Skillett.

61. The submission by the Environment Agency to the Public Planning Inquiry expressed the Environment Agency's support for the proposed effluent disposal system and included information about a detailed risk assessment which had been commissioned in late June 1996 by consultants acting for the Environment Agency. The risk assessment involved large numbers of assumptions, and I felt that too much reliance was being placed on the results of the assessment. I later also explained these arguments in my first statement to the BSE Inquiry.

62. Further information about the regulation of Thruxted Mill came to light during the Public Planning Inquiry. In Document CM105 (Supplementary statement by David Richardson, Manager of Thruxted Mill {Appendix 28 (25/02/97)} (not published by the Inquiry). Mr Richardson stated that he was requested by the Environment Agency on 31st July 1996 to concrete up the drain which led to the well. This was thirteen days after a meeting which I attended at the Department of Health, and one day after I spoke to officials in the Department of the Environment, requesting a high-level meeting because of detailed evidence that was in my possession. The instruction from the Environment Agency to Thruxted Mill, to fill the drain with concrete, preceded the "surprise" inspection of the premises carried out on 9th August 1996 by nine days. Mr Richardson's statement also referred to observations he had made about the rate of fall of the water level in the well over a period of 113 days between 31st July 1996 and 22nd November 1996. During that period he stated that the water level in the well dropped by only 28 metres, which he estimated was equivalent to a rate of fall of 225 litres per day. He pointed out that at this

rate of soaking away the potential capacity was a tiny fraction of the total volume of liquid discharged by the Mill. He stated that the slow rate of soaking away showed that the company could not possibly have pumped large volumes of water into the well. He went on to deny the majority of the other allegations. He stated that the liquid from the well when sampled by the Environment Agency was dark in colour, extremely light in texture, and odour free. He said that if considerable effluent had been allowed into the well, the characteristic of the liquid would have been different, and it would have had a putrefying odour. He admitted that there was a drainpipe leading into the well to allow rainwater to run in from the hard standing area.

63. On 5th March 1997 {Appendix 29 (05/03/97)} **(YB 97/03.05/1.1-1.2)** Mr Ed Gallagher, Chief Executive of the Environment Agency, wrote to Mrs Graham. He stated that the unannounced visit to Thruxted Mill by national and regional officers of the Environment Agency was aimed at ascertaining that "preventative or enforcement action was being taken in relation to any discharges that could potentially pollute the surface or ground waters". He commented that it was MAFF who had responsibility for identifying clean and dirty areas on the operational site. He stated that Dr Tingley, the regional officer involved in the Environment Agency Quality Assurance Team, "was satisfied that a surface drain to the well within the curtilage of the Mill had been sealed at the request of local Environment Agency officers prior to the visit". With reference to the Environment Agency's declaration that no written report of the "unannounced" visit had been made, he wrote: "Dr Tingley personally gave a telephone briefing (I presume this was a briefing about the outcome of the inspection) to an officer in the Department of the Environment, but was not required or asked to respond in writing." ....."Dr Stuart Stearn of the Environment Agency" (Branch Head: Integrated Pollution Control Strategic Policy)"confirmed the findings to the Department of the Environment and this concluded Environment Agency involvement". (Further details of tests carried on behalf of the Environment Agency are given in the report by Young et al {Appendix 30 ( /03/97)}) **(M70 Tab 9)**. Mr Gallagher went on "I would suggest that the outcome of your submissions to the Department of the Environment is more appropriately taken up directly with that department which is best placed to give a summary of their enquiries with all the parties involved". "The well within the curtilage of the Mill has been the subject of conventional investigation prior to it being sealed to ground level and I enclose results from the Public Register, which show that the well had been polluted at some time before sampling. Implications of past practice at the Mill, insofar as they could impact on potential risk, have been incorporated into evidence on risk presented to the Public Planning Inquiry (into the Planning Appeal). I believe you are already aware that the Environment Agency's investigation of the depth of the well was consistent with information from the former Southern Water Authority and Mid-Kent Water that the lower well shaft had been backfilled in the late '70s". "There has been no CCTV inspection of the well although a member of the audit team took amateur video of the well from the top to support his own recall". "As regards prosecution the Environment Agency is still considering relevant matters".

