

Construction Briefings



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practical tight-knit briefings including action guidelines on construction contract topics

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Frank Leone, Jr. is a partner in the Washington, D.C. office of the law firm of Spriggs & Hollingsworth.

Environmental Compliance For The Construction Industry

By Frank Leone, Jr.

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Construction companies increasingly face environmental risks that may lead to civil liability, fines, and even criminal sanctions. For example, a contractor who disturbs buried hazardous waste during a construction project at an industrial site may be liable for cleaning up the site under the federal "Superfund" statute.¹ The existence of wetlands may not be immediately apparent, but a contractor that fills a wetland without a proper permit may have violated the Clean Water Act.² In addition, disposal of construction debris, used oil, or other pollutants into rivers, streams, or other waters usually constitutes a violation of federal or state water protection statutes.³ Asbestos-containing materials (such as insulation and fireproofing) generally must be removed, using certain procedures, from buildings prior to demolition. The failure of contractors to comply with federal environmental and occupational safety laws has resulted in civil and criminal prosecutions.⁴ Storage of waste chemicals, including solvents, acids and flammable liquids, improperly or for too long a time period also may violate federal hazardous waste laws;⁵ federal or state governments may bring action for improper disposal of construction and demolition debris or used oil, lead paint and other potentially hazardous materials.⁶

Construction companies are now implementing environmental management programs to control these risks and to ensure that their projects comply with applicable federal, state, and local environmental regulations and permit obligations. Such programs may prevent violations of environmental regulations and also provide evidence of a company's good faith should a violation nevertheless occur. This CONSTRUCTION BRIEFING (1) reviews some of the *elements* of these environmental compliance

programs, and (2) provides an *overview* of the *substantive environmental requirements* that construction companies may confront.

Environmental Compliance Program Elements

A construction company's environmental compliance program may be as simple as an informal policy or as sophisticated as a formal environmental management system. Environmental compliance programs, however, typically involve the following common elements.

♦ **Corporate Environmental Policy Statement**

A corporate environmental policy statement briefly sets forth the contractor's environmental policies and typically includes commitments to (a) comply with all applicable environmental laws and regulations, (b) use environmentally sound waste handling and disposal practices, (c) enhance material conservation and recycling, (d) provide environmental awareness training to employees, and (e) continue to improve its environmental compliance program.

♦ **Environmental Compliance Manual**

The environmental compliance manual should delineate the contractor's environmental policy statement, set forth the elements of the contractor's environmental compliance program, and provide either general or specific guidance concerning environmental requirements that may apply to the company's projects. Such guidance should set forth general procedures for management of solid and hazardous wastes (including construction and demolition debris), avoidance of water pollution (including erosion and sediment control and storm water management practices), and control of air pollution (including dust) during construction activities. The company manual should be provided to all management employees and may, for example, be publicized through a company's internal computer network.

♦ **Project Checklists**

Either as part of the compliance manual or as a stand-alone "desktop checklist," the contractor should have summary documents that identify initial project planning requirements, ongoing environmental compliance issues, and project closeout steps. Initial planning, for example, should include identification of any required wastewater discharge or wetland permit requirements and determination of whether the project owner will be responsible for such permits. Ongoing requirements include compliance with waste management and spill control requirements, new employee training, and site record keeping. Project closeout items include completion of permit requirements such as erosion and sediment control site stabilization or storm water permit notice of termination.

♦ **Project Planning And Contracting**

A contractor's environmental compliance program must include the identification of potentially applicable contract and federal, state, and local regulatory requirements prior to the start of the contract. For example, the contractor should know prior to its bid if a project at a manufacturing facility involves the disturbance of contami-

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nated soil or if a building demolition involves asbestos-containing materials. The parties should determine up front whether the site owner or the contractor will be responsible for obtaining necessary water pollution control or other permits and will be listed as the generator of any hazardous wastes produced at the project site. Moreover, construction companies may want the contract documents to allocate environmental responsibilities between the site owner and the contractor and include appropriate language indemnifying the contractor from environmental liabilities. Finally, agreement should be reached on (1) actions to be taken if hazardous substances are encountered, (2) necessary notifications, (3) arrangements for handling of the substances, and (4) remedies if the presence of the substances causes delay, requires additional work, or prevents the execution of the contract.

♦ **Allocation Of Environmental Compliance Responsibilities To Appropriate Employees**

A good environmental compliance program will allocate responsibilities among employees at the appropriate corporate levels. Corporate headquarters employees, such as the General Counsel, Deputy General Counsel, Environmental Compliance Director, or Environmental Health and Safety Director, are given *general* oversight responsibilities. The Project Manager or the Project Manager's designees (e.g., site quality control and/or safety director) are responsible for *specific* projects. The contractor's employees who work on specific projects may also have specific environmental responsibilities.

♦ **Implementation Of Project-Specific Environmental Practices**

An environmental compliance program should reference standard materials that can be used to develop project-specific environmental practices. For example, under certain Government contracts, a contractor must prepare a project-specific environmental protection plan.⁷ The plan typically (a) contains a statement of environmental policy; (b)

designates personnel responsible for compliance assurance responsibilities; (c) identifies relevant federal, state, and local environmental regulations and applicable contract and permit requirements; (d) identifies procedures for protecting landscape features, air and water quality, soil, fish, and wildlife, and historical, archaeological, and cultural resources; (e) summarizes training programs; (f) describes any environmental monitoring to be conducted; (g) sets forth appropriate project-specific work practices to manage materials and waste properly and avoid water and air pollution; and (h) identifies (and contains drawings designating) site work, excavation, material storage, borrow, and disposal locations. A detailed plan may not be necessary for a smaller project. Rather, only a document that describes procedures for erosion and sediment control, dust suppression, and proper disposal of construction and demolition debris would be required.

♦ **Environmental Awareness Training**

Because any environmental program is only as good as the people who implement it, the training of personnel is a crucial part of the program. Training at the project management level can be offered in conjunction with ethics, safety, or other regularly scheduled corporate training. As a general rule, training for project workers should take place in conjunction with initial and periodic site safety meetings. Of course, if a project requires special training under an applicable occupational health or environmental statute—e.g., hazardous waste emergency response or asbestos abatement—workers must receive appropriate training from certified instructors and such training must be documented.

♦ **Internal Reporting System**

The contractor should publicize the telephone number of the general counsel's office and/or the environmental compliance officer to resolve issues before they become problems and to allow employees to report any potential violations of environmental requirements. The company should set up a procedure whereby the envi-

ronmental compliance officer's initial investigation reports are provided to the general counsel to maintain appropriate privileges.

♦ **Compliance By Subcontractors And Joint Venture Partners**

Even a company that has a solid environmental compliance program may face liability because of the actions of its joint venture partners or subcontractors. To avoid this situation, companies may require subcontractors and appropriate suppliers to certify that: (1) they have reviewed relevant contract documents; (2) they will comply with all applicable permits, licenses, statutes, ordinances, rules, and regulations affecting their work; and (3) they will provide verification that necessary permits or licenses have been or will be obtained. Moreover, the contractor should obtain verification from a prospective joint venture partner that it has an environmental compliance policy and training procedures in place and will, as part of the joint venture, comply with all applicable environmental laws, regulations, and relevant contract and permit conditions. The contractor may also want to obtain appropriate indemnification agreements from subcontractors and joint venture partners.

