

TO: Gloucestershire Health Authority
FROM: Consultant in Communicable Disease Control
DATE: 28th March 2001
SUBJECT: **INCIDENT AT CLEANSING SERVICES GROUP LTD (CSG) SITE, SANDHURST, COMMENCING 30TH OCTOBER 2000**

1.0 PURPOSE

- 1.1 To inform members of the background to the incident, the response of the Health Authority to date, the results of the Health Survey and proposed future actions.

2.0 BACKGROUND

2.1 History

The Cleansing Services Group (CSG) site at Sandhurst is a licensed chemical waste transfer station and treatment facility jointly regulated by the Environment Agency (EA) and the Health and Safety Executive (HSE). The County Council granted planning permission in January 1978 to allow change of use from a tar works to allow treatment of waste oil and oily waste. Later that year the County Council issued CSG with a waste disposal license. In 1991 the licence was modified to permit the treatment and transfer of a much wider range of hazardous chemicals. The EA took over responsibility for regulating the site from April 1996. The licence was substantially modified in May 1999. It is designated as a lower tier site under the COMAH regulations. Although few local concerns were registered when the site received original planning permission, in recent years there have been a number of complaints about odours from the site and activity related to site operation.

The Health Authority was first asked to be involved with the CSG site when a member of Maisemore Parish Council who was also a member of the Gloucestershire Community Health Council, wrote to the Director of Public Health on 8 August 1997. The letter stated that local people had been troubled by smells for two years and recently some had complained of sore mouths and throats. Enquiries revealed that the Environment Agency had been receiving complaints of smells for about a year and they had increased in number following a public meeting in Maisemore. It was thought likely that the smells might be emanating from the CSG works and diffusion tubes were to be put in place around the perimeter of the site.

Although there had been previous contact and correspondence between the Health Authority and the EA, in July 1999 an officer of the Environment

Agency wrote to the Health Authority drawing attention to continued complaints from residents about odour, and stating that health complaints suggested as being related to the plant included migraine, eye irritation, breathing difficulties and severe vomiting. It requested 'health indicators' for Maisemore and Sandhurst such as numbers of GP consultations for breathing difficulties, headaches, and eye and throat irritation, numbers of asthmatics, and birth weights.

After further discussion a meeting took place at the Environment Agency's offices on 28 February 2000 and a site visit was arranged on 6 March 2000. After discussion and consultation it was concluded that most of the suggested indicators were simply not available and where they were available it would be extremely difficult to draw any valid conclusions from the study of such a small population.

2.2 The Incident

Monday 30th October 2000

A fire occurred at the facility at 02.00 during severe weather conditions. The EA and the HSE are still investigating the cause.

Over 100 tons of organic solvents were ignited. Other chemicals involved in the incident included chlorinated solvents, pesticides, waste laboratory chemicals, mercury, zinc and cyanide. A comprehensive list of chemicals involved in the fire was not immediately available although the nature of the chemicals involved on the site was verbally communicated to the CCDC by EA staff in the first few hours. A plume of smoke from the fire was driven by the high prevailing wind in a north north-easterly direction over the village of Sandhurst. Residents living close to the site were evacuated to the village hall by the emergency services.

On the morning of the incident, the Consultant in Communicable Disease Control (CCDC) and the on-call Consultant in Public Health Medicine were notified of the incident by a consultant of the Chemical Incident Response Service (CIRS), Guy's and St Thomas' Hospital, London. They conferred and agreed that the former would attend Bronze Command at the Globe Inn near the site. The latter would proceed to the Health Authority headquarters immediately. This was in order that somebody would be present in the Department of Public Health to give any assistance requiring resources in the department as soon as possible.

The CCDC obtained a briefing at Bronze, attended the site, and then went to the Health Authority to brief colleagues. He then joined colleagues from other agencies in Gold Command in Cheltenham, which had been convened by the police at 09.30.

Ten emergency services staff were seen in the A&E department at Gloucestershire Royal Hospital. No-one required admission. Blood samples were taken which were screened for a range of chemicals. All were negative.

After the fire some "gassing" drums remained on the site and were gradually brought under control. Evacuated residents were allowed to return on the evening of Monday 30th October 2000. They were given advice from Gold Command to ventilate their properties on their return.

Tuesday 31st October 2000

At 21.30 the CCDC was advised by the County Council's Emergency Planning Officer that a significant number of residents were phoning the Environment Agency and complaining of feeling ill.

