ILLINOIS POLLUTION CONTROL BOARD
April 19, 2012

IN THE MATTER OF:	)	
	)	
TIERED APPROACH TO CORRECTIVE	)	R11-9
ACTION OBJECTIVES (TACO) (INDOOR	)	(Rulemaking - Land)
INHALATION): AMENDMENTS TO 35	)	
ILL. ADM. CODE 742	)	

Proposed Rule. First Notice.

OPINION AND ORDER OF THE BOARD (by T.E. Johnson):

The Board today proposes amendments to the Tiered Approach to Corrective Action Objectives (TACO) rules (35 Ill. Adm. Code 742). The amendments are proposed for first-notice publication in the *Illinois Register* pursuant to the Administrative Procedure Act (APA) (5 ILCS 100/5-40 (2010)). Publication will begin a 45-day public comment period. Since 1997, the TACO rules have provided procedures for developing remediation objectives based upon risks posed to human health by environmental conditions at a variety of sites. The first-notice amendments include the addition of a new exposure route under TACO: the indoor inhalation exposure route. To protect building occupants, this exposure route addresses the potential for vapors to migrate into buildings from underlying volatile chemicals in soil or groundwater, a process commonly known as "vapor intrusion" or "VI."

The Board also proposes adding 13 chemicals to the TACO tables based upon the Board's pending rulemaking on groundwater quality standards, Proposed Amendments to Groundwater Quality Standards (35 Ill. Adm. Code 620) (Groundwater Quality), R08-18.[1] Further, the first-notice amendments to TACO update physical and chemical parameters and revise toxicity values in accordance with the new United States Environmental Protection Agency (USEPA) hierarchy for selecting human health toxicity values.

This rulemaking was initiated when the Illinois Environmental Protection Agency (IEPA or Agency) filed a proposal with the Board on November 9, 2010, under Section 27 of the Environmental Protection Act (Act) (415 ILCS 5/27 (2010)). After conducting two public hearings and considering the entire record, including public comments and IEPA *errata* sheets, the Board is adopting for first notice the amendments proposed or agreed to by IEPA, with minor clarifying changes. In addition, the Board requires that IEPA be notified if an indoor inhalation building control technology at a school is rendered inoperable. The amendments will become effective on a date certain 60 days after their final adoption.

This opinion is divided into six main parts. First, the Board sets forth the procedural history of this rulemaking and a brief description of the predecessor rulemaking, Proposed

[1] In R08-18, the Board has proceeded to first notice under the APA (5 ILCS 100/5-40 (2010)). *See* Groundwater Quality, R08-18 (Oct. 20, 2011).

The following participants filed public comments on the dates indicated: IEPA on July 7, 2011 (PC1); Little Village Environmental Justice Organization (LVEJO) on July 13, 2011 (PC2); Raymond Reott of Reott Law Offices, LLC, on July 13, 2011 (PC3); Mr. Reott on July 22, 2011 (PC4, correcting PC3); and the City of Champaign on September 9, 2011 (PC 5).

PROCEDURAL MATTERS

Economic Impact Study

As required by Section 27(b) of the Act (415 ILCS 5/27(b) (2010)), the Board requested that the Department of Commerce and Economic Opportunity (DCEO) conduct an economic impact study (EcIS) on the R11-9 rulemaking. The Board's EcIS request, dated December 1, 2010, was placed in this rulemaking's docket. On December 7, 2010, DCEO responded to the Board's request, stating that DCEO is unable to undertake the EcIS. At hearing, the hearing officer noted the Board's EcIS request to DCEO and DCEO's response, affording anyone the opportunity to testify. No one testified about DCEO's response. Tr.1 at 120-21.

Materials from Other Records

In the R11-9 rulemaking, IEPA and Mr. Reott separately filed certain of their respective materials from the predecessor R09-9 rulemaking. Specifically, IEPA filed information related to the costs of soil gas investigations (Nifong PFT2 at Exh. 2), while Mr. Reott filed his pre-filed testimony and public comment (PC4, Exhs. A, B). In addition, by order of December 8, 2010, the hearing officer in R11-9 granted IEPA's motion for relief from having to file several voluminous documents that had already been filed in R09-9. The hearing officer order directed the Clerk to place the documents into the R11-9 record and to place a copy of the order into the closed R09-9 record. *See* 35 Ill. Adm. Code 101.306.

Because the following documents are not present in the R11-9 record but are relevant to the Board's decision-making today, the Board, "on its own initiative" (35 Ill. Adm. Code 101.306), incorporates into the R11-9 record these materials from the record of the pending Groundwater Quality, R08-18 rulemaking and the record of the closed Predecessor Rulemaking, R09-9 rulemaking:

- From R08-18, Pre-filed Testimony of Rick Cobb of IEPA (R08-18/Cobb PFT1) at 11-17 (filed May 29, 2008);
- From R08-18, Pre-filed Testimony of Dr. Thomas Hornshaw of IEPA (R08-18/Hornshaw PFT1) at 5-7 (filed May 29, 2008);
- From R08-18, Pre-filed Supplemental Testimony of IEPA (R08-18/IEPA PFT2) at 5, 10 (filed July 11, 2008);
- From R08-18, IERG Public Comment (R08-18/PC2) at 7-8 (filed Sept. 12, 2008);
- From R09-9, Pre-filed Testimony of Gary King of IEPA (R09-9/King PFT1) at 2-3, 5-6, 21-22, Exh. 1 (filed Nov. 14, 2008);

- From R09-9, Pre-filed Testimony of Tracey Hurley of IEPA (R09-9/Hurley PFT1) at 7 (filed Nov. 14, 2008);
- From R09-9, IEPA's Pre-filed Responses to Pre-filed Questions (R09-9/IEPA PFR1) at 2-4, 6-8, 10, 13 (filed Jan. 15, 2009);
- From R09-9, Transcript of Jan. 27, 2009 Hearing (R09-9/Tr.1) at 16-18, 21-22, 30-32, 40-49, 58-60, 72-78, 83-85, 88-89, 92-94 (filed Feb. 5, 2009);
- From R09-9, Pre-filed Testimony of Heather Nifong of IEPA (R09-9/Nifong PFT2) at 1-3 (filed Feb. 23, 2009);
- From R09-9, Pre-filed Testimony of Tracey Hurley of IEPA (R09-9/Hurley PFT2) at 2 (filed Feb. 23, 2009);
- From R09-9, Pre-filed Testimony of Harvey Pokorny of Versar (R09-9/Pokorny PFT2) at 1 (filed Feb. 24, 2009);
- From R09-9, Pre-filed Testimony of James Olsta on behalf of CETCO Remediation Technologies and Geokinetics (R09-9/Olsta PFT2) at 2-3 (filed Feb. 24, 2009);
- From R09-9, Pre-filed Testimony of Brian Martin of SRAC (R09-9/Martin PFT2) at 2-4 (filed March 5, 2009);
- From R09-9, IEPA's Pre-filed Responses to Pre-filed Questions (R09-9/IEPA PFR2) at 3-5 (filed Mar. 12, 2009);
- From R09-9, Transcript of Mar. 17, 2009 Hearing (R09-9/Tr.2 AM at 11, 12-13, 19, 22-23, 28-30, 33, 40, 42, 46-49, 56, 68-70, 78-80, 85, 87, 91, 102, 104, 108 and R09-9/Tr.2 PM at 17-22, 48) (filed Mar. 30, 2009);
- From R09-9, Public Comment of Keith Fetzner of Environmental Resources Management, Inc. (R09-9/PC2) (filed May 5, 2009);
- From R09-9, Public Comment of CETCO Remediation Technologies (R09-9/PC3) at 1-2 (filed May 27, 2009);
- From R09-9, Public Comment of IEPA (R09-9/PC4) at 4-7, 9-10, Exh. 1 (filed May 29, 2009);
- From R09-9, Public Comment of IEPA (R09-9/PC6) (filed June 9, 2009);
- From R09-9, IEPA's Status Report (R09-9/IEPA 2-10 Status) (filed Feb. 5, 2010);
- From R09-9, IEPA's Status Report (R09-9/IEPA 8-10 Status) (filed Aug. 5, 2010);
- From R09-9, IERG's Response to IEPA's Motion for Stay (R09-9/IERG Resp.) (filed Oct. 19, 2009); and
- From R09-9, IEPA's Motion to Voluntarily Withdraw Proposal (R09-9/IEPA Mot.) (filed Oct. 21, 2010).

For ease of reference, the Board also incorporates the identifying initial page of each of these documents where it is not otherwise incorporated above. The Board directs the Clerk to make a copy of these materials from the R08-18 and R09-9 records. The Board further directs the Clerk to place the copy into the R11-9 record. *See* 35 Ill. Adm. Code 101.306. Finally, the Board directs the Clerk to create a single entry in the R11-9 docket for these incorporated materials, and to physically and electronically attach this portion of the Board's opinion to the front of the incorporated materials.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
GROUNDWATER	)	R08-18
QUALITY STANDARDS	)	
AMENDMENTS:	)	(Rulemaking-Public Water Supplies)
35 ILL. ADM. CODE 620	)	

TESTIMONY OF RICHARD P. COBB, P.G., ON NEW PROPOSED GROUNDWATER QUALITY STANDARDS

My name is Richard P. Cobb. I am a licensed professional geologist and the Deputy Manager of the Division of Public Water Supplies of the Illinois Environmental Protection Agency's ("EPA") Bureau of Water ("BOW"). My primary responsibilities include managing the Groundwater and Source Water Protection, Field Operations, and the Administrative Sections of the Division. Further, I assist with administering the public water supervision program under the federal Safe Drinking Water Act ("SDWA"). Additionally, my responsibility includes the integration of source water protection with traditional water supply engineering and treatment practices, and to further assist with linking Clean Water Act and SDWA programs. I also directly manage the BOW's Groundwater Section. The groundwater section applies Geographic Information System ("GIS") programs, global positioning system technology, hydrogeologic models (including, 3D geologic visualization, vadose zone, groundwater flow, particle tracking, solute transport, and geochemical models), and geostatistical programs for groundwater protection and remediation. I represent the BOW on Illinois EPA's Contaminant Evaluation Group, Strategic Management Planning Team, Environmental Justice Committee, Information Management Steering Committee, and GIS Steering Committee. Since 1985 I have worked on the development of legislation, rules, and regulations. I have also served as a primary Agency witness at Illinois

E. Section 620.410(a)

The standards proposed below are based on either a U.S.EPA or Board MCL, a reference dose ("RfD") in U.S. EPA's Integrated Risk Information System ("IRIS"), U.S. EPA Health Effects Assessment Summary Table ("HEAST") RfD, Provisional Peer Reviewed Toxicity Values ("PPRTV") RfD, IRIS Slope Factor ("SFo"), or MDL used to derive the 35 Ill. Adm. Code 620, Subpart F, Appendix A: Human Threshold Toxicant Advisory Concentration for Tiered Approach for Correction Objectives ("TACO") (35 Ill. Adm. Code 742) groundwater ("GW") objectives. In addition, we are proposing to amend the existing Subpart F procedures to establish a new procedure that utilizes a 10^{-6} risk level versus the default PQL that was used in the 1980's. Many of the PQLs have dropped significantly and may be well below the respective10-6 risk level. Since 1991, the 10^{-6} risk level has become widely accepted and is used in the Board's TACO regulations. In addition to the 10^{-6} risk level, water solubility is being proposed as a factor. If an organic chemical is present at concentrations in groundwater exceeding its solubility a two-phase system may exist, and the behavior and migration of the chemical in such a system may be difficult to predict. Thus, the water solubility is the proposed basis for several contaminants where the 10^{-6} risk level exceeds water solubility. Dr. Hornshaw's testimony will go into more detail on these proposed amendments.

Carcinogens are denoted in the proposed Class I standards by an asterisk ("*"). Illinois EPA proposes that the Board amend Subsection 620.410(a) to include a Class I: Potable Resource Groundwater Standard for the following inorganic contaminants listed below:

Inorganic Chemicals *Denotes a carcinogen	Proposed Class I Standard (mg/l)	Basis
Arsenic*	0.010	Board and U.S. EPA MCL
Molybdenum	0.035	IRIS RfD
Perchlorate	0.0049	IRIS RfD
Vanadium	0.049	TACO GW Objective

F. Section 620.410(b)

The Illinois EPA proposes to the Board that this subsection be amended to include a Class I: Potable Resource Groundwater Standard for the following organic contaminants:

Volatile Organic Compounds ("VOCs") * Denotes a carcinogen	Proposed Class I Standard (mg/l)	Basis
Acetone	6.3	TACO GW Objective
2-Butanone (MEK)	4.2	IRIS RfD
Carbon disulfide	0.7	TACO GW Objective
Chloroform*	0.0002	TACO GW Objective
Dichlorodifluoromethane	1.4	IRIS RfD
1,1-Dichloroethane	1.4	PPRTV RfD
Isopropylbenzene (Cumene)	0.7	IRIS RfD
Trichlorofluoromethane	2.1	IRIS RfD

Semivolatile Organic Compounds * Denotes a carcinogen	Proposed Class I Standard (mg/l)	Basis
Acenaphthene	0.42	TACO GW Objective
Anthracene	0.043	Water Solubility
Benzo(a)anthracene*	0.00013	TACO GW Objective
Benzo(b)fluoranthene*	0.00018	TACO GW Objective
Benzo(k)fluoranthene*	0.00017	TACO GW Objective
Benzoic acid	28.0	TACO GW Objective
Chrysene*	0.0063	Water Solubility
Dibenzo (a,h,) anthracene*	0.0003	TACO GW Objective
Diethyl phthalate	5.6	TACO GW Objective
Di-n-butyl phthalate	0.7	TACO GW Objective
Di-n-octyl phthalate	0.02	Water Solubility
Fluoranthene	0.21	Water Solubility
Fluorene	0.28	TACO GW Objective
Indeno(1,2,3-cd)pyrene*	0.000022	Water solubility

2-Methylnaphthalene	0.028	IRIS RfD
2-Methylphenol	0.35	TACO GW Objective
Naphthalene	0.14	TACO GW Objective
p-Dioxane*	0.0077	10^{-6} cancer risk
Pyrene	0.21	TACO GW Objective
Pesticides/PCBs * Denotes a carcinogen		
alpha-BHC*	0.00011	TACO GW Objective
Dicamba	0.21	IRIS RfD
MCPP (Mecoprop)	0.007	IRIS RfD

G. Section 620.410(c)

The Illinois EPA proposes that the Board amend the Class I: Potable Resource Groundwater Standards to include a new subsection to for the following explosive contaminants:

Explosives * Denotes a carcinogen	**Proposed Class I Standard (mg/l)**	**Basis**
1,3-Dinitrobenzene	0.0007	IRIS RfD
2,4-Dinitrotoluene*	0.0001	10^{-6} Cancer risk level
2,6-Dinitrotoluene*	0.00031	TACO GW Objective
HMX	1.4	IRIS RfD
Nitrobenzene	0.0035	TACO GW Objective
RDX	0.084	IRIS RfD
1,3,5-Trinitrobenzene	0.84	IRIS RfD
2,4,6-Trinitrotoluene	0.014	IRIS RfD

H. Section 620.420(a)

The final opinion and order of the Board (Docket R89-14(B)), for establishing Class II groundwater quality standards (35 Ill. Adm. Code 620), published November 7, 1991, pages 19 and 20 states that:

> Section 620.420 establishes standards for Class II: General Resource Groundwaters. Because groundwaters are placed in Class II because they are quality-limited, quantity-limited, or both (see Subpart B discussion above), it is necessary that the standards that apply to these waters reflect this range of possible attributes. Among the factors considered in determining the Class II numbers are the capabilities of

treatment technologies to bring Class II waters to qualities suitable for potable use (R3 at 75) ["R3" means the transcript from the Board's May 1991 hearing on this matter, and "at 75" is page 75]. Thus, many Class II standards are based on MCL's as modified to reflect treatment capabilities. For some parameters the Class II standards are based on support of a use other then potability (e.g., livestock water, irrigation, industrial use) where a different use requires a more stringent standard (R3 at 1148)).

