ILLINOIS POLLUTION CONTROL BOARD
August 11, 1994

IN THE MATTER OF:	)	
	)	
REGULATION OF PETROLEUM	)	
LEAKING UNDERGROUND STORAGE TANKS	)	R94-2 (A)
35 ILL. ADM. CODE 732	)	(Rulemaking)
(Pursuant to P.A. 88-496)	)	

PROPOSED RULE. SECOND NOTICE.

OPINION AND ORDER OF THE BOARD (by C.A. Manning, J. Theodore Meyer, and M. McFawn):

I. INTRODUCTION

This opinion and order sets forth and explains the regulatory requirements of Illinois' Underground Storage Tank Program as the Illinois Pollution Control Board (Board) intends to promulgate them pursuant to the Second Notice provisions of the Illinois Administrative Procedure Act, 5 ILCS 100/5-40. These rules were initially published in the Illinois Register, pursuant to a "Nonsubstantive First Notice Opinion and Order," which this Board adopted on March 17, 1994, two days after the Illinois Environmental Protection Agency (Agency) timely submitted its regulatory proposal. The rules were filed pursuant to Title XVI of the Illinois Environmental Protection Act (Act), which is entitled the Leaking Underground Storage Tank Program and is hereinafter referred to as the Illinois LUST Law.[1]

State regulation of underground storage tanks (UST or USTs) is authorized by the Hazardous and Solid Waste Amendments of 1984 to Subtitle I of the federal Resource Conservation and Recovery Act (RCRA). (42 U.S.C. Section 6991-6991i.) Under RCRA, rather than mandatory administration by the United States Environmental Protection Agency (USEPA) on a national basis, states may adopt their own UST programs as long as the program or its standards are "no less stringent" than federal law or regulations promulgated pursuant thereto. (RCRA Section 6991(c)(b)(1) and 6991(g).)

RCRA establishes that if a state wishes to administer an UST program, the program will only be federally-approvable only if it is in compliance with certain requirements and

[1]These rules were filed by the Agency to satisfy its statutory directive to create rules in order to implement Illinois' new LUST program. The new LUST Law was signed by Governor Edgar on September 13, 1993 as P.A. 88-496. Among the law's many directives was the requirement that the Agency propose, within six months of the law's effective date, regulations implementing procedures and standards for the Agency's administration of its duties under the new UST program. (415 ILCS 5/57.14(b).) In turn, the legislature gave the Board an equally rigorous six month adoption deadline to complete the rulemaking and promulgate regulations consistent with the new LUST Law. Our adoption deadline is September 15, 1994.

standards (RCRA Section 6991c(a)(1)-(8)). One of these is to demonstrate that the State has a system in place to ensure UST owners and operators are "financially responsible" for performing corrective action. (RCRA Section 6991c(a)(6).) A state's corrective action and compensation program, such as Illinois' LUST Law, can be sufficient to satisfy this financial responsibility requirement, as can be a record-keeping system showing owners and operators have guarantors, private or self-insurance. (RCRA Section 6991c(c).)

Beginning in 1986, the Illinois legislature has promulgated various state underground storage tank laws and programs to implement a state-managed UST program. Throughout the program's complex eight-year history, the largest and most recurring problems the state has sought to address have concerned the cost and funding aspects of the program. Additionally, the state has continued to struggle with issues of remediation ("How Clean is Clean?") and what to do about abandoned tanks where there is no clear "owner" (the "orphan tank" problem). When representatives of industry sat down with representatives of government last year, their goals were clearly directed toward a comprehensive overhaul of the state's underground storage tank program. In particular, they sought to reduce the cleanup costs through implementation of a risk-based assessment program; spell out the criteria for determining "how clean is clean;" optimize the use of the UST Fund; boost the UST Fund in order to pay off long overdue reimbursements; facilitate the review of cleanup actions; and limit the liability of a tank owner once a cleanup action was completed.

While some of these goals will continue to be legislatively and regulatorily addressed, the Illinois legislature substantially addressed most of the problems associated with the old underground storage tank statutory provisions when it adopted the new Illinois LUST Law last year. Through the instant rulemaking, we hope to facilitate the parties' attempts to further resolve those problems that have plagued the prior programs and further implement the legislature's goals. Moreover, we hope to provide rules that are both environmentally sound and protective of the fund so that monies will be available for sites which are causing significant environmental damage and so that fund monies will not be unwisely spent.

II. THE NEW ILLINOIS LUST LAW: P.A. 88-496
The State Context

According to the "Intent and Purpose" Section of Illinois new LUST Law, its promulgation was "in accordance with the requirements of the Hazardous and Solid Waste Amendments of 1984 of the Resource Conservation and Recovery Act of 1976, and in accordance with the State's interest in the protection of Illinois land and water resources." (Illinois LUST Law, Section 57, Intent and Purpose.) More specifically, the legislature identified five purposes underlying the new law:

1. Adopt procedures for the remediation of underground storage tank sites due to the release of petroleum and other substances regulated under this Title from certain underground storage tanks or related tank systems **(Adopt Remediation Procedures)**;

2. Establish and provide procedures for a Leaking Underground Storage Tank Program which will oversee and review any remediation required for leaking underground storage tanks and administer the Underground Storage Tank Fund (**Adopt Programmatic and Administrative Procedures**);

3. Establish an Underground Storage Tank Fund intended to be a State fund by which persons who qualify for access to the Underground Storage Tank Fund may satisfy the financial responsibility requirements under applicable State law and regulations (**Establish Fund**);

4. Establish requirements for eligible owners and operators of underground storage tanks to seek payment for any costs associated with physical soil classification, groundwater investigation, site classification and corrective action from the Underground Storage Tank Fund (**Establish Reimbursement Requirements**); and

5. Review or audit and approve corrective action efforts performed by Licensed Professional Engineers (LPE) (**Audit LPE's Corrective Action Plans**).

The most significant change from Illinois former UST program is the legislation's infusion of "risk-based" decision-making into UST site classification and remediation. Instead of requiring excavation of all UST sites until sampling reaches the cleanup objectives of the Agency's guidance document (the LUST Cleanup Manual), the legislature enacted a statutory priority scheme based upon soil type, groundwater locality, migratory pathways and a variety of other factors. Using these factors, the owner/operator and the Agency can, together, determine the level of cleanup necessary at any given site.

A. ROLE OF THE OFFICE OF THE STATE FIRE MARSHAL (OSFM)[2]

Beginning with leak detection, the LUST Law gives the OSFM direct responsibility for oversight of activities such as tank removal, abandonment and repair. The OSFM's duties and the requirements for conducting tank removal still key off of RCRA, and its corresponding federal (42 U.S.C. Section 6991-6991i) and state identical-in-substance regulations (35 Ill. Adm. Code Part 731 and 41 Ill. Adm. Code Part 170). However, the OSFM now has a much greater role in the present UST program than in the previous ones. In particular, the OSFM must provide on-site assistance to the owner/operator for leak

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[2]While OSFM is one of the three major governmental players under the new LUST Law, substantive regulatory rules concerning its functions as delineated in the new law are not the subject of Board review and therefore are not a subject of this rulemaking. Since OFSM decisions are appealable to the Board, however, the Board is in the process of working with the OFSM and affected parties in the development of procedural rules which are intended to facilitate the processing and adjudication of those appeals. (See R94-11 In the Matter of Procedural Rules Revision: Appeals from the Office of the State Fire Marshal Determinations, (35 Ill. Adm. Code 107) (June 30, 1994 First Notice).)

confirmation, evaluation and eligibility information. The OSFM is also the state entity responsible for making eligibility and deductibility determinations (access to the fund issues). Further, the OSFM has the responsibility to issue, where appropriate, "Certificates of removal, repair or abandonment" which have the same statutory effect as an Agency "No Further Remediation Letter." (415 ILCS 5/57.5 and 57.9.)

B. ROLE OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

After an eligibility determination is made by the OSFM, or if an owner/operator moves straight into remediation, bypassing the reimbursement portion of the UST program, the Agency is vested with the responsibility under the LUST Law to oversee the corrective action activities at the UST site. More specifically, the Agency is responsible for overseeing all aspects of cleanup and appropriate reimbursement for appropriate cleanup. The Agency's responsibilities include oversight of the early action activities, site classification and remediation, authorization of payments from the UST Fund and enforcement of the requirements relative to LUST releases. (415 ILCS 5/57.6-57.8, 57.12.) Much of the Agency's supervisory role is to review, audit and approve the corrective actions plans and cleanup objectives presented by the owner/operator, usually through the owner/operator's LPE.

C. ROLE OF THE ILLINOIS POLLUTION CONTROL BOARD

In addition to the statute's mandate that the Board promulgate rules implementing Illinois new LUST Law, the legislation calls upon us to perform an adjudicatory role whenever a final determination of the OFSM or the Agency is appropriately appealed to us, by the owner/operator, pursuant to relevant provisions of the Act. Under prior laws, we only heard two types of appeals from the Agency's final decisions: those relating to ineligibility to access the UST Fund and those relating to Agency's final decision determining the reimbursability of corrective action costs. We did not hear appeals from decisions of the OSFM. Under the new law, OSFM's eligibility and deductibility decisions are directly appealable to the Board. Moreover, the LUST Law creates various new statutory "appeal points" where an owner/operator may contest Agency decisions related to classification, remediation, and reimbursement.

III. REGULATION OF UNDERGROUND STORAGE TANKS
The Federal Context

Because the driving force behind all state UST cleanup is the federal RCRA, the USEPA is in the position of delegating authority over UST cleanup to the individual states. Therefore, USEPA Region V takes a great interest in whether states in its region are meeting federal standards and, accordingly, has taken a great interest in this rulemaking. Through its Associate Director Norman R. Niedergang, Office of RCRA, USEPA has offered comments and constructive criticism throughout this proceeding. Moreover, in a letter to Agency

Director Mary Gade dated March 22, 1994, (Exh. #10) USEPA Region V Director Val Adamkus urged several changes to Illinois new LUST Law and stated:

> "(T)he adoption of these changes would provide a statute that is broad in scope yet consistent with federal requirements. However, it is equally important that the subsequent rulemaking process result in rules that are likewise consistent with federal requirements. I would appreciate your support to ensure that both the statutory and regulatory elements of this process proceed quickly and with a clear focus."

In this rulemaking, we attempt to provide a clear focus to the statutory intents and purposes in their regulatory context. However, we cannot in this regulatory proceeding change the underlying statute. Therefore, to the extent the USEPA has concerns about the Illinois LUST program which derive solely from the statutory language which cannot be addressed by regulation, we will simply set forth those concerns for consideration by the parties in the more appropriate forum, the state legislature, at a later time. Regarding the USEPA's regulatory concerns that are of a technical nature, we attempt, in a later section of this opinion and order, to positively address all concerns where we are not statutorily restricted.[3]

The USEPA has two overriding and major statutory concerns which, in our opinion, cannot be dealt with regulatorily. The first deals with the "operation of law" aspect of the legislation. Several provisions of the LUST Law provide that if the Agency fails to act within a certain specified time frame, the owner/operator can consider its application approved.[4] These provisions are indeed problematic in that they have the potential for allowing environmental damage to go unremediated as a result of a missed government deadline. While we cannot change these provisions by rule, we do note that there are other ways to help insure that government processes claims timely and, to some extent, one such way is already reflected in the statute. Section 57.9(c)(2) provides that if the OSFM fails to make a determination within 60 days, the action (actually, the lack thereof) is directly appealable to the Board. Presumably, then, the Board would decide the issue or require that a decision be made within a certain amount of time. While we cannot solve the operation of law problem, we note that statutory solutions are available.

The second major USEPA statutory concern involves the "deferred action" aspect of the legislation. Section 57.8 of the Act provides, essentially, that if there are no monies

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[3]The Agency and UST Advisory Committee (USTAC) also attempted to address the USEPA's technical concerns through changes made to their proposal, via five errata sheets, during this proceeding. (See Section IV in this Opinion entitled "The Rulemaking Process: The Public Context.")

[4]The following sections all deal in some fashion with the "operation of law" issue and were the subject of federal comment: 732.300(b), 732.400, 732.402, 732.403(f), 732.403(g), 732.403(h), 732.404(g), 732.410(d), 732.502(d), and 732.602(e). See also, Laverne L. Logan v. Zimmerman Brush Company, 455 US 422, 71 L. Ed. 2d 265, 102 S. Ct. 1148 (1982).

available in the fund, an owner/operator can defer corrective action until such funds are available. The USEPA is concerned that this language is inconsistent with the federal financial assurance requirements and should not relieve the owner/operator from liability from remediating the site. First, as to USEPA's concern regarding liability, we are not at this point convinced that liability is completely excused during any time of fund insolvency. Even though the statute defers corrective action until monies are available pursuant to the LUST program, third party liability may still exist pursuant to more general provisions of the Act and certainly exists pursuant to federal law. Also, the Agency has the authority to deny the request for deferral of corrective action where it determines that "a threat to the human health or the environment requires immediate action."[5]

Nonetheless, the USEPA is correct that the statute allows a deferment for cleanup until the funds are available and then provides for fund distribution on an essentially first come first serve basis when the monies do become available. The USEPA considers this to be inconsistent with the federal scheme since no consideration is given to priority of site, based upon environmental consequence, in how the funds are ultimately distributed once money is available. While these concerns are correctable through the legislature, they cannot be resolved in a regulatory context since the statutory mechanism is quite clear and allows the Board no room to address the deferment issue regulatorily.

However, to the extent that the primary underlying concern of the USEPA is one involving the mutual protection of the fund and the environment, the Board anticipates that these proposed regulations move positively in the direction of addressing that concern. In this rulemaking, all participants are united in the belief that the spending of monies from the fund should be prioritized on the basis of the environmental damage potential from the site. These rules are an attempt to inject risk-based principles within the legislative parameters. The Board understands the need to provide predictability to the process and the need to funnel cleanup money to those sites that pose the greatest danger and risk to the environment and the public. The only way to meet that concern is through the application of risk-based principles into the environmental decision-making process of the owners/operators, their engineers, and the Agency.

IV. THE RULEMAKING PROCESS

The Public Context

As proposed in First Notice, the rules were developed by the Agency in consultation with the Underground Storage Tank Advisory Committee (USTAC) as required by the LUST Law. As stated by the Agency in its Statement of Reasons, "(T)he proposed regulations are the product of six months of intensive efforts under difficult circumstances." (Agency Statement of Reasons at 4.) During the course of the rulemaking, the Agency filed five

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[5]The following sections all deal in some fashion with the "deferred action" issue and were the subject of federal comment: 732.306(a)(4), 732.306(c), 732.406(c), 732.503(h), and 732.603(c).

errata sheets amending the proposal. These errata sheets were filed on April 27, 1994, June 1, 1994, June 7, 1994, June 17, 1994 and July 11, 1994. For the most part, the errata sheet changes were the product of continued negotiations between the Agency and the USTAC.[6]

Upon the Agency's timely filing of these rules with the Board on March 15, 1994, the Board issued the proposed rules in its March 17, 1994 First Notice, Opinion and Order. Pursuant to Section 57.14(b) of the Act, the Board must adopt UST rules by September 15, 1994. Due to the rigid adoption schedule, we immediately accepted the petition for hearing, held pre-hearing conferences pursuant to Section 27(d) of the Act and held three sets of formal public hearings pursuant to Section 27 of the Act on April 27, 1994; May 23 and 24, 1994; and June 7 and 8, 1994. Notice of these hearings was sent to all persons on the Board's "Notice List" which list constituted approximately 200 interested individuals, associations and companies.[7]

The three sets of hearings were held in Springfield and Chicago before Hearing Officer Musette H. Vogel. Present on behalf of the Board were Board Chairman Claire A. Manning, and Board Members Marili McFawn, J. Theodore Meyer, and Dr. Ronald C. Flemal. Also present for the Board were Board attorneys Elizabeth Harvey, Kevin Desharnais, Charles Feinen, and Deborah Frank, Board law clerk Suzanne Yokley and the Board's technical staff, Anand Rao and Hiten Soni. Several members of the public were present. The following people entered appearances on the record:

***Participants*:**

For Agency:

Mark Wight	Counsel
Kimberly Robinson	Counsel
Gary King	Manager, Division of Remediation Mgmt.

[6]USTAC is statutorily comprised of one representative from each of the following associations: Illinois Manufacturers Association (IMA), the Illinois Petroleum Council (IPC), the Illinois Petroleum Marketers Association (IPMA), the Illinois State Chamber of Commerce (ISCC) and the Consulting Engineers Council of Illinois (CECI). Prior to the Agency's filing of the proposed rules, the Agency met repeatedly with these members, formally and informally (Agency Statement of Reasons at 4). As a whole, the group achieved a great deal of consensus concerning the majority of the regulatory proposal. Once the rules were filed with the Board, USTAC continued to take a very active role in rulemaking, as did its individual members representing their associations, presenting testimony mainly on the concept of "risk" as the integral and inseparable foundation of this proceeding. At the conclusion of the Board proceedings, only three issues remained in dispute between the Agency and USTAC: (1) the use of Appendix B as Soil Remediation Objectives; (2) Interpretation of Section 732.608 as amended in Errata Sheet #2 (Apportionment); and (3) Agency modification of High Priority Sites pursuant to Section 732.404 ("Low Priority" Site). Each of these issues is discussed in the body of this opinion and order.

[7]In accordance with 35 Ill. Adm. Code 102.162(b) and 102.221 the notice list consists of the proponent and all people who have given the Clerk of the Board or the Hearing Officer their names and addresses.

Harry Chappel, P.E.	Manager, LUST Section
James Patrick O'Brien	Manager, Office of Chemical Safety
Dr. Thomas Hornshaw	Unit Manager, Office of Chemical Safety
Kendra Brockamp	Project Manager, LUST Section
Douglas Oakley	Manager, LUST Section
Kevin Connolly	Project Manager, LUST Section
G. Todd Rowe	Manager, LUST Section
Vicky VonLanken	Paralegal

For USTAC:

Katherine Hodge	Hodge and Dwyer / IERG[8]
Neil Flynn	IPMA[9]
Geoffrey Gilman	Amoco / IPC[10]

Other Participants:

J. Randle Schick	Assistant Chief Counsel, IDOT[11]
Whitney Wager Rosen	Legal Counsel, IERG
Elizabeth Steinhour	Project Director, IERG
David Sykuta	Executive Director, IPC
Michael Rapps, P.E.	Consultant, IPMA
Jon Ellis	Counsel, IPMA
David Rieser	Counsel, ISG[12] / IPC
Linda Curran, P.E.	Amoco
Philip Haffenden	Counsel, Marathon
Daniel Moenter	Marathon
G.D. Sheely, P.E.	Marathon
P.D. Gates	Environmental Field Engineer, Mobil
Dr. Paul Johnson	Sr. Research Engineer, Shell
Robert Ettinger	Engineer, Shell
Harry Walton	Dir. of Land Poll. Control, Ill. Power Co.
James Frycek, P.E., S.E.	Inland Consultants Inc.
Raymond Reott	Jenner and Block

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[8]IERG: Illinois Environmental Regulatory Group.

[9]IPMA: Illinois Petroleum Marketers Association.

[10]IPC: Illinois Petroleum Council.

[11]IDOT: Illinois Department of Transportation.

[12]ISG: Illinois Steel Group.

Twenty-five public comments and thirty exhibits were filed in this rulemaking proceeding. Eighteen of the exhibits offered at hearing were prefiled testimony and the majority of the other twelve exhibits were lengthy technical documents relating to the Appendix B cleanup objectives. A complete list of the public comments follows. The Board has reviewed and considered all of the testimony, exhibits, and comments in making its decision.

Public Comments:

PC#01 04/18/94 **Comments from Linda Brand,** Manager of Regulatory Flexibility Unit, Illinois Department of Commerce and Community Affair, regarding the impact of the proposed rules on small businesses.

PC#02 04/21/94 **Comments from Robert L. Johnson, P.E.,** Senior Environmental Consultant, regarding soil remediation objectives in proposed Appendix B.

PC#03 04/22/94 **Comments from Connie Bradway,** Secretary of State, Administrative Code Division, regarding corrections to comply with Code Unit requirements.

PC#04 05/12/94 **Comments of Browning-Ferris Industries** submitted by William R. Uffelman, Divisional Vice-President, Government Affairs, regarding the need for the rules to allow for land disposal of contaminated soils.

PC#05 05/16/94 **Comments of Mobil Oil Corporation** by B.A. Underkoffler, Field Engineer Manager, regarding Appendix B and Sections 732.300(b), 732.406, 732.104, 732.201(f), 732.305, 732.306, 732.307(a)(1), 732.307(a)(2), 732.307(e), 732.307(h), 732.403(a)(1), 732.408(c), 732.502, 732.605, 732.606, and Dr. Hornshaw's comments on proposed Appendix B.

PC#06 05/25/94 **Comments of Weaver Boos Consultants** by David O'Dea and John Weaver, regarding the technical provisions dealing with site classification and evaluation and with establishing cleanup levels.

PC#07 06/08/94 **Comments on behalf of USEPA** by Norman R. Niedergang, Associate Division Director for RCRA, Waste Management Division; USEPA made legal comments regarding the following sections: Section 732.100(a) and (b); Section 732.103 ("Confirmed release," "Conventional technology," and "OCCURRENCE"); Section 732.202; Section 732.300(b); Section 732.306; Section 732.307(g)(3); Section 732.400; Section 732.402; Section 732.403

and 732.403(f); Section 732.404(g); Section 732.406; Section 732.410; Section 732.500; Section 732.502(d); Section 732.503; Section 732.505(b); Section 732.602(e); Section 732.603(c); Section 732.604(d); Section 732.606(n), (o), (z), (aa) and (bb).

USEPA made technical comments regarding the following sections: Section 732.101(a); Section 732.103 ("Class I Groundwater" and "Completion"); Section 732.302(a); Section 732.303(a)(1); Section 732.304(a)(1); Section 732.305(c) and (d); Section 732.306(a), and (a)(2) and (4); Section 732.307(c)(1), (c)(1)(D),(E) and (G), (f), (f)(1), and (j)(5)(A)and(C); Section 732.308(a); Section 732.400(b); Section 732.402; Section 732.403 and 732.403(d)(2); Section 732.404 (b)(1) and (f); Section 732.406(a); Section 732.407(a)(1) and (a)(3), (a)(5) and (c); Section 732.408(a)(1) - (3) and (d)(3); Section 732.502(d); Section 732.503(c); Section 732.504(d); and Appendix B.

PC#08 06/14/94 **Comments on behalf of IDOT** by J. Randle Schick, regarding the number of USTs IDOT has been involved with in the highway right-of-way.

PC#09 06/28/94 **Comments of Marathon Oil Company** by Daniel H. Moenter, Manager, Government Affairs, regarding the use of risk-based corrective action objectives to establish remediation goals. Marathon also commented on the USEPA's comments generally and specifically on USEPA's comments on Sections 732.408, 732.604(d), 732.103, and 732.400(b).

PC#10 06/29/94 **Comments on behalf of Agency** submitted by Mark Wight, Assistant Counsel and Kimberly A. Robinson, Assistant Counsel, supporting the proposal as environmentally protective, economically reasonable, technically feasible, and protective of human health. The comment also discusses proposed Appendix B. The comment also answers Board questions 5 and 7 from the May 23, 1994, hearing, regarding recharge zones and appeal points. In its comments, the Agency responds to USEPA's comments on Sections 732.103, 732.307(g)(3), 732.307(c)(1), 732.307(c)(1)(D), 732.307(c)(1)(E), 732.307(c)(1)(G), 732.307(d)(2), 732.307(j)(5)(A), 732.400(b), 732.403(d)(2), 732.404(b)(1), 732.407(a)(1), 732.407(a)(3), 732.407(a)(5), 732.407(c), 732.408. Additionally, this comment discusses the use of form letters in Section 732.410; defends the Agency's use of the TCLP test for determining whether contaminated soils reach Appendix B standards

and specifically addresses Sections 732.300(b)(1), 732.300(b)(2), 732.307(g)(4), 732.608(a)(1).

PC#11 06/29/94 **Comments of Brown & Bryant** submitted by Ann P. Messer, regarding the inclusion of a Board Note in Section 732.103 pertaining to orphan tanks and A.K.A. Land v. Agency (March 14, 1991) PCB 90-177.).

PC#12 06/29/94 **Comments from Dr. Richard C. Berg,** Senior Geologist, Head, Geological Mapping Section, Illinois State Geological Survey, regarding the statutory requirement of using the ISGS Berg circular 532 (1984) and other matters.

PC#13 06/30/94 **Comments on behalf of IERG** submitted by Katherine D. Hodge, regarding the separation of Appendix B into a separate subdocket and the issue of the use of the term "property damage."

PC#14 06/30/94 **Comments on behalf of IPMA** by William Fleischli, Executive Vice President, regarding the use of risk-based remediation objectives instead of Appendix B, the adequacy of the proposed language for evaluating a site specific plan found in Section 732.408(a), the apportionment issue contained in Section 732.608, and the inclusion of a Board Note in Section 732.103 pertaining to the A.K.A. Land decision. Additionally, these comments include a memo from Michael W. Rapps describing a cleanup matrix.

PC#15 06/30/94 **Comments from Raymond T. Reott,** regarding the use of the TCLP test for setting soil cleanup objectives.

PC#16 06/30/94 **Comments on behalf of ISG,** submitted by David L. Rieser, regarding a risk-based alternative to Appendix B, coordination of Appendix B with 35 Ill. Adm. Code 620 (groundwater standards), and the economic reasonableness of Appendix B.

PC#17 06/30/94 **Comments on behalf of IPC,** submitted by David L. Rieser, regarding a separate subdocket to handle Appendix B issues, and IDOT's proposal.

PC#18 07/01/94 **Comments on behalf of USTAC** submitted by Katherine D. Hodge, regarding the separation of Appendix B into a subdocket.

PC#19 07/01/94 **Amendments to PC#7 on behalf of USEPA** by Norman R. Niedergang, Associate Division Director for RCRA, Waste Management Division, regarding supporting documentation for

PC#7. This is a copy of the Risked-Based Corrective Action for LUST Sites guidance document issued by the Texas Natural Resource Conservation Commission.

PC#20 08/08/94[13] **Final Comments on behalf of IPMA,** by William Fleischli, Executive Vice President, in response to the Board's August 1, 1994 Interim Opinion and Order. Recommends amendments regarding the "operator" definition, allowing investigation of migratory pathways without a pre-approved budget and the apportionment provision of the rule.

PC#21 08/08/94 **Final Comments on behalf of the City of Chicago,** by William A. Chamberlain, Assistant Corporation Counsel in response to the Board's August 1, 1994 Interim Opinion and Order. Recommends amendments regarding the definition section, and various other provisions of the rule, such as the addition of QA/QC procedures.

PC#22 08/08/94 **Final Comments on behalf of ISG,** submitted by David L. Rieser in response to the Board's August 1, 1994 Interim Opinion and Order. Recommends reframing the Board's final Second Notice Opinion and Order to clarify that Class I groundwater standards of 35 Ill. Adm. Code Part 620, which are used as the groundwater objectives in these rules have not been proven to be economically reasonable or technically feasible, but are "adequate" as an interim measure. Suggests a rule clarification that non-Class I groundwater and the surrounding soil, need not be cleaned up to Class I groundwater standards.

PC#23 08/08/94 **Final Comments on behalf of IPC,** submitted by David L. Rieser in response to the Board's August 1, 1994 Interim Opinion and

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13Prior to the issuance of today's Second Notice Opinion and Order, the Board adopted an Interim Opinion and Order on August 1, 1994. Given the technical complexity of these rules, the Board entertained a last, final comment period for seven days, or until August 8, 1994. During this final comment period we received several helpful typographical and clarification suggestions from the Agency and from five public participants (IPMA, City of Chicago, ISG, IPC, and IERG). We also received many technical and non-technical recommendations and revisions for the final rule and for the language of the Second Notice Opinion and Order. Where we incorporated the suggested rule revisions, we have shown those changes in Section VIII, "Section-by-Section Analysis of the Board's Changes from First to Second Notice," and, of course, in the rule itself. Where we accepted recommendations to redraft certain sections of our proposed opinion, any new language we have added is simply incorporated herein.

Order. Similar to the comments in PC#22, the comments recommend reframing the opinion to reflect the interim nature and limited use of the Class I groundwater standards of 35 Ill. Adm. Code Part 620. Also recommends various rule changes regarding section referencing , incorrect use of the term alternative technology, verification of Class III groundwater sources for the site classification plan, allowance of off-site sampling, and the use of units of measurement in the formulae.

PC#24 08/08/94 **Final Comments on behalf of IERG**, submitted by Katherine D. Hodge and Whitney Wagner Rosen in response to the Board's August 1, 1994 Interim Opinion and Order. Recommends the deletion of an inappropriate reference to property damage consistent with recently-enacted legislation. Further recommends a clarification in the Board's opinion discussing corrective action plans so that it is clear that soil remediation is not necessarily required at all HP sites.

PC#25 08/08/94 **Final Comments on behalf of Agency**, submitted by Mark Wight, Assistant Counsel and Kimberly A. Robinson, Assistant Counsel, in response to the Board's August 1, 1994 Interim Opinion and Order. Offers typographical corrections, clarification for non-technical matters such as the A.K.A. Land issue, "completeness" of submittals to the Agency, and investigation of migratory pathways. Also suggests a number of changes to the technical rules for greater specificity and clarification.

V. THE PETROLEUM UNDERGROUND STORAGE TANK REGULATORY PROPOSAL

A. HOW THE REGULATIONS WORK: OBTAINING CORRECTIVE ACTION AND REIMBURSEMENT APPROVAL FROM THE AGENCY

The Petroleum Underground Storage Tank regulations, which we are proposing for second notice, mirror the statutory scheme set forth in new Illinois LUST Law. As submitted by the Agency, the regulations create a new Part 732 in Section 35 of the Illinois Administrative Code, entitled "Petroleum Underground Storage Tanks." This new part is further divided into six subparts: Subpart A, General Rules; Subpart B, Early Action Requirements; Subpart C, Site Evaluation and Classification; Subpart D, Corrective Action; Subpart E, Agency Review of Plans and Reports; and Subpart F, Reimbursement.

1. Subpart A: General Rules *(To Whom and to Which UST Sites Do These Regulations Apply?)*

Proposed Part 732, "Petroleum Underground Storage Tanks," contains procedures for responding to releases of petroleum products, and for seeking reimbursement from the UST Fund. The regulations apply to owners and operators of USTs or UST systems used to store petroleum, which have experienced confirmed releases reportable to the Illinois Emergency Management Agency (IEMA). Proposed Part 732 generally applies to releases occurring after the effective date of the new LUST Law; however, pursuant to Section 57.13 of the new LUST Law, those owner/operators who have been proceeding under the old law, may permanently "elect-in" by submitting written notice to the Agency. Likewise, owner/operators of USTs used exclusively to store heating oil for consumptive use on the premises where stored, and which serve other than a farm or residence, may also choose to proceed under these rules if they provide the Agency with written notice. Finally, owner/operators who have received a corrective action order from the OSFM for an UST or UST system taken out of operation before January 2, 1974, or of any UST system used exclusively to store heating oil, serving other than a farm or residence, must also conduct corrective action pursuant to these rules.

These rules do not apply to owners and operators of sites who experience releases in an amount insufficient to be reportable to IEMA, or for which OSFM has issued or will issue a certificate of removal or abandonment. In most cases, the rules do not apply to owners or operators of farm or residential tanks, since the definition of UST excludes farm and residential tanks of 1,100 gallons or less.

2. Subpart B: Early Action *(What is "Early Action" and When Is It Required?)*

Directly from the new LUST Law, "early action" requires an owner/operator upon confirmation of a release by the OSFM, to perform initial response actions within 24 hours of the release. Those initial response actions include reporting the release to IEMA, taking immediate action to prevent further release of the regulated substance, and identifying and mitigating fire, explosion, and vapor hazards. The owner/operator must then perform initial abatement measures, including removal of petroleum from the UST system to prevent further release into the environment, visual inspection of releases and prevention of further migration into surrounding soils and groundwater, investigation of migratory pathways and investigation and removal of possible free product. Within 20 days after confirmation of the release, the owner/operator shall submit a report summarizing its initial abatement steps and any resulting information (the "20 day report"). The owner/operators must then continue to assemble information about the site and the nature of the release, and submit that information to the Agency within 45 days of confirmation of a release (the "45 day report"). At sites where "free product" is present, the owner/operator must also submit a free product removal report within 45 days of the confirmation of the release. Prior to the submission of any plans to the Agency, the owner/operator may remove the tank system, or repair or abandon the UST in place. The owner/operator may also remove contaminated fill material (within an area of four feet from the outside dimensions of the tank) and any groundwater in the excavation which exhibits a sheen. An application for reimbursement for early action costs

can be submitted after the early action activities. Alternatively, an owner/operator can include its request for reimbursement for early action costs when submitting its corrective action budget plan to the Agency.

3. Subpart C: Site Evaluation and Classification *(What Is "Site Classification" and How Is It Performed?)*

After completion of early action activities, the owner/operator proceeds to evaluation and classification of the site. The owner/operator's classification of the site must be certified by a licensed professional engineer (LPE), and submitted to the Agency, who retains the authority to decide the proper classification. Sites fall into one of three classifications: **no further action (NFA), low priority (LP), or high priority (HP).** The classification decision is based upon specific statutory criteria:

- soil type (based on Berg geological map and circular);[14]
- groundwater quality standard (GQS) exceedence (at the property boundary or 200 feet from the excavation, whichever is less);
- proximity to potable water supply well or regulated recharge area;
- migratory threat to human health;
- presence of Class III Groundwater within 200 feet;[15]
- presence of visible sheen or free product layer on surface water body.

An owner/operator should first submit to the Agency a ***Site Classification Plan (SCP)*** which is designed to collect data sufficient to determine site classification. In addition, if the owner/operator intends to seek payment from the UST Fund, the owner/operator must submit a ***Site Classification Budget (SCB).*** The Agency then reviews the plan, and may approve, reject, or require modification of the plan. However, an owner/operator may proceed with site evaluation activities before submitting a site classification plan. If he or she does so, however, the Agency retains the authority to find that some costs and activities were unnecessary (and thus not reimbursable) when the owner/operator submits the final budget

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[14]Section 57.7 (b) of the Act requires that sites shall be classified pursuant to Illinois State Geological Survey (ISGS) circular 532 entitled "Potential for Contamination of Shallow Aquifers in Illinois" published in 1984 and authored by Dr. Richard Berg ("The Berg Circular"). Dr. Berg filed a public comment in this proceeding (PC#12) indicating that the mapping and the circular were not intended to be used to evaluate specific sites; instead the map was designed for regional evaluations. Dr. Berg emphasizes that it is unacceptable to enlarge the map because it will decrease the accuracy due to scaled distortions. However, Dr. Berg does believe that verification of site conditions as required in Section 57.2 of the Act and proposed Section 732.302 will resolve many of these problems.

[15]The Agency amended its original proposal at Section 732.307(h) to eliminate the requirement that the LPE contact the Board to ascertain whether there is a Class III groundwater inventory. Now, the LPE can make this determination on his own which will be a part of the general certification regarding site evaluation. (King Testimony 5/23/94 Tr. at 35.) Previously, the Board had issued a standard letter explaining there were no Class III designations as of yet in the State of Illinois.

for payment or reimbursement. The rules also provide for submission of amended ***SCPs*** and ***SCBs*** and for Agency review of those amended plans and budgets, if an owner/operator determines that revised procedures or cost estimates are necessary.

After approval of the ***SCP*** and ***SCB***, the owner/operator performs an actual site evaluation in order to determine the proper classification of the site. The owner/operator must hire an LPE, or persons working under the direction of an LPE, to conduct the evaluation. The rules set forth detailed requirements for performance of the site evaluation. For example, physical soil classification can be done pursuant to two alternative methods: (1) confirmation of consistency with the "Berg Circular," which the LUST Law establishes as a criterion for determining soil and geological classification; or (2) procedures from the Board's groundwater rules (35 Ill. Adm. Code 620.210) for identifying the geological conditions associated with Class I groundwater. The site evaluation also requires investigation of migration pathways, a survey of water supply wells, a determination of whether there is Class III groundwater within 200 feet of the UST system, and inspection of all surface bodies of water within 100 feet of the site. Additionally, if the site does not satisfy the requirements for an NFA site, the LPE must then perform a groundwater investigation.

After completing the required evaluation as explained above, the LPE is to determine, based upon specific statutory and regulatory criteria, whether a site is properly classified as NFA, LP or HP. Within 30 days of the LPE's completion of the site evaluation, the owner/operator must submit to the Agency a ***Site Classification Completion Report (SCCR)***. In this report, the LPE must certify the site's classification. The rules establish other general requirements for the ***SCCR***. The Agency then reviews and approves, rejects, or requires modifications of the ***SCCR***.

4. Subpart D: Corrective Action *(What is "Corrective Action"; When Should It Be Performed; How Does the Owner/Operator Know When the UST Site Is Fully Remediated?)*

Once the Agency has approved the LPE's site evaluation and classification, and unless the site is an NFA site, the owner/operator must proceed to perform corrective action. Corrective action is a correction of the environmental problem at the site to the extent determined necessary to protect the public health and environment. For an HP site, the site must be remediated; for a LP site, the groundwater must be monitored.

(a) Low Priority (LP) Sites

For an LP site, the owner/operator must submit a ***Groundwater Monitoring Plan (GMP)*** to the Agency and, if intending to seek payment from the UST Fund, a ***Groundwater Monitoring Budget (GMB)***. The rules include specific requirements for the ***GMP***, including a requirement that monitoring be conducted for three years. The Agency may approve, reject, or modify the plan and budget. Upon approval, the owner/operator must implement

the *GMP*. Groundwater analysis results must be submitted to the Agency within thirty days of the end of the annual sampling period.[16] Upon completion of the *GMP*, the owner/operator must submit a ***Completion Report (CR)*** to the Agency. If there have been no confirmed exceedences of the indicator contaminant objectives, the report shall contain a certification to that effect by an LPE. The Agency then reviews the completion report, and upon approval will issue a "No Further Remediation" ***(NFR)*** letter.

Like the site evaluation process, an owner/operator of a LP site can bypass the plan and budget process and perform full remediation.[17] This provision is necessary for owners and operators who may prefer that their sites be thoroughly remediated regardless of which classification applies to that site. If this option is chosen, however, the owner/operator must file a report at the completion of work ***(CR)*** which demonstrates that the site meets the remediation objectives for high priority sites. Further, an owner/operator who chooses this option should be aware that he is not entitled to reimbursement for any activities exceeding the minimum requirements of the Act.

(b) High Priority (HP) Sites

For an HP site, the owner/operator must submit a ***Corrective Action Plan (CAP)*** and, if reimbursement is sought, a ***Corrective Action Budget (CAB)***. While soil remediation may not be necessary at every HP site, the *CAP* must set forth whether the owner/operator intends to remediate soil to satisfy the criteria of Section 732.404(b), and how he will remediate any groundwater at the site. He can propose a *CAP* based upon a site-specific assessment of risk pursuant to Section 732.408 or he can choose the groundwater cleanup objectives and soil cleanup methodology in Appendix B. The plan may also propose the use of alternative technologies to respond to the release. Upon approval of the *CAP*, the owner/operator must implement the *CAP*. Within 30 days of the plan's completion, the owner/operator must submit to the Agency a ***Corrective Action Completion Report (CACR)***.

(c) No Further Remediation Letters

After the Agency receives the owner/operator's *CACR*, the Agency will approve the *CR* and issue a "No Further Remediation" (*NFR*) letter. A *NFR* letter is described in Section 57.10 of the Act, and referenced in the proposed rules. It serves as a legally rebuttable presumption that: 1) all statutory and regulatory corrective action requirements applicable to the occurrence have been met; 2) corrective action concerning the remediation of the

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[16]If those results indicate a confirmed exceedence of applicable indicator contaminant objectives, the Agency may reclassify the site as a high priority site. If reclassified, the owner/operator must develop a high priority corrective action plan and budget within 120 days of notification of the reclassification.

[17]This provision applies only to sites classified as low priority, since a no further action site requires no remediation, and a high priority site requires full remediation.

occurrence has been completed; and 3) no further corrective action is necessary for the protection of human health, safety, and the environment.

