DOE F 1325.8
(4/93)

United States Government

Department of Energy
Office of Inspector General

memorandum

DATE: June 15, 2001

REPLY TO
ATTN OF: IG-40

SUBJECT: Letter Report on Environment, Safety & Health Issues at the Ashtabula Environmental Management Project, INS-L-01-05

TO: Manager, Ohio Field Office

The purpose of this report is to make you aware of issues that came to our attention during recent Office of Inspector General (OIG) inspection activity at the Ashtabula Environmental Management Project (Ashtabula). Inspectors visited Ashtabula during the week of April 30, 2001, and we concluded that certain conditions at Ashtabula may require immediate management attention. During our visit, OIG Inspectors provided daily briefings to the Department's Ashtabula Site Manager to allow for immediate corrective actions as deemed necessary by the Site Manager. The Office of Inspector General is continuing its work at the Ashtabula site.

During our visit to Ashtabula, we physically inspected buildings and equipment owned by the Department and located on property owned by Earthline Technologies (Earthline). We also physically inspected Earthline-owned buildings, known as "Plant 2," where the Department leases storage space. Our inspection found conditions that indicated questionable contract implementation and administration by both Earthline and Department officials. As a result, there are serious concerns about worker safety and health, and conservation of Government equipment and resources.

Leaking Machinery

One concern arose during our physical inspection of the "Field Scale Compression Forming Unit," informally referred to on-site as the "brick machine." This machine stabilizes hazardous soil through combining soil and fly ash into compacted bricks. The brick machine is now stored at Plant 2. One Earthline employee described this area as "abandoned," and noted that the area is seldom entered. The brick machine consists of a truck-type frame that cost almost $56,000. Earthline upgrades brought the Department's total estimated cost for the brick machine to over $517,000.

During an OIG physical inspection of the brick machine, Inspectors found an oily substance had leaked from the machine and spread across the floor under the machine, yet no spill cleanup equipment was observed in the area. The OIG determined that at least one Earthline employee had reportedly observed the leak, yet took no action. We also observed a kerosene storage tank, described as a 500 gallon unit – partially full, and an expired fire extinguisher, in close proximity to the brick machine.

OIG Inspectors were told that the oily substance under the brick machine was hydraulic oil, and they were provided with a Material Safety Data Sheet in response to questions about the leaking fluid. According to the data sheet, new hydraulic oil is a non-regulated substance, but once used the hydraulic oil may be regulated under the Resource Conservation and Recovery Act (RCRA).

Based on our notification to management, a cleanup technician with spill control equipment was deployed. According to the cleanup technician, the brick machine was found to be leaking from multiple locations.

In addition to environmental compliance concerns, we are concerned that Government equipment of such value would not be inspected frequently enough to detect leaks. The fact that the machine is not being used and is degrading raises questions about its need and retention by the Department. We are also concerned that contractor employees had not reported this leak and that the Department may be liable to pay Earthline for cleanup of any leaks, releases, or spills onto Earthline property. Finally, we are concerned that fire protection in the area of the brick machine, given the proximity of the kerosene tank and the expired fire extinguisher, may not be sufficient to protect an asset of such value.

The OIG concluded that Ohio Field Office management should review this situation and determine whether immediate actions are necessary to protect the environment and the Government's investment in this equipment, and to limit the Department's liability with respect to the leased area.

Storeroom Safety

Another concern relates to an area leased by the Department from Earthline for storage of Government consumable supplies. The Earthline Operations Division manages the storeroom and consumable supplies for the Department.

We found that this area contains equipment as well as supplies. The equipment included two chart recorders, multiple boxes of radiation detectors labeled "out of service," two tanks marked "Sensitive" and "Methane/Argon Gas," and one computer printer marked "Sensitive." Other examples of equipment included soil washing machine pumps, a satellite teleconferencing system, and two heavy-duty lifting devices.

We also observed what appeared to be fire and electrical safety hazards in the storeroom, such as flammable and combustible liquids stored on the floor in front of a cabinet, large quantities of paper products, operational heaters (ignition sources), multiple corroded 480 volt electrical boxes (untagged to show status-possible ignition sources/safety hazards), corroded sprinkler heads, and pallets of flammable/combustible liquids against one wall. Also, the storeroom and various side rooms with doors opening off the interior of the storeroom contained large quantities of paper products which are fire fuel sources. Multiple drums of metallic shavings marked "Flammable" were in an area of the building adjacent to the storeroom, although not in DOE leased space. We asked an area worker about these drums and were told they contained "extremely flammable titanium

shavings" that are the property of Earthline. On May 2, 2001, we returned to the storeroom to perform a partial inventory of the storeroom's contents and to take photographs. A list of items found in the partial inventory is attached, as well as photographs. The inventory list and photographs 1 through 8 illustrate the potential fire and electrical hazards and also the quantities of equipment and supplies.