64. Young et al in their report dated 1st March 1997 {Appendix 30 ( /03/97)} **(M70 Tab 9)** described recent inspections and measurements carried out at Thruxted Mill. This report was not released until November 1997. A dried crust material was found to be blocking the shaft from about 1 – 2.5 metres below the rim of the ring, with liquid underneath. Inspection of the inside of the top of the well was initially not possible because the well was brimful. However, during the last week of July and again in August, (on p28 line 14) when the water level had begun to fall, four inlets to the well were revealed at different depths down to 3.4 metres. The highest was a surface gully, draining the well head.

Second was an inlet from a surface water gully apparently draining an area of about 8 $m^2$ adjacent to one of the Mill buildings. The third was a sealed inlet, below the second, which appeared to have drained old buildings. The fourth was an inlet 3.4 metres below the rim, "believed to have taken the discharge from plant to the well in the 1960s". The soil around the outside of the upper brick lining was excavated to a depth of 4.6 metres, but no other inlets were found. All inlets located during the survey were sealed with concrete. The rate of fall of the liquid level in the well was observed over the ensuing few weeks to be about 0.3 metres per day, equivalent to a daily leakage of about 0.2 $m^3$ volume per day. These rates are less than would be expected for open chalk, but it was observed that the exposed wall of the well appear blinded with "organic" material. The biological oxygen demand at different depths below the water level (10m, 20m, 30m and 40m below) were 226, 273, 4567, 9933 mg/lO. The suspended solids were 653, 653, 42000, and 44400, mg/l. (The above data are from section 3.4.2, pp28-30).

65. In section 4.6 the possible effect of previous discharges into the well were considered. The authors state that when the well was first employed for disposal of site liquids, the infiltration rate was probably high, and may at that stage have been capable of accepting many tens of cubic metres of liquid per day. They expected that in the distant past of the effluent would have contained high levels of suspended solids and fats, with the result that the infiltration capacity of the well would have fallen rapidly. They also speculated that the present rate of leakage of 0.2 $m^3$ per day had been typical of at least the past ten years. They attempted to estimate possible rates of discharge of BSE infectivity into the aquifer. In order to calculate these figures, a large number of assumptions had to be made. It was surmised that the rate of leakage from the well was $2m^3$ per day in 1988, falling to the current measured rate of 0.2 $m^3$ per day. There was no discussion of the possibility that some new material might have been introduced during July 1996, specifically to reduce the liquid egress from the well, prior to the measurements made by the Environment Agency. It was estimated that 22 infectious doses per day might have been present in the effluent discharge from the Mill in 1992 but that only a small fraction would have entered the well. In my view these figures are highly speculative and do not represent a worst case assumption.

66. The Environment Agency did not reveal the existence of the report by Young et al and did not disclose key data and observations about the well at the time of the Public Planning Inquiry. Following further enquiries, Mr Buckle of the Environment Agency stated in July 1997 that the report was restricted. He finally released a copy in November 1997.

67. On 24th August 1997 {Appendix 31 (24/08/97)} **(YB 97/08.24/1.1-1.2)** a memorandum from Liz Cook of the Environment Agency was sent to Gilly Mathieson of Meridian Television. Ms Cook pointed out that the lower well shaft - a thirty metre section between the bottom of the well and the water table - was backfilled with sand in 1978 and that this was well known to the Environment Agency. (Sand would act as a filter for larger solid particles, but would allow the contents of the well to drain away).

68. On 26th September 1997 Mr Skillett received a telephone call from Mr Martin Davies, Environment Agency Regional Solicitor, following a programme on Meridian TV (26th August 1997). He was asked if he would reconsider his position over giving evidence and he agreed. On 14th October 1997 he sent the Environment Agency a copy of his original affidavit and indicated this would be what he would be prepared to say in a statement. Over the next few months several minor alterations to the statement were made and the

accompanying diagram improved.

69. On 4th November 1997 {Appendix 32 (04/11/97)} **(YB 97/11.04/2.1)** Dr Buckley wrote to Mr Brazier in response to his letter of 30th October 1997to inform him of the Environment Agency's position regarding criminal proceedings and Canterbury Mills Ltd. She stated that around October and November 1996 considerable efforts had been made to identify potential offences and to gather available evidence.

70. She went on to state that it became clear that a significant proportion of the evidence was associated with the observations of a contractor who worked on site. The person involved subsequently indicated they no longer wished to provide their observations as evidence and the matter was left in abeyance. The agency had recently again made contact with the person who had given an indication that circumstances may have changed in respect of providing evidence. The matter was therefore once again being actively progressed, but it was not possible to say whether this would lead to legal proceedings. "I will write to you once again when the matter has been determined."

