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Technical Aspects of Phase I/II Environmental Site Assessments 3rd Edition

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Foreword

THIS PUBLICATION, *Technical Aspects of Phase I/II Environmental Site Assessments* was sponsored by ASTM Committee E50 on Environmental Assessment, Risk Management and Corrective Action. It is the third edition of MNL43 of ASTM International's manual series.

Acknowledgments

This manual changed from a dream to a reality because of ASTM and the many wonderful professionals associated with this technical organization.

It all began in 1993 when, at the invitation of ASTM's Scott Murphy, my colleagues on ASTM's Technical and Professional Training team and I developed the first Phase I Environmental Site Assessment Training Course. Since then, by teaching the class throughout the United States and throughout the world, we all enjoyed and continue to enjoy the opportunity to share a wealth of environmental knowledge, practical experiences, and helpful business information with each other and our students.

The experience was broadened further when we developed the Phase II Environmental Site Assessment Course, which was completed in February 1999 and has been offered by ASTM since then on a regular basis. Because of the natural progression and close relationship of the two standards, several of the instructors now teach both courses. It was during the development of the Phase II Course that I first conceived the idea of a manual based on the principles of the two standards, but that would also address many of the issues brought up during the classroom sessions. With the encouragement and support of my colleagues, I set out to fulfill that dream.

The first edition of this manual was published in 1999. In 2002, I completed the work with Mr. Shunichi Kamewada on a translation of the manual into Japanese, and I subsequently visited Japan on several occasions to train Japanese instructors in several ASTM Standards. In 2007, the manual was revised. Mr. John Worlund co-authored the edition with Dr. Hejzlar.

In recent years, with the changes in the U.S. Environmental Protection Agency Brownfields programs and related legislative developments, several changes evolved in the industry that drove the need to revise the ASTM Standards and the necessity to edit and update this manual. Ms. Julie Kilgore, who led the ASTM task group that revised the Phase I standard, and Mr. Norman Eke, who led the subcommittee of the task groups that revised the Phase I and Phase II standards, agreed to co-author the third edition with Dr. Hejzlar.

Many of the examples in the book are based on actual experiences of the instructors and students. Because of client confidentiality issues, many of the examples and case studies have been purged of names and references. In this third edition, several of the examples and photographs have been updated and revised. Sincere thanks go to the instructors who provided the materials, encouragement,

and expertise during the writing and technical review. Without their help, this manual would not have been possible.

Special thanks also go to ASTM technical professional trainers for drafting the chapter on safety and health and to David Vieau for providing materials presented in the chapter on work plans.

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Introduction

What Is the Manual About?

This manual is about applying ASTM Environmental Assessment Standards to environmental issues so that the various participants involved in commercial real estate transactions can make sound business decisions.

What This Manual Is Not About

This manual will not teach anyone how to be an environmental consultant, engineer, geologist, or a scientist because it cannot cover or replace years of education and experience or the latest in instrumentation or remediation methods.

Who Would Benefit from Reading It?

ASTM Standards are tools to promote understanding among buyers, engineers, consultants, regulators, owners, attorneys, lenders, Brownfields grantees, real estate brokers, appraisers, economic development agencies, and those involved with environmental insurance.

Commercial transactions involve numerous varied and often competing interests. Even in a simple scenario involving only a seller, buyer, banker, and an environmental professional, numerous conflicting interests abound. The seller and the buyer want a fair price. A fair price is not necessarily the same figure to both parties. All parties perceive any additional cost associated with the transaction as detrimental unless the other party pays for it. If some contamination is discovered on the property, then the buyer may want to use it as a bargaining chip. On the other hand, a buyer may think that environmental professionals make their living by cleaning up properties, using this as an opportunity to generate more business. The lender wants to make the loan, but wants to minimize the risk to the bank if the loan goes bad. One way to minimize risk is to hire a reputable environmental professional to thoroughly check the property. This will cost money, and if the cost is too high, then the buyer might obtain the loan from a competing lender who has more risk tolerance, uses a cheaper environmental professional, or asks no environmental questions at all. The risk of the buyer, who could be liable for the cost of cleaning a contaminated property, is significantly different than that of the banker, who only risks some percentage of the remaining loan balance. Lastly, everyone wants it done yesterday. This manual

examines how the ASTM Standards can be used as tools to resolve some of these issues.