Wednesday 1st November 2000

The CCDC met at the Environment Agency with a consultant medical toxicologist from the CIRS. More detailed information on the chemicals involved in the incident became available on the 1st, 2nd and 3rd of November and a strategy for sampling of air and flood water began to evolve.

It became clear that the site would flood and a modified flood action plan was invoked under the control of the EA and HSE.

The company's Waste License was suspended. A clean up operation commenced.

Thursday 2nd November 2000

During the clean-up operation of the site a small number of smaller leaks of chemical occurred, including the release of phosphorus pentoxide.

Friday 3rd November 2000

The CSG site began to be flooded by the River Severn. This complicated the clean-up operation. A number of residents continued to complain of feeling unwell. The main burden of such complaints continued to be directed to the Environment Agency. Its staff who were placed under considerable additional pressure became aware of a school of thought among the villagers which believed that evacuation should be offered. The situation was complicated by complaints of odour from Twigworth. An experienced environmental health officer established that some of the odour complaints could be ascribed to the burning of cable from a site unrelated to the CSG site.

Saturday 4th November 2000

During the flooding the condition of the site and possible discharge of chemicals from the site was monitored from the air by the EA.

A public meeting was held at Sandhurst Village Hall at which critical views of the Health Authority's performance were expressed.

Sunday 5th November 2000

During a site visit a problem drum containing selenium, cadmium arsenic and other sulphides was identified and subsequently made safe.

During the evening a number of flooded households close to the CSG site were evacuated. This was because the site was inaccessible owing to flooding and there were concerns that fire damaged drums might not remain secure in the strong winds. Indeed, earlier during the day advice had been given to the effect that there was a significant risk of a further fire. Expert assessment of the level of this risk receded somewhat during the day, however. A consensus emerged at gold command that a limited pre-emptive evacuation of homes close to the site and subject to flooding should nonetheless be offered. The flood waters were still rising and it was feared that it might become difficult to gain access to the residents concerned if a further emergency developed. The evacuees expressed grave concern about airborne and floodwater borne pollution of their properties by chemicals from the CSG site.

Tewkesbury Borough Council (TBC) provided accommodation for most of the evacuees (up to 27 people); a number elected to make their own arrangements or to stay in their properties (approximately 15).

Monday 6th November 2000

The EA and HSE gained access to the flooded site to undertake an inventory of chemicals on site and a risk assessment of the conditions of storage. Seven drums of solvents potentially contaminated with BSE were identified on the site.

A public meeting was held at Hatherley Manor Hotel

Monday 13th November 2000

Gold Control relinquished command of the incident

Monday 20th November 2000

Site access had been regained via the road.

Monday 27th November 2000

Site clearance work recommenced following a risk assessment by the EA. Work continued until Christmas and resumed in the New Year. Completion of the clearance work is anticipated by the end of March 2001.

Friday 1st December 2000

Results of testing of flooded properties provided for evacuees. No health risks identified.

Monday 4th December 2000

Last of the evacuees return to their properties or alternative accommodation

Tuesday 5th January 2001

A private meeting was held with evacuees at Tewkesbury Borough Council offices.

Tuesday 12th January 2001

A review meeting was held at GHA with representatives from local and national agencies and from the community.

At the end of January, after earlier assurances to the contrary from CSG, a small amount of low level radioactive material was found to be stored on the site. Following an investigation by the EA and HSE this was seized and removed by specialist consultants employed by the EA.

3.0 THE PUBLIC HEALTH RESPONSE

3.1 Communications with GPs and Other Health Professionals

Monday 30th October 2000

A Specialist Registrar in Public Health, working at Gold, who was seconded from CIRS to support the Health Authority, contacted local GPs and Accident and Emergency Departments. He asked these agencies to document any attendees who reported that they had been exposed to the smoke from the fire, record their symptoms and to take blood and urine samples for toxicological analysis.

Tuesday 31st October 2000

The CCDC wrote to local accident and emergency departments and four GP practices believed at the time to be looking after most of the Sandhurst population. The letter briefly described the incident, and symptoms reported by people (mainly services personnel), who had attended the accident and emergency department. The main symptoms reported were stinging eyes, sore skin and pain on deep inspiration, which had resolved quickly. The letter indicated that serious health problems appeared to be unlikely but asked GPs to report any patients consulting because of symptoms believed to be due to the fire. This letter confirmed telephone calls already made on the CCDC's behalf to the Accident and Emergency Departments and the four general practices by other staff.

