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Analysis of Disclosure, Agency Investigation and Reports, Whistleblower Comments, and Comments of the Special Counsel

OSC File No. DI-04-2815

Summary

Leroy A. Smith, Jr., a Safety Manager employed by the Federal Bureau of Prisons (BOP), disclosed to the Office of Special Counsel (OSC) that inmate workers and civilian staff members were being exposed to toxic materials, including lead, cadmium, barium, and beryllium, in computer recycling facilities at United States Penitentiary Atwater, California (USP Atwater) and other BOP institutions. According to the Occupational Health and Safety Administration (OSHA), overexposure to such toxic materials can cause cancer, kidney disease, disruption of the blood-forming system, damage to the central nervous system, impairment of the reproductive system, or even death. 29 C.F.R. §§ 1910.1025 App. A and 1910.1027 App. A. Mr. Smith alleged that BOP and Federal Prison Industries, Inc. (FPI) management discounted evidence of the dangers associated with the computer recycling process and continued to operate recycling facilities without adequate safety precautions.

More specifically, Mr. Smith alleged that factory and warehouse workers in the computer recycling facility operated by FPI at USP Atwater were being exposed to lead, cadmium, barium, and beryllium. According to Mr. Smith, these toxic materials were released when Cathode Ray Tubes (CRTs) were broken as an integral part of the recycling process. Mr. Smith stated that air quality testing repeatedly revealed elevated levels of airborne lead and cadmium in the recycling facility. After each test, Mr. Smith contended, he would direct the suspension of operations and recommend the adoption of additional safety precautions. Mr. Smith alleged, however, that management personnel at USP Atwater and FPI abused their authority by repeatedly ordering the reactivation of operations in the computer recycling facility without implementing the safety measures he recommended and without the written approval of the safety department. In addition, Mr. Smith disclosed that BOP and FPI located a food service area in the recycling facility at USP Atwater despite the fact that it was exposed to the toxic materials released as part of the recycling process in violation of 29 C.F.R. § 1910.141(g)(2). Finally, Mr. Smith disclosed that in the course of his attempts to address safety concerns associated with the recycling facility at USP Atwater, he learned that similar dangers to safety existed in recycling facilities located at other BOP institutions throughout the country.

In light of Mr. Smith's apparent expertise and his intimate knowledge of conditions in the recycling facility at USP Atwater, OSC referred his disclosure to the Honorable John Ashcroft, former Attorney General of the United States, for formal investigation by the agency pursuant to 5 U.S.C. § 1213(c) and (d). Attorney General Ashcroft delegated responsibility for investigating Mr. Smith's allegations to Harley G. Lappin, Director of the Bureau of Prisons.

The agency produced two reports in response to Mr. Smith's disclosure. Taken together, these reports substantiate some of Mr. Smith's allegations but ultimately conclude that "BOP[,] FPI and Safety Staff appear[ed] to have adequately addressed" the safety concerns raised in Mr. Smith's disclosure. According to the agency, BOP and FPI staff actively engaged in efforts to mitigate or eliminate the dangers to safety associated with the recycling of CRTs once they became apparent. The agency found that BOP and FPI management and staff took "appropriate steps to ensure factories [were] operating safely."

Mr. Smith vigorously disputed the agency's findings and provided OSC with extensive documentary evidence to support his account of events surrounding recycling activities at USP Atwater. Mr. Smith also stated that BOP investigators failed to interview some witnesses in possession of relevant evidence, particularly with respect to recycling facilities at BOP institutions other than USP Atwater. Ultimately, Mr. Smith maintained in his comments that "Federal Prison Industries management officials knowingly and willfully violate[d] ... OSHA guidelines" and that BOP's investigation into his allegations "was not impartial or comprehensive."

Having reviewed the agency's submission and the whistleblower's comments, I have determined that the agency's reports, taken together, contain all of the information required by statute, but I must conclude that findings in the agency's report appear unreasonable. In particular, the agency's reports made little effort to explain why documentary evidence that appears to contradict the agency's findings is unreliable or how this evidence can be reconciled with the conclusions of its investigation. Moreover, the agency's reports appear to rely on strained interpretations of applicable rules and procedures in order to justify past actions in connection with FPI recycling facilities, and the agency's investigation into conditions in recycling facilities at other BOP institutions appears to have been cursory at best. In light of these and other deficiencies, I cannot find the agency's reports reasonable within the meaning 5 U.S.C. § 1213(e)(2), and I am left to conclude that a thorough, independent, and impartial investigation into recycling activities at BOP institutions is still required.

The Whistleblower's Disclosures

Mr. Smith disclosed that factory and warehouse workers in the computer recycling facility at USP Atwater were being exposed to hazardous materials, including lead, cadmium, barium, and beryllium, without adequate safety precautions. Mr. Smith further alleged that management personnel at USP Atwater and FPI abused their authority by repeatedly ordering the reactivation of operations in the computer recycling facility without implementing adequate safety measures and without the written approval of the safety department. According to Mr. Smith, similar wrongdoing has occurred at other BOP institutions located throughout the country.

Mr. Smith has been employed by the BOP for approximately fourteen years, including ten years as a safety manager. He has had extensive experience evaluating occupational safety and environmental health risks and applying federal safety regulations to Federal Bureau of Prisons operations. At the time of his disclosure, Mr. Smith was the safety manager at USP Atwater, and as such, he was well situated to observe personally operations in the recycling facility at USP Atwater.

FPI has operated a computer recycling facility at USP Atwater since April 2002. Among other items, the facility recycles computer monitors. The process for recycling computer monitors involves stripping monitors of external components on the factory floor and breaking up the remaining CRTs with handheld hammers in a glass-breaking area. Before FPI opened its computer recycling facility at USP Atwater for operation, Mr. Smith discovered that CRTs contain high concentrations of lead, cadmium, barium, and beryllium, all of which are identified as hazardous materials by OSHA regulations. *See* 29 C.F.R. §§ 1910.1001 (barium and beryllium), 1910.1025 (lead), and 1910.1027 (cadmium). Mr. Smith alleged that despite his repeated recommendations, the recycling facility opened for operation without any assessment of potential environmental and health risks.

According to Mr. Smith, repeated air quality testing from June 2002 through January 2004, found lead and/or cadmium levels above OSHA permissible exposure limits in the glass-breaking area. *See* 29 C.F.R. §§ 1910.1025(c) and 1910.1027(c). With each new test, Mr. Smith suspended glass-breaking operations and prescribed minimum safety measures to be implemented prior to reactivation of operations. Mr. Smith asserted, however, that FPI routinely responded with attempts to discredit the testing methodology, cast doubt on the need for prescribed safety measures, and limit future testing. Mr. Smith further contended that nearly every time he suspended glass-breaking operations, FPI reactivated its facility without implementing all the prescribed safety measures and that Warden Paul M. Schultz approved or ordered such reactivation on numerous occasions. Ultimately, Mr. Smith alleged that this cycle of testing, suspension of operations, and reactivation continued until January 2004, when FPI finally implemented engineering changes in the glass-breaking area sufficient to reduce lead and cadmium exposure to below OSHA action levels.

Similarly, Mr. Smith maintained that, despite his repeated warnings, safety hazards persisted in other parts of the computer recycling facility. Mr. Smith stated that CRTs are accidentally broken on a daily basis at inmate work stations and in transit throughout the factory. He further observed that such breakage releases lead, cadmium, barium, and beryllium into the factory and warehouse areas, exposing workers to hazards similar to those found in the glass-breaking area. Mr. Smith pointed to blood tests performed on three factory workers as evidence of this exposure. Yet, according to Mr. Smith, at the time of his disclosure, neither Warden Schultz nor FPI had taken appropriate steps to reduce the risk of exposure to hazardous materials resulting from the accidental breakage of CRTs in these areas.

Mr. Smith further alleged that the location of a food service area in the computer recycling facility at USP Atwater violated 29 C.F.R. § 1910.141(g)(2), which provides, "[n]o employee shall be allowed to consume food . . . in any area exposed to a toxic material." *See also* 29 C.F.R. § 1910.141(g)(4). Located approximately twenty feet away from areas where workers handle CRTs, the food service area was separated from the work area by a partial wall that did not rise to the ceiling. Given the incidence of accidental CRT breakage in the factory, Mr. Smith asserted that the food service area was impermissibly exposed to toxic materials.

Mr. Smith identified alleged abuses of authority by USP Atwater and FPI personnel in connection with the unsafe operation of FPI's computer recycling facility. BOP Program Statement 1600.08(1)(D) authorizes safety managers to suspend operations in a "place of employment" where

conditions could cause "serious physical harm" and makes "[r]eactivation of the work . . . contingent upon the Safety Manager's reinspection and written approval," by management personnel. According to Mr. Smith, BOP and FPI management personnel discounted the requirements of Program Statement 1600.08(1)(D) when overseeing the operations of the recycling facility at UPS Atwater. Specifically, Mr. Smith alleged that Warden Schultz, Larry Novicky, Recycling Group Program Manager for FPI, and Thomas A. Stahley, Associate Warden for FPI operations at USP Atwater, repeatedly ordered reactivation of operations in the glass-breaking area without fully implementing the safety measures prescribed by Mr. Smith and without his written authorization. In fact, Mr. Smith alleged that he has not issued written approval for the reactivation of the computer recycling facility since he first suspended operations on July 8, 2002.

In addition, Mr. Smith maintained that in the course of addressing his safety concerns regarding the computer recycling facility at USP Atwater, he learned that other BOP institutions, including those located in Elkton, Ohio, Texarkana, Texas, and La Tuna, Texas, have been recycling CRTs with even fewer safety precautions than those in place at USP Atwater. On the basis of this information, Mr. Smith alleged that workers at these facilities were being exposed to hazardous materials at concentrations above OSHA action levels.