71. On 3rd February 1998 Mr Skillett received a final statement from Mr Davies, and a few days later received an improved diagram. Mr Skillett was satisfied with the content of this statement, signed it and returned it to Mr Davies on 24th February 1998. Since that time Mr Skillett has not been interviewed further and until February 1999 had received only one letter in which the Environment Agency stated it was considering the situation.

72. On 8th February 1999 Mr Davies wrote to Mr Skillett {Appendix 42 (08/02/99)} **(YB 99/02.08/1.1-1.2)** advising him that the Agency had taken the decision not to proceed with prosecution. He explained that further statements had been taken from the Agency's staff and a scientific report received on material taken from the well. He went on to say that "the scientific analysis of the contents of the well was compared with an examination of the products of the plant and this showed that there was no similarity between any of the samples." The letter gave no indication of the nature of these comparisons and when they were carried out. Mr Davies went on to refer to a scientist who was "able to say with a degree of certainty that no contamination of that water had taken place over recent years". The letter stated that Counsel for the Environment Agency had come to the conclusion that were too many inconsistencies in what would be the prosecution case to justify proceeding. However, the letter did not discuss how the Environment Agency explained the discrepancy between, on the one hand, the existence of drainage routes that would lead to liquid from inside the factory reaching the well, and, on the other, the recently quoted analyses which apparently did not provide evidence of similarities between two sets of samples. The letter also did not enumerate whether any inconsistencies had been found with other aspects of Mr Skillett's evidence.

## Recent Papers and Reports

73. This section discusses recent papers and reports including submissions to the BSE Inquiry.

### Letter By Dr A Colchester To M. Outhwaite (East Kent Health Authority)

74. In July 1998 I wrote to Mr Outhwaite {Appendix 33 (07/04/98)} (not published by the Inquiry), Chief Executive of the East Kent Health Authority, requesting a meeting to

discuss East Kent Health Authority's position over CJD cases in Kent and the 'precautionary principle' as applied to rendering. The meeting was held on 18th May 1998 between Mr Outhwaite; Dr Chandrakumar, Dr Limentani (both Public Health Consultants): and myself. It was agreed that Dr Chandrakumar would send me a draft of the report on cases of CJD in Kent on which he was working.

**East Kent Health Authority Report, "An Investigation Of The Local Cases Of Creutzfeldt-Jakob Disease In East Kent", by Dr M Chandrakumar - 4th September 1998**

75. I received the draft report (dated May 1998) "An Investigation of the Local Cases of Creutzfeldt-Jacob Disease in East Kent" by Dr M. Chandrakumar for the East Kent Health Authority and prepared extensive suggestions for editing which I sent to Dr Chandrakumar on 12th June 1998. He decided not to use the edits. On 18th September 1998 the final report was considered by a full meeting of the East Kent Health Authority, although the Chairman, Mrs Jo Hawkes, declared that she had been appointed a non-executive director of Mid Kent Water PLC so she left the meeting during this agenda item. The report was endorsed by the Authority and it was forwarded to the BSE Inquiry (BSE Inquiry document – Local Govt: EKHA: E4309). I found several aspects of the report confusing. My detailed comments of 12th June 1998 {Appendix 35 (12/06/98)} **(M11D Tab 3A)** on the draft were also applicable to the final report of 4th September 1998, because the report was almost the same as the earlier draft. These comments are summarised below.

76. On the day the report was released, Dr Chandrakumar issued a press release {Appendix 37 (18/09/98)} **(YB 98/09.18/1.1)** which was widely quoted in the media. The press release and the report were generally taken to provide clear evidence for the absence of risk. I felt that the contents of the report were generally not understood and reflected the fact that certain aspects were unclear. My conclusions were as follows {Appendix 35 (12/06/98)} **(M11D Tab 3A)**. Firstly, the report was very confusing in that it had mixed variant CJD (vCJD) cases with sporadic and familial. Not surprisingly, there was no significant difference in incidence based on this mixed grouping. Secondly, with four confirmed cases of vCJD, in addition to two suspected cases in Kent, there was still a strong suspicion that there could be some local environmental risk factors. Thirdly, if it were to be found possible that water could carry infection, then the population would be at risk not only at their home address, but anywhere where they consumed water from an infected source. Therefore, a major weakness of the study was merely to look at the home addresses of the patients. Fourthly, I was informed that water supplies were connected as a grid, and that the boundaries of supply zone could potentially be changed very easily. Indeed, different zones could be interconnected with each other in times of shortage. Unless a detailed history of any such alterations to normal flow carried out by the water company, was available it seemed misleading to refer to the boundaries as fixed. Fifthly, for all the above reasons, the report was incorrect in saying that "the expectation would have been for all three cases of confirmed vCJD to have lived at some time in the area".