The Agency has 120 days from the receipt of a NFA site classification report, a LP groundwater monitoring completion report, or a HP corrective action completion report to issue a *NFR* letter. The Agency may issue the *NFR* letter when it notifies the owner/operator that the report has been approved, or the Agency may decline to issue a NFA letter. If the Agency requires further remediation at an UST site, it will notify the owner/operator when the report is either rejected or approved with modifications. The Agency's refusal to issue a *NFR* letter is appealable to the Board within 35 days.

5. Subpart E: Agency Review of Plans and Reports *(How Extensive Is the Agency's Review of Plans and Reports?)*

The proposed rules also describe the selection criteria and standards of review for all plans and reports required by Part 732. The Agency may conduct a completeness review on plans in order to determine whether all required information and documentation have been included. This review will not be used to determine the technical sufficiency of a particular plan. The completeness review must be finished within 45 days of receipt of the plan. If the plan is found to be complete, the Agency must notify the owner/operator in writing and proceed to substantive approval, rejection, or modification of the plan. If the Agency finds the plan incomplete, it must notify the owner/operator in writing, and include an explanation of the missing information. Reports are not subject to the completeness review; instead, failure to submit a complete report is a basis for rejection of the report.

The proposed rules also establish a selection process for full review of plans and reports, although a full review will not be performed on all plans and reports. The Agency may approve, reject, or require modifications of any plan or report that has received a full review. The Agency must notify the owner/operator of its final action on a plan or report within 120 days of receipt of a complete plan or report, or the owner/operator may deem the plan or report approved. If the Agency rejects a plan or report or requires modifications, the written notification must include an explanation for that decision. Final decisions by the Agency may be appealed to the Board within 35 days.

6. Subpart F: Reimbursement *(How Does an Owner/Operator Obtain Reimbursement?)*

The process for obtaining reimbursement or payment from the UST Fund begins with the owner/operator submitting an application for payment, either for partial or final payment, to the Agency. Applications for payment may be submitted no more often than once every 90 days. Except for applications for payment of costs of early action, an application for payment must have an approved budget on file. Every application for payment will be reviewed to determine if the application is complete, and whether the requested payment amount is equal to or less than the amount approved in the corresponding budget. If the

amount sought is equal to or less than the amount approved in the budget, the Agency's review is complete and payment is approved unless one of following circumstances is present: 1) if the Agency has reason to believe that the application is fraudulent; or 2) the application includes costs for early action and those costs have not been previously approved in a budget. In those cases, the Agency may conduct a full review of the application for payment. Subsequent to the full review, the Agency may authorize or deny reimbursement in whole or in part, depending on the results of that review. When payment is authorized, the Agency must submit the payment voucher to the Office of the State Comptroller within 60 days.

The proposed rules also contain provisions governing limitations on total payments, establishing the types of costs which are eligible and ineligible for payment from the UST Fund, and setting forth the amount of handling charges that are eligible for payment. Payment may be made for costs to the owner/operator of indemnification resulting from an eligible release of petroleum. The proposed rules prohibit owner/operators from receiving payment from the UST Fund if the costs have been covered by insurance, agreement, or court order. The rules also provide a procedure for determining and collecting excess payments.

If there is insufficient money in the UST Fund when the owner/operator submits the site classification budget, as the law (and therefore these rules) currently read, an owner/operator is allowed to defer site evaluation and classification or corrective action. When approving the ***SCP*** or ***SCB***, the Agency is required to notify the owner/operator, whether sufficient funds are available in order to immediately begin site evaluation. Upon notification that there are not sufficient monies available, the owner/operator may choose to defer site evaluation and classification by notifying the Agency in writing within 30 days of receipt of Agency ***SCP*** or ***SCB*** approval. The rules also establish a priority list for notification to owner/operators when sufficient funds become available. Upon such notification, the owner/operator must begin site classification activities. However, if the Agency or the owner/operator determines that there is a threat to human health or the environment which requires immediate action, site evaluation and classification cannot be deferred. The Agency must notify the owner/operator by certified mail that such a situation exists. This decision is not appealable. According to the current law, corrective action, as explained below, may also be deferred during the UST Fund insolvency. **(Note to the reader: At the time of these rules the Act's deferment provisions were the subject of federal objection since the USEPA maintains that environmental liability cannot be deferred.)**

B. APPEALING THE AGENCY'S FINAL DETERMINATIONS TO THE BOARD

The LUST Law provides that most of the final decisions made by the Agency in its administration of the LUST program are appealable to the Board. While there are thirteen actual statutory "appeal points" in the rules and statute, not all appeal points are applicable to every site. In each case where an appeal is allowed, an owner/operator must appeal the Agency's decision to the Board, by a proper filing with the Office of the Clerk in the

Board's Chicago office, within 35 days of the Agency's decision. A hearing will be held, and a Board decision will generally be rendered in 120 days. The issues on review in any appeal to the Board will be framed by the Agency's written decision. (See, e.g. Centralia Environmental Services, Inc. v. Illinois Environmental Protection Agency (May 10, 1990), PCB 89-170.) The rules include specific items that must be included in the Agency's written decision. (Sections 732.502(b), 732.503(b), and 732.602(e).)

These appeal points fall into four specific categories. First, any action by the Agency to reject or require modifications of any plan (including budget plans) or report may be appealed to the Board pursuant to Section 40 of the Act. (Section 732.503(f).) This provision includes appeals of Agency final determinations on physical soil classification and groundwater investigation plans and budgets (Section 732.305), site classification completion reports (Section 732.309), groundwater monitoring plans and budgets (Section 732.403), and corrective action plans and budgets (Section 732.405). The Board has added language to Section 732.503(f) to indicate that the decision is appealable within 35 days of the Agency's final determination.

Second, an owner/operator may appeal an Agency decision to reclassify a site from low to high priority. (Section 732.403.) The Agency's comments state that this determination is appealable to the Board; however, the rules did not contain any language to that effect. (PC #10 at 17.) Thus, the Board has added the sentence "[a]ny action by the Agency to reclassify the site as a "High Priority" site shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for the review of permit decisions in Section 40 of the Act" as the last sentence of Section 732.403(g).

Third, a refusal by the Agency to issue an ***NFR*** letter is appealable to the Board. (Section 732.410(d).) This provision includes final determinations on ***NFR*** letters for no further action sites (Section 732.402), low priority sites (Section 732.403(f)), and high priority sites (Section 732.404(g)). The Board has added language to Section 732.410(d) to indicate that the decision is appealable within 35 days of the Agency's final action.

Fourth, an owner/operator may appeal an Agency final determination denying payment from the UST Fund, in whole or in part. (Section 732.602(h).) This allows appeal for a denial or partial denial of early action costs (Section 732.305(b)(1) and (c)), as well as denial or partial denial of classification and corrective action costs. Again, the Board has added language to Section 732.602(h) to indicate that the decision is appealable within 35 days of the Agency's final decision.

The proposed rules also include two additional appeal points not specifically established in the LUST Law (PC #10 at 17.) The rules establish procedures for the Agency to perform completeness review for plans (Section 732.502) and for applications for payment (Section 732.602(a)). The Agency states that both of these Agency determinations based upon such reviews are appealable to the Board, and cites Sections 732.503(f) and 732.602(h) as providing for appeal. (PC #10 at 17.) However, to ensure that the rules clearly state that

those completeness determinations are appealable to the Board, we have added the sentence "[a]ny action by the Agency pursuant to this Section shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for the review of permit decisions in Section 40 of the Act" as the last sentence of Section 732.502(d). We have added an identical sentence to Section 732.602(a), except that the reference to action pursuant to "this Section" is changed to "this subsection."

VI. ISSUES TO BE RESOLVED

A. SOIL REMEDIATION: APPENDIX B OR ALTERNATIVE: "HOW CLEAN IS CLEAN?"

1. Motion to Sever Docket

Well over three quarters of the record in this proceeding concerned the issue of "How Clean Is Clean?" with the end-result being a motion, joined by virtually all the participants but the proponing Agency, which requests the Board to reserve immediate ruling on the issue and to open a subdocket in this proceeding.[18] At our May 23, 1994 hearing USTAC advised that it would be filing a formal "Motion to Sever the Docket" and did so with the Board's Clerk's Office on June 1, 1994. In that motion, the participants seek more time in this rulemaking to allow for the development of objective, risk-based soil remediation numbers and/or matrix. The Agency opposes the motion and filed a response on June 7, 1994. For the reasons stated below, the motion is granted. A subdocket will be opened in this rulemaking, for a period of approximately six months. The rulemaking will be for the purpose of developing risk-based soil remediation cleanup objectives for leaking underground storage tank sites and dealing with select other issues.[19]

18The Board has in the past opened subdockets in rulemakings in order to separate issues which are more specific or require more time to resolve. (See In the Matter of: Regulation of Steel and Foundries and Landfill Amendments (R90-26(A) and (B).)

19Specifically, the Board will entertain issues of further site specific classification and risk analysis based on groundwater and its potential use. We will also entertain issues relating to the standard *NFR* letter and IDOT's concern regarding the placement of monitoring wells. (See our discussion in Section VI(C) of this opinion.) The specific time and issue parameters will be set forth in a separate order creating a subdocket.

2. Site Remediation Objectives In the Rules As Proposed

(a) Site-Specific Assessment--Section 732.408

Where site remediation is relevant (essentially, for HP sites), the Agency has proposed remediation objectives at Section 732.408. The most recent revised version of the Agency's proposal specifies that owners or operators may propose remediation objectives for applicable indicator contaminants based on site-specific risk assessment.[20] In support of site-specific objectives, the owner/operator must demonstrate to the Agency that the proposed objectives will be protective of human health and the environment. For those indicator contaminants that have a groundwater quality standard promulgated pursuant to Part 620, site-specific groundwater objectives may be proposed using the procedures of Part 620. The revised Section 732.408 addresses USEPA's concern that decisions be made on a site-specific risk basis.

(b) Appendix B

However, if an owner/operator of a high priority site does not elect to go through the costly process of proposing site-specific remediation objectives which would be acceptable to the Agency, the owner/operator's only regulatory choice in the rules as proposed is to use the admittedly conservative remediation objectives specified in Part 732, Appendix B. In recognition that soil remediation numbers would be necessary in some instances (e.g., where an owner/operator wants to clean up quickly without having to go through plan review with the Agency), the Agency attached Appendix B to the proposed rules. The Agency argues that the remediation numbers contained therein, while "conservative," are protective of the environment and have often been used by the Agency under prior UST programs as "default" numbers.[21] Essentially, the Appendix B numbers, which are proposed for both soil and groundwater remediation, are based on the Class I groundwater quality standards (GQS) found in Part 620.

20From the beginning of this rulemaking all of the participants were committed to a risk-based process. However, it was not until the May 23, 1994 hearing that risk-based assessment was reduced to writing in Errata Sheet #2 and incorporated in the rules as Section 732.408. For a discussion of how this section will work in practice, see Harry Walton's testimony of June 7, 1994. (Walton Testimony 06/07/94 Tr. at 125-144).

21See King Testimony 4/27/94 Tr. at 29 and 37. The record does not provide a clear explanation of what the Agency means when it uses the phraseology "default" numbers.

3. Economic/Technical Merit of Appendix B

As stated previously, the proposed soil remediation objectives listed in Appendix B were also the main focus of discussion at the merit hearings held in this matter, and were the subject of much public comment.[22] The participants questioned the scientific basis of the Agency's proposal and urged that the Board reject the proposed remediation objectives. Even the USEPA argued that the Appendix B numbers were much too conservative, and were not protective of the fund because monies would likely be spent on high priority sites that did not need to be cleaned to the strict numbers set forth in that Appendix. (PC# 7 at 6). It believes that the Agency's use of these numbers, which were derived from Groundwater Protection Act and our Part 620 groundwater regulations, does not take into consideration the actual "risk" relevant to underground storage tank removal and cleanup in this state. (PC# 7 at 6).

All parties agreed that within the high priority classification itself, sites can be further prioritized by environmental risk. Many argued that Appendix B is inconsistent with the new LUST Law's attempt to inject risk-based principles into site remediation because of the fear that owner/operators (in part due to pressure from the banking industry) will voluntarily cleanup to the numbers set forth in the Appendix, regardless of whether it is environmentally necessary or sound to do so. (See generally PC#14 (IPMA), PC#16 (ISG), and Reott Testimony 06/08/94 Tr. at 272.) Additionally, there are significant questions as to whether someone who decides to clean a high priority site to the Appendix B numbers will get reimbursed for that cleanup or whether the plan will be even approved.

The Agency believes that it has provided sufficient technical justification for the use of Appendix B objectives, and that Appendix B serves to make the rule complete, viable, environmentally protective, economically reasonable and technically feasible. It argues that it is unnecessary to expend the resources of the Agency, the Board, or the participants to further engage in the creation of regulations (Agency Response, 6/07/94 at 2.) The Board disagrees. From a state resources perspective, the regulatory development of environmentally sound, objective, risk-based soil cleanup standards such as those developed by our sister states will, in the long-term, save the Agency, the regulated community and this Board endless litigation. In the following subsections of the opinion the Board discusses the substantive merits of the proposed Appendix B remediation objectives.

(a) Appendix B: List of Remediation Contaminants

As proposed, Appendix B is a list of 72 remediation contaminants, derived from Appendix A Indicator Contaminants, for which cleanup objectives for both soil and

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22The following public comments object to Appendix B: PC#5, PC#6, PC#7, PC#9, PC#13, PC#14, PC#16, PC#17, PC#18, and PC#19. Other than the Agency's PC#10, no public comments support Appendix B.

groundwater are given. The Agency states that the list was developed from two sources, the indicator chemicals appearing in the Act and selected chemicals from the Agency publication entitled "LUST Sampling and Cleanup Requirements for Used Oil USTs." (Exh. #9 at 3.) Specifically, the list includes 24 volatile organic chemicals (VOCs), 9 base/neutrals, 16 polynuclear aromatic hydrocarbons (PNAs), 7 metals, 3 acids, 12 pesticides and PCBs. The Board finds that the Agency's rationale for including the 72 chemicals in Appendix B is justified. In this regard, the Board notes that none of the participants expressed any concern regarding the proposed list of remediation contaminants. The concerns were mainly related to the proposed remediation objectives for those contaminants.

(b) Appendix B: Groundwater Cleanup Objectives

The Agency has proposed the Class I groundwater quality standards under 35 Ill. Adm. Code 620.140 as the groundwater objectives for those indicator contaminants for which there is a Class I groundwater quality standard (GQS) under Part 620 and those standards which are a part of Appendix B. Similarly for those indicator contaminants for which Class I GQS are proposed in Docket R93-27,[23] the Agency has proposed the R93-27 standards as the groundwater objectives. For the remaining indicator contaminants for which there are no Part 620 standards, the Agency has proposed the health advisory concentrations as groundwater objectives. The Agency determined the health advisory concentration on the basis of whether an indicator contaminant is a carcinogen or a non-carcinogen. For indicator contaminants that are known carcinogens, the health advisory concentrations are set at the lowest PQL[24] of the SW-846 methodologies.[25] (Exh. #6 at 8.) For the non-carcinogenic chemicals (PNAs) having RfD[26] values in the USEPA's Integrated Risk Information System (IRIS), the health advisory concentrations were calculated using RfDs. The Agency notes that RfD values are not currently available for three noncarcinogenic PNAs. Therefore, the groundwater objective of Pyrene was used as a conservative surrogate (indicator parameter) for a cleanup objective for the sum of those three PNAs.

23(In the Matter of: Groundwater Protection: Amendments to Groundwater Quality Standards (35 Ill. Adm. Code 620), R93-27, (March 17, 1994 First Notice) .)

24"Practical Quantitation Level" or "PQL" means the lowest concentration or level that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions.

25"Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 (Third Edition, 1986, as amended by Revision I, Final Update I, July 1992), Doc. No. PB 89-148076.

26Reference Dose (RfD): A reference dose is an estimate (with an uncertainty typically an order of magnitude) of a daily exposure (mg/kg/day) to the general human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime of exposure. (Exhs. #21A and #22A)

The Board finds that the proposed groundwater remediation objectives as set forth in Appendix B are acceptable in the interim, as an alternative to sophisticated and expensive site specific risk assessments for determining clean up levels at LUST sites. However, the Board believes that it may not be appropriate to apply these remediation objectives to LUST sites impacting Class II groundwater, or where there is no Class I groundwater, unless the Class II groundwater is hydraulically connected to Class I groundwater. In this regard, the Board notes that it is not proposing groundwater objectives applicable to Class II groundwaters or special risk-based groundwater standards at this time, since adequate information to do so is not available in the record. However, the Board welcomes the Agency and participants to address this issue in the subdocket.

(c) Appendix B: Soil Cleanup Objectives

The Agency states that the derivation of soil cleanup objectives was not as straightforward as groundwater cleanup objectives, since there are no state or national soil cleanup standards other than USEPA's cleanup policy for PCBs spills. (Exh. #6 at 8.) For PCBs, the Agency chose the USEPA policy value as the cleanup objective. For the remaining indicator contaminants, the Agency states that it used its long-standing approaches and procedures to derive the soil cleanup objectives. (Hornshaw Testimony 04/27/94 Tr. at 138-150.) The basis for the proposed soil cleanup objectives, as stated by the Agency, is the protection of groundwater at the GQS. The Agency used the following procedures to derive the soil remediation objectives for the indicator contaminants listed in Appendix B.

(i) Toxic heavy metals. For these contaminants, which are found in leaded gasoline and hydraulic fluids, the Agency relied on TCLP extract to indicate potential contamination of the groundwater.[27] The Agency states that if the concentration of metals in the TCLP extract does not exceed the groundwater standard, then the residual metal concentration in soil should not cause exceedence of the groundwater standard in groundwater underlying the site. (Exh. 6 at 9.) In effect, the soil cleanup objectives for metals are identical to groundwater cleanup objectives. The Agency's rationale for utilizing TCLP procedure to establish soil remediation objectives is very conservative, since this approach does not consider factors such as dispersion and adsorption which affect subsurface transport of metals in aqueous phase. The issues concerning soil objectives for metals were generally not a subject of discussion in this rulemaking and the record does not contain any feasible alternative methodologies for calculating soil objectives for metals. Mr. Reott offered in his testimony that USEPA Method 1312, which establishes a partition coefficient for indicator contaminants, could be used as an alternative to the TCLP procedure to determine soil remediation objectives. (Reott Testimony 06/07/94 Tr. at 170-175).

27TCLP is a procedure by which a contaminant's ability to leach into the aqueous phase is measured. A soil sample is mixed with an extraction fluid (pH of 2.88 +/- 0.05) and the mixture is shaken for 24 hours. The resulting extract is analyzed for the presence of contaminants.

However, we find that this method can not be utilized as presented because it lacks supporting migration models. Therefore, the Board accepts the proposed soil remediation objectives for toxic heavy metals to be appropriate on an interim basis. However, the participants may address in more detail the procedures for determining soil remediation for toxic heavy metals in the subdocket.

(ii) **Organic chemicals.** The Agency has established cleanup objectives for organic chemicals, such as Benzene, Ethyl Benzene, Toluene and Xylene (BETX), based on the mobility of the chemicals in soil, and certain conservative assumptions. To determine the mobility of a chemical the Agency has relied on the organic carbon partition coefficient (K_{oc}), which is a measure of the chemical's propensity to stay bound to the organic matter in soil versus its ability to move with infiltrating precipitation. (Exh.# 6 at 10.) The Agency, based on its experience, has determined the K_{oc} value of 1100 to be the threshold value for determining mobility of an indicator contaminant in soil. The Agency considers all chemicals with K_{oc} value above 1100 to be immobile in soil, and K_{oc} value below 1100 to be mobile in soil. Based on this threshold K_{oc}, the Agency has established soil remediation objectives as follows:

Mobile Organic Chemicals.[28] ($K_{oc} < 1100$): For this class of chemicals, the Agency assumes that no dilution or attenuation would occur as the chemical moves through the unsaturated zone as well as the saturated zone to reach the compliance point. Therefore, the soil cleanup objectives would be the same as the groundwater cleanup objectives.

Immobile Organic Chemicals. ($K_{oc} > 1100$): For this class of chemicals, the Agency assumes that a 20-fold dilution would occur as the chemical moves through the unsaturated zone as well the saturated zone to reach the compliance point. Following this assumption, the soil cleanup objectives are calculated by multiplying the groundwater standards by the factor of 20[29].

The Agency did not utilize any modeling procedure in developing the soil cleanup objectives. However, the Agency presented a brief overview of a two-phased modeling exercise undertaken by the Agency in 1992 to support the proposed objectives. The modeling was performed to get an idea of how contaminants from LUST sites behave in the environment when released and to allow the Agency to set soil cleanup objectives based upon "real life" situations rather than conservative assumptions. (Exh. 6 at 13.) The Agency

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28Under these assumptions 33 out of the listed 65 organic chemicals are considered to be mobile and the remaining chemicals are considered to be immobile.

29For example, if a chemical (Pyrene) has a groundwater standard of 0.21 mg/l, then the soil cleanup objective is 0.21 x 20 = 4.2 mg/kg.

contends that the modeling results support the conservative assumptions originally made by the Agency when it developed the proposed cleanup objectives. (Exh 6. at 20.)

(d) Appendix B: Board Analysis of Soil Cleanup Objectives

The following comments address the Agency's proposal as it relates to the development of soil remediation objectives for organic chemicals proposed in Appendix B. We also attempt to address USEPA's general concerns regarding corrective action remediation objectives.

(i) Agency's Classification of Mobile and Immobile Organic Chemicals. The Agency has used K_{oc} as the criterion for classifying organic chemicals as mobile and immobile. The Board notes that the Agency has chosen ethylbenzene's K_{oc} value (1100) as the threshold for classifying organic chemicals as mobile or immobile[30]. The Agency contends that the threshold K_{oc} value is reasonable based on its experience, however, nothing was entered into the record to support this general statement. (Dr. Hornshaw Testimony 04/27/94 Tr. at 138-150.) The Agency argues that the objectives evolved over a period of years and were driven by principles of geology, hydrology, chemistry and toxicology informed by Agency experience, confirmatory modeling exercises and input from the regulated community. (PC#10 at 7.) The Agency did not, however, describe those principles and did not enter into the record sufficient modeling exercises, as discussed below, to support its finding. In addition, the Agency has used dilution attenuation factors that were unsupported by the record to calculate soil remediation objectives for immobile constituents. (O'Brien and Dr. Johnson Testimony 05/23/94 Tr. at 61-69.) The Board believes that soil remediation objectives must be based on sound scientific principles which take into account the factors that affect the subsurface transport of chemicals such as chemical properties, site geological characteristics, etc. In this regard, the Board finds that the Agency has not justified the proposed soil remediation objectives for organic chemicals.

(ii) Agency's Modeling Exercise. No meaningful conclusions can be drawn from the modeling report (Exh.#26) submitted by the Agency. Models such as those used by the Agency are designed with numerous underlying assumptions. These assumptions must be understood thoroughly to draw any meaningful conclusion from the results produced by the model. Actually, the Board has adopted standards for the contaminant transport models under its landfill regulation at 35 Ill. Adm. Code 811.317(c), which specifies the informational requirements for groundwater contaminant transport models. However, the voluminous report submitted by the Agency mostly consists of the values of the parameter fed into the model and the model's output. There is no supporting discussion

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30The adsorption coefficient K_{oc}, which is a measure of extent to which a chemical partitions itself between soil particle and water ranges from 1 to 10,000,000.

that alludes to the choice of the models or the rationale for choosing one set of values over others. Further, the modeling report does not include any information relating to model calibration and sensitivity analysis.

(e) Appendix B: Board Conclusion

The Board has evaluated the Agency's proposal and the supporting documents to determine whether the proposed cleanup objectives in Appendix B are technically sufficient. The evaluation indicates the Agency's rationale for establishing groundwater remediation objectives is consistent with the procedures adopted by the Board under Part 620. Further, the proposed soil remediation objectives for toxic heavy metals based on the TCLP procedure are appropriate on an interim basis. However, the procedure used by the Agency to develop the soil remediation objectives for organic chemicals (such as BETX) which are the major concern at petroleum UST sites, is not supported by the record. Therefore, the Board does not adopt the Appendix B soil remediation numbers for organics as proposed.

4. Alternatives to Appendix B

The participants in this rulemaking introduced into the record a number of objective risk-based soil remediation approaches as alternatives to the proposed Appendix B soil remediation numbers. These alternatives included the regulations of other states such as Ohio (submitted by Marathon Oil Company, Exh. #14 and USEPA, PC# 7), Texas (submitted by the USEPA, PC#19) and Iowa (submitted by Amoco Oil Company, Exh. 20), as well as the ASTM guidelines for risk-based corrective action at petroleum UST sites (submitted by Shell Oil Company, Exh. 21), and a methodology developed by Michael Rapps on behalf of IPMA which incorporates certain elements of the ASTM guidelines (Exh. 22.) The USEPA and the participants, with the exception of the Agency, strongly urged the Board to consider the approach taken by other states and/or the ASTM guidelines in developing a risk-based approach. Furthermore, both IPMA and the USTAC supported consideration of the IPMA proposal. The following is a discussion of the Board's technical review of these alternatives.[31]

31Regarding the approaches taken by Illinois' sister states, especially Ohio and Texas, the Board agrees that these risk-based approaches are quite worthy of examination in the subdocket. The Board finds that none of these approaches can be adopted in the immediate regulations, however, because a more detailed review would be necessary to customize them to Illinois' geological conditions and statutory framework.

(a) The ASTM Guidelines

Dr. Paul Johnson of Shell Oil Company testified at the May 23, 1994 hearing concerning the ASTM approach (Dr. Johnson Testimony 05/23/94 Tr. at 228.) He explained that the ASTM guide is not a methodology for doing a risk assessment, rather it is a framework for making risk-based decisions when determining what corrective action is appropriate. (Dr. Johnson Testimony 05/23/94 Tr. at 262.) It establishes the basic components and sequence of steps to be taken when making risk-based decisions. (Dr. Johnson Testimony 05/23/94 Tr. at 266.)

The ASTM guide was developed to assist states in customizing corrective action programs incorporating risk-based decision-making. (Johnson Testimony 05/23/94 Tr. at 266 and 278.) Since it not intended to be used as a methodology for performing site assessments, the models and equations that are proposed in the ASTM document are only intended to be examples of risk-based calculations, and are not necessarily intended to establish a specific method to be followed. (Johnson Testimony 05/23/94 Tr. at 260.) Therefore, while the ASTM guide is a valuable tool for establishing a risk-based program, it cannot by itself generate the specific values necessary for an operational program.

The ASTM risk-based corrective action (RBCA) process is implemented in a tiered approach involving increasingly sophisticated levels of data collection and analysis. The process includes three tiers where conservative assumptions of earlier tiers are replaced with more site-specific data. Upon completion of each tier, the user reviews the results and decides if more site-specific analysis is required. The decision to go to the next tier is mainly based on the cost of achieving the goals of the previous tier. The following is a brief description of ASTM process.

Tier 1: In general, Tier 1 involves the development of Risk Based Screening Levels (RBSLs) based on conservative non-site specific assumptions, since site-specific information is not available. The Tier 1 RBSLs would be based on conservative corrective action goals, such as Maximum Contaminant Level (MCL). The Tier 1 analysis would produce a "lookup table" for all sites. Such a "lookup table" must be updated periodically to incorporate new toxicological data. Tier 1 RBSLs may be presented as a range of values, corresponding to a range of risks. The screening levels to be used are then chosen based on a risk management decision. In this regard, the user may include a cost benefit analysis to determine the cost of achieving various risk levels.

Tier 2: Tier 2 involves the development of Site Specific Target Levels (SSTLs). If the cost of cleanup to achieve Tier 1 levels (RBSLs) is too high compared to cost of Tier 2 analysis, then user may choose to conduct Tier 2 analysis. This decision is based on the assumption that cleanup cost of Tier 1 is higher than the total cost of development of SSTLs and cleanup at SSTLs. It should be noted that RBSLs and SSTLs should be developed at the same risk level such as one in a million. Additional site assessment data may be required, but minimal incremental effort is usually required relative to Tier 1.

Tier 3: Tier 3 gives the user an option to further evaluate a site to develop appropriate SSTLs. The level of analysis under Tier 3 is much more complex than Tier 2. The decision to conduct Tier 3 analysis is based on assumption that a total cost of analysis for Tier 3 and cleanup at Tier 3 level is less than the total cost of analysis of Tier 2 and cleanup at Tier 2 level. The major difference between Tier 2 and Tier 3 is that Tier 3 requires substantial effort to analyze a site in great detail and conduct site-specific transport models. As noted above, in order to compare the cost of each tier, the analysis must be conducted at the same risk level (i.e. one in million or one in 10,000, etc.)

The participants urged the Board to use ASTM principles to develop more objective site-based cleanup objectives. The participants noted that the ASTM guide provides a good starting point for developing a RBCA procedure that may be used in Illinois. Because the ASTM guide is not intended to provide specific standards for cleanup of LUST sites, and because of the statutory time constraints in this rulemaking, the public participants, with the exception of IPMA (which favors adoption of its own proposal, outlined below), believe that the development of alternative remediation objectives based on the ASTM guide must be considered in a separate docket.

The Board believes that the ASTM guide offers a reasonable approach for calculating risk-based cleanup objectives. However, the ASTM guide is not specific enough to be used as a standard method. Appropriate assumptions must be established and appropriate input parameters must be selected before actual values can be generated. Therefore, the Board agrees with the participants that development of such an alternative methodology would be more suitably addressed in the new subdocket.

(b) IPMA's Proposal

On behalf of IPMA, Michael Rapps of Rapps Engineering and Applied Science, developed a site assessment methodology incorporating certain components of the ASTM guidelines. IPMA states that its proposal uses objective procedures to determine reasonable cleanup standards, which are protective of human health and the environment (Exh. #22), and at the same time protective of the financial integrity of the UST Fund. The Board notes that USTAC, in its post-hearing comments, states that the IPMA proposal is worthy of Board consideration as an alternative to the Agency's proposed Appendix B. (PC# 18 at 2.)

The IPMA proposal establishes its own site classification system unrelated to the ASTM guidelines. The proposal classifies the sites under HP classification into three groups based on location of water wells within the vicinity of a LUST site. It then applies ASTM analytical equations to establish cleanup objectives within this classification system. The following section describes the approach taken in the IPMA proposal.

(i) **General Provisions**

Site Classification. The proposal classifies HP LUST sites into one of the following three conditions on the basis of location of potable water wells in the vicinity of a LUST:

Condition 1: Sites where a water well exist or is likely to exist within 200 feet of contaminant source. The proposal considers this class as the "worst" case and suggests that the Agency's Appendix B levels are appropriate.

Condition 2: Sites where water wells do not exist, and are unlikely to exist, within 200 feet of the source of contamination, but where wells exist or may exist in the future at a distance ranging from 200 to 1000 feet from the source of contamination. This condition is considered as a "typical" or an "average" case, where the cleanup levels would be less stringent than Condition 1.

Condition 3: Sites where there is little or no risk to potable groundwater because there are no water wells within 1000 feet of the contaminant source, and where it is unlikely that water wells will be installed in the future. This class is considered as the "best" case, where cleanup standards would be less stringent than those proposed for Condition 2.

Cleanup Objectives Calculations. As noted above, the IPMA proposal accepts the Agency's Appendix B levels as the cleanup objectives for sites classified under Condition 1. The cleanup objectives for sites under Condition 2 and 3 are calculated in a different manner than the Agency's method. The proposal states that if there are existing Class I and Class II standards for a chemical under Part 620, then the proposal would use those standards as groundwater objectives. If Part 620 standards do not exist for any indicator chemicals, the risk-based screening levels are determined by using certain equations drawn from the ASTM guide. The proposal calculates the soil remediation objectives at the source using the groundwater objectives at the compliance point, and the ASTM equations are then used to account for steady state attenuation of the chemical concentration, and to account for the soil leaching factor. The ASTM equations are identified as "Equation No. 3 and "Equation No. 4" in the IPMA proposal. (Exh. #23, Rapps Memo at 2.)

(ii) **Board Analysis of IPMA Proposal**

The Board believes that the IPMA proposal's general approach of determining remediation objectives using an analytical model has merit. However, the proposal as presented contains certain errors and assumptions which are somewhat problematic. First, the proposal as presented by IPMA relies on an incorrect ASTM equation. Second, the proposal establishes groundwater objectives based on unsubstantiated risk

levels. These groundwater objectives are arguably inconsistent with current regulatory requirements. These issues are discussed in detail below.

Incorrect ASTM equation. After closely examining the ASTM groundwater transport equation used in the IPMA proposal, the Board has discovered a significant typographical error in the ASTM analytical equation (a missing "square root" symbol) which causes the equation as used by IPMA to generate incorrect results. This error exists in the groundwater transport equation presented in the ASTM guidance document. (Exh. #21A, Table C1 at C10.) The Board confirmed this error by obtaining the correct equation from the original document[32] referenced in the ASTM guidelines. (See Exh #21A at C16.) Because the IPMA model relied on this incorrect ASTM equation for all constituents modeled, all the cleanup objectives calculated in this proposal appear to be erroneous. Also, the proposal does not provide any rationale for assuming that all chemicals naturally degrade at a constant rate in cleanup objective calculations. In this regard, the Board notes that the IPMA proposal uses the degradation coefficient of Benzene for all the contaminants.

Compliance with groundwater standards. The proposal clearly states that for chemicals with existing groundwater standards under Part 620, the groundwater objectives would be the same as the Part 620 standards. However, the review of the proposal indicates that this premise is not followed in the calculations. The IPMA proposal uses calculated values as groundwater objectives for chemicals for which there are existing Class I and II groundwater standards under Part 620. The proposal calculates the groundwater objectives based on arbitrary risk levels of 10^{-5} (1 in 100,000) and 10^{-4} (1 in 10,000) for conditions 2 and 3, respectively. These levels are not consistent with the Class I and Class II GQSs under Part 620. The Board believes that the issue of groundwater classification as it relates to LUST cleanup is an appropriate subject for subdocket. The Board anticipates that discussion of the applicability of groundwater standards to site specific cleanups or risk-based site specific soil objectives will, by necessity, occur.

Finally, the Board notes that Section 57.7(c)(1)(E)(i) of the LUST Law requires a demonstration upon completion of corrective action at high priority sites that the applicable indicator contaminant GQS is met at the property boundary or 200 feet, whichever is less. Therefore, the Board believes that the groundwater objectives must at this time be based on the GQS applicable to the impacted groundwater. For example, if a LUST site contaminates Class I groundwater, the cleanup objectives must at this time be based on Class I GQS.

32Domenico, P.A., "Analytical Model for Multidimensional Transport of a Decaying Contaminant Species," *Journal of Hydrology*, Vol. 91, pp:49-58, 1987.

5. Interim Soil Remediation Objectives: Modified IPMA Methodology

Having found the Appendix B soil remediation numbers unsupported by the record, the Board has two alternatives regarding soil remediation cleanup objectives during the life of the subdocket: (1) incorporate no specific soil remediation numbers or methodology into the rules during this period; or (2) develop an interim soil remediation solution based upon all the information in the record.

If the proposed rules are adopted without the Appendix B soil numbers as presented by the Agency, the only regulatory option available to owners or operators of high priority (HP) sites implementing corrective action would be to propose remediation objectives based on site-specific risk assessment pursuant to Section 732.408. Due to the high costs associated with risk assessments, the Board does not believe that it is reasonable to expect all owners or operators of HP sites to conduct a full-fledged site-specific risk assessment. Further, the considerable technical resources that would be required to review and evaluate a large number of risk assessments would unduly tax the fund and the Agency's resources. In this regard, the Agency admitted at hearing that its current technical staff may not be able to handle a large number of site-specific risk assessments. (Hornshaw Testimony 4/27/94 Tr. at 155.) For these reasons, the Board proposes to adopt an interim method derived from the IPMA methodology for determining specific numerical soil remediation objectives.

The Board believes that even though there are some inherent problems with IPMA's over-all proposal as presented, the proposal's approach of determining soil remediation objectives using ASTM analytical equations and transport models has merit. By using fairly conservative non-site specific model parameters and safety factors, the Board believes that it is possible to determine generic soil remediation objectives that are protective of human health and environment at a significantly lower cost than conducting site-specific modeling. Therefore, the Board proposes the use of the IPMA methodology with certain modifications to establish soil remediation objectives for organic indicator contaminants. The Board believes that this methodology, which is described below and specified in the Board's modified Appendix B of the instant regulations, offers a reasonable approach to determining soil remediation objectives based on scientific principles which is supported by and derived from the record. Also, Appendix B includes soil remediation objectives for a set of six indicator contaminants determined by the Board using the modified IPMA methodology. The following is a description of this methodology.

(a) Analytical Equations

The analytical equations used in the instant regulations for determining soil remediation objectives are presented in Opinion Addendum B. These equations are the same as those used in the IPMA proposal, except for the following corrections and modifications:

- The instant regulations uses the correct version of the ASTM groundwater transport equation used in the IPMA proposal which had been identified as Equation No. 3 in

the IPMA proposal. (See Opinion Addendum A and our discussion at page 31, supra.)

- The ASTM equations identified as "Equation No. 1" and "Equation No. 2" in the IPMA's proposal for computing appropriate risk-based concentration levels for carcinogenic and non-carcinogenic compounds in drinking water are not used in today's regulations. Instead, the Appendix B groundwater objectives have been used as the applicable objectives at the compliance point.

(b) Model Parameter Values

The model parameter values are summarized in Tables 1 and 2 of Opinion Addendum C. The model values used in this exercise are the same as those proposed by IPMA, except for the chemical degradation rate or decay coefficient (λ) and the aquifer hydraulic conductivity. The proposed regulations use chemical specific degradation rates listed in the ASTM guidelines. (Table C, Exh. #21A at C17.) The Board notes that the IPMA proposal used the degradation rate of Benzene (λ=0.0009) for all the six chemicals.

Based on the information in the Berg Circular, the aquifer hydraulic conductivity (K_s) has been changed to 1 X 10^{-3} cm/sec. In this regard, IPMA proposed a value of 5 X 10^{-2} cm/sec, which is more conservative. The Board believes that the value reported in the Berg report is more representative of aquifer hydraulic conductivity. Further,the Board has used in its calculations a groundwater Darcy velocity of 2500 cm/year as suggested by the Agency in Public Comment #25, instead of 6307 cm/year, as used in the Rapps proposal. The Board finds that the remaining parameter values, which are for the most part drawn from the ASTM guidelines, are reasonable, since the modeling was done to determine non-site specific remediation objectives.

In Public Comment #25, the Agency raised several questions regarding the units of measurement specified in the Board's August 1, 1994 Interim Opinion and Order. In response, the Board has made corrections to the units of measurement for the sorption coefficient (ks), specific discharge(U), first order degradation coefficient(λ), and groundwater Darcy velocity (Ugw). The changes are shown in the attached Table under Section 732.Appendix B.

(c) Safety Factors

The IPMA proposal uses a safety factor of 100 to determine the groundwater objective at the source[33] and a safety factor of 10 to calculate the soil remediation objective necessary to meet the groundwater objective at the source. (See Equation Nos. 3 and 4 in Opinion

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33The Board notes that the IPMA methodology involves the calculation of groundwater objectives at the source by dividing the groundwater objectives at the compliance by the $C(x)/C_{source}$ and a factor of safety. Then, the groundwater objective at the source is used to determine the soil remediation level.

Addendum B.) Because there exists a degree of uncertainty associated with model predictions, the use of safety factors is appropriate in situations concerning protection of human health and the environment. However, the Board recognizes that the choice of a given safety factor carries with it a degree of subjectivity. (Rapps 06/07/94 Tr. 3 at 63-64).

In Public Comment #25, the Agency suggested that the Board follow the USEPA practice of setting safety factors of one order of magnitude (i.e., 10) for each uncertain parameter. Based on this approach, the Agency recommends that the Board use a safety factor of 100. However, based on the number of uncertain parameters in the adopted model, the Board believes that a safety factor of 1000 is more appropriate. The appropriate use of safety factors is an issue which may be further addressed in the subdocket.

(d) Indicator Contaminants

The instant regulations under Part 732, Appendix B include soil remediation objectives for only six indicator contaminants, since chemical specific data is not available in the record for all the indicator contaminants. The six indicator contaminants include Benzene, Toluene, Ethyl Benzene, Xylenes, Naphthalene and Benzo(a)pyrene. The chemical specific data for these contaminants are summarized in "Model Parameter Values" Table of Addendum C. The Board expects the regulated community to use the proposed methodology to determine soil remediation objectives for other indicator contaminants by using chemical specific data available in scientific literature.