Given the gravity of the issues involved and the apparent technical expertise of the whistleblower, OSC referred Mr. Smith's allegations to Attorney General Ashcroft for formal investigation by the agency pursuant to 5 U.S.C. § 1213(c) and (d).

The Agency's Investigation and Reports

Attorney General Ashcroft delegated responsibility for investigating Mr. Smith's allegations to Director Lappin, and this investigation was conducted by the Office of Internal Affairs for the BOP. According to the agency, investigators interviewed over thirty witnesses and reviewed extensive documentary evidence. On the basis of this investigation, Director Lappin produced a report to OSC on June 13, 2005 (Initial Report). In response to a request for additional information, BOP filed a supplemental report (Supplemental Report) with OSC on August 4, 2005. Taken together, these reports substantiate some of Mr. Smith's allegations but ultimately conclude that "BOP[,] FPI and Safety Staff appear[ed] to have adequately addressed" the safety concerns raised in Mr. Smith's disclosure.

Glass-Breaking Operations

Agency investigators found that "OSHA violations" and exposure to toxic metals did occur in the recycling facility at USP Atwater "during the initial months of its activation" and "on some subsequent occasions." According to the agency, however, "local and national FPI and Safety staff actively engaged in corrective action efforts after becoming aware" of safety concerns connected with the recycling of computer monitors at USP Atwater.

The agency's Initial Report acknowledges that Mr. Smith twice alerted FPI officials in writing to the potential hazards associated with the recycling of computer monitors before the recycling facility at USP Atwater opened for operation. Even after the facility opened for operation, FPI

officials ignored Mr. Smith's continuing recommendations and declined to initiate testing to determine the degree of exposure to toxic metals arising out of its recycling program at USP Atwater. Indeed, according to BOP investigators, it was Mr. Smith, and not FPI officials, who arranged for the first round of testing to determine whether workers were being exposed to toxic metals in the recycling facility's glass-breaking area. These tests occurred on June 20, 2002, over a month after the facility at USP Atwater began breaking CRTs.

On June 27, 2002, results from the testing commissioned by Mr. Smith revealed that personal air samples taken in the glass-breaking area exceeded OSHA's Permissible Exposure Limits (PEL) and Action Levels (AL) for lead and cadmium. *See* 29 C.F.R. §§ 1910.1025 (lead) and 1910.1027 (cadmium). The agency found in its Initial Report that "FPI shut down its CRT breaking operation on July 1, 2002." According to the agency, FPI resumed operations on July 24, 2002, after consulting with the BOP's Industrial Hygienist and implementing additional safety precautions. Personal air samples taken on July 24, 2002, again showed lead and cadmium levels exceeding the PEL and AL limits set by OSHA, and, according to the agency, FPI again suspended operations on August 2, 2002. The Initial Report maintains that a "cycle of testing, shutting down, modification, opening, and retesting" continued through 2003. During this period, according to the Initial Report, FPI arranged for several visits to the recycling facility by BOP's Industrial Hygienist to assist in addressing ongoing safety issues and bringing the facility into compliance.

The agency's Initial Report suggests that these safety issues were ultimately resolved in December 2003, when FPI moved the glass-breaking operation off the factory floor and into a separate, ventilated booth. Between January 2004 and September 2004, personal air samples taken from work-stations outside the glass-breaking area showed levels of lead, cadmium, barium, and beryllium below OSHA's PEL and AL limits. One personal air sample taken in February 2004 revealed exposure to cadmium above OSHA's PEL and AL limits, but the agency attributed this result to the unauthorized modification of a personal ventilation system by an inmate worker.

Agency investigators determined that workers were exposed to lead and cadmium in excess of OSHA's PEL and AL limits for at least eighty (80) days during the initial activation of the recycling facility at USP Atwater and for indeterminate intervals during the reengineering of the glass-breaking area in that facility. According to the agency, FPI's attempts to remedy this exposure proceeded without adequate advice from an Industrial Hygienist or other technically qualified person. In addition, the agency found that at various times in the operation of the recycling facility mechanical ventilation did not conform to OSHA standards, workers did not have access to appropriate respirators, and neither FPI nor BOP conducted adequate medical surveillance and biological monitoring of workers in the glass-breaking area. 29 C.F.R. §§ 1910.1025(e)(4)(ii), 1910.1025(f), 1910.1025(j), 1910.1027(g), and 1910.1027(l). FPI and BOP also failed to provide required changing rooms, showers, and lunchroom facilities and adequate employee information, training, and signage. 29 C.F.R. §§ 1910.1025(i), 1910.1025(l)-(m), 1910.1027(j), and 1910.1027(m).

According to the agency's Supplemental Report, BOP was planning disciplinary action against two FPI Program Managers in response to the safety violations it discovered in the course of its investigation. The agency also noted that FPI has now furnished workers in the glass-breaking

area at USP Atwater with proper safety equipment, instituted proper hygienic procedures, and provided training and information to "all workers associated with CRT destruction/dismantling." Finally, the agency reported that workers in the glass-breaking area at USP Atwater now receive initial and annual biological monitoring to assess blood levels of lead and cadmium in their systems and that FPI contracted for an outside environmental assessment of its computer recycling operations at USP Atwater and elsewhere.

Exposure Outside the Glass-Breaking Area

Agency investigators determined that a technical assessment performed by BOP's Industrial Hygienist in September 2004, which included the collection of personal air samples for workers outside the glass-breaking area, found no evidence that these workers were being exposed to hazardous metals above OSHA's PEL limits. According to the agency, the findings of its Industrial Hygienist were corroborated by an OSHA inspection conducted in March 2005.

The agency further determined that blood tests performed on workers outside the glass-breaking area did not provide evidence on ongoing exposure to toxic metals. The agency acknowledged that blood tests performed on three inmate workers stationed outside the glass-breaking reflected some barium content but maintained that the levels reported were "below acceptable limits."[1] In addition, the agency acknowledged that one inmate worker tested positive for cadmium, but, according to the agency, the concentration of cadmium found in the inmate's blood was consistent with the levels of cadmium found in smokers. The inmate in question was, in fact, a smoker. Consequently, the agency concluded that there is no evidence that workers outside the glass-breaking area are being exposed to toxic metals at levels above acceptable limits.

Nevertheless, the agency reported that FPI has further established procedures to safeguard workers when CRTs are accidentally broken on the factory floor, outside the glass-breaking area.

The Food Service Area

With respect to the food service area adjacent to the factory floor at USP Atwater, the agency took the position in its Initial Report that because there are no tests showing airborne lead, cadmium, barium, or beryllium above OSHA's PEL or AL limits, the area is not exposed to "toxic material" within the meaning of 29 C.F.R. § 1910.141. The agency conceded that the food service was open to the factory floor and that "some material made its way to the eating area." Indeed, the presence of lead and cadmium on surfaces in the food service area was established by wipe sample testing. Nevertheless, the agency maintained that in the absence of air samples showing lead and/or cadmium levels above "an acceptable limit," the food service area could not be in violation of the OSHA requirement that "[n]o employee ... be allowed to consume food ... in any area exposed to a toxic material." 29 C.F.R. § 1910.141.

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[1] According to the agency, the laboratory report summarizing the results of these blood tests contained erroneous information, creating the mistaken impression that these inmates had severely elevated levels of barium in their blood. The laboratory later clarified its results in corrected reports.

The agency noted in its Initial Report that on the basis of wipe samples showing the presence of hazardous metals, BOP's Industrial Hygienist recommended the food service area be isolated from the factory floor and separately ventilated. In response, BOP directed "FPI factories nationwide to close all internal food service operations," where those operations were not isolated and fully ventilated. The decision to close the food service area is explained in greater detail in the agency's Supplemental Report.

Repeated Abuses of Authority

The agency found that BOP and FPI officials did not abuse their authority by ordering the reactivation of operations in the recycling facility at USP Atwater without fully implementing the safety measures prescribed by Mr. Smith and without his written authorization. BOP Program Statement 1600.08(1)(D) authorizes safety managers to suspend operations in a "place of employment" where conditions "could reasonably be expected to cause ... serious physical harm" and makes "[r]eactivation of the work . . . contingent upon the Safety Manager's reinspection and written approval," by management personnel. The agency maintained, however, that this provision of its Program Statement did not apply to the safety hazards at issue in the recycling facility because exposure to toxic metals at levels above OSHA's PEL and AL limits presented "no imminent hazard" that would trigger the safety manager's authority. According to the agency, the lead and cadmium exposure documented at USP Atwater "presented conditions where exposed workers may experience chronic health effects as a result of exposure over time. These exposures did not, however, rise to the level of being imminently dangerous, as no immediate threat of death or serious physical harm occurred ...." Consequently, the agency found that BOP and FPI officials did not abuse their authority when they repeatedly ordered reactivation of glass-breaking operations.

The agency did find credible Mr. Smith's allegation that Warden Schultz made comments to him discouraging him from contacting OSHA. Specifically, Mr. Smith alleged that Warden Schultz ordered him not to contact OSHA saying, "you are not going to call OSHA or anyone else for that matter." While the agency discounted Mr. Smith's contention that the Warden specifically ordered him not to contact OSHA, it did determine that "the evidence suggests" that the Warden did make a comment to the effect described by Mr. Smith. The agency found that regardless of the Warden's intentions, his comment was inappropriate, and it accordingly recommended that the Warden be "counseled by his immediate supervisor."[2]

Dangers to Safety at Other Recycling Facilities

The agency's Initial Report contains a brief discussion of conditions in FPI recycling facilities located at other BOP institutions, including FCI Elkton, FCI Texarkana, and FCI La Tuna. In the course of its discussion of operations at these facilities, the agency noted that "site visits to [these facilities] did not occur during [its] investigation; rather interviews of relevant FPI and Safety staff were used to determine" conditions at those facilities."