Thursday 2nd November 2000

The CCDC wrote to all GPs in the county explaining that a number of Sandhurst residents had started to complain of symptoms and an unpleasant odour from the site on Tuesday 31 October. The letter explained that some symptoms might be related to chemical odours possibly resulting from the site clean up. It explained that efforts were being made to secure the site, and briefly outlined the sampling strategy. It mentioned that people exposed to the plume on the day of the fire were most likely to be affected, and indicated that asthmatics might experience exacerbation of their condition. It asked GPs to report consultations for symptoms related to the incident on a simple form.

Monday 6th November 2000

Health Authority staff began to make daily visits to evacuees looked after by TBC. Daily production of Question and Answer Sheets (Q&As) for community information co-ordinated by the EA commenced. Representatives of the Health Authority, Environment Agency, and the Borough Council began to attend twice daily drop-in sessions at Sandhurst Village Hall for local residents, providing up to date information on the management of the incident.

Thursday 9th November 2000

The CCDC wrote to all GPs in the county explaining that a number of residents had continued to complain of symptoms. Preliminary results of environmental samples had yielded no evidence of significant contamination. Blood tests on those exposed on the day of the fire had been negative for solvents and heavy metals. The letter repeated the request to report consultations related to the incident, and gave instructions on how to obtain expert medical toxicology advice and teratology advice.

Tuesday 14th November 2000

First meeting of CSG Incident Community Response Co-ordination Group (CSGICRCG) chaired by the CCDC. Membership of the group is drawn from the statutory agencies involved in the incident and community representatives.

The group continues to meet regularly to exchange up to date information on the incident and clean-up process, discuss community health concerns, planning and communication issues. Meetings have been held to discuss urgent issues e.g. the discovery of radio-active material on the site. Information from the meetings is disseminated to local people by the community representatives and in the regular Question and Answer briefing sheets.

On 14 November 2000 a further brief letter to GPs gave a list of chemicals on the site that the Environment Agency had already released to the public.

January 2000

The CCDC again wrote to GPs to remind them that reports of symptoms were still being collected.

The Health Authority contributed to the joint report of Environment Agency and Health and Safety Executive to the deputy Prime Minister on 12th January 2001. A follow-up report is planned for April 2001.

3.2 Communications with the Public.

Wednesday 1st November 2000

The CCDC wrote to members of the public in an area bounded by the following roads: A417, B4211, B4213, A38, A4019, M5, and A40. This area had been subject to a precautionary notice by the Foods Standards Agency in a press release. The letter briefly described the incident and efforts being made to manage it; acknowledged that a number of people had complained of symptoms and expressed health concerns; and advised on what to do in case of health concerns. This included advice to members of the public to ring NHS Direct in the first instance if they had health concerns. NHS Direct staff were asked to complete a report form for the Health Authority which was similar to that in use by the GPs.

Saturday 4th November 2000

The CCDC, an officer of the Environment Agency, and an officer of Tewkesbury Borough Council attended a public meeting of residents in Sandhurst Village Hall during which the performance of the Health Authority and other agencies was strongly criticised by some members of the public.

Tuesday 7th November 2000

The Director of Public Health addressed a public meeting convened by the Parish Council at which similar views were expressed.

Following this meeting arrangements were made for “drop-in” sessions to take place at Sandhurst Village Hall. Initially there were two two-hour sessions each weekday and one on Saturdays and Sundays, with officers of the Health Authority, Tewkesbury Borough Council, and the Environment Agency in attendance. These sessions were gradually reduced in length and frequency and finally stopped in January. Question and Answer briefings, initially produced to coincide with each drop-in session, continue to be issued and will in future follow meetings of the CSG Incident Community Response Group.

Friday 10th November 2000

Health Authority Staff visited the Willows campsite which had been cut off by floodwater.

Saturday 11th November 2000

Evacuees were advised by HA staff that early analysis of samples from within their flooded properties was encouraging and that they could return to their homes if they wished. However they would continue to be accommodated until more detailed analyses were available to inform the clearing up process.

Friday 1st December 2000

The CCDC wrote to the householders of five addresses from which occupants had been evacuated on Sunday 5 November. This letter gave each householder results of sampling of air, flood water and silt removed from the house. It was accompanied by a commentary on health implications agreed with the Environment Agency, Tewkesbury Borough Council, and the Health Authority's legal advisers. The letters advised in each case that there were no findings indicative of any health hazard.

