

# Environmental Compliance and Ethics: A Case Study at a Facility of the US Army Corps of Engineers in Oregon

Jeffrey A. Hepler, Catherine M. Neumann, Annette M. Rossignol

In November 1994, the US Army Corps of Engineers (USACE) conducted an environmental audit of the North Pacific Division Laboratory in Troutdale, Oregon. The North Pacific Division Laboratory performed geotechnical and chemical testing of materials for government agencies for the period 1948–1997. The audit results revealed serious deficiencies in environmental management and compliance that posed threats to human health, safety, and the environment. Specifically, the North Pacific Division Laboratory had nine “Major Findings” and one “Significant Finding.” Major Findings require action, but not necessarily immediate action, whereas Significant Findings require immediate attention. Types of deficiencies at the facility included unlabeled and improperly stored hazardous waste in storage sheds, an improperly abandoned and contaminated water supply well, illegal discharge of chemical wastewater into a local drainage ditch, and a non-permitted landfill containing buried 55-gallon drums of unknown substances. Chemicals commonly used at the North Pacific Division Laboratory included petroleum products, heavy metals, organic solvents, and chemical reagents. Following unsuccessful attempts to communicate the North Pacific Division Laboratory’s noncompliance issues through normal USACE channels, one author (Jeffrey A. Hepler) exercised provisions afforded under the Whistleblower Protection Act and contacted the United States Environmental Protection Agency and the Oregon Department of Environmental Quality. This paper discusses the sequence of events that led to the eventual closure of the North Pacific Division Laboratory and provides recommendations for environmental professionals involved in environmental auditing and com-

pliance. These recommendations include examining the efficacy of existing environmental management plans, utilizing professional and independent auditors, changing audit frequencies from five to three years, and reporting audit results directly to senior management.

Environmental Practice 5:134–145 (2003)

In 1991, the US Army Corps of Engineers (USACE) introduced the new environmental audit tool, *Environmental Review Guide for Operations* or *ERGO* (US Army Corps of Engineers, 2000a). *ERGO* was developed at the USACE Construction Engineering Research Laboratory in Champaign, Illinois. This audit tool was intended to be a master checklist of environmental laws and regulations for field offices to use in conducting audits and correcting deficiencies. The USACE believed that problems in environmental compliance within the organization could be readily identified and corrected using *ERGO*. At about the same time that *ERGO* was coming into use, Congress passed the 1992 Federal Facility Compliance Act. This legislation provided the United States Environmental Protection Agency (USEPA) and state governments with the authority to levy fines and penalties against federal facilities under the Resource Conservation and Recovery Act. The USEPA and states also gained significant new federal facility enforcement authorities as a result of the 1996 Safe Drinking Water Act Reauthorization (US Environmental Protection Agency, 1999). The enforcement of federal and state environmental standards pertaining to air, water, solid waste, and toxic pollutants became more effective as individual states were delegated or authorized by USEPA to direct these programs. Under these regulatory conditions, implementation of *ERGO* became a high priority within the USACE at some facilities.

---

*Affiliation of authors:* Jeffrey A. Hepler, Department of Public Health, Oregon State University, Corvallis, Oregon; Catherine M. Neumann, Department of Public Health, Oregon State University, Corvallis, Oregon; Annette M. Rossignol, Department of Public Health, Oregon State University, Corvallis, Oregon

*Address correspondence to:* Catherine M. Neumann, Associate Professor, Department of Public Health, Oregon State University, Corvallis, OR 97331-6406; (e-mail) cathy.neumann@orst.edu.

© 2003 National Association of Environmental Professionals

Today, there continues to be a concern that federal facilities comply with environmental laws and regulations, in particular, agencies within the Department of Defense. In fiscal year 2000, the USEPA Federal Facilities Enforcement Office issued or finalized 46 enforcement actions against federal agencies and government contractors, and the Department of Defense was named in 20 of these actions (US Environmental Protection Agency, 2001b). Fortunately, there is evidence to suggest that environmental management and compliance at federal facilities can be enhanced through periodic environmental auditing. As a result, environmental auditing is strongly supported by Executive Order #13148, *Greening of the Government Through Leadership in Environmental Management* (Federal Register, 2000). Section 202 of this Executive Order deals specifically with environmental compliance, and states: "Each agency shall comply with environmental regulations by establishing and implementing environmental compliance audit programs and policies that emphasize pollution prevention as a means to both achieve and maintain environmental compliance" (Federal Register, 2000).

Many environmental audit tools are used in the federal sector. Some of the more dominant tools include: Code of Environmental Management Principles for Federal Agencies (US Environmental Protection Agency, 1996b), *Generic Protocol for Conducting Environmental Audits of Federal Facilities* (US Environmental Protection Agency, 1996a), Global Reporting Initiative (Global Reporting Initiative, 2000), International Organization for Standardization [ISO] 14001 Environmental Management System Audit (International Organization for Standardization, 1998), and *The Environmental Assessment and Management Guide (TEAM)* (US Army Corps of Engineers, 2001). *TEAM* was introduced late in 1994 by the USACE to succeed the *ERGO* audit tool for both USACE and Department of Defense facilities. Most of the above audit tools examine both "environmental management" and "environmental compliance." It has been one author's auditing experience (Hepler) that facilities lacking effective environmental management plans or systems are often deficient in environmental compliance as well. For clarification, an environmental management system can be defined as "... a systematic approach to dealing with the environmental aspects of an organization. It is a 'tool' that enables an organization of any size or type to control the impact of its activities, products or services on the natural environment" (International Organization for Standardization, 2002).