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[2] The agency also found that a "management official communicated with Mr. Smith about unrelated matters in an unprofessional manner," and recommended discipline for that official. The agency's Supplemental Report later indicated that the management official subject to proposed discipline was Warden Schultz.

With respect to the recycling facility located at FCI Elkton, the agency found operations began in May 1997 with glass-breaking occurring in warehouses outside the factory. FPI learned the method it used for breaking CRTs at FCI Elkton from a non-governmental recycling company and a glass processing company. According to the agency, neither company expressed concern to FPI or BOP officials about hazardous metals released when breaking CRTs. Later, in March of 1998, FPI solicited the opinion of an outside consultant, who advised that CRT waste did not fall within the Resource Conservation and Recovery Act. The agency further found that wipe and air samples collected at FCI Elkton in August 2001 showed no significant exposure to toxic metals.

Also in August 2001, FPI moved its glass-breaking operation at FCI Elkton out of its warehouses and into the recycling factory. The agency reported in its Initial Report that "[s]hortly after this relocation," the Factory Manager and inmate workers "complained of silvery dust accumulations," prompting an effort to isolate glass-breaking operations in a paint booth that would exhaust particulate mater outside the factory. This paint booth was upgraded in April 2003, but personal air samples taken in May 2003 revealed cadmium levels above OSHA's PEL and AL limits.

With respect to the recycling facility located at FCI Texarkana, the agency found operations began in October 2001. Workers engaged in glass-breaking were fit tested with HEPA respirators in August 2002, and in October 2002, an environmental consultant advised FPI that the levels of toxic metals it detected in the glass-breaking area did not "pose an immediate health threat" because the workers engaged in glass-breaking "[were] wearing appropriate personal protective equipment." In April 2004, FPI upgraded its glass-breaking operations at FCI Texarkana with the installation of a new glass-breaking booth. Personal air samples taken in September 2004 revealed cadmium levels exceeding OSHA's AL limit. Yet, when the factory manager advised the FPI Program Manger overseeing computer recycling that this test result would put the recycling facility at FCI Texarkana in violation of Standard Operating Procedures (SOPs) issued by FPI in June 2003, he was directed "to continue production and to make progress toward the SOP goals."

The agency concluded in its Initial Report that workers at both FCI Elkton and FCI Texarkana were exposed to cadmium at levels exceeding OSHA limits in the months following the installation of glass-breaking booths. The agency also acknowledged that "[i]t is reasonable to conclude" that workers at both facilities suffered some level of exposure prior to the installation of these booths. Nevertheless, the agency found that FPI managers at both facilities did not "intentionally ... place[] CRT workers in harm's way" but rather approached glass-breaking operations with a "learn as you go" attitude. Indeed, with respect to operations at FCI Elkton and FCI Texarkana, the agency only recommended disciplinary action against one management official, namely, the FPI Program Manager who directed the facility at FCI Elkton to "continue production" in violation of FPI's SOPs.

With respect to FCI La Tuna, the agency determined that FPI operated a recycling program there for four months in 2004 but no glass-breaking occurred.

The Agency's Conclusions

In its Initial Report, the agency found that violations of OSHA regulations and periodic instances of excessive exposure to toxic metals did occur in the glass-breaking area of the recycling facility at USP Atwater from April 2002 through February 2003. The agency further found that FPI and BOP safety staff "actively engaged in corrective action efforts after becoming aware ... of problems in this regard," but they did not always do so "with a level of caution or strict adherence to applicable BOP policy and OSHA regulations." With respect to other recycling facilities operated by FPI, the agency found that "similar violations" likely occurred. As a result of these continual violations of OSHA standards and the repeated exposure of inmate workers to excessive levels of toxic metals, BOP recommended discipline of four management officials, namely, three FPI Program Managers and Warden Schultz.

The agency represents in its Initial Report that "FPI and Safety personnel appear to have taken the appropriate steps to ensure factories are operating safely and that they are in compliance with all applicable regulations and standards."

The Whistleblowers' Comments

Mr. Smith submitted voluminous comments disputing many of the findings contained in the agency's Initial and Supplemental Reports, and he attached extensive documentary evidence to these comments. In addition, Mr. Smith submitted an Executive Staff Paper summarizing his dispute with the agency's findings. In sum, Mr. Smith maintained that "Federal Prison Industries management officials knowingly and willfully violate[d] ... OSHA guidelines" and that BOP's investigation into his allegations "was not impartial or comprehensive."

Glass-Breaking Operations

In his comments, Mr. Smith maintained that far from cooperating with his efforts to ensure the safety of staff and inmate workers in the recycling facility at USP Atwater, BOP and FPI staff actively resisted his attempts to identify the scope of the danger presented by the glass-breaking operation and implement safety measures to minimize that danger. For example, Mr. Smith observed that prior to his arranging for personal air sampling in the glass-breaking area, he had on several occasions recommended in writing an "Environmental and Health Risk assessment of the ... glass-breaking process" to FPI officials. *See* Exhibits A, B, and C. According to Mr. Smith these recommendations along with a specific request for personal air sampling were rejected by FPI, prompting him to arrange for testing through the local Safety Department. These tests established that airborne lead and cadmium concentrations in the glass-breaking area were above OSHA's PEL and AL limits. Yet, Mr. Smith stated that even after these tests documented excessive lead and cadmium levels, FPI failed to suspend operations and implement recommended safety measures.

Mr. Smith's comments dispute the agency's finding that FPI suspended operations on July 1, 2002, after learning the results of the testing performed on June 20, 2002. Rather, Mr. Smith stated that FPI ignored a memorandum he issued on June 28, 2002, in which he directed the temporary suspension of glass-breaking operations, and as a result, Mr. Smith issued a second memorandum

on July 8, 2002, again directing the suspension of operations. *See* Exhibits D and E. On July 10, Larry Novicky, a General Manager for FPI, circulated an e-mail seeking to discredit the results of the air quality testing performed on June 20, 2002, and purportedly prohibiting future testing in the USP Atwater recycling facility. *See* Exhibit F. According to Mr. Smith, FPI suspended operations for, at most, two days on or about July 15, 2002, in order to outfit workers in the glass-breaking area with respirators. FPI allowed this brief pause in its operations only after BOP's Industrial Hygienist expressed his agreement with Mr. Smith's recommendation that workers in the glass-breaking area be provided with respiratory protection. FPI wholly ignored Mr. Smith's direction that hygiene facilities be installed pursuant to OSHA regulations.

Air sampling conducted on July 24, 2004, again found levels of lead and cadmium above OSHA's PEL and AL limits in the glass-breaking area at USP Atwater. The results of these tests became available to FPI and BOP staff on or about August 2, 2002, and on August 6, 2002, Mr. Smith circulated a memorandum directing the temporary suspension of glass-breaking operations and reiterating the requirement that hygiene facilities be made available to workers in the glass-breaking area. *See* Exhibit G. According to Mr. Smith, FPI failed to suspend operations as directed. Indeed, on August 22, 2002, Mr. Smith issued a second memorandum reiterating his direction to suspend operations, again without effect. *See* Exhibit H. Moreover, on August 21, 2002, BOP's Industrial Hygienist circulated a list of safety precautions required by OSHA regulations in light of the documented levels of airborne lead and cadmium in the glass-breaking area. According to Mr. Smith, FPI failed to implement many of these precautions until late 2003 and never implemented others.[3] In November 2002, personal air samples again showed airborne lead and cadmium levels above OSHA's PEL and AL limits. At this point, FPI did temporarily suspend operations in order to implement engineering changes in the glass-breaking area.

Mr. Smith stated that FPI reactivated glass-breaking operations on January 21, 2003, to allow for air quality testing in its new glass-breaking booth. These tests reported levels of airborne cadmium exceeding OSHA's PEL and AL limits as well as the presence of lead on the skin of inmate workers. Yet, even before these results were reported, Mr. Smith learned that the ventilation system in the glass-breaking area was exhausting a silvery dust because required filters had not been installed. He immediately directed the suspension of operations. *See* Exhibit I. According to Mr. Smith, FPI failed to replace the required filters for at least eight days and glass-breaking operations continued into February, when additional air quality testing documented excessive levels of cadmium and beryllium. It was not until December 2003, when glass-breaking operations were moved into an area entirely separate from the factory floor, that FPI brought airborne lead and cadmium levels within OSHA's PEL and AL limits.

Mr. Smith contended in his comments that the process by which the glass-breaking operation at USP Atwater was brought into compliance with OSHA regulations governing airborne

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[3] Specifically, Mr. Smith reported that while FPI did provide personal air monitoring, medical surveillance, and respiratory protection to inmate workers in the glass-breaking area during part of 2002, it never provided adequate hygiene facilities. Moreover, he stated that FPI delayed the posting of required signage and the labeling of shipping and storage containers until late 2003. Finally, according to Mr. Smith, required training of workers did not occur until 2004, and FPI civilian staff who worked in the recycling facility were not provided with medical monitoring until April 2003.

contaminants was not a cooperative one in which FPI and BOP management worked together with local safety staff to protect inmate workers and FPI staff. Rather, it was one in which the local safety staff lead by Mr. Smith continually struggled to overcome the resistance of FPI and BOP management in order to implement required safety measures, meeting with, at best, mixed success.