♦ **Inspections And Compliance Review Procedures**

Every environmental compliance program requires some degree of compliance review. At the project level, quality control representatives should include environmental concerns in their regular inspections of material storage areas, waste collection areas, erosion and sediment controls and the like. Management may also implement compliance reviews or audits to monitor the company's conformity with environmental requirements on selected projects.

Overview Of Environmental Laws And Regulations

Most of the major federal environmental laws set forth national standards that are administered

by the U.S. Environmental Protection Agency. The EPA has delegated implementation of many of these programs to the states. Moreover, states may enact more stringent requirements and may impose requirements in areas where no federal regulation exists. A construction company, therefore, should initially determine which federal, state, and/or local regulations apply to any given project. The remainder of this BRIEFING will provide a brief outline of specific federal regulations and the types of state and local regulations that may apply to construction projects. A discussion of potential sanctions for violations of environmental statutes is beyond the scope of this CONSTRUCTION BRIEFING; however, such sanctions may include civil penalties, criminal fines, and/or imprisonment of responsible individuals. Such statutes also may allow citizens to bring private actions seeking injunctions ordering compliance and damage awards.

♦ **Solid And Hazardous Waste**

Any sizeable construction project generates large amounts of solid waste, including construction and demolition (C&D) debris. State and local authorities generally regulate solid waste disposal. Wastes that meet the definition of "hazardous," however, must be managed pursuant to federal regulations. Businesses whose operations generate solid waste must determine if those wastes are regulated as hazardous wastes and handle them appropriately. State waste management regulations typically define C&D waste materials to include brick, concrete or other masonry, wood, wall coverings, plaster, drywall, plumbing, fixtures, insulation, roofing shingles, asphalt pavement, glass, and plastics.⁸ State and local regulations may limit disposal of these wastes to certain landfills. Moreover, some state regulations preclude solid waste landfills from accepting plaster and other materials that are likely to produce gases or leachate during decomposition.⁹ States may also specifically prohibit landfill disposal of listed "special wastes," including asbestos-containing materials, electrical equipment containing polychlorinated biphe-

nyls (PCBs), mercury-containing lamps or switches, drums, containers and fuel tanks, and certain items that may be recycled (used oil, lead-acid batteries, and whole tires). These special wastes must generally be recycled or disposed of only at specially approved landfills.¹⁰

Construction companies should take advantage of opportunities for salvaging materials that can be reused or recycling wastes where practical. Many states have active programs encouraging the salvaging for reuse or recycling of construction materials, including clean wood, cardboard, drywall, bricks, asphalt, concrete, and aluminum and other scrap metals.¹¹ Moreover, organic materials such as trees and cleared vegetation may be shredded as mulch or used for composting. Other materials that can be recycled include used oil, batteries, plastics, tires, and paper. Some types of waste can be disposed onsite. For example, clean fill and masonry can typically be buried onsite and, in some localities, vegetation and untreated wood may be burned.¹² Most types of construction site wastes, however, must be disposed at permitted facilities. The company should retain documentation showing that the waste haulers have necessary licenses and are disposing of wastes at appropriate facilities.

(1) *Hazardous Waste Management.* The federal Resource Conservation and Recovery Act of 1976 (RCRA) governs the management of solid waste, including hazardous waste.¹³ The EPA has issued regulations that establish a "cradle-to-grave" regime governing hazardous waste generation, transportation, storage, and disposal.¹⁴ State regulations must also be consulted because the EPA has authorized nearly all of the states to administer their own hazardous waste programs and RCRA allows states to issue stricter requirements.¹⁵

As part of the contract process, a construction company should determine if any hazardous wastes or hazardous materials are present at the project site (e.g., drums or tanks containing chemicals, asbestos-containing materials, or contaminated soils or sediments). Contractors also must

be vigilant about unanticipated hazardous materials or wastes that may be encountered onsite during ongoing project operations. Some materials, e.g., slightly contaminated sediments that do not meet "hazardous waste" criteria, may be managed pursuant to contract specifications, but other materials will require outside hazardous waste remediation contractors and special handling and disposal procedures. Assuming that the project begins at a "clean" site, a company must determine if its construction activities will generate any hazardous wastes and identify those wastes.

RCRA hazardous wastes include specifically listed wastes that when tested exhibit a hazardous waste characteristic (ignitability, corrosivity, reactivity or toxicity).¹⁶ Construction site materials that may become hazardous wastes when disposed include (a) spent solvents and cleaners, (b) stored materials, such as paint and pesticides that have exceeded their shelf life and are no longer usable products, (c) demolition/renovation debris including asbestos-containing materials, lead paint, varnishes, adhesives, or creosote, (d) PCB-containing equipment, (e) mercury lamps and switches, (f) equipment-related wastes, including used oil, antifreeze and batteries, and (g) drums or other containers of abandoned chemicals from manufacturing sites.

The applicability of federal and state hazardous waste management standards generally depends on the amount of hazardous waste generated. Companies that generate hazardous wastes typically must (1) obtain an EPA identification number, (2) properly store wastes and accumulate them onsite for only a limited period, (3) prepare manifests for waste transportation, (4) ensure proper packaging and labeling, (5) enact waste minimization programs, and (6) observe record keeping and reporting requirements.¹⁷ Federal RCRA regulations exempt generators of smaller quantities of wastes from some of these requirements, but state regulations may incorporate different levels of exemptions.

Under the federal regulations, a conditionally exempt small quantity generator (CESQG) that

generates less than 220 pounds (about 28 gallons) of waste per month at a site must identify the hazardous waste generated, store no more than 2,200 pounds on site at any one time, and dispose of the waste at an appropriate facility. A small quantity generator (SQG) that generates between 220 pounds and 2,200 pounds of hazardous waste per month must obtain an EPA identification number, properly store waste on site for a limited time, and arrange for the waste to be disposed of with a manifest at a permitted hazardous waste treatment, storage, disposal, or recycling facility. Such wastes must be stored in properly marked, secured, and closed containers in appropriate areas with adequate spill control/containment measures present.

In general, hazardous wastes must be properly handled to avoid leaks or spills and should be transported by licensed haulers and disposed at a licensed hazardous waste recycling or disposal facility. Records, including waste disposal contracts and, for appropriate wastes, manifests and certificates of disposal, should be maintained.

(2) *Used Oil*. Used oil, e.g. crankcase and piston-engine oils used in automobiles or heavy equipment, that is mixed with solvents and chemicals may be classified as hazardous waste. Used oil that is not contaminated, however, may be managed under special standards.¹⁸ Pursuant to these standards, used oil should be stored in secure labeled containers, not mixed with hazardous waste, handled to prevent leaks and spills, properly disposed of at approved collection centers, and disposal records should be maintained. States may impose additional used oil regulatory requirements.¹⁹

(3) *Universal Wastes*. The EPA also has issued regulations providing for less burdensome special management procedures for specifically listed "universal wastes," including some materials that may be present at demolition sites.²⁰ These wastes include rechargeable batteries, mercury-containing thermostats, and certain electric lamps containing mercury, lead, or cadmium, including fluorescent, high intensity discharge, neon,

mercury vapor, high pressure sodium, and metal halide lamps.²¹ Generators of less than 220 pounds of universal wastes per month are exempt from the regulations.