This article has two objectives. The first objective is to discuss how a 1994 *ERGO* environmental compliance audit at a USACE facility in Oregon effectively identified serious non-compliance issues, thereby contributing to the facility's even-

tual closure and referral to the USEPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list (US Environmental Protection Agency, 2001a). CERCLIS is the official repository for all Superfund data generated and compiled in support of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites currently being evaluated for inclusion in Superfund, as well as sites in various stages of remediation. The second objective is to provide broad recommendations for improving environmental performance through future environmental compliance audits at other USACE facilities.

## Background

The US Army Corps of Engineers, North Pacific Division, ran a materials testing laboratory (geotechnical and chemical testing) in Troutdale, Oregon, from 1948 until the facility was closed in 1997. The North Pacific Division Laboratory consisted of a single-level 65,000-square-foot warehouse located on 6.5 acres of land (Figure 1). Geotechnical testing consisted of analyzing rock and soil samples for basic physical properties in support of USACE's massive construction programs. Chemical testing ranged from radiation shielding research in the 1950s to paint and PCB testing in the 1960s and 1970s, and testing of contaminated soil and water samples from numerous Department of Defense sites (such as military bases going through closure). Samples were submitted to the North Pacific Laboratory from a wide geographical area, although most samples originated from the Pacific Northwest or Alaska. Samples arrived in a variety of containers and volumes ranging from one-ton shipments of soil to eight-ounce vials of toxic waste.



Figure 1. North Pacific Division Laboratory, Troutdale, Oregon.

The North Pacific Division Laboratory was managed on site by civilian leaders who reported to the Commander of the North Pacific Division (a Brigadier General in the US Army Corps of Engineers). Approximately 60 people worked at the facility at the time of the November 1994 audit. Most employees had undergraduate degrees in technical areas such as chemistry, geology, soil science, or engineering, and some had advanced graduate degrees. A small percentage of the employees at the North Pacific Division Laboratory were technicians who performed most of the physical labor at the facility, including moving large quantities of geotechnical materials, general maintenance, and remodeling. Student workers from a nearby community college often assisted these technicians.

In October 1990, based on disposals of large quantities of hazardous waste, USEPA began an investigation of the North Pacific Division Laboratory. USEPA had previously listed the North Pacific Division Laboratory on the Federal Hazardous Waste Compliance Docket. Such site evaluation activities help determine whether the facility should be included on the National Priorities List (NPL), and provide USEPA and the public with valuable information about the facility (US Environmental Protection Agency, 2002).

In response to the USEPA investigation, the USACE North Pacific Division Commander signed a June 24, 1991 Preliminary Assessment Report describing waste management practices at the North Pacific Division Laboratory. The Division Commander's letter and report to USEPA stated "... this Preliminary Assessment indicates there is no reason to believe there is hazardous and toxic waste contamination from past practice activities," and requested "that the North Pacific Division Materials Laboratory be removed from the Federal Hazardous Waste Compliance Docket" (US Army Corps of Engineers, 1991). Based on the Division Commander's 1991 letter and Preliminary Assessment Report, the USEPA terminated investigation of the North Pacific Division Laboratory on November 13, 1992. As subsequent disclosures revealed, however, the North Pacific Division had not disclosed the full extent of its problems to the USEPA. This decision ultimately contributed to greater regulatory oversight, as described below.

In 1992, the USACE began a nationwide effort to perform environmental audits at all of its facilities. As part of this program, on November 2, 1994, Woodward-Clyde and Associates, Inc., under contract with the USACE Portland District, conducted an *ERGO* environmental compliance audit (*ERGO* audit) at the North Pacific Division Laboratory in Troutdale, Oregon (US Army Corps of Engineers, 1995b). Within the USACE, several Districts are combined to form one Division.

An *ERGO* audit covers 13 separate environmental subjects, i.e., hazardous materials, petroleum, oil and lubricants, and wastewater management. Although the new *TEAM* audit procedures were released by the USACE the same year, *ERGO* audits were still being performed. One author (Jeffrey A. Hepler) was the USACE Portland District program manager for the *ERGO* audit. This responsibility included accompanying the contractor to most (but not all) sites, reviewing draft reports for accuracy, and ensuring that an independent, high quality final report was produced on time and within budget.

The *ERGO* audit conducted in November 1994 identified numerous deficiencies at the North Pacific Division Laboratory. These deficiencies were expressed in terms of "Significant or Major Findings." According to *ERGO* audit guidelines, "Significant Findings" are defined as follows: "A problem categorized as significant requires immediate attention. These deficiencies pose, or have a high likelihood to pose, a direct and immediate threat to human health, safety, the environment, or the mission." "Major Findings" are defined as: "A major deficiency requires action, but not necessarily immediate action. Major deficiencies may pose a threat to human health, safety, or the environment" (US Army Corps of Engineers, 2000a). The North Pacific Division Laboratory was found to have nine "Major Findings" and one "Significant Finding," as summarized in Table 1 (US Army Corps of Engineers, 1995b). In the opinion of one author (Hepler), four of the Major Findings could have been classified at the Significant Finding level, and, along with the single Significant Finding, merit additional discussion.

Under the category of Section 3, Hazardous Waste Management, the first of the most serious Major Findings was the condition of the North Pacific Division Laboratory's hazardous waste storage shed (Figure 2). This shed contained unlabeled and improperly stored hazardous waste. An overflow pipe exited the building and led to a ditch that drained into

**Table 1.** Significant and Major Findings at the US Army Corps of Engineers North Pacific Division Laboratory in Troutdale, Oregon (US Army Corps of Engineers, 1995b)

Compliance category	Findings
Cultural and historic resources management	1 major
Hazardous waste management	3 major
Natural resources management	1 major
Petroleum, oil, and lubricants management	2 major
Solid waste management	1 major
Water quality management	1 major
Wastewater management	1 significant



**Figure 2.** Hazardous Waste Disposal Building that previously contained unlabeled and improperly stored hazardous waste, North Pacific Division Laboratory, Troutdale, Oregon.