A senior official in Earthline's Office of Environment, Safety and Health advised us that the facility is under the jurisdiction of the U.S. Occupational Safety and Health Administration (OSHA), and therefore must comply with OSHA regulations. These regulations set forth specific storage and fire/electrical safety requirements. We are concerned that the storeroom conditions may not meet OSHA requirements. Additionally, storing equipment in an area outside of the property manager's responsibility is a control weakness with respect to the conservation and efficient utilization of Department equipment.

Wastewater Treatment Plant Contamination

Another concern relates to a Department wastewater treatment plant stored on Earthline Plant 2 property in an area leased by the Department (see photograph 9). This plant was transferred to Ashtabula from the Department's site in Grand Junction, Colorado, in January 1999. Our physical inspection revealed a light coating of yellow dust on the majority of the plant equipment. A September 30, 1998, report prepared by an Earthline (then RMI Decommissioning Project) contractor employee in preparation for acquiring the plant described the plant as "lightly contaminated with uranium and radium from mill tailings." Earthline documents show that the plant was delivered in January 1999, but was not surveyed by the Earthline health physics technicians until November 1999 at which time it was found to contain significant radioactive contamination. A contamination survey report indicated that contamination control restrictions were not placed on the area where the plant was stored until after the November 1999 survey.

Photograph 10 shows a close up of one of many "resin" columns associated with the wastewater treatment plant. We inspected the columns and found them to contain a buildup of yellow dust. Our attempts to determine the exact nature of this dust during our visit were unsuccessful. Following our site visit, Earthline surveyed the columns and found that radioactive contamination levels were within acceptable levels. However, this survey did not sample or analyze the yellow dust in the columns to determine whether it was toxic or hazardous. We were told that the November 1999 radiation survey, which resulted in the posting of the room as a controlled area, was conducted after a safety concern was raised. However, Plant 2 is not a Department of Energy facility, and we were informed that Earthline's Nuclear Regulatory Commission/Ohio Department of Health (NRC/ODH) license to conduct radioactive operations does not cover Department of Energy contamination at Plant 2. Therefore, we could not determine under what authority or procedures the room containing the wastewater treatment plant was designated as "controlled" or if those procedures were sufficient. In discussing this issue with the Department's Site Manager he indicated that, if the wastewater treatment plant is contaminated with radioactivity, then he would be concerned that storage of the plant on

Earthline property in Plant 2 could violate the NRC/ODH radioactive operations license which covers Department operations at the Earthline Extrusion Plant. This situation also raises concerns about employee exposure during the time from receipt in January 1999 until the area was posted in November 1999.

An additional concern with the wastewater plant relates to a tank which is labeled "Barium Chloride." Barium is regulated under RCRA. The tank in question appeared to contain some residues, but for safety reasons we did not closely inspect the tank (see photograph 11). We concluded that Ohio Field Office management may want to consider reviewing the storage of the wastewater treatment plant for safety, liability, and regulatory concerns and consider sampling and analyzing the material in the resin columns and Barium tank so as to properly characterize any hazards or contamination. Photographs of the wastewater treatment plant, resin columns, and Barium tank are attached to this report.

Leaking Evaporator Storage Tank

During our physical inspection of the Department's Soil Washing Plant located on Earthline property, we found thick black liquid draining from a flange in evaporator storage tank 12. A spill pan had been placed beneath the flange and had overflowed causing the liquid to run under and around tank 12. Although a technician had placed absorbent material around the tank, the leak was unattended and the black liquid had saturated the absorbent material in places and was entering a floor drain (see photographs 12 through 13).

Personnel in the Soil Washing Plant referred to the leaking liquid as "evaporator liquor." This liquid is a concentrated residue from soil washing operations, and is presumed to contain concentrated radionuclides that are washed from the site's soil during cleanup operations. We are concerned that this leak was unattended and was not being administratively controlled, such as through the use of ropes or postings. Although the area in question is inside a controlled area, soil washing plant personnel told us that they were not always present in the area. Therefore, we concluded that instituting precautionary administrative controls would be consistent with the Department's policy to limit occupational radiation exposures to a level as low as reasonably achievable. Further, in accordance with Department policies, such controls would assist with preventing the transfer of contamination from the area by employees and visitors.