The same principle is applied to these proposed Class II standards here today. The standards proposed below are based on irrigation and livestock watering from the National Academy of Sciences, 1972, *Water Quality Criteria*.

Illinois EPA proposes that Subsection 620.410(a) be amended to include a Class II: General Resource Groundwater Standard for the following inorganic chemicals:

Inorganic Chemicals	**Reference Proposed Class I Standard (mg/l)**	**Proposed Class II Standard (mg/l)**	**Basis for Class II**
Arsenic	0.010	0.2	Irrigation
Molybdenum	0.035	0.035	Class I standard (Irrigation criterion is 10)
Perchlorate	0.0049	0.0049	0X
Vanadium	0.049	0.1	Irrigation

I. Section 620.420(b)

Most of the original groundwater standards for organic compounds were based on U.S. EPA MCLs. Best Available Treatment ("BAT") technology removal efficiencies are published in the CFR and 35 Ill. Adm. Code 611, Subpart F. However, none of the contaminants in this proposal, with the exception of arsenic standard, has a codified MCL. Thus, the Illinois EPA used some of the same factors used by U.S. EPA to develop BAT surrogates.

Air Stripping - Due to the high volatility of many of the organic compounds, air stripping is an efficient and cost effective treatment technology (35 Ill. Adm. Code 611, Subpart F). Air

stripping is a proven, effective means to remove VOCs from groundwater as detailed in 35 Ill. Adm. Code 611, Subpart F. Less volatile compounds (e.g., low Henry's Law Constants) are not as easily removed via air stripping (Canter, L.W., and R.C. Knox, 1985, (*Ground water pollution control*, Lewis Publishers). In contrast, compounds with lower Henry's Law Constants are more difficult to remove by air stripping than compounds with high constants. Methylene chloride has one of the lowest Henry's Law Constants at 8.98 X 10^{-2} unit less at 20° Celsius ("C") (35 Ill. Adm. Code 742) in comparison to other VOCs. Where multiple VOCs are present, the compound with the lowest Henry's Law Constant will generally be the limiting compound in the design of the air stripper.

Carbon Adsorption - Carbon adsorption is also is an efficient and cost effective treatment technology (35 Ill. Adm. Code 611, Subpart F) for removing various organic contaminants. Activated carbon is widely used to remove organic compounds (American Water Works Association, 1995, *Water Treatment*). The process of adsorption onto activated carbon requires the contaminated groundwater to come into contact with carbon, which selectively adsorbs organic constituents by a surface attraction phenomenon (due to chemical and physical properties). The organic molecules are attracted to the internal pores of the carbon granules (U.S. EPA, 1989). A coefficient referred to as partition or sorption coefficient (Log K_{oc}) represents the ratio of adsorbed chemical per unit weight of organic carbon to the aqueous concentration (Montgomery, J.H., and L.M. Welkom, 1995, *Groundwater chemicals desk reference*, Volume I, Lewis Publishers.). This value provides an indication of the tendency of a chemical to partition between organic carbon particles and water (Montgomery, 1995). Compounds that bind strongly to organic carbon have characteristically low solubilities, whereas compounds, such as methyl

tertiary butyl ether ("MTBE"), with low tendencies to adsorb to organic particles have high solubilities. Correlations between K_{oc} and the solubility of organic compounds in water have shown a log-log linear relationship (Montgomery, 1995).

Treatment Factor - A five fold treatment factor ("5X") was used to derive a proposed Class II standard for organic compounds with a K_{oc} value greater than (>) ethylbenzene's K_{oc} of 363 liters per kilogram at 20° C or a Henry's Law constant greater than methylene chloride's (8.98×10^{-2} unit less at 20° C). A five fold treatment factor equates to a removal efficiency of 80%. This is a very economical approach, since most of the BATs achieve a 99% removal rate. The Class I standard was proposed where either or both were below the factors detailed above.

Illinois EPA proposes that the Board amend Subsection 620.420(b) to include a Class II: General Resource Groundwater Standard for the following organic compounds:

Volatile Organic Compounds	**Reference Proposed Class I Standard (mg/l)**	**Proposed Class II Standard (mg/l)**	**Basis For Class II**
Acetone	6.3	6.3	TACO GW Objective
2-Butanone (MEK)	4.2	4.2	0X
Carbon disulfide	0.7	3.5	TACO GW Objective
Chloroform	0.0002	0.001	TACO GW Objective
Dichlorodifluoromethane	1.4	7.0	5X
1,1-Dichloroethane	1.4	7.0	5X
Isopropylbenzene (Cumene)	0.7	3.5	5X
Trichlorofluoromethane	2.1	10.5	5X
Semivolatile Organic Compounds			
Acenaphthene	0.42	2.1	TACO GW Objective
Anthracene	0.043	0.043	Water Solubility
Benzo(a)anthracene	0.00013	0.00065	TACO GW Objective
Benzo(b)fluoranthene	0.00018	0.0009	TACO GW Objective
Benzo(a)pyrene	0.0002	0.0016	Water Solublity
Benzo(k)fluoranthene	0.00017	0.0008	Water Solubility
Benzoic acid	28.0	28.0	TACO GW Objective
Chrysene	0.0063	0.0063	Water Solubility

Diethyl phthalate	5.6	5.6	TACO GW Objective
Dibenzo (a,h,) anthracene	0.0003	0.0015	TACO GW Objective
Di-n-butyl phthalate	0.7	3.5	TACO GW Objective-
Di-n-octyl phthalate	0.02	0.02	Water Solubility
Fluoranthene	0.21	0.21	Water Solubility
Fluorene	0.28	1.4	TACO GW Objective
Indeno(1,2,3-cd)pyrene	0.000022	0.000022	Water Solubility
2-Methylnaphthalene	0.028	0.14	5X
2-Methylphenol	0.35	0.35	TACO GW Objective
Naphthalene	0.14	0.22	TACO GW Objective
p-Dioxane	0.0077	0.0077	10^{-6} Cancer risk
Pyrene	0.21	1.05	TACO GW Objective
Pesticides/PCBs			
alpha-BHC	0.00011	0.00055	TACO GW Objective
Dicamba	0.21	0.21	0X
MCPP (Mecoprop)	0.007	0.035	5X
Methoxychlor	0.04	0.045	Water Solubility

In addition, the existing Class II standard for Benzo(a)pyrene should be amended to 0.0002 mg/l based on its water solubility. Additionally, the Class II standard for Methoxychlor should be amended to 0.045 mg/l based on its water solubility.

J. Section 620.420(c)

This new subsection has been amended to propose a Class II: General Resource Groundwater Standard for the following explosive compounds:

Explosives	Reference Proposed Class I Standard (mg/l)	Proposed Class II Standard (mg/l)	Basis
1,3-Dinitrobenzene	0.0007	0.0007	0X
2,4-Dinitrotoluene	0.0001	0.0001	0X
2,6-Dinitrotoluene	0.00031	0.00031	TACO GW Objective
HMX	1.4	1.4	0X
Nitrobenzene	0.0035	0.0035	0X
RDX	0.084	0.084	0X
1,3,5-Trinitrobenzene	0.84	0. 84	0X
2,4,6-Trinitrotoluene	0.014	0.014	0X

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
GROUNDWATER	)	R08-18
QUALITY STANDARDS	)	
AMENDMENTS:	)	(Rulemaking-Public Water Supplies)
35 ILL. ADM. CODE 620	)	

TESTIMONY OF RICHARD P. COBB, P.G., ON NEW PROPOSED GROUNDWATER QUALITY STANDARDS

My name is Richard P. Cobb. I am a licensed professional geologist and the Deputy Manager of the Division of Public Water Supplies of the Illinois Environmental Protection Agency's ("EPA") Bureau of Water ("BOW"). My primary responsibilities include managing the Groundwater and Source Water Protection, Field Operations, and the Administrative Sections of the Division. Further, I assist with administering the public water supervision program under the federal Safe Drinking Water Act ("SDWA"). Additionally, my responsibility includes the integration of source water protection with traditional water supply engineering and treatment practices, and to further assist with linking Clean Water Act and SDWA programs. I also directly manage the BOW's Groundwater Section. The groundwater section applies Geographic Information System ("GIS") programs, global positioning system technology, hydrogeologic models (including, 3D geologic visualization, vadose zone, groundwater flow, particle tracking, solute transport, and geochemical models), and geostatistical programs for groundwater protection and remediation. I represent the BOW on Illinois EPA's Contaminant Evaluation Group, Strategic Management Planning Team, Environmental Justice Committee, Information Management Steering Committee, and GIS Steering Committee. Since 1985 I have worked on the development of legislation, rules, and regulations. I have also served as a primary Agency witness at Illinois

important to note that there is a significant difference between what is considered ordinary treatment processes for surface water versus groundwater sources of drinking water. All community water systems ("CWS") using surface water apply coagulation, sedimentation, filtration, disinfection, and treatment for taste and odor. Private drinking water systems do not use surface water as a source of drinking water, due to the inherent vulnerability of surface water resources to contamination and the associated cost for treating such water. A private drinking water system is defined as a system that serves an owner occupied single family dwelling (415 ILCS 55/9(a)). Secondly, there is a significant difference between what is considered ordinary treatment processes for a small CWS using groundwater versus a private drinking water system well. The small CWS using groundwater has more treatment infrastructure resources available than the owner of a private well. Lastly, a private well owner typically only has to chlorinate his or her well to use the groundwater for potable uses. Thus, this defines the lowest common denominator of what ordinary treatment processes means to the protection of Class I: Potable Resource Groundwater. In other words, the Act and Board regulations prohibit a person from causing, threatening or allowing contamination of potable resource groundwater above what is not removed by ordinary treatment processes in a private drinking water system well. For example, a plume of tritium at a concentration above background or naturally occurring levels, moving toward a private drinking water system well, is considered a threat to diminishing the existing Class I groundwater resource, since tritium cannot be removed by advanced treatment processes let alone ordinary treatment processes. This diminishment of resource groundwater (415 ILCS 55/3(j)) may lead to preclusion of the use of the well if the private well owner chooses not to use it (e.g., suitability) due to the contamination.

The Illinois Supreme Court also determined the following in *Central Illinois Public Service Company v. Pollution Control Board*, 116 Ill.2d 397:

> The Board, at the outset, disagrees with CIPS' interpretation of the definition of water pollution in the Act. **The Board argues that the Act treats water as a resource, and that pollution occurs whenever contamination is likely to render water unusable. Under the Board's interpretation there is not need to show that harm *will* occur, only that harm *would* occur if the contaminated water were to be used.** Since the Board is charged with administering the Environmental Protection Act, its interpretation of the statute is entitled to deference. (*Massa v. Department of Registration & Education* (1987), 116 Ill.2d 376, 107 Ill.Dec, 661, 507 N.E.2d 814; *Illinois Consolidated Telephone Co. v. Illinois Commerce Com.* (1983), 95 Ill.2d 142, 152, 69 Ill.Dec. 78, 447 N.E.2d 295.) **Under the Board's view any contamination which prevents the State's water resources from being usable would constitute pollution, thus allowing the Board to protect those resources from necessary diminishment.** CIPS' interpretation, on the other hand would mean that water rendered unusable would not be polluted so long as use of the water ceased subsequent to contamination. **We find the Board's interpretation preferable to CIPS' interpretation, especially considering the deference we must accord to the Board.** (Emphasis added)

The Illinois EPA framed and the Board adopted the following after the legal cornerstones detailed above:

> Section 620.301 General Prohibition Against Use Impairment of Resource Groundwater
>
> a) **No person shall cause, threaten or allow the release of any contaminant to a resource groundwater such that:**
>
> 1) Treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or
>
> 2) **An existing or potential use of such groundwater is precluded.** (Emphasis added)

In summary, the conclusions and facts, provided above, clearly provide the supporting foundation for Standards, as follows:

- The original Act and regulations establish that no person shall discharge contaminants that threaten, cause or allow contamination;
- The intent of this multi-tiered standard is to prevent degradation of the resource up to the numerical standard;
- The Board clearly established that current and potential sources of potable resource groundwater were to be protected;
- Section 12(a) of the Act is integrated with Board regulations to prohibit polluting up to the numerical standards in such regulations;
- The Board's opinions in the matters, quoted above, indicate that resource groundwater should be protected such that a private water supply would be able to obtain clean drinking water through ordinary treatment processes;
- The Board's opinion on Illinois' Groundwater Protection Plan is "...that unreasonable waste and degradation of the resources be prohibited;"
- Public Act 85-863 indicates that waste and degradation of the resources be prevented and includes this as a factor that the Board must consider in adopting comprehensive groundwater quality standard regulations;
- The Illinois Supreme Court has upheld the Board's view that any contamination that prevents the State's water resources from being usable would constitute pollution, thus allowing the Board to protect those resources from unnecessary diminishment; and
- The Board's final opinion and order on groundwater quality standards indicates that the numerical standard is not meant to be a level to pollute up to and included

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	
GROUNDWATER QUALITY	)	R08-018
STANDARDS	)	(Rulemaking-Public Water Supplies)
(35 Ill. Adm. Code 620)	)	
	)	

SUPPLEMENTAL TESTIMONY OF THE ILLINOIS EPA

This testimony responds to additional questions and requests provided in an Illinois Pollution Control Board Hearing Officer Order issued on June 20, 2008. The testimony is intended to answer the following questions asked in the Illinois Pollution Control Board ("Board") Hearing Officer Order. Additionally, the Illinois EPA is adding Gary King to the panel of witnesses, and this supplemental testimony is a joint effort of Richard P. Cobb, Thomas C. Hornshaw, and Gary King. All three witnesses will be available to answer questions regarding this written testimony.

I. BOARD QUESTIONS/REQUESTS AND ILLINOIS EPA RESPONSES

Board questions/requests are followed by emboldened Illinois EPA responses.

Question 1 - At page 11 of Mr. Cobb's pre-filed testimony, he states that the proposed standards are based on a United States Environmental Protection Agency ("USEPA") Maximum Contaminant Level ("MCL") or Board MCL, a reference dose ("RfD") in USEPA's Integrated Risk Information System (IRIS), USEPA Health Effects Assessment Summary Table ("HEAST") RfD, Provisional Peer Reviewed Toxicity Values ("PPRTV") RfD, and IRIS Slope Factor ("Sfo").

a. Please clarify whether USEPA's MCLs are the same as the Board's MCLs. If not, please explain any differences.

b. The proposed standards for several inorganic and organic chemical constituents are based on RfDs and Sfos obtained from the various USEPA databases. Please explain how the Agency used the RfDs and Sfos to derive the proposed standards for various chemical constituents

i. Would the Agency be able to update the tables on pages 12 and 13 of Mr. Cobb's pre-filed testimony to include the appropriate RfD values used to determine the proposed standards?

Question 2 - On page 11 of Mr. Cobb's pre-filed testimony, he states that some of the proposed standards are based on Method Detection Limits ("MDLs") used to derive the Part 620, Subpart F, Appendix A: Human Threshold Toxicant Advisory Concentration for Tiered Approach to Corrective Action Objectives ("TACO") groundwater objectives under Part 742.

a. Please clarify whether all of the proposed standards based on TACO groundwater objectives are based on MDLs.

b. Also, please explain how MDLs were used to derive the proposed standards for which TACO groundwater objectives are listed as the basis for the standard.