(4) *Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)*.²² CERCLA, commonly known as "Superfund," gives the Federal Government authority to respond to releases of hazardous substances that may endanger public health, welfare, or the environment. The EPA, states, or private parties typically use CERCLA to compel or fund the clean-up of past releases of hazardous substances that have contaminated soil or groundwater.²³ Private parties who clean up sites may bring contribution actions to recover some of their costs against other potentially responsible parties.²⁴ A party conducting a clean-up must adhere to the procedures established in the National Contingency Plan.²⁵ States may impose more stringent clean up requirements and/or sponsor additional site remediation programs.

Potentially responsible parties (PRPs) who may be liable under CERCLA include present owners or operators of facilities at which hazardous substances have been released, prior owners or operators if they owned the facility at the time of disposal, parties who generated hazardous substances and arranged for their treatment or disposal, and parties who transported the hazardous substances.²⁶ Contractors may be held liable under CERCLA for the clean-up of hazardous substances generated at construction sites and improperly disposed at other sites. Contractors should, therefore, do business only with reputable waste haulers who provide documentation that hazardous waste has been disposed at licensed facilities.

Moreover, construction contractors who have moved contaminated soil around a site as part of excavation, grading, or fill operations have been held liable under CERCLA.²⁷ Contractors should request site owners to identify contaminated areas and even do their own sampling if they suspect that they may encounter contaminated ma-

materials. It should be noted, however, that remediation contractors who are carrying out response actions under CERCLA (under contract with EPA or a PRP who has settled with EPA) are not liable for damages resulting from releases of hazardous substances, unless the release is caused by the contractor's negligence, gross negligence, or intentional conduct.²⁸ Finally, contractors who sell fill from a site or obtain fill from other sites should take reasonable steps to make sure that the material is not contaminated.²⁹

CERCLA hazardous substance release reporting regulations³⁰ require responsible persons to notify the National Response Center of any release (spill, leak, dump, emission) into the environment of a hazardous substance in an amount that exceeds its reportable quantity.³¹ State regulations typically require that the same notice be given to the appropriate state agency.

(5) *Emergency Planning and Community Right-to-Know Act (EPCRA)*. EPCRA³² requires certain facilities to prepare emergency response plans, notify the EPA of accidental releases, and report chemical inventories and routine toxic chemical releases. Facilities are subject to these requirements if certain hazardous chemicals are present in excess of threshold quantities. These requirements typically do not apply to construction sites, but may apply, for example, to a construction yard.

(6) *Petroleum and Chemical Storage Tanks*. States generally implement the comprehensive federal regulations governing underground storage tanks for petroleum and other substances.³³ These regulations require notification of existence of tanks and their decommissioning, compliance with design standards for new tanks, notification of spills and leaks, and corrective action if there have been releases. Above-ground tanks may also be subject to federal Clean Water Act and state requirements, including spill prevention and containment standards.³⁴ Contractors must observe the applicable regulatory requirements if an old storage tank is to be removed or a new tank is to be installed as part of a construction project.

(7) *Waste Minimization/Pollution Prevention/Recycling*. Pursuant to the Pollution Prevention Act of 1990,³⁵ the EPA encourages waste minimization and material reuse and recycling. As noted above, many states have active programs encouraging the salvaging for reuse or recycling of construction materials. The different types of waste streams, e.g., hazardous, special, and C&D, should be stockpiled separately to reduce disposal costs and facilitate reuse or recycling of appropriate materials. Pursuant to the Comprehensive Procurement Guideline, Federal Government agencies are required to increase their purchases of products containing recovered (e.g., recycled) materials.³⁶

♦ **Hazardous Materials And Occupational Safety And Health Regulations**

U.S. Occupational Safety and Health Administration (OSHA) regulations and analogous state Department of Labor regulations³⁷ govern a wide variety of construction workplace issues. Certain standards, particularly the Hazard Communication,³⁸ Asbestos,³⁹ and Lead⁴⁰ standards address hazardous materials and interact with environmental requirements.⁴¹

(1) *Hazard Communication Standard*. This standard requires employers to provide employees with information concerning hazardous materials that are used or stored in the workplace. The employer must have (a) a written hazard communication program, (b) an inventory list of hazardous chemicals known to be present, (c) a complete file of Material Safety Data Sheets (MSDS) for those chemicals, (d) proper labeling and hazard warnings for drums and containers, (e) proper chemical storage facilities, (f) an information and training program for employees who may be exposed to hazardous chemicals, and (g) a method for informing other companies and their employees of chemicals present at the company's worksite.

(2) *Asbestos Construction Standard*. This standard applies to activities, particularly building

renovation or demolition projects, that may affect asbestos-containing materials. Such materials include pipe and boiler insulation and sprayed or troweled on acoustical plaster or fireproofing. The employer must make sure that employees avoid exposures to asbestos fibers exceeding the permissible exposure limits and take certain precautions, e.g., wearing protective clothing and using respirators if high levels of asbestos will be released. The standard also includes training, warning, and record keeping requirements. States typically have additional asbestos requirements.⁴² As discussed below, EPA hazardous air pollution emission regulations also govern asbestos work.

(3) *Lead Construction Standard.* This standard governs construction worker exposure to lead, including in paint and painted debris, lead pipes, and copper pipes with lead solder. Lead exposure may arise from manual demolition, sanding, scraping, general clean-up, power tool cleaning, and spray-painting. The standard requires a hazard determination (including exposure assessment) and, as appropriate, engineering controls (such as isolation, enclosure or exhaust ventilation) work practices, air monitoring, personal protective equipment, and warning signs.

♦ **Water Pollution**

Federal, state, and local governments all have enacted regulatory requirements to protect wetlands, streams, rivers, lakes, oceans, and other waters. Construction activities can affect water quality and supply. For example, grading and other land disturbances may contribute to erosion and cause sedimentation of water, dredging and filling of surface waters can affect water quality, and materials used at a construction site, including oils, can infiltrate into groundwater or run off the site to surface waters. Although site owners are typically responsible for obtaining necessary permits, construction contractors need to be aware of regulatory requirements concerning discharges of pollutants to waters, storm water/sediment control, and dredging and filling of wetlands.

