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M E M O R A N D U M

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DATE: July 17, 1998

SUBJECT: RESULTS FROM SEAL BEACH APPLICATION CREW MONITORING FOR METHYL BROMIDE EXPOSURE ON MAY 2, 1998 (ORANGE COUNTY), STUDY #9802

On May 2, 1998, I conducted a methyl bromide exposure monitoring of the application crew utilizing “virtually impermeable film (VIF)” tarpaulin. According to its manufacturer, it supposedly reduces methyl bromide gas emissions from treated fields better than high-barrier tarpaulin. In conjunction with the Environmental Monitoring/Pest Management Branch (EM/PM), who were monitoring the effectiveness of the tarpaulin in terms of its environmental mitigation efficiency, Worker Health and Safety (WH&S) branch was present to monitor the exposure of the workers applying the material. The monitored work crew included the applicator, the co-pilot and the shovelers. Both the applicator and the copilot were monitored, while only two of the four shovelers were outfitted with monitoring equipment. An additional monitoring site was located by the WH&S staging area, to sample general environmental levels of methyl bromide.

Application began at 0600 hours and lasted beyond 1300 hours. However, because of staff travel arrangements, personnel sampling was terminated at 1250 hours. None the less, the workers were continuously monitored during that entire period.

Five separate sample periods were monitored for methyl bromide, three for chloropicrin. These time periods and the associated gas levels are given in Tables One and Two.

Table One
Worker Methyl Bromide Airborne Levels (PPM)

	Time Period					
Activity	**550-700**	**700-815**	**815-930**	**930-1115**	**1115-1245**	**TWA (7 hr)**
Applicator	0.066	0.075	0.123	0.091	0.076	0.087
Copilot	0.100	0.164	0.177	0.099	0.027	0.105
Shovel#1	0.008	0.009	0.047	0.057	0.039	0.037
Shovel#2	0.012	0.021	0.181	0.053	0.016	0.060
ENVIRON	***0.008****	***0.015****	***0.011****	0.058	0.097	0.047

***calculated from MDL of 0.5 ug/sample**

Table Two
Worker Chloropicrin Airborne Levels (PPM)

	Time Period			
Activity	**550-815**	**815-1115**	**1115-1245**	**TWA (7 hr)**
Applicator	0.003	0.004	0.001	0.003
Copilot	0.009	0.006	***0.001****	0.006
Shovel#1	0.001	0.005	0.004	0.003
Shovel#2	0.004	0.008	0.003	0.006
ENVIRON	***0.001****	***0.001****		

***calculated from MDL of 0.5 ug/sample**

During the application, there were some delays and equipment problems, but none of a magnitude that would be considered extraordinary. Environmental conditions ranged from cool and wet in the morning (16.4° C and RH 78%, misting rain) to warm and dry by 1130 hours (24° C and RH 49%, sunny).

These data indicate that exposure to workers was far below the DPR target 24-hour exposure value of 210 PPB, and also below the DPR target 8-hour exposure value of 630 PPB. This first measurement indicates methyl bromide application using VIF tarpaulin does not result in undue exposure to the workers.

cc: R. Rutz
D. Gibbons