Exposure Outside the Glass-Breaking Area

In his comments, Mr. Smith also contested the agency's findings with respect to operations outside the glass-breaking area in the recycling facility at USP Atwater. Specifically, he maintained that despite the fact that wipe samples taken from the hands of workers in the factory showed the presence of "high levels" of barium, beryllium, lead, and cadmium, FPI refused to take additional steps to determine the scope of the danger to which workers were being exposed.[4] *See* Exhibit J. Mr. Smith concedes that the limited blood testing performed on workers outside the glass-breaking area showed levels of toxic metals below occupational exposure limits, but he insisted that these tests did show low-level exposure that warranted concern. Yet, according to Mr. Smith, he participated in an August 2004 telephone conference with FPI and BOP management officials who insisted that evidence of continuous low-level exposure of workers on the factory floor did not warrant additional measures to protect workers. *See* Exhibit K. Finally, Mr. Smith observed that with respect to operations outside the glass-breaking area at USP Atwater, FPI resisted even the safety recommendations made by BOP's Industrial Hygienist, ignoring some recommended safety measures altogether.

The Food Service Area

In his comments, Mr. Smith disputed the agency's contention that the hazardous metals must exceed OSHA's PEL and AL limits before they constitute "toxic material" within the meaning of 29 C.F.R. § 1910.141. He observed that wipe samples taken from surfaces in the food service area identified various levels of lead, cadmium, barium, and beryllium, and reported that BOP's own Industrial Hygienist had expressed concern that the presence of these materials "could pose a cross-contamination exposure potential to workers through ingestion." *See also* Exhibit J (recommending the isolation of the food service area because low levels of "toxic materials" were present). Mr. Smith also observed that FPI and BOP management officials ignored his concerns about situating the food service area in a factory where toxic materials were present when he first raised them before the food service area was built.

Repeated Abuses of Authority

Mr. Smith disputed the agency's finding that FPI and BOP management personnel did not abuse their authority when they resisted the suspension of glass-breaking operations and repeatedly ordered reactivation of operations without fully implementing the safety measures he prescribed and without his written authorization. The agency maintained that the excessive levels of toxic metals present in the glass-breaking area presented "no immediate threat of death or serious physical harm"

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[4] According to Mr. Smith, personal air sampling performed outside the glass-breaking area occurred during periods when cable boxes, and not CRTs, were being recycled, thereby reducing the likelihood that the samples collected would contain high levels of the toxic materials released in the process of recycling CRTs.

that would trigger the safety manager's authority. Mr. Smith, on the other hand, quoted the text of Program Statement 1600.08(1)(D), which makes the safety manager's authority to suspend operations dependant on his determination that conditions "could reasonably be expected to cause death or serious physical harm." Thus, Mr. Smith contended that regardless of the immediacy of the harm that would result from exposure to excessive levels of toxic materials, he had the authority to suspend operations where serious harm could reasonably be foreseen. According to Mr. Smith FPI and BOP management abused their own authority when they repeatedly disregarded his directions to suspend operations and neglected to implement the safety measures he prescribed.

In addition, Mr. Smith disputed the agency's finding that Warden Schultz did not "inten[d] to issue a specific order to not contact OSHA." Mr. Smith attached to his comments a memorandum dated September 30, 2004, in which he reported Warden Schultz's statement. Mr. Smith also made available to OSC and agency investigators a contemporaneous memorandum recording the Warden statement and the context within which it occurred. According to Mr. Smith, the phrasing and context of the Warden's statement, as evidenced in these documents, make it clear that the Warden intended to issue an order. Mr. Smith has consistently maintained that this order constituted an abuse of authority warranting discipline. Mr. Smith added in his comments that Associate Warden Richard T. Luna should also be subject to discipline for his failure to report and active concealment of the abuse in question.

Dangers to Safety at Other Recycling Facilities

Mr. Smith's comments also call into question the adequacy of the agency's investigation into the conditions in other FPI recycling facilities. He observed that the agency failed to conduct site visits to these other facilities during its investigation and asserted that "[FPI] staff ... should [have] been given the opportunity to be interviewed." Indeed, Mr. Smith stated that he has been contacted by staff members who worked at FCI Elkton and FCI Marianna. According to Mr. Smith, these staff members complained about the hazardous conditions at those facilities, and some reported health problems they believed to be linked to their exposure to toxic materials. Moreover, Mr. Smith contended that the agency ignored extensive documentary evidence supporting his allegations that workers in recycling facilities at FCI Elkton, FCI La Tuna, FCI Marianna, and FCI Texarkana were exposed to toxic materials without proper protection. Mr. Smith attached much of this evidence as exhibits to his comments.

With respect to FCI La Tuna, Mr. Smith asserted that agency investigators unreasonably discounted evidence of potential hazardous conditions. Specifically, Mr. Smith asserts that when he was interviewed by investigators in the presence of a number of FPI and BOP representatives, BOP's own Industrial Hygienist confirmed that FCI La Tuna had briefly conducted glass-breaking operations. The agency's report, however, stated that no glass-breaking occurred at La Tuna. Mr. Smith further observed that the agency's Initial Report did not address conditions in the recycling facility at FCI Marianna even though he raised concerns about this facility in his interview with investigators. In short, Mr. Smith maintained in his comments that the agency's Initial Report deliberately ignored evidence of agency wrongdoing and potentially hazardous conditions in recycling facilities operated at BOP institutions other than USP Atwater.

The Whistleblower's Conclusions

On the basis of the numerous defects that Mr. Smith identified in the agency's findings, he concluded that the BOP's investigation into his allegations was neither impartial nor comprehensive. According to Mr. Smith, witnesses willing to testify before an impartial investigative authority and readily available documentary evidence support the conclusion that "FPI management officials knowingly and willfully continued to violate OSHA guidelines," exposing "staff, inmates, and staff families" to "environmental and health risks" in order to "maintain[] production and mak[e] profit." In light of what Mr. Smith characterizes as BOP's "obstruction" and "concealment," he has recommended an independent investigation by the Office of Inspector General for the U.S. Attorney General as well as congressional hearings. Only with such a high degree of scrutiny, he suggested, will BOP management officials be forced to address the continuing health and safety issues connected with FPI's computer recycling program.

Conclusion

Based on the representations made in the agency's reports and as stated above, I have determined that these reports contain all of the information required by statute, but I am unable to conclude that the agency's findings are reasonable. More specifically, the agency's account of events surrounding the activation and modification of operations in the recycling facility at USP Atwater appears to be inconsistent with documentary evidence that Mr. Smith made available to both OSC and BOP investigators. Contrary to the agency's findings, these documents suggest that FPI officials, with the knowledge and approval of Warden Schultz, rarely if ever suspended glass-breaking operations in response to adverse test results and routinely neglected to implement the recommendations of both the safety staff and BOP's own Industrial Hygienist.[5] These documents also suggest that when made aware of the potential safety hazards associated with computer recycling, FPI and BOP officials impeded steps to determine the scope of these hazards and refused to implement recommended precautionary measures. The documents do not reflect active engagement of local and national FPI and BOP staff in a cooperative effort to address the safety concerns associated with CRT recycling, as the agency maintained in its reports. Yet, the agency's reports made little effort to explain why this documentary evidence is unreliable or how this evidence can be reconciled with the conclusions of its investigation. This failure to address and explain the extensive body of countervailing evidence would alone make the agency's report unreasonable within the meaning of 5 U.S.C. § 1213(e).

There are, however, additional defects in the agency's Initial and Supplemental Reports that further compel me to find deficient the agency's response to Mr. Smith's disclosure. These defects include the following:

- The agency's investigation into Mr. Smith's allegation that hazardous conditions existed in recycling facilities located at BOP institutions other than USP Atwater appears to have

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[5] Indeed, according to Mr. Smith, FPI and BOP have yet to make proper hygiene facilities available to inmate workers despite the fact that such facilities were first recommended by Mr. Smith and BOP's Industrial Hygienist as early as July 8, 2002. *See* Exhibit E and L.

been cursory at best and does not appear to have sought evidence from staff members who had relevant knowledge of those conditions;

- The agency failed entirely to address conditions in the recycling facility at FCI Marianna despite the concerns that Mr. Smith raised regarding this facility;

- BOP's contention that 29 C.F.R. § 1910.141 only prohibits the consumption of food in areas exposed to excessive levels of *airborne* lead, cadmium, barium, and/or beryllium is disingenuous in light of the fact that this rule defines "[t]oxic material" to include materials "of such toxicity so as to constitute a recognized hazard that is causing or is likely to cause death or serious physical harm"; and

- BOP wrongly excuses the conduct of FPI and BOP staff on the grounds that exposure to excessive levels of lead and cadmium was not "imminently dangerous, as no immediate threat of death or serious physical harm occurred," whereas Program Statement 1600.08(1)(D) actually requires only that conditions "could reasonably be expected to cause death or serious physical harm" in order to trigger the safety manager's authority to "shut down" operations.

These and other apparent defects in the agency's reports, lead me to question the impartiality of the investigation into Mr. Smith's allegations and conclude that many of the agency's findings are inconsistent with available evidence. Consequently, I must concur with Mr. Smith's recommendation of an independent investigation not subject to the supervision of BOP management in order to ascertain reliably the scope of past and present dangers in FPI's computer recycling facilities and determine appropriate remedial measures for staff and inmate workers who may have been exposed to toxic materials in those facilities.