Response to Question (2)(a) – Referencing the MDL was incorrect. The practical quantitation limit ("PQL") should have been referenced.

Response to Question (2)(b) - Some of the TACO objectives were based on PQLs (not MDLs) where the health based numbers were below the PQL.

Question 3 - Also on page 11 of Mr. Cobb's pre-filed testimony, he notes that carcinogens are denoted in the proposed Class I standard by an asterisk. Please clarify whether dibenzo(a,h)anthracene should be listed under Section 620.410(b) with an asterisk to indicate that it is a carcinogen.

Response to Question 3 – Dibenzo (a,h) anthracene is a carcinogen, and should be so noted.

Request 4 - The proposal lists the acronyms for several chemical constituents in Section 620.410. Please provide the chemical names for alpha-BHC, MCPP, HMX and RDX.

Response to Request 4 – The following provides the chemical, common and abbreviated names:

Chemical Name	Common Name	Abbreviated Name
1,2,3,4,5,6-hexachlorocyclohexane	Alpha-Benzene hexachloride	alpha-BHC
2-(2-Methyl-4-chlorophenoxy) propionic acid	Mecoprop	MCPP
Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine	High Melting Explosive, Octogen	HMX
Hexahydro-1,3,5-trinitro-1,3,5-triazine	Royal Demolition Explosive, Cyclonite	RDX

Request 5 - On page 14 of Mr. Cobb's pre-filed testimony, he states that the proposed Class II standards for inorganic constituents are based on irrigation and livestock watering from a

objective for 1,1-Dichloroethane of 0.7 mg/L, which is lower than the proposed Class I standard of 1.4 mg/L, is one of the needed revisions.

Response to Question 16 – Yes.

Question 17 - On page 5 of Dr. Hornshaw's pre-filed testimony, he states that the Toxicity Assessment Unit decided to include in the proposal any chemical from the Bureau of Land's master list that had a toxicity value in the IRIS database. Please explain the rationale for limiting the chemicals to only those with IRIS toxicity values instead of considering the USEPA's three-tier hierarchy.

Response to Question 17 – As stated in Dr. Hornshaw's oral testimony in response to a similar question, the Toxicity Assessment Unit decided to include in the proposal any of the "new" chemicals (those not already in TACO) for which toxicity data were available in the IRIS and PPRTV databases. It was reasoned that these two sources provide nationally-accepted and peer-reviewed criteria as the basis for developing the new standards.

Question 18 - On page 7 of Dr. Hornshaw's pre-filed testimony, he states that additional corrections are necessary for several reasons, including the revision of the selection criteria for groundwater standards for carcinogenic chemicals. Dr. Hornshaw notes that the revised criteria require a comparison of each carcinogenic constituent's health based concentration (1 in million risk level) with its corresponding analytical MDL, the greater of which is compared with the constituent's reported water solubility.

a. Please clarify whether the analytical detection limit represents the carcinogenic constituent's MDL or its lowest Practical Quantitation Limit (PQL).

b. If the detection limit represents the MDL, should Part 620, Subpart F continue to refer to PQLs or should it be amended to state MDLs?

Response to Question 18(a)– As discussed above, all references to MDLs should be changed to PQLs.

Response to Question 18(b)- Continue to refer to PQLs.

II. CONCLUSION

This concludes the supplemental testimony of the Illinois EPA witnesses. We will be available to answer any questions.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R08-18
GROUNDWATER QUALITY STANDARDS,	)	(Rulemaking – Public Water Supply)
35 ILL. ADM. CODE 620	)	

COMMENTS OF THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP

NOW COMES the Illinois Environmental Regulatory Group ("IERG"), by its attorneys Alec M. Davis and HODGE DWYER ZEMAN, and submits the following comments in the above referenced matter.

I. INTRODUCTION

IERG is a not-for-profit corporation affiliated with the Illinois Chamber of Commerce. IERG is composed of 56 member companies that are regulated by governmental agencies that promulgate, administer, or enforce environmental laws, regulations, rules, or other policies. IERG submits these comments following the testimony of Brian H. Martin, at the July 16, 2008 hearing in this rulemaking.

As discussed in Mr. Martin's pre-filed testimony, IERG has been working with the Illinois Environmental Protection Agency ("Illinois EPA" or "Agency"), both during the initial outreach, and in an on-going capacity during this rulemaking. Many of the concerns raised by IERG members will be addressed if the solubility basis for deriving standards is removed, as proposed by the Agency at the second hearing, and if molybdenum is removed from the proposal, as described below. *See* Supplemental Testimony of the Illinois EPA, *In the Matter of: Proposed Amendments to Groundwater Quality Standards, 35 Ill. Adm. Code 620*, R08-18 at 6-8 (Ill.Pol.Control.Bd. July 11,

of OMM, IERG understands that SMCRA does not govern abandoned mine sites. IERG further understands, based on discussions with the Agency, that these abandoned sites are under no special purview of the Illinois EPA. The result of these discussions is uncertainty within the regulated community as to whether and/or how the use of CCB may ever be determined to be beneficial at such sites.

It is IERG's understanding that this potential for the Class I groundwater quality standard for molybdenum to adversely impact the continued use of CCB in Illinois was not foreseen by the Agency at the time that the rule was proposed. Therefore, by removing molybdenum from the proposal, the unintended impact can be further assessed.

III. THE ILLINOIS EPA PROCESS FOR IDENTIFYING CONSTITUENTS FOR INCLUSION IN PROPOSED STANDARDS

At the July 16, 2008 hearing, IERG committed to provide recommendations on "additional or alternative criteria for identifying commonly detected chemical constituents on a state-wide basis." Transcript of July 16, 2008 Hearing, *In the Matter of: Proposed Amendments to Groundwater Quality Standards, 35 Ill. Adm. Code 620,* R8-18 at 30-31 (Ill.Pol.Control.Bd. July 28, 2008) (hereafter "Transcript"). Having obtained and reviewed the datasets relied upon by the Agency to determine what chemicals to add to Part 620 in the proposal, IERG is prepared to make the following observations and comments regarding the process used by the Agency. *See* Prefiled Testimony of Thomas Hornshaw, *In the Matter of: Proposed Amendments to Groundwater Quality Standards, 35 Ill. Adm. Code 620*, R08-18 at 5 (Ill.Pol.Control.Bd. May 29, 2008).

It is IERG's understanding, based on communications with the Agency, that consideration of chemicals in the database for inclusion was limited to those chemicals with ten or greater detections in the state during the past 20 years. IERG agrees with this

approach in general, but thinks that in addition to a threshold based on the number of detections, attention needs to be paid to the number of distinct sites at which such detections are made. For example, alpha benzene hexachloride ("alpha-BHC") was detected 24 times, yet 23 of those 24 detections were at a single site. IERG suggests that the Illinois EPA, in addition to reviewing the total number of detections of a chemical, also analyze whether the diversity of locations indicates a need for a state-wide standard.

IERG has also noted, based on its analysis of the Illinois EPA data, that some of the chemicals added in the proposal have been detected only at federal cleanup sites (such as detection of explosive contaminants at military sites). IERG is concerned that requiring state-wide monitoring for additional chemicals, based solely on their occurrence at sites of unique character, could potentially amount to a great economic burden, without a commensurate environmental benefit. IERG would suggest that chemicals which are associated with only a few unique sites or processes would be better regulated on a basis tailored to site-specific conditions, rather than on a state-wide scale.

IV. ECONOMIC IMPACT ON COAL COMBUSTION BYPRODUCT USE

At the July 16, 2008 hearing, IERG was asked multiple questions relating to the potential economic impact of the proposed groundwater quality standards on the continued use of CCB. Transcript at 28, 31-32. In an attempt to fully describe the universe of industries potentially affected, IERG obtained data regarding the chemical analysis of CCB leachate in the state, the nature of the current uses of CCB, and the potential impact that the current rulemaking could have on the use of CCB.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	
TIERED APPROACH TO CORRECTIVE	)	R09-9
ACTION OBJECTIVES	)	(Rulemaking-Land)
(35 Ill. Adm. Code 742)	)	

PRE-FILED TESTIMONY OF GARY KING

Qualifications

My name is Gary King. I am the Acting Chief for the Bureau of Land at the Illinois Environmental Protection Agency. Since 1990, I have been senior manager for the Illinois EPA site cleanup programs: the voluntary cleanup program, federal and state Superfund cleanup programs, Department of Defense cleanup program, Brownfields assistance program and the Leaking Underground Storage Tank program. I led Illinois EPA's development of the original 35 Ill. Adm. Code Part 742 rule, Tiered Approach to Corrective Action Objectives (TACO, R97-14) and all subsequent amendments.

I also chaired the Association of State and Territorial Solid Waste Management Officials ("ASTSWMO") CERCLA Research Center from January 2001 to October 2008. In that role I had frequent contact with other States and U.S. EPA concerning important issues to State and federal Superfund programs.

Prior to 1990, I managed Illinois EPA land enforcement programs. I am an attorney and hold a B.S degree in civil engineering from Valparaiso University.

Testimonial Statement

I will be testifying in support of the proposed amendments to 35 Ill. Adm. Code 742: Tiered Approach to Corrective Action Objectives. I will present an overview of the pathway

evaluation and tiered approach to the indoor inhalation exposure route; describe the derivation of the Tier 1 remediation objectives for the indoor inhalation exposure route, including the recommended parameter values for the modified Johnson and Ettinger (J&E) model; and explain the rationale and requirements for the use of soil gas data and building control technologies.

Subpart A: Introduction

Section 742.115 introduces the exposure routes to be evaluated under this Part, including the indoor inhalation exposure route. Similar to the groundwater ingestion route, the indoor inhalation route has both a soil and groundwater component. In addition, it has a soil gas component. The soil component is the migration of contaminants from soil through soil gas into a building interior. The groundwater component is the migration of contaminants from groundwater through soil gas into a building interior. This pathway is unique in that it involves three types of media: soil, groundwater, and soil gas.

Subpart B: General

Section 742.200 contains new definitions for the terms "building," "building control technology," "soil gas," and "soil vapor saturation limit." Assigning a specific meaning to "building" will avoid confusion as to whether the indoor inhalation pathway must be evaluated for every structure. The use of "building control technology" describes mitigation systems for indoor inhalation risks and is compatible with the existing term "engineered barriers." "Soil gas" merits a definition now that it has become a medium of interest as does "soil vapor saturation limit," which parallels the definitions of "soil saturation limit" and "solubility." The amended definition of "soil saturation limit" is actually language taken from an original footnote contained in Appendix B, Tables A and B. The footnote offered the better explanation. As for the amended definition of "volatile chemicals," it resulted from a re-examination (and eventual deletion) of

the original definitions of "volatile organic compounds" and "volatile chemicals." Today the term is used to define contaminants subject to evaluation under the indoor inhalation exposure route, including elemental mercury.

Section 742.210 contains 19 new incorporations by reference. The most notable of these are U.S. EPA's draft guidance, *Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils*, which established the use of the J&E model, and its companion document, *Users Guide for Evaluating Subsurface Vapor Intrusion into Buildings*, which provided justification for certain parameter values. Other significant publications include ASTM International's *Standard Practice for Assessment for Vapor Intrusion into Structures on Property Involved in Real Estate Transactions* and the Interstate Technology and Regulatory Council (ITRC)'s *Vapor Intrusion Pathway: A Practical Guide*. Additional incorporations have been included to provide soil gas analytical methods, source information for parameter value selection, and techniques for mitigation systems.

Section 742.222 provides methods for determining the soil vapor saturation limit and parallels Section 742.220, which is used for determining the soil saturation limit. The soil vapor saturation limit is the maximum vapor concentration that can exist in the soil pore air at a given temperature and pressure. Section 742.Appendix A, Table K presents the soil vapor saturation limits for volatile chemicals. For the indoor inhalation exposure route, soil gas remediation objectives cannot exceed the soil vapor saturation limit; otherwise, the assumptions of the modified J&E model would be violated. The modified J&E model as well as the existing RBCA and SSL models operate on similar assumptions regarding soil saturation and solubility. These risk-based models assume an equilibrium between contaminant concentrations that exist as vapors in soil pores, contaminants that adhere to soil particles, and contaminants that dissolve

Section 742.227 provides minimal requirements for the collection and analysis of soil gas samples. Ordinarily, sampling locations, quantities and protocol are determined by the program under which the remediation is being performed (LUST, RCRA, Site Remediation Program); however, because the use of soil gas data is not as well understood by site evaluators, Illinois EPA decided to specify the most essential criteria to reduce the likelihood of error, the misrepresentation of actual conditions, and the need for repeat sampling.

Subpart C: Exposure Route Evaluations

Section 742.312 identifies ways in which the indoor inhalation exposure route may be excluded from consideration. Indoor inhalation presents a risk only if volatile chemicals are the contaminants of concern. If a site has none of the 59 chemicals listed in Section 742.Appendix A, Table J or any other contaminants meeting the new definition of "volatile chemicals," then the indoor inhalation pathway does not need to be evaluated.

If volatile chemicals are present, the site evaluator has the option of excluding the pathway by either restricting buildings above contaminated areas or by implementing building control technologies. The general pathway exclusion criteria of existing Sections 742.300 and 742.305 must also be met; these are the "speed bumps" to prevent free product, the leaving behind of materials with the potential impact of hazardous waste, and concentrations of polychlorinated biphenyls above 50 parts per million.

The new building-specific exclusions would need institutional controls as follows:

1. A land use restriction prohibiting a building or man-made pathway above the contaminated soil or groundwater. (The indoor inhalation exposure route is incomplete if a building does not exist.)
2. Operation and maintenance requirements for approved building control

technologies, including sub-slab depressurization, sub-membrane depressurization or membrane barriers. These requirements are contained in the new Subpart L: Building Control Technologies.

The indoor inhalation exposure route cannot be excluded by use of a groundwater ordinance. This exclusion is not allowed because an ordinance restricting the use of groundwater as a source of drinking water would not protect the enclosed air space of a building from the migration of contaminants emanating from the groundwater.

Subpart E: Tier 1 Evaluation

A Tier 1 remediation objective is a numerical chemical concentration that represents a level of contamination at or below which there are no human health concerns. Sites achieving residential Tier 1 remediation objectives are intended to clearly indicate that the property meets an unrestricted land use category for that category of use. Tier 1 requires a determination of either residential or industrial/commercial land use. Generally, equally protective but less restrictive remediation objectives apply to the industrial/commercial sites. [Note: whenever remediation objectives are based on an industrial/commercial land use, an institutional control must be placed on the property in accordance with Section 742.1000(a)(1).]

Early in the rulemaking development, SRAC proposed that indoor air OSHA standards should apply in lieu of TACO at facilities where the chemicals of concern continue to be used or manufactured. Illinois EPA disagreed since vapor intrusion potentially impacts the entire building and all of its occupants. The OSHA standards may be more narrowly applied to a subset of workers and do not account for the future use of the property.

As with the other exposure routes, the indoor inhalation remediation objectives are calculated based on a one-in-a-million individual excess cancer risk for chemicals causing

this is because an ordinance restricting the source of drinking water would not protect the enclosed air space of a building from the migration of contaminants in the groundwater. The other institutional controls available in TACO for land use restrictions and engineered barriers may still be used, though Highway Authority Agreements will likely not apply to the indoor inhalation exposure route.