(e) Calculation

The soil remediation objectives for the six indicator contaminants were calculated from a distance of 5 to 200 feet from the source at five foot intervals. The MathCad® software package, which was used in the IPMA proposal, was used for the calculations. The results are summarized in Table 4 of Opinion Addendum C. Step one of the calculation determines the groundwater objective at the source. This involves the use of Equations 1 and 3 in Opinion Addendum B. Equation 1 is used to determine the chemical attenuation rate for an indicator contaminant, and Equation 3 is then used to calculate the groundwater objective at the source. The next step involves the calculation of the soil remediation objective using the groundwater objective at the source and the soil leaching factor. First, the soil leaching factor for the indicator contaminant is calculated using Equation 2. Then, Equation 4 is used to calculate the soil remediation objective.

The Board notes that except for Xylenes, the calculated soil remediation objectives for the remaining 5 indicator contaminants are generally as stringent as the Agency's near the source and less stringent than the Agency's at a further distance from the source. For Xylenes, the Board has set the soil remediation objective at the same level as the groundwater objective since the calculated value was less than the groundwater objectives.

In Public Comment #25, the Agency has raised a legitimate issue concerning the determination of the compliance point. The Agency asks that the Board clarify the application of the "distance" column from Section 732.Appendix B Table 4. In this regard, the Board notes that the measurement to the property line must be based on the shortest distance from the edge of the UST system to property line in the direction of groundwater flow. If such distance is greater than 200 feet, then the 200-foot compliance point could be used instead.

In Public Comment #25, the Agency also correctly noted that the Board mistakenly included the terms "cos" and "$k_i\theta_{ai}$" in Equation 2 in our interim order of August 1, 1994. These errors were typographical in nature and did not affect the actual calculations. Additionally, the Board's interim opinion and order contained an inadvertent error in Equation 1, which resulted in incorrect values being listed in Table 4. The Board has made the corrections necessary to rectify these errors.

In Public Comment #25, the Agency also raised legitimate concerns regarding the valid range of the equation. In this regard, the Board agrees with the Agency that the valid range of the model is limited by the solubility of indicator contaminants in water. In order to address Agency's concerns, the Board has incorporated the solubility of contaminants in determining soil remediation objectives. Essentially, the Board has used the indicator contaminant concentration predicted by using equation 3 in Section 732.Appendix B at various distances from the compliance point, as long as the concentration is less than the solubility of the contaminant. At the point at which the predicted concentration exceeds the contaminant solubility, the Board has substituted the concentration predicted by the contaminant solubility in calculating the soil remediation objectives. The Board believes this approach ensures that the model is used within the valid range and results in more realistic remediation objectives.

The Board has used the contaminant solubility listed in Exhibit 9C for all the modeled indicator contaminants, except Naphthalene. The Board obtained the value for Naphthalene solubility in water from scientific literature, since the value is not listed in Exhibit 9C. The Board has listed the solubility values for all the six modeled indicator contaminants in Section 732.Appendix B Table 3. The Board has also listed the applicable indicator contaminant groundwater objectives used in the calculations.

The Board notes that solubility values used in the calculations are measured at 25° C, which is higher than the typical ground water temperature. The Board believes that it is appropriate to use these values without correction for temperature since such a correction would not result in significantly different soil remediation objectives. However, this issue may be further addressed in the subdocket.

6. Conclusion

As stated previously, the Board proposes to adopt Appendix B for its list of remediation contaminants, groundwater remediation objectives, and soil remediation objectives for toxic metals and PCBs on an interim basis pending further review in the subdocket. However, regarding interim soil remediation objectives for the remaining organic contaminants, the Board proposes to substitute the soil remediation numbers (calculated for six contaminants) with the methodology explained above and in Opinion Addendum and modified Appendix B. This method is based on the IPMA methodology and the ASTM guide. Its starting values are the groundwater remediation objectives proposed by the Agency. These values are inputted into the corrected version of the groundwater transport equation from the ASTM guide. This equation incorporates the hydraulic conductivity from the Berg Circular, since the Board believes it is a proper representation of aquifer hydraulic conductivity. A soil leaching factor equation from the ASTM guide is then applied. The final soil remediation objectives are calculated by applying two equations proposed by IPMA. The first equation is used to establish groundwater concentrations at the source, and the second translates these groundwater concentrations into soil concentrations. The safety factor of 1000 is used to ensure the soil remediation objectives are protective of human health and the environment. The end product values are the proposed interim soil remediation objectives.

The Board believes that this methodology offers a reasonable interim alternative to the proposed Appendix B soil remediation objectives. We believe that this methodology is protective of public health and the environment, consistent with the Act and other Board regulations, and provides a reasonable short-term scientific methodology while a more long-term, objective, risk-based soil remediation alternative is developed in the subdocket.

B. THE ORPHAN TANK PROBLEM: A.K.A. LAND

Since the beginning of this proceeding, the Agency and USTAC have requested that the Board address what they have jointly referred to as the "A.K.A. Land problem." The Agency, supported by USTAC, proposes that a Board note be inserted after the definition of "operator" in the proposed definition section, Section 732.103, to allay the fears of the regulated community arising from the Board's decision in A.K.A. Land v. IEPA, (March 14 1991) PCB 90-177. The proposed note would clarify that a person, who is not the statutorily-defined owner/operator, but who nonetheless undertakes the voluntary removal of an orphan tank from the ground, shall not be "deemed" an operator by merely so doing.

In A.K.A. Land, the petitioner company bought property in 1988 which had been used as a gasoline station, but had closed prior to 1976. Upon discovering contamination, A.K.A. Land removed the tanks and performed corrective action. Under the existing definition of "owner," which provides that in the case of tanks no longer in use on November 8, 1984, the owner is any person who owns the tank immediately before the discontinuation of use (32 Ill. Adm. Code 731.1120), A.K.A. Land was clearly not an owner. However, a majority of the Board found that the company became an "operator" of the UST system when it undertook

the corrective action, even though the company did not apparently otherwise fall under the definition of "operator." This finding enabled the company to access the fund and be reimbursed for its voluntary cleanup activities.

Arguably, under A.K.A. Land an entity or person becomes an "operator" and thus subject to the entire tank program (both liability and reimbursement) whenever it voluntarily undertakes corrective action of an otherwise "orphan" tank. Therefore, there is little incentive, and quite a bit of risk, for an entity which has never been an operator in the usual sense (i.e., actually using the tank to store or dispense gasoline) to remove a tank. As a result, there has been considerable interest by the participants in this proceeding to "fix" the orphan tank problem.

The Illinois Department of Transportation (IDOT), through its counsel J. Randle Schick, also argued in favor of a solution to the orphan tank problem. He proposed fixing the problem by adding a Board note at the end of Section 732.100 ("Applicability"). IDOT stated that state and local governments which find abandoned UST systems in highway right-of-way are not removing those systems for fear of becoming liable under A.K.A. Land, so leaking tanks are remaining in the public right-of-way. Therefore, IDOT proposed language which would make it clear that any person who removes a tank, and does not intend to become the owner/operator by so doing, will not become the owner/operator by merely removing the system. Since such a person may intend to become the owner/operator to gain access to the fund, if that person is otherwise eligible, IDOT also proposed language which would allow such a person to make that election by so indicating on the OSFM permit application to remove the UST system.

The Board also received two public comments which further address such a proposed Board note. In PC#14, William Fleischli of IPMA commented in opposition to IDOT's proposal. IPMA believes that the IDOT proposal contravenes the intent of the LUST Law by circumventing its registration and liability requirements. IPMA contends that since the Board has made its decision in A.K.A. Land, that decision should stand. This argument aside, the Board chooses not to adopt IDOT's proposal because it would require the Board to assert regulatory authority over the OSFM application process. Therefore, IPMA's comment is no longer pertinent.

The second public comment, PC#11 submitted by the law firm of Brown & Bryant, expressed concern that the language proposed by the Agency leaves open the question of whether a person who is not otherwise an owner/operator of the UST system could be deemed the "owner," as opposed to the "operator," of the orphan tank he removed. Accordingly, the commentator requests that the Board clarify the Agency's language.

The Board recognizes that its decision in A.K.A. Land has unwittingly discouraged the voluntary removal of orphan tanks. Good public policy requires the encouragement, not discouragement, of voluntary tank removal and cleanup. Therefore, the Board agrees that

the orphan tank problem presented by A.K.A. Land should be resolved. Accordingly, the Board has revised the Board Note following the definition of "operator" to state:

BOARD NOTE: A person who voluntarily undertakes action to remove an underground storage tank system from the ground shall not be deemed an "operator" merely by the undertaking of such action.

Anything further, e.g., addressing the question of "owner" status, is not necessary since A.K.A. Land only expanded the applicability of the definition of "operator." The Board chooses to minimize the use and effect of Board notes to avoid unanticipated and unintended interpretations akin to that which resulted from A.K.A. Land. Additionally, in response to PC#25 from the Agency, we wish to make it clear that our overruling A.K.A. Land extends to all USTs regulated under 35 Ill. Adm. Code Part 731 and not just petroleum USTs under this new Part 732.

C. ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) ISSUES

Through its Assistant Chief Counsel, J. Randle Schick, IDOT raised several issues and later filed PC#8 which provides an estimate of the number of LUST sites affected by concerns specific to IDOT. The public comment estimates that IDOT has had the Geological Survey perform approximately 600 "Preliminary Environmental Site Assessments" (PESAs) of property adjacent to proposed highway construction projects that may be a source of contamination of the highway right-of-way. These PESAs cover multiple sites, with an estimated average of two LUST sites per investigation, for an estimated total of 1200 sites. After excluding sites which pose no or a low risk of contamination, and sites at which IDOT can avoid acquiring contaminated property, IDOT has performed detailed investigations of 165 sites in the last five years. Additionally, IDOT has discovered unexpected contamination at an unknown number of sites. At each contaminated site IDOT has performed the necessary remediation. IDOT has sought UST Fund reimbursement at only three sites.

IDOT's suggestion regarding the A.K.A. Land issue was addressed above. Mr. Schick presented five other issues which are discussed below. In each of the five issues, IDOT's suggested language is not specific to IDOT but would apply to all relevant owners and operators. In PC#17 filed by David Rieser of IPC, Rieser stated opposition to the adoption of any of IDOT's proposed modifications, urging that the issues raised by IDOT could be better addressed through administration of the LUST program, rather than adding an additional level of governmental review.

1. Definition of Property Line

IDOT proposes that we add a definition of property line to the definition section of the proposed rules (Section 732.103) which would read as follows:

"Property line" means the dividing line between a lot, tract or parcel of land and the contiguous street, alley or adjacent lots, tracts, or parcels of land. A street or alley right-of-way shall be synonymous with property line.

This proposed definition is an attempt to deal with the installation of monitoring wells at the property line of a property that has a dedicated right-of-way. It is based on the definition of "lot line" used in zoning ordinances. It would consistently define property line as the edge of the right-of-way, whether the right-of-way is owned in fee or in dedication. IDOT points out that by adopting this definition the need for drilling and placing monitoring wells in the middle of a highway and related IDOT permitting issues would be avoided. Additionally, its adoption would avoid the need to place monitoring wells at some point other than the property line if IDOT denies a permit to place monitoring wells in the right-of-way.

The Board notes that placing the monitoring well within the right-of-way may not always present a problem. For example, the right-of-way may not involve an existing roadway. However, the Board recognizes that other sites may not afford such a simple solution, and while redefining is not the correct solution for the problem raised by IDOT, there are other solutions to consider. Perhaps, for example, the owner/operator should be allowed to apply a groundwater transport model, to project groundwater contamination levels at the actual property line in conjunction with monitoring at the edge of the right-of-way. To further examine this problem and possible solutions, the Board reserves this issue for consideration under the subdocket.

In addition, the Board notes that if the ASTM equation for predicting chemical concentration attenuation is adopted as a basis for determining groundwater and soil cleanup objectives in the subdocket, there would be no need to install monitoring wells on a property line in the middle of a dedicated right-of-way. Cleanup objectives would be based on the distance from the LUST pollution source to the compliance point at the property boundary. Monitoring wells could be installed at the edge of the right-of-way and the calculations of cleanup objectives using the ASTM equation could compensate for the distance from the edge of the right-of-way to the compliance point at the property boundary by adjusting values in the equation.

2. Investigation of Migratory Pathways

IDOT proposes that the Board require that migratory pathways be investigated before allowing deferment of corrective action for lack of funds. Specifically, IDOT proposes that Section 732.306(a) read as follows:

NOTWITHSTANDING ANY OTHER PROVISION OF RULE OF LAW WITH THE EXCEPTION OF THE early action requirements of Subpart B

of this part and the investigation of migration pathways as required by ***Section 732.307(g).***[34] *** (IDOT proposed language emphasized in bold.)

This language would require the investigation of migratory pathways before corrective action could be deferred, consistent with Section 57.8(b) of the Act, which disallows postponement of corrective action if the Agency determines there is a threat posed by a pathway investigation, and that investigation should be done as soon as the tank is pulled as part of early action. The major impact of that modification is that, unlike other activities which are considered corrective action, investigation of migratory pathways could no longer be delayed pending availability of funds.

The Board accepts the change to Section 732.306(a) otherwise a serious threat to human health and welfare could go undetected. The Board agrees with IDOT that this amendment is consistent with the legislature's allowance for the Agency to disallow deferment where there is a serious threat to human health and welfare exists. Furthermore, USEPA has earnest concerns about the Act's deferred action requirement. While the Board cannot change the Act's requirement, the Board can, by regulations, lessen the risk that serious environmental damage may remain unremediated during periods of fund insolvency.

In PC#25, the Agency agreed that this revision is appropriate if it only becomes operative when the owner/operator learns from the Agency that deferral is an option due to insufficient money in the UST Fund. That information is only made known to the owner/operator after the Agency has completed its review of a site application plan and budget. If the owner/operator elects to defer action, subsection (a) of Section 732.306 allows such owner/operator up to 60 days after the election to submit to the Agency the results of the pathway investigation contained in its site classification plan and budget.

3. Notification and Comment Regarding Migratory Pathways

IDOT proposes that Section 732.307(e)(1) also be modified to include a notification requirement, to owners of migratory pathways. Specifically, it proposes the addition of the following language.

> *The owners, if reasonably ascertainable, of such pathways, basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces or of property that may be damaged shall be notified by the engineer and given the opportunity to comment upon the portions of the site classification plan and site classification report as they pertain to those pathways and property. Those notices and comments shall be included in the site classification report.*

34IDOT's proposed language referenced Section 732.309(a); however, pursuant to PC#20 which notes that this is an incorrect reference, we have substituted Section 732.307(g).

IDOT also proposes that Section 732.408(c) be modified by adding a subsection (4) to provide for comments to the Agency concerning its evaluation under that section as follows:

> *(4) Comments obtained from the owners notified during the investigation of migration pathways as to the potential of any remaining contaminants to pose a significant threat to human health or the environment and comments of adjoining property or highway right-of-way owners as to the practicality of continuing with remediation.*

These provisions are intended to provide IDOT and other potentially affected third parties with notice of potential impacts from LUST sites, and to provide them with an opportunity to comment on the site evaluation plan and site classification report. They would require the engineer performing the site classification to obtain comments of those who may be adversely affected.

At hearing, Geoffrey Gilman of Amoco Oil (also appearing at the hearing as a representative of USTAC and IPC) commented that allowing IDOT or another third party to comment on every Site Classification Plan and Corrective Action Plan would "throw the Agency into chaos." (Gilman Testimony 5/24/94 Tr. at 218.) Mr. Schick responded that he did not think the additional requirements would be particularly onerous, and that the concerns raised are important health and safety concerns. Also, the comments discussed are intended to be directed to the professional engineer. Mr. Gilman responded that most often the site neighbor is not IDOT, and that providing notice to a neighboring owner raises additional liability concerns for the UST site owner.

We agree that IDOT expresses a valid concern about notice and comment procedures. Although we do not believe that avoiding third-party liability is a legitimate consideration when determining whether notice should be given to adjacent landowners, we can not incorporate notice and/or comment procedures at this time. IDOT's proposed requirements would slow down the site remediation process considerably, and moreover, the record does not support the inclusion of such requirements. IDOT's proposal does not establish any timetable for the notification of affected owners or the submission of comments, nor does it establish what weight the comments should be given, and by whom. If IDOT has specific concerns about notification concerning its properties, it could potentially work this issue through administratively with the Agency. Moreover, whenever a dispute arises between the Agency and an owner/operator regarding the corrective action plan, or any of the other appeal points in the LUST Law, we hold a public hearing during which adjacent landowners or members of the public may offer testimony or comment.

4. Include Special IDOT Costs for Corrective Action Reimbursement

IDOT proposes that we modify Section 732.605 "Eligible Costs" by adding the following:

Costs included in relocating groundwater monitoring and investigation wells as a result of the acquisition of highway right-of-way.

This language is intended to address the situation where IDOT acquires a strip of land from property adjoining a highway that contains monitoring wells which must be relocated. IDOT wants the cost of relocating the wells to be a reimbursable cost. Since IDOT is most likely the only entity that will be acquiring land in this type of strip, the effect of this proposal would be limited strictly to cases where IDOT obtains a portion of a LUST site. The cost of relocating such wells is a cost ordinarily associated with property acquisition, not site remediation. We do not see how this expense differs from relocating or compensating the property owner for a structure only to remove it from the property acquired. Therefore, the Board declines IDOT's proposed language.

VII. ECONOMIC AND MERIT FINDINGS

A. ECONOMIC MERIT

Pursuant to Section 27(a) of the Act, the Board must consider the economic reasonableness of the proposed rules. Pursuant to section 27(b), the Board must include in its written opinion a determination, based upon the information in the record, as to whether the proposed regulations have any adverse economic impact on the people of the State of Illinois. Therefore, we will examine the evidence presented as to the economic reasonableness of this proposal.

There are currently 60,000 registered tanks which equate to 24,000 UST sites that are potentially subject to these regulations. (Chappel Testimony 4/27/94 Tr. at 156.) In its Supplemental Statement of Reasons (filed April 15, 1994), the Agency projects that the site classification scheme under the new program will substantially reduce the overall cost of the UST program. Under the new classification scheme, the Agency estimates that only 15 to 20 percent of all sites seeking reimbursement will be classified as high priority sites, while 40 to 50 percent will be classified as low priority sites, and the remaining 35 to 45 percent will be classified as no further action sites. Only the 15 to 20 percent classified as high priority sites will be required to perform the full remediation previously required for all sites.

Under the old program, the average cost per site for all sites seeking payment from the fund was approximately $100,000, which included early action activities, site investigation, and appropriate remediation. Under the new program, the Agency estimates that early action and site classification activities, which are applicable to all sites, will have a combined cost of approximately $15,000 to $20,000 per site. For no further action sites, this will represent the full cost of compliance under the UST program. Low priority sites will require groundwater monitoring, which is estimated to cost an additional $20,000 to $30,000 over three years for an estimated total of $35,000 to $50,000 per site. High priority sites will require soil and/or groundwater remediation with an average estimated cost of $130,000 to $160,000 per site, for a total average cost of $145,000 to $180,000.

Under the old program, the demand on the fund was approximately $7.5 million per month. The Agency estimates that the average demand on the fund under the new program will be in the range of $3.2 million to $4.2 million per month. The Agency estimates that the overall savings over the life of the program could total several hundred million dollars. Additionally, the money from the fund will be spent in a manner which targets those sites that are in the most vulnerable areas or which represent the most serious contamination.

Based upon the evidence in the record, we find that the proposed rules are economically reasonable.

B. TECHNICAL MERIT

The Board reviewed the Agency's proposal in this rulemaking in conjunction with the record to determine the technical sufficiency of the proposed regulations. Specifically, the Board evaluated the provisions relating to site classification, corrective action, and development of remediation objectives. The Board notes that the participants in this rulemaking expressed concerns regarding a number of technical requirements. The Board has addressed these comments in Section VIII of this opinion and, where warranted, has made necessary changes. As noted earlier, the major technical objections to the Agency's proposal concerned the proposed soil remediation objectives. The Board believes that this issue and all the other concerns regarding the Agency's proposal are addressed by the changes made in the instant regulations, which includes the addition of interim soil remediation objectives. Finally, the Board notes that the technical aspects of today's regulations are consistent with current statutory requirements.

VIII. SECTION-BY-SECTION ANALYSIS OF PUBLIC COMMENTS AND BOARD CHANGES FROM FIRST NOTICE TO SECOND NOTICE[35]

After careful consideration of all the public comments received in this rulemaking, we have drafted this section to show the changes being made to the Agency's proposal as originally filed, and proposed for First Notice by the Board on March 17, 1994. Any deletions to the original rule text are stricken through, any additions recommended by the Agency or other participants that the Board adopts, are shown with underlining, and any clarifying or consistency amendments by the Board are highlighted.

35The Board would like to thank all of the participants and members of the public who offered public comment in this rulemaking. Those public comments leading to a specific rule text change are discussed in this section. Though all public comments may not have led to an amendment and therefore are not discussed in this opinion, all were carefully considered.

Section 732.100 Applicability

732.100(b) ~~*Owners or operators subject to this Part by law or by election shall proceed expeditiously to comply with all requirements of the Act and the regulations and to obtain the "No Further Remediation" letter signifying final disposition of the site for purposes of this Part. The Agency may use its authority pursuant to the Act in Section 732.105 of this Part to expedite investigative, preventive or corrective action by an owner or operator or to initiate such action.~~

Upon the receipt of a corrective action order from the OSFM pursuant to Section 57.5(g) of the Act, the owner or operator of any underground storage tank system used to contain petroleum and taken out of operation before January 2, 1974, or any underground storage tank system used exclusively to store heating oil for consumptive use on the premises where stored and which serves other than a farm or residential unit shall conduct corrective action in accordance with this Part.

732.100(c) *Owners or operators subject to this Part by law or by election shall proceed expeditiously to comply with all requirements of the Act and the regulations and to obtain the "No Further Remediation" letter signifying final disposition of the site for purposes of this Part. The Agency may use its authority pursuant to the Act and Section 732.105 of this Part to expedite investigative, preventive or corrective action by an owner or operator or to initiate such action.*

• The Agency made these changes in Errata Sheet #1 to correspond with the exceptions in Title XVI of the Act. (King Testimony 4/27/94 Tr. at 22-23.)

* * * * * *

Section 732.101 Election to Proceed under Part 732

732.101(a) *Owners or operators of any underground storage tank system used to contain petroleum and for which a release was reported to the proper state authority on or before September 12, 1993, may elect to proceed in accordance with this Part by submitting to the Agency a written statement of such election signed by the owner or operator.* ~~*Completion of c*~~*Corrective action shall then follow the requirements of this Part. The election shall be effective upon receipt by the Agency and shall not be withdrawn once made.*

• USEPA commented that the word "completion" in the last sentence is confusing. USEPA questioned whether it refers to a "No Further Remediation" letter. (PC#7 at 5.) The phrase "completion of corrective action" used in Section 732.101(a) refers to the completion of corrective action initiated at the site prior to or after an owner/operator elects to proceed under the proposed Part 732. Thus, by opting to proceed under Part 732, any corrective action activity at the site would follow the requirements of the proposed Part 732 and not the standards of existing Part 731. To clarify, the Board makes the change indicated above.

* * * * * *

732.101(b) *Except as provided in Section 732.100(b) of this Part, ~~O~~owners or operators of underground storage tanks (USTs) used exclusively to store heating oil for consumptive use on the premises where stored and which serve other than a farm or residential unit may elect to proceed in accordance with this Part by submitting to the Agency a written statement of such election signed by the owner or operator. ~~Completion of c~~Corrective action shall then follow the requirements of this Part. The election shall be effective upon receipt by the Agency and shall not be withdrawn once made.*

• The Agency made the first change in the above subsection in Errata Sheet #1 based on the limited conditions found in the Act and the proposed rules. The Board will adopt the change, but will also add the last correction in order to be consistent with subsection (a).

* * * * * *

Section 732.103 Definitions

732.103 *~~"Accounting" means a compilation of documentation to establish, substantiate and justify the nature and extent of the corrective action costs incurred by an owner/operator.~~*

"Full Accounting" means a compilation of documentation to establish, substantiate and justify the nature and extent of the corrective action costs incurred by an owner or operator.

• The Agency made this change in Errata Sheet #1 based on the concerns that the definition of the term being defined should be more reflective of its actual meaning. The addition of "Full" denotes the type of accounting review the Agency will be applying. (4/27/94 Tr. at 23.) The Board will adopt this change.

* * * * * *

732.103 *"Act" means the Environmental Protection Act (415 ILCS 5/1 et seq.).*

• The Agency made this change in Errata Sheet #1. The Board will adopt this change for Second Notice.

* * * * * *

732.103 *"Line Item Estimate" means an estimate of the costs associated with each line item (including, but not necessarily limited to, personnel, equipment, travel, etc.) which an owner or operator anticipates will be incurred for the development, implementation and completion of a plan or report.*

• In Errata Sheet #1 the Agency added this definition based on discussions with the USTAC because it describes the type of cost accounting review that the Agency will be doing and the types of items that are to be submitted by the owners and operators. (4/27/94 Tr. at 24.) The Board will add this definition to the Second Notice of the Board's rules.

* * * * * *

~~*Board Note: A person who is not the owner/operator of an underground storage tank system pursuant to the definitions of "owner" and "operator" contained in this Part, and who undertakes action to remove such underground storage tank system from the ground, shall not be deemed an "owner/operator" merely by the undertaking of such action. However, this Board Note is not intended to otherwise limit a person's voluntary actions to become an "owner" of an underground storage tank system.*~~

BOARD NOTE: A person who voluntarily undertakes action to remove an underground storage tank system from the ground shall not be deemed an "operator" merely by the undertaking of such action.

• This Board Note was added by the Agency after consultation with USTAC. The note is intended to overrule A.K.A. Land v. Agency. For a full discussion of this issue, please see Section VI(B) of this opinion.

* * * * * *

"PHYSICAL SOIL CLASSIFICATION" MEANS VERIFICATION of geological conditions consistent with regulations for identifying and protecting potable resource groundwater or verification THAT SUBSURFACE STRATA ARE AS GENERALLY MAPPED IN THE PUBLICATION ILLINOIS GEOLOGICAL SURVEY CIRCULAR (1984) ENTITLED "POTENTIAL FOR CONTAMINATION OF SHALLOW AQUIFERS IN ILLINOIS," BY BERG, RICHARD C., ET AL. SUCH

CLASSIFICATION MAY INCLUDE REVIEW OF SOIL BORINGS, WELL LOGS, PHYSICAL SOIL ANALYSIS, REGIONAL GEOLOGIC MAPS, OR OTHER SCIENTIFIC PUBLICATIONS. (Section 57.2 of the Act).

• This definition change is being made pursuant to the Agency's recommendation in PC#25. The Agency believe the addition of the underlined language will reflect the addition of "Method Two" in Section 732.307(d).

* * * * * *

Section 732.104 Incorporations by Reference

"Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 (Third Edition, 1986, as amended by Revision I, Final Update I, July 1992) ~~(December 1987),~~ Doc. No. PB 89-148076.

• The Agency made this change in Errata Sheet #2. The Agency states that this change was made to ensure that it was the most accurate citation to date. (5/28/94 Tr. at 28.) Additionally, Mobil Oil would like ASTM ES 38, Guide to Risk-Based Corrective Action at Petroleum Release Sites, pending March 10, 1994, included. The Board believes that it would be useful to the regulated community to incorporate by reference the ASTM guide to risk-based corrective action at petroleum sites. However, the Board will not include the actual ASTM guidance document under Section 732.104 at this time since it is still in a draft form. A review of the draft document in the record (Exh. #21A) suggests that there are number of typographical and substantive errors, which are not yet corrected by the ASTM standards committee. The Board will certainly welcome any proposal in the future to incorporate the final version of this document into these rules.

* * * * * *

Section 732.204 Application for Payment

Owners or operators intending to seek payment or reimbursement for early action activities are not required to submit a corresponding budget plan to the Agency prior to the application for payment. The application for payment may be submitted to the Agency upon completion of the early action activities in accordance with the requirements at Subpart F of this Part. In the alternative, the owner or operator may submit ~~an itemized accounting~~ a line item estimate of the activities and costs as part of a site classification budget plan submitted pursuant to Section 732.305 for prior review and approval in accordance with Subpart E of this Part. If the alternative of submitting a line item estimate of the activities and costs is selected, ~~A~~ a subsequent application for payment satisfying the requirements of

Subpart F will be required before payment can be approved and such application for payment must be submitted with an application for payment for site classification activities.

• The Agency changed this language in Errata Sheet #1. After negotiations with the USTAC, the Agency recommended changing the language from itemized accounting to "a line item estimate." (See King Testimony 4/27/94 Tr. at 23, and generally at 214-215.) These changes are consistent with the idea of "line item estimate." Therefore, the Board will adopt these changes.

* * * * * *

Section 732.300 General

732.300(b) ~~*Owners or operators of sites subject to this Part may choose to remediate all soil and groundwater contamination without conducting site classification activities pursuant to this Subpart C. Upon completion of the remediation activities, owners or operators choosing full remediation without site classification shall submit a corrective action completion report to the Agency. The report shall demonstrate that soil and groundwater have been cleaned to the levels required at Section 732.408 of this Part. Upon approval of the corrective action completion report by the Agency or by operation of law in accordance with Subpart E, a "No Further Remediation" letter shall be issued by the Agency.*~~

Owners or operators subject to this Part 732 may proceed without conducting site classification activities pursuant to this Subpart C under the following circumstances:

732.300(b)(1) *If the owner or operator chooses to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part. Upon completion of the remediation, the owner or operator shall submit a corrective action completion report demonstrating compliance with the required levels; or*

732.300(b)(2) *If, upon completion of early action requirements pursuant to Subpart B of this Part, the owner or operator can demonstrate compliance with the remediation objectives required in Section 732.408 of this Part. Upon completion of the early action requirements, the owner or operator shall submit a corrective action completion report demonstrating compliance with the required levels.*

732.300(c) *For corrective action completion reports submitted pursuant to subsection (b) above, the Agency shall issue a "No Further Remediation" letter upon approval of the report by the Agency or by operation of law in accordance with Subpart E.*

• The Agency made the changes referenced above in Errata Sheet #2. The Agency states that it made these changes at the suggestion of the USTAC so that the Section was clear as to intent. (See King Testimony 4/27/94 Tr. at 28.) These changes are adopted.

* * * * * *

Section 732.302 "No Further Action" Sites

732.302(a)(3) *After completing early action measures in accordance with Subpart B of this Part, there is no evidence that, through natural pathways or man-made pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces~~; or may otherwise cause property damage~~;*

• In PC#13 at 6, IERG advised that legislation is pending to delete the phrase "or may otherwise cause property damage" from the underlying law which would cause a regulatory deletion. Since the filing of that comment, that legislation was passed (SB 1721). In anticipation of the change becoming law, we accept the proposed regulatory deletion. Throughout this Section, we will also delete all references to "or may otherwise cause property damage."

* * * * * *

Section 732.303 "Low Priority" Sites

732.303(c) *After completing early action measures in accordance with Subpart B of this Part, there is no evidence that, through natural or man-made pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces~~; or may otherwise cause property damage~~;*

• In PC#13 at 6, IERG advised that legislation is pending to delete the phrase "or may otherwise cause property damage" from the underlying law which would cause a regulatory deletion. Since the filing of that comment, that legislation was passed (SB 1721). In anticipation of the change becoming law, we accept the proposed regulatory deletion.

* * * * * *

Section 732.304 "High Priority" Sites

732.304(c) *After completing early action measures in accordance with Subpart B of this Part, there is evidence that, through natural or man-made pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces~~, or may otherwise cause property damage~~;*

• In PC#13 at 6, IERG advised that legislation is pending to delete the phrase "or may otherwise cause property damage" from the underlying law which would cause a regulatory deletion. Since the filing of that comment, that legislation was passed (SB 1721). In anticipation of the change becoming law, we accept the proposed regulatory deletion.

* * * * * *

Section 732.305 Plan Submittal and Review

732.305(b)(2) *A site classification budget plan, which shall include, but not be limited to, a copy of the eligibility and deductibility determination of the OSFM and ~~an itemized accounting~~ a line item estimate of all costs associated with the development, implementation and completion of the site evaluation activities required in Section 732.307. In accordance with Section 732.204 of this Part, the owner or operator may submit a site classification budget plan that includes ~~an itemized accounting~~ a line item estimate of the activities and costs of early action for review and approval prior to the submittal of an application for payment. Formulation of budget plans should be consistent with the eligible and ineligible costs listed at Sections 732.605 and 732.606 of this Part. Site classification budget plans shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.*

• After negotiations with USTAC, the Agency recommended this change in Errata Sheet #1 which changed itemized accounting to "a line item estimate." (See King Testimony 4/27/94 Tr. at 23, and generally at 214-215.) These changes are consistent with the concept of "line item estimate." Therefore, the Board adopts these changes.

* * * * * *

732.305(e) *If, following the approval of any site classification plan, an owner or operator determines that revised procedures or cost estimates are necessary in order to comply with the minimum required activities for the site, the owner or operator shall submit, as applicable, an amended site classification plan or associated budget plan for review by the Agency. The Agency shall have the authority to review and approve, reject or require modifications of the amended plan in accordance with the procedures contained in Subpart E of this Part.*

• Mobil raises the question as to whether groundwater investigation plans are reimbursable since they may not be required for low priority or NFA sites. Mobil supports the idea that the budget be submitted on an Agency form which provides a breakdown of the areas to be included in a budget. Additionally, Mobil believes that the Section should contain language allowing the Agency one opportunity to review the documents and requiring the Agency to review fully and comment on the documents in a specific manner. (PC#5 at 3-4.)

• The Board agrees with Mobil and believes the language of this subpart may be misleading in that, if a person proceeds with a site classification plan prior to submitting and obtaining Agency approval, some actions may be deemed not reimbursable. Thus, the Board adds the Board Note below.

BOARD NOTE: Owners or operators proceeding under subsection (d) of this Section are advised that they may not be entitled to full payment or reimbursement. See Subpart F of this part.

* * * * * *

Section 732.306 Deferred Site Classification; Priority List

732.306(a) *NOTWITHSTANDING ANY OTHER PROVISION OR RULE OF LAW WITH THE EXCEPTION OF THE early action requirements of Subpart B of this Part and the investigation of migratory pathways as required by Section 732.307(g), THE OWNER OR OPERATOR WHO HAS SUBMITTED ANY budget PLAN PURSUANT TO this Part AND WHO IS ELIGIBLE FOR PAYMENT FROM THE UNDERGROUND STORAGE TANK FUND SHALL BE ELIGIBLE TO ELECT TO COMMENCE site classification UPON THE AVAILABILITY OF FUNDS. SUCH ELECTION SHALL BE MADE IN WRITING TO THE AGENCY WITHIN 30 DAYS OF RECEIPT OF AGENCY APPROVAL OF A budget PLAN. At that time, or up until 60 days thereafter, the OWNER OR OPERATOR shall also provide the results of the investigation of the migratory pathways so that the Agency can make its decision in accordance with subsection (b) of this subsection. THE AGENCY SHALL PROVIDE NOTICE TO THE Owner or operator AT*

SUCH TIME AS IT APPROVES THE budget PLAN WHETHER SUFFICIENT RESOURCES ARE AVAILABLE IN ORDER TO IMMEDIATELY COMMENCE THE APPROVED MEASURES. (Section 57.8(b) of the Act.)

• IDOT proposes that we include a requirement in Section 732.306(a) that requires investigation of migratory pathways before allowing deferment of corrective action for lack of funds. The Board adopts the change to Section 732.306(a). (For a full discussion of this issue, please see Section VI(C) of this opinion.)

* * * * * *

732.306(a)(2) *The Agency shall monitor the availability of funds to determine whether sufficient resources exist to provide payment in an amount equal to the total of the ~~for~~ approved budget plans and shall porovide notice to owners or operators of the availability of funds in accordance with Section 732.503(h). Funds shall not be deemed available for owners or operators electing to defer site classification so long as there are owners or operators on the priority list established pursuant to Section 732.603(d) of this Part awaiting forwarding of vouchers to the Office of the State Comptroller.*

• USEPA is concerned that the term "sufficient" needs to be clarified and believes sites should be ranked according to relative risk posed to human health and the environment, as described in the ASTM "Risk Based Corrective Action" method. The Board agrees with USEPA's approach to risk and notes that the proposed intent of Section 732.306(a)(2) is to require the Agency to monitor the availability of funds to determine whether or not adequate resources exist to pay the amount equal to the total of the approved site classification budget plans pending before the Agency. As funds become available to cover each budget plan, the Agency is required to notify the owners or operators of sites on the priority lists. The Board has made clarifying language changes to Section 732.306(a)(2) to address USEPA's concerns, and this change is indicated above. Because of statutory restrictions, the Board can go no further. (PC#7 at 6.)

* * * * * *

732.306(b) *SHOULD THE AGENCY OR Owner or operator DETERMINE A THREAT TO HUMAN HEALTH AND/OR THE ENVIRONMENT REQUIRES IMMEDIATE ACTION, INCLUDING THE EXISTENCE OF PETROLEUM OR VAPORS WHICH THREATEN HUMAN HEALTH OR HUMAN SAFETY OR MAY CAUSE EXPLOSIONS IN BASEMENTS, CRAWL SPACES, UTILITY CONDUITS, STORM OR SANITARY SEWERS, VAULTS OR OTHER CONFINED SPACES, ~~OR MAY OTHERWISE CAUSE ADDITIONAL PROPERTY DAMAGE~~, THE*

ELECTION TO COMMENCE site classification UPON THE AVAILABILITY OF FUNDS SHALL NOT BE AVAILABLE. THE AGENCY SHALL NOTIFY THE Owner or operator BY CERTIFIED MAIL THAT A SITUATION EXISTS THAT WOULD PRECLUDE THE Owner or operator FROM COMMENCING site classification UPON THE AVAILABILITY OF FUNDS. SUCH ACTION BY THE AGENCY SHALL NOT BE SUBJECT TO APPEAL. (Section 57.8(b) of the Act.)

• In PC#13 at 6, IERG advised that legislation is pending to delete the phrase "or may otherwise cause property damage" from the underlying law which would cause a regulatory deletion. Since the filing of that comment, that legislation was passed (SB 1721). In anticipation of the change becoming a law, we accept the proposed regulatory deletion.

* * * * * *

Section 732.307 Site Evaluation

732.307(b) *As a part of each site evaluation, the Licensed Professional Engineer shall conduct a physical soil classification in accordance with the procedures at subsections (c) or (d) below. Except as provided in subsection (e) below, all elements of the chosen method of physical soil classification must be completed for each site. In addition to the requirement for a physical soil classification, the Licensed Professional Engineer shall, at a minimum, complete the requirements at subsections (f) through ~~(i)~~(j) below before classifying a site as "High Priority" or "Low Priority" and subsection (f) through (i) below before classifying a site as "No Further Action."*

• The Agency suggested this language change in Errata Sheet #2 so that it is explicit that when an owner/operator is going through the process of site classification it must address all five criteria. (See King Testimony 5/23/94 Tr. at 29-30.) We adopt the change as indicated above.

* * * * * *

732.307(c)(1)(C) *If, during boring, bedrock is encountered or if auger refusal occurs because of the density of a geological material, a sample of the bedrock or other material shall be collected to determine permeability or an in situ test shall be performed to determine hydraulic conductivity in accordance with subsections (c)(3)(A) and (c)(3)(B) below. If bedrock is encountered or auger refusal occurs, the Licensed Professional Engineer shall ~~certify~~ verify that the conditions that prevented the full boring are expected to be continuous through the remaining required depth.*

• The Agency suggested this language change in Errata Sheet #2 based on comments it received from the engineering community. The concern is that if someone has drilled and encountered bedrock, there is no point to the continuation of boring. (See King Testimony 5/23/94 Tr. at 30-31.) We are adopting the change as indicated above.

* * * * * *

732.307(c)(1)(D) Borings shall be performed within 200 feet of the outer edge of the tank field or at the property boundary, whichever is less. If more than one boring is required per site, borings shall be spaced to provide reasonable representation of site characteristics. The actual spacing of the borings shall be based on the regional hydrogeologic information collected in accordance with Section 732.307(c)(1)(A). Location shall be chosen to limit to the greatest extent possible the vertical migration of contamination.