**Figure 3.** Oil Storage Building that previously contained unlabeled, leaking hazardous waste containers, North Pacific Division Laboratory, Troutdale, Oregon.



**Figure 4.** Partially buried 55-gallon drums, miscellaneous unknown containers, concrete products, paint waste, and additional unsorted solid waste found at the non-permitted landfill, North Pacific Division Laboratory, Troutdale, Oregon.

adjacent wetlands. The second Major Finding of concern, also under Section 3, Hazardous Waste Management, was the presence of unlabeled, improperly stored, and leaking hazardous waste in the North Pacific Division Laboratory's oil storage shed adjacent to the hazardous waste storage shed (Figure 3). The third Major Finding of concern, found under Section 12, Water Quality Management, was an improperly abandoned and contaminated water supply well adjacent to the laboratory. The fourth Major Finding of concern, under Section 9, Solid Waste Management, involved a non-permitted solid

waste landfill adjacent to local wetlands. Numerous buried 55-gallon drums with unknown contents, among other solid waste, were observed to be protruding from the surface (Figure 4).

A water/wastewater specialist on the environmental audit team identified a Significant Finding, under Section 13, Wastewater Management. Many of the North Pacific Division Laboratory's floor and sink drains had been plumbed into a subsurface sump, including drains located in the Chemistry



**Figure 5.** Local drainage ditch that received chemical laboratory wastewater from North Pacific Division Laboratory, Troutdale, Oregon.

Department of the Laboratory. From this sump, or via direct discharge, wastewater was pumped or flowed into the same adjacent ditch that, as previously mentioned, drained into the local wetlands (Figure 5). The *ERGO* auditor noted in his Finding that wastewater in this ditch potentially was believed to be a threat to local groundwater and/or local wetlands. The discharge of chemical wastewater from the facility into this ditch was a clear violation of the Clean Water Act and warranted immediate attention.

Woodward-Clyde and Associates provided completed copies of the *ERGO* audit report to the audit program manager (Hepler) in January 1995. Copies were then transmitted from the USACE Portland District to the North Pacific Division Laboratory by letter in March 1995 (following Portland District review). As part of the *ERGO* audit process, the North Pacific Division Laboratory was asked to prepare a Corrective Action Plan that addressed all of the Findings described in the audit report. Although the North Pacific Division Laboratory took minor actions to correct deficiencies, as of September 1995 little progress had been made to correct the Major and Significant Findings. This was confirmed by Hepler during a site visit to the laboratory on September 27, 1995. Under pressure from Portland District (to meet new performance indicators), North Pacific Division Laboratory provided a Corrective Action Plan to Portland District on September 28, 1995.

In November 1995, an anonymous report was received by one author (Hepler) concerning a “waste disposal well” located at the North Pacific Division Laboratory. The caller indicated that the well was used to dispose of caustic or viscous chemicals that would otherwise damage or impair flow through the Laboratory’s sink drains. At the time of the November 2, 1994, *ERGO* audit, the suspect waste disposal well was covered by high grass and not disclosed by North Pacific Division Laboratory management to the audit team. A follow-up inspection performed by Hepler confirmed the existence of the waste disposal well on the property (Figure 6). At the time of the follow-up inspection, the grass was carefully trimmed around the well. There was a dark, unknown material on the surface of the gravel inside the waste disposal well and a slight odor that could be detected up to about three feet above the well opening. Vegetation appeared distressed in patchy areas around the immediate perimeter. These observations suggested that the waste disposal well currently was in use.

Through documents obtained from the US Army Corps of Engineers (2000b), it was later discovered that the North Pacific Division Laboratory had prior knowledge of the waste disposal well and, using North Pacific Division Laboratory chemists, had obtained soil samples for analysis on January 25, 1995. The existence of the waste disposal well was later disclosed by North Pacific Division Laboratory management to a USACE Portland District environmental engineer on



**Figure 6.** Hazardous waste disposal well, North Pacific Division Laboratory, Troutdale, Oregon.

October 31, 1995. Due to the North Pacific Division Laboratory's failure to disclose the waste disposal well to USACE auditors, the January 1995 *ERGO* audit report makes no mention of the well. On May 7, 1996, 16 months after the waste disposal well was sampled by the chemist, the USACE Portland District requested and received a copy of the sampling data.

Records suggest that the Oregon Department of Environmental Quality and the USEPA were not informed of the waste disposal well until January 20, 1998, when the USACE Portland District transmitted its *Environmental Baseline Survey* report to both agencies. The delay in informing the USEPA is important, because the USEPA previously required the North Pacific Division Laboratory to report the discovery of any "new" information pertaining to inappropriate waste management practices (as required by CERCLA and requested by the USEPA letter to the USACE North Pacific Division dated November 13, 1992).

### **Failure to Act by North Pacific Division Laboratory and Initiation of Regulation Action**

Despite the Major and Significant Findings, the North Pacific Division Laboratory failed to take substantial actions during the year following the 1994 *ERGO* audit. Appropriate coordination and disclosure to the USEPA and Oregon Department of Environmental Quality had not been performed, the landfill remained uninvestigated, the water supply well remained contaminated, and minimal effort had been expended to perform site characterization of the soil and groundwater associated with the drainage ditch. In addition,

water from the Chemistry section sinks still flowed into the ditch (albeit with an internal policy not to add pollution), and geotechnical operations still washed contaminated water into the ditch as well.

