

THE BAY BUCKET BRIGADE

SUMMARY AND MAP OF WHERE, WHY AND HOW SAMPLE WAS TAKEN

written by Bay Bucket Brigade

1. THE BACKGROUND

- 1.1 The Bay Bucket Brigade was formed out of a need to collect scientific data on the air quality surrounding the communities living around the Bay. The concerns for the many inhabitants in this area lie mainly with the very heavy, daily emissions of sulphur dioxide, particulates, volatile organic compounds and other noxious gases from the refinery, petrochemical industries, paper, steelworks, power stations, bunkering, traffic and other fuel related pollution (see picture A).



A. Birds eye view of Bay showing Gibraltar, La Linea the industrial zone and Algeciras

- 1.2 The Bay Bucket Brigade referred to from now on as the BBB, is made up of individuals and organisations from Gibraltar and Spain and is supported by several others through funding and at regular open meetings. The BBB invited Director of Global Community Monitor, Denny Larson, to Gibraltar and Spain last year to introduce the concept of the bucket sampling technique, a system he helped pioneer along with the legendary Erin Brockovich, who successfully challenged highly polluting industries in the USA by taking independent samples. Mr Larson returned in May 2004 to train the BBB team to collate background data, take samples, and organise for laboratory analysis to be done effectively and efficiently. The BBB embarked on a sampling programme which has now been running for three months and will continue until enough data has been collected.
- 1.3 As well as sampling air quality, the BBB team has been logging pollution incidences, using "Pollution log sheets"(see attached 9 - sample), to record a particularly strong chemical smell or unusually thick clouds of noxious smoke emanating from the industrial zone. This log file was started three months ago and has over thirty entries covering pollution in Spain and Gibraltar. The most intense has been at the refinery where a run of very heavy polluting incidences related to power shutdowns and subsequent start-ups, has produced voluminous clouds of particulate pollution covering the surrounding area. Heavy sulphurous emissions have also been produced in the Bay with inversion climatic conditions creating a pea-soup type of environment, setting off alarms in monitoring stations for dangerous levels of SO₂. The authorities however, have chosen not to publicly acknowledge these incidences claiming the overall performance of these industries



comply with European regulations. It should be noted that on these heavy polluting days the Spanish Environmental Ministry website responsible for displaying monitoring data, often has gaps with missing relevant information.

- 1.4 In Gibraltar the climatic conditions protect the ecology and residents to a great degree but **not** altogether and the impact from the refinery can often be seen with visible plumes of sulphurous emissions, or through nauseating odours when processing VOC's (benzene, toluene, xylene etc.) under the right wind conditions. This makes residents close up their homes due to difficulty in breathing; to also experience sore throats, headaches and a worsening of allergies, and it is feared, is contributing **towards the many cases of rare and unusual illnesses and cancers**. It was this chronic pollution that motivated two of the BBB members, the ESG and the GONHS to submit a lengthy and detailed official complaint to the European Commission in November 2002 (*See ESG website for background document*). This has since had several follow-ups, although the desired inspection by the EC has not yet taken place. It is hoped that the data obtained by the BBB team will help support this complaint.
- 1.5 The attached photographic material also highlights the frequency and intensity of the pollution incidences (**See attachment 2- supplementary evidence**).
- 1.6 In the past month, the worst affected residential area near the Refinery, Puente Mayorga, has seen regular protests and road blockades outside the CEPSA Refinery due to intolerable levels of pollution from the plant. Its' neighbourhood association promised they would keep up these weekly protests so long as pollution levels and/or incidences remained as bad as they were.
- 1.7 A recent fire within the Refinery plant and close to the residential area and school also caused panic and has deepened the distrust that exists already between the communities and the Refinery. According to some residents this was "because of the lack of information made available to the communities as the fire was happening" and "the lack of emergency information or presence of emergency services on stand-by in case the fire became uncontrollable." This fire was very visible from Gibraltar and also caused great concern "with great clouds of smoke escaping the plant reaching a kilometre away" (**See attachment 3 - press cutting**) as it was impossible to obtain accurate information on what was happening. A large fire at an Oil Refinery presents a high risk scenario for which there was no visible contingency plan apparent to the communities.