We returned to inspect the cleanup of the leak the next day, May 2, 2001, and found the tank again unattended. The original leak had been cleaned up, but seepage from under the tank was continuing to puddle and run onto the floor and into the floor drain. In interviews with personnel responsible for the cleanup, we were told that the leak had been progressing for about two days. The personnel responsible told us that they had left the leak unattended and said that they did not feel it was important to complete the clean up. These personnel stated that they were unaware of site procedures for leak and spill reporting/cleanup or for radiation control. An employee responsible for the tanks could not produce any inspection procedures or documentation for ensuring the tanks did not

leak. Photographs of the leak and cleanup are attached to this report (see photographs 12 through 14).

We were informed that the Soil Washing Plant cost the Department approximately $4 million. A senior official in Earthline's Office of Environment, Safety and Health told us that Department equipment is being inspected for leaks, releases, and spills by the site's security officers, in addition to observations by other contractor employees. However, in reviewing security logs, we noted that officers do not note which specific equipment they have inspected, only that they have completed a security "round." Moreover, the security inspections did not rectify conditions in the storeroom, the leaking brick machine, or result in attention to the leak in evaporator storage tank 12.

Based on our observations, we are concerned that the "evaporator liquor" was reaching the floor drain. Site personnel advised that the floor drain system feeds into a holding tank and that pipes then run to a treatment facility before the material is discharged to the environment. This treatment system reportedly removes uranium contamination to a level approved by the State of Ohio before discharge at a permitted outfall. However, some site employees informed us there are some indicators that the pipes under the soil washing facility and other buildings at the Extrusion Plant may be cracked. The site employees contacted were unable to locate any evidence that the pipes from tank 12 or other underground wastewater pipes have been internally inspected to determine their integrity. In light of the fact that radioactive contaminated liquid is being routed through the pipes, and due to the Department's liability for cleaning up contamination at the Extrusion Plant Site, we believe that Ohio Field Office management may want to take appropriate action to address the regulatory and liability considerations of this situation.

Please advise this office within 30 days of any action taken or planned with respect to the information provided in the Letter Report. This inspection was conducted in accordance with the "Quality Standards for Inspections" issued by the President's Council on Integrity and Efficiency.

We appreciate the cooperation we have received from your staff during this inspection. Should you have any questions concerning this review, please contact me on (202) 586-4109, or David Sumner, Inspections Team Leader for the Eastern Region, on (865) 576-7839.

Sandra L. Schneider
Assistant Inspector General
for Inspections

Attachments

cc: Acting Assistant Secretary for Environment, Safety and Health
Acting Assistant Secretary for Environmental Management

Partial Inventory of DOE Storeroom at Ashtabula Environmental Management Project

In most, but not all, cases specific amounts of liquids and quantities of consumables were not recorded. However, amounts and conditions are generally reflected in the attached photographs of the area. The Inspector noted the following conditions and materials:

CONDITIONS

Corroded 480 volt electrical switch boxes (multiple boxes), untagged and unlocked
Corroded fire sprinkler heads

MATERIALS

Flammable/Combustible and Potentially Hazardous Products

2 gasoline cans, partially full and containing vapors (stored next to heater)
25 gallons (5 individual 5-gallon cans) of "Eco Guard" liquid marked "Flammable" (stored underneath an operating wall mounted heater)
Hose Lubricant – labeled "Class IIIB Combustible"
Mobil synthetic gear oil (SHC 629)
Transmission oil (HDW-90)
Used florescent light bulbs (multiple tubes)
Hydraulic oil
Deck stain
Brake fluid
Drive train oil
Spray paint
Black top tar
Roof sealer

Paper Products (Fire Fuel Sources)

Approximately 21 pallets of copy paper with approximately 40 boxes per pallet, some boxes marked "Legal" size and others marked "3-hole punch" size, and others letter size
Multiple cardboard boxes of protective coveralls stacked against an operating baseboard type wall heater
Paper towels
2-ply dinner napkins
Legal pads
Wax drinking cups
Bath tissue
File folders
Boxes marked "air filters"

Equipment

Multiple opened and unopened boxes marked "Eberline," "Berthold," and "Ludlum" containing multiple units of radiation detection equipment that were tagged "out of service," some dated 1994
2 "Clessele" chart recorders
1 computer printer marked "Sensitive"
2 compressed gas type tanks marked "Sensitive" and labeled "Methane/Argon Gas"
2 large crates containing a satellite teleconferencing system

1. The photograph to the left shows a view of the DOE storeroom at Ashtabula and pallets of copy paper, approximately 21, with each pallet holding approximately 40 boxes. Note the operating heater in the top right corner of the photograph. An inspection of the copy paper found it to be covered with grime, with many boxes being "3-hole" type and many boxes being "legal size."