(1) *Clean Water Act.* The Federal Water Pollution Control Act, commonly known as the Clean Water Act, regulates both the direct and indirect (non-point) discharges of pollutants into navigable waters of the U.S.⁴³ The Clean Water Act prohibits the discharge, without a permit, of pollutants into "navigable waters," a term that is very broadly defined.⁴⁴

(2) *Point Source Discharges.* The Clean Water Act prohibits discharges from "point sources," such as pipes and ditches, without a permit.⁴⁵ Section 402 of the Act requires parties directly discharging pollutants from such point sources to obtain a permit under the National Pollutant Discharge Elimination System (NPDES) Program.⁴⁶ Construction activities potentially subject to NPDES requirements include the discharge of effluent from concrete batch manufacturing and dewatering for foundation construction. Companies responsible for such discharges must obtain permits from the EPA or state agencies operating approved programs. The permits may set forth limits for pollutants present in the wastewater.⁴⁷

Even if an individual NPDES permit is not required for a specific construction site, a contractor should exercise care to avoid the discharge of wastewaters generated during activities such as vehicle and equipment washing and rinsing, acid washing of concrete and masonry, painting, and fueling. Activities that generate a significant amount of wastewater should be conducted in vegetated or grassy locations that are not subject to surface water runoff and are a reasonable distance (e.g., more than 50 feet) away from a storm drain or open ditch. Wastewaters may be discharged through a drain to a sanitary sewer (in compliance with any pre-treatment requirements) or a closed loop water recycling system may be used.

(3) *Sanitary Sewer Discharges.* Wastewaters may be discharged to sanitary sewers connected to publicly-owned treatment works. Local authorities should be contacted prior to discharge to ensure compliance with federal, state, or local pretreatment standards concerning pH,

solids, oil/grease, and specific chemicals contained in wastewaters.⁴⁸

(4) *Storm Water Control.* Construction site grading can remove grasses and other ground cover and erode underlying sediment, which rain can then wash into nearby streams. Construction waste can also reach streams and lakes and endanger fish and other aquatic life. Runoff of fertilizers and phosphorous, nitrogen, and other nutrients can also affect water quality. In general, contractors should limit chemical spills at construction sites by using care and spill containment procedures. Care should be taken to: (1) properly store, use, handle, and dispose of pesticides and petroleum products; (2) use proper management practices for application of fertilizers and lime to the soil; and (3) locate fuel and vehicle maintenance areas a reasonable distance from waterways.

State law and local ordinances typically dictate standards governing storm water runoff and sediment and erosion control at construction sites. Local planning/permit assistance authorities, such as the county engineer, should be consulted regarding permits, fees, plan submissions, and other requirements.

The NPDES permit program imposes federal regulatory oversight over storm water runoff associated with construction sites.⁴⁹ Under these regulations, construction projects on sites over five acres (or part of a common plan of development that exceeds five acres) in which storm water from the construction activity can reach surface waters, should obtain a general permit from the EPA regional office. The general permit requires the site operator (which may include the site owner and/or a contractor) to create a Storm Water Pollution Prevention Plan and implement temporary erosion and sediment control measures (best management practices) to control runoff during construction. Such controls include stabilization practices (e.g., seeding, mulching, vegetative buffer strips, and geotextile covering), structural controls (e.g., silt fences, drainage swales, soil retaining basins, and sediment traps)

and other controls (including prohibition of discharge of solid waste, including building materials, into wetlands and other waters). The plan may also provide for site maintenance, inspection, and final stabilization.

Under Phase II of the federal storm water program, permits will be required for "small construction activities," i.e., those disturbing between one and five acres of land (or are part of a common plan that will disturb at least one acre).⁵⁰ The EPA is phasing in the general permit and other requirements. Some states, however, currently regulate construction sites smaller than five acres (and even smaller than one acre in environmentally sensitive areas) and may require storm water control measures and written erosion and sediment control plans.⁵¹

The EPA is currently developing "effluent guidelines" for the construction industry and plans to issue a proposed rule in March 2002. The EPA anticipates that the guidelines will be national technology-based standards that will be incorporated into NDPES permits. The guidelines will set forth minimum requirements for erosion and sediment control and storm water runoff best management practices for construction sites and enact minimum federal standards for projects that are now primarily subject to state and local control.

If all storm water from a site is to be discharged to the ground (e.g., infiltration basins), a storm water permit may not be required. Reasonable measures should be taken, however, to avoid degradation of ground water quality. Moreover, underground injection well regulations may apply. Pursuant to the Safe Drinking Water Act, the EPA regulates underground injection wells, including "Class V" wells such as dry wells, seepage pits, catch basins, french drains, and retention ponds.⁵² These wells may be used for site dewatering to keep foundation excavation pits dry or for storm water drainage and disposal. Notice must be provided to the appropriate agency, but most Class V wells are authorized by rule and do not require individual permits, assuming that they do not endanger

underground sources of drinking water. If such wells are used for storm water disposal, appropriate steps should be taken to prevent sediments, oils, or other contaminants from being disposed in the well.

(5) *Dredge And Fill Permits.* The Clean Water Act prohibits the discharge of dredged or fill material into U.S. waters (including wetlands).⁵³ The Rivers and Harbors Act also prohibits obstruction, excavation, and filling of navigable waters without federal authorization.⁵⁴ Dredge and fill permits are issued by the U.S. Army Corps of Engineers. The EPA also participates in the process by developing criteria for permit evaluations, commenting on individual applications, and overseeing state implementation. The EPA retains the authority to veto the Corps' permit decisions. The presence of a regulated wetland may not be obvious because wetlands need not have water present at the surface all year round. Instead, as delineated by Corps/EPA guidance, wetlands consist of areas that contain wetland vegetation, hydric soils, and wetland hydrogeology. The site owner or developer usually obtains a permit, but their failure to do so may not protect a contractor if construction-related discharges occur.⁵⁵

Significant projects that impact wetlands or other waters require individual permits that may entail creation of new wetlands to compensate for destroyed wetlands. The Corps, however, grants general permits for discharges that will have minimal adverse effects, including permits for minor discharges/dredging, single-family housing, and temporary structures for site dewatering and access during construction (e.g., cofferdams). A recent court ruling held that developers could not fill wetlands, but could cut ditches and thus drain non-tidal wetlands without permits or oversight from the Corps.⁵⁶ In response to that ruling, some states have enacted legislation requiring state permits for draining of wetlands⁵⁷ and the Corps/EPA have proposed regulations that purport to restrict certain types of draining and ditching.⁵⁸

(6) *Spill Notification.* Clean Water Act regulations require notification to the National Response Center of any discharge of possibly harmful quantities of oil or hazardous substances into navigable waters of the U.S.⁵⁹ State law may also require notice of discharges to state waters of certain amounts of oil or of other substances without a permit. Under Clean Water Act regulations, certain facilities that store, transport, or dispense petroleum products are required to prepare a Spill Prevention, Control and Countermeasures (SPCC) Plan.⁶⁰ The regulations do not apply to facilities (1) with less than 42,000 gallons of underground storage and 1,320 gallons of above ground storage (with no container larger than 660 gallons), or (2) from which a spill is unlikely to reach U.S. waters.⁶¹

(7) *Coastal Zone Management Act.* The Coastal Zone Management Act⁶² and regulations administered by the EPA and the National Oceanic and Atmospheric Administration⁶³ prohibit the EPA from issuing a permit for an activity affecting land or water use in the 29 states and territories comprising the coastal zone until the applicant certifies that the proposed activity complies with the state's Coastal Zone Management Program and the state concurs (or the Secretary of Commerce overrides the state objection). Covered states must develop Coastal Non-Point Pollution Control Programs that set forth mandatory requirements for non-point source pollution control that are *not* subject to NPDES permit requirements. Such "management measures" may include (a) construction erosion/sediment controls that require the development of an approved sediment and erosion control plan prior to land disturbance, and (b) construction site chemical controls that limit the application, generation, and migration of chemicals (including petroleum and pesticides) and nutrients and provide proper storage and disposal to prevent significant chemical and nutrient runoff to surface water. Construction projects in covered states will have to comply with these state-administered programs.