Exhibit A

U.S. Department of Justice

Federal Bureau of Prisons

United States Penitentiary
Atwater, California 95301

November 28, 2001

MEMORANDUM FOR JAMES M SLATON, FACTORY MANAGER

FROM: L. A. Smith, Safety Manager

SUBJECT: CRT Concerns

After receiving the information UNICOR provided on the CRT monitors, the Safety Department has identified the monitors to contain lead, cadmium, and other harmful metals. The future recycling process of the CRT monitors may cause a health concern to staff and inmate workers. As a precautionary measure, the Safety Departments recommends an environmental risk/health assessment be conducted prior to the CRT booth opening. This will ensure the Safety and Health of the UNICOR staff and inmate workers.

If I can provide any further assistance, please do not hesitate to let me know.

cc: Richard T. Luna, Associate Warden Operations
Thomas W. Stahley, Associate Warden Industries

Exhibit B

U.S. Department of Justice

Federal Bureau of Prisons

United States Penitentiary
Atwater, California 95301

January 31, 2002

MEMORANDUM FOR THOMAS W. STAHLEY, ASSOCIATE WARDEN INDUSTRIES

FROM: **L. A. Smith, Safety Manager**

SUBJECT: **CRT Concerns**

This is to remind you of the Safety Departments previous attempt on November 28, 2001, to address the hazardous metals associated with the CRT monitors. You informed me that UNICOR has not conducted any environmental assessments because there are no hazards with the CRT monitoring process per Mr. Novicky, Larry, UNICOR Central Office. The Safety Department strongly requests UNICOR to conduct an environmental risk/health assessment of the CRT monitoring process to ensure there is documented analytical data to support no health or environmental concerns exist for staff or inmate workers. The Safety Department believe this is paramount to the continued success of the UNICOR Factory.

cc: Richard T. Luna, Associate Warden Operations
James M. Slaton, Factory Manager

If I can provide any further assistance, please do not hesitate to let me know.

Exhibit C

U.S. Department of Justice

Federal Bureau of Prisons

United States Penitentiary
Atwater, California 95301

May 9, 2002

MEMORANDUM FOR THOMAS W. STAHLEY, ASSOCIATE WARDEN (I&E)

FROM: L. A. Smith, Safety Manager

SUBJECT: Respirator Requirements

I am very concerned with the potential exposure to hazardous metals (i.e. lead, cadmium, and barium etc.) to staff and inmate workers currently working in the glass breaking operation. The Safety Department strongly requests UNICOR to conduct the Environmental and Health Risk Assessment of the CRT glass breaking process to ensure the safety and health of staff and inmate workers. As a precautionary measure the Safety Department requests all staff and inmate workers working in the glass breaking area be provided a HEPA Full Face or Half Face Respirator. Also, staff and inmate workers will need to be medically cleared, fit tested, and trained with the respirator prior to use. The current dust mask being provided to the staff and inmate workers will not protect them from the identified hazardous metals. It is paramount that these environmental and occupational control measures be implemented to ensure staff and inmate workers are protected according to OSHA.

If I can provide any further assistance, please do not hesitate to let me know.

cc: Warden AW(O)

Exhibit D

U.S. Department of Justice

Federal Bureau of Prisons

United States Penitentiary
Atwater, California 95301

June 28, 2002

MEMORANDUM FOR THOMAS W. STAHLEY, ASSOCIATE WARDEN (I&E)

FROM: L. A. Smith, Safety Manager

SUBJECT: Glass Breaking Operation

As a precautionary measure inmate personal air monitoring and area air sampling was conducted on June 20, 2002, by OCCU-TECH Inc. Upon review of the baseline analytical data received on June 27, 2002, which identifies the food area, production line areas, glass breaking area, and upper main office areas as being below the OSHA permissible exposure limit for harmful metals. Also, the inmate personal air sample taken at the point of operation exceeded the OSHA permissible exposure limit for lead and cadmium. Additional sampling will need to be conducted in accordance with OSHA Seven (7) Hour Time Weighted Average (TWA) requirements and personal/area swab testing.

Effective June 28, 2002, the UNICOR Glass Breaking Operation is temporally suspended until the following procedures are implemented:

1. All staff and inmates working in the glass breaking operation and area will need to have a baseline blood test for lead and cadmium.

2. Need to purchase half-face respirators as a minimum protection level requirement. The respirator cartridges need to be able to protect against harmful metals, especially for lead and cadmium. The respirators need to be purchased in small, medium, and large.
(Dan Trujillo, with Jorgerson Company, at 559-268-6241)

3. An area will need to be identified for the location of the respirators to be stored. Proper storage equipment for the respirators will need to be purchased. Also, proper cleaning solutions/equipment for the respirator will need to be purchased, which the respirators will need to be cleaned after each use daily.
(Dan Trujillo, with Jorgerson Company, at 559-268-6241)

4. The inmates identified to wear the respirators during the glass breaking operation will need to be medically cleared prior to the respirator being worn.

5. The inmates will need to receive respirator training by the Safety Department. Also, will need to be fit-tested prior to wearing the respirator, which will ensure a proper fit and seal of the respirator.

6. All staff and inmates in the glass operation and area will need to be provided formal documented lead training by the Safety Department.

The above mentioned steps will need to be implemented prior to the reactivation of the glass breaking operation. This will be contingent upon the Safety Manager's verification and written approval. This will ensure USP Atwater remains in compliance with Bureau Policy and all Regulatory Agencies.

cc: Associate Warden (O)
Union
Safety File

Exhibit E

U.S. Department of Justice

Federal Bureau of Prisons

United States Penitentiary
Atwater, California 95301

July 8, 2002

MEMORANDUM FOR THOMAS W. STAHLEY, ASSOCIATE WARDEN (I&E)

FROM: L. A. Smith, Safety Manager

SUBJECT: Computer Monitor (CRT's)

This is a second reminder that on June 20, 2002, air sampling was conducted in the glass breaking area by Occu-Tech Inc. These sample results indicate inmate workers are being exposed above the Permissible Exposure Limits (PEL) for Lead and Cadmium. OSHA regulatory guidelines require hygiene facilities (i.e., showers, hand washing station, and changing area) be available to workers to reduce exposure. As a precautionary measure the glass breaking area shall be temporally suspended until the a hygiene facility or additional environmental measures can be implemented to ensure the safety and health of staff and inmates.

If I can provide any further assistance, please do not hesitate to let me know.

cc: Associate Warden (O) Safety File Union

Exhibit F

From: Larry Novicky
To: tom@central.unicor.gov
Date: 7/10/02 7:07PM
Subject: Re: Glass breaking

7-11-02

Tom:

Reiterating our conversation of today, I am deeply concerned about the direction and events going on at Atwater concerning the innuendoes and statements I have heard surrounding the review of the glass breaking process by Mr. Leroy Smith. As I stated earlier, I want a complete written documentation of the events provided to my attention. Relaying of information verbally, as I have been receiving is completely unacceptable. If there are any concerns about certain aspects of the UNICOR glass recycling activities I want those provided to all parties, in writing, specifically delineating areas of concern. Additionally, I want written parameters of Federal and / or state regulations of which there are any concerns with specific citations of any regulations that apply to these concerns. No further testing is to be performed of any kind until this documentation is done in a professional manner. I plan to share this documentation with Central Office UNICOR and BOP Safety staff to insure all areas are properly addressed. From what I have heard to date, the testing was incorrectly performed. If there are any areas that UNICOR must address in order to be in compliance with all regulations I want a corrective action plan and timetable provided that will meet any areas of concern, (ie respirators, vacuums etc.) The verbal transmittal of accusations and / or innuendoes of noncompliance of UNICOR's Atwater operation is unprofessional and is to cease immediately.

Tom, I want to thank you for your efforts in making sure that FPI Atwater meets or exceeds all environmental requirements, I also share these goals, but we can not allow improperly documented or haste govern the operation of our UNICOR operations. Please share this transmittal with the Warden sothat we are all on the same s

CC: lnovicky@central.unicor.gov

Exhibit G

U.S. Department of Justice

Federal Bureau of Prisons

United States Penitentiary
Atwater, California 95301

August 06, 2002

MEMORANDUM FOR THOMAS W. STAHLEY, ASSOCIATE WARDEN (I&E)

FROM: L. A. Smith, Safety Manager

SUBJECT: Computer Monitor (CRT's)

On July 24, 2002, air sampling was conducted in the glass breaking area by Occu-Tech Inc. These sample results indicate inmate workers are being exposed above the Permissible Exposure Limits (PEL) for Lead and Cadmium. OSHA regulatory guidelines require hygiene facilities (i.e., showers, hand washing station, and changing area) be available to workers to reduce exposure. As a precautionary measure the glass breaking area shall be temporally suspended until the a hygiene facility or additional environmental measures can be implemented to ensure the safety and health of staff and inmates.

If I can provide any further assistance, please do not hesitate to let me know.

cc: Associate Warden (O) Safety File Union

Exhibit H

U.S. Department of Justice

Federal Bureau of Prisons

United States Penitentiary
Atwater, California 95301

August 22, 2002

MEMORANDUM FOR THOMAS W. STAHLEY, ASSOCIATE WARDEN (I&E)

FROM: L. A. Smith, Safety Manager

SUBJECT: Computer Monitor (CRT's)

On July 24, 2002, air sampling was conducted in the glass breaking area by Occu-Tech Inc. These sample results indicate inmate workers are being exposed above the Permissible Exposure Limits (PEL) for Lead and Cadmium. OSHA regulatory guidelines require hygiene facilities (i.e., showers, hand washing station, and changing area) be available to workers to reduce exposure. As a precautionary measure the glass breaking area shall be temporally suspended until the a hygiene facility or additional environmental measures can be implemented to ensure the safety and health of staff and inmates.