2. The photograph to the left shows a view of the DOE storeroom as seen by one entering thorough the main door. In the center of the photo is a fire cabinet marked "Flammable Keep Fire Away." There is a heater above the cabinet and heater directly opposite cabinet in upper right of photo. In the floor, stored in the open and not inside a protective cabinet, are flammable/combustible containers which include black top tar, paint, deck stain, and roof sealer. There are additional items stored on top of cabinet. Finally, note that on the left side of the photo, is a stack of cardboard boxes containing paper products.

3. The photograph above shows a view the DOE storeroom. Shown are pallets holding hose lubricant, transmission and drive train oil, gasoline cans, hydraulic oil, and brake fluid. In the upper left, just in front of the gasoline can on the left, is a floor heater bearing a warning that it should not be near flammable materials.

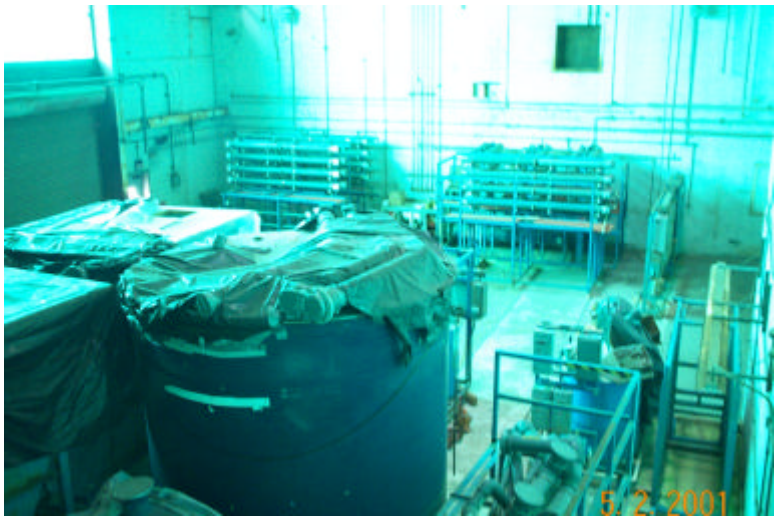
4. Photograph above shows combustible/flammable liquids stored in DOE storeroom in front of heater. Heater was "hard wired" into the wall. Note that heater bears a sign reading "Do Not Set Heater Near Flammables."

5. Photograph on left shows an expanded view of the previous photograph. Note heater, gasoline cans, and proximity to electrical cabinets behind the pallet. Behind the pallet is a door leading to another area of the storeroom where cardboard boxes of equipment is stored.

6. Photograph on left shows close-up of wiring of a ceiling heater that is positioned above the fire cabinet in the DOE storeroom. Note that the wire is not in conduit, the wire runs through the metal structure, and the wire appears to be kinked.

7. The photograph to the left shows conditions in a small closet type room that opens off the DOE storeroom. Multiple boxes of paper were present with papers in the floor. This material all contributes to the fire fuel load in the DOE storeroom. The Inspector was told by the Earthline property and records manager that these documents were the property of Earthline's parent company, RMI Titanium, of Niles, Ohio. The property and records manager did not believe that DOE was paying for the storage of these non-DOE records. However, when briefing the DOE site manager on the storeroom conditions he disagreed and he stated these records were being stored in space leased and paid for by DOE. A master drawing of DOE leased space in Earthline's Plant 2 appears to confirm the site manager's belief.

8. Photograph at left shows one example of several 480-volt electrical boxes located in the DOE storeroom. Note that the door on the box is partly open, and the box itself is corroded. There is no tag or lock present on the box to indicate whether or not it is electrically energized, or to indicate what device, if any, the box operates.



9. Photograph at left shows a wide view of the wastewater treatment plant obtained from Grand Junction, CO, in 1999. This wastewater plant is now stored on Earthline property in Plant 2.

10. Photograph at left shows a closeup of resin column of wastewater treatment plant with yellow dust substance caked within.

11. Photograph at left shows a closeup of wastewater treatment plant tank containing Barium residue.

12. Photograph at left shows leak of suspected radioactive liquid known as “liquor” from evaporator tank 12 in Department’s Soil Washing Plant at Ashtabula.

13. Photograph at left shows a different view of leak from tank 12 and illustrates proximity to floor drain.

14. Photograph at left shows closeup of seepage from underneath tank 12 following cleanup. Note seepage is entering floor drain.