It is unclear why North Pacific Division Laboratory management did not act on the above issues, but documentation suggests they were concerned. In the North Pacific Division Laboratory's Fiscal Year 1996-First Quarter Briefing, dated November 28, 1995, they reported a "Significant Issue and Concern" regarding "Hazardous Materials and Waste Disposal." Specifically, the report states (1) "Insufficient staff to address this on a full-time basis," (2) "One employee [junior level technician] spends 10% of time on this area," and (3) "Too much backlog to clear up with part-time attention" (US Army Corps of Engineers, 1995e). This briefing document was provided to senior USACE North Pacific Division managers with oversight responsibility. Despite the serious warning implicit in the briefing document, the North Pacific Division Laboratory deferred action on key environmental compliance issues.

To stimulate appropriate corrective action, repeated verbal and written attempts were made by one author (Hepler) to inform senior management of the severity of the North Pacific Division Laboratory's Major and Significant Findings. A chronology of key events pertinent to this case is provided in Table 2. On October 24, 1995, Hepler submitted a draft memorandum through his chain of command to the Assistant Chief, Operations Division (in Portland District). The draft memorandum strongly advised the USACE North Pacific Division to report the site to state and federal authorities, cease discharging sink and drain effluent into the local ditch, properly close the contaminated well (an abandoned water supply well, not the waste disposal well), and begin remedial investigations (US Army Corps of Engineers, 1995a). The memorandum was returned without action. On November 6, 1995, a second draft memorandum was forwarded to the Assistant Chief, Operations Division reiterating the importance of reporting and taking corrective actions at the North Pacific Division Laboratory (US Army Corps of Engineers, 1995c). Once again, the memorandum was returned without action. On December 12, 1995, a "Memorandum for Record," citing each of the previous unsuccessful attempts to initiate corrective actions, proper reporting, and compliance with the Clean Water Act at the North Pacific Division Laboratory, was prepared by Hepler and submitted to the Assistant Chief, Operations Division (US Army Corps of Engineers, 1995d).

On June 4, 1996, a final memorandum titled "Requirement to Notify State and Federal Regulatory Authorities of Suspect

**Table 2.** Chronology of key events at the US Army Corps of Engineers (USACE) North Pacific Division Laboratory in Troutdale, Oregon

Date	Event
October 5, 1990	United States Environmental Protection Agency (USEPA) requests USACE North Pacific Division to prepare a Preliminary Assessment Report for North Pacific Division Laboratory.
June 24, 1991	USACE North Pacific Division transmits report, signed by the Division Commander, to USEPA, citing no reason for environmental concerns at North Pacific Division Laboratory.
November 13, 1992	Based on North Pacific Division Laboratory Preliminary Assessment Report, the USEPA provides response “Letter of No Further Action.”
November 2, 1994	USACE Portland District, using Woodward-Clyde and Associates, Inc., performs <i>Environmental Review Guide for Operations (ERGO)</i> field audit at the North Pacific Division Laboratory, Troutdale, Oregon.
January 25, 1995	North Pacific Division Laboratory chemist obtains soil samples from hazardous waste disposal well for analysis.
January 1995	<i>Environmental Review Guide for Operations</i> audit report is completed and furnished to the USACE Portland District by Woodward-Clyde and Associates, Inc.
March 1995	<i>ERGO</i> audit report is transmitted by letter from USACE Portland District to North Pacific Division Laboratory.
September 27, 1995	One author (Hepler) visits North Pacific Division Laboratory and determines that minimal progress has been made to correct deficiencies identified in November 2, 1994 audit/January 1995 audit report.
September 28, 1995	North Pacific Division Laboratory submits a Corrective Action Plan to Portland District (to meet new performance indicators).
October 24, 1995	One author (Hepler) sends a draft memorandum to Assistant Chief, Operations, Portland District, regarding “Uncorrected Findings” at North Pacific Division Laboratory.
October 31, 1995	North Pacific Division Laboratory management discloses to a Portland District environmental engineer that the property has a hazardous waste disposal well.
November 6, 1995	One author (Hepler) sends a second draft memorandum to Assistant Chief, Operations, Portland District, regarding “Uncorrected Findings” at North Pacific Division Laboratory.
November 1995	One author (Hepler) receives an anonymous report that the North Pacific Division Laboratory has a hazardous waste disposal well on the premises and did not disclose it during the audit—the report is verified by the author.
November 28, 1995	First Quarter Briefing by North Pacific Division Laboratory to Management: “Significant Issue and Concern” related to “Hazardous Materials and Waste Disposal.”
December 12, 1995	One author (Hepler) prepares <i>Memorandum for Record</i> , with copy furnished to Assistant Chief, Operations, Portland District, regarding “Uncorrected Findings” at North Pacific Division Laboratory.
May 7, 1996	Portland District engineer receives waste disposal well data previously sampled by North Pacific Division Laboratory chemist.
June 4, 1996	One author (Hepler) prepares and transmits <i>Requirement to Notify State and Federal Regulatory Authorities of Suspect Hazardous Waste Sites</i> memorandum to Assistant Chief, Operations, Portland District, regarding “Uncorrected Findings” at North Pacific Division Laboratory and other significant disposal sites.
August 21, 1996	After a site inspection, the Oregon Department of Environmental Quality adds North Pacific Division Laboratory to environmental cleanup site information database.
August 1996	USACE North Pacific Division transfers North Pacific Division Laboratory to USACE Portland District.
December 11, 1996	Oregon Department of Environmental Quality conducts water quality inspection at North Pacific Division Laboratory.
December 13, 1996	Oregon Department of Environmental Quality conducts hazardous waste inspection at North Pacific Division Laboratory.
December 19, 1996	Oregon Department of Environmental Quality conducts follow-up hazardous waste inspection at North Pacific Division Laboratory.
December 20, 1996	Oregon Department of Environmental Quality issues a Class I Notice of Noncompliance to the North Pacific Division Laboratory, for violating Oregon’s hazardous waste regulations (as a result of the December 13 and 19, 1996 inspections).
March 19, 1997	One author (Hepler) meets with Portland District Commander to raise environmental compliance concerns.
March 21, 1997	One author (Hepler) is given written memorandum prohibiting future communication regarding environmental issues outside of immediate chain of command.
September 12, 1997	North Pacific Division Laboratory estimated by USACE Portland District to be \$1.7 million in debt.
October 1997	North Pacific Division Laboratory is closed by USACE Portland District.