If I can provide any further assistance, please do not hesitate to let me know.

cc: Associate Warden (O) Safety File Union

Exhibit I

U.S. Department of Justice

Federal Bureau of Prisons

United States Penitentiary
Atwater, California 95301

January 23, 2003

MEMORANDUM FOR THOMAS W. STAHLEY, ASSOCIATE WARDEN (I&E)

FROM: **L. A. Smith, Safety Manager**

SUBJECT: **Dust Release (i.e., Lead, Cadmium, Barium, etc.)**

This memorandum is to reiterate our previous discussion and deep concerns expressed by UNICOR staff about the dust being released from the glass breaking booths exhaust system into the factory. The Safety Office essentially identified two major issues. First, the glass breaking operation has released hazardous metals into the air. Second, staff and inmates were possibly exposed to higher levels of lead, cadmium, barium and other dangerous metals then allowed for by Occupational Safety and Health Act (OSHA). As a precautionary measure staff and inmates should be notified and offered the opportunity to receive baseline blood and urine tests to determine if any their exposure.

Also, as a precautionary measure the glass breaking area shall be temporally suspended until corrective action and additional testing can be conducted, which will ensure the safety and health of staff and inmates.

If there are any questions, please do not hesitate to let me know.

cc: Warden

Exhibit J

U.S. Department of Justice

Federal Bureau of Prisons

Washington, D.C. 20534
December 2, 2004

MEMORANDUM FOR PAUL SCHULTZ, WARDEN
USP ATWATER

//S//

FROM: Maryellen Thoms, Assistant Director
Health Services Division

SUBJECT: Technical Assistance Visit

As requested, Matthew Korbelak, National Industrial Hygienist, was onsite at USP Atwater on September 28 - 30, 2004, to conduct air monitoring and wipe testing in the UNICOR factory and warehouse to determine potential exposure to metals from handling computer monitors. Findings and recommendations are detailed below.

Air Monitoring

Air sampling was conducted on workers at the UNICOR outside warehouse and in the UNICOR factory who handle monitors and computer equipment but are not involved in the deliberate breaking of the computer monitors. Inmates in the glass breaking operation have already been assessed. During the monitoring, an inmate accidentally broke the electron gun end of a monitor tube while disassembling the casing and related components (sample

[redacted]

OSHA has established permissible exposure levels and action limits for various chemicals in the workplace. Analysis for barium, beryllium, cadmium, and lead was conducted on the air samples collected. Barium coats the inside of the monitor vacuum tubes. Beryllium is typically found in power supplies. Cadmium is a component of the phosphors on the inside of the screen (green dots). Lead is found in the funnel glass of the monitor vacuum tube.

The results of all personal air monitoring were well below the OSHA action levels and personal exposure limits for barium, beryllium, cadmium, and lead (see following and attached data tables). Neither the use of respiratory protection nor the

requirement to conduct biological monitoring (blood and/or urine tests) are required for workers in the sampled areas/operations. The institution may opt to conduct random biological monitoring (especially in the production areas), the results of which may be used to assess the need for more extensive monitoring.

OSHA levels vs. Sampling Results

Metal	OSHA Action Level	OSHA Permissible Exposure Limit	Range of Sampling Results as 8-hour, time-weighted averages *
Barium	None	0.5 mg/M3	<0.002 - <0.004 mg/M3
Beryllium	None	0.002 mg/M3	<0.0001 - <0.0002 mg/M3
Cadmium	0.0025 mg/M3	0.005 mg/M3	<0.0009 - <0.0020 mg/M3
Lead	0.03 mg/M3	0.05 mg/M3	<0.002 - <0.004 mg/M3

mg/M3 = milligrams per cubic meter of air.
OSHA levels/limits are 8-hour, time-weighted averages.
* 8-hour, time-weighted averages (8-hr TWAs) based on maximum exposure potential of 6.5 hours per shift due to breaks, setup, and tool call.

Note: Lab results were all below the limit of detection. Consequently, calculated 8-hr TWAs are preceded by a 'less than' sign.

Air monitoring was also conducted at a box of monitors where a potential exposure was manufactured to simulate occasional breakages that occur during the separation of glass tubes from the monitor housing and wiring. Workers were not present during this monitoring. Six tubes were broken and three air sampling pumps were placed on the edges of the box to evaluate the extent of release from the breakage.

Air monitoring results from the gaylord box of deliberately broken monitors were below OSHA limits if the area samples were considered to represent workers (8-hour, time-weighted average is based on a maximum exposure time of six hours). No respiratory protection is required for workers involved in operations with occasional monitor breakage.

Wipe Sampling

Wipe samples were collected from various surfaces, including the hands of UNICOR workers, to get relative levels of barium, beryllium, cadmium, and lead. There are no standards or regulatory levels for these metals on surfaces. The highest levels for barium, beryllium, and lead were found on the table tops in the production areas. However, the highest cadmium level

was from a sample collected from the top of an unbroken monitor (screen side up) at the top of a palletized stack of monitors stored in the Production 2 area.

Wipe samples from workers' hands were often below the limit of detection with some showing low levels of barium and lead. The only hand sample with cadmium was in production area 3. Though hand samples were among the lowest levels sampled, surfaces with higher levels of metals could pose a cross-contamination exposure potential to workers through ingestion. This potential route of exposure is not regulated.

Two samples [redacted], were collected in the food service/dining area which is in an open corner of the UNICOR factory. One was at a dining table that is used and cleaned every day and had low, but detected, levels of barium and cadmium. The other was from a smooth, slanted top of a cabinet along the wall that had low, but detected, levels of barium , cadmium, and lead.

Recommendations

Factory/Warehouse Operations

Based on the sampling results, it is recommended that personal hygiene, specifically hand washing, be emphasized and maintained. In addition, the prevention of dust accumulation should be met by means of the following:

- Prevent the buildup of dust and associated levels of metals on tabletops by using disposable surfaces (cardboard, butcher paper, etc.)

- Wet wipe and/or vacuum (with a HEPA filtered vacuum cleaner) surfaces throughout the factory and warehouse to prevent the accumulation of metal-bearing dusts.

- Use disposable latex or nitrile gloves under regular work gloves to prevent cross-contamination of metal laden surfaces (including reused work gloves) and workers' skin.

Food Service/Dining Area

29 CFR 1910.141(g)(2) states, "Eating and drinking areas. No employee shall be allowed to consume food or beverages in a toilet room nor in any area exposed to a toxic material." Based on the low levels of metals (toxic material) in the food service/dining area, it is recommended that the food service/dining area be isolated from the factory operations. Besides physically separating the food service/dining area from

the factory with doors, walls and ceiling surfaces, isolation from factory air/ventilation would also be required to prevent deposition of metals on surfaces in the food service/dining area.

Additional Observation

While conducting sampling, I observed, and numerous workers reported, the improper use of tools and techniques due to the lack of appropriate tools to more safely dismantle monitors. Specifically, security screws in some monitors had to be broken out because no tip was available (these screws and tips are not the type used in the institution). Another type of monitor had deep set screws and the screw drivers could not reach them. Forced breaking of monitor housings when an easier dismantling is an option increases the potential for injuries and the use of additional personal protective equipment. It is recommended that the appropriate tools be provided and used correctly to minimize hazards from dismantling monitors.

If you have any questions or concerns regarding these matters, please contact Steve Tussey, National Safety Administrator at 202-353-8192, or Mr. Korbelak at 202-353-9321.

cc: J. E. Gunja, Regional Director, Western Region
D. Clements, Regional Safety Administrator, Western Region

Attachment

Air Sampling Data Table

Sample #	Location	Lab Result
092804-01A	UNICOR Outside Warehouse. On inmate [redacted] Rebuilding CPU's.	Ba <0.002 mg/M3 Be <0.0001 mg/M3 Cd <0.0011 mg/M3 Pb <0.002 mg/M3
092804-02A	UNICOR Outside Warehouse. On inmate [redacted] Sorting CPU's, etc.	Ba <0.002 mg/M3 Be <0.0001 mg/M3 Cd <0.0011 mg/M3 Pb <0.002 mg/M3
092804-03A	UNICOR Outside Warehouse. On inmate [redacted] Sorter, palletizes product.	Ba <0.003 mg/M3 Be <0.0001 mg/M3 Cd <0.0013 mg/M3 Pb <0.003 mg/M3
092804-04A	UNICOR Outside Warehouse. On inmate [redacted] Testing monitors.	Ba <0.002 mg/M3 Be <0.0001 mg/M3 Cd <0.0011 mg/M3 Pb <0.002 mg/M3
092804-05A	UNICOR Outside Warehouse. On inmate [redacted] Rebuilding and testing laptops.	Ba <0.002 mg/M3 Be <0.0001 mg/M3 Cd <0.0011 mg/M3 Pb <0.002 mg/M3

092804-06A	UNICOR Outside Warehouse. On inmate [redacted]. Sorter, palletizes product.	Ba <0.002 mg/M3 Be <0.0001 mg/M3 Cd <0.0011 mg/M3 Pb <0.002 mg/M3
092904-01A	UNICOR factory. On inmate [redacted]. Food service area worker.	Ba <0.003 mg/M3 Be <0.0002 mg/M3 Cd <0.0015 mg/M3 Pb <0.003 mg/M3
092904-02A	UNICOR factory. On inmate [redacted]. Testing monitors.	Ba <0.003 mg/M3 Be <0.0001 mg/M3 Cd <0.0014 mg/M3 Pb <0.003 mg/M3
092904-03A	UNICOR factory. On inmate [redacted]. Material handling - pallets, truck loading.	Ba <0.003 mg/M3 Be <0.0002 mg/M3 Cd <0.0016 mg/M3 Pb <0.003 mg/M3
092905-04A	UNICOR factory. On inmate [redacted]. Material handling - pallets, truck loading.	Pump fault - VOID sample
092904-05A	UNICOR factory. On inmate [redacted]. Monitor tear-down.	Ba <0.003 mg/M3 Be <0.0001 mg/M3 Cd <0.0015 mg/M3 Pb <0.003 mg/M3