**Statement by Ashford Borough Council to the BSE Inquiry, 1st July 1998**

77. Mr Evan Stirzaker, Environmental Health Manager for Ashford Borough Council, submitted a statement {Appendix 36 (01/07/98)} **(WS No. 169)** on behalf of the Council to the BSE Inquiry. In Section 1.ii he stated that the council's officers had considered whether existing legislation to deal with risks to public health - the statutory nuisance provisions of part iii of the Environmental Protection Act 1990 – could be applied. "Following discussion with the Council's Medical Adviser it has been concluded that in

the absence of a demonstrable risk to public health, its use is not appropriate. In this context, risk would need to be demonstrable by the physical and/or measurable presence of material and organisms". The statement continues: "It is clear that some members of the community look to the council and other enforcing agencies concerned with public water supplies to prohibit abstraction in a situation where there is no scientifically demonstrable risk to public health but where the perceived threat of infection suggests that the use of such sources should be excluded until it is possible to demonstrate that no risk exists. In effect this concern poses the question - should the ‘precautionary principle’

ongoing issue which was drawn to the attention of MAFF.

**Response by Wollastons (for Canterbury Mills Ltd) to Ashford Borough Council Statement to the BSE Inquiry, 16th October 1998**

81. On 16th October 1998 {Appendix 38 (16/10/98)} **(YB 98/10.16/1.1-1.4)**, Wollastons, the solicitors acting for Canterbury Mills Ltd, wrote to Ashford Borough Council. They were responding to certain points in Ashford Borough Council's BSE Inquiry submission which implied, or appeared to imply, potential criticism of Thruxted Mill. Wollastons' letter states "To date not a shred of evidence exists suggesting the plant is any threat to human health". Referring to Section 1.i (Scientific Issues –Scientific Concerns), Wollastons refer to evidence concerning the origins of BSE. They state: "The origins of the disease are likely to be spread geographically. The best view appears to be that the disease arose simultaneously in a number of locations across Southern England". I have previously read the published views of MAFF scientists on the distribution of early BSE cases. MAFF has refused to disclose data about the locations of places of manufacture of potentially infected cattle feed. The distribution of such feed after its manufacture is not restricted to the immediate locality of the manufacturing facility. Similarly, a batch of infected MBM might be distributed to more than one feed manufacturer, as well as being distributed to local or more distant farms. For this reason alone, it would be surprising if BSE cases first arose in one small neighbourhood. Two further points should be made in this context. Firstly, cases of cattle suffering from BSE almost certainly arose before the initial publicity, and one would therefore expect that the first real cases might not have been recorded. This point is exemplified by the discovery in February 1998 of an early case, dating from 1985, from a farm near Midhurst, West Sussex that had previously not been reported by MAFF. This farm was near a rendering factory at Portchester which received partially rendered products from Thruxted Mill. Secondly, the variability of the incubation period means that the date of appearance of clinical symptoms of cases infected from the same source will be dispersed, making it much harder to use the incidence of BSE cases as evidence for, or against, the origin coming from a specific source. Referring to section 1.ii of the Ashford Borough Council's statement, Wollastons (for Canterbury Mills Ltd) state that extensive investigations into the Thruxted site have shown the risk to be so negligible as to cause no concern whatsoever. I have made it clear that I disagree with this view (see paragraph 78 of this statement and BSE Inquiry Statement No.19) **(WS No. 19)**. They argue that no overhaul of statutory powers is required, and that there are already more than adequate environmental controls on a site such as Thruxted. Referring to a further section in the Ashford Borough Council statement, on the multiplicity of agencies, Wollastons did not agree that were any practical problems over dealing with multiple agencies. Again, I strongly disagree with these views.