(8) *TMDL Program.* In July 2000, the EPA issued rules beginning to phase in the Clean Water

Act "Total Maximum Daily Load" program.⁶⁴ Under this program, states will be required to identify polluted water bodies (under section 303(d) of the Clean Water Act) and adopt plans for improving water quality. These plans may involve management measures, including increased erosion and sediment controls at construction sites.

(9) *State Requirements.* In addition to implementation of Clean Water Act standards, states may have water quality protection requirements, including, for example, the following:

(1) State regulations may govern activities or require a permit for activities that will impact groundwater.

(2) Property owners are generally required to obtain state permits for the withdrawal of water from surface or groundwater sources.

(3) Construction projects that involve subsurface sanitary sewerage systems (such as septic tanks and drain fields) or drainage and sewer lines that hook up to municipal sewage must observe state and local health and environmental regulations and usually require appropriate permits.

(4) Construction projects in flood plains must meet requirements of local flood damage reduction ordinances as part of the general building permit process.

♦ Air Pollution

Construction and demolition activities that may harm air quality by increasing the ambient concentrations of regulated pollutants may be subject to federal, state, and/or local requirements. Most federal Clean Air Act requirements⁶⁵ apply to stationary facilities and motor vehicles, but a few federal as well as state and local requirements are generally relevant to construction activity.

(1) *Asbestos.* The primary hazardous air pollutant of potential concern at construction sites is asbestos. Projects involving the demolition, renovation, repair, construction, or maintenance of buildings may disturb asbestos-containing ma-

terials (ACMs). ACMs include pipe, duct, and boiler insulation, ceiling tiles, and sprayed-on fireproofing or insulation. Facilities to be renovated or demolished should be inspected for the presence of ACMs. Handling, disturbing, removing, and disposing of ACMs is governed by the EPA's National Emissions Standards for Hazardous Air Pollutants, (NESHAPs)⁶⁶ and analogous state regulations.⁶⁷ The asbestos NESHAP sets forth methods for assessing and removing ACMs prior to disturbance. For most ACMs, abatement may be performed only by trained and licensed contractors who provide appropriate notice to regulatory agencies, follow required work practices (containment, air monitoring, respirators and protective clothing), properly dispose of asbestos-containing waste, and keep appropriate records. The EPA and the U.S. Department of Justice have in recent years brought criminal charges resulting in fines and jail time for asbestos-related Clean Air Act violations, including the use of untrained workers, improper removal procedures, and unauthorized dumping of debris.

Under federal regulations, certain ACMs that are in good condition and non-friable (cannot be crushed by hand pressure), typically including floor tile and asphaltic roofing products, may be left in place during demolition or removed during renovation using less burdensome procedures.

(2) *Dust and Fugitive Emission Control.* Construction activities that generate dust and other particulate matter may be subject to state or local regulations requiring contractors to take reasonable dust control precautions.⁶⁸ Measures may include avoiding disturbance of ground cover for as long as possible, using slope stabilizers and planting grass, installing wind fences, using water or other approved liquids (not used oil) to prevent dust generation, installing gravel pads at access points (to avoid dirt track-out), paving roads, covering piles and disturbed soils with tarpaulins, and covering haul trucks. State or local regulations may require site owners or general contractors to file a dust control plan and obtain an earth moving equipment permit if a

minimum area is to be disturbed. Adoption of new federal Clean Air Standards governing particulate matter could encourage states/localities to adopt more stringent dust control measures.⁶⁹

(3) *Other State/Local Requirements.* Construction projects may sometimes involve the open burning of land clearing debris or construction and demolition waste. State or local regulations may prohibit open burning entirely or limit it to natural vegetation. In areas where burning is allowed, state or local environmental, air, or fire protection authorities may issue permits. State and local regulations may also, for example, contain requirements concerning emissions during spray painting of buildings, certification of operators of boilers paving roads and parking lots, and vehicle emissions inspection and maintenance.⁷⁰

♦ **Other Potentially-Relevant Environmental Regulations**

Numerous other federal, state, and local environmental requirements may impact construction projects.

(1) *National Environmental Policy Act (NEPA).* NEPA⁷¹ requires federal agencies to prepare a detailed environmental impact statement (EIS) "for major Federal actions significantly affecting the quality of the human environment."⁷² The agency will prepare an environmental assessment to determine if an EIS is justified and, if not, will prepare a "finding of no significant impact" (FONSI) and allow the project to proceed. Certain federally funded construction projects will be subject to NEPA requirements and, moreover, NEPA requirements may apply to private party actions where issuance of permits or other federal activity constitutes "substantial federal actions." Some states have also adopted statutes that apply a NEPA-like environmental review of certain projects within those states. Moreover, Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations⁷³ require federal agencies to consider the impact of their actions on historic properties. The review is coordinated with the NEPA review. As with NEPA, federal actions may include

construction projects funded by the Federal Government and projects requiring permits or other approvals from federal agencies. States or local governments may also have statutes or ordinances that require approval from a historic review board prior to commencing construction activities within designated historic areas.

(2) *Endangered Species Act (ESA).* Several sections of the ESA⁷⁴ may apply to construction projects. ESA Section 9 prohibits the "taking" (including the harming or killing) of an endangered species. Under U.S. Fish and Wildlife Service (FWS)/National Marine Fisheries Service regulations implementing ESA Section 10, a private property owner may obtain an "incidental take" permit if an activity will result in the incidental taking of a listed animal species.⁷⁵ The property owner must submit a Habitat Conservation Plan that specifies the likely impact on an affected species and the steps that will be taken to minimize and mitigate such impacts. Moreover, ESA Section 7 requires federal agencies to ensure that their actions, including construction projects, will not jeopardize listed endangered or threatened species by, for example, destroying or adversely modifying the species' critical habitats. Section 7 is not limited to projects where the Government is the owner, but may apply to private party actions where issuance of permits or other federal activity constitutes substantial federal actions. Such actions have included issuance of a dredge and fill permit under the Clean Water Act for construction of a dam, expansion of a ski resort, and federally-financed state highway projects.