Table 2. Continued

Date	Event
January 20, 1998	USACE Portland District transmits <i>Environmental Baseline Survey</i> report to Oregon Department of Environmental Quality and USEPA.
May 1998	USACE Portland District, using Tetra Tech, Inc., performs groundwater survey at North Pacific Division Laboratory, installing six monitoring wells in the process.
June 1999	USACE Portland District, using Tetra Tech, Inc., removes and disposes of 30 cubic yards of soil from the drainage ditch and 25 cubic yards of soil from the waste disposal well (dry well).
July 29, 1999	Oregon Department of Environmental Quality adds North Pacific Division Laboratory into Independent Cleanup Program.
August 25, 1999	USACE Portland District signs a Letter Agreement with the Oregon Department of Environmental Quality, agreeing to participate in the Voluntary Cleanup Program using Oregon Department of Environmental Quality oversight.
February 9, 2000	USEPA issues Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 104(e) Notice to USACE Portland District for records pertaining to North Pacific Division Laboratory.
March 15, 2000	USACE responds to February 9, 2000 USEPA CERCLA Section 104(e) Notice, providing extensive and previously unreleased documentation concerning North Pacific Division Laboratory operations.
October 23, 2000	USEPA adds North Pacific Division Laboratory back on to Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), rescinding November 13, 1992 action.
April 2002	USACE Portland District, using URS, Inc., provides a Draft Site Inspection Report to Oregon Department of Environmental Quality, including soil and groundwater sampling.
June 6, 2002	Using USACE data from the April 2002 report, the Oregon Department of Environmental Quality confirms that contamination exists on North Pacific Division Laboratory property, and requests that an additional investigation be performed.
September 30, 2002	USACE Portland District, using URS, Inc., provides a Draft Final Site Inspection Report to Oregon Department of Environmental Quality.
December 2002	Oregon Department of Environmental Quality asks USACE Portland District to perform an ecological risk assessment at North Pacific Division Laboratory to determine cleanup requirements.

The chronology is limited to key events described in this article concerning the USACE North Pacific Division Laboratory. Numerous other events took place over the long duration of the auditing and remedial processes that, for the sake of brevity, are omitted from this table.

Hazardous Waste Sites” was submitted by Hepler to the Assistant Chief, Operations Division. Key points in this document included the following: (1) there was a failure to notify officials in a timely manner of USACE activities at hazardous and toxic waste sites (North Pacific Division Laboratory and two other Portland District sites); (2) no formal correspondence (with state and federal regulatory officials) had taken place regarding the North Pacific Division Laboratory; and (3) failure to notify regulatory officials was placing the Portland District at a high risk for enforcement. As before, there was no reply to the memorandum from USACE Portland District management (US Army Corps of Engineers, 1996).

On March 19, 1997, Hepler brought the environmental concerns identified in the previous memorandum to the attention of the District Commander. The District Commander did not agree that there were environmental compliance problems that merited his concern, and the meeting was terminated. On March 21, 1997, Hepler was served with a mem-

orandum from his immediate supervisor prohibiting any future communication, including copies furnished outside the immediate chain of command. The memorandum concluded, “. . . you do not have the authority to bypass proper channels in bringing matters to the Commander or other District staff” (US Army Corps of Engineers, 1997b). This memorandum effectively terminated Hepler’s ability to elevate issues within the USACE Portland District structure.

After repeated, unsuccessful attempts to communicate North Pacific Division Laboratory noncompliance issues through established USACE channels, Hepler contacted both the USEPA (Region 10) and the Oregon Department of Environmental Quality during the period 1996–2001. This decision was prompted by the joint failures of North Pacific Division Laboratory management to fully disclose to the audit team past environmental practices and of USACE Portland District management to initiate appropriate post-audit administrative actions.



In an attempt to limit the potential for reprisal, Hepler exercised provisions afforded under the Whistleblower Protection Act. Congress enacted the Whistleblower Protection Act in 1989 to help prevent discrimination following employee disclosure of violations to higher authorities. Provisions for employee protection pertinent to the North Pacific Division Laboratory also are found in the Federal Water Pollution Control Act, Safe Drinking Water Act, Solid Waste Disposal Act, and Toxic Substance Control Act. Discussions between Hepler and state and federal agencies were conducted over a five-year period and remain protected from disclosure. As a result of these discussions, USACE Portland District was subjected to increased USEPA and Oregon Department of Environmental Quality oversight. This situation may have contributed to an alleged prohibited personnel practice (retaliation through reassignment) against Hepler. A complaint was filed (by Hepler in 1998) with the US Office of Special Counsel, who determined that sufficient evidence existed to merit a full investigation of the matter, which is in progress (US Office of Special Counsel, 2002).

## Regulatory Enforcement and Closure of the North Pacific Division Laboratory

Beginning in August 1996, North Pacific Division Laboratory began to receive greater oversight from the Oregon Department of Environmental Quality. The Oregon Department of Environmental Quality shares environmental program authorities with the USEPA. On August 21, 1996, the Oregon Department of Environmental Quality inspected the North Pacific Division Laboratory (for water quality violations) and, as a result, recommended that the USACE perform a remedial investigation. The Oregon Department of Environmental Quality also "listed" the North Pacific Division Laboratory on its environmental cleanup database (Environmental Cleanup Site Investigation #1390) as a result of this inspection.