How Is the Manual Organized?

Part 1 of the manual is dedicated to the understanding and appreciation of the Phase I Environmental Site Assessment **E1527** Standard [1], including the changes incorporated into the 2013 version. Discussion has been added to explain the relationship between the U.S. Environmental Protection Agency (EPA)'s All Appropriate Inquiries (AAI) regulation [2] and ASTM **E1527**. Part 2 builds on the experience and knowledge gained in Part 1 and covers **E1903** [3], elaborating on the technical business application of the Phase II Standard. The latest version of the standards can be obtained from ASTM.

Reasons for ASTM Environmental Site Assessment Standards

Federal law creates liability for pollution or contamination with hazardous substances which is strict, joint and several. "Strict liability" means that fault is not a prerequisite. It does not matter if the owner was obeying the law when they disposed of the hazardous waste. "Joint" and "several" liability means that any of the parties in the lawsuit may be liable for the entire cost of the cleanup. This provision is referred to as "deep pocket" because those parties that have the money to pay for the cleanup will generally be targeted. The liability is also retroactive, which means that it does not matter when the pollutant was released.

Potentially responsible parties (PRPs) can clean up the sites themselves with EPA or state oversight. For example, if owners find out that the site is contaminated, they can clean it up with either state or EPA's supervision. If they determine that someone else caused the contamination, such as prior owners, then they can sue to recover the cost of cleanup. On many sites, the cleanup costs are (or are perceived to be) so high that the owners may have abandoned the sites. In those instances, EPA and/or the state government can start actions to clean up the sites and then sue PRPs to recover the cost of the cleanup. There is a difference between private parties and the government trying to recover response costs (costs of cleanup). Broadly speaking, a private party must prove that its costs were necessary and that the cleanup action was

consistent with the National Contingency Plan (NCP). If the government cleans up the site and sues, then it is presumed that the cleanup action was necessary and was consistent with the NCP.

There were initially three defenses to liability for EPA response costs:

- 1. Act of God
- 2. Act of war
- 3. Third party and the purchaser had no reason to know.

For example, the owner would not be held liable if the contamination of the property was caused by an earthquake (although a court might consider whether the facility was located in an area riddled with known fault lines and preventative measures should have been taken) or if a release was caused by a terrorist strike (although a court might consider whether war had actually been declared at the time the release occurred).

Considering the low probability of these events, the only real defense against liability for cost of cleanup is what was referred to in the ASTM Standards as the Innocent Landowner Defense (ILD). To qualify for the ILD, the purchaser must

- 1. Acquire the site after the disposal or placement of hazardous substances on the property, and
- 2. Demonstrate that the purchaser did not know, or had no reason to know, that any hazardous substances were present on the property.

To establish that the purchaser had no reason to know about the contamination, the purchaser must

- 1. Undertake all appropriate inquiries (AAI) into the previous ownership and uses of the property, and
- 2. The appropriate inquiries must be consistent with good commercial and customary practice.

The language was left to broad interpretation, and the ASTM Standards were created with the purpose of defining all appropriate inquiries and good commercial customary practice.

The Brownfields Amendments of 2002 provided two additional defenses. These are the Bona Fide Prospective Purchaser (BFPP) and the Contiguous Property Owner (CPO). These two defenses along with the previous ILD are collectively referred to as the Landowner Liability Protections (LLPs).

Petroleum and crude oil have been explicitly excluded from the definition of hazardous substances. However, they are covered by other regulations and are of concern in many commercial real estate transactions; therefore, they are included within the scope of the ASTM Phase I and Phase II Standards.

The Phase I and Phase II Standards are continuously evolving documents. As the application of the standards changes, case law develops, and the industry evolves, the members on the ASTM Committee review the developments and work to incorporate applicable changes into the standards through the revision process. Environmental professionals and those who contract with environmental professionals (the “users”) are strongly encouraged to stay current on the latest revisions and modify their procedures to reflect applicable changes.