• USEPA questioned how "reasonableness" is determined, regarding the spacing of soil borings on a site. The Joint Committee on Administrative Rules also generally requires more specificity in the regulations than the word "reasonable" represents. The Agency comments that spacing borings for a "reasonable" representation of site characteristics is only relevant when more that one 50 foot native soil boring is needed (when there is more than one UST field). The Agency believes that "borings placed at a good distance from one another will provide a more representative indication of the underlying soils than borings placed in close proximity." (PC#10.) The Board agrees with the Agency in its comments. Additional borings are necessary to establish the continuity of the underlying stratigraphic units. The location (or spacing) and number of borings required to characterize a site is determined on the basis of existing information relating to the regional hydrogeologic setting. Therefore, USEPA's concern regarding the use of the term "reasonable" may be addressed by requiring that spacing of borings be determined on the basis of the regional hydrogeologic information collected in accordance with Section 732.307(c)(1)(A). The Board's clarifying language to resolve this situation is underlined above.

* * * * * *

732.307(c)(1)(E) Soil borings shall be continuously sampled to ensure that no gaps appear in the sample column.

• USEPA questioned what the definition of "continuous" sampling of a soil boring means. (PC#7 at 11.) The Agency defines this in its comment as the collection of soil samples whereby no gaps appear in the sampling protocol. It is done so that no potential migration pathways are overlooked. (PC#10 at 25.) The Board believes that the term "continuous sampling" in Section 732.307(c)(1)(E) does not refer to the sampling interval, but to the sampling methodology. In this regard, the Agency correctly states that "continuous" sampling is the collection of samples whereby no gaps appear in the sampling protocol. (Id.)

The boring may be sampled at intervals of two feet, five feet, etc., but no gaps in sampling should occur. When a boring is continuously sampled the intervals would be measured as 0-5, 5-10, 10-15 and so on. The Board notes that this method of sampling has been specified in other Board regulations. However, in order to address USEPA concerns the Board has added the clarifying language underlined above.

* * * * * *

732.307(c)(1)(H) The owner or operator may utilize techniques other than those specified in subsection (c)(1) for soil classification provided that:

1) The techniques provide equivalent, or superior, information as required by this Section;

2) The techniques have been successfully utilized in applications similar to the proposed application;

3) Methods for quality control can be implemented and

4) The owner or operator has received written approval from the Agency prior to the start of the investigation.

• USEPA comments that non-traditional methods such as Geoprobes and Cone Penetrometers should be included in the methods for soil classification collection. (PC#7 at 7.) Regarding the use of techniques for soil classification other than those specified in subsection (c)(1), the Board believes that the USEPA has expressed valid concerns. Techniques which have not been used extensively must be always utilized with caution and only if such methods provide the same information required by the regulations. The Board also recognizes that the regulation must allow the use of proven substitute techniques as stated by the USEPA. Therefore, the Board proposes to allow the use of other techniques for soil classification at Section 732.307(c)(1)(H) subject to requirements set out above at subparagraphs (1) through (4).

* * * * * *

732.307(c)(3)(B)(i) A hydraulic conductivity analysis of undisturbed or laboratory compacted granular soils (i.e. clay, silt, sand or gravel) using the test method specified in ASTM (American Society for Testing and Materials) Standard D 5084-90, "Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter," incorporated by reference in Section 732.104 of this Part;

732.307(c)(3)(B)(ii) ~~A hydraulic conductivity analysis of bedrock using the test method specified in ASTM (American Society for Testing and Materials)~~

~~*Standard D 4525-90, "Standard Test Method for Permeability of Rocks by Flowing Air," incorporated by reference in Section 732.401 of this Part.*~~

Granular soils having estimated hydraulic conductivity of greater than 1 x 10^{-3} cm/s will fail the hydraulic conductivity requirements within the Berg Circular for "No Further Action" geology, and therefore, no tests need to be run on the soils.

732.307(c)(3)(B)(iii) *A hydraulic conductivity analysis of bedrock using the test method specified in ASTM (American Society Testing Materials) Standard D 4525-90, "Standard Test Method for Permeability of Rocks by Flowing Air," incorporated by reference in Section 732.104 of this Part.*

• This change is made pursuant to Errata Sheet #1, the Agency made the change in order to address situations where drilling encounters bedrock. (King Testimony 5/23/94 Tr. at 31-33.) We are adopting the change.

* * * * * *

732.307(d)(2)(A) *A soil particle analysis satisfying the requirements of subsection (c)(2)(A) above; and*

732.307(d)(2)(B) *A pump test or equivalent to determine the yield of the geological material. Methodology, assumptions and any calculations performed shall be submitted as part of the site classification completion report. If the aquifer geometry and transmissivity have been obtained through a site-specific field investigation, an analytical solution may be used to estimate well yield. The Licensed Professional Engineer shall demonstrate the appropriateness of the analytical solution to estimate well yield versus an actual field test. Well yield should be determined for either confined or unconfined formations; ~~and~~ or*

• In PC#10, the Agency has indicated the above typographical changes. We are adopting the changes.

* * * * * *

732.307(d)(3)(A) *Does not contain unconsolidated sand, gravel or sand and gravel that is 5 feet or more in thickness with 12 percent or less fines (i.e., fines that pass through a No. 200 sieve tested according to ASTM (American Society for Testing and Materials) Standard D ~~2248-90~~ 22487-90, ~~"Standard Practice for Description and Identification of Soils (Visual~~*

~~*Manual Procedure),"*~~ *"Standard Test Method for Classification of Soils for Engineering Purposes," incorporated by reference at Section 732.104 of this Part);*

• This is a consistency change offered by the Agency in Errata Sheet #1. The Agency is correcting the title of the test and the incorporation by reference. We adopt the change.

* * * * * *

732.307(e) *If, during the completion of the requirements of subsections (c) or (d) above, a Licensed Professional Engineer determines that the site geology is not consistent with areas D, E, F or G of the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois", incorporated by reference in Section 732.104 of this Part or that the criteria of subsection (d)(3) are not satisfied, any remaining steps required by subsections (c) or (d) may be suspended, provided that the soil investigation has been sufficient to satisfy the requirements of subsection (g) below. If activities are suspended under this subsection (e), the Licensed Professional Engineer shall complete the requirements of subsections (f) through (j) below in order to determine whether the site is "High Priority" or "Low Priority." The site conditions upon which the suspension of the requirements of subsections (c) or ~~(b)~~ (d) above is based shall be documented in the site classification completion report.*

• This is a consistency change proposed by the Agency in Errata Sheet #2. We adopt the change.

* * * * * *

732.307(g)(1) *The Licensed Professional Engineer shall conduct an investigation either separately or in conjunction with the physical soil classification to identify all potential natural and man-made migration pathways that are on the site, in rights-of-way attached to the site, or in any area surrounding the site that may be adversely affected as a result of the release of petroleum from the UST system. Once the migration pathways have been identified, the areas along all such pathways shall be further investigated in a manner sufficient to determine whether or not there is evidence that migration of petroleum or vapors along such pathways; ~~may potentially threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or~~*

~~*sanitary sewers, vaults or other confined spaces, or otherwise cause property damage.*~~

732.307(g)(1)(A) *May potentially threaten human health or human safety; or*

732.307(g)(1)(B) *May cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces.*

732.307(g)(3) ~~*If the Licensed Professional Engineer certifies that there is no evidence that, through natural or manmade pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces, or may otherwise cause property damage, the Licensed Professional Engineer's certification to that effect shall be presumed correct unless the Agency's review reveals objective evidence to the contrary.*~~

Unless the Agency's review reveals objective evidence to the contrary, the Licensed Professional Engineer shall be presumed correct when certifying whether or not there is evidence that, through natural or man-made pathways, migration of petroleum or vapors:

732.307(g)(3)(A) *May potentially threaten human health or human safety, or*

732.307(g)(3)(B) *May cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces.*

• These six sections were amended by the Agency in Errata Sheet #2. The Agency was attempting to clarify how an LPE should deal with the issue of property damage. An interim amendment to this section added "property damage" as subparagraph "C". However for reasons previously stated, references to property damage have been omitted. Remaining is the regulation as revised above without the property damage reference. We believe this regulatory language is clearer than it was set out in First Notice and, therefore, adopt this change. (See King Testimony 5/23/94 Tr. at 175-76.)

* * * * * *

732.307(h) *The Licensed Professional Engineer shall* ~~*review the Board's inventory of designated Class III groundwater to*~~ *verify whether Class III groundwater exists within 200 feet of the UST* ~~*excavation*~~ *system.*

• This change was made in Errata Sheet #2 by the Agency for efficiency reasons so that the LPE does not need to come to the Board, or the Agency. (King Testimony 5/23/94 Tr. at

35.) We are adopting the change. In PC#23, the ISG suggests we make it clear that the LPE need only verify the existence of Class III groundwater, because testimony at these rulemaking hearings has indicated that no Class III groundwater has yet been designated in Illinois. We have changed the language of this rule from "determine if" to "verify whether" so that it is clear that a review of an authoritative source, such as the *Environmental Register*, is sufficient to satisfy 732.307(h).

* * * * * *

732.307(j)(5)(D)(v) *Field and lab blanks.*

• This change was made in Errata Sheet #1 by the Agency. There has been no objection from any of the public participants. We are adopting the change.

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Section 732.308 **Boring Logs and Sealing of Soil Borings and Groundwater Monitoring Wells**

732.308(a)(1)(A) *Sampling device, sample ~~distance~~ number and amount of recovery;*

• This amendment is a minor change suggested by the Agency in Errata #1 to make the Section consistent with other substantive changes. (5/23/94 King Testimony at 36.) We are adopting the change.

* * * * * *

Section 732.310 **Indicator Contaminants**

732.310(a) *For purposes of this Part, the term "indicator contaminants" shall mean the parameters listed in subsections (b) through (g) below. ~~For petroleum products not listed below, the Agency shall determine indicator contaminants on a site by site basis.~~*

• The participants agreed to strike this portion of the subsection on the record at the May 23, 1994 hearing. The Board will adopt this change.

* * * * * *

732.310(b) *For gasoline, including but not limited to leaded, unleaded, premium and gasohol, the indicator contaminants shall be benzene ~~and BETX~~*

~~(the sum of benzene~~, ethylbenzene, toluene and total xylenes~~)~~. For leaded gasoline, lead shall also be an indicator contaminant.

732.310(c) *For aviation turbine fuels, jet fuels, diesel fuels, gas turbine fuel oils, heating fuel oils, illuminating oils, kerosene, lubricants, liquid asphalt and dust laying oils, cable oils, crude oil, crude oil fractions, petroleum feedstocks, petroleum fractions and heavy oils, the indicator contaminants shall be benzene, ~~BETX~~ ethylbenzene, toluene and total xylenes and the polynuclear aromatics listed in Appendix A. For leaded aviation turbine fuels, lead shall also be an indicator contaminant.*

732.310(d) *For transformer oils the indicator contaminants shall be benzene, ~~BETX~~ethylbenzene, toluene and total xylenes, the polynuclear aromatics listed in Appendix B and the polychlorinated biphenyl parameters listed in Appendix B.*

732.310(e) *For hydraulic fluids the indicator contaminants shall be benzene, ~~BETX~~, the polynuclear aromatics listed in Appendix B and barium.*

* * * * *

732.310(e)(3) *If none of the parameters exceed their cleanup objective, the used oil indicator contaminants shall be benzene, ~~BETX~~ ethylbenzene, toluene and total xylenes and the polynuclear aromatics listed in Appendix B.*

• The Agency in PC#25, questioned the continued use of the BETX parameter due to the change in the cleanup objectives. The Agency states that the BETX parameter would no longer serve its practical purpose because the summation of the objectives inflates the BETX parameter too high to be protective of the environment. The Board agrees and adopts this change for Second Notice.

Section 732.311 ~~Groundwater Quality Standards for Indicator Contaminants~~ Indicator Contaminant Groundwater Objectives

732.311 ~~*For purposes of this Part, indicator contaminant groundwater quality standards shall be the groundwater objectives specified in Appendix B for the applicable indicator contaminants, except for mixtures and degradation products as provided in Section 732.310 of this Part.*~~

For purposes of this Part, indicator contaminant groundwater quality standards shall be the groundwater objectives specified in Appendix B for the applicable indicator contaminants. For mixtures and degradation products that have been included as indicator contaminants

in accordance with Section 732.310 of this Part, the Agency shall determine groundwater objectives on a site-by-site basis.

• This change was made in Errata Sheet #2 by the Agency in order to make this provision consistent with Section 732.408. (King Testimony 5/23/94 Tr. at 35-36.) We are adopting this change; however, we note that the use of Appendix B groundwater objectives is an interim measure and will be considered again in the subdocket.

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Section 732.400 General

732.400(a) *Following approval of the site evaluation and classification by the Agency or by operation of law pursuant to Subpart C of this Part and except as provided in subsection (b) or (c) below, the owner or operator of an UST system subject to the requirements of this Part shall develop and submit a corrective action plan and perform corrective action activities in accordance with the procedures and requirements contained in this Subpart D.*

• This amendment is a minor change suggested by the Agency in Errata #1 which was done to make the Section consistent with other substantive changes (5/23/94 King Testimony at 36.). We are adopting the change.

* * * * * *

732.400(b) ~~*Owners or operators of sites classified in accordance with the requirements of Subpart C as "No Further Action" or "Low Priority" may choose to remediate all soil and groundwater contamination. Any owner/operator choosing full remediation shall so notify the Agency in writing prior to conducting remediation activities. A corrective action plan shall be developed and submitted to the Agency for review in accordance with Subpart E of this Part. Upon completion of the remediation activities, owners or operators choosing full remediation shall submit a corrective action completion report to the Agency. The corrective action completion report shall demonstrate that soil and groundwater have been cleaned to the levels required by Section 732.408 of this Part. Upon approval of the corrective action completion report by the Agency or by operation of law in accordance with Subpart E, a "No Further Remediation" letter shall be issued by the Agency.*~~

Owners or operators of sites classified in accordance with the requirements of Subpart C as "No Further Action" may choose to

conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part.

• This amendment is a change suggested by the Agency to comport with changes in Section 732.408 that eliminate the concept of "full remediation." (5/23/94 King Testimony Tr. at 36.) We are adopting the change.

* * * * * *

732.400(c) *Owners or operators of sites classified in accordance with the requirements of Subpart C as "Low Priority" may choose to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part. Any owner or operator choosing to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part shall so notify the Agency in writing prior to conducting such efforts. Upon completion of the remediation activities, owners or operators choosing to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part shall submit a corrective action completion report to the Agency demonstrating compliance with the required levels. Upon approval of the corrective action completion report by the Agency or by operation of law in accordance with Subpart E, a "No Further Remediation" letter shall be issued by the Agency.*

BOARD NOTE: Owners or operators proceeding under subsection (b) or (c) above are advised that they may not be entitled to full payment or reimbursement. See Subpart F of this Part.

• This amendment is a change suggested by the Agency to comport with changes in Section 732.408 that eliminate the concept of "full remediation." (5/23/94 King Testimony at 36.) We are adopting the change. However, the Board notes that "remediation objectives" contained in Section 732.408 have been modified.

* * * * * *

Section 732.403 "Low Priority" Site

732.403(c) *Prior to the implementation of groundwater monitoring, the owner or operator shall submit the groundwater monitoring plan to the Agency for review in accordance with Section 732.405. If the owner or operator intends to seek payment from the Fund, a groundwater monitoring budget plan also shall be submitted to the Agency for review. The groundwater monitoring budget plan shall include ~~an itemized accounting~~ a line item estimate of all costs associated with the implementation and completion of the groundwater monitoring plan.*

Groundwater monitoring plans and budgets shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.

• The change in this section is consistent with those other amendments at 732.204 and 732.305(b), and we are adopting the change. (See King Testimony 4/27/94 Tr. at 23, and generally at 214-215.)

* * * * * *

732.403(g) *If at any time groundwater analysis results indicate a confirmed exceedence of applicable indicator contaminant objectives, the Agency may reclassify the site as a "High Priority" site within 60 days of the receipt of an annual groundwater sampling report, a groundwater monitoring completion report, or a notification by the owner or operator pursuant to subsection (d)(2) above. The Agency shall notify the owner or operator in writing if a site is reclassified. Notice of reclassification shall be by registered or certified mail, post marked with a date stamp and with return receipt requested. Final action shall be deemed to have taken place on the post marked date that such notice is mailed. Any action by the Agency to reclassify the site as a "High Priority" site shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for in the review of permit decisions in Section 40 of the Act.*

• The Board is adding the underlined language at Second Notice to clarify that the owner/ operator has a right to appeal the reclassification decision.

* * * * * *

Section 732.404 "High Priority" Site

732.404(a) *The owner or operator of a site that has been certified by a Licensed Professional Engineer as a "High Priority" site and approved as such by the Agency or by operation of law shall develop a corrective action plan and perform corrective action in accordance with the requirements of this Section. The purpose of the corrective action plan shall be to remediate or eliminate each of the criteria set forth in subsection (b) below that caused the site to be classified as "High Priority."*

• This is an Errata Sheet #2 change made by the Agency to clarify that the purpose of the Corrective Action Plan is to eliminate the situation which triggered the application of the triggering subsection (b) criteria and/or the high priority classification. This change is in

response to questions received by the Agency. (King Testimony 5/23/94 Tr. at 37.) We received no other comments and we are adopting the change.

732.404(b) *The owner or operator of a site certified as "High Priority" by a Licensed Professional Engineer and approved as such by the Agency or by operation of law or reclassified as "High Priority" by the Agency pursuant to Section 732.403(g) shall develop a corrective action plan based on site conditions and designed to achieve the following as applicable to the site:*

• This is an Errata Sheet #2 change consistent with the change above in Section 732.404(a). For the same reasons, we also adopt this change. (King Testimony 5/23/94 Tr. at 37.)

* * * * * *

732.404(b)(1) *Provide that, after complete performance of the corrective action plan, applicable indicator contaminant objectives are not exceeded at the property boundary line or 200 feet from the UST system, whichever is less, as a result of the underground storage tank release for any indicator contaminant identified in the groundwater investigation. If off-site sampling is included within an approved corrective action plan and if an adjoining property owner will not allow the owner or operator access to his or her property so as to ascertain information sufficient to satisfy this requirement, adequate documentation of the owner or operators' efforts to gain access to the property shall satisfy this subsection;*

• The USEPA believes that a provision should be added to this section discussing what procedures are to be followed if an owner is denied access to adjoining property to determine the presence of off-site contamination. The Agency responded that while it cannot require a neighbor to allow access, it would accept documentation from the owner/operator indicating he or she cannot gain access to the neighboring property. This would satisfy the requirement of this subsection. Accordingly, we have made the above highlighted change to the subsection so as to clarify the Agency's procedure on the point. The underlined language is added in response to PC#23, wherein the ISG indicates that it should be made clear that the requirement to supply documentation of attempts to contact off-site owners only applies at sites where such contact is either mandated or proposed in a corrective action plan.

* * * * * *

732.404(b)(3) *Remediate threats due to the presence or migration, through natural or manmade pathways, of petroleum in concentrations sufficient to harm human health or human safety or to cause explosions in basements,*

crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces ~~or to otherwise damage property~~;

• In PC#13 at 6, IERG advised that legislation is pending to delete the phrase "or may otherwise cause property damage" from the underlying law which would cause a regulatory deletion. Since the filing of that comment, that legislation was passed (SB 1721). In anticipation of the change becoming a law, we adopt the proposed regulatory deletion.

* * * * * *

732.404(c) ~~*Groundwater and soil remediation objectives shall be determined in accordance with Section 732.408 of this Part.*~~ *In developing the corrective action plan, if the Licensed Professional Engineer selects soil or groundwater remediation, or both, to satisfy any of the criteria set forth in subsection (b) above, remediation objectives shall be determined in accordance with Section 732.408 of this Part. Groundwater monitoring wells shall satisfy the requirements of Sections 732.307(j)(3) and 732.307(j)(4) of this Part.*

• The Agency recommended the above change in Errata Sheet #3 and, in addition, that subsection (c) be amended to include the following language:

Soil remediation may not be necessary at every site to address the criteria upon which the site has been classified as "High Priority," but where the Licensed Professional Engineer has not selected soil remediation in the corrective action plan as a method of addressing those criteria, nothing in this section shall preclude the Agency from requiring the use of soil remediation through a modification to the plan.

• We adopt the stricken language, but have declined to add the supplemental language. IPC argues that the proposed language fails to identify the factors that the Agency will use to make this determination. (PC#17 at 4.) We agree. Although the Agency has the authority to make this type of modification to the corrective action plan, no regulatory guidance is provided as to when it might do so.

* * * * * *

732.404(e) *The owner or operator shall submit the corrective action plan to the Agency for review in accordance with Section 732.405 of this Part. If the owner or operator intends to seek payment from the Fund, a corrective action plan budget also shall be submitted to the Agency for review. The corrective action plan budget shall include an ~~itemized accounting~~ a line item estimate of all costs associated with the implementation and completion of the corrective action plan. The*

corrective action plan and corrective action plan budget shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.

• The change in this Section is consistent with those other amendments in Sections 732.204, 732.305(b), and 732.403(c) and we are adopting the change. (See King Testimony 4/27/94 Tr. at 23 and more generally at 214-215.)

* * * * * *

Section 732.405 Plan Submittal and Review

732.405(b) *In addition to the plans required in subsection (a) above and prior to conducting any groundwater monitoring or corrective action activities, any owner or operator intending to seek payment from the Fund shall submit to the Agency a groundwater monitoring or corrective action budget plan. Such budget plans shall include, but not be limited to, a copy of the eligibility and deductibility determination of the OSFM and ~~an itemized accounting~~ a line item estimate of all costs associated with the development, implementation and completion of the applicable activities. Formulation of budget plans should be consistent with the eligible and ineligible costs listed at Sections 732.605 and 732.606 of this Part. Groundwater monitoring and corrective action budget plans shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.*

• The change in this Section is consistent with those other amendments in Sections 732.204, 732.305(b), 732.403(c) and 732.404(e) and we are adopting the change. (See King Testimony 4/27/94 Tr. at 23, and generally at 214-215.)

* * * * * *

732.405(d) *Notwithstanding subsections (a) and (b) above and except as provided at Section 732.407 of this Part, an owner or operator may proceed to conduct "Low Priority" groundwater monitoring or "High Priority" corrective action activities in accordance with this Subpart D prior to the submittal or approval of an otherwise required groundwater monitoring plan or budget or corrective action plan or budget. However, any such plan shall be submitted to the Agency for review and approval, rejection or modification in accordance with the procedures contained in Subpart E of this Part prior to payment or reimbursement for any related costs or the issuance of a "No Further Remediation" letter.*

BOARD NOTE: Owners or operators proceeding under subsection (d) of this Section are advised that they may not be entitled to full payment or reimbursement. See Subpart F of this Part.

• *We have added the above Board note to clarify to the owner/operator that costs incurred prior to the submission of a budget and plan may not be reimbursable.*

Section 732.406 Deferred Corrective Action; Priority List

732.406(a)(2) *The Agency shalll monitor the availability of funds to determine whether sufficient resources exist to provide payment in an amount equal to the total of the ~~for~~ approved budget plans and shall provide notice to owners or operators of the availability of funds in accordance with Section 732.503(h). Funds shall not be deemed available for owners or operators electing to defer corrective action so long as there are owners or operators on the priority list established pursuant to Section 732.603(d) of this Part awaiting forwarding of vouchers to the Office of the State Comptroller.*

• USEPA is concerned that the term "sufficient" needs to be clarified and believes sites should be ranked according to relative risk posed to human health and the environment, as described in the ASTM "Risk Based Corrective Action" method. The Board agrees and made such a change in Section 732.306(a)(2). Accordingly, for consistency purposes, we are making such a change here.

* * * * * *

732.406(b) SHOULD THE AGENCY OR OWNER OR OPERATOR DETERMINE A THREAT TO HUMAN HEALTH AND/OR THE ENVIRONMENT REQUIRES IMMEDIATE ACTION, INCLUDING THE EXISTENCE OF PETROLEUM OR VAPORS WHICH THREATEN HUMAN HEALTH OR HUMAN SAFETY OR MAY CAUSE EXPLOSIONS IN BASEMENTS, CRAWL SPACES, UTILITY CONDUITS, STORM OR SANITARY SEWERS, VAULTS OR OTHER CONFINED SPACES, ~~OR MAY OTHERWISE CAUSE ADDITIONAL PROPERTY DAMAGE~~, THE ELECTION TO COMMENCE CORRECTIVE ACTION UPON THE AVAILABILITY OF FUNDS SHALL NOT BE AVAILABLE. THE AGENCY SHALL NOTIFY THE OWNER OR OPERATOR BY CERTIFIED MAIL THAT A SITUATION EXISTS THAT WOULD PRECLUDE THE OWNER OR OPERATOR FROM COMMENCING CORRECTIVE ACTION UPON THE AVAILABILITY OF FUNDS. SUCH ACTION BY THE AGENCY SHALL NOT BE SUBJECT TO APPEAL. (Section 57.8(b) of the Act.)

• In PC#13 at 6, IERG advised that legislation is pending to delete the phrase "or may otherwise cause property damage" from the underlying law which would cause a regulatory deletion. Since the filing of that comment, that legislation was passed (SB 1721). In anticipation of the change becoming a law, we accept the proposed deletion.

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732.407(a)(5) *Within one year from the date of Agency approval the owner or operator will provide to the Agency monitoring program results establishing whether the proposed alternative technology will successfully achieve compliance with the requirements of subsection (a)(1) above and any other applicable regulations. The Agency may require interim reports as necessary to track the progress of the alternative technology. The Agency will specify when those interim reports shall be submitted to the Agency in the approval.*

• The USEPA is concerned that too long of a period of time is imposed to determine whether technology is adequate. USEPA would like the rules to provide for pilot test and interim reports. The Agency believes there is nothing in the rule prohibiting the Agency from requiring pilot tests and interim reports as necessary. Additionally, the Agency does not believe the language regarding one year requires that the entire year expire before the owner\operator provides the Agency with the results. The language instead requires the results within one year. For the above reasons, we have added the highlighted language.

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Section 732.408 *Corrective Action Remediation Objectives Risk-Based Remediation Objectives*

732.408(a) ~~*For owners or operators conducting "High Priority" corrective action or corrective action pursuant to Sections 732.300(b) or 732.400(b) of this Part, the remediation objectives for the applicable indicator contaminants identified pursuant to Section 732.310 of this Part shall be the following:*~~

For sites requiring "High Priority" corrective action or for which the owner or operator has elected to conduct corrective action pursuant to Sections 732.300(b), 732.400(b), 732.400(c) of this Part, the owner or operator may propose remediation objectives for applicable indicator contaminants based on a site specific assessment of risk. In support of site specific remediation objectives, the owner or operator shall demonstrate to the Agency that the proposed objectives will be protective of human health and the environment.

• Section 732.408 was amended by the Agency in Errata Sheet #2 in order to entirely restructure that section and provide for risk-based site assessment. (King Testimony 5/23/94 Tr. at 38-39.) We adopt the new language.

* * * * * *

732.408(a)(1) *Except as provided in subsection (a)(2) of this section, the owner or operator may propose site specific remediation objectives for applicable indicator contaminants.*

732.408(a)(2) *For applicable indicator contaminants that have a groundwater quality standard promulgated pursuant to 35 Ill. Adm. Code 620, site specific groundwater remediation objectives may be proposed so as to achieve groundwater quality standards established pursuant to, and using the procedures approved under, 35 Ill. Adm. Code 620.*

• These changes were proposed by the Agency in Errata Sheets #2 and #4. No rationale has been given on the record to support the amendments. However, the recommendation was intended to address the USEPA's public comment expressing the following concern: "without supporting documentation from 35 Ill. Adm. Code 620, there may be a potential conflict between those procedures and those outlined in Section 732.408(a)." (See PC#10 at 29.) Accordingly, we adopt the change, but recognize that the groundwater issue may be revisited in the subdocket.

* * * * * *

732.408(b) ~~*Groundwater remediation objectives shall be the objectives specified in Appendix B for the applicable indicator contaminants, except for mixtures and degradation products as provided in Section 732.310 of this Part.*~~

In reviewing a proposal for site specific remediation objectives pursuant to subsection (a)(1) above, the Agency shall evaluate the following factors:

1) The potential for any remaining contaminants to pose a significant threat to human health or the environment;

2) Circumstances related to the practicality of remediation;

3) The management of risk relative to any remaining contamination;

4) Background levels for the applicable indicator contaminants; and

5) Appropriateness of the scientific methodology selected as a basis for the demonstration of protectiveness and correct application of the methodology. Methodologies adopted by a nationally recognized entity such as American Society for Testing and Materials (ASTM), or equivalent methodologies, shall be acceptable for use as a basis for the demonstration of protectiveness.

• This section was amended by the Agency in Errata Sheet #2. This change allows for a risk-based site assessment process and the use of ASTM methodology in order to develop cleanup objectives. (King Testimony 5/24/94 Tr. at 41-42.) In light of the comments of the USEPA and the public participants, we fully support and adopt this new language.

* * * * * *

732.408(c) ~~*Soil remediation objectives shall be the objectives specified in Appendix B for the applicable indicator contaminants, except for mixtures and degradation products as provided in Section 732.310 of this Part.*~~

For sites requiring "High Priority" corrective action or for which the owner or operator has elected to conduct corrective action pursuant to sections 732.300(b), 732.400(b) or 732.400(c) of this Part, if the owner or operator does not elect to propose remediation objectives pursuant to subsection (a) above, the owner or operator shall ~~*submit a corrective action plan for applicable indicator contaminants based on the remediation objectives in Appendix B of this Part*~~ *use remediation objectives, as applicable, based on Appendix B of this Part. Where indicator contaminants based on mixtures or degradation products have been designated by the Agency pursuant to Section 732.310 of this Part, the Agency shall determine remediation objectives on a site-by-site basis.*

• This change was made by the Agency in Errata Sheets #2 and #3. The Agency is carrying through the concept that Appendix B numbers are intended to be default numbers so that an owner/operator may elect to use the numbers rather than go through a site specific approach. We adopt the change; however, we again note that Appendix B for groundwater objectives is an interim adoption and soil remediation, while interim as well, will be reviewed again in the subdocket.

* * * * * *

732.408 *BOARD NOTE: The remediation objectives contained in Appendix B are not soil or groundwater standards. The remediation objectives contained in Appendix B of this Part are not remediation objectives for purposes of remediation of releases other than LUST releases pursuant to this Part 732.*

• This Board Note was added to the proposal by the Agency in order to explicitly set forward what had been implicit according to the Agency. The Agency made the change based on its agreement with USTAC that such a change was necessary. (King Testimony 5/24/94 Tr. at 43.) The changes are intended to make clear that the Appendix B numbers are not standards, and that the Agency administers other programs, however, these objectives are specific to the UST program. (Id.) We adopt this additional language.

* * * * * *

732.408(d) *d) ~~An owner or operator may request that the Agency revise soil remediation objectives based on site specific conditions provided that the owner or operator demonstrates to the Agency that the revised objectives will be protective of human health and the environment. In revising soil remediation objectives, the Agency shall evaluate the following factors:~~*

~~1) The potential of any remaining contaminants to pose a significant threat to human health or the environment;~~

~~2) Other site specific circumstances related to the practicality of continuing with remediation; and~~

~~3) The management of risk relative to any remaining contamination.~~

The election to proceed under either subsection (a) or (c) above does not prohibit the owner or operator from exercising the other option at a later time.

• This change was made by the Agency in Errata Sheet #2 in order to conform this subsection with the remainder of Section 732.408. (King Testimony 5/24/94 Tr. at 43.) We adopt this change.

* * * * * *

Section 732.409 Groundwater Monitoring and Corrective Action Completion Reports

732.409(2)(C) *The release of petroleum does not threaten human health or human safety due to the presence or migration, through natural or manmade pathways, of petroleum in concentration sufficient to harm human health or human safety or to cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces~~, or to otherwise damage property~~;*

• In PC#13 at 6, IERG advised that legislation is pending to delete the phrase "or may otherwise cause property damage" from the underlying law which would cause a regulatory deletion. Since the filing of that comment, that legislation was passed (SB 1721). In anticipation of the change becoming a law, we adopt the proposed regulatory deletion.

* * * * * *

Section 732.410 "No Further Remediation" Letter

732.410(d) *The notice of denial of a "no further remediation" letter by the Agency may be included with the notification of rejection or modification of the applicable report. The reasons for the denial shall be stated in the notification. The denial shall be considered a final determination appealable to the Board* *within 35 days of the Agency's final action* *in the manner provided for the review of permit decisions in Section 40 of the Act.*

• The Board is adding this language at Second Notice to clarify the owner/operator appeal right in this Section.

* * * * * *

Section 732.500 General

732.500(b)(4) ~~*Any corrective action plan submitted pursuant to Sections 732.300(b) or 732.400(b) of this Part.*~~

• This is a consistency change proposed by the Agency. We are adopting the amendment.

* * * * * *

732.500(c)(5) *Any corrective action completion report submitted pursuant to Subpart D of this Part or Sections 732.300(b) or 732.400(b)* *or (c)* *of this Part.*

• This is a consistency change proposed by the Agency. We adopt the change.

* * * * * *

Section 732.502 Completeness Review

732.502(a)The Agency ~~*may*~~ *shall review for completeness all plans submitted pursuant to this Part 732. The completeness review shall be sufficient to determine whether all information and documentation required by the Agency form for the particular plan are present. The*

review shall not be used to determine the technical sufficiency of a particular plan or of the information or documentation submitted along with the plan.

• Mobil believes that the Agency must review all plans for completeness. We agree, and have made the change as indicated above.

* * * * * *

732.502(d) *The failure of the Agency to notify an owner or operator within 45 days that a plan is either complete or incomplete shall ~~constitute approval of the plan~~ result in the plan being deemed complete by operation of law. Any action by the Agency pursuant to this Section shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for in the review of permit decisions in Section 40 of the Act.*

• The Agency made the change from "constitute approval" to "deemed complete" in order to add an interim step to the default approval process. (King Testimony 4/27/94 Tr. at 25.) While the Act at Section 57.7(c)(4)(B) creates a 120-day limit in which the Agency may reject or modify any plan submitted pursuant to this Title, there is no requirement creating a time limit of 45 days to notify a party of completeness. The Agency does not believe that because a plan may be deemed complete, this means it is approved. We adopt the change. The Agency may still conduct a review regarding the substance of the corrective action. The Board also adds language to Section 732.502(d) at Second Notice to clarify the owner/operator appeal right in this Section.

* * * * * *

Section 732.503 Full Review of Plans or Reports

732.503(b) *The Agency shall have the authority to approve, reject or require modification of any plan or report that has been given a full review. The Agency shall notify the owner or operator in writing of its final action on any such plan or report. Except as provided in subsections (c) and (d) below, if the Agency fails to notify the owner or operator of its final action on a plan or report within 120 days of the receipt of a ~~complete~~ plan or report, the owner/operator may deem the plan or report approved by operation of law. If the Agency rejects a plan or report or requires modifications, the written notification shall contain the following information, as applicable:*

• The Board is deleting the word "complete" from Section 732.503(b) in order to make it consistent with subsection (g) "Notification of Selection for Full Review."

* * * * * *

732.503(f) *Any action by the Agency to reject or require modification of a plan or report shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for the review of permit decisions in Section 40 of the Act. Any owner or operator may elect to incorporate modifications required by the Agency and shall do so by submitting a revised plan or report within 30 days of the receipt of the Agency's written notification. If no revised plan or report is submitted to the Agency or no appeal to the Board filed within the specified time frames, the plan or report shall be deemed approved as modified by the Agency.*

• The Board adds this language to clarify the owner/operator appeal right in this Section.

* * * * * *

703.503(g) *Notification of Selection for Full Review*

703.503(g)(1) *Owners or operators submitting plans shall be notified by the Agency within ~~30~~ 60 days ~~of the date the plan is deemed complete~~ from the date the plan is received whether or not the plan has been selected for full review in accordance with Section 732.504 of this Part. Failure of the Agency to so notify the owner or operator or notification by the Agency that the plan has not been selected for full review shall constitute approval of the plan by operation of law.*

703.503(g)(2) *Owners or operators submitting reports shall be notified by the Agency within ~~30~~ 60 days of the receipt of the report whether or not the report has been selected for full review in accordance with Section 732.504 of this Part. Failure of the Agency to so notify the owner or operator or notification by the Agency that the report has not been selected for full review shall constitute approval of the report by operation of law.*

• The Agency made this correction in Errata Sheet #1 for consistency with the approval process timing. (King Testimony 4/27/94 Tr. at 25.) This self-imposed deadline is akin to that in Section 732.503(b). It is procedural in nature and no objections were noted in the record. Therefore, we will adopt the amendment.

* * * * * *

Section 732.505 Standards of Review for Plans and Reports

732.505(b) *If the Licensed Professional Engineer certifies that there is no evidence that, through natural or manmade pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces, ~~or may other wise cause property damage,~~ the Licensed Professional Engineer's certification to that effect shall be presumed correct unless the Agency's review reveals objective evidence to the contrary.*

• In PC#13 at 6, IERG advised that legislation is pending to delete the phrase "or may otherwise cause property damage" from the underlying law which would cause a regulatory deletion. Since the filing of that comment, that legislation was passed (SB 1721). In anticipation of the change becoming a law, we adopt the proposed regulatory deletion.

* * * * * *

Section 732.602 Review of Applications for Payment

732.602(a) *The Agency shall conduct a review of any application for payment submitted pursuant to this Part 732. Each application for payment shall be reviewed to determine whether the application contains all of the elements and supporting documentation required by Section 732.601(b) of this Part and whether the amounts sought for payment have been certified in accordance with Section 732.601(b)(2) of this Part as equal to or less than the amounts approved in the corresponding budget plan. Any action by the Agency pursuant to this subsection shall be subject to appeal to the Board within 35 days of the*

Agency's final action in the manner provided for the review of permit decisions in Section 40 of the Act.

• The Board adds this language at Second Notice to clarify the owner/operator appeal right in this Section.

* * * * * *

732.602(b)(2) ~~*To determine whether an application for payment filed pursuant to Section 732.601 of this Part is fraudulent*~~ *If the Agency has reason to believe that the application for payment is fraudulent; or*

• The Agency made this correction in Errata Sheet #1 to reflect discussions with USTAC. This change is intended to clarify the type of review the Agency will perform on the applications for payment. (King Testimony 4/27/94 Tr. at 25-26.) We adopt the change.

* * * * * *

732.602(c) *When conducting a full review of any application for payment, the Agency may require the owner or operator to submit* ~~*documentation, receipts and invoices*~~ *a full accounting supporting all claims as provided in subsection (d) below.*

• The Agency made this correction in Errata Sheet #1 in order to simplify this provision. (King Testimony 4/2794 Tr. at 25-26.) We adopt the change.

* * * * * *

732.602(h) *Any action by the Agency to deny payment for an application for payment or portion thereof or to require modification shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for the review of permit decisions in Section 40 of the Act. Any owner or operator may elect to incorporate modifications required by the Agency and shall do so by submitting a revised application for payment within 30 days of the receipt of the Agency's written notification. If no revised application for payment is submitted to the Agency or no appeal to the Board filed within the specified timeframes, the application for payment shall be deemed approved as modified by the Agency and payment shall be authorized in the amount approved.*

• The Board adds this language at Second Notice to clarify the owner/operator appeal right in this Section.

* * * * * *

Section 732.604 Limitations on Total Payments

732.604(c) *FOR PURPOSES OF ~~THIS section~~ subsection (b) of this Section, REQUESTS SUBMITTED BY ANY OF THE AGENCIES, DEPARTMENTS, BOARDS, COMMITTEES OR COMMISSIONS OF THE STATE OF ILLINOIS SHALL BE ACTED UPON AS CLAIMS FROM A SINGLE OWNER OR OPERATOR. (Section 57.8(d) of the Act.)*

732.604(d) *FOR PURPOSES OF ~~THIS Section~~ subsection (b) of this Section, OWNER OR OPERATOR INCLUDES (i) ANY SUBSIDIARY, PARENT, OR JOINT STOCK COMPANY OF THE OWNER OR OPERATOR AND (ii) ANY COMPANY OWNED BY ANY PARENT, SUBSIDIARY, OR JOINT STOCK COMPANY OF THE OWNER OR OPERATOR. (Section 57.8(d) of the Act.)*

• These corrections were made by the Agency in Errata Sheet #5. These changes appear to be technical in nature. Therefore, we adopt the changes.