On December 11, 1996, the Oregon Department of Environmental Quality conducted a water/wastewater inspection at the North Pacific Division Laboratory. Just two days later, on December 13, 1996, the Oregon Department of Environmental Quality returned to the site to conduct a hazardous waste inspection. A follow-up to the hazardous waste inspection occurred on December 19, 1996. The hazardous waste inspections of December 13 and 19, 1996, were initiated by a complaint filed by METRO, the local regional government, which operates a household hazardous waste collection facility. The North Pacific Division Laboratory delivered multiple shipments of hazardous waste to the METRO facility, in part to reduce an aging stockpile of hazardous waste. The

METRO facility staff correctly recognized that the North Pacific Division Laboratory was not a household hazardous waste generator and filed a complaint with the Oregon Department of Environmental Quality. The North Pacific Division Laboratory subsequently received a Notice of Noncompliance (from the hazardous waste inspections) and was ordered to manage hazardous waste correctly, in accordance with state and federal law (Oregon Department of Environmental Quality, 1996).

Even without the threat of environmental enforcement and costly site remediation, the North Pacific Division Laboratory was already in serious financial difficulty. USACE Districts, including Portland, Walla Walla, Seattle, and Alaska were made aware, through peer discussions, of the poor environmental management practices at the North Pacific Division Laboratory, and they began sending their soil and water samples to private laboratories. These factors are believed to have contributed to the USACE Division Commander's decision to transfer "ownership" and responsibility of the North Pacific Division Laboratory to the USACE Portland District in August 1996. Not having a choice in the decision, the Commander of Portland District assumed responsibility for the deeply troubled facility.

On April 22, 1997, only eight months after receiving ownership of the North Pacific Division Laboratory, the Commander of the USACE Portland District announced that the North Pacific Division Laboratory would be closed. According to the US Army Corps of Engineers' *North Pacific Division Laboratory Closure Plan*, dated September 12, 1997, the cumulative financial losses at the facility were estimated to be \$1.7 million (US Army Corps of Engineers, 1997a). The North Pacific Division Laboratory officially was closed in October 1997. The responsibility and cost for relocating employees, paying off debt, and, most importantly, conducting site investigations and cleanups now rested with the USACE Portland District. The USACE Portland District began to take aggressive measures in an effort to turn the property over to the General Services Administration (GSA). Among many other duties, the GSA handles real estate transactions for agencies of the federal government.

Approximately two years after closure of the North Pacific Division Laboratory, on July 29, 1999, the Oregon Department of Environmental Quality entered the facility into its Independent Cleanup Program. This program allows an owner to independently investigate and clean up their contaminated property in a cooperative manner using the Oregon Department of Environmental Quality for oversight. On August 25, 1999, USACE Portland District signed a Letter

Agreement with the Oregon Department of Environmental Quality ensuring its full cooperation at each stage of the site investigation and cleanup process. In addition, the Letter Agreement enabled the Oregon Department of Environmental Quality to begin billing the USACE Portland District for expenses related to the cleanup.

Although these measures helped restore a more cooperative site investigation process with the Oregon Department of Environmental Quality, the USACE Portland District did not coordinate and fully disclose North Pacific Division Laboratory pollution with the USEPA. As a result, on February 9, 2000, the USEPA served the USACE Portland District with a CERCLA Section 104(e) Notice (US Environmental Protection Agency, 2000a).

A CERCLA Section 104(e) Notice is a formal record retrieval document that carries civil and criminal penalties for non-compliance. On the basis of information from this retrieval and interviews with past employees, USEPA took the unusual step of placing the North Pacific Division Laboratory back on the Federal Hazardous Waste Compliance Docket. That action was accomplished by letter on October 23, 2000; the site was reassigned CERCLIS #OR1210800032 (US Environmental Protection Agency, 2000b). The October 23, 2000, letter from USEPA identified the following concerns:

1. "Our review raised serious concerns regarding the waste handling and disposal practices at the Laboratory";
2. "In addition, we are concerned that the COE [USACE] failed to notify [US]EPA about ongoing contaminant releases from the site";
3. "Based on the information recently submitted, in response to the [CERCLA] 104(e) request, it appears that the PA [Preliminary Assessment] submitted on June 24, 1991 did not identify many serious hazardous waste handling and disposal practices that were being used at the laboratory. Some of these practices include the discharges of lab drains to an onsite ditch, use of a dry well for laboratory discharges, and the potential for hazardous substance disposal into an onsite landfill."
4. "Furthermore, in 1995 [January 1995 *ERGO* report], the COE's [USACE] internal quality control auditors discovered the inappropriate disposal practices, and yet the COE [USACE] again failed to notify [US]EPA of this 'new' information as required by CERCLA and as requested by our [USEPA] (NFRAP) letter of 11/13/92."
5. "This information only came to light after an anonymous complaint was filed with the Region [USEPA Region 10] which initiated our [CERCLA] 104(e) request, in February 2000."

Following receipt of this letter from USEPA, the USACE Portland District initiated regular communication with both the USEPA and the Oregon Department of Environmental Quality.