2. LOCATION AND MANNER OF SAMPLING:



B. Picture of Industrial Zone

X Marks the spot sample was taken

- 2.1 The BBB has taken a total of 5 samples but has made at least three times as many trips in pollution patrols to investigate pollution incidences and also to familiarise itself with the layout of the industrial plants around the Bay.
- 2.1.1 The sample **SP 004** that revealed high levels of toxic chemicals is one that the BBB took on the 6th September 2004 in the vicinity of the Oil Refinery during normal operating conditions (see **Picture B**). This sample was taken in the presence of 6 BBB members from Gibraltar and Spain. It should be noted that the strong smells of VOC that prompted the sample taking had reached a residential street a few yards away from the refinery. The BBB took the sample while having difficulty in breathing and being overcome with fumes but the sample was taken successfully and the team left the area quickly to cleaner air. Under "**BBB sample taking protocol**", a "**Chain of Custody**" and "**Bucket Site**" form is filled on the spot (see attachment 4). This ensures that every detail accounting for the circumstances in which the sample is taken is recorded and that the sample is signed for at each handover on route to the laboratory with no risk of tampering.
- 2.1.2 The BBB is pleased to report that all samples have reached the accredited laboratory in the USA safely and results have been successfully obtained on all. Full reports on all the samples will be made available on various websites but the conference today will focus on the findings of sample **SP 004**.
(See attachment - 5 Laboratory report).

IMPORTANT



- 2.1.3 The sample **SP 004** has shown that concentrations of **BENZENE** were present in extremely high quantities. The sample also contained 14 other toxic chemicals with a total of 6 chemicals present at levels of concern. (*See list attachment 6*).

Given that the BBB was standing outside the refinery fence-line and a short distance away from populated areas, it raises alarming questions over the safety of the residents and their vulnerability to contract cancer or many other proven health effects from this toxic chemical. It should also be noted here that under **European Directive 2000/69** it states that:

“Benzene is a human genotoxic carcinogen and there is no identifiable threshold below which there is no risk to human health.” (*See attachment 7 -directive in full*).

Attachment 1 - is an analysis of the sample findings in
Table 1.0 Results of sample SP 004 taken 06/09/04 Location beyond Refinery fence line)



3. HEALTH, ECONOMICS & THE ENVIRONMENT

3.1 There are a few factors that contribute towards the multi-pronged campaigns which have led to the creation of the BBB:-

- The prevalence of cancers and rate of mortality recently revealed in a Spanish health study conducted by the University of Barcelona shows that the Cadiz Province is the worst affected zone in Spain. This supports what is common knowledge within these communities and underlines the frustration experienced by many that the constant promises by authorities for epidemiological studies to be done never materialise. While important for such studies to begin immediately, these alone would not address the necessary operational changes to be made by industry within the desired time frame.
(See attachment 8 - *Short Report on highest mortality areas in Spain*)
- The industrial pollution has directly been impacting on the frontline communities creating high incidences of cancers, allergies, respiratory and cardiovascular problems, abortions, childhood leukaemia, skin conditions and many others, commonly associated with chemical emissions from refineries and associated industry
(See attachment 1- *Table 1.0 with health effects and target organs from Benzene exposure*).
- Economic growth within the Bay has created serious pressures on the natural environment and ecosystems as well as significantly increasing the risk factor of industrial and marine accidents. All signs are there for continued economic growth without parallel investment in proper environmental management or policy making strategies.
- Within the European Union the creation of the **EPER** (European Pollutant Emission Register), has also provided evidence that the industrial zone in this area is among the highest polluters in Europe
(See *link to EPER website on ESG website*).
- For the past decade NGO's from both sides of the border have lobbied authorities in Gibraltar, Spain and complained officially to the European Commission over the unsustainable levels of air and water pollution.



4. CONCLUSION

The Bay Bucket Brigade submits this report for publication in order to help strengthen the campaign for better air monitoring and air quality in the zone. The BBB has been advised that through proper investment in best available technology to reduce and monitor pollution and enforcement of regulations in place to safeguard communities and the environment, the people in the Bay could live in a safer, cleaner, and more prosperous zone that they do at present.

The BBB is advised that equipment such as high-tech optical sensors (among others) that can detect and identify hundreds of gases up to a kilometre away from the plant and would feedback real time data automatically, could contribute toward safer operational practices and more accurate air quality monitoring.

The BBB confirms that it will continue to take air samples both in Gibraltar and Spain and will make significant finds public in order to push for necessary investments to be made by private industry and Governments to put a halt to the poisonous climate surrounding the Bay communities.

The Bay Bucket Brigade is optimistic that through continued sampling it will bring about this necessary change as indeed has already happened in many other parts of the world. When people decide they are no longer going to be held to ransom over the profiteering objectives of certain companies, only then will the health and well-being of our children and families be safe-guarded.

It should be noted that this announcement of data collected by a cross border community run programme is a ground breaking event. It happens a week before the first major environmental demonstration will be held in the Bay where it is expected that residents from all local communities will attend in a show of solidarity and defiance and a demand for a cessation of all toxic and cancer causing emissions to emanate from this heavily industrialised zone.

A right to a healthy and decent quality of life is fundamental to every human being.