* * * * * *

Section 732.606 Ineligible Costs

732.606(z) *Costs incurred after completion of early action activities in accordance with Subpart B by owners or operators choosing, pursuant to Section 732.300(b) of this Part, to conduct ~~full remediation~~ remediation sufficient to satisfy the remediation objectives ~~pursuant to Section 732.300(b) of this Part~~;*

• These amendments were made by the Agency in Errata Sheet #4 after the conclusion of the public hearings. The amendments appear to clarify the type of remediation required consistent with satisfying the minimum requirements of the Act pursuant to Section 57.9. We have received no objection to the change and therefore adopt it.

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732.606(aa) *Costs incurred after completion of site classification activities in accordance with Subpart C by owners or operators choosing, pursuant to Section 732.400 (b) or (c) of this Part, to conduct ~~full remediation~~ remediation sufficient to satisfy the remediation objectives ~~pursuant to Section 732.400(b) of this Part~~;*

• These amendments were made by the Agency in Errata Sheet #4 after the conclusion of the public hearings. The amendments appear to be consistent with that in subsection (z) and as stated above, appear to clarify the type of remediation required consistent with satisfying the minimum requirements of the Act pursuant to Section 57.9. We have received no objection to the change and therefore adopt it.

* * * * * *

Section 732.608 Apportionment of Costs

732.608(a) *The Agency may apportion payment of costs if:*

732.608(a)(1) *THE OWNER OR OPERATOR WAS DEEMED ELIGIBLE TO ACCESS THE FUND FOR PAYMENT OF CORRECTIVE ACTION COSTS FOR SOME, BUT NOT ALL, OF THE UNDERGROUND STORAGE TANKS AT THE SITE; AND*

732.608(a)(2) *THE OWNER OR OPERATOR FAILED TO JUSTIFY ALL COSTS ATTRIBUTABLE TO EACH UNDERGROUND STORAGE TANK AT THE SITE. (Derived from Section 57.8(m) of the Act.)*

732.608(b) *Upon notification from the Agency of an apportionment of costs pursuant to this Section, the owner or operator shall within 30 days notify the Agency whether the apportionment shall be based upon the total number of all the USTs at the site or the total volume of all of the USTs at the site.*

• The Agency included these amendments to subsection (b) in Errata Sheet #2 when it made the apportionment changes regarding petroleum and non-petroleum. However, there is no relationship between calculating costs based on total number of tanks or volume, and the petroleum/non-petroleum distinction which we have declined to make above. Therefore, we are adopting this change. Section 732.608(a) provided in the interim opinion that apportion would occur only for HP sites. In PC#25, the Agency recommended that we allow apportionment for any eligible tank. That change has been incorporated.

* * * * * *

Section 732.610 Indemnification

732.610(b) *If the application for payment of the costs of indemnification is deemed complete and otherwise satisfies all applicable requirements of this Subpart F, the Agency shall forward the request for indemnification to the Office of the Attorney General for review and approval in accordance with Section 57.8(c) of the Act. The owner or operator's*

request for indemnification shall not be placed on the priority list for payment until the Agency has received the written approval of the Attorney General. The approved application for payment shall then enter the priority list established at Section 732.603(d)(1) of this Part based on the date the complete application was received by the Agency.

• We are making this change in order to clarify the section to indicate that the Attorney General's responsibilities in connection with indemnification are set forth at Section 57.8(c) of the Act.

Section 732.Appendix A Indicator Contaminants

TANK CONTENTS	*INDICATOR CONTAMINANTS*
GASOLINE	*benzene* *~~BETX~~ ethylbenzene* *toluene* *xylene*
* * * * * *	
jet fuels	*~~BETX~~ ethylbenzene* *toluene* *xylene*

* * * * * *

~~(1) BETX is the sum of the benzene, ethylbenzene, toluene and total xylene concentrations~~
(1)~~(2)~~ lead is also an indicator contaminant
(2)~~(3)~~ the polychlorinated biphenyl parameters listed in Appendix B are also indicator contaminants
(3)~~(4)~~ barium is also an indicator contaminant
(4)~~(5)~~ the volatile, base/neutral and polynuclear aromatic parameters listed in Appendix B are also indicator contaminants
(5)~~(6)~~ ~~waste~~ used oil indicator contaminants shall be based on the results of a ~~waste~~ used oil soil sample analysis - refer to ~~732.311(g)~~ 732.310(g)
(6)~~(7)~~ acenaphthylene, benzo(g,h,i)perylene and phenanthrene

• At footnote (5), the modifier "waste" is replaced with "used" to define "oil". This change was made by the Agency in Errata Sheet #1 in order to the clarify and correct typographical errors. Also, the cite to the proposed rule is corrected. We adopt the changes. We are also deleting footnote (1) and the reference to "BETX" in response to PC#25 from the Agency. See our opinion at Section VI for a full discussion of this issue.

Section 732.Appendix B Groundwater and Soil Remediation Objectives and Acceptable Detection Limits

Section 732.Appendix B Table 1 Groundwater and Soil Remediation Objectives

Parameters	*Objectives*		*ADLs*[1]	
	Soil (mg/l)	*Groundwater ~~(mg/kg)~~*	*Soil (mg/l)*	*Groundwater*
Volatiles				
1. Benzene	~~*0.005*~~	*0.005*		
2. Bromoform	~~*0.001*~~	*0.001*	~~*0.002*~~	*0.001*
3. Carbon tetrachloride	~~*0.005*~~	*0.005*		
4. Chlorobenzene	~~*0.1*~~	*0.1*		
5. Chloroform	~~*0.0002*~~		*0.0002*	*0.0002*
6. Dichlorobromomethane	~~*0.0002*~~	*0.0002*	~~*0.0002*~~	*0.0002*
7. 1,2-Dichloroethane	~~*0.005*~~	*0.005*		
8. 1,1-Dichloroethene	~~*0.007*~~	*0.007*		
9. cis-1,2-Dichloroethene	~~*0.07*~~	*0.07*		
10. trans-1,2-Dichloroethene	~~*0.01*~~	*0.01*		
11. Dichloromethane	~~*0.005*~~	*0.005*		
12. 1,2-Dichloropropane	~~*0.005*~~	*0.005*		
13. cis-1,3-Dichloropropene	~~*0.001*~~	*0.001*	~~*0.005*~~	*0.001*
14. trans-1,3-Dichloropropene	~~*0.001*~~	*0.001*	~~*0.005*~~	*0.001*
15. Ethylbenzene	~~*0.7*~~	*0.7*		
16. Styrene	~~*0.1*~~	*0.1*		
17. Tetrachloroethene	~~*0.005*~~	*0.005*		
18. Toluene	~~*1.0*~~	*1.0*		
19. 1,1,1-Trichloroethane	~~*0.2*~~	*0.2*		
20. 1,1,2-Trichloroethane	~~*0.005*~~	*0.005*		
21. Trichloroethene	~~*0.005*~~	*0.005*		
22. Vinyl chloride	~~*0.002*~~	*0.002*		
23. Xylenes (total)	~~*10.0*~~	*10.0*		
24. BETX (total)	~~*11.705*~~	*11.705*		
Base/Neutrals				
1. Bis(2-chloroethyl)ether	~~*0.01*~~	*0.01*	~~*0.66*~~	*0.01*
2. Bis(2-ethylhexyl)phathalate	~~*0.12*~~	*0.006*	~~*0.18*~~	*0.006*
3. 1,2-Dichlorobenzene	~~*12.0*~~	*0.6*		
4. 1,4-Dichlorobenzene	~~*1.5*~~	*0.075*		
5. Hexachlorobenzene	~~*0.01*~~	*0.0005*	~~*0.034*~~	*0.0005*
6. Hexachlorocyclopentadiene	~~*1.0*~~	*0.05*		
7. N-Nitrosodi-n-propylamine	~~*0.01*~~	*0.01*	~~*0.66*~~	*0.01*
8. N-Nitrosodiphenylamine	~~*0.01*~~	*0.01*	~~*0.66*~~	*0.01*

9.	*1,2,4-Trichlorobenzene*	~~1.4~~	0.07		
	Polynuclear Aromatics				
1.	*Acenaphthene*	~~8.4~~	0.42		
2.	*Anthracene*	~~42.0~~	2.1		
3.	*Benzo(a)anthracene*	~~0.0026~~	0.00013	~~0.0087~~	0.00013
4.	*Benzo(a)pyrene*	~~0.004~~	0.0002	~~0.015~~	0.00023
5.	*Benzo(b)fluoranthene*	~~0.0036~~	0.00018	~~0.012~~	0.00018
6.	*Benzo(k)fluoranthene*	~~0.0034~~	0.00017	~~0.011~~	0.00017
7.	*Chrysene*	~~0.003~~	0.0015	~~0.1~~	0.0015
8.	*Dibenzo(a,h)anthracene*	~~0.006~~	0.0003	~~0.02~~	0.0003
9.	*Fluoranthene*	~~5.6~~	0.28		
10.	*Fluorene*	~~5.6~~	0.28		
11.	*Indeno(1,2,3-c,d)pyrene*	~~0.0086~~	0.00043	~~0.029~~	0.00043
12.	*Naphthalene*	~~0.025~~	0.025		
13.	*Pyrene*	~~4.2~~	0.21		
14.	*other*				
	Non-Carcinogenic PNAs (total)	~~4.2~~	0.21		
	Acenaphthylene				
	Benzo(g,h,i)perylene				
	Phenanthrene				
	Metals[2]				
1.	*Arsenic*	0.05	0.05		
2.	*Barium*	2.0	2.0		
3.	*Cadmium*	0.005	0.005		
4.	*Chromium (total)*	0.1	0.1		
5.	*Lead*	0.0075	0.0075		
6.	*Mercury*	0.002	0.002		
7.	*Selenium*	0.05	0.05		
	Acids				
1.	*Pentachlorophenol*	~~0.02~~	0.001	~~2.4~~	0.001
2.	*Phenol (total)*	~~0.1~~	0.1		
3.	*2,4,6-Trichlorophenol*	~~0.128~~	0.0064	~~0.43~~	0.0064
	Pesticides				
1.	*Aldrin*	~~0.0008~~	0.00004	~~0.003~~	0.00004
2.	*alpha-BHC*	~~0.0006~~	0.00003	~~0.002~~	0.00003
3.	*Chlordane*	~~0.04~~	0.002		
4.	*4,4'-DDE*	~~0.0008~~	0.00004	~~0.0027~~	0.00004
5.	*4,4'-DDD*	~~0.0022~~	0.00011	~~0.0074~~	0.00011

6. 4,4'-DDT	~~*0.0024*~~	*0.00012*	~~*0.008*~~	*0.00012*
7. Dieldrin	~~*0.0004*~~	*0.00002*	~~*0.0013*~~	*0.00002*
8. Endrin	~~*0.04*~~	*0.002*		
9. Heptachlor	~~*0.008*~~	*0.0004*		
10. Heptachlor epoxide	~~*0.004*~~	*0.0002*	~~*0.056*~~	
11. Lindane (gamma-BHC)	~~*0.0002*~~	*0.0002*	~~*0.0027*~~	
12. Toxaphene	~~*0.003*~~	*0.003*	~~*0.16*~~	

Polychlorinated Biphenyls

1. Polychlorinated Biphenyls (as Decachlorobiphenyl)	*	*0.0005*

* *See 40 CFR 761.120, as incorporated by reference at Section 732.104, for USEPA "PCB Spill Cleanup Policy."*

* * * * * *

• For the reasons discussed at Section VI, supra, Appendix B has been changed to contain soil remediation cleanup objectives for heavy metals only. Therefore, the list of numerical soil remediation objectives proposed by the Agency and published at First Notice are deleted, except for those applicable to heavy metals. On the other hand, the proposed list of groundwater cleanup objectives remains unchanged. Soil cleanup objectives, other than for heavy metals, are to be addressed during the interim using Appendix B as modified by the Board. See our Order infra. In addition, the Agency's PC#25 asks that for groundwater ADL, Dibenzo(a,h)anthracene, the value be changed to 0.0003 rather than 0.003. We are accepting the change.

1) *Acceptable Detection Limit - "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 and "Methods for the Determination of Organic Compounds in Drinking Water," EPA, EMSL, EPA-600/4-88/039, as incorporated by reference at Section 732.104 of this Part, must be used. For parameters where the specified objective is below the ADL, the ADL shall serve as the objective until the USEPA promulgates lower ADLs. When promulgated, the new USEPA ADL or the specified objective, whichever is higher, shall apply. For other parameters the ADL must be below the specified cleanup objective.*

• This change at Footnote 1 of Appendix B was added by the Agency in Errata Sheet #1 to include USEPA drinking water methodologies, since these procedures have been used to provide certain of the acceptable detection limits in Appendix B. (Hornshaw Testimony 4/27/94 Tr. at 92.)

IX. CONCLUSION

For the foregoing reasons, today we are hereby sending the Agency's proposal, including amendments both recommended by the public participants, the Agency and drafted by the Board to Second Notice and for review by the Joint Committee on Administrative Rules. We are statutorily required by the LUST Law to finalize these rules by September 15, 1994 and have accordingly scheduled a Board Meeting on that date. Today, we are also issuing in order creating a subdocket (R94-2(B)) to mainly consider the adoption of site specific remediation methodologies and/or matrices as alternatives to Appendix B of proposed new Part 732. Our Order setting forth the Second Notice changes to proposed Part 732 follow the opinion addenda A, B, and C.

OPINION ADDENDUM A

IPMA Proposal Groundwater Transport Model

The IPMA proposal has used the following ASTM equation (Exh. #21A, Table C1 at c10) to determine the contaminant transport at the source:

$$\frac{C(x)}{C_{source}} = \exp\left[\frac{x}{2\alpha_x}\left(1-\left(1+\frac{4\lambda\alpha_x}{U}\right)\right)\right]\left[erf\left(\frac{S_w}{4\sqrt{\alpha_y x}}\right)\right]\left[erf\left(\frac{S_d}{4\sqrt{\alpha_z x}}\right)\right]$$

This equation describes the steady state attenuation of chemical concentration along the center line of a dissolved plume. A close examination of the above equation indicated what appeared to be a algebraic error causing the right hand side of the equation to be reduced to the following equation:

$$\frac{C(x)}{C_{source}} = \exp\left[\frac{2\lambda x}{U}\right]\left[erf\left(\frac{S_w}{4\sqrt{\alpha_y x}}\right)\right]\left[erf\left(\frac{S_d}{4\sqrt{\alpha_z x}}\right)\right]$$

Upon further review of the information provided in the record the the correct equation for steady state attenuation of chemical concentration obtained from the original document[36] referenced in the ASTM guide is as follows:

$$\frac{C(x)}{C_{source}} = \exp\left[\frac{x}{2\alpha_x}\left(1-\sqrt{\left(1+\frac{4\lambda\alpha_x}{U}\right)}\right)\right]\left[erf\left(\frac{S_w}{4\sqrt{\alpha_y x}}\right)\right]\left[erf\left(\frac{S_d}{4\sqrt{\alpha_z x}}\right)\right]$$

36Domenico, P.A., "An Analytical Model for multidimensional Transport of a Decaying Contaminant Species," *Journal of Hydrology*, Vol. 91, pp:49-58, 1987.

OPINION ADDENDUM B

Equation 1: Groundwater Transport

The Board used the following correct ASTM equation for steady state attenuation of chemical concentration obtained from the original document[37] referenced in the ASTM guide:

$$\frac{C(x)}{C_{source}} = \exp\left[\frac{x}{2\alpha_x}\left(1-\sqrt{\left(1+\frac{4\lambda\alpha_x}{U}\right)}\right)\right]\left[erf\left(\frac{S_w}{4\sqrt{\alpha_y x}}\right)\right]\left[erf\left(\frac{S_d}{4\sqrt{\alpha_z x}}\right)\right]$$

C = Dissolved hydrocarbon concentration along centerline of dissolved plume [g/cm^3-H_2O]
C_{source} = Dissolved hydrocarbon concentration in dissolved plume source area [g/cm^3-H_2O]
S_d = Source width (vertical plane) [cm]
S_w = Source width (horizontal plane) [cm]
α_x = Longitudinal dispersivity [cm]
α_y = Transverse dispersivity [cm]
α_z = Vertical dispersivity [cm]
$U = K_s i/\theta_s$
K_s = Saturated hydraulic conductivity [cm/d]
k_s = Sorption coefficient [cm^3-H_2O/g-soil]
θ_s = Volumetric water content of saturated zone
i = Groundwater gradient [cm/cm]
λ = First order degradation constant [day^{-1}]
erf(η) = Error function evaluated for value of η
x = Distance along the center line from edge of dissolved plume source zone [cm]

37Domenico, P.A., "An Analytical Model for multidimensional Transport of a Decaying Contaminant Species." *Journal of Hydrology*, Vol. 91, pp:49-58, 1987.

Equation 2: Soil-Groundwater relationship

The Board used the following equation drawn from the ASTM guidelines to calculate the soil leaching factor (identified as "Equation No. 4" in the IPMA proposal):

$$LF_{sw}\frac{(mg/l\text{-}Water)}{(mg/kg\text{-}Soil)} = \frac{\rho_s}{[\theta_{ws}+k_s\rho_s+H\theta_{as}]\left(1+\frac{U_{gw}\delta_{gw}}{IW}\right)} x10^0 \frac{cm^3\text{-}kg}{L\text{-}g}$$

LF_{sw} = Leaching factor [(mg/l - H_2O)/(mg/kg - soil)]
k_s = Soil-water sorption coefficient [cm^3-H_2O/g-soil]
U_{gw} = Groundwater Darcy Velocity [cm/sec]
δ_{gw} = Groundwater mixing zone thickness [cm]
ρ_s = Soil bulk density [g/cm^3]
θ_{as} = Volumetric air content in vadose zone soils
θ_{ws} = Volumetric water content in vadose zone soils
H = Henry's Law constant
I = Infiltration rate of water through soil [cm/year]
W = Width of source parallel to groundwater flow [cm]

Equations 3: For Calculating Groundwater Objectives at the Source

The Board used the following equation drawn from the IPMA proposal to calculate the groundwater objectives at the source:

$$GW_{source} = \frac{GW_{comp}}{(C(x)/C_{source})}$$

GW_{source} = Groundwater objective at the source
GW_{comp} = Groundwater objective at compliance point
$C(x)/C_{source}$ = Calculated for a distance of 5 to 200 feet using equation 1

Equations 4: For Calculating and Soil objectives at the Source

The Board used the following equation drawn from the IPMA proposal to calculate the soil remediation objectives:

$$SoilTarget = \frac{GW_{source}}{(LF_{sw})\,SF}$$

Soil Target = Soil objective at the source [mg/kg]
LF_{sw} = Soil leaching factor calculated using equation 2
SF = Safety factor (1000)

OPINION ADDENDUM C

Table of Model Parameter Values[38]

PARAMETER	DEFINITION (UNIT)	MODEL VALUES
S_d	Source width (vertical plane) [cm]	304.8
S_w	Source width (horizontal plane) [cm]	609.6
α_x	Longitudinal dispersivity [cm]	0.1 * x
α_y	Transverse dispersivity [cm]	$\alpha_x/3$
α_z	Vertical dispersivity [cm]	$\alpha_x/20$
U	Specific discharge ($K_s i/\theta_s$) [cm/day]	0.346
K_s	Saturated hydraulic conductivity [cm/d]	86.4
k_s	Sorption coefficient [cm^3-H_2O/g-soil]	Chemical specific
θ_s	Volumetric water content of saturated zone	0.25
i	Groundwater gradient [cm/cm]	0.001
λ	First order degradation constant [day^{-1}]	Chemical specific
x	Distance along the center line from edge of dissolved plume source zone [cm]	152-6096
U_{gw}	Groundwater Darcy Velocity [cm/year]	2500
δ_{gw}	Groundwater mixing zone thickness [cm]	304.8
ρ_s	Soil bulk density [g/cm^3]	1.7
θ_{as}	Volumetric air content in vadose zone soils [cm^3 - air/cm^3 - soil]	0.22
θ_{ws}	Volumetric water content in vadose zone soils [cm^3 - water/cm^3 - soil]	0.12
H	Henry's Law constant [cm^3 - water/cm^3 - soil]	Chemical specific
I	Infiltration rate of water through soil [cm/year]	30
W	Width of source parallel to groundwater flow [cm]	1500

38The Model Parameter Values were derived from Exh. 21A.

Table of Chemical Specific Parameters[39]

Chemical	Sorption Coefficient (k_s)	Degradation Constant (λ)	Henry's Law Constant (H)	Solubility (mg/l)	Ground water Objective (mg/l)
Benzene	0.38	0.0009	0.22	1750	0.005
Toluene	1.349	0.011	0.26	535	1.0
Ethyl Benzene	0.955	0.003	0.32	152	0.7
Xylene	2.399	0.0019	0.29	130	10.0
Naphthalene	12.88	0.0027	0.049	31.7	0.025
Benzo(a)pyrene	3890.45	0.0007	1.49×10^{-9}	0.0012	0.0002

39The Chemical Specific Parameters were derived from Exh. #21A.

Table of Soil Remediation Objectives

Distance (ft)	Chemical Name					
	Benzene	Toluene	Ethyl Benzene	Xylenes	Naphthalene	Benzo(a) pyrene
	Soil Cleanup Objectives (mg/kg)					
5	0.005	1.0	0.7	10.0	0.025	0.019
10	0.005	11.010	0.7	10.0	0.025	0.025
15	0.005	13.943	0.7	10.0	0.025	0.033
20	0.005	13.943	0.7	10.0	0.025	0.045
25	0.005	13.943	1.507	10.0	0.459	0.065
30	0.005	13.943	2.908	10.0	0.991	0.084
35	0.005	13.943	2.908	10.0	2.095	0.084
40	0.005	13.943	2.908	10.0	4.305	0.084
45	0.005	13.943	2.908	10.0	7.366	0.084
50	0.005	13.943	2.908	10.0	7.366	0.084
55	0.005	13.943	2.908	10.0	7.366	0.084
60	0.005	13.943	2.908	10.0	7.366	0.084
65	0.007	13.943	2.908	10.0	7.366	0.084
70	0.010	13.943	2.908	10.0	7.366	0.084
75	0.015	13.943	2.908	10.0	7.366	0.084
80	0.020	13.943	2.908	10.0	7.366	0.084
85	0.028	13.943	2.908	10.0	7.366	0.084
90	0.038	13.943	2.908	10.0	7.366	0.084
95	0.051	13.943	2.908	10.0	7.366	0.005
100	0.069	13.943	2.908	10.0	7.366	0.084

Table of Soil Remediation Objectives (Cont'd)

Distance (ft)	Chemical Name					
	Benzene	Toluene	Ethyl Benzene	Xylenes	Naphthalene	Benzo(a) pyrene
	Soil Cleanup Objectives (mg/kg)					
105	0.091	13.943	2.908	10.0	7.366	0.084
110	0.120	13.943	2.908	10.0	7.366	0.084
115	0.157	13.943	2.908	10.0	7.366	0.084
120	0.205	13.943	2.908	10.0	7.366	0.084
125	0.265	13.943	2.908	10.0	7.366	0.084
130	0.341	13.943	2.908	10.0	7.366	0.084
135	0.436	13.943	2.908	10.0	7.366	0.084
140	0.555	13.943	2.908	10.0	7.366	0.084
145	0.704	13.943	2.908	10.0	7.366	0.084
150	0.888	13.943	2.908	10.0	7.366	0.084
155	1.115	13.943	2.908	10.0	7.366	0.084
160	1.395	13.943	2.908	10.0	7.366	0.084
165	1.738	13.943	2.908	10.0	7.366	0.084
170	2.157	13.943	2.908	10.0	7.366	0.084
175	2.668	13.943	2.908	10.0	7.366	0.084
180	3.289	13.943	2.908	10.0	7.366	0.084
185	4.042	13.943	2.908	10.0	7.366	0.084
190	4.950	13.943	2.908	10.0	7.366	0.084
195	6.046	13.943	2.908	10.0	7.366	0.084
200	7.362	13.943	2.908	10.0	7.366	0.084

Order

The Board hereby proposes the following rules in 35 Ill. Adm. Code Part 732. The rules are to be submitted to the Joint Committee on Administrative Rules.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER d: UNDERGROUND INJECTION CONTROL AND UNDERGROUND STORAGE TANK PROGRAMS

PART 732
PETROLEUM UNDERGROUND STORAGE TANKS

SUBPART A: GENERAL

SUBPART B: EARLY ACTION

SUBPART C: SITE EVALUATION AND CLASSIFICATION

SUBPART D: CORRECTIVE ACTION

SUBPART E: SELECTION AND REVIEW PROCEDURES FOR PLANS AND REPORTS

SUBPART F: PAYMENT OR REIMBURSEMENT

732.Appendix A Indicator Contaminants
732.Appendix B ~~Groundwater and Soil Remediation Objectives and Acceptable Detection Limits~~ Groundwater Remediation Objectives and Acceptable Detection Limits and Soil Remediation Methodology
Table 1 Groundwater and Soil Remediation Objectives
Table 2 Soil Remediation Methodology: Model Parameter Values
Table 3 Soil Remediation Methodology: Chemical Specific Parameters
Table 4 Soil Remediation Methodology: Objectives
Illustration 1 Equation For Groundwater Transport
Illustration 2 Equation For Soil-Groundwater Relationship
Illustration 3 Equation For Calculating Groundwater Objectives at the Source
Illustration 4 Equation For Calculating Soil Objectives at the Source

AUTHORITY: Implementing Sections 22.12 and 57 - 57.17 and authorized by Section 57.14 of the Environmental Protection Act (415 ILCS 5/22.12, 57 - 57.17, 57.14, as added by P.A. 88-496, effective September 13, 1993).

SOURCE: Adopted in R94-2(a) at 18 Ill. Reg. _____, effective _____, 19__.

NOTE: Capitalization denotes statutory language.

SUBPART A: GENERAL

Section 732.100 Applicability

a) This Part applies to owners or operators of any underground storage tank system used to contain petroleum and for which a release has been confirmed and required to be reported to Illinois Emergency Management Agency (IEMA) on or after the effective date of this Part in accordance with regulations adopted by the Office of State Fire Marshal (OSFM). It does not apply to owners or operators of sites for which the OSFM does not require a report to IEMA or for which the OSFM has issued or intends to issue a certificate of removal or abandonment pursuant to Section 57.5 of the Environmental Protection Act (Act) (415 ILCS 5/57.5). Owners or operators of any underground storage tank system used to contain petroleum and for which a release was reported to IEMA on or before September 12, 1993, may elect to proceed in accordance with this Part pursuant to Section 732.101.

~~b) Owners or operators subject to this Part by law or by election shall proceed expeditiously to comply with all requirements of the Act and the regulations~~

~~and to obtain the "No Further Remediation" letter signifying final disposition of the site for purposes of this Part. The Agency may use its authority pursuant to the Act and Section 732.105 of this Part to expedite investigative, preventive or corrective action by an owner or operator or to initiate such action.~~

b) Upon the receipt of a corrective action order from the OSFM pursuant to Section 57.5(g) of the Act, the owner or operator of any underground storage tank system used to contain petroleum and taken out of operation before January 2, 1974, or any underground storage tank system used exclusively to store heating oil for consumptive use on the premises where stored and which serves other than a farm or residential unit shall conduct corrective action in accordance with this Part.

c) Owners or operators subject to this Part by law or by election shall proceed expeditiously to comply with all requirements of the Act and the regulations and to obtain the "No Further Remediation" letter signifying final disposition of the site for purposes of this Part. The Agency may use its authority pursuant to the Act and Section 732.105 of this Part to expedite investigative, preventive or corrective action by an owner or operator or to initiate such action.

Section 732.101 Election to Proceed under Part 732

a) Owners or operators of any underground storage tank system used to contain petroleum and for which a release was reported to the proper state authority on or before September 12, 1993, may elect to proceed in accordance with this Part by submitting to the Agency a written statement of such election signed by the owner or operator. ~~Completion of c~~Corrective action shall then follow the requirements of this Part. The election shall be effective upon receipt by the Agency and shall not be withdrawn once made.

b) Except as provided in Section 732.100(b) of this Part, ~~O~~owners or operators of underground storage tanks (USTs) used exclusively to store heating oil for consumptive use on the premises where stored and which serve other than a farm or residential unit may elect to proceed in accordance with this Part by submitting to the Agency a written statement of such election signed by the owner or operator. ~~Completion of c~~Corrective action shall then follow the requirements of this Part. The election shall be effective upon receipt by the Agency and shall not be withdrawn once made.

c) If the owner or operator elects to proceed pursuant to this Part, corrective action costs incurred in connection with the release and prior to the notification of election shall be payable or reimbursable in the same manner as was

allowable under the then existing law. Corrective action costs incurred after the notification of election shall be payable or reimbursable in accordance with Subparts E and F of this Part.

Section 732.102 Severability

If any provision of this Part or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of this Part as a whole or of any portion not adjudged invalid.

Section 732.103 Definitions

Except as stated in this Section, or unless a different meaning of a word or term is clear from the context, the definition of words or terms in this Part shall be the same as that applied to the same words or terms in the Environmental Protection Act (415 ILCS 5/1-57.17).

~~"Accounting" means a compilation of documentation to establish, substantiate and justify the nature and extent of the corrective action costs incurred by an owner or operator.~~

"Act" means the Environmental Protection Act (415 ILCS 5/1 et seq.).

"Agency" means the Illinois Environmental Protection Agency.

"Alternative technology" means a process or technique, other than conventional technology, used to perform a corrective action with respect to soils contaminated by releases of petroleum from an underground storage tank.

"Board" means the Illinois Pollution Control Board.

"BODILY INJURY" MEANS BODILY INJURY, SICKNESS, OR DISEASE SUSTAINED BY A PERSON, INCLUDING DEATH AT ANY TIME, RESULTING FROM A RELEASE OF PETROLEUM FROM AN UNDERGROUND STORAGE TANK. (Section 57.2 of the Act).

"CLASS I GROUNDWATER" MEANS GROUNDWATER THAT MEETS THE CLASS I: POTABLE RESOURCE GROUNDWATER CRITERIA SET FORTH IN THE BOARD REGULATIONS ADOPTED PURSUANT TO THE ILLINOIS GROUNDWATER PROTECTION ACT. (Section 57.2 of the Act).

"CLASS III GROUNDWATER" MEANS GROUNDWATER THAT MEETS THE CLASS III: SPECIAL RESOURCE GROUNDWATER CRITERIA SET FORTH IN THE BOARD REGULATIONS ADOPTED PURSUANT TO THE ILLINOIS

GROUNDWATER PROTECTION ACT. (Section 57.2 of the Act).

"Confirmed exceedence" means laboratory verification of an exceedence of the applicable groundwater quality standards or objectives.

"Confirmed release" means a release of petroleum that has been confirmed in accordance with regulations promulgated by the Office of the State Fire Marshal at 41 Ill. Adm. Code 170.

"Conventional technology" means a process or technique to perform a corrective action by removal, transportation and disposal of soils contaminated by a release of petroleum from an underground storage tank in accordance with applicable laws and regulations, but without processing to remove petroleum from the soils.

"CORRECTIVE ACTION" MEANS ACTIVITIES ASSOCIATED WITH COMPLIANCE WITH THE PROVISIONS OF SECTIONS 57.6 AND 57.7 OF the Act. (Section 57.2 of the Act).

"FILL MATERIAL" MEANS NON-NATIVE OR DISTURBED MATERIALS USED TO BED AND BACKFILL AROUND AN UNDERGROUND STORAGE TANK. (Section 57.2 of the Act).

"Free product" means petroleum that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water).

"Full Accounting" means a compilation of documentation to establish, substantiate and justify the nature and extent of the corrective action costs incurred by an owner or operator.

"FUND" MEANS THE UNDERGROUND STORAGE TANK FUND. (Section 57.2 of the Act).

"GROUNDWATER" MEANS UNDERGROUND WATER WHICH OCCURS WITHIN THE SATURATED ZONE AND GEOLOGIC MATERIALS WHERE THE FLUID PRESSURE IN THE PORE SPACE IS EQUAL TO OR GREATER THAN ATMOSPHERIC PRESSURE. (Section 3.64 of the Act).

"Handling charges" means administrative, insurance, and interest costs and a reasonable profit for procurement, oversight, and payment of subcontracts and field purchases.

"HEATING OIL" MEANS PETROLEUM THAT IS NO. 1, NO. 2, NO. 4 - LIGHT, NO. 4 - HEAVY, NO. 5 - LIGHT, NO. 5 - HEAVY OR NO. 6 TECHNICAL GRADES OF FUEL OIL; AND OTHER RESIDUAL FUEL OILS

INCLUDING NAVY SPECIAL FUEL OIL AND BUNKER C. (Section 57.2 of the Act).

"IEMA" means the Illinois Emergency Management Agency.

"INDEMNIFICATION" MEANS INDEMNIFICATION OF AN OWNER OR OPERATOR FOR THE AMOUNT OF JUDGMENT ENTERED AGAINST THE OWNER OR OPERATOR IN A COURT OF LAW, FOR THE AMOUNT OF ANY FINAL ORDER OR DETERMINATION MADE AGAINST THE OWNER OR OPERATOR BY ANY AGENCY OF STATE GOVERNMENT OR ANY SUBDIVISION THEREOF, OR FOR THE AMOUNT OF ANY SETTLEMENT ENTERED INTO BY THE OWNER OR OPERATOR, IF THE JUDGMENT, ORDER, DETERMINATION, OR SETTLEMENT ARISES OUT OF BODILY INJURY OR PROPERTY DAMAGE SUFFERED AS A RESULT OF A RELEASE OF PETROLEUM FROM AN UNDERGROUND STORAGE TANK OWNED OR OPERATED BY THE OWNER OR OPERATOR. (Section 57.2 of the Act).

"LICENSED PROFESSIONAL ENGINEER" MEANS A PERSON, CORPORATION OR PARTNERSHIP LICENSED UNDER THE LAWS OF THE STATE OF ILLINOIS TO PRACTICE PROFESSIONAL ENGINEERING. (Section 57.2 of the Act).

"Line Item Estimate" means an estimate of the costs associated with each line item (including, but not necessarily limited to, personnel, equipment, travel, etc.) which an owner or operator anticipates will be incurred for the development, implementation and completion of a plan or report.

"Man-made pathway" means constructed routes that may allow for the transport of mobile petroleum free-liquid or petroleum-based vapors including, but not limited to, sewers, utility lines, utility vaults, building foundations, basements, crawl spaces, drainage ditches or previously excavated and filled areas.

"Monitoring well" means a water well intended for the purpose of determining groundwater quality or quantity.

"Natural pathway" means natural routes for the transport of mobile petroleum free-liquid or petroleum-based vapors including, but not limited to soil, groundwater, sand seams and lenses and gravel seams and lenses.

"OCCURRENCE" MEANS ANY RELEASE FROM AN UNDERGROUND STORAGE TANK, INCLUDING ANY ADDITIONAL RELEASE FROM THAT UNDERGROUND STORAGE TANK AT THE SITE IDENTIFIED IN THE COURSE OF PERFORMING CORRECTIVE ACTION IN RESPONSE TO THE INITIAL RELEASE. (Section 57.2 of the Act).

"OSFM" means the Office of the State Fire Marshal.

"Operator" means any person in control of, or having responsibility for, the daily operation of the underground storage tank. (42 U.S.C. § 6991).

BOARD NOTE: A person who voluntarily undertakes action to remove an underground storage tank system from the ground shall not be deemed an "operator" merely by the undertaking of such action.

"Owner" means:

In the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use or dispensing of regulated substances;

In the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such underground storage tank immediately before the discontinuation of its use. (42 U.S.C. § 6991).

"Person" means, for the purposes of interpreting the definitions of the terms "owner" or "operator," an individual, trust, firm, joint stock company, joint venture, consortium, commercial entity, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body and shall include the United States Government and each department, agency, and instrumentality of the United States. (Derived from 42 U.S.C. § 6991).

"Petroleum" means petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute). (42 U.S.C. § 6991).

"PHYSICAL SOIL CLASSIFICATION" MEANS VERIFICATION of geological conditions consistent with regulations for identifying and protecting potable resource groundwater or verification THAT SUBSURFACE STRATA ARE AS GENERALLY MAPPED IN THE PUBLICATION ILLINOIS GEOLOGICAL SURVEY CIRCULAR (1984) ENTITLED "POTENTIAL FOR CONTAMINATION OF SHALLOW AQUIFERS IN ILLINOIS," BY BERG, RICHARD C., ET AL. SUCH CLASSIFICATION MAY INCLUDE REVIEW OF SOIL BORINGS, WELL LOGS, PHYSICAL SOIL ANALYSIS, REGIONAL GEOLOGIC MAPS, OR OTHER SCIENTIFIC PUBLICATIONS. (Section 57.2 of the Act).

"POTABLE" MEANS GENERALLY FIT FOR HUMAN CONSUMPTION IN ACCORDANCE WITH ACCEPTED WATER SUPPLY PRINCIPLES AND

PRACTICES. (Section 3.65 of the Act).

"PROPERTY DAMAGE" MEANS PHYSICAL INJURY TO, DESTRUCTION OF, OR CONTAMINATION OF TANGIBLE PROPERTY owned by a person other than an owner or operator of the UST from which a release of petroleum has occurred and which tangible property is located off the site where the release occurred. Property damage includes ALL RESULTING LOSS OF USE OF THAT PROPERTY; OR LOSS OF USE OF TANGIBLE PROPERTY THAT IS NOT PHYSICALLY INJURED, DESTROYED OR CONTAMINATED, BUT HAS BEEN EVACUATED, WITHDRAWN FROM USE, OR RENDERED INACCESSIBLE BECAUSE OF A RELEASE OF PETROLEUM FROM AN UNDERGROUND STORAGE TANK. (Derived from Section 57.2 of the Act).

"Registration" means registration of an underground storage tank with the OSFM in accordance with Section 4 of the Gasoline Storage Act (430 ILCS 15/4).

"REGULATED RECHARGE AREA" MEANS A COMPACT GEOGRAPHIC AREA, AS DETERMINED BY THE BOARD, THE GEOLOGY OF WHICH RENDERS A POTABLE RESOURCE GROUNDWATER PARTICULARLY SUSCEPTIBLE TO CONTAMINATION. (Section 3.67 of the Act).

"Regulated substance" means:

> Any substance defined in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. § 9601(14)] (but not including any substance regulated as a hazardous waste under subtitle C of the Resource Conservation and Recovery Act [42 U.S.C. §§ 6921 et seq.]), and Petroleum. (42 U.S.C. § 6991).

"RELEASE" MEANS ANY SPILLING, LEAKING, EMITTING, DISCHARGING, ESCAPING, LEACHING, OR DISPOSING OF PETROLEUM FROM AN UNDERGROUND STORAGE TANK INTO GROUNDWATER, SURFACE WATER OR SUBSURFACE SOILS. (Section 57.2 of the Act).

"Residential tank" means an underground storage tank located on property used primarily for dwelling purposes.

"Residential unit" means a structure used primarily for dwelling purposes including multi-unit dwellings such as apartment buildings, condominiums, cooperatives or dormitories.

"SETBACK ZONE" MEANS A GEOGRAPHIC AREA, DESIGNATED PURSUANT TO THE ACT or regulations, CONTAINING A POTABLE WATER SUPPLY WELL OR A POTENTIAL SOURCE OR POTENTIAL ROUTE,

HAVING A CONTINUOUS BOUNDARY, AND WITHIN WHICH CERTAIN PROHIBITIONS OR REGULATIONS ARE APPLICABLE IN ORDER TO PROTECT GROUNDWATER. (Section 3.61 of the Act).

"SITE" MEANS ANY SINGLE LOCATION, PLACE, TRACT OF LAND OR PARCEL OF PROPERTY INCLUDING CONTIGUOUS PROPERTY NOT SEPARATED BY A PUBLIC RIGHT-OF-WAY. (Section 57.2 of the Act).

"Surface body of water" or "surface water body" means a natural or man-made body of water on the ground surface including, but not limited to, lakes, ponds, reservoirs, retention ponds, rivers, streams, creeks and drainage ditches. Surface body of water does not include puddles or other accumulations of precipitation, run-off or groundwater in UST excavations.