82. Wollastons' response then moves on to make reference to the press release from Dr Chandrakumar of East Kent Health Authority. Wollastons draw strongly on the reassurance of Dr Chandrakumar's press release and local report. I have discussed my views about the report above. In my opinion, Canterbury Mills Ltd and the local media have misinterpreted the actual contents of the report. Wollastons state that Canterbury Mills Ltd categorically denied suggestions that it had poured effluent from the plant down a well above the aquifer.

**Letter by John Williams to the Kentish Express, 26th October 1998**

83. On 26th October 1998 {Appendix 39 (26/10/98)} **(YB 98/10.26/1.1)** Mr John Williams, a biologist who provided evidence to Phase One of the BSE Inquiry and who has a particular interest in the origins of BSE and *variant* CJD (vCJD) and in local issues in Kent, wrote to the Kentish Express. He drew attention to the fact that Dr Chandrakumar's report referred to the incidence of *sporadic* CJD as being lower than the national average, citing this as evidence against the presence of a "CJD cluster" in Kent, when the real issue clearly concerned *variant* CJD. He felt that one could not help concluding that Dr Chandrakumar's intention was to lead people to equate absence of proof with proof of absence.

**Letter by Ashford Borough Council to Wollastons, 19th November 1998**

84. Mr Stirzaker for Ashford Borough Council wrote to Wollastons {Appendix 40 (19/11/98)} **(Annex A)**. He referred to the East Kent Health Authority report published in September 1998, particularly to the conclusions (paras 61 & 62) of that report {Appendix 35(12/06/98)} **(M11D Tab 3A)**, and to differences in their interpretation. In my opinion the basic problem is that the conclusions of that report were confused and I have discussed my reasons in paragraphs 75 and 76 above.

**Paper by Paul Brown, "BSE: the final resting place" Lancet 351: 1146-1147, 18th April 1998**

85. This paper {Appendix 34 (18/04/98)} **(J/L/351/1146)** discussed several issues concerning the disposal of tissues from animal known to have, or potentially incubating, BSE. Several of the points are highly relevant to the BSE Inquiry, and will be discussed under a series of subheadings.

86. ***Distribution of Infectivity in the bodies of infected animals:*** Brain and spinal cord are by far the most infective tissues, with typical titres of $10^6$ infective doses per gram in natural kuru, scrapie and BSE. In cattle with BSE, only the following tissues have so far been shown to contain infectivity: brain, spinal cord, cervical and thoracic dorsal root ganglia, trigeminal ganglia, distal ileum, and bone marrow (Wells et al. 1998). (It is noteworthy that very few experimental measurements have ever actually been published). He goes on to say: "However, the much more widespread distribution of low levels of infectivity in human beings with kuru or CJD, and in sheep and goats with scrapie, suggests that caution is advisable in prematurely dismissing as harmless other tissues of BSE-infected cattle".

87. ***Inactivation of infectivity:*** Brown refers to the legendary resistance of the prion agent to conventional inactivation procedures. Even when the majority of infectious particles are inactivated, a small population of particles may remain infective. Also, most data are from laboratory experiments, and in practice such conditions may not be achieved in a commercial environment. Even where there are data from a commercial scenario, vigilant quality control is essential to maintain adherence. Boiling and treatment with most chemicals are useless. Sodium hypochlorite (bleach) and sodium hydroxide are the most effective. Wet heat is more effective than dry heat. Steam at 134C° for one hour is the

most effective system that has been tested.

88. ***Natural decay:*** Infectivity persists for a long time in the environment. A study by Palsson in 1979 showed how scrapie was contracted by healthy sheep, after they had grazed on land which had previously been grazed by scrapie-infected sheep, even though the land had lain fallow for three years before the healthy sheep were introduced. Brown also quoted an early experiment of his own (1991), where he had buried scrapie-infected hamster brain and found that he could still detect substantial infectivity three years later near where the material had been placed.

89. ***Potential environmental routes of infection:*** Brown discusses the various possible scenarios, including surface or subsurface deposits of TSE-contaminated material, which would lead to a build-up of long-lasting infectivity. Birds feeding on animal remains (such as gulls visiting landfill sites) could disperse infectivity. Other animals could become vectors if they later grazed on contaminated land. "A further question concerns the risk of contamination of the surrounding water table or even surface water channels, by effluents and discarded solid wastes from treatment plants. A reasonable conclusion is that there is a potential for human infection to result from environmental contamination by BSE-infected tissue residues. The potential cannot be quantified because of the huge numbers of uncertainties and assumptions that attend each stage of the disposal process". These comments, from a long established authority on TSEs, closely echo my own statements which were based on a recent examination of all the evidence.