(3) *Toxic Substances Control Act (TSCA).* TSCA⁷⁶ governs the testing, manufacture, processing and distribution of certain toxic chemicals. Contractors handling transformers, capacitors, and other electric equipment containing polychlorinated biphenyls (PCBs) should be aware of EPA regulations concerning marking, storage, disposal, releases, and spill clean-up from such equipment.⁷⁷

The EPA recently issued a proposed rule, pursuant to TSCA, that would allow disposal of

lead-based paint (LBP) debris in C&D landfills.⁷⁸ Currently, such debris may have to be tested under the hazardous waste toxicity characteristic leaching procedure and handled as hazardous waste if the debris exceeds the lead leaching limits. Lead-based paint chips and dust, solvents, and contaminated wash water are not classified as LBP debris and may be subject to RCRA requirements. Moreover, pursuant to TSCA Sections 402 and 404,⁷⁹ the EPA has issued standards for training and certification of workers who engage in LBP activities. TSCA Section 405⁸⁰ also encourages state programs for training, risk assessment, inspection, and abatement of lead paint, primarily in residential housing. States may have regulations that impact demolition/renovation activities involving structures with lead paint.

(4) *Pesticides*. The Federal Insecticide, Fungicide, and Rodenticide Act,⁸¹ deals with the sale, distribution, labeling, and use of pesticides. State and local regulations concern, for example, certifications for applicators of restricted use pesticides, limitations of use of certain pesticides, application procedures, and disposal requirements for unused pesticides or pesticide containers and other wastes.

(5) *Hazardous Materials Transportation Act*. The Act and its Department of Transportation implementing regulations⁸² set forth federal standards for transportation of hazardous materials, including hazardous wastes.

(6) *Environmentally Sensitive Areas*. States may have special requirements governing land use and construction activities in environmentally sensitive areas. For example, the Maryland Chesapeake Bay Protection Act and its Critical Area program⁸³ limits construction activities within a certain distance of the shore. The Virginia Chesapeake Bay Preservation Act⁸⁴ requires local governments in the tidewater area to enact development limits and storm water management programs.

(7) *Noise*. State regulations may outline provisions and standards for sound level measurements and maximum noise levels from equipment, motor vehicle, or site activities. Some of the regulations apply to construction activities and may specify the time, duration (work hours), and location of maximum permissible levels. Local governments may have additional noise control ordinances and can, for example, use curfews to regulate construction noise.

Conclusion

Construction companies must incorporate environmental compliance procedures into their project, contract, planning, and implementation processes by establishing an environmental compliance program. Such a program will identify and set up a process for complying with the myriad potential federal, state, and local environmental requirements that may govern construction projects.

Guidelines

These *Guidelines* discuss general environmental concerns for contractors. They are not, however, a substitute for professional representation in any specific situation.

1. A construction company may avoid environmental liabilities by implementing an *environmental compliance program* with a comprehensive policy, clear guidelines, and appropriate training.

2. Construction companies should consider environmental issues at the contract formation stage and assign clearly the responsibility for obtaining *permits* and handling *hazardous materials*. In addition, contractors should require the owner to disclose the presence of hazardous substances and obtain an appropriate *indemnification provision* in the contract.

3. *Training* is a crucial part of any environmental program. Company officers should receive specific environmental training and project workers should be given environmental rules when they begin a project and be kept up to date at regular project safety meetings.

4. Contractors may be held *liable* under CERCLA for the clean-up of *hazardous substances*. Therefore, contractors should not disturb onsite hazardous substances and deal only with reputable waste haulers who can *document* that off-site wastes have been disposed at licensed facilities.

5. Project developers are generally responsible for obtaining *wetlands and wastewater dis-*

charge permits, but contractors are *obligated* to *comply* with the terms of those permits and may incur liability for improper discharges.

6. *Air pollution control* requirements for construction sites may be limited to machinery emissions, dust controls, and open burning prohibitions, but in demolition projects, care should be taken not to disturb asbestos-containing materials without proper permits and procedures.

7. From the initial point of contract *bidding*, construction companies should *exercise care* to identify, and ensure compliance with, environmental requirements.

References

1. Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) 42 USC §§ 9601-9675; See, e.g., Kaiser Aluminum & Chemical Corp. v. Cattelus Development Corp., 976 F.2d 1338 (9th Cir. 1992); Tanglewood East Homeowners v. Charles-Thomas, Inc., 849 F.2d 1568 (5th Cir. 1988).
2. See, e.g., U.S. v. Holland, 874 F.2d 1470 (11th Cir. 1989) (maritime contractor's probation was revoked because he engaged in unauthorized dredging, bulkheading and filling of wetlands in violation of federal and state clean water acts); U.S. v. Van Leuzen, 816 F. Supp. 1171 (S.D. Tex. 1993) (independent contractor received civil penalty under Clean Water Act for transporting fill to wetlands project that did not have proper permits); see also U.S. v. Pozgai, 999 F.2d 719 (3d Cir. 1993) (landowner who directed filling of wetlands without a permit subject to criminal and civil penalties; companies that hauled fill to the site ordered to remove it and restore the site), cert. denied, 510 U.S. 110 (1994).
3. See, e.g., Molokai Chamber of Commerce v. Kukui (Molokai), Inc., 891 F. Supp. 1389 (D. Hawaii 1995) (Clean Water Act civil suit could be brought against construction company for discharge of pollutants without a permit in connection with storm water runoff from construction project); Nemeth v. Abonmarche Development, Inc., 576 N.W.2d 641 (Mich. 1998) (developers and construction company violated state environmental protection act where they failed to implement a soil erosion and sediment control plan and construction site wind and water-blown sediments caused damage); Pennsylvania National Mutual Casualty Co. v. Triangle Paving, Inc., 973 F. Supp. 560 (E.D.N.C. 1996) (insurance coverage case where sediment dislodged by construction company escaped site and contaminated downstream water, company required to correct problem and pay damages to other property owners), affd. per curiam, 121 F.3d 699 (4th Cir. 1997); Orgulf Transport Co. v. U.S., 711 F. Supp. 344 (W.D. Ky. 1989) (court upheld imposition of fine for Clean Water Act violation against tug boat operator responsible for five gallon oil spill); EPA Region 3 Enforcement Initiatives and Significant Actions, Criminal Enforcement Notices (Nov. 2000) (EPA cited individuals for unlawfully dumping fill material into a waterway in violation of the Clean Water Act during home construction); EPA Headquarters Press Release (June 6, 1997) (company and individual convicted of discharging oil, construction debris, paint chips, metal fragments, insulation and other materials to river in violation of Clean Water Act and Refuse Act during ship demolition and scrapping).
4. See, e.g., U.S. v. Dell'Aquila, 150 F.3d 329 (3d Cir. 1998) (court held that site developer was liable as a site operator for asbestos-related Clean Air Act violations); U.S. v. Buckley, 934 F.2d 84 (6th Cir. 1991) (defendant involved with demolition project found criminally liable for violation of Clean Air Act in connection with release of asbestos); U.S. v. Louisville Edible Oil Products, 926 F.2d 584 (6th Cir.) (property owner and construction/demolition company criminally prosecuted for violation of Clean Air Act asbestos removal standards), cert. denied, 502 U.S. 859 (1991); U.S. v. J&D Enterprises, 955 F. Supp. 1153 (D. Minn. 1997) (court assessed civil penalties under Clean Air Act against construction company for improper handling of asbestos-containing materials during demolition of warehouse); U.S. v. Geppert Bros., Inc., 638 F. Supp. 996 (E.D. Pa. 1986) (contractor who demolished buildings containing asbestos-containing materials without complying with Clean Air Act asbestos regulation's requirements for notice and compliance with work practices could be held civilly liable).
5. See, e.g., 40 CFR § 262.34 (hazardous waste generators may not store waste for more than 90 days); U.S. v. Case, No. CR 99-33-B-M1 (M.D. La. July 31, 2000) (construction company, subcontractor and employees charged with criminal violation of Resource Conservation and Recovery Act, 42 U.S.C. § 6928(d)(2)(A), for storing or disposing of pesticide canisters without a permit; person killed when canister leaked).
6. See, e.g., Michigan Department of Environmental Quality Press Release (Oct. 11, 2000) (contractors convicted of illegal disposal of solid waste for operating a construction and demolition debris handling facility without a license or permit); EPA Region 3 Enforcement Initiatives and Significant Actions, Criminal Enforcement (Nov. 2000) (Pennsylvania waste hauler convicted of illegal disposal of petroleum-derived liquid waste at a municipal sewer