"Tank field" means all underground storage tanks at a site that reside within a circle with a 100 foot radius.

"Underground Storage Tank" or "UST" means any one or combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 per centum or more beneath the surface of the ground. Such term does not include any of the following or any pipes connected thereto:

Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;

Septic tank;

Pipeline facility (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. App. 1671 et seq.), or the Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. App. 2001 et seq.), or which is an intrastate pipeline facility regulated under State laws as provided in either of these provisions of law, and which is determined by the Secretary to be connected to a pipeline or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;

Surface impoundment, pit, pond, or lagoon;

Storm water or waste water collection system;

Flow-through process tank;

Liquid trap or associated gathering lines directly related to oil or gas

production and gathering operations; or

Storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor. (Derived from 42 U.S.C.§ 6991).

THE TERM "UNDERGROUND STORAGE TANK" SHALL ALSO MEAN AN UNDERGROUND STORAGE TANK USED EXCLUSIVELY TO STORE HEATING OIL FOR CONSUMPTIVE USE ON THE PREMISES WHERE STORED AND WHICH SERVES OTHER THAN A FARM OR RESIDENTIAL UNIT. (Section 57.2 of the Act).

"UST system" or "tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.

Section 732.104 Incorporations by Reference

a) The Board incorporates the following material by reference:

ASTM. American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103 (215) 299-5400

ASTM D 422-63, Standard Test Method for Particle-Size Analysis of Soils, approved November 21, 1963, (reapproved 1990).

ASTM D 1140-54, Standard Test Method for Amount of Material in Soils Finer than the No. 200 (75 um) Sieve, approved September 15, 1954, (reapproved 1990).

ASTM D 2216-90, Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock, approved November 30, 1990.

ASTM D 4643-87, Standard Test Method for Determination of Water (Moisture) Content of Soil by the Microwave Oven Method, approved February 2, 1987.

ASTM D 2487-90, Standard Test Method for Classification of Soils for Engineering Purposes, approved June 22, 1990.

ASTM D 2488-90, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), approved June 29, 1990.

ASTM D 5084-90, Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter, approved June 22, 1990.

ASTM D 4525-90, Standard Test Method for Permeability of Rocks by Flowing Air, approved May 25, 1990.

ISGS. Illinois State Geological Survey, 615 E. Peabody Drive, Champaign, IL 61820-6964 (217) 333-4747

Richard C. Berg, John P. Kempton, Keros Cartwright, "Potential for Contamination of Shallow Aquifers in Illinois," (1984), Circular No. 532.

NTIS. National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161 (703) 487-4600.

"Methods for Chemical Analysis of Water and Wastes," EPA Publication No. EPA-600/4-79-020, (March 1983), Doc. No. PB 84-128677.

"Methods for the Determination of Organic Compounds in Drinking Water," EPA, EMSL, EPA-600/4-88/039 (Dec. 1988), Doc. No. PB 89-220461.

"Practical Guide for Ground-Water Sampling," EPA Publication No. EPA-600/2-85/104 (September 1985), Doc. No. PB 86-137304.

"Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 (Third Edition, 1986, as amended by Revision I, Final Update I, July 1992) ~~(December 1987)~~, Doc. No. PB 89-148076.

USGS. United States Geological Survey, 1961 Stout Street, Denver, CO 80294 (303) 844-4169

"Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents," Book I, Chapter D2 (1981).

b) CFR (Code of Federal Regulations). Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402,

(202) 783-3238

40 CFR 261, Appendix II (1992).

40 CFR 761.120 (1993).

c) This Section incorporates no later editions or amendments.

Section 732.105 Agency Authority to Initiate Investigative, Preventive or Corrective Action

a) THE AGENCY HAS THE AUTHORITY TO DO EITHER OF THE FOLLOWING:

1) PROVIDE NOTICE TO THE OWNER OR OPERATOR, OR BOTH, OF AN UNDERGROUND STORAGE TANK WHENEVER THERE IS A RELEASE OR SUBSTANTIAL THREAT OF A RELEASE OF PETROLEUM FROM SUCH TANK. SUCH NOTICE SHALL INCLUDE THE IDENTIFIED INVESTIGATION OR RESPONSE ACTION AND AN OPPORTUNITY FOR THE OWNER OR OPERATOR, OR BOTH, TO PERFORM THE RESPONSE ACTION.

2) UNDERTAKE INVESTIGATIVE, PREVENTIVE OR CORRECTIVE ACTION WHENEVER THERE IS A RELEASE OR A SUBSTANTIAL THREAT OF A RELEASE OF PETROLEUM FROM AN UNDERGROUND STORAGE TANK. (Section 57.12(c) of the Act).

b) IF NOTICE HAS BEEN PROVIDED UNDER THIS SECTION, THE AGENCY HAS THE AUTHORITY TO REQUIRE THE OWNER OR OPERATOR, OR BOTH, OF AN UNDERGROUND STORAGE TANK TO UNDERTAKE PREVENTIVE OR CORRECTIVE ACTION WHENEVER THERE IS A RELEASE OR SUBSTANTIAL THREAT OF A RELEASE OF PETROLEUM FROM SUCH TANK. (Section 57.12(d) of the Act).

SUBPART B: EARLY ACTION

Section 732.200 General

OWNERS AND OPERATORS OF UNDERGROUND STORAGE TANKS SHALL, IN RESPONSE TO ALL CONFIRMED RELEASES of petroleum, COMPLY WITH ALL APPLICABLE STATUTORY AND REGULATORY REPORTING AND RESPONSE

REQUIREMENTS. (Section 57.6(a) of the Act). No work plan shall be required for conducting early action activities.

Section 732.201 Agency Authority to Initiate

Pursuant to Sections 732.100 or 732.105 of this Part, the Agency shall have the authority to require or initiate early action activities in accordance with the remainder of this Subpart B.

Section 732.202 Early Action

a) Upon confirmation of a release of petroleum from a UST system in accordance with regulations promulgated by the OSFM, the owner or operator, or both, shall perform the following initial response actions within 24 hours of the release:

1) Report the release to IEMA (e.g., by telephone or electronic mail);

2) Take immediate action to prevent any further release of the regulated substance to the environment; and

3) Identify and mitigate fire, explosion and vapor hazards.

b) Upon confirmation of a release of petroleum from a UST system in accordance with regulations promulgated by the OSFM, the owner or operator shall perform the following initial abatement measures:

1) Remove as much of the petroleum from the UST system as is necessary to prevent further release into the environment;

2) Visually inspect any aboveground releases or exposed belowground releases and prevent further migration of the released substance into surrounding soils and groundwater;

3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements);

4) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement or corrective action activities. If these remedies include treatment or disposal of soils, the owner or operator shall comply with 35 Ill. Adm. Code 722, 724, 725, and 807 through 815.

5) Measure for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with regulations promulgated by the OSFM. In selecting sample types, sample locations, and measurement methods, the owner or operator shall consider the nature of the stored substance, the type of backfill, depth to groundwater and other factors as appropriate for identifying the presence and source of the release; and

6) Investigate to determine the possible presence of free product, and begin free product removal as soon as practicable and in accordance with Section 732.203 below.

c) Within 20 days after confirmation of a release of petroleum from a UST system in accordance with regulations promulgated by the OSFM, owners or operators shall submit a report to the Agency summarizing the initial abatement steps taken under subsection (b) above and any resulting information or data. The report shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.

d) Owners or operators shall assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures in subsections 732.202(a) and (b) above. This information must include, but is not limited to, the following:

1) Data on the nature and estimated quantity of release;

2) Data from available sources or site investigations concerning the following factors: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions and land use;

3) Results of the site check required at subsection 732.202(b)(5);

4) Results of the free product investigations required at subsection 732.202(b)(6), to be used by owners or operators to determine whether free product must be recovered under Section 732.203.

e) Within 45 days after confirmation of a release of petroleum from a UST system in accordance with regulations promulgated by the OSFM, owners or operators shall submit to the Agency the information collected in compliance with subsection (d) above in a manner that demonstrates its applicability and technical adequacy. The information shall be submitted on forms prescribed

by the Agency or in a similar format containing the same information.

f) NOTWITHSTANDING ANY OTHER CORRECTIVE ACTION TAKEN, AN OWNER OR OPERATOR MAY, AT A MINIMUM, AND PRIOR TO SUBMISSION OF ANY PLANS TO THE AGENCY, REMOVE THE TANK SYSTEM, OR REPAIR OR ABANDON THE UNDERGROUND STORAGE TANK IN PLACE, IN ACCORDANCE WITH THE REGULATIONS PROMULGATED BY THE OFFICE OF THE STATE FIRE MARSHAL. THE OWNER MAY REMOVE VISIBLY CONTAMINATED FILL MATERIAL AND ANY GROUNDWATER IN THE EXCAVATION WHICH EXHIBITS A SHEEN. (Section 57.6(b) of the Act).

BOARD NOTE: Section 57.7(a)(1)(B) of the Act limits payment or reimbursement from the Fund for removal of contaminated fill material during early action activities. See Subpart F of this Part.

Section 732.203 Free Product Removal

At sites where investigations under Section 732.202(b)(6) above indicate the presence of free product, owners or operators shall remove free product to the maximum extent practicable while initiating or continuing any actions required pursuant to this Part or other applicable laws or regulations. In meeting the requirements of this Section, owners or operators shall:

a) Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state and federal regulations;

b) Use abatement of free product migration as a minimum objective for the design of the free product removal system;

c) Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

d) Within 45 days after the confirmation of a release of petroleum from an UST in accordance with regulations promulgated by the OSFM, prepare and submit to the Agency a free product removal report on forms prescribed by the Agency or in a similar format containing the same information. The report shall, at a minimum, provide the following:

1) The name of the persons responsible for implementing the free product removal measures;

2) The estimated quantity, type and thickness of free product observed or measured in wells, boreholes and excavations;

3) The type of free product recovery system used;

4) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

5) The type of treatment applied to, and the effluent quality expected from, any discharge;

6) The steps that have been or are being taken to obtain necessary permits for any discharge; and

7) The disposition of the recovered free product.

Section 732.204 Application for Payment

Owners or operators intending to seek payment or reimbursement for early action activities are not required to submit a corresponding budget plan to the Agency prior to the application for payment. The application for payment may be submitted to the Agency upon completion of the early action activities in accordance with the requirements at Subpart F of this Part. In the alternative, the owner or operator may submit ~~an itemized accounting~~ a line item estimate of the activities and costs as part of a site classification budget plan submitted pursuant to Section 732.305 for prior review and approval in accordance with Subpart E of this Part. If the alternative of submitting a line item estimate of the activities and costs is selected, ~~A~~ a subsequent application for payment satisfying the requirements of Subpart F will be required before payment can be approved and such application for payment must be submitted with an application for payment for site classification activities.

SUBPART C: SITE EVALUATION AND CLASSIFICATION

Section 732.300 General

a) Except as provided in subsection (b) below, the owner or operator of any site subject to this Part shall evaluate and classify the site in accordance with the requirements of this Subpart C. All such sites shall be classified as "No Further Action," "Low Priority" or "High Priority." Site classifications shall be based on the results of the site evaluation, including, but not limited to, the physical soil classification and the groundwater investigation, if applicable.

b) ~~Owners or operators of sites subject to this Part may choose to remediate all soil and groundwater contamination without conducting site classification activities pursuant to this Subpart C. Upon completion of the remediation~~

~~activities, owners or operators choosing full remediation without site classification shall submit a corrective action completion report to the Agency. The report shall demonstrate that soil and groundwater have been cleaned to the levels required at Section 732.408 of this Part. Upon approval of the corrective action completion report by the Agency or by operation of law in accordance with Subpart E, a "No Further Remediation" letter shall be issued by the Agency.~~

Owners or operators subject to this Part 732 may proceed without conducting site classification activities pursuant to this Subpart C under the following circumstances:

1) If the owner or operator chooses to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part. Upon completion of the remediation, the owner or operator shall submit a corrective action completion report demonstrating compliance with the required levels; or

2) If, upon completion of early action requirements pursuant to Subpart B of this Part, the owner or operator can demonstrate compliance with the remediation objectives required in Section 732.408 of this Part. Upon completion of the early action requirements, the owner or operator shall submit a corrective action completion report demonstrating compliance with the required levels.

c) For corrective action completion reports submitted pursuant to subsection (b) above, the Agency shall issue a "No Further Remediation" letter upon approval of the report by the Agency or by operation of law in accordance with Subpart E.

BOARD NOTE: Owners or operators proceeding under subsection (b) above are advised that they may not be entitled to full payment or reimbursement. See Subpart F of this Part.

Section 732.301 Agency Authority to Initiate

Pursuant to Sections 732.100 or 732.105 of this Part, the Agency shall have the authority to require or initiate corrective action activities in accordance with the remainder of this Subpart C.

Section 732.302 "No Further Action" Sites

a) Sites shall be classified as "No Further Action" if all of the following criteria are satisfied:

1) The physical soil classification procedure confirms either of the following:

A) "Berg Circular"

i) The site is located in an area designated D, E, F or G on the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois," incorporated by reference at Section 732.104 of this Part; and

ii) The site's actual physical soil conditions are verified as consistent with those designated D, E, F or G on the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois"; or

B) The site soil characteristics satisfy the criteria of Section 732.307(d)(3) of this Part;

2) The UST system is not within the minimum or maximum setback zone of a potable water supply well or regulated recharge area of a potable water supply well;

3) After completing early action measures in accordance with Subpart B of this Part, there is no evidence that, through natural pathways or man-made pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces~~, or may otherwise cause property damage~~;

4) There is no designated Class III special resource groundwater within 200 feet of the site; and

5) After completing early action measures in accordance with Subpart B of this Part, no surface bodies of water are adversely affected by the presence of a visible sheen or free product layer as a result of a release of petroleum.

b) No groundwater investigation pursuant to Section 732.307(j) shall be required to demonstrate that a site meets the criteria of a "No Further Action" site.

Section 732.303 "Low Priority" Sites

Sites shall be classified as "Low Priority" if all of the following criteria are met:

a) The physical soil classification and groundwater investigation procedures confirm the following:

1) The groundwater quality standard or groundwater objective for any applicable indicator contaminant has not been exceeded at the property boundary line or 200 feet from the UST system, whichever is less; and

2) "Berg Circular"

A) The site is located in an area designated A1, A2, A3, A4, A5, AX, B1, B2, BX, C1, C2, C3, C4, or C5 on the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois," incorporated by reference at Section 732.104 of this Part; and

B) The site's actual physical soil conditions are verified as consistent with those designated A1, A2, A3, A4, A5, AX, B1, B2, BX, C1, C2, C3, C4, or C5 on the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois"; or

3) The site soil characteristics do not satisfy the criteria of Section 732.307(d)(3) of this Part;

b) The UST system is not within the minimum or maximum setback zone of a potable water supply well or regulated recharge area of a potable water supply well;

c) After completing early action measures in accordance with Subpart B of this Part, there is no evidence that, through natural or man-made pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces~~, or may otherwise cause property damage~~;

d) There is no designated Class III special resource groundwater within 200 feet of the site; and

e) After completing early action measures in accordance with Subpart B of this Part, there are no surface bodies of water adversely affected by the presence of a visible sheen or free product layer as a result of the release of petroleum.

Section 732.304 "High Priority" Sites

Sites shall be classified as "High Priority" if any of the following are met:

a) The physical soil classification and groundwater investigation procedures confirm the following:

1) The groundwater quality standard or groundwater objective for any applicable indicator contaminant has been exceeded at the property boundary line or 200 feet from the UST system, whichever is less; and

2) "Berg Circular"

i) The site is located in an area designated A1, A2, A3, A4, A5, AX, B1, B2, BX, C1, C2, C3, C4, or C5 on the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois," incorporated by reference at Section 732.104 of this Part; and

ii) The site's actual physical soil conditions are verified as consistent with those designated A1, A2, A3, A4, A5, AX, B1, B2, BX, C1, C2, C3, C4, or C5 on the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois"; or

3) The site soil characteristics do not satisfy the criteria of Section 732.307(d)(3) of this Part;

b) The UST system is within the minimum or maximum setback zone of a potable water supply well or regulated recharge area of a potable water supply well;

c) After completing early action measures in accordance with Subpart B of this Part, there is evidence that, through natural or man-made pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces~~, or may otherwise cause property damage~~;

d) There is designated Class III special resource groundwater within 200 feet of the site; or

e) After completing early action measures in accordance with Subpart B of this Part, a surface body of water is adversely affected by the presence of a visible

sheen or free product layer as a result of a release of petroleum.

Section 732.305 Plan Submittal and Review

a) Prior to conducting any site evaluation activities, the owner or operator shall submit to the Agency a site classification plan, including but not limited to a physical soil classification ~~/~~ and groundwater investigation plan, satisfying the minimum requirements for site evaluation activities as set forth in Section 732.307. The plans shall be designed to collect data sufficient to determine the site classification in accordance with Sections 732.302, 732.303 or 732.304 of this Part. Site classification plans shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.

b) In addition to the plan required in subsection (a) above and prior to conducting any site evaluation activities, any owner or operator intending to seek payment from the Fund shall submit to the Agency:

1) An application for payment of costs associated with eligible early action costs incurred pursuant to Subpart B of this Part, except as provided in subsection (b)(2) below; and

2) A site classification budget plan, which shall include, but not be limited to, a copy of the eligibility and deductibility determination of the OSFM and ~~an itemized accounting~~ a line item estimate of all costs associated with the development, implementation and completion of the site evaluation activities required in Section 732.307. In accordance with Section 732.204 of this Part, the owner or operator may submit a site classification budget plan that includes ~~an itemized accounting~~ a line item estimate of the activities and costs of early action for review and approval prior to the submittal of an application for payment. Formulation of budget plans should be consistent with the eligible and ineligible costs listed at Sections 732.605 and 732.606 of this Part. Site classification budget plans shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.

c) The Agency shall have the authority to review and approve, reject or require modification of any plan submitted pursuant to this Section in accordance with the procedures contained in Subpart E of this Part.

d) Notwithstanding subsections (a) and (b) above, an owner or operator may proceed to conduct site evaluation activities in accordance with this Subpart C prior to the submittal or approval or an otherwise required site classification plan (including physical soil classification and groundwater investigation plans and associated budget plans). However, any such plan shall be submitted to

the Agency for review and approval, rejection or modification in accordance with the procedures contained in Subpart E of this Part prior to payment or reimbursement for any related costs or the issuance of a "No Further Remediation" letter.

e) If, following the approval of any site classification plan, an owner or operator determines that revised procedures or cost estimates are necessary in order to comply with the minimum required activities for the site, the owner or operator shall submit, as applicable, an amended site classification plan or associated budget plan for review by the Agency. The Agency shall have the authority to review and approve, reject or require modifications of the amended plan in accordance with the procedures contained in Subpart E of this Part.

BOARD NOTE: Owners or operators proceeding under subsection (d) of this section are advised that they may not be entitled to full payment or reimbursement. See Subpart F of this Part.

Section 732.306 Deferred Site Classification; Priority List

a) NOTWITHSTANDING ANY OTHER PROVISION OR RULE OF LAW WITH THE EXCEPTION OF THE early action requirements of Subpart B of this Part and the investigation of migratory pathways as required by Section 732.307(g), THE OWNER OR OPERATOR WHO HAS SUBMITTED ANY budget PLAN PURSUANT TO this Part AND WHO IS ELIGIBLE FOR PAYMENT FROM THE UNDERGROUND STORAGE TANK FUND SHALL BE ELIGIBLE TO ELECT TO COMMENCE site classification UPON THE AVAILABILITY OF FUNDS. SUCH ELECTION SHALL BE MADE IN WRITING TO THE AGENCY WITHIN 30 DAYS OF RECEIPT OF AGENCY APPROVAL OF A budget PLAN. At that time, or up until 60 days thereafter, the owner or operator shall also provide the results of the investigation of the migratory pathways so that the Agency can make its decision in accordance with subsection (b) of this subsection. THE AGENCY SHALL PROVIDE NOTICE TO THE OWNER OR OPERATOR AT SUCH TIME AS IT APPROVES THE budget PLAN WHETHER SUFFICIENT RESOURCES ARE AVAILABLE IN ORDER TO IMMEDIATELY COMMENCE THE APPROVED MEASURES. (Section 57.8(b) of the Act)

1) Approvals of budget plans shall be pursuant to Agency review or by operation of law in accordance with Subpart E of this Part.

2) The Agency shall monitor the availability of funds to determine whether sufficient resources exist to provide payment in an amount equal to the total of the ~~for~~ approved budget plans and shall provide

notice to owners or operators of the availability of funds in accordance with Section 732.503(h). Funds shall not be deemed available for owners or operators electing to defer site classification so long as there are owners or operators on the priority list established pursuant to Section 732.603(d) of this Part awaiting forwarding of vouchers to the Office of the State Comptroller.

3) Upon receiving written notification that an owner or operator elects to defer site classification until funds are available, the Agency shall place the site on a priority list for notification of availability of sufficient funds. Sites shall enter the priority list based solely on the date the Agency receives the written notification of deferral, with the earliest dates having the highest priority. The Agency's record of the date of receipt shall be deemed conclusive, unless a contrary date is proven by a dated, signed receipt from registered or certified mail.

4) As funds become available, the Agency shall encumber funds for each site in the order of priority in an amount equal to the total of the approved budget plan for which deferral was sought. The Agency shall then notify owners or operators that sufficient funds have been allocated for the owner or operator's site. After such notification the owner or operator shall commence site classification activities.

5) Authorization of payment of encumbered funds for deferred site classification activities shall be approved in accordance with the requirements of Subpart F of this Part.

6) The priority list for notification of availability of sufficient funds shall be the same as that used for deferred corrective action pursuant to Section 732.406 with both types of deferrals entering the list and moving up solely on the basis of the date the Agency receives written notice of the deferral.

b) SHOULD THE AGENCY OR OWNER OR OPERATOR DETERMINE A THREAT TO HUMAN HEALTH AND/OR THE ENVIRONMENT REQUIRES IMMEDIATE ACTION, INCLUDING THE EXISTENCE OF PETROLEUM OR VAPORS WHICH THREATEN HUMAN HEALTH OR HUMAN SAFETY OR MAY CAUSE EXPLOSIONS IN BASEMENTS, CRAWL SPACES, UTILITY CONDUITS, STORM OR SANITARY SEWERS, VAULTS OR OTHER CONFINED SPACES~~, OR MAY OTHERWISE CAUSE ADDITIONAL PROPERTY DAMAGE~~, THE ELECTION TO COMMENCE site classification UPON THE AVAILABILITY OF FUNDS SHALL NOT BE AVAILABLE. THE AGENCY SHALL NOTIFY THE OWNER OR OPERATOR BY CERTIFIED

MAIL THAT A SITUATION EXISTS THAT WOULD PRECLUDE THE OWNER OR OPERATOR FROM COMMENCING site classification UPON THE AVAILABILITY OF FUNDS. SUCH ACTION BY THE AGENCY SHALL NOT BE SUBJECT TO APPEAL. (Section 57.8(b) of the Act)

c) An owner or operator may withdraw the election to commence site classification activities upon the availability of funds at any time. The Agency shall be notified in writing of the withdrawal. Upon such withdrawal, the owner or operator shall proceed with site classification in accordance with the requirements of this Part.

Section 732.307 Site Evaluation

a) Except as provided in Section 732.300(b), the owner or operator of any site for which a release of petroleum has been confirmed in accordance with regulations promulgated by the OSFM and reported to IEMA shall arrange for site evaluation and classification in accordance with the requirements of this Section. A Licensed Professional Engineer (or, where appropriate, persons working under the direction of a Licensed Professional Engineer) shall conduct the site evaluation. The results of the site evaluation shall provide the basis for determining the site classification. The site classification shall be certified as required by the supervising Licensed Professional Engineer.

b) As a part of each site evaluation, the Licensed Professional Engineer shall conduct a physical soil classification in accordance with the procedures at subsections (c) or (d) below. Except as provided in subsection (e) below, all elements of the chosen method of physical soil classification must be completed for each site. In addition to the requirement for a physical soil classification, the Licensed Professional Engineer shall, at a minimum, complete the requirements at subsections (f) through ~~(i)~~ (j) below before classifying a site as "High Priority" or "Low Priority" and subsection (f) through (i) below before classifying a site as "No Further Action."

c) Method One for Physical Soil Classification:

1) Soil Borings

A) Prior to conducting field activities, a review of scientific publications and regional geologic maps shall be conducted to determine if the subsurface strata are as generally mapped in the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois," incorporated by reference in Section 732.104 of this Part. A list of the publications reviewed and any preliminary conclusions

concerning the site geology shall be included in the site classification completion report.

B) A minimum of one soil boring to a depth that includes 50 feet of native soil or to bedrock shall be performed for each tank field with a release of petroleum.

C) If, during boring, bedrock is encountered or if auger refusal occurs because of the density of a geologic material, a sample of the bedrock or other material shall be collected to determine permeability or an in situ test shall be performed to determine hydraulic conductivity in accordance with subsections (c)(3)(A) and (c)(3)(B) below. If bedrock is encountered or auger refusal occurs, the Licensed Professional Engineer shall ~~certify~~ verify that the conditions that prevented the full boring are expected to be continuous through the remaining required depth.

D) Borings shall be performed within 200 feet of the outer edge of the tank field or at the property boundary, whichever is less. If more than one boring is required per site, borings shall be spaced to provide reasonable representation of site characteristics. The actual spacing of the borings shall be based on the regional hydrogeologic information collected in accordance with Section 732.307(c)(1)(A). Location shall be chosen to limit to the greatest extent possible the vertical migration of contamination.

E) Soil borings shall be continuously sampled~~.~~ to ensure that no gaps appear in the sample column.

F) If anomalies are encountered, additional soil borings may be necessary to verify the consistency of the site geology.

G) Any water bearing units encountered shall be protected as necessary to prevent cross-contamination of water bearing units during drilling.

H) The owner or operator may utilize techniques other than those specified in subsection (c)(1) for soil classification provided that:

1) The techniques provide equivalent, or superior, information as required by this Section;

2) The techniques have been successfully utilized in applications similar to the proposed application;

3) Methods for quality control can be implemented and

4) The owner or operator has received written approval from the Agency prior to the start of the investigation.

2) Soil Properties

The following tests shall be performed on a representative sample of each stratigraphic unit encountered at the site:

A) A soil particle analysis using the test methods specified in ASTM (American Society for Testing and Materials) Standards D 422-63 or D 1140-54, "Standard Test Method for Particle-Size Analysis of Soils," or "Standard Test Method for Amount of Material in Soils Finer than the No. 200 (75 um) Sieve," incorporated by reference in Section 732.104 of this Part;

B) A soil moisture content analysis using the test methods specified in ASTM Standards D 2216-90 or D 4643-87, "Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock," or "Standard Test Method for Determination of Water (Moisture) Content of Soil by the Microwave Oven Method," incorporated by reference in Section 732.104 of this Part;

C) A soil classification using the test methods specified in ASTM Standards D 2487-90 or D 2488-90, "Standard Test Method for Classification of Soils for Engineering Purposes" or "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)," incorporated by reference in Section 732.104 of this Part; and

D) Unconfined compression strength shall be determined in tons per square foot by using a hand penetrometer.

3) Hydraulic Conductivity

A) If a water bearing unit is encountered while performing soil boring(s) for the physical soil classification, an in situ hydraulic conductivity test shall be performed in the first fully saturated

layer below the water table. If multiple water bearing units are encountered, an in situ hydraulic conductivity test shall be performed on each such unit.

i) Wells used for hydraulic conductivity testing shall be constructed in a manner that ensures the most accurate results.

ii) The screen must be contained within the saturated zone.

B) If no water bearing unit is encountered in the required soil boring(s), then the following laboratory analyses shall be conducted, as applicable, on a representative sample from each stratigraphic unit:

i) A hydraulic conductivity analysis of undisturbed or laboratory compacted granular soils (i.e. clay, silt, sand or gravel) using the test method specified in ASTM (American Society for Testing and Materials) Standard D 5084-90, "Standard Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter," incorporated by reference in Section 732.104 of this Part;

ii) ~~A hydraulic conductivity analysis of bedrock using the test method specified in ASTM (American Society for Testing and Materials) Standard D 4525-90, "Standard Test Method for Permeability of Rocks by Flowing Air," incorporated by reference in Section 732.104 of this Part.~~

Granular soils having estimated hydraulic conductivity of greater than 1×10^{-3} cm/s will fail the hydraulic conductivity requirements within the Berg Circular for "No Further Action" geology, and therefore, no tests need to be run on the soils.

iii) A hydraulic conductivity analysis of bedrock using the test method specified in ASTM (American Society for Testing and Materials) Standard D 4525-90, "Standard Test Method for Permeability of Rocks by Flowing Air," incorporated by reference in Section 732.104 of this Part.

4) If the results of the physical soil classification or groundwater investigation reveal that the actual site geologic characteristics are different from those generally mapped by the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois," incorporated by reference at Section 732.104 of this Part, the site classification shall be determined using the actual site geologic characteristics.

d) Method Two for Physical Soil Classification:

1) Soil Borings

A) A minimum of one soil boring to a depth that includes at least the first 15 feet of native material below the invert elevation of the UST.

B) This boring shall meet the requirements of subsections (c)(1)(C) through (c)(1)(G) above.

2) Soil Properties

The following tests shall be performed on a representative sample of each stratigraphic unit encountered in the native soil boring:

A) A soil particle analysis satisfying the requirements of subsection (c)(2)(A) above; and

B) A pump test or equivalent to determine the yield of the geologic material. Methodology, assumptions and any calculations performed shall be submitted as part of the site classification completion report. If the aquifer geometry and transmissivity have been obtained through a site-specific field investigation, an analytical solution may be used to estimate well yield. The Licensed Professional Engineer shall demonstrate the appropriateness of the analytical solution to estimate well yield versus an actual field test. Well yield should be determined for either confined or unconfined formations; ~~and~~ or

C) Hydraulic conductivity shall be determined in accordance with subsection (c)(3) above.

3) The results of the boring(s) and tests described in subsections (d)(1) and (d)(2) above shall be used to demonstrate whether the first 15 feet of native material below the invert elevation of the UST meets all of the

following criteria:

A) Does not contain unconsolidated sand, gravel or sand and gravel that is 5 feet or more in thickness with 12 percent or less fines (i.e., fines that pass through a No. 200 sieve tested according to ASTM (American Society for Testing and Materials) Standard D ~~2248-90~~ 22487-90, ~~"Standard Practice for Description and Identification of Soils (Visual Manual Procedure),"~~ "Standard Test Method for Classification of Soils for Engineering Purposes," incorporated by reference at Section 732.104 of this Part);

B) Does not contain sandstone that is 10 feet or more in thickness, or fractured carbonate that is 15 feet or more in thickness; and

C) Is not capable of:

i) Sustained groundwater yield, from up to a 12 inch borehole, of 150 gallons per day or more from a thickness of 15 feet or less; or

ii) Hydraulic conductivity of 1×10^{-4} cm/sec or greater.

e) If, during the completion of the requirements of subsections (c) or (d) above, a Licensed Professional Engineer determines that the site geology is not consistent with areas D, E, F or G of the Illinois State Geological Survey Circular (1984) entitled, "Potential for Contamination of Shallow Aquifers in Illinois," incorporated by reference in Section 732.104 of this Part or that the criteria of subsection (d)(3) are not satisfied, any remaining steps required by subsections (c) or (d) may be suspended, provided that the soil investigation has been sufficient to satisfy the requirements of subsection (g) below. If activities are suspended under this subsection (e), the Licensed Professional Engineer shall complete the requirements of subsections (f) through (j) below in order to determine whether the site is "High Priority" or "Low Priority." The site conditions upon which the suspension of the requirements of subsections (c) or ~~(b)~~ (d) above is based shall be documented in the site classification completion report.

f) Survey of Water Supply Wells

1) The Licensed Professional Engineer shall conduct a survey of water supply wells for the purpose of identifying and locating all community water supply wells within 2500 feet of the UST system and all potable water supply wells within 200 feet of the UST system. The survey

shall include, but not be limited to, contacting the Illinois State Geological Survey and the Illinois State Water Survey. The local unit of government with authority over the site shall be contacted to determine if there is a local ordinance or policy regulating the usage of potable water supply wells.

2) The Licensed Professional Engineer shall provide a map to scale showing the locations of all community water supply wells and all potable water supply wells identified pursuant to subsection (f)(1) above. Radii of 200, 400 and 1000 feet from the UST system shall be marked on the map.

3) The Licensed Professional Engineer shall provide a table indicating the setback zone for each community water supply well and potable water supply well identified pursuant to subsection (f)(1) above and the distance from the UST system to the well. The locations of each well shall be identified on the map by numbers corresponding to the information provided in the table.

4) The Licensed Professional Engineer shall determine if the UST system is within the regulated recharge area of any community water supply well or potable water supply well. The sources consulted in making this determination shall be described in the site classification completion report.

g) Investigation of Migration Pathways

1) The Licensed Professional Engineer shall conduct an investigation either separately or in conjunction with the physical soil classification to identify all potential natural and man-made migration pathways that are on the site, in rights-of-way attached to the site, or in any area surrounding the site that may be adversely affected as a result of the release of petroleum from the UST system. Once the migration pathways have been identified, the areas along all such pathways shall be further investigated in a manner sufficient to determine whether or not there is evidence that migration of petroleum or vapors along such pathways; ~~may potentially threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces, or otherwise cause property damage.~~

A) May potentially threaten human health or human safety; or

B) May cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces.

2) The Licensed Professional Engineer shall provide a map of the site and any surrounding areas that may be adversely affected by the release of petroleum from the UST system. At a minimum, the map shall be to scale, oriented with north at the top, and shall show the location of the leaking UST system(s) with any associated piping and all potential natural and man-made pathways that are on the site, in rights-of-way attached to the site, or that are in areas that may be adversely affected as a result of the release of petroleum.

3) ~~If the Licensed Professional Engineer certifies that there is no evidence that, through natural or manmade pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces, or may otherwise cause property damage, the Licensed Professional Engineer's certification to that effect shall be presumed correct unless the Agency's review reveals objective evidence to the contrary.~~

Unless the Agency's review reveals objective evidence to the contrary, the Licensed Professional Engineer shall be presumed correct when certifying whether or not there is evidence that, through natural or man-made pathways, migration of petroleum or vapors:

A) May potentially threaten human health or human safety; or

B) May cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces.

h) The Licensed Professional Engineer shall ~~review the Board's inventory of designated Class III groundwater to determine if~~ verify whether Class III groundwater exists within 200 feet of the UST ~~excavation~~ system.

i) The Licensed Professional Engineer shall locate all surface bodies of water on site and within 100 feet of the site and provide a map noting the locations. All such surface bodies of water shall be inspected to determine whether they have been adversely affected by the presence of a sheen or free product layer resulting from the release of petroleum from the UST system.

j) Groundwater Investigation

1) For any site that fails to satisfy the requirements for a "No Further Action" site classification, the Licensed Professional Engineer shall perform a groundwater investigation in accordance with this subsection (j) to determine whether an applicable indicator contaminant groundwater quality standard has been exceeded at the property boundary or 200 feet from the excavation, whichever is less, as a result of the UST release of petroleum.

2) Applicable indicator contaminants and groundwater quality standards shall be those identified pursuant to Sections 732.310 and 732.311 of this Part.

3) A minimum of four groundwater monitoring wells shall be installed at the property boundary or 200 feet from the UST system, whichever is less. The Agency may require the installation of additional monitoring wells to ensure that at least one monitoring well is located hydraulically upgradient and three monitoring wells are located hydraulically downgradient of the UST system. The wells must be installed so that they provide the greatest likelihood of detecting migration of groundwater contamination. At a minimum, monitoring well construction shall satisfy the following requirements:

A) Construction shall be in a manner that will enable the collection of representative groundwater samples;

B) All monitoring wells shall be cased in a manner that maintains the integrity of the borehole. Casing material shall be inert so as not to affect the water sample. Casing requiring solvent-cement type couplings shall not be used.

C) Wells shall be screened to allow sampling only at the desired interval. Annular space between the borehole wall and well screen section shall be packed with clean, well-rounded and uniform material sized to avoid clogging by the material in the zone being monitored. The slot size of the screen shall be designed to minimize clogging. Screens shall be fabricated from material that is inert with respect to the constituents of the groundwater to be sampled;

D) Annular space above the well screen section shall be sealed with a relatively impermeable, expandable material such as cement/bentonite grout, which does not react with or in any way

affect the sample, in order to prevent contamination of groundwater samples and groundwater and avoid interconnections. The seal shall extend to the highest known seasonal groundwater level;

E) The annular space shall be backfilled with expanding cement grout from an elevation below the frost line and mounded above the surface and sloped away from the casing so as to divert surface water away;

F) All monitoring wells shall be covered with vented caps and equipped with devices to protect against tampering and damage. Locations of wells shall be clearly marked and protected against damage from vehicular traffic or other activities associated with expected site use.

G) All wells shall be developed to allow free entry of water, minimize turbidity of the sample, and minimize clogging.

4) Monitoring well construction diagrams prescribed and provided by the Agency or diagrams using a similar format and containing the same information shall be completed for each monitoring well.

5) Static water elevations shall be measured for each monitoring well. Groundwater samples shall be taken from each well and analyzed for the applicable indicator contaminants. The data collected shall be used to determine the direction of groundwater flow and whether the applicable groundwater quality standards or clean-up objectives have been exceeded. Samples shall be collected and analyzed in accordance with the following procedures:

A) Samples shall be collected in accordance with the procedures set forth in the documents "Methods for Chemical Analysis of Water and Wastes," "Methods for the Determination of Organic Compounds in Drinking Water," "Practical Guide for Ground-Water Sampling," "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," or "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents," as appropriate for the applicable indicator contaminants or groundwater objectives and as incorporated by reference at Section 732.104 of this Part.

B) Groundwater elevation in a groundwater monitoring well shall

be determined and recorded to establish the gradient of the groundwater table.

C) The analytical methodology used for the analysis of the indicator contaminants shall be consistent with both of the following:

i) The methodology shall have a practical quantitation limit (PQL) at or below the objectives or detection levels of Appendix B or as set for mixtures or degradation products as provided in Section 732.310 of this Part; and

ii) The methodology must be consistent with the methodologies contained in "Methods for Chemical Analysis of Water and Wastes," "Methods for the Determination of Organic Compounds in Drinking Water," "Practical Guide for Ground-Water Sampling," "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," and "Techniques of Water Resources Investigations of the United States Geological Survey, Guidelines for Collection and Field Analysis of Ground-Water Samples for Selected Unstable Constituents," as incorporated by reference at Section 732.104.

D) In addition to analytical results, sampling and analytical reports shall contain the following information:

i) Sample collection information including but not limited to the name of sample collector, time and date of sample collection, method of collection, and monitoring location;

ii) Sample preservation and shipment information including but not limited to field quality control;

iii) Analytical procedures including but not limited to the method detection limits and the practical quantitation limits (PQL); and

iv) Chain of custody and control.

v) Field and lab blanks.

Section 732.308 Boring Logs and Sealing of Soil Borings and Groundwater Monitoring

Wells

a) Soil boring logs shall be kept for all soil borings. The logs shall be submitted along with the site classification completion report and shall be on forms prescribed by the Agency or in a similar format containing the same information.

1) Soil boring logs shall contain the following information at a minimum:

A) Sampling device, sample ~~distance~~ number and amount of recovery;

B) Total depth of boring to the nearest 6 inches;

C) Detailed field observations describing materials encountered in boring, including soil constituents, consistency, color, density, moisture, odors, and the nature and extent of sand or gravel lenses or seams equal to or greater than 1 inch in thickness;

D) Petroleum hydrocarbon vapor readings (as determined by continuous screening of borings with field instruments capable of detecting such vapors);

E) Locations of sample(s) used for physical or chemical analysis; and

F) Groundwater levels while boring and at completion.

2) Boring logs for soil boring(s) completed for physical soil classification also shall include the following information, as applicable for the classification method chosen, for each stratigraphic unit encountered at the site:

A) Moisture content;

B) Unconfined compression strength in tons per square foot (TSF) using a hand penetrometer; and

C) Unified Soil Classification System (USCS) soil classification group symbol in accordance with ASTM Standard D 2487-90, "Standard Test Method for Classification of Soils for Engineering Purposes," incorporated by reference in Section 732.104 of this Part.

b) Boreholes and monitoring wells shall be abandoned pursuant to regulations promulgated by the Illinois Department of Public Health at 77 Ill. Adm. Code 920.120.