Subpart L: Building Control Technologies

Building control technologies are designed to prevent the migration of volatile chemicals into enclosed spaces. They control unacceptable health risks due to vapor intrusion by reducing or eliminating the concentrations in the indoor air without necessarily reducing the residual concentrations in soil, groundwater, or soil gas. The objective of these measures is to make the indoor inhalation exposure route incomplete by preventing the migration of chemicals into a building.

Section 742.1200 establishes the use of building control technologies as an acceptable final corrective action and requires that the site evaluator also comply with the provisions of Subpart J regarding institutional controls. This Section allows for no further remediation determinations to be made on building control technologies for buildings not yet constructed, provided that the approved technology is in place and operational before human occupancy. Site owners and operators are required to maintain building control technologies; specific maintenance duties will be contained in the institutional control. In the event that the system shuts down, site owners and operators are required to notify building occupants and workers and implement protective measures to prevent exposure to the contaminants of concern. System inoperability may occur during routine maintenance or power failures. Contingency measures will be contained in the institutional control; this practice is consistent with provisions in place

for engineered barriers used by the other exposure routes. Lastly, this Section states that the no further remediation determination may be voided if the building control technology is not maintained as stipulated in the institutional control.

Section 742.1205 lists the information to be submitted in a proposal to use any of the three mitigation systems under Subpart L.

Section 742.1210 defines the specific requirements for three common mitigation systems: sub-slab depressurization, sub-membrane depressurization, and membrane barrier systems. This Section specifically prohibits natural attenuation, access controls and point of use treatment from use as building control technologies. Also, building control technologies cannot be used as part of a Tier 1 evaluation.

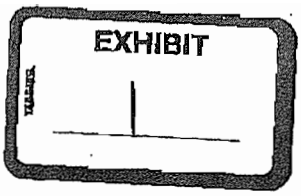
Sub-slab depressurization is an active venting system that draws contaminated soil gas from beneath the building and expels it to the atmosphere. Sub-slab depressurization systems can be used for existing and new buildings. Sub-membrane depressurization is similar to the sub-slab depressurization system, but used for existing buildings with crawl spaces.

Membrane barrier systems are used for new building construction and serve to physically block the entry of contaminants into interior air space.

This concludes my testimony.

Errata Sheet Number 1

Illinois EPA would like to remove Section 742.1210(c)(4) from the proposed rules. This section contains the building control technology requirements for a barrier made of geologic materials. This language was added early on in the rulemaking development when it made sense to offer a barrier parallel to the engineered barriers available for the ingestion and outdoor



Instances of Vapor Intrusion Risk at Sites in Illinois

Below are seven case studies detailing remedial efforts at contaminated sites in Illinois. These case studies serve two purposes. First, they are meant to give the reader an overview of the variety of sites and cleanup programs affected by vapor intrusion risks. Second, and more importantly, these case studies illustrate the need for consistent and comprehensive regulations for evaluating and managing the indoor inhalation exposure route. For example, the Peoples Gas site and Bell Fuel site demonstrate how the lack of Tier 1 remediation objectives and a defined sampling protocol for the indoor inhalation exposure route may cause unnecessary work that is costly and intrusive and lead to site evaluation results that may be unreliable.

Without regulations in place, Illinois EPA, site owners, environmental cleanup professionals and future property users experience problems in interpreting site data and uncertainty as to remediation goals.

Acme Solvents/Rockford: Remedial Project Management Section; State Sites Unit

The Acme Solvents Site is located in an industrial area southeast of downtown Rockford, on the southwest corner of the intersection of 15th Street and 20th Avenue. According to Illinois EPA records, Acme Solvents began operation as a solvent reclaimer in 1955. Illinois EPA inspections from 1980 to 1983 noted numerous violations of RCRA storage and disposal regulations, including spills and poor housekeeping. In 1984 a Civil Complaint was filed against Acme for violations of the Hazardous Materials Transporting Act. Acme Solvent Reclaiming, Inc. ceased operation in 1986.

In the late 1980's Illinois EPA conducted an investigation of the Acme Solvent Site and determined that significant concentrations of chlorinated solvents, BETX and other volatile chemicals were present in the soil and groundwater. Further investigation by the Responsible Parties determined that soil impacts extend off-site to one adjacent property and groundwater impacts extend to a number of off-site properties.

Soil and groundwater concentrations exceeded the draft TACO Tier 1 soil and groundwater indoor inhalation remediation objectives. As a result, in 2008 the Responsible Parties collected soil gas samples at three adjacent off-site properties. A number of volatile chemicals were detected in the soil gas samples at concentrations exceeding the draft TACO Tier 1 indoor inhalation objectives. Based on the results of the soil gas samples, the Responsible Parties completed a risk assessment and determined that the indoor inhalation risk at each of the adjacent properties has an incremental lifetime cancer risk less than 1×10^{-6} and a hazard quotient less than 1. To further reduce risks, the Responsible Parties are proposing soil vapor extraction and air sparging at the Acme Solvents Site.

Devon Bank/Wheeling: Remedial Project Management Section, Site Remediation Program

The Devon Bank Site, located in Wheeling, Illinois, is part of a larger remediation site that includes several properties owned by Interstate Brand Corporation. This particular property was formerly occupied by a drycleaner, which contaminated the area with volatile chemicals. Perchlorocthylene (PCE), a chemical commonly used by the dry cleaning industry, was detected at levels exceeding TACO Tier 1 soil remediation objectives. Trichloroethylene (TCE), commonly used as a metal degreaser, was also detected at levels exceeding TACO Tier 1 soil remediation objectives.

During the remedial process, in-situ chemical oxidation was used to lower concentrations of PCE to an acceptable remediation level under TACO. However, concentrations left in the soils at the Devon Bank Site posed a risk of vapor intrusion. To address this concern, in 2008 Devon Bank installed a vapor barrier membrane beneath the foundation slab to exclude the potential for chemicals to migrate into the building.

People Gas/Chicago: Remedial Project Management Section, Site Remediation Program

People's Gas Site, formerly known as 31st Street Gas Distribution Center, served as a storage and distribution facility for manufactured gas between 1887 and 1934. Two gas holders and various gas distribution piping and equipment were on the site. After closure the property was transferred to the Chicago Housing Authority and eventually developed into Bridgeport Homes, which consists of 13 two-story brick buildings, each containing several residential units, and a two-story community building. The buildings are slab on grade with no basements.

Previous soil and soil gas samples showed contamination from benzene, naphthalene, semi-volatiles, and metals. In 2004, indoor and outdoor air samples were taken from the first and second floors of five occupied and eleven unoccupied units in the housing complex. Illinois EPA coordinated with the Illinois Department of Public Health because air samples were taken inside the residences. The results of indoor air sampling found elevated naphthalene in two unoccupied units (A and B). Construction materials were stored in unit A and unit B, which had recently undergone renovation. In both units naphthalene levels were higher on the second floor than on the first; however the Illinois EPA and the Illinois Department of Public Health concluded that contamination levels did not pose a threat to human health, and were probably not due to vapor intrusion.

Chanute Air Force Base/Rantoul: Federal Site Remediation Section, Department of Defense Program

The former Chanute Air Force Base occupies nearly 2100 acres in Rantoul. The base opened in 1917 and conducted military flight operations until 1971. From 1971 until all military operations ceased in 1993, Chanute served as a non-flying training base. During its years of operation, hazardous materials were used at Chanute, such as fuels and chlorinated solvents.

Eighteen structures on the former base were evaluated for vapor intrusion, but two buildings stand out as particularly contaminated. Building 343 served as a laundromat and has a history of trichloroethene (TCE) and PCE spills. Building 995 was a jet engine test cell; TCE and vinyl chloride are the primary contaminants at this location.

Vapor intrusion investigations were performed at the base during remedial investigations conducted under CERCLA. The Air Force conducted sub-slab soil gas sampling at buildings within 100 feet of volatile chemical-impacted groundwater. These measurements exceeded U.S. EPA screening values corresponding to target carcinogenic risk levels of 10^{-5} for indoor air inhalation. The risk assessment model used by the Air Force indicates that remedial action or institutional controls are needed to ensure protection of potential future residents.

Southeast Rockford/Rockford: Federal Sites Remediation Section, Superfund Program

The Rockford Groundwater Contamination Superfund Site contains two contaminated Areas – 4 and 7 – with vapor intrusion potential.

Area 4 is a mixed industrial/commercial and residential use area. The source of the volatile chemical contamination is located across the street from residences to the west and a mobile home park is located to the east (up gradient). The groundwater plume extends down gradient under the houses. Soil gas samples collected during many previous phases of investigation detected volatile chemicals on the western edge of the mobile home park. Initial indoor air samples were collected in 1993. 1,1,1-TCA and TCE were detected but at concentrations below health-based screening levels available at the time. A second round of sampling was done in 2003 using four houses in the affected area and a background house. The houses were sampled indoors and outdoors, and soil gas samples were also taken. A groundwater sample was taken from a well that is down gradient/side gradient and closest to the plume. Risks to residents were estimated from the measured indoor air samples and modeled indoor air concentrations from the soil gas. No data were currently available that adequately characterized shallow groundwater in the vicinity of the residences; risks from groundwater were not assessed. The results of the indoor and outdoor air samples, as well as the soil gas samples, showed signs of vapor intrusion in some areas, in one case due to an improperly sealed well pit which provided a migration pathway for vapors in the groundwater into the home. That well has since been sealed.

Area 7 contains a park owned by the Rockford Park District and is bordered by a subdivision on the east and west. The cause for contamination at the site is a former open dump. The groundwater, which extends under the subdivision, is contaminated with volatile chemicals. Initial air samples taken in 1993 detected volatile chemicals at concentrations below health-based screening levels available at that time. The results of this sampling did not correlate to the groundwater contamination and there were no obvious signs of vapor intrusion. In July and August of 2003, a second round of sampling was conducted. Five houses in the affected area and a background house, used as a control, were air sampled indoors and outdoors; soil gas samples were collected, and groundwater was tested. The results were mixed; chemicals were found but not deemed hazardous to human health.

Premcor/Hartford: RCRA Corrective Action

Premcor Refinery, the largest independent petroleum refiner in North America, is located on 400 acres in the village of Hartford, Madison County, Illinois. Since the 1940's the site has operated under various owners as a petroleum refinery. Bordering Premcor are two other refinery sites. Amoco operated from 1980-81, and ConocoPhillips is currently in operation. In the 1970's and 1980's residents in the Hartford area experienced gas odors in their basements, while some residents experienced fires and explosions. The matter was referred to the Illinois Attorney General who urged all three operators to study gasoline composition. Illinois EPA conducted fingerprinting and geo/hydrology studies which found that Clark (now Premcor) was the predominant source of the gasoline under north Hartford.

Illinois EPA and the Attorney General's Office negotiated with Clark/Premcor in the 1970's and again in the 1990's to install recovery systems to mitigate the effects of the leaks. The first system, recovery wells, captured 1.16 million gallons of gasoline. The second system, vapor recovery, has captured the equivalent of 1.8 million gallons of gasoline, and still operates; however, Premcor no longer operates the recovery wells. Since the implementation of these recovery systems, citizens have continued to complain about gas vapors.

There are several environmental and human health concerns due to contamination. The groundwater under Hartford may contain several million gallons of hydrocarbons, and in May 2002 the Illinois EPA found explosive levels of vapors in homes along a corridor of Hartford. The Illinois EPA also found, in 2002, elevated levels of benzene in many homes, and determined that residential vapor intrusion was a public health hazard.

In May 2003, Illinois EPA requested that U.S. EPA, Region 5 conduct a time critical removal assessment, assess current site conditions, and determine if possible removal actions were warranted at the North Hartford Premcor Site. U.S. EPA has assumed primary responsibility for addressing the problems at the Hartford Site since the

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	
TIERED APPROACH TO CORRECTIVE	)	R09-9
ACTION OBJECTIVES	)	(Rulemaking-Land)
(35 Ill. Adm. Code 742)	)	

PRE-FILED TESTIMONY OF TRACEY HURLEY

Qualifications

My name is Tracey Hurley. I am an Environmental Toxicologist with the Toxicity Assessment Unit at the Illinois Environmental Protection Agency ("Illinois EPA"). I have been with the Illinois EPA for twenty years. I have been a member of the Illinois EPA's workgroups that developed the original 35 Ill. Adm. Code Part 742 rule, Tiered Approach to Corrective Action Objectives ("TACO", R97-14) and subsequent amendments.

I was a member of the Agency's workgroup that developed the original 35 Ill. Adm. Code Part 620 rule, Groundwater Quality Standards (PCB R89-14).

I have a Bachelor of Science degree in Biology and a Master of Public Health degree.

Testimonial Statement

I will be testifying in support of the proposed amendments to 35 Ill. Adm. Code 742: Tiered Approach to Corrective Action Objectives. I will present an overview of the updates to the tables in Appendices A, B, and C and Errata Sheet 1.

There are four main explanations for the revisions to the tables: changes in the toxicity values, changes in the physical and chemical parameters, addition of chemicals

is different for exposures occurring from birth and exposures that occur during adulthood. The ADLs for chlordane and toxaphene have been deleted to reflect changes that USEPA has made to its SW-846 methods. The Class I groundwater remediation objective for arsenic has been changed in accordance with 35 Ill. Adm. Code 620 (R08-18).

Table J is a new table containing a list of volatile chemicals that must be considered for the indoor inhalation route. "Volatile chemical" is defined in 742.200 as a chemical with an H' value greater than 1.9×10^{-2} or a vapor pressure greater than 0.1 Torr (mm Hg) at 25°C and elemental mercury. USEPA, in its "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils" (November 2002), defines a volatile chemical as having a Henry's Law Constant greater than 10^{-5} atm m^3/mol (equivalent to an H' value of 4.1×10^{-4}). The existing TACO definition for volatile organic compounds is based on SW-846 analytical methods or a boiling point less than 200 °C and a vapor pressure greater than 0.1 Torr (mm Hg) at 25°C. We felt that having two separate definitions for volatile chemicals, one for the indoor inhalation pathway using USEPA's definition and one for the other pathways, would be too confusing. In addition, USEPA's definition includes many polynuclear aromatic hydrocarbons (such as acenaphthene and chrysene) that really do not volatilize in a significant amount. In order to reconcile the two definitions, we looked at some physical-chemical properties of the chemicals and whether these properties determined if the chemical was analyzed by an SW-846 method for volatiles or analyzed as a semi-volatile. The physical-chemical properties we examined included vapor pressure, boiling point, H', molecular weight, and the log of the octanol-water partition coefficient ("logP"). logP is used to calculate K_{oc}. There did not appear to be a relationship between

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R09-9
TIERED APPROACH TO CORRECTIVE	)	(Rulemaking-Land)
ACTION OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	
	)	

ILLINOIS EPA'S RESPONSES TO PRE-FILED QUESTIONS

NOW COMES the Illinois Environmental Protection Agency ("Illinois EPA"), by and through one of its attorneys, Kimberly A. Geving, and submits the following Pre-Filed Answers in Response to the Pre-Filed Questions of Kara Magyar, Gail Artrip, P.E., and the Illinois Environmental Regulatory Group ("IERG").

Question of Kara Magyar

Question 1) Ms. Magyar requested that the Illinois EPA provide its rationale for assuming the value of Q_{soil} being zero at a distance greater than five feet.

Answer: In Tiers 1 and 2, the default value for the volumetric rate of soil gas into a building (Q_{soil}) is zero, meaning that advection is not factored into the calculation of remediation objectives. This is because other parameter values are suitably conservative.

