

involving the lead liners were placed on hold. The area was cleaned again the next day and all materials (including the materials from the day before) were placed in their own separate containers. General Area and Breathing Zone samples were sent to a laboratory for analysis. A high priority was placed on a quick turn-around on these samples. The General Area sample results were just above the action level of 30 micro grams per cubic meter for lead. The Breathing Zone sample results indicated a personnel exposure to lead at 3 times the OSHA Permissible Exposure Limit (PEL) of 50 micro grams per cubic meter. All employees involved in the work area (there were 5 people) were notified of what happened and they had blood tests performed to determine Blood Lead Levels (BLL). The BLL results of all personnel involved with the project at the time of the exposure were within normal or background levels. No employee had elevated Blood Lead Levels.

ANALYSIS- Upon a close inspection of the lead liners, it was determined there was scale-like material on one side of the liner that when subjected to the rigors of field operations broke off and some material dispersed into the air. The scale-like material either was or contained minute quantities of lead in it. This scale-like material was on the inside of the rolled up liner and could not be seen until the liner had been removed and unrolled for surveying. There was no indication of moisture present in any of the drums. The degradation of the liner had not been anticipated and could not have been foreseen based on the available information prior to starting field operations.

RESOLUTION/RECOMMENDED ACTIONS- Prior to resuming field operations with the lead liners; project management and team personnel evaluated field operations and implemented administrative and engineering controls necessary to decrease the amount of lead entering the air from field operations. Additional PPE was also worn. The result of the controls added to the project, successfully lowered the background lead readings to the detection limit of the laboratory and no further exceedance of the PEL existed for project personnel. Process Knowledge was used extensively to make decisions regarding field operations in this project. In retrospect, one of the drums of lead should have been opened and processed with PPE required as if lead dust were expected. PPE could have been downgraded for the remainder of the project if lead levels were less than the PEL. Process Knowledge needs to be put into perspective and evaluated for changing conditions when used to make decisions on field operations. The principals of Integrated Safety Management had been performed throughout this project from start until finish.

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PRIORITY DESCRIPTOR Blue/Information

KEYWORDS exposure, lead, hazard analysis, work planning, permissible exposure limit, respirator

REFERENCES Occurrence Report ORO--BJC-PORTENVRESS-1999-0012; Operating Experience Weekly Summary

DOE FUNCTIONAL CATEGORIES Occupational Safety & Health, Conduct of Operations

BJC FUNCTIONAL CATEGORIES- Occupational Safety & Health; Waste Management;
Planning & Controls
HAZARDS Hazardous Material, Personnel Protection
WORK ACTIVITY Waste Remediation, Material/Material Handling, Work Control

FOLLOW-UP ACTION- Information in this report is accurate to the best of our knowledge. As means of measuring the effectiveness of this report please notify Joanne E. Schutt at (423) 574-1248, e-mail at s6u@ornl.gov of any action taken as a result of this report or of any technical inaccuracies you find. Your feedback is important and appreciated.