Results for individual households were handed to the evacuees at the regular 'drop-in' session at the village hall. A private meeting was held with these evacuees to discuss these results on 5th December 2000. Evacuees were accommodated by TBC until 3rd December 2000. Some people were unable to return to their homes due to flood damage but made alternative arrangements.

Some families were evacuated for a third time during renewed flooding in the new year.

Similar letters were prepared as results became available for a sixth property. A further six houses and one public house (the Globe Inn) from which only air samples were taken subsequently received their results. A number of properties were subject to long term air monitoring. Results were sent out to householders as soon as they were available. Results on the final few properties were still being received and interpreted in March 2001.

Friday 12th January 2001

The Director of Public Health chaired a meeting for local and regional Public Health professionals, the director of CIRS, a consultant from the University of Bristol, local GPs and community representatives to review the health evidence accumulated thus far and to consider proposals for further enquiry and health monitoring.

Friday 2nd February 2001

An emergency meeting of the CSGICRCG was held to discuss issues and share information arising from the discovery of low level radioactive material on the site.

Wednesday 21st March 2001

The report of the Health Questionnaire (see below) will be sent to all households involved in the survey, local GPs and agencies involved in the incident.

Health Authority staff have continued to respond to telephone calls from local residents, people with occupational links to the site and to the general public. For some people living well outside the area considered to have been affected or the survey areas, the incident provoked considerable anxiety particularly about children's health and the origin of chronic disease.

3.3 Reported Illnesses

Ten people from the emergency services were seen in A&E suffering from respiratory and irritant symptoms. The majority of the acute symptoms resolved quickly. Reassuringly no patient required admission to hospital on the day of the fire and all were discharged from Accident and Emergency Departments. One member of the emergency services has not yet returned to normal duties.

One hundred and forty-one reports of individuals with symptoms were received from GPs and NHS Direct. Three local residents were seen in A&E but none were admitted and samples were not taken. A number of residents consulting their own GP had blood taken for screening. Two people have been referred for specialist advice to the Medical Toxicology Unit at Guys and St Thomas

Three local residents were admitted to hospital during the course of the incident but no link with chemical contamination was established.

3.4 Sampling

Biological sampling

Blood samples were taken from symptomatic individuals from the emergency services and screened for a range of chemicals and heavy metals. Urine samples of EA staff were similarly screened. All were negative. The Health Authority took expert advice on the value of taking community biological samples e.g. hair, toe nail clippings in addition to carrying out a community health survey and concluded it was not indicated at this stage. Members of the Sandhurst community disagreed with this judgement and hair samples were taken from nearly 200 individuals who came forward for testing. These are being analysed elsewhere but it is hoped that the results will be made available to the Health Authority in due course through CSGICRCG.

The Health Authority has taken advice on the need for long term biological sampling and has been advised that the evidence to date does not suggest that this would be useful.

Environmental Sampling

Monitoring was undertaken based on a strategy agreed between the EA and TBC on 31st October 2000. Subsequently sampling was undertaken to a strategy agreed between GHA, EA, TBC as part of the tripartite monitoring group set up by Gold Control. Samples were also taken by the Ministry of Agriculture Food & Fisheries and the Food Standards Agency. Air, water, soil, vegetation, animal and household swabs samples were taken for analysis and the findings compared with known occupational exposure limits where they exist. It was not possible to obtain a sample of the plume contents.

No significant contamination was detected away from the site other than in a half-acre adjacent to the site where firewaters ran off during the incident. The Meteorological Office provided plume modelling data which was used by the EA to model a worst case scenario for pollution arising from the incident.

Health risk assessment reports were produced when results of environmental sampling were available. This process was accomplished as quickly as possible so that evacuated families could return to their homes. However difficulties of interpretation of the data in consultation with CIRS and the need to establish relevant standards often involved breaking new ground and took longer than the evacuees or the agencies would have wished. Evacuees were kept up to date on the progress of the analysis but the process was frustrating for all concerned.

Householders were informed that the evidence from the sampling did not suggest any risk to their long term health.

The Health Authority has worked in close collaboration with the EA to interpret the wealth of data for local residents and to produce reports for future planning. Lessons for the future include the importance of developing appropriate sampling strategies.

The EA continues to carry out routine sampling in the area.