In Tier 3, however, remediation objectives for the indoor inhalation exposure route must take into account the possible migration of chemicals caused by both diffusion and advection. If contamination is within five feet of an existing or potential building or man-made pathway, then a Q_{soil} value of 83.33 cm^3/sec must be used in calculating the attenuation factor (equation J&E8a), unless additional site-specific information indicates a different remediation objective is reasonable and appropriate. A Q_{soil} assessment under Tier 3 is a balancing factor to make sure alternative evaluations remain health-protective.

The five foot setback and 83.33cm^3/sec values are from USEPA's *Users Guide for Evaluating Subsurface Vapor Intrusion Into Buildings* (EPA/68/W-02/33, February 2004).

Questions of Gail Artrip, P.E. (Carlson Environmental)

Question 1) If I have soil and ground water issues on my site, in addition to evaluating indoor inhalation on my site as per the proposed TACO rules, would I also have to evaluate potential off-site lateral migration of measured impacts via Equation R-26 to assess the potential for (ground water component of) indoor inhalation exceedances on my neighbor's property as well? As an alternative, could I install monitoring wells along our shared property boundary to measure actual ground water concentrations? If either approach results in potential off-site exceedances of the ground water component of indoor inhalation, what will I be required to do (neighbor notification, ELUC requiring installation, operation, and maintenance of a building control technology, etc.)? If an ELUC is required on my neighbor's property and he is reluctant to comply, can I still get my NFR? Is it reasonable to assume that only ground water (not soil) transport onto adjoiners' properties will require evaluation?

Answer: To determine if off-site properties are at risk from indoor inhalation route exposures, site evaluators have the option of running TACO equation R26, collecting groundwater samples, or collecting soil gas samples at the down gradient property boundary. With respect to the indoor inhalation route, soil gas data trumps groundwater sample data and R26 modeling results. Groundwater sample data trumps R26 modeling results when addressing the indoor inhalation route.

If R26 predicts groundwater impacts will migrate off-site at concentrations above the groundwater indoor inhalation remediation objectives, but soil gas concentrations at the source or down gradient property boundary of the remediation site are below the soil gas remediation objectives, no further analysis of off-site properties is necessary in regards to the indoor inhalation route.

If R26 predicts groundwater impacts will migrate off-site at concentrations above the groundwater indoor inhalation remediation objectives, but groundwater samples at the down gradient property boundary are below the indoor inhalation remediation objectives, no further analysis is necessary in regards to the indoor inhalation route.

Using both the J&E and the R26 models to predict down gradient risks associated with the indoor inhalation route is an extremely conservative, but allowable, option.

Off-site properties impacted above the indoor inhalation remediation objectives will require an ELUC. Illinois EPA will not issue a No Further Remediation letter without an ELUC in place when off-site properties are affected.

It is reasonable to assume that only contaminants in groundwater, not soil, will migrate off-site, but exceptions to this scenario may occur.

Question 2) P. 9 of Gary King's Nov. 14, 2008 pre-filed testimony says, "Building-specific default values for the following parameters...The same default values must be used for the same parameters when performing Tier 2 calculations. The actual values of these parameters do not have a great impact on the remediation objectives; however, the default values are based on a conservative representation of the type of buildings that are or may be present at the site in the future. Without these conservative values, restrictions would be required on the minimum size of a building that can be

constructed over the contaminated area." I understand the Illinois EPA's institutional control-related challenge, but take issue with the defaults not having a great impact on the remediation objectives. In our preliminary analysis, we are finding that the building dimensions can significantly alter the Tier 2 remediation objectives. Our clients are industrial users, and instead of 65 feet x 65 feet x 10 feet tall (the default assumptions), tend to have buildings that are 500 ft x 500 ft x 25 ft tall, and this does have a dramatic effect on the Tier 2 indoor inhalation remediation objectives. In putting together our SRP reports, we will run the Tier 2 calculations using the building dimension defaults. If there are no exceedances, the outcome is straightforward. However, if the Tier 2 remediation objectives using the default building dimensions predict an exceedance, our inclination is to also run the Tier 2 calculations using the existing building-specific dimensions, and present both outcomes. If no exceedances are predicted using the building-specific dimensions, is there a proposed institutional control option that would allow us to avoid putting in a (unnecessary) building control technology until the existing building is demolished and a future building is constructed? For example, perhaps our NFR has a condition that requires a building control technology or max. size for future construction (when the existing building is torn down). Somehow the Illinois EPA's approval letter/NFR will acknowledge that the current building conditions are acceptable. Surely no one thinks it's a good idea to install an unnecessary mitigation system (based on modeling) in an existing building just to get an NFR. Obviously if our Tier 2 calculation with building-specific inputs indicates a problem, we would have to install a building control technology. We recognize that Tier 3 does allow for use of building-specific dimensions, however, are finding that inclusion of the advection component in the

Answer: Section 742.717(l) does not exist. Ms. Artrip is referencing an earlier draft version of the proposed amendments.

Questions of the IERG

Question 1) The outdoor inhalation pathway can be excluded in several ways. Can the vapor intrusion pathway be excluded in the same manners? Is it correct that the primary difference impacting the manner in which the pathways can be excluded is that the vapor intrusion pathway must consider the impact a building (i.e., chimney effect) has on the migration route?

Answer: No and no. To exclude the indoor inhalation pathway, site evaluators must follow the requirements of Section 742.312.

Question 2) Can the Agency provide draft language that will be included in No Further Remediation ("NFR") Letters for the following circumstances:

a. Where a site with a building location achieves the remediation objectives for all pathways, including vapor intrusion;
b. Where there is no building on the site; and
c. Where there is no building on the site when the NFR Letter is issued, but there is a likelihood of construction of a building with a known location in the future? An unknown location?

Answer: As part of this rulemaking, Illinois EPA has not provided language to be used in future No Further Remediation letters. This is consistent with past practice. However, in response to the specific scenarios presented as part of this question, Illinois EPA makes the following observations:

a. The NFR letter will be worded as before (pre-indoor inhalation).

b. and c. are the same for purposes of the NFR letter. Illinois EPA intends for the entire site to be safe for current and future building occupants, regardless of where those buildings are located.

Question 3) Is it the Agency's intention to require in an NFR letter issued for scenario 2(c) above: (i) the use of a Building Control technology for future construction, or (ii) that the site be re-enrolled and re-evaluated pursuant to the applicable program requirements?

Answer: At a site with no existing buildings, the NFR letter may require installation of a Building Control Technology ("BCT") for a future building. If a site owner prefers not to install the BCT, they have the option of re-enrolling the site and cleaning up the remaining contamination so that an institutional control is no longer necessary.

Due to this question and the preceding two questions, Illinois EPA would like to clarify that the location of an existing building does not control evaluation of the indoor inhalation exposure route. Illinois EPA's approach to management of the indoor inhalation pathway is site-wide and based on the location of the contaminant source. Illinois EPA intends for the entire site to be safe for current and future building occupants, regardless of where those buildings are located.

Question 4) In terms of the vapor intrusion pathway, will there be a difference between the requirements in an NFR Letter and those stated in an ELUC? Can the Agency provide an explanation of the impact the proposed vapor intrusion pathway will have on the effectiveness of ELUCs?

Answer: For every exposure route, the NFR letter addresses on-site contamination and the ELUC addresses off-site contamination. ELUCs for the indoor inhalation route will be the same as ELUCs for any other exposure route.

Question 5) If a responsible party is required to evaluate off-site impacts and identifies some impact, is an ELUC necessary? How will off-site vapor intrusion from groundwater pathway be institutionally excluded on adjacent properties? Are ELUCs an institutional control option?

Answer: ELUCs are required anytime off-site contamination above the remediation objectives is left in place. Refer to Section 742.312 for pathway exclusion options for the indoor inhalation route.

Question 6) Does the Agency intend to amend the model ELUC language to address the impacts of the vapor intrusion pathway?

Answer: Yes, as necessary.

Question 7) Will the Agency require actual data or allow modeling of groundwater to evaluate the vapor intrusion pathway to an off-site building?

Answer: To determine if off-site properties are at risk from indoor inhalation route exposures, site evaluators have the option of running TACO equation R26, collecting groundwater samples, or collecting soil gas samples at the down gradient property boundary. With respect to the indoor inhalation route, soil gas data trumps groundwater sample data and R26 modeling results. Groundwater sample data trumps R26 modeling results when addressing the indoor inhalation route.

If R26 predicts groundwater impacts will migrate off-site at concentrations above the groundwater indoor inhalation remediation objectives, but soil gas concentrations at

Answer: The same obligations exist as with any other exposure pathway when off-site properties are contaminated.

Question 10) The default f_{oc} used for calculating C_{sat} for the outdoor inhalation pathway (0.6%) is the default f_{oc} for soils in the 0-3 foot depth interval. Is that correct?

a. Hypothetically speaking, when calculating a site-specific C_{sat} for this pathway, could a remedial applicant use a site-specific f_{oc} for this same depth interval?

b. Would the answer to 10(a) change, if the sample being screened came from, for example, the 8-10 foot depth interval?

Answer: Yes, the default f_{oc} used for calculating C_{sat} for the outdoor inhalation pathway is the default f_{oc} for soils in the 0-3 foot depth interval.

a. Yes.

b. Yes. For the outdoor inhalation pathway, the surface f_{oc} value-- either default or site-specific—must be used.

Question 11) The Agency's website (http://www.epa.state.il.us/land/taco/vapor-intrusion-rulemaking.html, visited December 11, 2008) contains some "answers to common questions about the proposed rule":

Q. Will Illinois EPA re-open sites that have already earned a No Further Remediation letter and require them to evaluate the indoor inhalation pathway?

A. No. Illinois EPA would take action only if new site-specific information indicates a vapor intrusion problem. In such an event, the action would begin with voidance of the NFR letter.

effective, unless the Board expressly states otherwise in its final opinion and order.

b. Unknown. Cost increases are expected to vary widely depending on site and contaminant characteristics and the willingness of affected property owners to accept building control technologies and institutional controls.

c. Yes. Staff training began last fall and will continue.

d. No. However, in keeping with current practice, responsible parties are encouraged to evaluate the indoor inhalation pathway on a site-specific basis if impacts are suspected or if performing a full risk assessment under Tier 3. The methodology may differ from the proposed rules, but is subject to Illinois EPA approval.

e. Illinois EPA has proposed that the rules take effect immediately upon adoption. It will be up to the Board to decide the implementation schedule. If the rules are adopted prior to issuance of an NFR determination, then a party will be required to evaluate the indoor inhalation pathway.

f. See answer to e) above. When the rules become effective, any site that has not closed will be subject to all of the amendments, including the updated remediation objectives for other exposure routes. Illinois EPA is not deviating from past practice. This is consistent with past practice.

g. Yes, but no new NFR letter will be issued unless the owner re-enrolls the property in the Site Remediation Program.

Question 12) Can a responsible party use past soil gas data for compliance with the vapor intrusion ROs that were obtained using different sampling methods than

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	
TIERED APPROACH TO	)	R09-9
CORRECTIVE ACTION	)	(Rulemaking - Land)
OBJECTIVES (35 ILL. ADM.	)	
CODE 742)	)	

Proceedings held on January 27, 2009, at 10:35 a.m., at the Illinois Pollution Control Board, 1021 North Grand Avenue East, Springfield, Illinois, before Richard R. McGill, Jr., Hearing Officer.

Reported By: Karen Waugh, CSR, RPR
CSR License No: 084-003688
KEEFE REPORTING COMPANY
11 North 44th Street
Belleville, IL 62226
(618) 277-0190

included 59 chemicals of concern that we have identified should be subject to this exposure route. Those are listed in the proposal.

Management of the indoor inhalation route is going to be similar to what we have in the other pathways of TACO. Again, as I said before, it's really building upon it. We've got a three-tiered approach, a Tier 1 with a table of numbers that can screen compounds out or not; there's a set of Tier 2 equations that are put in the rules; and then finally there's Tier 3 that kind of deals with situations that fall outside of Tier 1 and Tier 2. We have included opportunities for pathway exclusion, as we have done with the other pathways, and we've included, as I was describing before, building control technologies, which is somewhat similar to the concept of engineering barriers that we had relative to the other pathways.

Included with my testimony are some case studies, and that's -- that was from seven different sites, and the reason why we put those together, it's not that those are the only things we've encountered, but we wanted to give kind of a flavor of the fact that this issue relative to indoor inhalation is something that needs to be addressed across all of the programs that Illinois EPA

looks at when they're managing a cleanup site, and it really shows the kind of variety of those types of sites and shows the different types that are encountered and really shows the need for having a consistent methodology for how you address indoor inhalation, which is what we are proposing in this rule.

We think this is going to have three important benefits for the state and for the residents of the state. First there's going to be -- this methodology will create a better way of protecting Illinois residents from volatile chemicals migrating into -- from contaminated soil and groundwater into their homes or places of business. Secondly, site owners and other remediation applicants will have a more expanded liability relief through issuance of a no further remediation letter that covers this pathway. And then finally, we think that this -- having these remediation objectives will facilitate property transactions.

In March of last year, ASTM issued a standard practice document for assessment of vapor intrusion into structures relative to real estate transactions. As part of that practice document, they instruct users to apply state generic risk-based concentrations as they're going through the process of using the ASTM standard. We think

that what we're doing here really is part of helping assist that process along.

Rather than go through the details, I think the details of the proposal are kind of spelled out. We'll kind of talk about those further as we discuss some of the questions and responses to them. I wanted to talk briefly about -- we submitted a couple of errata with our -- subsequent to our proposal. Errata 1 proposes removing a subsection, 742.1210(c)(4). That section contains a building control technology requirement for a barrier made of geologic materials. As I put together in my testimony after -- we initially had that included, but as we went through the process of our developing our proposal and developing the other building control technologies, we realized that that (c)(4) provision really didn't make sense to be included based on the way the equations worked, so we are proposing that that be dropped. The second errata --

HEARING OFFICER MCGILL: I'm sorry. Could I just interrupt you for one sec? I want to make sure I'm looking at the right errata sheet. You said that was in errata sheet number 1?

MR. RAO: Yes.

MR. KING: Yes.

helpful for those who haven't read the question.

MR. KING: Okay. This is question 8, and the question is as follows: "If there is a well at the property boundary and it exceeds the remediation objectives for the vapor intrusion groundwater pathway, will the site still qualify for an NFR letter? For example, the remediation site might not have any buildings and indoor inhalation ROs might not apply, but presumably the groundwater (and exceedance) might go off-site." Okay. And the answer is as follows: "Yes, if the site meets the soil gas remediation objectives at the property boundary and no other pathways are a concern. If soil gas concentrations exceed remediation objectives, the site evaluator must investigate off-site."

Just as an aside, that's similar to what we had before in the answer. Here's kind of the difference where we broke it out into the LUST program and site remediation program. "Under the LUST program, if contamination is identified off-site, the site evaluator must either clean up the contamination or negotiate an ELUC." That's capital E, capital L, capital U, capital C. "Under the site remediation program, the site evaluator need only actively remediate the on-site

contamination to qualify for an NFR letter. The NFR letter issued by the site remediation program will not, however, release the site from any off-site liability. For both programs, the absence of any buildings, on-site or off-site, does not matter when performing the site investigation."

That concludes my presentation.

HEARING OFFICER MCGILL: Thank you.

MS. GEVING: Ms. Hurley, if you'd like to proceed with your summary, please.