Regulatory Background

Congress, citing their constitutional power to regulate commerce amongst the states, has enacted broad regulatory statutes delegating implementation to administrative agencies. Adopting detailed regulations takes many years, and the scientific data intended to justify the regulations may be uncertain and subject to conflicting interpretations. Once regulations are adopted, parties that are dissatisfied with the result may file legal challenges to them. Agencies frequently publish guidance documents or issue interpretative letters. Agency regional offices sometimes issue policy statements that may govern the conduct of businesses within their region, especially on subjects that the agencies’ headquarters may not have addressed. There are also state laws and regulations, and the federal government often defers to state programs so long as they believe that the state program is at least as stringent as the federal program. Environmental law is a complex and dynamic subject that continues to be very much in flux. Throughout the manual, we will present several examples of case law outcomes.

The main federal regulations are

Year	Regulation
1970	U.S. EPA created.
1970	Clean Air Act (CAA) gave EPA the power to establish clean air standards. Amendments followed in 1974, 1977, and 1990. In addition to establishing ambient air pollution standards such as those regarding vehicle emissions, EPA also establishes standards for point sources, such as factories and power plants.
1972	Federal Water Pollution Act (FWPCA), predecessor to the Clean Water Act.
1976	Resource Conservation and Recovery Act (RCRA) and the Toxic Substance Control Act (TSCA). RCRA is designed to manage industrial wastes from the point of generation to their final disposal location. It is often referred to as the “cradle to grave” management process for hazardous wastes. The act requires the generators and transporters to identify, quantify, and characterize their hazardous wastes. It also specifies performance standards and permit systems for treatment storage and disposal (TSD) facilities. Most important for those involved in real estate transactions, all petroleum products are regulated under the RCRA.
1976	The TSCA regulates the manufacture, use, and disposal of chemical substances and requires the substances to be tested to determine whether they pose an unreasonable risk to human health or the environment. For example, the TSCA introduced extensive regulation covering polychlorinated biphenyls (PCBs).
1977	Clean Water Act (CWA), under which the EPA controls pollutants entering all surface waters, including lakes, rivers, estuaries, oceans, and wetlands as they define them.
1980	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as the “Superfund Law,” created the need for environmental site assessments for commercial property transactions. It generated a “blueprint” on how the hazardous substances are to be cleaned up, known as the NCP. If lenders could be perceived by the court as participating in management, then the lenders were held liable for clean up of the properties. CERCLA created a fund for clean up of the dangerous sites that is based on evaluation and priority listing, which was initially from taxes on the chemical industry and 42 commercial chemicals.

1984	RCRA amended by the Hazardous Solid Waste Amendments (HSWA), which aimed at the protection of groundwater by new requirements for managing and treating small quantities of hazardous wastes such as those generated by auto repair shops and dry cleaners and stricter requirements for municipal solid waste and industrial landfills.
1985	Asbestos Hazard Emergency Response Act (AHERA) requires schools to identify and respond to their asbestos problems. The Asbestos School Hazard Abatement Act (ASHAA), passed in 1984, provided interest-free loans to schools for asbestos control projects.
1986	Superfund Amendments and Reauthorization Act (SARA). The CERCLA/SARA liability provisions are very broad and require EPA to recover the cost of any cleanups from the “responsible parties,” which include all past and present owners and operators of the property. The details of this liability recovery and the defenses to it led to the development of the ASTM Phase I Environmental Site Assessment Standard, described in more detail in the Reasons section for ASTM Phase I.
1986	Emergency Planning and Community Right-to-Know Act (EPCRA) requires hazardous chemical emergency planning by federal, state, and local governments; Indian tribes; and industry. It requires industry to report on the storage, use, and releases of hazardous chemicals to federal, state, and local governments.
1990	Hazardous Materials Transportation Uniform Safety Act (HMTUSA) regulates the transportation of hazardous materials in intrastate, interstate, and foreign commerce.
1990	Pollution Prevention Act (PPA) authorized EPA to encourage the adoption of source reduction techniques by businesses using matching grants and information exchange on the topic.
1992	EPA created a rule providing a Secured Creditor Exemption from CERCLA liability.
1994	The 1992 EPA Secured Creditor Exemption was declared invalid.
1996	CERCLA was amended to provide a Secured Creditor Exemption creating a “safe harbor” for many customary lending practices, although a lender who exercises too much control may lose this protection. Lenders could still lose all or part of the remaining loan balance if the borrower is held liable for cleanup; therefore, they often conduct environmental due diligence on the basis of their risk tolerance. The risk tolerance of the borrower may be significantly different than that of the lender.
2002	Small Business Liability Relief and Brownfields Revitalization Act (Pub. L. 107-118, 115 Stat. 2356, “the Brownfields Amendment”) [4] required EPA to develop regulations establishing standards and practices for how to conduct “all appropriate inquiries,” and Congress included a list of criteria that EPA must address in the regulations establishing standards and practices for conducting all appropriate inquiries.
2005	EPA issued their All Appropriate Inquiries Final Rule (AAI).
2013	AAI Final Rule Amended to reference revised ASTM Standard.