- treatment plant instead of a specifically designated treatment center); EPA Region 3 Enforcement Initiatives and Significant Actions, Criminal Enforcement Notices (Nov. 2000) (West Virginia company fined for illegal disposal of excess paint by, e.g., spraying it into waterways and then charging the state of West Virginia for the paint by claiming it was used to paint bridges).
7. For example, Federal Government contracts may incorporate U.S. Army Corp of Engineers Specification CEGS-01354 (Oct. 1995), which requires submission of an Environmental Protection Plan.
 8. See, e.g., Fla. Stat. Ann. § 403.703(17) (under Florida law, construction and demolition debris includes non-water soluble, non hazardous discarded material—e.g., steel, brick, glass, concrete, asphalt roofing materials, pipe, vegetative material, paper, plastic and wood).
 9. See, e.g., Wash. Admin. Code § 173-304-100(19) (definition of demolition waste under Washington State solid waste disposal regulations excludes plaster—i.e. sheet rock or plaster board—and other materials other than demolition wood that are likely to produce gases or leachate during decomposition).
 10. See, e.g., Wash. Admin. Code §§ 173-303, 173-304-461, 173-351-200 (Washington State solid waste disposal regulations exclude dangerous wastes, e.g. asbestos, from disposal at solid waste landfills and require disposal at specially-licensed facilities); 310 MA ADC § 19.017(3) (listing materials, including lead batteries, cathode ray tubes, aluminum containers, leaves and yard waste that may not be disposed at landfills); 15A N.C. ADC §§ 13B.0103, 13B.0505(11) (liquid wastes, including used oil, may not be disposed at solid waste disposal facilities; properly packaged asbestos waste may be disposed in separate disposal areas).
 11. See, e.g., Arkansas Solid Waste Management Act, Ark. Code Ann. § 8-6-201; the "Waste Not Washington Act," Wash. Rev. Code § 70.95; Solid Waste Management and Multi-Material Recycling Act, D.C. Stat. § 6-3401; N.C. Stat. §130A-290(4), (14), (15) and (45) (definition of construction demolition debris under North Carolina's solid waste management statute excludes inert debris, e.g. concrete, brick, uncontaminated rock or soil, which may be used as on-site fill, see § 130A-301.1, and land-clearing debris and yard debris which are to be reduced, reused or recycled as mulch or compost, see § 130A-309.11).
 12. See, e.g., N.C. Stat. §§ 130A-294(a)(4), 130A-301.1, 130A-301.2 (construction and demolition debris may be buried onsite, subject to certain restrictions).
 13. 42 USC §§ 6901-6992k.
 14. 40 CFR Parts 260-299, RCRA Subtitle C regulations.
 15. See 42 USC § 6926(b) (states may be authorized to administer hazardous waste programs that are equivalent to, and no less stringent than, the federal program), 42 USC § 6929 (state programs may be more stringent than the federal program); see also 65 Fed. Reg. 57734, (Sept. 26, 2000) (EPA authorization of Pennsylvania program, including more stringent requirements such as a prohibition on disposal of conditionally exempt small quantity generator hazardous waste at municipal landfills); 65 Fed. Reg. 46606, (July 31, 2000) (authorization of Virginia program, including more stringent requirements such as requirement that conditionally exempt small quantity generator can send hazardous waste to a solid waste facility only if the facility has received permission to receive such wastes). Comprehensive state programs include, e.g., the Massachusetts Hazardous Waste Management Act, Mass. Gen. Laws, Ch. 21C.
 16. See 40 CFR Part 261.
 17. 40 CFR Part 262.
 18. 40 CFR Part 279.
 19. See, e.g., 14 Cal. Code §§ 18600-18659.5 (California's Used Oil Recycling Program); N.C. Stat. §§ 130A-309.15 through 130A-309.24 (used oil disposal limitations and management standards).
 20. 40 CFR Part 273.
 21. See 40 CFR § 273.9.
 22. 42 USC § 9601-9675.
 23. 42 USC §§ 9604, 9607.
 24. 42 USC § 9613(f).
 25. 40 CFR Part 300.
 26. 42 USC § 9607(a).
 27. See, e.g., Kaiser Aluminum & Chemical Corp. v. Cattelus Development Corp., 976 F.2d 1338 (9th Cir. 1992) (contractor that excavated and graded contaminated soil held liable as facility operator and transporter); Tanglewood East Homeowners v. Charles-Thomas, Inc., 849 F.2d 1568 (5th Cir. 1983) (contractor who graded and filled creosote pools was potentially liable as a generator or transporter). Even if a contractor is a potentially responsible party (PRP) under CERCLA, courts have held that it may not be liable to other PRPs in a contribution action. See, e.g., Danella Southwest, Inc. v. Southwestern Bell Telephone Co., 775 F. Supp. 1227 (E.D. Mo. 1991) (When a contractor for a telephone company excavated contaminated soil from a trench and placed it at a different property, EPA issued an administrative order to the telephone company and contractor to contain the soil. The telephone company complied with the order and brought a contribution action against the contractor to recover its remediation costs. The court held that although the contractor was a responsible party under CERCLA, consideration of equitable factors lead it to conclude that the contractor, who was unaware of the contamination and performed the job properly, was not liable for contribution to the telephone company), *affd.*, 978 F.2d 1263 (8th Cir. 1992).
 28. 42 USC § 9619(a).
 29. See, e.g., Jersey City Redevelopment Authority v. PPG Industries, 665 F. Supp. 1257 (D.N.J. 1987) (contractor who sold contaminated fill used at new construction site was responsible for costs of remediation of second site).
 30. 40 CFR Part 302; see also U.S. v. Buckley, 934 F.2d 84 (6th Cir. 1991) (defendant involved with demolition project found criminally liable for violation CERCLA notification requirement in connection with release of asbestos into the environment).
 31. See 40 CFR § 302.4.
 32. 42 USC §§ 11001-11050; 40 CFR §§ 302, 304, 311, 312 and 314.
 33. 40 CFR Part 280.
 34. See 40 CFR § 112 (Clean Water Act spill prevention requirements apply to facilities with an above ground tank with a capacity exceeding 660 gallons or total tank capacity exceeding 1,320 gallons); Cal. Health and Safety Code §§ 25270-25270.13 (California's Aboveground Petroleum Storage Act requires owners and operators of aboveground storage tanks in excess of 660 gallons to file a storage statement, pay a fee, and implement measures to prevent spills); Pennsylvania State Storage Tank and Spill Prevention Program, 25 Pa. Code Ch. 45 (performance and

design standards, closure requirements and record keeping requirements, generally applying to stationary aboveground storage tanks with a capacity exceeding 250 gallons).