90. ***Susceptibility:*** It is likely that transmissibility of the disease to humans in vivo is probably low, because sheep that die from scrapie and cattle that die from BSE are probably a small fraction of the exposed population. However, no definitive data are available.

91. ***Recommendations for disposal procedures*****:** Brown recommends that material which is actually or potentially contaminated by BSE should be: 1) exposed to caustic soda; 2) thoroughly incinerated under carefully inspected conditions; and 3) that any residue should be buried in landfill, to a depth which would minimise any subsequent animal or human exposure, in areas that would not intersect with any potable water-table source.

92. This review and recommendations from Brown have particular importance. Brown is one of the world's foremost authorities on TSEs and is a senior researcher in the US National Institutes of Health (NIH). It is notable that such a respected authority is forthright in acknowledging the existence of potential risks, and in identifying the appropriate measures necessary to safeguard public health.

**Paper by SM Cousens, L Linsell, PG Smith, Dr M Chandrakumar, JW Wilesmith, RSG Knight, M Zeidler, G Stewart, RG Will, "Geographical distribution of variant CJD in the UK (excluding Northern Ireland)". *Lancet* 353:18-21, 2nd January 1999**

93. The above paper {Appendix 41 (02/01/99)} **(J/L/353/18)** examined the possibility that patients with vCJD (variant CJD) might live closer to rendering factories than would be expected by chance. All 26 cases of vCJD in the UK with onset up to 31st August 1998 were studied. The incubation period of vCJD is not known but by analogy with other human TSEs could lie within the range 5-25 years. If vCJD had arisen by exposure to rendering products, such exposure might plausibly have occurred 8-10 years before the onset of symptoms. The authors were able to obtain the addresses of all rendering plants in the UK which were in production in 1988. For each case of vCJD, the distance from the place of residence on 1st January 1998 to the nearest rendering plant was calculated

from postcode data. Data on population distribution were used to estimate the numbers of people living within various distances of each rendering plant. If there were no association between living near a rendering plant and development of vCJD, the distribution of cases would be expected to follow the distribution of the normal population. The authors also identified all cases of vCJD who had lived in Kent at any time up to the onset of symptoms (i.e. not just on 1st January 1998).

94. Considering the data for all rendering plants as a group, and all vCJD cases as a group, the numbers of cases living at certain distances away from rendering plants was very similar to chance. Individual rendering plants were also examined. Those plants which had two or more cases of vCJD within 50km of the plant were examined. There were two plants in the London area, one with five cases and one with four cases within 50km respectively. These two factories were close to each other, and all four of the cases living near the second factory were also close to the first.

95. In 1988 there were two rendering plants in Kent, one at Faversham and one at Thruxted Mill. Subsequently, the plant at Faversham was closed, and activity transferred to Thruxted Mill. For the Faversham factory, there were four patients who later developed vCJD residing within 50 km on 1st January 1988 (one resided within 20km). This was significantly in excess of the predicted 1.04 cases ($p<0.02$). For the second Kent plant (Thruxted Mill) there were also four cases living within 50km (one within 10 km). Presumably these are the same four cases as living near Faversham. In this case the predicted number of cases was 0.74, and the observed number (4 cases) was significantly greater than chance ($p<0.007$). The calculation of statistical significance in this study was based on the assumption of a Poisson distribution. This is a well known statistical test, and is widely used for such calculations. The authors point out that there are occasions when a Poisson estimation can overestimate significance, although this was the test which had been chosen in their Methods section. In my opinion, the test was appropriate to use for Thruxted Mill, as discussed in paragraph 100. Also, the authors chose the test in advance as appropriate test to use.

96. In the Discussion section of the paper, the authors applied a second statistical method to assess the Kent cases and by this test the number of vCJD cases in Kent did not constitute a significant cluster.

97. The authors identified another vCJD case who had lived about 10km from Thruxted Mill, but who was not resident at that location on 1st January 1988. However, they did not include this case in their statistical analyses. Given the wide range of possible incubation periods for vCJD, the possibility of exposure of some local environmental factor must apply to this case as well as to those resident near the factory on 1st January 1988.