092904-06A	UNICOR factory. On inmate [redacted] Monitor tear-down.	Ba <0.003 mg/M3 Be <0.0001 mg/M3 Cd <0.0014 mg/M3 Pb <0.003 mg/M3
093004-01A	Gaylord box of monitors outside of UNICOR warehouse. South side of box at the rim.	Ba <0.003 mg/M3 Be <0.0001 mg/M3 Cd <0.0015 mg/M3 Pb <0.003 mg/M3
093004-02A	UNICOR outside warehouse. On inmate [redacted] Handling/loading monitors and styrofoam trays.	Ba <0.004 mg/M3 Be <0.0002 mg/M3 Cd <0.0021 mg/M3 Pb <0.004 mg/M3
093004-03A	UNICOR outside warehouse. On inmate [redacted] Handling/loading monitors and styrofoam trays.	Ba <0.005 mg/M3 Be <0.0002 mg/M3 Cd <0.0025 mg/M3 Pb <0.005 mg/M3
093004-04A	Gaylord box of monitors outside of UNICOR warehouse. East side of box at the rim.	Ba <0.006 mg/M3 Be <0.0003 mg/M3 Cd <0.0028 mg/M3 Pb <0.006 mg/M3
093004-05A	Gaylord box of monitors outside of UNICOR warehouse. West side of box at the rim.	Ba <0.005 mg/M3 Be <0.0003 mg/M3 Cd <0.0027 mg/M3 Pb <0.005 mg/M3

Ba = Barium

Be = Beryllium
Cd = Cadmium
Pb = Lead
mg/M3 = milligrams per cubic meter of air

Wipe Sampling Data Table

Sample #	Location	Amount of metals on wipe
092804-01W	UNICOR Outside Warehouse. CPU tear-down table. Blue plastic top	Ba 122 ug Be <0.25 ug Cd 29.9 ug Pb 59.2 ug
092804-02W	UNICOR Outside Warehouse. Inside wall of "dirty plastic" baler. Smooth steel.	Ba 15.4 ug Be <0.25 ug Cd 2.60 ug Pb 13.8 ug
092804-03W	UNICOR Outside Warehouse. Inside surface of gaylord box outside of warehouse full of electron guns. Not sealed - no cover.	Ba 394 ug Be <0.25 ug Cd 3.98 ug Pb 18.6 ug
092804-04W	UNICOR Outside Warehouse. Re-used styrofoam monitor trays - empty.	Ba 13.5 ug Be <0.25 ug Cd 2.37 ug Pb 31.0 ug
092804-05W	UNICOR Outside Warehouse. Old televisions on a pallet.	Ba 38.2 ug Be 0.299 ug Cd 2.58 ug Pb 40.4 ug
092804-06W	UNICOR Outside Warehouse. Sorting table stacked with hard drives.	Ba 48.1 ug Be <0.25 ug Cd 7.01 ug Pb 73.9 ug
092804-07W	UNICOR Outside Warehouse. Hard drive testing table.	Ba 41.5 ug Be <0.25 ug Cd 4.11 ug Pb 88.8 ug
092804-08W	UNICOR Outside Warehouse. Hands of inmate [redacted] Sorter, palletizes product.	Ba 6.2 ug Be <0.25 ug Cd <1.0 ug Pb 5.07 ug
092804-09W	UNICOR Outside Warehouse. Hands of inmate [redacted] Sorting CPU's, etc.	Ba 6.33 ug Be <0.25 ug Cd <1.0 ug Pb 14.3 ug
092804-10W	UNICOR Outside Warehouse. Hands of inmate [redacted] Rebuilding and testing laptops.	Ba 3.77 ug Be <0.25 ug Cd <1.0 ug Pb 7.00 ug
092804-11W	UNICOR Outside Warehouse. Hands of inmate [redacted] Sorter, palletizes product.	Ba 6.76 ug Be <0.25 ug Cd <1.0 ug Pb 11.5 ug

092904-01W	UNICOR Factory. Production Area 3. Table top.	Ba 397 ug Be <0.25 ug Cd 7.27 ug Pb 3760 ug
092904-02W	UNICOR Factory. Production Area 3. Table top.	Ba 1320 ug Be 0.768 ug Cd 3.29 ug Pb 2200 ug
092904-03W	UNICOR Factory. Production Area 1. Table top.	Ba 388 ug Be 0.545 ug Cd 15.1 ug Pb 3440 ug
092905-04W	UNICOR Factory. Food Service area. Top of 4 seat dining table.	Ba 2.17 ug Be <0.25 ug Cd 1.09 ug Pb <4.0 ug
092904-05W	UNICOR Factory. Food Service area. Slanted top of a cabinet on the wall.	Ba 4.71 ug Be <0.25 ug Cd 1.05 ug Pb 11.8 ug
092904-06W	UNICOR Factory. Production Area 2. Top of a stack of monitors.	Ba 89.7 ug Be <0.25 ug Cd 38.1 ug Pb 305 ug
092904-07W	UNICOR Factory. Red pallet jack, #4 in the triage area.	Ba 180 ug Be <0.25 ug Cd 6.11 ug Pb 295 ug
092904-08W	UNICOR Factory. Sides and surfaces of a gaylord box and monitor tubes within. In the triage area.	Ba 58.4 ug Be <0.25 ug Cd 13.3 ug Pb 148 ug
092904-09W	UNICOR Factory. Pallet of finished product - tested monitors in the triage area.	Ba <2.00 ug Be <0.25 ug Cd <1.00 ug Pb 6.89 ug
092904-10W	UNICOR Factory. Hands of inmate [redacted]. Production area 3, working on cable boxes.	Ba <2.00 ug Be <0.25 ug Cd 2.17 ug Pb 5.93 ug
092904-11W	UNICOR Factory. Hands of inmate [redacted]. Triage area, material handling.	Ba <2.00 ug Be <0.25 ug Cd <1.0 ug Pb 6.13 ug
092904-12W	UNICOR Factory. Hands of inmate [redacted]. Production area 1, monitor tear-down.	Ba <2.00 ug Be <0.25 ug Cd <1.00 ug Pb <4.00 ug

092904-13W	UNICOR Factory. Hands of inmate [redacted]. Worker in the food service area.	Ba <2.00 ug Be <0.25 ug Cd <1.00 ug Pb <4.00 ug
093004-01W	UNICOR outside warehouse. Inside wall of a gaylord box of broken panel glass. In storage yard/area near building.	Ba 11.8 ug Be <0.25 ug Cd 10.9 ug Pb 52.3 ug
093004-02W	UNICOR outside warehouse. Inside wall of a gaylord box of broken funnel glass. In storage yard/area near building.	Ba 10.0 ug Be <0.25 ug Cd 19.5 ug Pb 38.1 ug
093004-03W	UNICOR outside warehouse. Hands of inmate [redacted]. Handling/loading monitors and styrofoam trays.	Ba <2.00 ug Be <0.25 ug Cd <1.00 ug Pb <4.00 ug
093004-04W	UNICOR outside warehouse. Hands of inmate [redacted]. Handling/loading monitors and styrofoam trays.	Ba 3.44 ug Be <0.25 ug Cd <1.00 ug Pb 10.5 ug

Ba = Barium
Be = Beryllium
Cd = Cadmium
Pb = Lead
ug = micrograms (1000 micrograms = 1 milligram)

Sample concentrations are per square foot except for hand wipe samples.

Exhibit K

August 4, 2004

MEMORANDUM FOR TO WHOM IT MAY CONCERN

FROM: L. A. Smith, Safety Manager

SUBJECT: Meeting with Mr. Gonzalez, Ms. Aragon, Cynthia Keidel, Varney Smith

On August 4, 2004, approximately 9:00 a.m., I received a call from Mr. Gonzalez, Executive Assistant, which he requested that I meet him in his office in fifteen minutes to hold our meeting pertaining to UNICOR.

I asked Mr. Gonzalez, why is the meeting being moved up so soon?

Mr. Gonzalez replied, that Ms. Aragon wouldn't be available Thursday and neither would he.

I informed Mr. Gonzalez, that I would meet him at his office shortly.

Mr. Rodriguez and I walked upon Mr. Gonzalez in the corridor outside the Warden Office.

Mr. Gonzalez asked, why is Mr. Rodriguez here?

I informed Mr. Gonzalez, that Mr. Rodriguez has always participated in all UNICOR meetings and has been instrumental in the implementation of all environmental control measures affecting the UNICOR Glass Breaking Operation.

Mr. Gonzalez then stated, I don't want him (Mr. Rodriguez) to participate in this meeting, I only want you here.

I then asked Mr. Gonzalez, is there a particular reason why Mr. Rodriguez can't be part of this meeting?

Mr. Gonzalez then stated, because I don't need him at this meeting, I only requested for you!

I then informed Mr. Gonzalez, that I mentioned Mr. Rodriguez attending this meeting on my return e-mail to him, which he opened and didn't express any concerns of Mr. Rodriguez attending this meeting over the phone earlier.

Mr. Gonzalez then stated, I don't have to explain myself! Mr. Gonzalez and I then proceeded to enter his office, when he asked me to set down. Ms. Aragon was already in Mr. Gonzalez office at the time we arrived.