## The Current Situation

USACE Portland District performed several environmental site investigations at the North Pacific Division Laboratory between 1997 and 2002, and more are planned. Public trust of the Portland District has eroded and damaging media coverage has occurred. At present, the North Pacific Division Laboratory remains contaminated with solid and hazardous waste. Groundwater pollution has occurred, and at this time, the facility and surrounding land have limited potential use. According to the Oregon Department of Environmental Quality (2002), based on the USACE Portland District August 2002 Draft Final Site Inspection Report:

1. "The [USACE] report documents the presence of hazardous substances in site soil and groundwater above risk-based screening levels developed for the protection of human health and the environment";
2. "DEQ [Department of Environmental Quality] disagrees with the COE [USACE] conclusion that no receptors or habitat exist at the site. It is DEQ's opinion that the Level I Ecological Risk Assessment indicates the need for a Level II Ecological Risk Assessment";
3. "Prior to completing the human health and ecological risk assessment the full nature and extent of contamination must be defined";
4. "Additional characterization is needed for the landfill material, beneath the former laboratory building, and near the concrete sump"; and
5. "Additional data are needed to determine if site activities have impacted groundwater quality."

Five years after the North Pacific Division Laboratory closed, the full extent of chemical contamination from past environmental mismanagement practices at the North Pacific Division Laboratory remains unknown. Additional site characterization, ecological risk assessment, and remedial activities (at significant cost) are required before this property no longer poses a potential threat to public health or the environment.

## Conclusions and Recommendations

In November 1994, the USACE Portland District conducted a comprehensive environmental audit of the North Pacific Di-

vision Laboratory in Troutdale, Oregon. The results revealed serious deficiencies in environmental management and compliance that ultimately contributed to the facility's closure. Site investigation and cleanup activities are continuing under USEPA and Oregon Department of Environmental Quality oversight as of February 2003. The failure of the North Pacific Division Laboratory management to self-monitor compliance with environmental standards at the North Pacific Division Laboratory, and the USACE Portland District's subsequent lack of coordination with the USEPA and Oregon Department of Environmental Quality, suggest a breach of commitment to monitor and comply with environmental standards in this case. It was evident from the number and severity of Findings discovered during the November 1994 audit that there was an ineffective environmental management system at the North Pacific Division Laboratory. For facilities like the North Pacific Division Laboratory that do not exercise proper environmental management, it seems imperative to perform professional and independent audits to help bring these facilities into compliance.

The accuracy of environmental audits is highly dependent on the composition, independence, and experience of the auditors. For this reason, every effort should be undertaken to ensure not only that audits are conducted but also that audit team members are selected with careful attention to their areas of expertise, skill levels, and ability to ascertain compliance with environmental standards without partisan or coercive influences. As an example, the North Pacific Division Laboratory audit team included a registered Professional Geologist whose background and skills enabled him to recognize the severity of hazards associated with the chemical wastewater pumped into the local drainage.

Within the USACE structure, senior military leaders are generally rotated on a three-year interval. Environmental audits that are performed on a similar interval have a greater likelihood of being recognized and acted upon by a single USACE District Commander. Increasing audit frequency from the existing five-year interval used by USACE to a three-year interval (used by other Department of Defense elements) would substantially achieve this goal.

Professional, independent, and timely audit reports do not of themselves produce desired outcomes. The reports must be presented to senior leaders who have the means to commit proper resources to achieve compliance. They, in turn, have the appropriate information and authority for taking corrective action.

A difficult situation results when an environmental audit is withheld from the public's regulatory agencies. If there ap-

pears to be a threat to human or ecological receptors, direct disclosure is a reasonable, ethical, and legal option for the audit program manager. Such disclosure should be performed only after exhausting every extant method of accomplishing this task. In the event that direct disclosure to regulatory agencies is warranted, the auditor should be aware that the Whistleblower Protection Act offers very little protection against retaliation. If a valid whistleblower retaliation case does exist, the process for recourse may be lengthy and the outcome uncertain. In the case of one author (Hepler), a prohibited practice allegedly occurred in 1996, a formal complaint against the USACE Portland District was filed by Hepler in 1998, and the matter was still under active investigation by the US Office of Special Counsel as of February 2003.

The case study reported here clearly demonstrates how an independent environmental audit conducted by the USACE Portland District effectively identified serious problems in the environmental management practices at the North Pacific Division Laboratory in Oregon. Lack of timely and appropriate corrective actions contributed to the eventual closure of the facility. Had the North Pacific Division Laboratory management properly identified and disclosed environmental problems to the Oregon Department of Environmental Quality and USEPA in 1991, they may have been better able to budget and execute corrective actions. It is also likely that North Pacific Division Laboratory would have retained existing business from long-standing customers. Deferring these issues through nondisclosure proved to be an imprudent decision from both an environmental and economic perspective.

Based on this case study, several recommendations for improving environmental performance through environmental compliance audits at USACE facilities can be made, including the following:

1. As part of the environmental audit process, examine the efficacy of the facility's environmental management system or plan;
2. Utilize professionally trained and independent auditors (private consultants or USACE resources external to the host District and Division);
3. Change audit intervals from five years to three years to increase leadership oversight and minimize the chances that violations could exist for long periods of time;
4. Report environmental management and compliance audit results directly to senior management;
5. Exercise the option of bringing in state and federal regulators when internal reporting systems prevent disclosure of apparent environmental violations; and

6. If exercising provisions under the Whistleblower Protection Act, ensure that all extant reporting methods have been exhausted, that records exist to support alleged violations, and that one's rights and responsibilities are well understood.

It is essential that facilities such as those operated by the USACE develop effective environmental management plans and auditing procedures if long-term environmental performance is to be realized. Senior leadership at all USACE facilities must commit to proper environmental management practices to avert environmental problems such as those at the North Pacific Division Laboratory.