Section 732.309 Site Classification Completion Report

a) Within 30 days of the completion of a site evaluation in accordance with Section 732.307, the owner or operator shall submit to the Agency a site classification completion report addressing all applicable elements of the site evaluation. The report shall contain all maps, diagrams, and any other information required by Section 732.307, as well as the results or conclusions of all surveys and investigations and any documentation necessary to demonstrate those results or conclusions. The report shall be submitted on forms prescribed by the Agency or in a similar format containing the same information, shall be signed by the owner or operator, and shall contain the certification of a Licensed Professional Engineer of the site's classification as "No Further Action," "Low Priority" or "High Priority" in accordance with this Subpart C.

b) The Agency shall have the authority to review and approve, reject or require modification of any report submitted pursuant to this Section in accordance with the procedures contained in Subpart E of this Part.

Section 732.310 Indicator Contaminants

a) For purposes of this Part, the term "indicator contaminants" shall mean the parameters listed in subsections (b) through (g) below. ~~For petroleum products not listed below, the Agency shall determine indicator contaminants on a site by site basis.~~

b) For gasoline, including but not limited to leaded, unleaded, premium and gasohol, the indicator contaminants shall be benzene ~~and BETX (the sum of benzene~~, ethylbenzene, toluene and total xylenes~~)~~. For leaded gasoline, lead shall also be an indicator contaminant.

c) For aviation turbine fuels, jet fuels, diesel fuels, gas turbine fuel oils, heating fuel oils, illuminating oils, kerosene, lubricants, liquid asphalt and dust laying oils, cable oils, crude oil, crude oil fractions, petroleum feedstocks, petroleum fractions and heavy oils, the indicator contaminants shall be benzene, ~~BETX~~ ethylbenzene, toluene, total xylenes and the polynuclear aromatics listed in Appendix A. For leaded aviation turbine fuels, lead shall also be an indicator contaminant.

d) For transformer oils the indicator contaminants shall be benzene,

~~BETX~~ethylbenzene, toluene, total xylenes, the polynuclear aromatics listed in Appendix B and the polychlorinated biphenyl parameters listed in Appendix B.

e) For hydraulic fluids the indicator contaminants shall be benzene, ~~BETX~~ethylbenzene, toluene, total xylenes, the polynuclear aromatics listed in Appendix B and barium.

f) For petroleum spirits, mineral spirits, Stoddard solvents, high-flash aromatic naphthas, moderately volatile hydrocarbon solvents and petroleum extender oils, the indicator contaminants shall be the volatile, base/neutral and polynuclear aromatic parameters listed in Appendix B. The Agency may add degradation products or mixtures of any of the above pollutants in accordance with 35 Ill. Adm. Code 620.615.

g) For used oil the indicator contaminants shall be determined by the results of a used oil soil sample analysis. Prior to the submission of a site classification plan the owner or operator shall collect a grab sample from a location representative of soil contaminated by a release from the used oil UST. If an area of contamination cannot be identified, the sample shall be collected from beneath the used oil UST. The sample shall be analyzed for:

1) All volatile, base/neutral, polynuclear aromatic and metal parameters listed at Appendix B and any other parameters the Licensed Professional Engineer suspects may be present based on UST usage. The Agency may add degradation products or mixtures of any of the above pollutants in accordance with 35 Ill. Adm. Code 620.615.

2) The used oil indicator contaminants shall be those volatile, base/neutral, polynuclear aromatic and metal parameters listed at Appendix B or as otherwise identified at subsection (a) above that exceed their cleanup objective at Appendix B or as determined by the Agency.

3) If none of the parameters exceed their cleanup objective, the used oil indicator contaminants shall be benzene, ~~BETX~~ ethylbenzene, toluene, total xylenes and the polynuclear aromatics listed in Appendix B.

Section 732.311 ~~Groundwater Quality Standards for Indicator Contaminants~~ Indicator Contaminant Groundwater Objectives

~~For purposes of this Part, indicator contaminant groundwater quality standards shall be the groundwater objectives specified in Appendix B for the applicable indicator contaminants, except for mixtures and degradation products as provided in Section 732.310 of this Part.~~

For purposes of this Part, indicator contaminant groundwater quality standards shall be the

groundwater objectives specified in Appendix B for the applicable indicator contaminants. For mixtures and degradation products that have been included as indicator contaminants in accordance with Section 732.310 of this Part, the Agency shall determine groundwater objectives on a site-by-site basis.

SUBPART D: CORRECTIVE ACTION

Section 732.400 General

a) Following approval of the site evaluation and classification by the Agency or by operation of law pursuant to Subpart C of this Part and except as provided in subsection (b) or (c) below, the owner or operator of an UST system subject to the requirements of this Part shall develop and submit a corrective action plan and perform corrective action activities in accordance with the procedures and requirements contained in this Subpart D.

b) ~~Owners or operators of sites classified in accordance with the requirements of Subpart C as "No Further Action" or "Low Priority" may choose to remediate all soil and groundwater contamination. Any owner or operator choosing full remediation shall so notify the Agency in writing prior to conducting remediation activities. A corrective action plan shall be developed and submitted to the Agency for review in accordance with Subpart E of this Part. Upon completion of the remediation activities, owners or operators choosing full remediation shall submit a corrective action completion report to the Agency. The corrective action completion report shall demonstrate that soil and groundwater have been cleaned to the levels required by Section 732.408 of this Part. Upon approval of the corrective action completion report by the Agency or by operation of law in accordance with Subpart E, a "No Further Remediation" letter shall be issued by the Agency.~~

Owners or operators of sites classified in accordance with the requirements of Subpart C as "No Further Action" may choose to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part.

c) Owners or operators of sites classified in accordance with the requirements of Subpart C as "Low Priority" may choose to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part. Any owner or operator choosing to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part shall so notify the Agency in writing prior to conducting such efforts. Upon completion of the remediation activities, owners or operators choosing to conduct remediation sufficient to satisfy the remediation objectives in Section 732.408 of this Part shall submit a corrective action completion report to the Agency demonstrating compliance with the required levels. Upon approval of the corrective action

completion report by the Agency or by operation of law in accordance with Subpart E, a "No Further Remediation" letter shall be issued by the Agency.

BOARD NOTE: Owners or operators proceeding under subsection (b) or (c) above are advised that they may not be entitled to full payment or reimbursement. See Subpart F of this Part.

Section 732.401 Agency Authority to Initiate

Pursuant to Sections 732.100 or 732.105 of this Part, the Agency shall have the authority to require or initiate corrective action activities in accordance with the remainder of this Subpart D.

Section 732.402 "No Further Action" Site

The owner or operator of a site that has been certified as a "No Further Action" site by a Licensed Professional Engineer and approved as such by the Agency or by operation of law shall have no additional remediation responsibilities beyond those performed pursuant to Subparts B or C of this Part. Unless the Agency takes action to reject or modify the site classification completion report pursuant to Section 732.309, the Agency shall issue to the owner or operator within 120 days of the receipt of a complete report a "No Further Remediation" letter in accordance with Section 732.410.

Section 732.403 "Low Priority" Site

a) The owner or operator of a site that has been certified as a "Low Priority" site by a Licensed Professional Engineer and approved as such by the Agency or by operation of law shall develop a groundwater monitoring plan and perform groundwater monitoring in accordance with the requirements of this Section.

b) The owner or operator of a site certified as "Low Priority" by a Licensed Professional Engineer and approved as such by the Agency or by operation of law shall develop a groundwater monitoring plan designed to satisfy the following requirements at a minimum:

1) Groundwater monitoring shall be conducted for a period of three years following the Agency's approval of the site classification;

2) Groundwater monitoring wells shall be placed at the property line or 200 feet from the UST system, whichever is closer. The wells shall be placed in a configuration designed to provide the greatest likelihood of detecting migration of groundwater contamination;

3) Groundwater monitoring wells shall satisfy the requirements at Sections

732.307(j)(3) and 732.307(j)(4) of this Part;

4) During the first year of groundwater monitoring, samples from each well shall be collected and analyzed on a quarterly basis. During the second year of groundwater monitoring, samples from each well shall be collected and analyzed during the second and fourth quarters. During the third and final year of groundwater monitoring, at a minimum, samples from each well shall be collected and analyzed in the fourth quarter.

5) To determine whether groundwater quality standards or Agency approved objectives have been exceeded, samples for groundwater monitoring shall be collected and analyzed in accordance with the procedures set forth in Section 732.307(j)(5) of this Part for the applicable indicator contaminants determined pursuant to Section 732.310 of this Part.

c) Prior to the implementation of groundwater monitoring, the owner or operator shall submit the groundwater monitoring plan to the Agency for review in accordance with Section 732.405. If the owner or operator intends to seek payment from the Fund, a groundwater monitoring budget plan also shall be submitted to the Agency for review. The groundwater monitoring budget plan shall include ~~an itemized accounting~~ a line item estimate of all costs associated with the implementation and completion of the groundwater monitoring plan. Groundwater monitoring plans and budgets shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.

d) Groundwater analysis results obtained pursuant to subsection (b) above shall be submitted to the Agency within 30 days of the end of each annual sampling period on forms prescribed by the Agency or in a similar format containing the same information.

1) The information to be collected shall include but not be limited to the information set forth in Section 732.307(j)(5) of this Part.

2) If at any time the groundwater analysis results indicate a confirmed exceedence of the applicable indicator contaminant groundwater quality standards or Agency approved objectives as a result of the underground storage tank release of petroleum, the owner or operator shall notify the Agency of the exceedence within 30 days and provide supporting documentation of the nature and extent of the exceedence.

3) Indicator contaminant groundwater quality standards shall be

determined in accordance with Section 732.311 of this Part.

e) Within 30 days of the completion of the "Low Priority" groundwater monitoring plan, the owner or operator shall submit to the Agency a groundwater monitoring completion report in accordance with Section 732.409 of this Part. If there is no confirmed exceedence of applicable indicator contaminant objectives during the three year groundwater monitoring period, the report shall contain a certification to that effect by a Licensed Professional Engineer.

f) The Agency shall review the groundwater monitoring completion report in accordance with the procedures set forth in Subpart E of this Part and shall issue a "No Further Remediation" letter to the owner or operator in accordance with Section 732.410 upon approval of the report by the Agency or by operation of law.

g) If at any time groundwater analysis results indicate a confirmed exceedence of applicable indicator contaminant objectives, the Agency may reclassify the site as a "High Priority" site within 60 days of the receipt of an annual groundwater sampling report, a groundwater monitoring completion report, or a notification by the owner or operator pursuant to subsection (d)(2) above. The Agency shall notify the owner or operator in writing if a site is reclassified. Notice of reclassification shall be by registered or certified mail, post marked with a date stamp and with return receipt requested. Final action shall be deemed to have taken place on the post marked date that such notice is mailed. Any action by the Agency to reclassify the site as a "High Priority" site shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for in the review of permit decisions in Section 40 of the Act.

h) The owner or operator of a "Low Priority" site reclassified to "High Priority" pursuant to subsection (g) above shall develop and submit for Agency approval a "High Priority" corrective action plan satisfying the requirements of Section 732.404 of this Part within 120 days of receiving the notice of reclassification. If the owner or operator intends to seek reimbursement from the Fund, a corrective action plan budget also shall be submitted within 120 days of receiving the notice of reclassification.

Section 732.404 "High Priority" Site

a) The owner or operator of a site that has been certified by a Licensed Professional Engineer as a "High Priority" site and approved as such by the Agency or by operation of law shall develop a corrective action plan and perform corrective action in accordance with the requirements of this Section.

The purpose of the corrective action plan shall be to remediate or eliminate each of the criteria set forth in subsection (b) below that caused the site to be classified as "High Priority."

b) The owner or operator of a site certified as "High Priority" by a Licensed Professional Engineer and approved as such by the Agency or by operation of law or reclassified as "High Priority" by the Agency pursuant to Section 732.403(g) shall develop a corrective action plan based on site conditions and designed to achieve the following as applicable to the site:

1) Provide that, after complete performance of the corrective action plan, applicable indicator contaminant objectives are not exceeded at the property boundary line or 200 feet from the UST system, whichever is less, as a result of the underground storage tank release for any indicator contaminant identified in the groundwater investigation. If off-site sampling is included within an approved corrective action plan and if an adjoining property owner will not allow the owner and operator access to his or her property so as to ascertain information sufficient to satisfy this requirement, adequate documentation of the owner and operators' efforts to gain access to the property shall satisfy this subsection;

2) Provide that, after complete performance of the corrective action plan, Class III special resource groundwater quality standards for Class III special resource groundwater within 200 feet of the UST system are not exceeded as a result of the underground storage tank release for any indicator contaminant identified in the groundwater investigation;

3) Remediate threats due to the presence or migration, through natural or manmade pathways, of petroleum in concentrations sufficient to harm human health or human safety or to cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces ~~or to otherwise damage property~~;

4) Remediate threats to potable water supplies; and

5) Remediate threats to bodies of surface water.

c) ~~Groundwater and soil remediation objectives shall be determined in accordance with Section 732.408 of this Part.~~ In developing the corrective action plan, if the Licensed Professional Engineer selects soil or groundwater remediation, or both, to satisfy any of the criteria set forth in subsection (b) above, remediation objectives shall be determined in accordance with Section 732.408 of this Part. Groundwater monitoring wells shall satisfy the requirements of

Sections 732.307(j)(3) and 732.307(j)(4) of this Part.

d) In developing the corrective action plan, additional investigation activities beyond those required for the site evaluation and classification may be necessary to determine the full extent of soil or groundwater contamination and of threats to human health or the environment. Such activities may include, but are not limited to, additional soil borings with sampling and analysis or additional groundwater monitoring wells with sampling and analysis. Such activities as are technically necessary and consistent with generally accepted engineering practices may be performed without submitting a work plan or receiving prior approval from the Agency, and associated costs may be included in a "High Priority" corrective action budget plan. A description of these activities and the results shall be included as a part of the corrective action plan.

e) The owner or operator shall submit the corrective action plan to the Agency for review in accordance with Section 732.405 of this Part. If the owner or operator intends to seek payment from the Fund, a corrective action plan budget also shall be submitted to the Agency for review. The corrective action plan budget shall include ~~an itemized accounting~~ a line item estimate of all costs associated with the implementation and completion of the corrective action plan. The corrective action plan and corrective action plan budget shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.

f) Within 30 days of completing the performance of the "High Priority " corrective action plan, the owner or operator shall submit to the Agency a corrective action completion report in accordance with Section 732.409 of this Part.

g) Within 120 days, ~~T~~the Agency shall review the corrective action completion report in accordance with the procedures set forth in Subpart E of this Part and shall issue a "No Further Remediation" letter to the owner or operator in accordance with Section 732.410 upon approval by the Agency or by operation of law.

Section 732.405 Plan Submittal and Review

a) Prior to conducting any corrective action activities pursuant to this Subpart D, the owner or operator shall submit to the Agency a "Low Priority" groundwater monitoring plan or a "High Priority" corrective action plan satisfying the minimum requirements for such activities as set forth in Sections 732.403 or 732.404 of this Part, as applicable. Groundwater monitoring and corrective action plans shall be submitted on forms prescribed by the Agency

or in a similar format containing the same information.

b) In addition to the plans required in subsection (a) above and prior to conducting any groundwater monitoring or corrective action activities, any owner or operator intending to seek payment from the Fund shall submit to the Agency a groundwater monitoring or corrective action budget plan. Such budget plans shall include, but not be limited to, a copy of the eligibility and deductibility determination of the OSFM and ~~an itemized accounting~~ a line item estimate of all costs associated with the development, implementation and completion of the applicable activities. Formulation of budget plans should be consistent with the eligible and ineligible costs listed at Sections 732.605 and 732.606 of this Part. Groundwater monitoring and corrective action budget plans shall be submitted on forms prescribed by the Agency or in a similar format containing the same information.

c) The Agency shall have the authority to review and approve, reject or require modification of any plan submitted pursuant to this Section in accordance with the procedures contained in Subpart E of this Part.

d) Notwithstanding subsections (a) and (b) above and except as provided at Section 732.407 of this Part, an owner or operator may proceed to conduct "Low Priority" groundwater monitoring or "High Priority" corrective action activities in accordance with this Subpart D prior to the submittal or approval of an otherwise required groundwater monitoring plan or budget or corrective action plan or budget. However, any such plan shall be submitted to the Agency for review and approval, rejection or modification in accordance with the procedures contained in Subpart E of this Part prior to payment or reimbursement for any related costs or the issuance of a "No Further Remediation" letter.

BOARD NOTE: Owners or operators proceeding under subsection (d) of this section are advised that they may not be entitled to full payment or reimbursement. See Subpart F of this Part.

e) If, following approval of any groundwater monitoring plan, corrective action plan or associated budget plan, an owner or operator determines that revised procedures or cost estimates are necessary in order to comply with the minimum required activities for the site, the owner or operator shall submit, as applicable, an amended groundwater monitoring plan, corrective action plan or associated budget plan for review by the Agency. The Agency shall review and approve, reject or require modifications of the amended plan in accordance with the procedures contained in Subpart E of this Part.

Section 732.406 Deferred Corrective Action; Priority List

a) NOTWITHSTANDING ANY OTHER PROVISION OR RULE OF LAW WITH THE EXCEPTION OF THE early action requirements of Subpart B of this Part, THE OWNER OR OPERATOR WHO HAS SUBMITTED ANY budget PLAN PURSUANT TO this Part AND WHO IS ELIGIBLE FOR PAYMENT FROM THE UNDERGROUND STORAGE TANK FUND SHALL BE ELIGIBLE TO ELECT TO COMMENCE CORRECTIVE ACTION UPON THE AVAILABILITY OF FUNDS. SUCH ELECTION SHALL BE MADE IN WRITING TO THE AGENCY WITHIN 30 DAYS OF RECEIPT OF AGENCY APPROVAL OF A budget PLAN. THE AGENCY SHALL PROVIDE NOTICE TO THE OWNER OR OPERATOR AT SUCH TIME AS IT APPROVES THE budget PLAN WHETHER SUFFICIENT RESOURCES ARE AVAILABLE IN ORDER TO IMMEDIATELY COMMENCE THE APPROVED MEASURES. (Section 57.8(b) of the Act)

1) Approvals of budget plans shall be pursuant to Agency review or by operation of law in accordance with Subpart E of this Part.

2) The Agency shall monitor the availability of funds to determine whether sufficient resources exist to provide payment in an amount equal to the total of the ~~for~~-approved budget plans and shall provide notice to owners or operators of the availability of funds in accordance with Section 732.503(h). Funds shall not be deemed available for owners or operators electing to defer corrective action so long as there are owners or operators on the priority list established pursuant to Section 732.603(d) of this Part awaiting forwarding of vouchers to the Office of the State Comptroller.

3) Upon receiving written notification that an owner or operator elects to defer corrective action until funds are available, the Agency shall place the site on a priority list for notification of availability of sufficient funds. Sites shall enter the priority list and move up based solely on the date the Agency receives the written notification of deferral, with the earliest dates having the highest priority. The Agency's record of the date of receipt shall be deemed conclusive, unless a contrary date is proven by a dated, signed receipt from registered or certified mail.

4) As funds become available, the Agency shall encumber funds for each site in the order of priority in an amount equal to the total of the approved budget plan for which deferral was sought. The Agency shall then notify owners or operators that sufficient funds have been allocated for the owner or operator's site. After such notification the owner or operator shall commence corrective action.

5) Authorization of payment of encumbered funds for deferred corrective

action activities shall be approved in accordance with the requirements of Subpart F of this Part.

6) The priority list for notification of availability of sufficient funds shall be the same as that used for deferred site classification pursuant to Section 732.306 with both types of deferrals entering the list and moving up solely on the basis of the date the Agency receives written notice of the deferral.

b) SHOULD THE AGENCY OR OWNER OR OPERATOR DETERMINE A THREAT TO HUMAN HEALTH AND/OR THE ENVIRONMENT REQUIRES IMMEDIATE ACTION, INCLUDING THE EXISTENCE OF PETROLEUM OR VAPORS WHICH THREATEN HUMAN HEALTH OR HUMAN SAFETY OR MAY CAUSE EXPLOSIONS IN BASEMENTS, CRAWL SPACES, UTILITY CONDUITS, STORM OR SANITARY SEWERS, VAULTS OR OTHER CONFINED SPACES, ~~OR MAY OTHERWISE CAUSE ADDITIONAL PROPERTY DAMAGE,~~ THE ELECTION TO COMMENCE CORRECTIVE ACTION UPON THE AVAILABILITY OF FUNDS SHALL NOT BE AVAILABLE. THE AGENCY SHALL NOTIFY THE OWNER OR OPERATOR BY CERTIFIED MAIL THAT A SITUATION EXISTS THAT WOULD PRECLUDE THE OWNER OR OPERATOR FROM COMMENCING CORRECTIVE ACTION UPON THE AVAILABILITY OF FUNDS. SUCH ACTION BY THE AGENCY SHALL NOT BE SUBJECT TO APPEAL. (Section 57.8(b) of the Act)

c) An owner or operator may withdraw the election to commence corrective action upon the availability of funds at any time. The Agency shall be notified in writing of the withdrawal. Upon such withdrawal, the owner or operator shall proceed with corrective action in accordance with the requirements of this Part.

Section 732.407 Alternative Technologies

a) An owner or operator may choose to use an alternative technology for corrective action in response to a release of petroleum at a "High Priority" site. Corrective action plans proposing the use of alternative technologies shall be submitted to the Agency in accordance with Section 732.405 of this Part. In addition to the requirements for corrective action plans contained in Section 732.404, the owner or operator who seeks approval of an alternative technology shall submit documentation along with the corrective action plan demonstrating that:

1) The proposed alternative technology has a substantial likelihood of

successfully achieving compliance with all applicable regulations and all corrective action remediation objectives necessary to comply with the Act and regulations and to protect human health or the environment;

2) The proposed alternative technology will not adversely affect human health or the environment;

3) The owner or operator will obtain all Agency permits necessary to legally authorize use of the alternative technology;

4) The owner or operator will implement a program to monitor whether the requirements of subsection (a)(1) above have been met; and

5) Within one year from the date of Agency approval the owner or operator will provide to the Agency monitoring program results establishing whether the proposed alternative technology will successfully achieve compliance with the requirements of subsection (a)(1) above and any other applicable regulations. The Agency may require interim reports as necessary to track the progress of the alternative technology. The Agency will specify when those interim reports shall be submitted to the Agency in the approval.

b) An owner or operator intending to seek payment or reimbursement for costs associated with the use of an alternative technology shall submit a corresponding budget plan in accordance with Section 732.405 of this Part. In addition to the requirements for corrective action budget plans at Section 732.404 of this Part, the budget plan must demonstrate that the cost of the alternative technology will not exceed the cost of conventional technology.

c) If an owner or operator has received approval of a corrective action plan and associated budget plan from the Agency or by operation of law prior to implementing the plan and the alternative technology fails to satisfy the requirements of subsections (a)(1) or (a)(2) above, such failure shall not make the owner or operator ineligible to seek payment or reimbursement for the activities associated with the subsequent performance of a corrective action using conventional technology. However, in no case shall the total payment or reimbursement for the site exceed the statutory maximums. Owners or operators implementing alternative technologies without obtaining pre-approval shall be ineligible to seek payment or reimbursement for the subsequent performance of a corrective action using conventional technology.

Section 732.408 ~~Corrective Action Remediation Objectives~~ Risk Based Remediation Objectives

a) ~~For owners or operators conducting "High Priority" corrective action or corrective action pursuant to Sections 732.300(b) or 732.400(b) of this Part, the remediation objectives for the applicable indicator contaminants identified pursuant to Section 732.310 of this Part shall be the following:~~

For sites requiring "High Priority" corrective action or for which the owner or operator has elected to conduct corrective action pursuant to Sections 732.300(b), 732.400(b), 732.400(c) of this Part, the owner or operator may propose remediation objectives for applicable indicator contaminants based on a site specific assessment of risk. In support of site specific remediation objectives, the owner or operator shall demonstrate to the Agency that the proposed objectives will be protective of human health and the environment.

1) Except as provided in subsection (a)(2) of this Section, the owner or operator may propose site specific remediation objectives for applicable indicator contaminants.

2) For applicable indicator contaminants that have a groundwater quality standard promulgated pursuant to 35 Ill. Adm. Code 620, site specific groundwater remediation objectives may be proposed so as to achieve groundwater quality standards established pursuant to, and using the procedures approved under, 35 Ill. Adm. Code 620.

b) ~~Groundwater remediation objectives shall be the objectives specified in Appendix B for the applicable indicator contaminants, except for mixtures and degradation products as provided in Section 732.310 of this Part.~~

In reviewing a proposal for site specific remediation objectives pursuant to subsection (a)(1) above, the Agency shall evaluate the following factors:

1) The potential for any remaining contaminants to pose a significant threat to human health or the environment;

2) Circumstances related to the practicality of remediation;

3) The management of risk relative to any remaining contamination;

4) Background levels for the applicable indicator contaminants; and

5) Appropriateness of the scientific methodology selected as a basis for the demonstration of protectiveness and correct application of the methodology. Methodologies adopted by a nationally recognized entity such as American Society for Testing and Materials (ASTM), or equivalent methodologies, shall be acceptable for use as a basis for the

demonstration of protectiveness.

c) ~~Soil remediation objectives shall be the objectives specified in Appendix B for the applicable indicator contaminants, except for mixtures and degradation products as provided in Section 732.310 of this Part.~~

For sites requiring "High Priority" corrective action or for which the owner or operator has elected to conduct corrective action pursuant to Sections 732.300(b), 732.400(b) or 732.400(c) of this Part, if the owner or operator does not elect to propose remediation objectives pursuant to subsection (a) above, the owner or operator shall use remediation objectives, as applicable, based on Appendix B of this Part. Where indicator contaminants based on mixtures or degradation products have been designated by the Agency pursuant to Section 732.310 of this Part, the Agency shall determine remediation objectives on a site-by-site basis.

Board Note: The remediation objectives contained in Appendix B are not soil or groundwater standards. The remediation objectives contained in Appendix B of this Part are not remediation objectives for purposes of remediation of releases other than LUST releases pursuant to this Part 732.

d) ~~An owner or operator may request that the Agency revise soil remediation objectives based on site specific conditions provided that the owner or operator demonstrates to the Agency that the revised objectives will be protective of human health and the environment. In revising soil remediation objectives, the Agency shall evaluate the following factors:~~

~~1) The potential of any remaining contaminants to pose a significant threat to human health or the environment;~~

~~2) Other site specific circumstances related to the practicality of continuing with remediation; and~~

~~3) The management of risk relative to any remaining contamination.~~

The election to proceed under either subsection (a) or (c) above does not prohibit the owner or operator from exercising the other option at a later time.

Section 732.409 Groundwater Monitoring and Corrective Action Completion Reports

a) Within 30 days of completing the performance of a "Low Priority" groundwater monitoring plan or "High Priority" corrective action plan, the owner or operator shall submit to the Agency a groundwater monitoring completion report or a corrective action completion report.

1) The "Low Priority" groundwater monitoring completion report shall include, but not be limited to, a narrative describing the implementation and completion of all elements of the groundwater monitoring plan and the procedures used for collection and analysis of samples, analytical results in tabular form, actual analytical results, laboratory certification and any other information or documentation relied upon by the Licensed Professional Engineer in reaching the conclusion that the requirements of the Act and regulations have been satisfied and that no further remediation is required at the site.

2) The "High Priority" corrective action completion report shall include, but not be limited to, a narrative and timetable describing the implementation and completion of all elements of the corrective action plan and the procedures used for the collection and analysis of samples, soil boring logs, actual analytical results, laboratory certification, site maps, well logs and any other information or documentation relied upon by the Licensed Professional Engineer in reaching the conclusion that the requirements of the Act and regulations have been satisfied and that no further remediation is required at the site. A "High Priority" corrective action completion report shall demonstrate the following:

   A) Applicable indicator contaminant groundwater objectives are not exceeded at the property boundary line or 200 feet from the UST system, whichever is less, as a result of the release of petroleum for any indicator contaminant identified during the groundwater investigation;

   B) Class III resource groundwater quality standards, for Class III special use resource groundwater within 200 feet of the UST system are not exceeded as a result of the release of petroleum for any indicator contaminant identified during the groundwater investigation;

   C) The release of petroleum does not threaten human health or human safety due to the presence or migration, through natural or manmade pathways, of petroleum in concentration sufficient to harm human health or human safety or to cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces~~, or to otherwise damage property~~;

   D) The release of petroleum does not threaten any surface water body; and

E) The release of petroleum does not threaten any potable water supply.

b) The applicable report shall be submitted on forms prescribed by the Agency or in a similar format containing the same information, shall be signed by the owner or operator, and shall be accompanied by a certification from a Licensed Professional Engineer that the information presented in the applicable report is accurate and complete, that groundwater monitoring or corrective action have been completed in accordance with the requirements of the Act and this Subpart D, and that no further remediation is required at the site.

c) The Agency shall have the authority to review and approve, reject or require modification of any report submitted pursuant to this Section in accordance with the procedures contained in Subpart E of this Part.

Section 732.410 "No Further Remediation" Letters

a) Upon approval by the Agency or by operation of law of a "No Further Action" site classification report, a "Low Priority" groundwater monitoring completion report, or a "High Priority" corrective action completion report, the Agency shall issue to the owner or operator a "no further remediation" letter. The "no further remediation" letter shall have the legal effect prescribed in Section 57.10 of the Act. The "no further remediation" letter shall be denied if the Agency rejects or requires modification of the applicable report.

b) The Agency shall have 120 days from the date of receipt of a complete report to issue a "no further remediation" letter and may include the "no further remediation" letter as part of the notification of approval of the applicable report in accordance with Subpart E of this Part.

c) If an applicable report is approved by operation of law pursuant to Subpart E of this Part and a "no further remediation" letter is not received from the Agency, the legal presumptions prescribed by Section 57.10 of the Act also shall become effective by operation of law.

d) The notice of denial of a "no further remediation" letter by the Agency may be included with the notification of rejection or modification of the applicable report. The reasons for the denial shall be stated in the notification. The denial shall be considered a final determination appealable to the Board within 35 days of the Agency's final action in the manner provided for the review of permit decisions in Section 40 of the Act.

SUBPART E: PLAN AND REPORT SELECTION AND REVIEW PROCEDURES

Section 732.500 General

a) The Agency shall have the authority to review any plan or report, including any amended plan or report, submitted pursuant to this Part. All such reviews shall be subject to the procedures set forth in the Act and this Subpart E.

b) For purposes of this Part 732, "plan" shall mean:

1) Any physical soil classification or groundwater investigation plan or associated budget plan submitted pursuant to Subpart C of this Part;

2) Any groundwater monitoring plan or associated budget plan submitted pursuant to Subpart D of this Part; or

3) Any site-specific corrective action plan or associated budget plan submitted pursuant to Subpart D of this Part; ~~or~~

~~4) Any corrective action plan submitted pursuant to Sections 732.300(b) or 732.400(b) of this Part.~~

c) For purposes of this Part 732, "report" shall mean:

1) Any early action report or free product removal report submitted pursuant to Subpart B of this Part;

2) Any site classification completion report submitted pursuant to Subpart C of this Part;

3) Any annual groundwater monitoring report submitted pursuant to Subpart D of this Part; ~~or~~

4) Any groundwater monitoring completion report submitted pursuant to Subpart D of this Part; or

5) Any corrective action completion report submitted pursuant to Subpart D of this Part or Sections 732.300(b) or 732.400(b) or (c) of this Part.

Section 732.501 Submittal of Plans or Reports

All plans or reports shall be made on forms prescribed by the Agency or in a similar format containing the same information. Plans or reports shall be mailed or delivered to the address designated by the Agency. The Agency's record of the date of receipt shall be deemed conclusive unless a contrary date is proven by a dated, signed receipt from certified or registered mail.

Section 732.502 Completeness Review

a) The Agency ~~may~~ shall review for completeness all plans submitted pursuant to this Part 732. The completeness review shall be sufficient to determine whether all information and documentation required by the Agency form for the particular plan are present. The review shall not be used to determine the technical sufficiency of a particular plan or of the information or documentation submitted along with the plan.

b) The Agency shall have 45 days from the receipt of a plan to finish the completeness review. If the completeness review finds that the plan is complete, the Agency shall so notify the owner or operator in writing and proceed, where appropriate, to approval, rejection or modification of the substantive portions of the plan. If the completeness review finds that the plan is incomplete, the Agency shall notify the owner or operator in writing. The notification shall include an explanation of the specific type of information or documentation that the Agency deems necessary to complete the plan.

1) The Agency may, to the extent consistent with Agency deadlines, provide the owner or operator with a reasonable opportunity to correct deficiencies prior to a final determination on completeness.

2) The Agency shall mail notice of incompleteness by registered or certified mail, post marked with a date stamp and with return receipt requested. The decision shall be deemed to have taken place on the post marked date that such notice is mailed.

3) All time limits for Agency final action on a plan or report shall be calculated from the date the Agency receives a complete plan or report.

c) Any budget plan submitted must be preceded or accompanied by an associated technical plan in order for the budget plan to be deemed complete.

d) The failure of the Agency to notify an owner or operator within 45 days that a plan is either complete or incomplete shall ~~constitute approval of the plan~~ result in the plan being deemed complete by operation of law. Any action by the Agency pursuant to this Section shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for in the review of permit decisions in Section 40 of the Act.

Section 732.503 Full Review of Plans or Reports

a) In addition to the completeness review for plans conducted pursuant to Section 732.502, the Agency may conduct a full review of plans or reports selected in

accordance with the requirements of Section 732.504. A full review may include any or all technical or financial information, or both, relied upon by the owner or operator or Licensed Professional Engineer in developing the plan or report selected for review. The full review also may include the review of any other plans or reports submitted in conjunction with the site.

b) The Agency shall have the authority to approve, reject or require modification of any plan or report that has been given a full review. The Agency shall notify the owner or operator in writing of its final action on any such plan or report. Except as provided in subsections (c) and (d) below, if the Agency fails to notify the owner or operator of its final action on a plan or report within 120 days of the receipt of a ~~complete~~ plan or report, the owner or operator may deem the plan or report approved by operation of law. If the Agency rejects a plan or report or requires modifications, the written notification shall contain the following information, as applicable:

1) An explanation of the specific type of information, if any, that the Agency needs to complete the full review;

2) An explanation of the sections of the Act or regulations that may be violated if the plan or report is approved; and

3) A statement of specific reasons why the cited sections of the Act or regulations may be violated if the plan or report is approved.

c) For "High Priority" corrective action plans submitted by owners or operators not seeking reimbursement from the Fund, the Agency may delay final action on such plans until 120 days after it receives the corrective action completion report required pursuant to Section 732.409 of this Part.

d) An owner or operator may waive the right to a final decision within 120 days of the submittal of a complete plan or report by submitting written notice to the Agency prior to the applicable deadline. Any waiver shall be for a minimum of 60 days.

e) The Agency shall mail notices of final action on plans or reports by registered or certified mail, post marked with a date stamp and with return receipt requested. Final action shall be deemed to have taken place on the post marked date that such notice is mailed.

f) Any action by the Agency to reject or require modification of a plan or report shall be subject to appeal to the Board <u>within 35 days of the Agency's final action</u> in the manner provided for the review of permit decisions in Section 40 of the Act. Any owner or operator may elect to incorporate modifications

required by the Agency and shall do so by submitting a revised plan or report within 30 days of the receipt of the Agency's written notification. If no revised plan or report is submitted to the Agency or no appeal to the Board filed within the specified time frames, the plan or report shall be deemed approved as modified by the Agency.

g) Notification of Selection for Full Review

1) Owners or operators submitting plans shall be notified by the Agency within ~~30~~ 60 days ~~of the date the plan is deemed complete~~ from the date the plan is received whether or not the plan has been selected for full review in accordance with Section 732.504 of this Part. Failure of the Agency to so notify the owner or operator or notification by the Agency that the plan has not been selected for full review shall constitute approval of the plan by operation of law.

2) Owners or operators submitting reports shall be notified by the Agency within ~~30~~ 60 days of the receipt of the report whether or not the report has been selected for full review in accordance with Section 732.504 of this Part. Failure of the Agency to so notify the owner or operator or notification by the Agency that the report has not been selected for full review shall constitute approval of the report by operation of law.

3) Notice shall be sent and the date of notification shall be computed in accordance with subsection (e) above.

h) In accordance with Sections 732.306 and 732.406 of this Part, upon the approval of any budget plan by the Agency or by operation of law, the Agency shall include as part of the final notice to the owner or operator a statement of whether or not the Fund contains sufficient resources in order to immediately commence the approved measures.

Section 732.504 Selection of Plans or Reports for Full Review

a) The Agency shall select for full review a reasonable number of each type of plan or report. The number of plans or reports selected for full review shall be determined by the Agency based on the resources available to the Agency, the potential environmental impact at the site, the financial and technical complexity of the plan or report, and experience with prior reviews. To assure consistency and fairness in the selection process, the Agency shall follow a selection process that has the following goals:

1) A full technical and financial review of every "High Priority" corrective action plan, associated budget plan, and completion report

submitted pursuant to Subpart D of this Part;

2) A full technical and financial review of every corrective action plan, associated budget plan, and completion report submitted pursuant to Sections 732.300(b) or 732.400(b) of this Part;

3) A full technical review of approximately 20% of the site classification reports submitted pursuant to Subpart C of this Part;

4) Site Classification Plans

   i) A full technical review of any site classification plan (including physical soil classification and groundwater investigation plans) for which the associated site classification report was selected for full review or that has an associated budget plan exceeding the typical cost for such plans as determined by the Agency;

   ii) A full financial review of any site classification budget plan exceeding the typical cost for such plans as determined by the Agency;

5) "Low Priority" Groundwater Monitoring Plans

   i) A full technical review of any "Low Priority" groundwater monitoring plan that has an associated budget plan exceeding the typical cost for such plans as determined by the Agency;

   ii) A full financial review of any "Low Priority" groundwater monitoring budget plan exceeding the typical cost for such plans as determined by the Agency;

6) A full technical review of any "Low Priority" annual groundwater sampling and analysis report or any groundwater monitoring completion report submitted pursuant to Subpart D of this Part;

7) A full technical review of any 20-day report, 45-day report, or free product report submitted pursuant to Subpart B of this Part in conjunction with the review of another plan or report selected in accordance with this Section.

b) The Agency may conduct a full review of any plan or report not selected in accordance with the provisions of this Section if the Agency has reason to believe that such review is necessary in conjunction with the review of another plan or report selected for that site.

c) Notwithstanding any other limitations on reviews, the Agency may conduct a full technical review on any plan or report identified in this Section that concerns a site for which an investigation has been or may be initiated pursuant to Section 732.105 of this Part.

d) Agency decisions on whether or not to select a plan or report for full review shall not be subject to appeal.

Section 732.505 Standards of Review for Plans and Reports

a) A full technical review shall consist of a detailed review of the steps proposed or completed to accomplish the goals of the plan and to achieve compliance with the Act and regulations. Items to be reviewed, if applicable, shall include, but not be limited to, number and placement of wells and borings, number and types of samples and analysis, results of sample analysis, and protocols to be followed in making determinations. The overall goal of the technical review for plans shall be to determine if the plan is sufficient to satisfy the requirements of the Act and regulations and has been prepared in accordance with generally accepted engineering practices. The overall goal of the technical review for reports shall be to determine if the plan has been fully implemented in accordance with generally accepted engineering practices, if the conclusions are consistent with the information obtained while implementing the plan, and if the requirements of the Act and regulations have been satisfied.

b) If the Licensed Professional Engineer certifies that there is no evidence that, through natural or manmade pathways, migration of petroleum or vapors threaten human health or human safety or may cause explosions in basements, crawl spaces, utility conduits, storm or sanitary sewers, vaults or other confined spaces, ~~or may other wise cause property damage,~~ the Licensed Professional Engineer's certification to that effect shall be presumed correct unless the Agency's review reveals objective evidence to the contrary.

c) A full financial review shall consist of a detailed review of the costs associated with each element necessary to accomplish the goals of the plan as required pursuant to the Act and regulations. Items to be reviewed shall include, but not be limited to, costs associated with any materials, activities or services that are included in the budget plan. The overall goal of the financial review shall be to assure that costs associated with materials, activities and services shall be reasonable, shall be consistent with the associated technical plan, shall be incurred in the performance of corrective action activities, and shall not be used for corrective action activities in excess of those necessary to meet the minimum requirements of the Act and regulations.