MS. HURLEY: Okay. My name is Tracey Hurley. My testimony concerns the updates to the appendices, errata sheet number 1 and errata sheet number 2. We have four primary reasons for the updates to the appendices. One is we've calculated new remediation objectives for the indoor inhalation route, and we have added a new associated table with the Tier 1 remediation objective, and we have also added a new table with the Johnson and Ettinger equations, and we have added a new table with the parameters that were used in the Johnson and Ettinger equations and the default values for these parameters, and in the appendices we have also updated the remediation objectives for the other pathways, and this was due to updates in the toxicity criteria and

response was that "b and c are the same purposes -- are the same for purposes of an NFR letter. Illinois EPA intends for the entire site to be safe for current and future building occupants regardless of where those buildings are located." And so my question is whether or not the location of contaminants relative to a building location makes a difference in the response. Would an NFR letter be appropriate given a building location that is not overlying the contaminated portion of the site?

MR. KING: I mean, there still would be institutional control on the property. I guess I'm a little -- Maybe if you phrased the question as a hypothetical.

MR. DAVIS: I can do that, certainly. If you had a site where, you know, you had -- we'll just say, you know, the north half of the site was not contaminated, the south half of the site was contaminated, would an NFR letter -- could an NFR letter be issued that would, you know, require an institutional control over the south half and, you know, either allow for buildings or if there was an existing building on the north half, would that be permissible?

MR. KING: Yes, I think that's correct.

MR. DAVIS: Okay. I just wanted to clarify

that.

MR. KING: Just as long as it -- again, it's -- what's critical to that hypothetical is the area of contamination be identified.

MR. DAVIS: Okay. And just generally, on NFR letters that are going to be issued under this new regime with inhalation exposure route, will those letters when they're issued explicitly refer to the fact that the indoor inhalation route has been evaluated or some other instance just to set them apart from previously issued no further remediation letters?

MR. KING: At this point we weren't planning on making that kind of separation. I mean, it would just -- it would be -- the way we have things set up is once the rules go into effect, a site has to end up addressing all of the pathways, including indoor inhalation, so it's just to be -- presumed to be the case.

MR. DAVIS: Okay. Moving on, then, from that --

BOARD MEMBER JOHNSON: Wait a second, Alec. I mean, if one of your goals is to facilitate property transactions, don't you think the addition of language addressing that specifically in an NFR letter would

benefit that?

MR. KING: You know, we have put in language at the request of remediation applicants that wanted specific language in there. I think we could evaluate that. We just -- We weren't going to set up a procedure where we were mandating that that would apply because we don't do that now and there's multiple pathways, so again, we're just trying to be somewhat similar to the way we've been, but if somebody wants to have that referenced, I think we could accommodate that.

MR. DAVIS: Thank you. All right. For question 7, our -- IERG's question 7 is, "Will the Agency require actual data or allow modeling of groundwater to evaluate the vapor intrusion pathway to an off-site building?" My question, I guess, which is relative to this but isn't specifically drafted is, does the indoor inhalation pathway require modeling of the migration of contaminated soil or groundwater?

MR. KING: When you say -- Are you just looking at the J&E model or are you looking at R26 or -- because those are two separate models, so I'm a little confused by the question.

MR. DAVIS: Well, I -- your response referred to R26, but I think if you could describe both,

challenging whether it's really sand or not.

MR. KING: Yes.

MR. REOTT: Okay. Was any attempt made based upon those seven case studies that you had talked about in your testimony to try to correlate actual indoor air quality readings in the field with the predicted values under the Johnson and Ettinger model?

MR. KING: The simple answer is no.

MR. REOTT: It seems that one of the -- or two of the primary impacted populations by this rule change is going to be the LUST fund and the City of Chicago, the LUST fund because of the number of sites that could potentially be affected. Has anybody done a financial calculation to see the impact of this on the LUST fund?

MR. KING: No, we have not done that. I mean, part of that too again, what we're seeing as far as remediation costs is that the petroleum contaminants are not as significant of a problem as the chlorinated compounds, so how much actual impact there would be relative to tank sites in terms of actual remediation is not quite clear at this point.

MR. REOTT: Did the Agency do any tables that directly compare for the 59 chemicals the

preexisting TACO pathway values and the proposed values? Because you have separate tables now in the way the rule's written. Just to keep someone from having to reconstruct this, did you guys internally do anything in a more -- in an easy-to-compare formula show the new projected values for indoor inhalation versus the existing TACO values for the same 59 chemicals?

MR. KING: Yeah, that was one of the things we kind of struggled with. We wanted to put it all in the same set of tables just for making that kind of comparison you're talking about easier to do, but it just, you know --

MR. REOTT: Print ends up so small you can't read it.

MR. KING: Yeah. You know, you can't -- and you get to a point -- I mean, we've got footnotes on those tables, and those footnotes are important, and all of a sudden you take them apart and you can't even -- you can't read what the footnote is, so we chose to use a separate table, and we did do some comparison, and in some situations they're more conservative than what's existing now and then in other situations they're not. Where the groundwater ingestion pathway that's still -- that's in the older set of rules is still -- has not been

excluded or that's not been excluded, that is generally still going to be the driving pathway.

MR. REOTT: The most restrictive criteria.

MR. KING: Right, the most restrictive criteria. Where that has been excluded, okay, then a lot of the time the indoor inhalation pathway will become the most restrictive for volatile chemicals.

MR. REOTT: So for volatile chemicals at sites in the city of Chicago or other communities with groundwater ordinances, the indoor inhalation pathway will turn out to be the most restrictive pathway, then.

MR. KING: I think that's -- that is going to turn out to be true.

MR. REOTT: So particularly for those populations, you know, people with sites in those kind of communities, Chicago and other communities with groundwater ordinances, then there's something substantial at stake here, you know, in this change. This is not a minor change to the rule. It's a pretty big change.

MR. KING: No, it is a significant change, and that was one of the things we earlier identified for people, is that the groundwater ordinance institutional control would not apply for this pathway, and so there --

it is something that additionally will be -- will need to be addressed.

MR. REOTT: There's a couple of points in the testimony where different witnesses describe different issues with trying to measure indoor air quality and use indoor air testing to evaluate compliance with an indoor inhalation pathway and point out obvious problems with indoor air testing. It seemed as if most of those problems resulted in false positives in a sense that, you know, if the person in the home is using some volatile chemical, it will result in a positive in the sense that it will show that chemical in the air in the house or building but it didn't necessarily come from the soil or groundwater. If you have indoor air results that are negative, so in other words they show the chemicals are not present, why wouldn't those still trump the other predicted modeling sources for what the indoor air quality would be?

MR. KING: Under Tier 3 that would be an option, but it's still -- you'd still have to address the source of the contamination. I mean, it -- you could go into a building and find negative values, but, you know, where is that building in the context of the contamination? There has to be a correspondence between

where the contaminants are and where the building's at. It would be -- That would be a potential way to approach things, but again, as you were commenting, the danger of false positives and the intrusive nature of that kind of sampling, particularly when you're talking about residences, we just thought it was a more sound approach to look at the contamination at the site without having that -- you know, the indoor aspect as a -- as its own tier.

MR. REOTT: So at least in a Tier 3 type evaluation, the Agency would consider that approach?

MR. KING: Yeah, we could consider it. I wouldn't advise it, I mean, just because of the -- I think that would be kind of a last resort kind of an approach given the other flexibilities we've included in the rules.

MR. REOTT: That's it. Thank you.

HEARING OFFICER MCGILL: Mr. Reott, if you -- are you just here on your own behalf or representing an organization today?

MR. REOTT: I --

HEARING OFFICER MCGILL: On your own behalf is fine. I just --

MR. REOTT: I'm here -- I testified three

times in the original TACO rulemaking --

HEARING OFFICER MCGILL: Yeah, we recall.

MR. REOTT: -- for those of you who were around for that, was one of the two people who opposed the original Agency proposal in that rulemaking, which the Board substantially changed, and I just think that --

HEARING OFFICER MCGILL: And before you proceed, I -- we certainly would be happy to swear you in if you would like to provide some testimony.

MR. REOTT: No. I may well do that in March.

HEARING OFFICER MCGILL: Okay. Fair enough.

MR. REOTT: Today was more informational gathering about the nature of the Agency's proposal, try to flush out a couple of parameters. This is really important. This is going to affect a lot of sites, and, you know, I think I'll probably elaborate on that in March, but, you know, this needs to be looked at very carefully.

HEARING OFFICER MCGILL: Thank you. We look forward to hearing from you.

MR. KING: Could we make one other addition? Dr. Hornshaw wanted to make one other addition.

HEARING OFFICER MCGILL: Sure. We're still

on the record. Go ahead.

DR. HORNSHAW: Just wanted to point out that in addition to the potential problem of false positives, there's also a problem -- a potential problem for false negatives. You can pump up the ventilation, open the window, etc., to help defeat the actual results that might be truly there.

HEARING OFFICER MCGILL: Thank you. I'll ask again if anyone in the audience has any questions for the Agency's witnesses. Seeing none, why don't we go off the record for a moment.

(Discussion held off the record.)

HEARING OFFICER MCGILL: The Board -- Seeing at this point there were no other questions from the audience, the Board was going to pose its questions, after which if Dr. Salhotra hasn't shown up yet, we'll probably break for lunch.

MS. GEVING: Okay.

MR. RAO: We'll just go section by section and start with the definitions. Mr. King, in the definition of a building, could you please explain the rationale for choosing six months as a time frame for minimum occupancy?

MR. KING: Well, we were -- we knew we had

to have something longer than a day, you know, so it -- we just -- this is one of those discussions we had with the Site Remediation Advisory Committee in terms of trying to come up with something that would be, you know, a reasonable time frame that would indicate that there was a permanency to the structure, you know, so in essence, if you had a -- you know, Larry Estep, who is with -- on behalf of Site Remediation Advisory Committee, he wanted to make sure that his chili tents that he set up for chili cook-offs weren't going to be considered buildings, you know, and so we kind of had to make sure that tent structures set up for a short period of time were not buildings, so it was kind of like -- had to reach the conclusion as to what represented a permanent structure, and so we just -- we came up with six months as that kind of designation.

MR. RAO: So if somebody has a summer rental and occupies it for three months, that --

MR. KING: Well, if the building -- excuse me. Yeah, if it's intended for or supports any human occupancy for more than six consecutive months, I guess we'd be in a close call there, because that's something that's intended for -- you know, could be intended for occupancy for more than six months. I mean, it's --

we're kind of trying to look at the building itself.

MR. RAO: Okay.

HEARING OFFICER MCGILL: I had a question. The definition of residential property is not -- the Agency proposal does not seek to amend it, but I've got a couple questions on that definition and whether or not it needs to be amended to take into account the new indoor inhalation pathway. I think because you included the definition section, most of you probably have the definition in front of you, but I'm going to read it just quickly from Section 742.200. Residential property is defined as any real property that is used for habitation by individuals or where children have the opportunity for exposure to contaminants through soil ingestion or inhalation at educational facilities, health care facilities, child care facilities or outdoor recreational areas, and my question is, should the definition of residential property be amended so that the Tier 1 residential indoor inhalation remediation objectives clearly would apply to, for example, where children have the opportunity for exposure to contaminants through indoor inhalation at educational facilities, health care facilities, child care facilities or conceivably indoor recreational areas?

MR. KING: So you're looking at -- it says soil ingestion or inhalation, and then you're looking at how those modifiers are working there.

HEARING OFFICER MCGILL: Well, right. There's the -- well, several things. There's -- And you know the history of this provision probably as well as anyone back in '97. In R97-11 and R97-12 there was a lot of attention paid to this language, so, yeah, I think there's a question of whether soil ingestion or inhalation would cover indoor volatilization and then also the reference to outdoor recreational areas. At the time of the original TACO rulemaking, indoor recreational areas were specifically mentioned in the Board opinion as not being included, so I just was wondering if you guys revisited that definition in light of this proposal.

MR. KING: No, we did not, but I -- in looking at the definition in the context of the questions you've raised, I think we certainly will go back and look at this and consider submitting an additional errata on this point to clarify it.

HEARING OFFICER MCGILL: Thank you. And if -- while you're looking at that, if you could also -- I'm sure you'll be looking at R97-11 and 12, where there was a lot of discussion and Agency-proposed language. At

question for you. On page 2 of your prefiled testimony you state that the revised chemical parameter values are the results of updates in the sources that IEPA uses for information, and we were just wondering if you could please clarify whether the Handbook on Environmental Degradation Rates has been updated since it was published in 1991 or if that was the only one that you had.

MS. HURLEY: That has not been updated.

MS. LIU: Okay. Thank you.

MR. RAO: I have one more for you, Miss Hurley. On page 7 of your testimony you state that USEPA's definition for volatile chemical includes many polynuclear aromatic hydrocarbons that do not volatilize in a specific amount. Could you please clarify whether any of these chemicals are included in Appendix A, Table J?

MS. HURLEY: Appendix A, Table J is the list of TACO volatile --

MR. RAO: Oh, okay. Yeah.

MS. HURLEY: -- chemicals for the indoor inhalation exposure route. That includes Naphthalene and 2-Methylnaphthalene, which I believe are the only PNAs, and it does not include any of the PNAs that would not volatilize. That's why we chose the definition that we

have in TACO for volatile chemical, to exclude the chemicals that would not volatilize.

MR. RAO: Any reason why USEPA included some of these PNAs which do not volatilize as volatile chemicals? Is there any concern with those chemicals in terms of indoor inhalation? I see Dr. Salhotra shaking his head here, saying no, but --

DR. HORNSHAW: Part of the reason we chose naphthalene is because it's included in both method 8260 and method 8270, 8260 being volatiles and 8270 being semi-volatiles, so we chose that as a cutoff point to determining whether a chemical meets the definition of volatile chemical or not.

MR. RAO: Okay. Thanks for the clarification.

MS. GEVING: Could we just have Dr. Salhotra sworn at this point? Because he may want to add some testimony.

HEARING OFFICER MCGILL: Sure. Would you please swear in the witness?

(Witness sworn.)

HEARING OFFICER MCGILL: You want to go ahead and introduce --

MS. GEVING: This is Dr. Atul Salhotra with

the RAM Group out of Texas, correct? Dr. Salhotra, do you have anything to add to that last question, any response?

DR. SALHOTRA: I think that's correct. The other one you can add is the solubility of those chemicals is very small, so there's going to be very little of those chemicals present in the groundwater.

MR. RAO: Okay. That helps. Thank you.

HEARING OFFICER MCGILL: Thank you.

MS. LIU: Miss Hurley, you're on the hot seat today. In Appendix C, Tables B and D, the Agency proposes to revise the source information for some of those parameters listed from what was used as IEPA and then, in parentheses, IRIS/HEAST, to simply just the Illinois EPA as the source. You explain on page 11 of your prefiled testimony that this is simply to simplify the source information. I understand from reading your prefiled testimony and now the record explains how this reflects the new hierarchy and -- that was described in the OSWER Directive. However, I think the simple reference in the table now to just Illinois EPA might be a little too vague for somebody actually using the table later on. I was wondering if it might be possible for the Agency to consider maybe a footnote to that Illinois

rule we have a definition of what is the -- it has a definition of volatilization, and there is a list, as we talked earlier, of the volatile chemicals. Once the chemicals volatilize, then they have to migrate, because if they volatilize and stay there, ten feet, fifteen feet, five feet below the building, there is not going to be any adverse risk to anyone. So in this particular case, the second step is for those chemicals to migrate from the point of volatilization. We can call it source for -- the source that we refer in the definition to, but for this, we can think of that as a source and migration of those chemicals into the buildings, so that's the second process that will happen.