Mr. Gonzalez then began to dial a phone number on his office phone.

I asked Mr. Gonzalez, who are you calling?

Mr. Gonzalez replied, I am calling UNICOR in the Central Office.

I then asked Mr. Gonzalez, I thought this meeting was suppose to between yourself, Ms. Aragon, and I?

Mr. Gonzalez then stated, don't worry about it Leroy!

I then informed Mr. Gonzalez, that Warden Schultz informed me yesterday that this meeting would be held between us only and we were to keep this in-house and that Central Office was not to be involved.

Mr. Gonzalez then stated, don't worry about it Leroy!, I have spoken with Warden Schultz and he approved this meeting with the Cental Office. Mr. Gonzalez then stated, you need to set down and keep quite!

Ms. Keidel, Cynthia, Environmental Program Manager Central Office, answered the phone and Mr. Gonzalez introduced everyone in his office. Ms. Keidel appeared to be on the phone by herself.

Mr. Gonzalez asked Ms. Keidel, if there were any concerns about the recent memorandum they received by Leroy Smith?

Ms. Keidel replied, Yes. Ms. Keidel stated, I would like to make clear that the last time Mr. Smith and I spoke during my visit to USP Atwater, I informed him that he was to notify me first about any safety or health concerns pertaining to UNICOR's Recycling Program. Ms. Keidel then asked, isn't that right Leroy?

Mr. Gonzalez then asked, is that true Leroy?

I informed Ms. Keidel and Mr. Gonzalez, that we never talked about that, but we did talk about the work already done at USP Atwater and work needing to still be done to ensure the safety and health of staff and inmate workers.

I then asked Ms. Aragon, do you remember Ms. Keidel asking me to inform her of any UNICOR safety concerns? I then informed everyone, the reason why I am asking Ms. Aragon this question is because I never spoke with Ms. Keidel without Ms. Aragon present.

Ms. Aragon replied, I can't recall because it's been awhile.

Ms. Keidel then stated, I have read Mr. Smith memorandum and I can't believe what I have read, matter of fact this memorandum disturbs me! Ms. Keidel then stated, and the second memorandum I received clearly makes things more confusing then the first!

Ms. Keidel then stated, I have also provided a copy of this memorandum to Mr. Lee, John, Central Office Safety. Ms. Keidel then asks, have you all seen Mr. Lee's memorandum in response to Mr. Smith allegations? Ms. Keidel then begins to read Mr. Lee's memorandum response over the phone. After reading Mr. Lee's memorandum, Ms. Keidel states, Mr. Lee totally disagrees with Mr. Smith's findings.

I inform Ms. Keidel, that part of Mr. Lee's response totally agrees with my fact finding and corrective action measures. I then informed Ms. Keidel, that Mr. Lee's response is comparing apples to oranges, which he is clearly off the mark in what he has responded too. I also informed Ms. Keidel, that I never mentioned in my memorandum that we were exceeding the OSHA Action Levels or Permissible Exposure Limits (PEL) for Lead or Cadmium, what I am addressing is the short or long term of low concentrations of lead or cadmium exposure to inmate workers.

Ms. Keidel then asks, correct me if I am wrong, but I believe that USP Atwater glass breaking operation meets all OSHA guidelines? Ms. Keidel then states, if we are not above the OSHA Action or PEL there is nothing we need to due Mr. Smith!

I informed Ms. Keidel, that I don't disagree that the glass breaking operation is meeting OSHA guidelines. I then informed Ms. Keidel, that we should take initial blood and urine test of each inmate to establish a base line, which will protect Federal Prison Industries and Bureau of Prisons.

Ms. Keidel then states, I don't agree with you Mr. Smith (Leroy).

I then informed Ms. Keidel, UNICOR Central Office and Safety Central Office has disagreed with me about the safety and environmental health concerns associated with the glass breaking operation for over three years, why would this be any different.

I also informed Ms. Keidel, that it appears that Mr. Lee and herself have interrupted my memorandum in correctly, because I address the CRT disassembling work stations and CRT separation points for low concentration of lead and cadmium exposure over a period of time. I also informed Ms. Keidel, that when the CRT's are broken the debris needs to be handled as a hazardous spill.

A second voice then speaks out. Then second voice states, the broken CRT's are not classified as hazardous waste, but universal waste.

I then ask, is that Mr. Lee?

Ms. Keidel replies, No., that's Varney Smith Leroy.

I then inform Ms. Keidel and Mr. Smith, Varney, that I never classified the CRT debris as hazardous waste, but I did identify the CRT debris as a hazardous waste spill for proper clean-up, which will meet the EPA guidelines.

Mr. Smith, Varney then states, you can sweep the CRT debris up and dispose of it with the rest of the CRT glass.

Ms. Keidel then states, your wrong Mr. Smith (Leroy), the EPA has clearly classified the CRT's as Universal Waste, not Hazardous Waste, as long as it's being processed in the factory.

I then informed Mr. Smith, Varney, that we must follow proper protocol set forth by UNICOR's own CRT Procedures and follow Mr. Lee's guidance using a wetting agent, HEPA Vacuum, and proper personal protection.

Ms. Keidel replies, that's correct! Ms. Keidel then asks Ms. Aragon, we are following our procedures on cleaning up broken CRT's?

Ms. Aragon replied, we haven't been, but I gave additional training t

I informed Ms. Keidel and Mr. Smith, Varney, Universal Waste classification is for shipping, handling, and disposal purposes, after the CRT's have been broken and packaged in the glass breaking operation. I then informed Ms. Keidel and Mr. Smith, Varney, when CRT's are being disassembled at the work station or separation points and the CRT's break on the table or on ground this is classified as a hazardous waste spill, cadmium gas, lead, barium, and beryllium are released into the air at low concentrations exposing inmate workers.

Mr. Smith, Varney then states, it's no different then you or I being exposed to fumes while pumping gas!

Ms. Keidel then states, I agree, it's like being exposed to second hand smoke!

I informed Ms. Keidel and Mr. Smith, Varney, that each one of your scenarios are different, but just as unsafe or unhealthy. I then informed Ms. Keidel and Mr. Smith, Varney, that low concentrations of gas fumes and second hand smoke has been proven to cause serious health concerns or death, which OSHA clearly identifies low concentrations to lead and cadmium may cause serious health concerns as well.

Ms. Keidel then asks Ms. Aragon, when I was at USP Atwater there were no CRT's reported to have been broken during my visit?

Ms. Aragon replies, No, there has been CRT's broken periodically throughout the factory.

Ms. Aragon then asked Ms. Keidel, let me get something straight, I can have any inmate in the factory cleanup the CRT debris as long as we follow UNICOR's procedures and it doesn't have to be an inmate from the glass breaking operation?

Ms. Keidel replies, that's correct, just make sure the inmate follows the proper procedures.

I then asked Ms. Keidel, that you are authorizing and allowing any inmate worker with out being medically cleared or receiving an initial blood or urine test to cleanup CRT debris, which contains lead, cadmium, barium, and beryllium?

Ms. Keidel and Mr. Smith, Varney replied, Yes!

I then ask Ms. Keidel, you don't think this will allow us to be venerable to inmate litigation.

Ms. Aragon then states, inmates volunteer to work in UNICOR, if feel unsafe they can also quite.

I then informed Ms. Keidel, Ms. Aragon, Mr. Smith, Varney, and Mr. Gonzalez, like some inmates that have brought up safety concerns in the past and have been removed from their jobs and placed on orderly duty or fired.

Ms. Aragon replied, I don't know anything about that.

I then asked Ms. Keidel and Mr. Smith, Varney, that it's acceptable to allow inmates to ingest, absorb, or inhale low concentrations of lead and cadmium over a short or long period of time when CRT's are broken at the work stations and separation points and we are not required to do anything as long as we don't exceed the OSHA Action Level or Permissible Exposure Limit, which this is acceptable practice by OSHA and UNICOR Bureau wide.

Ms. Keidel and Mr. Smith, Varney both replied, Yes, this is acceptable.

Mr. Smith, Varney then states, we have no reason to believe we have exceeded the OSHA Action Level or PEL without additional testing, which would cause us to take any further action.

I then informed Ms. Keidel and Mr. Smith, Varney, that I just wanted verification that inmate exposure to low concentration of lead and cadmium over a period of time is acceptable practice by UNICOR and you both answered that for me.

Ms. Keidel then stated, I think there has been a lot discussed during this meeting, which we will need to take under advisement. Ms. Keidel then stated, we will need to setup another meeting next week.

Mr. Gonzalez replies, let us know and we will be available.

Exhibit L

From: Matthew R. Korbelak
To: Novicky, Larry
Date: Wed, Aug 21, 2002 3:57 PM
Subject: Atwater Sampling Results

Today I reviewed the results from air samples collected on July 24, 2002 at USP Atwater in the glass breaking area of the UNICOR factory. The results indicate that workers are exposed above the permissible exposure limits (PEL) for lead and cadmium. OSHA regulations for both of these metals, 29 CFR 1910.1025 (lead) and 29 CFR 1910.1027 (cadmium), require that the following actions (not limited to) be implemented when exposures exceed the PEL:

- personal air monitoring every 3 months for lead and every 6 months for cadmium
- provision of hygiene facilities; showers, hand washing station, changing area.
- medical monitoring including periodic blood tests
- signs in regulated areas
- labeling of shipping and storage containers
- respiratory protection and other personal protective equipment (covered in your memorandum of August 13, 2002)
- training of workers

Please feel free to contact me to discuss any of these items in further detail.

CC: Leroy Smith; Stahley, Thomas; Tussey, Steve