98. In summary, this paper effectively shows that five of the new variant cases confirmed prior to 31st of August 1998 had lived relatively close to Thruxted Mill at a time when they might have been expected to contract the disease. The chosen test of statistical significance suggested that this was highly significant, even excluding the fifth case who did not happen to live near the Mill at the time of the arbitrary index date (1st January 1988). The authors did not apply the second statistical test (which had shown non-significance with four cases) to the five cases.

99. In my view this paper contradicts certain important points in the East Kent Health Authority report published a few months previously.

**Published letter by ACF Colchester and PJ Brown, "Cluster of vCJD cases in Kent and its importance", and reply by SM Cousens et al. *Lancet* 353:1357-1359, April 17 1999**

100. In the above letter to the Lancet {Appendix 43 (17/04/99)} **(J/L/353/1357)**, Professor Phillip Brown and I argue that the Poisson distribution was an appropriate method to use to analyse the data presented by Cousens et al in the Lancet on 2nd Jan 1999 (volume 353, pages 18-21), and provided strong evidence for the emergence of a local cluster of cases. We disagreed with the statement of Cousens et al that the only reason to consider Thruxted Mill as meriting special scrutiny had been earlier, inaccurate, media reports that there was a cluster of cases in Kent. We stated that we had drawn attention to the deficiencies in the regulation of rendering, and to the poor standard of practice at this particular factory, as early as April 1996. Our concerns were not based on the perception of a cluster (indeed at that time there had been only two cases locally of confirmed vCJD) but on the recognition of the potential risks of handling infective material, and of the resistance of the agent to inactivation by conventional means including natural degradation. We pointed out that the reasons for the concerns had been drawn to the attention of the Department of Health; the Ministry of Agriculture, Fisheries and Food; the Department of the Environment; the Spongiform Encephalopathy Advisory Committee; and the relevant local Councils.

101. We also argued that Cousens et al should have included in their analysis a fifth case who had lived about 10km from the factory in the 1980's, but had moved away by the arbitrary index date of 1st January 1988. We re-analysed the data, including this fifth case. The Poisson probability of a cluster of this size occurring by chance became <0.001, even more significant. We also used a second much more conservative test, similar to a second test used by Cousens (see Appendix 41 and paragraph 95) **(J/L/353/18)**. When including the fifth case, we found that this second test also showed clear significance.

102. The reply by Cousens et al did not, in our opinion, adequately address our points. They introduced new data, and we have repeated our analyses taking these into account. Our conclusions are not altered.

103. The following observations should be borne in mind. The statistical tests merely indicate that the cluster of cases is very unlikely to have arisen by chance. They do not show that the cluster was definitely not due to chance. Furthermore, it is clear that there are many possible reasons for the existence of a statistically significant geographical cluster, which might be due to factors unrelated to the rendering factory or the water supply.

## SECTION 5: SUMMARY

104. The major portion of this submission has dealt with specific events related to a rendering plant at Thruxted Mill, near Canterbury, spanning a period of over three years. The submission covers these events in chronological order and is supported by extensive written documentation. It describes my concerns about the operation and regulation of Thruxted Mill. These centre on information I received in June 1996 that a well close to the effluent pits in the mill had been used as a channel for the disposal of effluent. If this had indeed happened, it could clearly have posed a serious threat to public health as the well could have been providing a direct pathway to the aquifer from which the local water supply was drawn. This submission describes my initial efforts to secure action to substantiate the information I had received. It catalogues the various responses of

government departments, the Environment Agency's site inspection, its reporting of the site inspection and its efforts to gather evidence to establish whether any illegal operations had been carried out. The sequence of events ends with a letter written in February 1999 to the potential witness who had first drawn the well to my attention in which the Environment Agency stated that as far as they were concerned there were insufficient grounds for a prosecution and that they would be taking no further action.

This submission also covers the medical and scientific debate about a possible "cluster" of cases of vCJD in Kent and about the local water supply, leading up to recent publications in the Lancet.

**Issued on behalf of the witness by:**

**The BSE Inquiry Press Office**

**6th Floor Hercules House**

**Hercules Road**

**London SE1 7DU**

**Fax: 0171 803 0893**

**Website: http://www.bse.org.uk**

**email: inquiry@bse.org.uk**