The third thing is for these chemicals, they must enter the living space or the working space inside the building, because if they stay outside the building and the building prevents it from migrating into the building, again, there will not be any adverse health effects to people who are inside the building. So that's an important third step. The next thing is once chemicals enter the building, those chemicals mix with the indoor air because there is a natural draft, natural mixing going on of the air inside the building, and that causes those chemicals to mix with the air, which then

have to be inhaled by the individuals to cause potential adverse health effects. So the fourth step causes a certain concentration in the air. The fifth step is obviously if there are people living there, they would be breathing, and so chemicals potentially get inside there or the body, and then we look at the toxicity of the chemical to see if it is a potential adverse health effect. So in the rules that you are seeing, there are these six steps that are -- that help you evaluate this part.

BOARD MEMBER LIN: May I ask a question now?

DR. SALHOTRA: Sure, any time.

HEARING OFFICER MCGILL: Sure.

BOARD MEMBER LIN: The mixing, vapor and air, is there any chemical reaction that become nontoxic or more toxic?

DR. SALHOTRA: Yeah. Typically the chemicals that we are talking about are not going to react with the air inside the building and cause some chemical reactions, so typically we are talking about very low concentrations and we are not talking about any reaction inside the building.

So these are the six steps, and it helps you conceptualize and break this complex process into

individual pieces and kind of visualize as to what's happening here.

Now, as we talk about this, one of the factors that affect the migration of these chemicals into the building -- and there are several factors -- first of all, the source is important; in other words, what type of chemicals do we have, which chemicals do we have and where are they located, are they three feet below the building or are they fifteen feet below the building. So the characteristics of the source have an effect on this pathway. Then we have the media through which chemicals migrate. We already talked about capillary fringe, the vadose, or what's called the unsaturated zone, the building materials through which chemicals may migrate into the building and if there are cracks in the floor, they are not open cracks, there are some dirt or soil inside those cracks. So those media have an effect on the migration, and then each of these media has certain properties, like the porosity, water content, permeability and organic carbon content, which essentially describe each of these media, so -- and I think all of these terms are the ones for which there are default values and for which are defined in the rule, proposed rule.

Other factors that affect this pathway are the characteristics of the building, the type of air conditioning system you have, the amount of ventilation you have in the building, the size of the building, whether you have any preferential pathways that allow vapors to get into the building, the use of the building, so these are all characteristics of the building, and then of course we have the general climatic factors. The higher the temperature, the greater is the volatilization, or if the -- there is an atmospheric pressure which is a low atmospheric pressure, you could have degassing of the vapors. So these atmospheric pressure are generally a very transient phenomena, and so -- but the temperature can have an effect, although we are talking about chemicals coming from five, six, ten feet below ground where the temperature does not change as much as it will change in the atmosphere.

But these are all the factors that are considered, and because of all these factors, this pathway is more complex than the other pathways, and in fact, in the last four or five years, I don't think you could have gone to any environmental conference or gathering of individual professionals without having some discussion of this pathway, and what makes this complex

is the factors listed here. First of all, there are many factors that affect the migration intrusion of vapors into a building. Not only are there many factors, but these factors also have some spatial and temporal variability. Things change in time. The ventilation system in the building changes with time. The concentrations of chemicals in the soil is going to be different, so there's differences in space and time.

There are many factors that are site-specific but they cannot easily be measured, so we have to rely on good professional judgment and default values. We already talked about -- There was a question about capillary fringe. It can vary from one location to another, but it is difficult to measure, and so a more practical approach is to adopt some default values that are generally accepted in the industry. The number of cracks and the size of cracks in the walls of basements or floors affect this pathway.

The other complicating factor is that there are many chemicals that have indoor sources. The same benzene that we consider a contaminant, we have a leak of gasoline, is also the chemical that is generated if someone smokes inside a house. The same solvents, PCE, that we consider a contaminant is the chemical that

dry-cleaners use to clean our clothes. Every time we bring clothes into our house that are dry-cleaned, we bring trace of those chemicals into our home. A lot of our cleaning products have those chemicals. So that adds a big -- a huge dimension to the complexity of this pathway, and because of these indoor sources, if you have elevated indoor air concentrations, they -- it does not necessarily imply that there is a contamination problem under the building, so those high sources may just be because of the activities that are going on inside the building.

The -- So those are all the complexities, but the first thing that we have to do is determine whether this pathway is really complete, whether we need to evaluate this pathway at a given site, and here are some factors that have to be present for the pathway to be complete. If the pathway is not complete, that means it does not need to be evaluated on the site. So the first one is the presence of volatile chemicals. If you have a site with only metals problem, other than mercury, then you will not have any vapor intrusion issues. The presence of a building, current or in the future, the -- and typically, if you have a building, you are going to have some human receptors inside it. The question is for what

period of time. And then if you do not have a barrier that prevents the migration of vapors into a building, then in those situations this pathway will be complete and has to be evaluated.

Now, we have a history of evaluating this pathway. The most recent major publication is the ASTM standard, although there is some debate as to how that standard can be modified and adjusted or perhaps even removed, but it is a good document, has a lot of good references and is being actively used in many parts of our country.

Now, the next part of the discussion is how do these vapors move, so if you imagine a building with ten feet of clay under it and below that you have a volatile chemical, what causes those molecules of benzene or any of the other volatile chemicals to get inside the building? There are two known forces or known phenomena that cause that to happen. The first one is diffusion and the second one is advection, and in the next few slides I'm going to briefly talk about each of these two processes.

So the first one is diffusion, and diffusion is something that happens all the time, and what -- the best way to visualize it is if you take a bowl of water and

and different states use different combinations of these approaches, they give different weights to these approaches, and each of them has its own unique pros and cons, so let me briefly talk about that, and then I can just tell you how we are handling these two approaches in the proposed rule.

The -- If you decide to use the first approach, which is to go inside the building and measure the concentration, you have to do two things. First you have to measure the concentrations and then you have to evaluate the measured concentrations, and measuring the indoor air concentrations is not that difficult. You know, you can -- if you follow the correct protocols and you put your instrumentation correctly, it's a relatively straightforward procedure. It is intrusive, so it has certain disadvantages, but it can be done rather easily, but the problem is, once you get the data, evaluation of that data makes it very difficult because of the numerous indoor air sources of chemicals, so if you measure concentration in an industrial building that we suspect is being impacted by vapors coming from below and we go inside and we measure the concentration, we don't know whether that concentration is coming from below into the building or whether it is because of chemicals that are

stored inside the building, and the chemicals that we are dealing with oftentimes are not so unique that we wouldn't have them inside the building, so that makes it very difficult to evaluate the data and to determine what is the cause of the problem, if there is one. And so because of this reason and because here are all the sources of indoor air pollutants that we are talking about --

MR. KING: Is that your basement, Atul?

DR. SALHOTRA: Well, in Texas we have big garages that look like that. Yeah, it's only in Texas you'll have a $30,000 car outside and everything in the basement -- in the garage is what's probably $1,000, right?

So anyway, there are many, many indoor sources, and so what we have said in our rule is that in Tier 3, on a site-specific basis you can measure indoor air concentration, then evaluate them if it makes for a site-specific -- if that type of evaluation and analysis is required at a site. However, in -- what we do in the rule is we have soil, groundwater and soil vapor concentrations that were developed using a model that is publicly available and has been used by USEPA and many other agencies and states.

Now, this model, it's obviously a very technical model, but what it really does is simulates those six steps that I talked about earlier, the volatilization of chemical, the migration of chemical entering into the building, mixing with the building, and then somebody breathe that, and then it calculates the risk, okay? So without spending too much time in the nitty-gritty details of this model -- and of course you can ask me questions and I'll try to answer those -- but basically, this model simulates those six steps using indoor parameters that we talked about some of those that are default values, which are all in the rule, and then comes up with what we call the acceptable soil and groundwater and soil vapor concentrations. So we have three standards, so to speak, soil concentration, groundwater concentration and soil vapor concentrations, below or adjacent to the building that are considered protective of this pathway, and those are based using this model and using the diffusion process that we talked about and using the six steps that I alluded to earlier.

And we can go through each of the steps. The way the model does the calculation is it first looks at the building and says what is acceptable concentration inside the building. That of course depends on how long a

sequence of how this model works, you start with what is considered the acceptable risk level, which has not changed from the existing TACO regulations, and you look at the toxicity of the chemical and the human body's response to these chemicals and you estimate what is an acceptable indoor air concentration, and then we have another model that does calculations to come up with the attenuation factors, and by combining the attenuation factor and the indoor air concentration, you can get what we call the acceptable soil gas concentration, and this soil gas concentration here would be the Tier 1 remedial objective. This is like the standard for soil gas. And based on the properties of the soil and how the chemicals partition between soil and groundwater and moisture, you then can also estimate soil and groundwater concentrations. So these are the three ROs that we have in our proposal, soil gas concentration, soil and groundwater concentration.

And to summarize, the indoor inhalation depends on soil vapor concentrations; it depends on the parameters of what is between the source and the building; it depends on the building and certain environmental parameters; and these are the parameters that are included in the various tables for which we have

default values, which can obviously be changed to meet site-specific conditions under Tier 2 or Tier 3.

So finally, the indoor inhalation pathway is conceptually simple. We have the six steps from the source to the building. There are many input parameters on which this pathway depends on. The data that is necessary can be collected and analyzed in a timely and cost-effective way, the ones that we are requiring people to collect. There are others that is a little bit more complicated and costly, and so we have default values for those. There are simple methods that can be used to make the pathway incomplete. There are -- The rule allows vapor barriers and other types of mechanisms to close the pathway, so with the correct type of risk management and correct type of barriers, you can make a pathway incomplete, and then it involves building control technologies and suggests that those be evaluated up front as part of evaluating this pathway.

So I think I'll stop here, and again, as I mentioned earlier, the rule that we have is very practical, it's a very usable rule, and I think it strikes a very good balance with the size and the practicality of dealing with this pathway.

HEARING OFFICER MCGILL: Thank you.

account for it because the assumption is we have a large source, and so the -- and it's a steady-state situation, so retardation will only delay the -- or even slow the movement, but it will not reduce the movement, so as far as -- that's as far as retardation is concerned. So the retardation that happens while the chemicals are moving, the vapors are moving, has not been accounted for, but it's not necessary because we are dealing with more technically, if you recall, an infinite source, so if -- when you have an infinite source or a very large source, then that factor is not relevant.

As far as biodegradation is concerned, that I believe can be handled in a Tier 3 type evaluation. In Tier 1 and Tier 2, the assumption is that the vapors do not migrate, and there's a technical reason for that, because really, biodegradation is such a site-specific phenomenon that we cannot come up with a generic biodegradation rate, and so it's best handled on a site-specific basis if necessary in a Tier 3 type evaluation.

MR. REOTT: Would the rate of absorption be affected by the choice of sand as your default material in the vadose zone?

DR. SALHOTRA: Yes, sand versus clay will --

well, if you're talking about retardation, yes. The organic carbon content and the sand versus clay will affect retardation. However, because we are talking again of a very large infinite type source, steady-state situation, retardation has no effect, so whenever we are dealing with a non-degrading steady-state situation, retardation in the movement is not relevant. All it does is it delays when steady state is reached.

MR. REOTT: One of your slides described the, quote, key technical components of the Johnson and Ettinger model, and one of the bullet points was, quote, finite source and infinite source. I take it the model allows for the consideration of either of those two options.

DR. SALHOTRA: Well, the original -- yes, the model allows for that, but in our program, if someone really wanted to use finite source, which would be very, very, very rare situation, it would be -- could be dealt with as a Tier 3 evaluation.

MR. REOTT: The current Tier 1 numbers have been calculated, however, using an infinite source assumption?

DR. SALHOTRA: Yeah, that is correct.

MR. REOTT: Just to make it clear.

DR. SALHOTRA: That is correct, but I think we shouldn't go away thinking that infinite means thousands and thousands of kilograms of contaminants. I mean, that's not what we want. What we are really talking about is a steady-state source, and so the amount of vapor that get into the building relative to what we have is what we have to consider in terms of infinite, so I don't want anybody going away thinking that infinite like we normally think of infinite being huge and endless. What we are talking about is the relative mass that goes in versus what comes out.

MR. REOTT: But the system has reached stability.

DR. SALHOTRA: It's reached a steady state, yes.

MR. REOTT: Does the mixing that occurs under the model depend on the assumptions that are made about the building size?

DR. SALHOTRA: The mixing -- It is assumed that the air inside the building is completely mixed, so the air inside the building, whether it is a small building or a big building, is assumed to be completely mixed, so I don't know if that answers your question.

MR. REOTT: For purposes of back calculating

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R09-9
TIERED APPROACH TO CORRECTIVE	)	(Rulemaking-Land)
ACTION OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	

PRE-FILED TESTIMONY OF HEATHER NIFONG

At the request of the Illinois Pollution Control Board during the January 27, 2009 hearing on amendments to 35 Ill. Adm. Code Part 742, Illinois EPA has reviewed the existing definition of "residential property" and considered the inclusion of new definitions for "capillary fringe," "saturated zone," and "water table."

Illinois EPA agrees that the definition of "residential property" should be revised to clarify the addition of the indoor inhalation exposure route. The amended definition now reads as follows:

"Residential property" means any real property that is used for habitation by individuals, or where children have the opportunity for exposure to contaminants through soil ingestion or inhalation (indoor or outdoor) at educational facilities, health care facilities, child care facilities, or ~~outdoor~~ recreational areas.

Next, Illinois EPA agrees that regulatory definitions for "capillary fringe," "saturated zone," and "water table" should be included in 35 Ill. Adm. Code 742. Additionally, the Illinois EPA proposes that a fourth term, "unconfined aquifer," be included. The new definitions set forth below have been taken from the United States Geological Survey, *Water Basics Glossary of Terms*. The citation for this document will be added to the Illinois EPA's list of studies referenced during the Agency's indoor inhalation rulemaking development.

"Capillary Fringe" means the zone above the water table in which water is held by surface tension. Water in the capillary fringe is under a pressure less than atmospheric.

"Saturated Zone" means a subsurface zone in which all the interstices or voids are filled with water under pressure greater than that of the atmosphere.

"Water Table" means the top water surface of an unconfined aquifer at atmospheric pressure.

"Unconfined Aquifer" means an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure.

To describe the relationship between these terms, Illinois EPA directs the Board to page four of the following document: *Basic Ground-Water Hydrology*, United States Geological Survey Water-Supply Paper 2220 (Exhibit 1 to my testimony). This single page contains both a narrative description and a figure illustrating the capillary fringe, saturated zone and water table. The citation for this document will be added to the Illinois EPA's list of studies referenced during the Agency's indoor inhalation rulemaking development.

Lastly, Illinois EPA would like to amend its response to pre-filed question #7 from the Illinois Environmental Regulatory Group. As originally written, the answer could be interpreted to conclude that the Agency would not take into account the length of time needed for contaminants to migrate horizontally. Such an interpretation would not be correct. Compliance determinations in regards to sample adequacy will be made by the program under which the site is being remediated; no changes to Part 742 are necessary. The amended language is located at final paragraph of the Agency's answer to Question 7.

Question 7) Will the Agency require actual data or allow modeling of groundwater to evaluate the vapor intrusion pathway to an off-site building?

Answer: To determine if off-site properties are at risk from indoor inhalation route exposures, site evaluators have the option of running TACO equation R26, collecting groundwater samples, or collecting soil gas samples at the down gradient property boundary. With respect to the indoor inhalation route, soil gas data trumps groundwater sample data and R26 modeling results. Groundwater sample data trumps R26 modeling results when addressing the indoor inhalation route.

If R26 predicts groundwater impacts will migrate off-site at concentrations above the groundwater indoor inhalation remediation objectives, but soil gas concentrations at the source or down gradient property boundary of the remediation site are below the soil gas remediation objectives, no further analysis of off-site properties is necessary in regards to the indoor inhalation route.