In addition to the federal regulations discussed here, many states and local governing bodies within each state have adopted environmental regulations that mirror the federal statutes. Local regulations can often be stricter than federal laws or deal with issues not covered by federal regulations. Throughout this manual, we will stress the importance of local knowledge with respect to environmental assessments and the need for the environmental professionals to become acquainted with state and local requirements.

References

- [1] ASTM Standard **E1527**, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, *Annual Book of ASTM Standards*, ASTM International, West Conshohocken, PA, 2013.
- [2] U.S. Environmental Protection Agency, “All Appropriate Inquiries,” Final Rule 40 CFR Part 312.
- [3] ASTM Standard **E1903**, Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, *Annual Book of ASTM Standards*, ASTM International, West Conshohocken, PA, 2011.
- [4] Small Business Liability Relief and Brownfields Revitalization Act (Brownfields Bill), 42 USC §§9601 *et seq.*, 2012.



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Through many years of association with ASTM, Dr. Hejzlar has developed and taught technical professional courses in environmental and safety risk management, property condition assessments and occupational safety and health. His projects include deployment, health and safety, risk evaluations, training and standards development for the U.S. Department of Defense, property evaluations for the U.S. Department of Agriculture, Technical Professional Training for ASTM, RIFS and HAZWOPER training for clients in Asia, and environmental risk training for World Bank Group members in Europe. Dr. Hejzlar is involved in standards development on five different committees at ASTM. He is chairman of the ASTM Committee on Publications. He is also the author of the first edition of this manual.



Julie H. Kilgore

Julie Kilgore is president of Wasatch Environmental, Inc., an environmental science firm based in Salt Lake City, Utah. A member of ASTM International since 1994, Kilgore is the past chair of Committee E50 on Environmental Assessment, Risk Management and Corrective Action (2006 to 2014). Since 2000, Kilgore has chaired the ASTM E1527 Phase I Environmental Site Assessment Task Group, which includes more than 100 stakeholders, and has led the task group through the 2005 and 2013 revisions of the E1527 standard. In 2004, she was appointed by the U.S. Environmental Protection Agency (EPA) as one of 25 negotiators to serve on the advisory committee that assisted EPA in developing the “All Appropriate Inquiries” (AAI) regulation. Kilgore also served on the ASTM board of directors from 2005 to 2007, and was chairman of the ASTM Finance and Audit Committee in 2008.

She received an E50 Service Award in 2007, and the ASTM Award of Merit and accompanying title of fellow from the committee in 2009. In 2013, she received the Robert J. Painter Award from ASTM International and SES (the Society for Standards Professionals) for her exceptional contributions as the driving force behind the development and subsequent revisions of ASTM E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. She provides training, lectures, and presentations to professional groups and regulatory agencies about the environmental site assessment process and related ASTM standards and has written or contributed to numerous technical journals and industry publications regarding environmental due diligence.



Norman S. Eke

Mr. Eke is the senior vice president and managing officer of Converse Consultants’ California environmental offices. Converse Consultants is a multi-disciplinary engineering corporation that provides geotechnical engineering, engineering geology, soils and materials testing and inspection, environmental consulting services, water resources management and occupational and environmental health and safety services. He has served as the principal-in-charge and contract administrator to deliver consulting services to federal, state and municipal governments, financial institutions, electrical and natural resource utilities, educational facilities including K-12 and state and private universities, transportation authorities, community builders and private owners.

Mr. Eke has served as the ASTM subcommittee chairman for the ASTM E50.02 Real Estate Assessment and Management subcommittee, which includes standards for Phase I & II environmental sites assessments, vapor encroachment, building energy efficiency and continuing obligations.

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