SUBPART F: PAYMENT OR REIMBURSEMENT

Section 732.600 General

The Agency shall have the authority to review any application for payment or reimbursement and to authorize payment or reimbursement from the Fund or such other funds as the legislature directs for corrective action activities conducted pursuant to the Act and this Part 732. For purposes of this Part and unless otherwise provided, the use of the word "payment" shall include reimbursement. The submittal and review of applications for payment and the authorization for payment shall be in accordance with the procedures set forth in the Act and this Subpart F.

Section 732.601 Applications for Payment

a) An owner or operator seeking payment from the Fund shall submit to the Agency an application for payment on forms prescribed by the Agency or in a similar format containing the same information. The owner or operator may submit an application for partial payment or final payment for materials, activities or services contained in an approved budget plan. An application for payment also may be submitted for materials, activities or services for early action conducted pursuant to Subpart B of this Part and for which no budget plan is required.

b) A complete application for payment shall consist of the following elements:

1) A certification from a Licensed Professional Engineer acknowledged by the owner or operator that the work performed has been in accordance with a technical plan approved by the Agency or by operation of law or, for early action activities, in accordance with Subpart B;

2) A statement of the amount approved in the corresponding budget plan and the amount actually sought for payment along with a certified statement by the owner or operator that the amount so sought has been expended in conformance with the elements of a budget plan approved by the Agency or by operation of law;

3) A copy of the OSFM eligibility and deductibility determination;

4) Proof that approval of the payment requested will not exceed the limitations set forth in the Act and Section 732.604 of this Part;

5) A federal taxpayer identification number and legal status disclosure certification;

6) A Private Insurance Coverage form; and

7) A Minority/Women's Business Usage form.

c) Applications for payment shall be mailed or delivered to the address designated by the Agency. The Agency's record of the date of receipt shall be deemed conclusive unless a contrary date is proven by a dated, signed receipt from certified or registered mail.

d) Applications for partial or final payment may be submitted no more frequently than once every 90 days.

e) Except for applications for payment for costs of early action conducted pursuant to Subpart B of this Part, in no case shall the Agency review an application for payment unless there is an approved budget plan on file corresponding to the application for payment.

f) In no case shall the Agency authorize payment to an owner or operator in an amount greater than the amount approved by the Agency or by operation of law in a corresponding budget plan. Revised cost estimates or increased costs resulting from revised procedures must be submitted to the Agency for review in accordance with Subpart E of this Part using amended budget plans in accordance with Sections 732.305(e) or 732.405(e) of this Part.

Section 732.602 Review of Applications for Payment

a) The Agency shall conduct a review of any application for payment submitted pursuant to this Part 732. Each application for payment shall be reviewed to determine whether the application contains all of the elements and supporting documentation required by Section 732.601(b) of this Part and whether the amounts sought for payment have been certified in accordance with Section 732.601(b)(2) of this Part as equal to or less than the amounts approved in the corresponding budget plan. Any action by the Agency pursuant to this subsection shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for the review of permit decisions in Section 40 of the Act.

b) The Agency may conduct a full review of any application for payment:

1) If the amounts sought for payment exceed the amounts approved in the corresponding budget plan;

2) ~~To determine whether an application for payment filed pursuant to Section 732.601 of this Part is fraudulent~~ If the Agency has reason to

believe that the application for payment is fraudulent; or

3) If the application for payment includes costs for early action activities conducted pursuant to Subpart B of this Part and either of the following circumstances exist:

A) The application for payment is solely for early action costs that have not been approved as part of a prior budget plan; or

B) The application for payment includes early action costs that have not been approved as part of a prior budget plan, except that only the portion of the application for the unapproved early action costs may be given a full review.

c) When conducting a full review of any application for payment, the Agency may require the owner or operator to submit ~~documentation, receipts and invoices~~ a full accounting supporting all claims as provided in subsection (d) below.

d) A full review of an application for payment shall be sufficient to determine which line items contained in the application for payment have caused the application for payment to exceed the corresponding approved budget plan pursuant to subsection (b)(1) above, which line items, if any, are ineligible for payment pursuant to subsections (b)(2) or (b)(3) above, and whether there is sufficient documentation to demonstrate that line items have been completed in accordance with a plan approved by the Agency or by operation of law. A full review may include review of any or all elements and supporting documentation relied upon by the owner or operator in developing the application for payment, including but not limited to a review of invoices or receipts supporting all claims. The full review also may include the review of any plans or reports previously submitted for the site to ensure that the application for payment is consistent with work proposed and actually performed in conjunction with the site.

e) Following a review, the Agency shall have the authority to approve, deny or require modification of applications for payment or portions thereof. The Agency shall notify the owner or operator in writing of its final action on any such application for payment. Except as provided in subsection (f) below, if the Agency fails to notify the owner or operator of its final action on an application for payment within 120 days of the receipt of a complete application for payment, the owner or operator may deem the application for payment approved by operation of law. If the Agency denies payment for an application for payment or for a portion thereof or requires modification, the written notification shall contain the following information, as applicable:

1) An explanation of the specific type of information, if any, that the Agency needs to complete the full review;

2) An explanation of the sections of the Act or regulations that may be violated if the application for payment is approved; and

3) A statement of specific reasons why the cited sections of the Act or regulations may be violated if the application for payment is approved.

f) An owner or operator may waive the right to a final decision within 120 days of the submittal of a complete application for payment by submitting written notice to the Agency prior to the applicable deadline. Any waiver shall be for a minimum of 30 days.

g) The Agency shall mail notices of final action on applications for payment by registered or certified mail, post marked with a date stamp and with return receipt requested. Final action shall be deemed to have taken place on the post marked date that such notice is mailed.

h) Any action by the Agency to deny payment for an application for payment or portion thereof or to require modification shall be subject to appeal to the Board within 35 days of the Agency's final action in the manner provided for the review of permit decisions in Section 40 of the Act. Any owner or operator may elect to incorporate modifications required by the Agency and shall do so by submitting a revised application for payment within 30 days of the receipt of the Agency's written notification. If no revised application for payment is submitted to the Agency or no appeal to the Board filed within the specified timeframes, the application for payment shall be deemed approved as modified by the Agency and payment shall be authorized in the amount approved.

Section 732.603 Authorization for Payment; Priority List

a) Within 60 days of notification of an owner or operator that the application for payment or a portion thereof has been approved by the Agency or by operation of law, the Agency shall forward to the Office of the State Comptroller in accordance with subsections (c) or (d) below a voucher in the amount approved. If the owner or operator has filed an appeal with the Board of the Agency's final decision on an application for payment, the Agency shall have 60 days from the final resolution of the appeal to forward to the Office of the State Comptroller a voucher in the amount ordered as a result of the appeal. Notwithstanding the time limits imposed by this Section, the Agency shall not forward vouchers to the Office of the State Comptroller until sufficient funds are available to issue payment.

b) Any deductible, as determined by the OSFM, shall be subtracted from any amount approved for payment by the Agency or by operation of law.

c) For owners or operators who have deferred site classification or corrective action in accordance with Sections 732.306 or 732.406 of this Part, payment shall be authorized from funds encumbered pursuant to Sections 732. 306(a)(4) or 732.406(a)(4) of this Part upon approval of the application for payment by the Agency or by operation of law.

d) For owners or operators not electing to defer site classification or corrective action in accordance with Sections 732.306 or 732.406 of this Part, the Agency shall form a priority list for the issuance of vouchers pursuant to subsection (a) above.

1) All such applications for payment shall be assigned a date that is the date upon which the complete application for partial or final payment was received by the Agency. This date shall determine the owner or operator's priority for payment in accordance with subsection (d)(2) below, with the earliest dates receiving the highest priority.

2) Once payment is approved by the Agency or by operation of law or ordered by the Board or courts, the application for payment shall be assigned priority in accordance with subsection (d)(1) above. The assigned date shall be the only factor determining the priority for payment for those applications approved for payment.

Section 732.604 Limitations on Total Payments

a) Limitations per occurrence:

1) THE AGENCY SHALL NOT APPROVE ANY PAYMENT FROM THE FUND TO PAY AN OWNER OR OPERATOR FOR COSTS OF CORRECTIVE ACTION INCURRED BY SUCH OWNER OR OPERATOR IN AN AMOUNT IN EXCESS OF 1,000,000 PER OCCURRENCE. (Section 57.8(g) of the Act)

2) THE AGENCY SHALL NOT APPROVE ANY PAYMENT FROM THE FUND TO PAY AN OWNER OR OPERATOR FOR COSTS OF INDEMNIFICATION OF SUCH OWNER OR OPERATOR IN AN AMOUNT IN EXCESS OF 1,000,000 PER OCCURRENCE. (Section 57.8(g) of the Act)

b) Aggregate limitations:

1) NOTWITHSTANDING ANY OTHER PROVISION OF THIS Part 732, THE AGENCY SHALL NOT APPROVE PAYMENT TO AN OWNER OR OPERATOR FROM THE FUND FOR COSTS OF CORRECTIVE ACTION OR INDEMNIFICATION INCURRED DURING A CALENDAR YEAR IN EXCESS OF THE FOLLOWING AMOUNTS BASED ON THE NUMBER OF PETROLEUM UNDERGROUND STORAGE TANKS OWNED OR OPERATED BY SUCH OWNER OR OPERATOR IN ILLINOIS:

AMOUNT	NUMBER OF TANKS
$1,200,000	FEWER THAN 101
$2,000,000	101 OR MORE

2) COSTS INCURRED IN EXCESS OF THE AGGREGATE AMOUNTS SET FORTH IN subsection (b)(1) above SHALL NOT BE ELIGIBLE FOR PAYMENT IN SUBSEQUENT YEARS. (Section 57.8(d) of the Act)

c) FOR PURPOSES OF ~~THIS Section~~ subsection (b) of this Section, REQUESTS SUBMITTED BY ANY OF THE AGENCIES, DEPARTMENTS, BOARDS, COMMITTEES OR COMMISSIONS OF THE STATE OF ILLINOIS SHALL BE ACTED UPON AS CLAIMS FROM A SINGLE OWNER OR OPERATOR. (Section 57.8(d) of the Act)

d) FOR PURPOSES OF ~~THIS Section~~ subsection (b) of this section, OWNER OR OPERATOR INCLUDES (i) ANY SUBSIDIARY, PARENT, OR JOINT STOCK COMPANY OF THE OWNER OR OPERATOR AND (ii) ANY COMPANY OWNED BY ANY PARENT, SUBSIDIARY, OR JOINT STOCK COMPANY OF THE OWNER OR OPERATOR. (Section 57.8(d) of the Act)

Section 732.605 Eligible Costs

a) Types of costs that may be eligible for payment from the Fund include those for corrective action activities and for materials or services provided or performed in conjunction with corrective action activities. Such activities and services may include but are not limited to:

1) Early action activities conducted pursuant to Subpart B of this Part;

2) Engineering oversight services;

3) Remedial investigation and design;

4) Feasibility studies;

5) Laboratory services necessary to determine site classification and whether the established corrective action objectives have been met;

6) Installation and operation of groundwater investigation and groundwater monitoring wells;

7) The removal, treatment, transportation and disposal of soil contaminated by petroleum at levels in excess of the established corrective action objectives;

8) The removal, treatment, transportation and disposal of water contaminated by petroleum at levels in excess of the established corrective action objectives;

9) The placement of clean backfill to grade to replace excavated soil contaminated by petroleum at levels in excess of the established corrective action objectives;

10) Groundwater corrective action systems;

11) Alternative technology;

12) Recovery of free phase petroleum from groundwater;

13) The removal and disposal of any UST if a release of petroleum from the UST was identified and IEMA was notified prior to its removal;

14) Costs incurred as a result of a release of petroleum because of vandalism, theft or fraudulent activity by a party other than an owner, operator or their agent;

15) Engineering costs associated with seeking payment or reimbursement from the Fund including, but not limited to, completion of an application for partial or final payment;

16) Costs associated with obtaining an Eligibility and Deductibility Determination from the OSFM;

17) Costs for destruction and replacement of concrete, asphalt and paving to the extent necessary to conduct corrective action and if the destruction and replacement has been certified as necessary to the performance of corrective action by a Licensed Professional Engineer;

18) The destruction or dismantling and reassembly of above grade structures in response to a release of petroleum if such activity has been certified as necessary to the performance of corrective action by a Licensed Professional Engineer. For purposes of this subsection, destruction, dismantling or reassembly of above grade structures do not include costs associated with replacement of pumps, pump islands, buildings, wiring, lighting, bumpers, posts or canopies; and

19) Preparation of site classification plans (including physical soil classification and groundwater investigation plans) and associated budget plans, site classification reports, groundwater monitoring plans and associated budget plans, groundwater monitoring completion reports, "High Priority" corrective action plans and associated budget plans, and "High Priority" corrective action completion reports.

b) An owner or operator may submit a budget plan or application for partial or final payment that includes an itemized accounting of costs associated with activities, materials or services not identified in subsection (a) above if the owner or operator submits detailed information demonstrating that the activities, materials or services not identified in subsection (a) above are essential to the completion of the minimum corrective action requirements of the Act and this Part 732.

Section 732.606 Ineligible Costs

Costs ineligible for payment from the Fund include but are not limited to:

a) Costs for the removal of more than four feet of fill material from the outside dimensions of the UST during early action activities conducted pursuant to Section 732.202(f);

b) Costs or losses resulting from business interruption;

c) Costs incurred as a result of vandalism, theft or fraudulent activity by the owner or operator or their agent, including the creation of spills, leaks or releases;

d) Costs associated with the replacement of above grade structures such as pumps, pump islands, buildings, wiring, lighting, bumpers, posts or canopies, including but not limited to those structures destroyed or damaged during corrective action activities;

e) COSTS OF CORRECTIVE ACTION OR INDEMNIFICATION INCURRED BY AN OWNER OR OPERATOR PRIOR TO JULY 28, 1989 (Section

57.8(j) of the Act);

f) Costs associated with the procurement of a generator identification number;

g) LEGAL DEFENSE COSTS INCLUDING LEGAL COSTS FOR SEEKING PAYMENT UNDER these regulations UNLESS THE OWNER OR OPERATOR PREVAILS BEFORE THE BOARD and the Board authorizes payment of legal fees (Section 57.8(l) of the Act);

h) Purchase costs of non-expendable materials, supplies, equipment or tools, except that a reasonable rate may be charged for the usage of such materials, supplies, equipment or tools;

i) Costs associated with activities that violate any provision of the Act or Board or Agency regulations;

j) Costs associated with investigative action, preventive action, corrective action, or enforcement action taken by the State of Illinois if the owner or operator failed, without sufficient cause, to respond to a release or substantial threat of a release upon, or in accordance with, a notice issued by the Agency pursuant to Section 732.105 of this Part and Section 57.12 of the Act;

k) Costs for removal, disposal or abandonment of an UST if the tank was removed or abandoned, or permitted for removal or abandonment, by the OSFM before the owner or operator provided notice to IEMA of a release of petroleum;

l) Costs associated with the installation of new USTs and the repair of existing USTs;

m) Costs exceeding those contained in a budget plan or amended budget plan approved by the Agency or by operation of law;

n) Costs of corrective action or indemnification incurred before providing notification of the release of petroleum to IEMA in accordance with Section 732.202 of this Part;

o) Costs for corrective action activities and associated materials or services exceeding the minimum requirements necessary to comply with the Act;

p) Costs associated with improperly installed sampling or monitoring wells;

q) Costs associated with improperly collected, transported or analyzed laboratory samples;

r) Costs associated with the analysis of laboratory samples for constituents other than applicable indicator contaminants or groundwater objectives;

s) Costs for any corrective activities, services or materials unless accompanied by a letter from OSFM confirming eligibility and deductibility in accordance with Section 57.9 of the Act;

t) Interest or finance costs charged as direct costs;

u) Insurance costs charged as direct costs;

v) Indirect corrective action costs for personnel, materials, service or equipment charged as direct costs;

w) Costs associated with the compaction and density testing of backfill material;

x) Costs associated with sites that have not reported a release to IEMA or are not required to report a release to IEMA;

y) Costs related to activities, materials or services not necessary to stop, minimize, eliminate, or clean up a release of petroleum or its effects in accordance with the minimum requirements of the Act and regulations;

z) Costs incurred after completion of early action activities in accordance with Subpart B by owners or operators choosing, pursuant to Section 732.300(b) of this Part, to conduct ~~full remediation~~ remediation sufficient to satisfy the remediation objectives ~~pursuant to Section 732.300(b) of this Part;~~

aa) Costs incurred after completion of site classification activities in accordance with Subpart C by owners or operators choosing,pursuant to Section 732.400(b) or (c) of this Part, to conduct ~~full remediation~~ remediation sufficient to satisfy the remediation objectives ~~pursuant to Section 732.400(b) of this Part~~;

bb) Costs of alternative technology that exceed the costs of conventional technology; and

cc) Costs for investigative activities and related services or materials for developing a "High Priority" corrective action plan that are unnecessary or inconsistent with generally accepted engineering practices or unreasonable costs for justifiable activities, materials or services.

Section 732.607 Payment for Handling Charges

HANDLING CHARGES ARE ELIGIBLE FOR PAYMENT ONLY IF THEY ARE EQUAL TO OR LESS THAN THE AMOUNT DETERMINED BY THE FOLLOWING TABLE (Section 57.8(g) of the Act):

SUBCONTRACT OR FIELD PURCHASE COST:	ELIGIBLE HANDLING CHARGES AS A PERCENTAGE OF COST:
$0 - $5,000	12%
$5,001 - $15,000	$600 PLUS 10% OF AMOUNT OVER $5,000
$15,001 - $50,000	$1,600 PLUS 8% OF AMOUNT OVER $15,000
$50,001 - $100,000	$4,400 PLUS 5% OF AMOUNT OVER $50,000
$100,000 - $1,000,000	$6,900 PLUS 2% OF AMOUNT OVER $100,000

Section 732.608 Apportionment of Costs

a) The Agency may apportion payment of costs if:

~~a)~~ 1) THE OWNER OR OPERATOR WAS DEEMED ELIGIBLE TO ACCESS THE FUND FOR PAYMENT OF CORRECTIVE ACTION COSTS FOR SOME, BUT NOT ALL, OF THE UNDERGROUND STORAGE TANKS AT THE SITE; AND

~~b)~~ 2) THE OWNER OR OPERATOR FAILED TO JUSTIFY ALL COSTS ATTRIBUTABLE TO EACH UNDERGROUND STORAGE TANK AT THE SITE. (Derived from Section 57.8(m) of the Act)

b) Upon notification from the Agency of an apportionment of costs pursuant to this Section, the owner or operator shall within 30 days notify the Agency whether the apportionment shall be based upon the total number of all the USTs at the site or the total volume of all of the USTs at the site.

Section 732.609 Subrogation of Rights

PAYMENT OF ANY AMOUNT FROM THE FUND FOR CORRECTIVE ACTION OR INDEMNIFICATION SHALL BE SUBJECT TO THE STATE ACQUIRING BY SUBROGATION THE RIGHTS OF ANY OWNER, OPERATOR, OR OTHER PERSON TO RECOVER THE COSTS OF CORRECTIVE ACTION OR INDEMNIFICATION FOR WHICH THE FUND HAS COMPENSATED SUCH OWNER, OPERATOR, OR PERSON FROM THE PERSON RESPONSIBLE OR LIABLE FOR THE RELEASE. (Section 57.8(h) of the Act)

Section 732.610 Indemnification

a) Upon submittal of a request for indemnification for payment of costs incurred

as a result of a release of petroleum from an underground storage tank, the Agency shall review the application for payment in accordance with this Subpart F.

b) If the application for payment of the costs of indemnification is deemed complete and otherwise satisfies all applicable requirements of this Subpart F, the Agency shall forward the request for indemnification to the Office of the Attorney General for review and approval in accordance with Section 57.8(c) of the Act. The owner or operator's request for indemnification shall not be placed on the priority list for payment until the Agency has received the written approval of the Attorney General. The approved application for payment shall then enter the priority list established at Section 732.603(d)(1) of this Part based on the date the complete application was received by the Agency.

Section 732.611 Costs Covered By Insurance, Agreement or Court Order

COSTS OF CORRECTIVE ACTION OR INDEMNIFICATION INCURRED BY AN OWNER OR OPERATOR WHICH HAVE BEEN PAID TO AN OWNER OR OPERATOR UNDER A POLICY OF INSURANCE, ANOTHER WRITTEN AGREEMENT, OR A COURT ORDER ARE NOT ELIGIBLE FOR PAYMENT from the Fund. AN OWNER OR OPERATOR WHO RECEIVES PAYMENT UNDER A POLICY OF INSURANCE, ANOTHER WRITTEN AGREEMENT, OR A COURT ORDER SHALL REIMBURSE THE STATE TO THE EXTENT SUCH PAYMENT COVERS COSTS FOR WHICH PAYMENT WAS RECEIVED FROM THE FUND. (Section 57.8(e) of the Act)

Section 732.612 Determination and Collection of Excess Payments

a) If, for any reason, the Agency determines that an excess payment has been paid from the Fund, the Agency may take steps to collect the excess amount pursuant to subsection (c) below.

1) Upon identifying an excess payment, the Agency shall notify the owner or operator receiving the excess payment by certified or registered mail, return receipt requested.

2) The notification letter shall state the amount of the excess payment and the basis for the Agency's determination that the payment is in error.

3) The Agency's determination of an excess payment shall be subject to appeal to the Board in the manner provided for the review of permit decisions in Section 40 of the Act.

b) An excess payment from the Fund includes, but is not limited to:

1) Payment for a non-corrective action cost;

2) Payment in excess of the limitations on payments set forth in Sections 732.604 and 732.607 of this Part;

3) Payment received through fraudulent means;

4) Payment calculated on the basis of an arithmetic error;

5) Payment calculated by the Agency in reliance on incorrect information.

c) Excess payments may be collected using any of the following procedures:

1) Upon notification of the determination of an excess payment in accordance with subsection (a) above or pursuant to a Board order affirming such determination upon appeal, the Agency may attempt to negotiate a payment schedule with the owner or operator. Nothing in this subsection (c)(1) shall prohibit the Agency from exercising at any time its options at subsections (c)(2) or (c)(3) below or any other collection methods available to the Agency by law.

2) If an owner or operator submits a subsequent claim for payment after previously receiving an excess payment from the Fund, the Agency may deduct the excess payment amount from any subsequently approved payment amount. If the amount subsequently approved is insufficient to recover the entire amount of the excess payment, the Agency may use the procedures in this section or any other collection methods available to the Agency by law to collect the remainder.

3) The Agency may deem an excess payment amount to be a claim or debt owed the Agency, and the Agency may use the Comptroller's Setoff System for collection of the claim or debt in accordance with the "State Comptroller Act." 15 ILCS 405/10.05 (1993).

Section 732.Appendix A Indicator Contaminants

TANK CONTENTS	INDICATOR CONTAMINANTS
GASOLINE leaded[21], unleaded, premium and gasohol	benzene ~~BETX[1]~~- ethylbenzene toluene xylene
MIDDLE DISTILLATE AND HEAVY ENDS aviation turbine fuels[2] jet fuels	benzene ~~BETX[1]~~ ethylbenzene toluene xylene
diesel fuels gas turbine fuel oils heating fuel oils illuminating oils kerosene lubricants liquid asphalt and dust laying oils cable oils crude oil, crude oil fractions petroleum feedstocks petroleum fractions heavy oils transformer oils[3] hydraulic fluids[4] petroleum spirits[5] mineral spirits[5], Stoddard solvents[5] high-flash aromatic naphthas[5] VM&P naphthas[5] moderately volatile hydrocarbon solvents[5] petroleum extender oils[5]	acenaphthene anthracene benzo(a)anthracene benzo(a)pyrene benzo(b)fluoranthene benzo(k)fluoranthene chrysene dibenzo(a,h)anthracene fluoranthene fluorene indeno(1,2,3-c,d)pyrene naphthalene pyrene other non-carc.PNAs(total)[7]
USED OIL	screening sample[6]

~~(1) BETX is the sum of the benzene, ethylbenzene, toluene and total xylene~~ concentrations.

(1)~~(2)~~ lead is also an indicator contaminant

(2)~~(3)~~ the polychlorinated biphenyl parameters listed in Appendix B are also indicator contaminants

(3)~~(4)~~ barium is also an indicator contaminant

(4)~~(5)~~ the volatile, base/neutral and polynuclear aromatic parameters listed in Appendix B

are also indicator contaminants

(5)~~(6)~~ ~~waste~~ used oil indicator contaminants shall be based on the results of a ~~waste~~ used oil soil sample analysis - refer to ~~732.311(g)~~ 732.310(g)

(6)~~(7)~~ acenaphthylene, benzo(g,h,i)perylene and phenanthrene

Section 732.Appendix B Groundwater and Soil Remediation Objectives and Acceptable Detection Limits

Section 732.Appendix B Table 1 Groundwater and Soil Remediation Objectives

Parameters	Objectives		ADLs[1]	
	Soil ~~(mg/l)~~ (mg/kg)	Groundwater ~~(mg/kg)~~ (mg/l)	Soil ~~(mg/l)~~ (mg/kg)	Groundwater
Volatiles				
1. Benzene	~~0.005~~	0.005		
2. Bromoform	~~0.001~~	0.001	~~0.002~~	0.001
3. Carbon tetrachloride	~~0.005~~	0.005		
4. Chlorobenzene	~~0.1~~	0.1		
5. Chloroform	~~0.0002~~	0.0002	~~0.0002~~	0.0002
6. Dichlorobromomethane	~~0.0002~~	0.0002	~~0.0002~~	0.0002
7. 1,2-Dichloroethane	~~0.005~~	0.005		
8. 1,1-Dichloroethene	~~0.007~~	0.007		
9. cis-1,2-Dichloroethene	~~0.07~~	0.07		
10. trans-1,2-Dichloroethene	~~0.01~~	0.01		
11. Dichloromethane	~~0.005~~	0.005		
12. 1,2-Dichloropropane	~~0.005~~	0.005		
13. cis-1,3-Dichloropropene	~~0.001~~	0.001	~~0.005~~	0.001
14. trans-1,3-Dichloropropene	~~0.001~~	0.001	~~0.005~~	0.001
15. Ethylbenzene	~~0.7~~	0.7		
16. Styrene	~~0.1~~	0.1		
17. Tetrachloroethene	~~0.005~~	0.005		
18. Toluene	~~1.0~~	1.0		
19. 1,1,1-Trichloroethane	~~0.2~~	0.2		
20. 1,1,2-Trichloroethane	~~0.005~~	0.005		
21. Trichloroethene	~~0.005~~	0.005		
22. Vinyl chloride	~~0.002~~	0.002		
23. Xylenes (total)	~~10.0~~	10.0		
24. BETX (total)	~~11.705~~	11.705		
Base/Neutrals				
1. Bis(2-chloroethyl)ether	~~0.01~~	0.01	~~0.66~~	0.01
2. Bis(2-ethylhexyl)phathalate	~~0.12~~	0.006	~~0.18~~	0.006
3. 1,2-Dichlorobenzene	~~12.0~~	0.6		
4. 1,4-Dichlorobenzene	~~1.5~~	0.075		
5. Hexachlorobenzene	~~0.01~~	0.0005	~~0.034~~	0.0005
6. Hexachlorocyclopentadiene	~~1.0~~	0.05		
7. N-Nitrosodi-n-propylamine	~~0.01~~	0.01	~~0.66~~	0.01

8.	N-Nitrosodiphenylamine	~~0.01~~	0.01	~~0.66~~	0.01
9.	1,2,4-Trichlorobenzene	~~1.4~~	0.07		
	Polynuclear Aromatics				
1.	Acenaphthene	~~8.4~~	0.42		
2.	Anthracene	~~42.0~~	2.1		
3.	Benzo(a)anthracene	~~0.0026~~	0.00013	~~0.0087~~	0.00013
4.	Benzo(a)pyrene	~~0.004~~	0.0002	~~0.015~~	0.00023
5.	Benzo(b)fluoranthene	~~0.0036~~	0.00018	~~0.012~~	0.00018
6.	Benzo(k)fluoranthene	~~0.0034~~	0.00017	~~0.011~~	0.00017
7.	Chrysene	~~0.003~~	0.0015	~~0.1~~	0.0015
8.	Dibenzo(a,h)anthracene	~~0.006~~	0.0003	~~0.02~~	0.0003
9.	Fluoranthene	~~5.6~~	0.28		
10.	Fluorene	~~5.6~~	0.28		
11.	Indeno(1,2,3-c,d)pyrene	~~0.0086~~	0.00043	~~0.029~~	0.00043
12.	Naphthalene	~~0.025~~	0.025		
13.	Pyrene	~~4.2~~	0.21		
14.	other				
	Non-Carcinogenic PNAs (total)	~~4.2~~	0.21		
	Acenaphthylene				
	Benzo(g,h,i)perylene				
	Phenanthrene				
	Metals[2]				
1.	Arsenic	0.05	0.05		
2.	Barium	2.0	2.0		
3.	Cadmium	0.005	0.005		
4.	Chromium (total)	0.1	0.1		
5.	Lead	0.0075	0.0075		
6.	Mercury	0.002	0.002		
7.	Selenium	0.05	0.05		
	Acids				
1.	Pentachlorophenol	~~0.02~~	0.001	~~2.4~~	0.001
2.	Phenol (total)	~~0.1~~	0.1		
3.	2,4,6-Trichlorophenol	~~0.128~~	0.0064	~~0.43~~	0.0064
	Pesticides				
1.	Aldrin	~~0.0008~~	0.00004	~~0.003~~	0.00004
2.	alpha-BHC	~~0.0006~~	0.00003	~~0.002~~	0.00003
3.	Chlordane	~~0.04~~	0.002		
4.	4,4'-DDE	~~0.0008~~	0.00004	~~0.0027~~	0.00004

5. 4,4'-DDD	~~0.0022~~	0.00011	~~0.0074~~	0.00011
6. 4,4'-DDT	~~0.0024~~	0.00012	~~0.008~~	0.00012
7. Dieldrin	~~0.0004~~	0.00002	~~0.0013~~	0.00002
8. Endrin	~~0.04~~	0.002		
9. Heptachlor	~~0.008~~	0.0004		
10. Heptachlor epoxide	~~0.004~~	0.0002	~~0.056~~	
11. Lindane (gamma-BHC)	~~0.0002~~	0.0002	~~0.0027~~	
12. Toxaphene	~~0.003~~	0.003	~~0.16~~	

Polychlorinated Biphenyls

1. Polychlorinated Biphenyls (as Decachlorobiphenyl)	*	0.0005

* See 40 CFR 761.120, as incorporated by reference at Section 732.104, for USEPA "PCB Spill Cleanup Policy."

1) Acceptable Detection Limit - "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 and "Methods for the Determination of Organic Compounds in Drinking Water," EPA, EMSL, EPA-600/4-88/039, as incorporated by reference at Section 732.104 of this Part, must be used. For parameters where the specified objective is below the ADL, the ADL shall serve as the objective until the USEPA promulgates lower ADLs. When promulgated, the new USEPA ADL or the specified objective, whichever is higher, shall apply. For other parameters the ADL must be below the specified cleanup objective.

2) For soil, based upon the concentration determined by the Method 1311 Toxicity Characteristic Leaching Procedure (TCLP) at 40 CFR 261, Appendix II, as incorporated by reference at Section 732.104 of this Part.

Section 732.Appendix B Table 2 Soil Remediation Methodology: Model Parameter Values

PARAMETER	DEFINITION (UNIT)	MODEL VALUES
S_d	Source width (vertical plane) [cm]	304.8
S_w	Source width (horizontal plane) [cm]	609.6
α_x	Longitudinal dispersivity [cm]	0.1 * x
α_y	Transverse dispersivity [cm]	$\alpha_x/3$
α_z	Vertical dispersivity [cm]	$\alpha_x/20$
U	Specific discharge ($K_s i/\theta_e$) [cm/day]	0.346
K_s	Saturated hydraulic conductivity [cm/d]	86.4
k_s	Sorption coefficient [cm^3-H_2O/g-soil]	Chemical specific
θ_e	Volumetric water content of saturated zone	0.25
i	Groundwater gradient [cm/cm]	0.001
λ	First order degradation constant [day^{-1}]	Chemical specific
x	Distance along the center line from edge of dissolved plume source zone [cm]	152-6096
U_{gw}	Groundwater Darcy Velocity [cm/year]	2500
δ_{gw}	Groundwater mixing zone thickness [cm]	304.8
ρ_s	Soil bulk density [g/cm^3]	1.7
θ_{as}	Volumetric air content in vadose zone soils [cm^3 - air/cm^3 - soil]	0.22
θ_{ws}	Volumetric water content in vadose zone soils [cm^3 - water/cm^3 - soil]	0.12
H	Henry's Law constant [cm^3 - water/cm^3 - soil]	Chemical specific
I	Infiltration rate of water through soil [cm/year]	30
W	Width of source parallel to groundwater flow [cm]	1500

Section 732.Appendix B Table 3 Soil Remediation Methodology: Chemical Specific Parameters

Chemical	Sorption Coefficient (k_s)	Degradation Constant (λ)	Henry's Law Constant (H)	Solubility (mg/l)	Ground water Objective (mg/l)
Benzene	0.38	0.0009	0.22	1750	0.005
Toluene	1.349	0.011	0.26	535	1.0
Ethyl Benzene	0.955	0.003	0.32	152	0.7
Xylene	2.399	0.0019	0.29	130	10.0
Naphthalene	12.88	0.0027	0.049	31.7	0.025
Benzo(a)pyrene	3890.45	0.0007	1.49×10^{-9}	0.0012	0.0002

Section 732.Appendix B Table 4 Soil Remediation Methodology: Objectives

Distance (ft)	Chemical Name					
	Benzene	Toluene	Ethyl Benzene	Xylenes	Naphthalene	Benzo(a) pyrene
	Soil Cleanup Objectives ~~(PPM)~~ (mg/kg)					
5	0.005	1.0	0.7	10.0	0.025	0.019
10	0.005	11.010	0.7	10.0	0.025	0.025
15	0.005	13.943	0.7	10.0	0.025	0.033
20	0.005	13.943	0.7	10.0	0.025	0.045
25	0.005	13.943	1.507	10.0	0.459	0.065
30	0.005	13.943	2.908	10.0	0.991	0.084
35	0.005	13.943	2.908	10.0	2.095	0.084
40	0.005	13.943	2.908	10.0	4.305	0.084
45	0.005	13.943	2.908	10.0	7.366	0.084
50	0.005	13.943	2.908	10.0	7.366	0.084
55	0.005	13.943	2.908	10.0	7.366	0.084
60	0.005	13.943	2.908	10.0	7.366	0.084
65	0.007	13.943	2.908	10.0	7.366	0.084
70	0.010	13.943	2.908	10.0	7.366	0.084
75	0.015	13.943	2.908	10.0	7.366	0.084
80	0.020	13.943	2.908	10.0	7.366	0.084
85	0.028	13.943	2.908	10.0	7.366	0.084
90	0.038	13.943	2.908	10.0	7.366	0.084
95	0.051	13.943	2.908	10.0	7.366	0.005
100	0.069	13.943	2.908	10.0	7.366	0.084

Distance (ft)	Chemical Name					
	Benzene	Toluene	Ethyl Benzene	Xylenes	Naphthalene	Benzo(a) pyrene
	Soil Cleanup Objectives ~~(PPM)~~ (mg/kg)					
105	0.091	13.943	2.908	10.0	7.366	0.084
110	0.120	13.943	2.908	10.0	7.366	0.084
115	0.157	13.943	2.908	10.0	7.366	0.084
120	0.205	13.943	2.908	10.0	7.366	0.084
125	0.265	13.943	2.908	10.0	7.366	0.084
130	0.341	13.943	2.908	10.0	7.366	0.084
135	0.436	13.943	2.908	10.0	7.366	0.084
140	0.555	13.943	2.908	10.0	7.366	0.084
145	0.704	13.943	2.908	10.0	7.366	0.084
150	0.888	13.943	2.908	10.0	7.366	0.084
155	1.115	13.943	2.908	10.0	7.366	0.084
160	1.395	13.943	2.908	10.0	7.366	0.084
165	1.738	13.943	2.908	10.0	7.366	0.084
170	2.157	13.943	2.908	10.0	7.366	0.084
175	2.668	13.943	2.908	10.0	7.366	0.084
180	3.289	13.943	2.908	10.0	7.366	0.084
185	4.042	13.943	2.908	10.0	7.366	0.084
190	4.950	13.943	2.908	10.0	7.366	0.084
195	6.046	13.943	2.908	10.0	7.366	0.084
200	7.362	13.943	2.908	10.0	7.366	0.084

Section 732.Appendix B Illustration 1 Equation For Groundwater Transport

The Board used the following correct ASTM equation for steady state attenuation of chemical concentration obtained from Domenico, P.A., "An Analytical Model for Multidimensional Transport of a Decaying Contaminant Species." *Journal of Hydrology*, Vol. 91, pp:49-58,

$$\frac{C(x)}{C_{source}} = \exp\left[\frac{x}{2\alpha_x}\left(1-\sqrt{\left(1+\frac{4\lambda\alpha_x}{U}\right)}\right)\right]\left[erf\left(\frac{S_w}{4\sqrt{\alpha_y x}}\right)\right]\left[erf\left(\frac{S_d}{4\sqrt{\alpha_z x}}\right)\right]$$

1987, referenced in the ASTM guide:

C = Dissolved hydrocarbon concentration along centerline of dissolved plume [g/cm^3-H_2O]
C_{source} = Dissolved hydrocarbon concentration in dissolved plume source area [g/cm^3-H_2O]
S_d = Source width (vertical plane) [cm]
S_w = Source width (horizontal plane) [cm]
α_x = Longitudinal dispersivity [cm]
α_y = Transverse dispersivity [cm]
α_z = Vertical dispersivity [cm]
$U = K_s i/\theta_s$
K_s = Saturated hydraulic conductivity [cm/d]
k_s = Sorption coefficient
θ_s = Volumetric water content of saturated zone
i = Groundwater gradient [cm/cm]
λ = First order degradation constant
erf($\acute{\eta}$) = Error function evaluated for value of $\acute{\eta}$
x = Distance along the center line from edge of dissolved plume source zone [cm]

Section 732.Appendix B Illustration 2 Equation For Soil-Groundwater Relationship

The Board used the following equation drawn from the ASTM guidelines to calculate the soil leaching factor (identified as "Equation No. 4" in the IPMA proposal):

$$LF_{sw}\frac{(mg/l-Water)}{(mg/kg-Soil)} = \frac{\rho_s}{[\theta_{ws}+k_s\rho_s+H\theta_{as}]\left(1+\frac{U_{gw}\delta_{gw}}{IW}\right)} x10^0\frac{cm^3-kg}{L-g}$$

LF_{sw} = Leaching factor

k_s = Soil-water sorption coefficient
U_{gw} = Groundwater Darcy Velocity [cm/sec]
δ_{gw} = Groundwater mixing zone thickness [cm]
ρ_s = Soil bulk density
θ_{as} = Volumetric air content in vadose zone soils
θ_{ws} = Volumetric water content in vadose zone soils
H = Henry's Law constant
I = Infiltration rate of water through soil
W = Width of source parallel to groundwater flow

Section 732.Appendix B Illustration 3 Equation For Calculating Groundwater Objectives at the Source

The Board used the following equation drawn from the IPMA proposal to calculate the groundwater objectives at the source:

$$GW_{source} = \frac{GW_{comp}}{(C(x)/C_{source})}$$

GW_{source} = Groundwater objective at the source
GW_{comp} = Groundwater objective at compliance point
$C(x)/C_{source}$ = Calculated for a distance of 5 to 200 feet using equation 1

Section 732.Appendix B Illustration 4 Equation For Calculating Soil Objectives at the Source

The Board used the following equation drawn from the IPMA proposal to calculate the soil remediation objectives:

$$SoilTarget = \frac{GW_{source}}{(LF_{sw})SF}$$

Soil Target = Soil objective at the source
LF_{sw} = Soil leaching factor calculated using equation 2
SF = Safety factor (1000)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 11th day of August, 1994, by a vote of 6-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board