## References

- Federal Register. 2000. *Executive Order 13148: Greening the Government Through Leadership in Environmental Management*. <http://ceq.eh.doc.gov/nUSEPA/regs/eos/eo13148.html>. Accessed July 26, 2002.
- Global Reporting Initiative. 2000. *Environmental Performance Guidelines*. <http://www.globalreporting.org>. Accessed July 26, 2002.
- International Organization for Standardization. 1998. *ISO 14000—Meet the Whole Family*. <http://www.iso.ch/iso/en/prods-services/otherpubs/pdf/iso14000.pdf>. Accessed July 25, 2002.
- International Organization for Standardization. 2002. *Technical Committee 207 on Environmental Management*. <http://www.tc207.org/faqs/index.html>. Accessed November 30, 2002.
- Oregon Department of Environmental Quality. 1996. *Notice of Noncompliance (Hazardous Waste Violation) issued to the USACE North Pacific Division Laboratory at Troutdale, Oregon*. December 20, 1996.
- Oregon Department of Environmental Quality. 2002. *Comments on the USACE Draft Final Site Investigation Report, North Pacific Division Laboratory, ECSI No. 1390, Troutdale, Oregon*. December 18, 2002.
- US Army Corps of Engineers. 1991. *Division Commander Letter to the USEPA dated 24 June 1991*. Freedom of Information Request Document accessed March 18, 2000.
- US Army Corps of Engineers. 1995a. *Draft Memorandum dated 24 October 1995*. Prepared by Jeffrey A. Hepler and submitted to USACE Portland District Assistant Operations Chief, North Pacific Division Laboratory Environmental Compliance. Freedom of Information Request Document accessed March 18, 2000.
- US Army Corps of Engineers. 1995b. *Environmental Compliance Audit of the North Pacific Division Laboratory, Troutdale, Oregon*. Freedom of Information Request Document accessed March 18, 2000.
- US Army Corps of Engineers. 1995c. *Draft Memorandum dated 6 November 1995*. Prepared by Jeffrey A. Hepler and submitted to USACE Portland District Assistant Operations Chief, North Pacific Division Laboratory Environmental Compliance. Freedom of Information Request Document accessed March 18, 2000.
- US Army Corps of Engineers. 1995d. *Memorandum for Record dated 12 December 1995, Notification of the District and Division Commander that a Significant ERGO Finding Remains Uncorrected*. Prepared by Jeffrey A. Hepler. Freedom of Information Request Document accessed March 18, 2000.
- US Army Corps of Engineers. 1995e. *North Pacific Division Laboratory, Fiscal Year 1996, First Quarter Briefing on November 28, 1995*. Freedom of Information Request Document accessed March 18, 2000.
- US Army Corps of Engineers. 1996. *Memorandum dated 4 June 1996, Requirement to Notify State and Federal Regulatory Authorities of Suspect Hazardous Waste Sites*. Prepared by Jeffrey A. Hepler and submitted to USACE Portland District Assistant Operations Chief, North Pacific Division Laboratory Environmental Compliance. Freedom of Information Request Document accessed March 18, 2000.
- US Army Corps of Engineers. 1997a. *Internal Memorandum dated 12 September 1997, North Pacific Division Lab Closure Plan*. Freedom of Information Request Document accessed March 18, 2000.
- US Army Corps of Engineers. 1997b. *Memorandum dated 21 March 1997 from Chief, Natural Resources Section to Jeff Hepler, District Environmental Compliance Coordinator, Preparing a Memorandum for the Record*. Privacy Act request, March 2000.
- US Army Corps of Engineers. 2000a. *The Environmental Review Guide for Operations Supplement*. US Army Construction Engineering Research Laboratory Special Report 97/62, 13, 306 pp.
- US Army Corps of Engineers. 2000b. *USACE Response to USEPA CERCLA Section 104 Notice*. March 15, 2000.
- US Army Corps of Engineers. 2001. *The Environmental Assessment and Management Guide*. US Army Construction Engineering Research Laboratory Special Report EC-95/05, 36, 2236 pp.
- US Environmental Protection Agency. 1996a. *Generic Protocol for Conducting Environmental Audits of Federal Facilities*. Federal Facilities Enforcement Office, 1611 pp.
- US Environmental Protection Agency. 1996b. *Implementation Guide for the Code of Environmental Management Principles for Federal Agencies*. <http://www.USEPA.gov/Compliance/resources/publications/incentives/ems/cempmaster.pdf>. Accessed July 26, 2002.
- US Environmental Protection Agency. 1999. *The Yellow Book: Guide to Environmental Enforcement and Compliance at Federal Facilities*. Federal Facilities Enforcement Office, 362 pp. Available online at <http://www.USEPA.gov/Compliance/resources/publications/civil/federal/yellowbk.pdf>. Accessed July 25, 2002.
- US Environmental Protection Agency. 2000a. *CERCLA Section 104 Notice to the US Army Corps of Engineers, dated 9 February 2000*. Freedom of Information Request Document accessed March 18, 2000.
- US Environmental Protection Agency. 2000b. *USEPA Decision to Rescind Previous "No Further Action Planned" Designation and to Perform Additional Evaluation of the Site under CERCLA, dated 23 October 2000*. Correspondence between USEPA Region 10 and the USACE Portland District.
- US Environmental Protection Agency. 2001a. *Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)*. <http://www.USEPA.gov/ceisweb1/ceishome/ceisdocs/cerclis/cerclis-ex.htm>. Accessed March 2002.
- US Environmental Protection Agency. 2001b. *Federal Facilities Enforcement & Compliance Accomplishments Report FY2000*. <http://www.epa.gov/compliance/resources/reports/planning/results/federal/fy00acomplrpt.pdf>. Accessed January 25, 2003.
- US Environmental Protection Agency. 2002. *Federal Agency Hazardous Waste Compliance Docket*. <http://www.epa.gov/compliance/cleanup/federal/hazwastedocket.html>. Accessed December 2, 2002.
- US Office of Special Counsel. 2002. *Letter from Office of Special Counsel to Jeffrey A. Hepler regarding File Number MA-00-1998*.

Submitted April 9, 2002; revised February 6, 2003; accepted February 10, 2003.