3.5 Health Monitoring

Health Authority Questionnaire

Gloucestershire Health Authority sent out a health questionnaire to residents of Sandhurst and two comparison areas on Wednesday 15 November 2000 asking them to indicate which of a number of listed symptoms they had the day before the fire and in the ensuing week, and whether they had been flooded. Reminders were sent out on 29th November 2000. In response to local concerns the HA agreed to send questionnaires to a fourth group of self selected residents. The delay in the

availability of results was agreed with community representatives beforehand.

The key findings of the survey (see attached report) were as follows:

- the physical and/or psychological health of a significant number of Sandhurst residents who replied to a questionnaire were affected following the fire at CSG.
- Reported levels of irritant and respiratory symptoms were higher in those who were splashed by floodwater and in Sandhurst residents who left the area because of the fire.
- some people experienced symptoms which persisted beyond the study period and it is planned that these will be followed up by a further survey.
- the report provides quantified information on the size of the incident's effect on health.

The report is being sent to all households in the survey areas, those who requested a questionnaire, GPs, and agencies involved in the incident. A helpline has been set up to answer questions arising from the survey. A press release will be issued and will reach the wider population.

A long term health monitoring group at the Health Authority has been meeting since December 2000 to look at options for future health monitoring.

A questionnaire to follow up symptoms persisting beyond the time frame of the health first questionnaire is being developed with community representatives.

A short term Community Liaison post has been appointed to ensure continuing public health support to the communities affected by the chemical incident.

Community questionnaires

The results of two community questionnaires have been made available to the Health Authority. Major issues raised by the results include:

- The high level of continuing community concern over health risks
- The persistence of symptoms,
- Criticisms of the communication skills of the Health Authority particularly in the early days of the incident

4.0 DISCUSSION

- 4.1 This incident presented problems that were both complex and unusual in nature. Thankfully chemical incidents of this nature are rare. The subsequent floods created circumstances for which there is little if any precedent on which to base decisions and actions.
- 4.2 The Health Authority acknowledges the strength of the criticisms voiced by some members of the public during the incident. Contributing factors were a lack of understanding of the role of the Health Authority in such incidents and the level of understandable public expectation which exceeded the ability of a relatively small number of people to respond. Recovery of community confidence in the ability of the Health Authority to act on their behalf was and remains a high priority; where shortcomings were identified, action was taken to address the problems.
- 4.3 The importance of developing an agreed sampling strategy early in the evolution of an incident is an important lesson for future incidents. This strategy should address analysis of results and reporting arrangements. The volume of results processed and the difficulties in providing meaningful interpretation for residents led to considerable delays. Although every effort was made to minimise delays while producing reports of acceptable quality and to keep householders up to date with progress, the Health Authority acknowledges that the detailed reports took longer to produce than anticipated and this contributed to the frustrations of those who were waiting for them.
- 4.4 The Health Authority recognises that there were differences in the perception of risk between itself and the community which led to tensions. Public Health staff based the assessment of risk on objective evidence or effect. Members of the community based their assessment of risk on the possibility of an effect. It has taken some time to recognise and acknowledge the differences between these two perspectives, however progress has been made. There is clear evidence from the questionnaires that the community experienced symptoms following the fire. To date it has not been possible to demonstrate definitively that these symptoms were caused by any particular chemicals.
- 4.5 This incident highlights difficulties in the capacity of smaller health districts to respond to emergency situations of this nature. Public Health as a specialty should consider how such incidents should best be resourced in future.
- 4.6 The Health Authority acknowledges that the legitimacy and importance of multi-agency co-ordination in health issues during this incident and that at times this could have been improved. The relationships that have been

developed with other agencies have been highly beneficial and will be built upon in planning the response for future incidents.

- 4.7 Although the acute incident is almost over there is a continuing need to support the community by providing information and advice to address their concerns where long term health effects are uncertain.

5.0 NEXT STEPS

- A second Health Questionnaire is planned for June 2001. The questionnaire is being designed with the help of representatives from the local community.
- Discussions have commenced with representatives from Gloucester and South Tewkesbury Primary Care Group to determine the appropriate long term monitoring of the local community and the resource implications.
- The Health Authority will establish a Health Advisory Group, which will include all agencies with responsibility for public health in major incidents, as a sub group of the Gloucestershire Major Incident Co-ordinating Group.
- The Health Authority will seek to establish a post of NHS Emergency Planning Co-ordinator to develop the NHS response to further incidents drawing on the lessons learned from this experience.

6.0 RECOMMENDATION

- 6.1 Members are asked to note the contents of this report and to endorse the proposals for next steps set out in section 5.