35. 42 USC §§ 13101-13109.
36. See RCRA § 6002(c)(1); Exec. Order 13101 (Sept. 14, 1998); 40 CFR Part 247.
37. Occupational Safety and Health Act Section 18, 29 USC § 667, provides that states (with OSHA approval) may develop and enforce their own standards "which are at least as effective in providing safe and healthful employment" as existing federal standards.
38. 29 CFR § 1926.59.
39. 29 CFR § 1926.1101.
40. 29 CFR § 1926.62.
41. Other potentially relevant OSHA standards include the OSHA Process Safety Management of Highly Hazardous Chemicals Standard, 29 CFR § 1910.119 (requirements for preventing and minimizing the consequences of catastrophic releases of hazardous chemicals in processes using more than a threshold amount of listed chemicals) and OSHA standards addressing requirements for Personal Protective Equipment, including respirators, that might be required for work with substances such as asbestos.
42. See, e.g., New York Industrial Code Rule 56 (code requirements include contractor licensing, certification of all persons working on asbestos projects, filing of notifications for large asbestos projects, and pre-demolition surveys to identify asbestos-containing materials that may be present); Virginia asbestos program, Va. Code §§ 40.1-51.20 to 40.1-51.41 (state asbestos notification, licensing, and inspection requirements).
43. 33 USC §§ 1251-1387.
44. 33 USC § 1311(a).
45. 33 USC § 1311.
46. 33 USC § 1342.
47. See 40 CFR Parts 122-124.
48. See 40 CFR Parts 403-471.
49. 40 CFR Parts 122-124, 131.
50. See 64 Fed. Reg. 68722 (Dec. 8, 1999) (final rule).
51. See, e.g., Virginia Chesapeake Bay Preservation Act Regulations, 9 VA ADC § 10-20-120 (construction activities disturbing more than 2,500 square feet in designated preservation areas must comply with local erosion and sediment control ordinances); 25 PA ADC § 102.4 (construction activities disturbing less than 5,000 square feet must implement and maintain erosion and sediment control best management practices; activities disturbing over 5,000 square feet require a written erosion and sediment control plan); Wis. Stat. § 281.33 (allows municipalities to enact local construction site erosion control and stormwater management plans which may apply to sites less than five acres) and Wis. Stat. § 101.62 (requiring localities to adopt a Uniform Dwelling Code that contains provisions to control erosion during construction of one and two family dwellings); Alabama Department of Environmental Management Admin. Code R. 335-6-6 (Alabama's general permit for erosion control applies to discharges from all construction sites regardless of the size of the project, although in practice permits are required only for construction sites that meet the federal threshold, unless the discharges from smaller sites adversely affect state water quality).
52. 42 USC §§ 300f through 300j-26.
53. Clean Water Act § 404, 33 USC § 1344.
54. 33 USC § 403.
55. 33 U.S. § 1344; see, e.g., U.S. v. Holland, 874 F.2d 1470 (8th Cir. 1989) (upholding criminal conviction of contractor for engaging in dredging and filling activities without necessary permits).
56. National Mining Assoc. v. U.S. Army Corps of Engineers, 145 F.3d 1399 (D.C. Cir. 1998).
57. See, e.g., Va. Code § 62.1-44.5 (requiring a permit for excavating, filling, flooding or otherwise significantly altering or degrading existing wetlands).
58. See 65 Fed. Reg. 50107 (Aug. 16, 2000) (proposed rule).
59. See Clean Water Act § 311; 40 CFR § 110.6.
60. 40 CFR § 112.
61. 40 CFR § 112.1(d)(2).
62. 16 USC §§ 1451-1464; see particularly § 307(c), 16 USC § 1456(c).
63. 15 CFR Part 930.
64. 65 Fed. Reg. 43586 (July 13, 2000).
65. 42 USC §§ 7401-7642.
66. 40 CFR Part 61, subpart M.
67. See, e.g., District of Columbia Asbestos Licensing and Control regulations, D.C. Code § 6-991 (requirements regarding licensing for asbestos removal activities, notice to state agencies, penalties for violations, and limitations on disposal); Maryland asbestos removal regulations, Md. Reg. Code tit. 26, § 21 (similar provisions).
68. See, e.g., Pennsylvania Administrative Code, 25 PA ADC §§ 123.1, 123.2 (allowing generation of fugitive dust during construction projects, but requiring reasonable actions to control the dust, including use of water or chemicals during demolition, application of oil, water or other chemicals on dirt roads, or paving of roadways); Sacramento (California) Air Quality Management District SACAQMD Rule 403 (requiring persons to take reasonable precautions to prevent emissions of fugitive dust beyond the property line, including use of water or chemicals to control dust during demolition and application of asphalt, oil, water or other suitable chemicals to roadways and other surfaces); Rhode Island Air Pollution Control Regulation No. 5 "Fugitive Dust" (persons at construction sites shall take "adequate precautions to prevent particulate matter from becoming airborne").
69. EPA Clean Air Act particulate standards were successfully challenged by industry, American Trucking Association v. Environmental Protection Agency, 195 F.3d 4 (D.C. Cir. 1999), cert. granted, 120 S. Ct. 2003 (2000) and the U.S. Supreme Court is expected to resolve the matter in 2001.
70. See, e.g., Pennsylvania Administrative Code, 34 PA ADC § 35.131 (recommendations for health protection of workers engaged in spray painting operations); MD ADC § 11.14.08 (Maryland motor vehicle emissions inspection requirements); 310 MA ADC § 60.02 (Massachusetts regulations regarding vehicle emissions inspections).
71. 42 USC §§ 4321-4370(e).
72. 42 USC § 4332(C)(2).

73. 16 USC § 470; 36 CFR Part 800.
74. 16 USC §§ 1531-1544.
75. 50 CFR Part 222.
76. 15 USC §§ 2601-2692.
77. 40 CFR Part 761.
78. 63 Fed. Reg. 70190 (Dec. 18, 1998).
79. 15 USC §§ 2682, 2684.
80. 15 USC § 2685.
81. 7 USC §§ 136-136y.
82. 49 USC §§ 1801-1819; 49 CFR Parts 171-178.
83. Md. Nat. Res. §§ 8-1801 et seq.
84. Va. Code Ann. §§ 10.1-2100 to 2016; see also 9 VA ADC §§ 10-20-10 to 10-20-280.