If R26 predicts groundwater impacts will migrate off-site at concentrations above the groundwater indoor inhalation remediation objectives, but groundwater samples at the down gradient property boundary are below the indoor inhalation remediation objectives, no further analysis is necessary in regards to the indoor inhalation route.

Using both the J&E and the R26 models to predict down gradient risks associated with the indoor inhalation route is an extremely conservative, but allowable, option.

When either soil gas or groundwater data are used to demonstrate compliance, the number of sampling rounds required will be determined by the program under which the site is being remediated. This is because soil gas or groundwater samples collected after a recent spill or release may not represent the actual impact from contaminants migrating in groundwater. Repeat samples may be necessary to address this time lapse and ensure that the migration of the contaminant plume is fully evaluated.

ORIGINAL

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO:	)	
TIERED APPROACH TO CORRECTIVE	)	R09-9
ACTION OBJECTIVES	)	(Rulemaking-Land)
(35 Ill. Adm. Code 742)	)	

SUPPLEMENTAL TESTIMONY OF TRACEY HURLEY

This testimony responds to additional questions and requests made by the Illinois Pollution Control Board members during the January 27, 2009 hearing. As a result of the Board's questions and requests, we are proposing some changes, which are documented in Errata Sheet Number 3.

The Illinois EPA was asked to provide more information on the source of the toxicity parameters listed in Appendix C, Tables B and D. The toxicity parameters and their values and the sources of these values are listed on the Illinois EPA website. The tables on the website are updated on a quarterly basis. We will refer users of TACO to the website to ensure that they have the most current information. Therefore, we are proposing the following changes: For the symbols RfC, RfD_o, SF_o, URF in Appendix C, Table B, and the symbols RfD_i, RfD_o, SF_i, SF_o, in Appendix C, Table D, the Source column will now read "Illinois EPA (http://www.epa.state.il.us/land/taco/toxicity-values.xls)".

The Hearing Officer asked for the sources of the default physical and chemical parameters listed in Appendix C, Table E. In response to this request, we are proposing to add a footnote to the end of the title of this table, footnote "e". Footnote "e" will read: "The values in this table were taken from the following sources (in order of preference):

SCDMS online database (http://www.epa.gov/superfund/sites/npl/hrsres/tools/scdm.htm); CHEMFATE online database (http://www.srcinc.com/what-we-do/databaseforms.aspx?id=381); PhysProp online database (http://www.srcinc.com/what-we-do/databaseforms.aspx?id=386); Water9 (http://www.epa.gov/ttn/chief/software/water/) for diffusivity values; and *Handbook of Environmental Degradation Rates* by P.H. Howard (1991) for first order degradation constant values."

In my pre-filed testimony for the February 2009 hearing I referred to Rick Cobb's testimony in support of adding chemicals to the proposed Groundwater Quality Standards during the Part 620 hearings. The Hearing Officer asked that a specific portion of his testimony be referenced, not the entire testimony. The specific portions of Rick Cobb's testimony to which I was referring are pages 11 – 17 of his pre-filed testimony. I would also like to add a portion of Tom Hornshaw's pre-filed testimony from the Part 620 hearings, specifically pages 5 – 7. Lastly, I would like to add questions and responses numbers 2, 17, and 18 from the supplemental testimony of Richard P. Cobb and Thomas C. Hornshaw from the Part 620 hearings.

In Appendix C, Table M, the parameter column for the symbol C_v^{sat} should be corrected to read "Soil vapor saturation concentration." The word "saturation" was inadvertently omitted. Soil vapor saturation concentration is the term used in the Definitions section, 742.200.

We have received some questions about the conversion factors used in some of the J&E equations listed in Appendix C, Table L. In order to clear up any confusion, we are adding units and making the conversions more specific. In J&E1, the factor of 1000

100 West 22nd Street, Suite 151
Lombard, Illinois 60168
630/268-8555

February 24, 2009

Mr. Richard R. McGill, Jr.
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph
Suite 11-500
Chicago, Illinois 60601

RE: Prefiled Questions
Rulemaking R09-9
In the Matter of: Proposed Amendments to Tiered Approach to Corrective Action Objectives (35 Ill. Adm. Code 742)

Dear Mr. McGill:

The intent of this letter is to present issues regarding proposed Vapor Intrusion Pathway amendments to Tiered Approach to Corrective Action Objectives (TACO). We offer the following comments regarding proposed vapor intrusion regulations:

- Creation of Tier 1 vapor intrusion risk-based health objectives for indoor air volatile organic compounds (VOCs). This would allow the user/remedial applicant to use empirical indoor air quality survey results on a site with an existing building to determine if a problem exists. The present rulemaking only allows for a Tier 3 evaluation to use this avenue of rebuttal. Without a set of published guidelines, a property owner with an existing NFR closure document would have no way of proving a problem is NOT present without obtaining additional subsurface data and applying a predictive model to determine if the need for additional remediation is required. Other states with indoor air VOC objectives include Minnesota and California.

We advocate this addition to the proposed rules to allow exclusion of the vapor intrusion pathway by using indoor air quality (IAQ) data without additional subsurface testing. Submission of IAQ data as a Tier 3 package (not listed as an option within 35 IAC 742.935) would result in risk-based site-specific objectives for each site, and place undue burden on the consultant and regulator to determine if the intent of the regulation has been properly addressed. It is intuitive that IAQ data indicating no significant impact is inherently superior evidence than any data obtained outside the building envelope.

A major driving force for application of TACO (typically applied in a voluntary fashion to promote on-site health and well-being) is future marketability of the subject property. As a part of property transaction due diligence, a Phase I Environmental Site Assessment conforming to ASTM standard 1527-05 is typically performed (Note: ASTM E 1527-00 is incorporated into the proposed regulation by reference. This document has been replaced by ASTM E 1527-05).

GeoKinetics
Geotechnical &
Environmental Engineers

77 Bunsen
Irvine, CA 92618

Tel 949.502.5353, Fax 949.502.5354
E-Mail: geokinetics@appliedgeokinetics.com

February 23, 2009

SUBJECT: COMMENTS IN RESPONSE TO PROPOSED AMENDMENTS TO SECTION 742 OF THE STATE OF ILLINOIS' TIERED APPROACH TO CORRECTIVE OBJECTIVES (TACO) DOCUMENT, DATED 5-23-08

The purpose of this letter is to address proposed amendments to Section 742 of the State of Illinois' Tiered Approach to Corrective Objectives (TACO) Document, dated May 23, 2008. Specifically, this letter addresses Section 742.1210c of that document, which recognizes building control technologies for the purpose of determining remediation objectives that exceed residential remediation objectives. Under the sub-membrane depressurization (SMD) systems section, a "cross-laminated polyethylene membrane liner at least 0.15 mm (or 6 mil)" would be recognized as an adequate vapor barrier. This letter addresses our concerns with respect to the use of this type and thickness of material for vapor mitigation purposes.

GeoKinetics has extensive experience in the investigation and mitigation of subsurface methane gas and organic vapors – both naturally occurring (as is typically the case for methane) or associated with releases of gasoline, chlorinated solvents and other hydrocarbon compounds. GeoKinetics has performed subsurface methane and/or soil vapor investigations and interior air quality monitoring at many thousands of residential and/or commercial properties. These investigations have involved both existing and planned structures. Where regulated levels of methane or Volatile Organic Compounds (VOC's) have been identified, GeoKinetics has implemented appropriate mitigation measures under regulatory oversight. These mitigation measures have included the installation of sub-slab vapor barriers, the installation of passive and active subsurface ventilation systems, and others. The undersigned have prepared plans and specifications for methane and/or vapor mitigation systems for more than 10,000 buildings in the United States over the last three decades. These buildings have included single family residences, multi-family residences, school facilities, hospitals, apartment buildings, retail centers, shopping malls, and commercial / industrial buildings. GeoKinetics has provided a full range of services with respect to methane and VOC barriers – including permitting, installation, and post-installation monitoring. GeoKinetics has developed smoke testing procedures to confirm the integrity of membrane installations and manufactures the equipment necessary for this type of testing. Smoke testing can help insure that tears, perforations, pin-holes, and improperly sealed seams or penetrations are not present in the membrane at the completion of the installation.

In addition to the design of methane and organic vapor barrier systems, GeoKinetics has been extensively involved in the testing of these barriers for performance, reliability and chemical compatibility. Along these lines, GeoKinetics has performed diffusion testing, permeability testing, and strength testing for a number of membrane materials and products. Many of the diffusion tests have extended for periods in excess of six months in order to more thoroughly evaluate the long term performance and chemical compatibility of the membranes. We have also performed post-construction monitoring and testing of sub-slab membrane installations. This work has included the collection of air samples above the membrane and below the floor slab, as well as on the interior of the protected building, to monitor for contaminants. It has also included the coring of floor slabs at more than 1,000 buildings to collect membrane samples for inspection and testing. Many of the membrane samples that were retrieved had been in place for ten years or more.

Several things have become apparent based upon our experience as set forth above. First of all, no membrane is completely effective in so far as blocking the passage of contaminants. All membranes "leak" to some degree. Secondly, there is significant variability in the effectiveness of different types of vapor barrier materials – in other words, some membranes leak much more than others. For example, the rate at which organic vapors can pass through a 6-mil low density polyethylene membrane can be orders of magnitude greater than for a more conventional 60-mil high density polyethylene membrane. Third, damage in the form of penetrations and tears, along with improperly sealed seams, can cause order of magnitude increases in the rate of vapor transmission across a membrane. Relatively thin 6 to 10-mil membranes are much more prone to construction damage than the standard 60-mil membranes that are typically used for VOC vapor mitigation. Of the thousand+ structures with 6 and 10-mil vapor barriers that we have performed post-construction testing on to date, we have yet to find a single installation that did not have an unacceptably high rate of membrane holes / open penetrations for a VOC barrier application. This is in contrast to standard 60-mil membranes where holes / open penetrations are rare.

Based upon our experience and observations, we do not believe the use of a 6-mil cross laminated polyethylene vapor barrier would be effective or appropriate for many installations. As outlined above, there is a much greater potential for elevated rates of vapor migration across such a membrane for many reasons. Our experience indicates a typical 6-mil installation is not nearly as effective or reliable as a standard 60-mil barrier. This is not to say there are no suitable applications for 6-mil vapor barriers. There are many appropriate applications that need to be evaluated and identified on a site by site basis. However the adoption of a standard that would allow for the universal use of a 6-mil vapor barrier would be problematic and would likely result in excessive VOC vapor transmission, along with potential exposure issues, and/or excessive water vapor transmission and associated property damage in many instances.

Furthermore, Section F of the SMD sub-section of Section 742 requires that a smoke test be performed in accordance with the manufacturer's requirements to ensure that no leaks exist. In our experience, smoke testing a 6-mil polyethylene system is very difficult to perform, and in many cases is not fully effective. Since the barrier is so thin and light, it is lifted off of the sub-grade at a pressure of approximately 0.003 psi. This low confining pressure makes the smoke test less effective. Higher pressures typically result in excessive lifting of the membrane and the associated potential for damage. A 6-mil polyethylene barrier is often capable of providing adequate protection from water vapor transmission, depending upon the site conditions. However, when the health and safety of building occupants is dependant upon the quality and reliability of a barrier, it is our opinion that a 6-mil vapor barrier would present an unacceptably high level of risk at many sites.

We hope this information is helpful to you. We would be happy to address any questions or comments the assembly members might have in regard to this issue, or any related issue. Please do not hesitate to contact either of the undersigned if you have any questions or comments.

Sincerely,
GEOKINETICS, INC.

Kevin Lea, RCE
Senior Project Engineer

REGISTERED PROFESSIONAL ENGINEER
KEVIN J. LEA
NO. C-67844
EXP. 6-30-09
CIVIL
STATE OF CALIFORNIA

Glenn D. Tofani, GE/RCE/REA
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
GLENN D. TOFANI
No. 044229
Exp: 6-30-09
CIVIL
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
GLENN D. TOFANI
No. GE 2496
Exp: 6-30-09
GEOTECHNICAL
STATE OF CALIFORNIA

John DeReamer, PhD/PG
Principal Geologist

PROFESSIONAL GEOLOGIST
JOHN H. DEREAMER
NO. 7999
EXP. 10/31/09
STATE OF CALIFORNIA

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO TIERED	)	R09-9
APPROACH TO CORRECTIVE ACTION	)	(Rulemaking - Land)
OBJECTIVES (35 ILL. ADM. CODE 742)	)	

PRE-FILED TESTIMONY OF BRIAN H. MARTIN

NOW COMES the Site Remediation Advisory Committee ("SRAC"), and submits the following PRE-FILED TESTIMONY OF BRIAN H. MARTIN for presentation at the March 17, 2009, hearing scheduled in the above-referenced matter.

Testimony of Brian H. Martin

I. INTRODUCTION

Good Morning. My name is Brian Howard Martin, and I am a Consulting Environmental Scientist at Ameren Services in St. Louis, Missouri. I have over 23 years of experience working in the environmental field. In addition, I represent the Illinois Manufacturer's Association as current Chairman of the SRAC.[1] On behalf of SRAC, I want to thank the Illinois Pollution Control Board ("Board") for the opportunity to present this testimony today.

As described by Gary King at the January 27, 2009 hearing in Springfield, SRAC has been active in working with the Illinois Environmental Protection Agency ("Illinois EPA" or "Agency") in developing this proposal since 2007. My testimony today is intended to speak, on behalf of SRAC, in support of the averaging approach proposed by

[1] SRAC is authorized by Section 58.11 of the Illinois Environmental Protection Act, 415 ILCS 5/58.11, and consists of members from the Illinois State Chamber of Commerce, Illinois Manufacturer's Association, Chemical Industry Council of Illinois, Consulting Engineers Council of Illinois, Illinois Bankers Association, the Community Bankers Association of Illinois, Illinois Realtor Association, and the National Solid Waste Management Association. Additional groups, such as IERG, the Illinois Petroleum Council, the Illinois Petroleum Marketer's Association, and City of Chicago, participate on an ad hoc basis.

the Agency in Errata Sheet Number 3, as well as to provide further elaboration on concerns originally raised by Illinois Environmental Regulatory Group ("IERG"), in its Pre-Filed Questions and subsequently in follow-up questions at the first hearing, regarding the impact of the effective date of the proposed rule on on-going remediation projects and the contents of No Further Remediation ("NFR") letters.

II. SOIL DATA AVERAGING

SRAC supports the approach to averaging as proposed by the Illinois EPA in Errata Sheet Number 3. SRAC appreciates the Agency's willingness to work with us on this issue. Appropriately implemented, this approach will provide flexibility and help streamline some site remediation projects. Based on our experience with the Illinois EPA's remediation programs and the use of averaging in other settings, SRAC believes that the Illinois EPA review will satisfactorily determine when this pathway can be safely excluded based on the data submitted by remedial applicants. Should more information be needed or if there are questions about the data, the discussions can proceed under the more comprehensive Tier 3 review.

III. IMPLEMENTATION OF THE PROPOSAL AND NFR LETTERS

The proposal, in addition to creating the new indoor inhalation pathway, also updates a number of Remediation Objectives ("ROs") for various chemicals for all of the pathways. Although the Agency has indicated that it does not intend to require responsible parties to be implementing the requirements of this proposal prior to its adoption as a final rule, the Agency has stated that it intends to require that sites that have not been closed be subject to all of the amendments, including the updated ROs, immediately upon the effective date of these rules. Illinois EPA's Responses to Prefiled

Questions, *In the Matter of: Proposed Amendments to Tiered Approach to Corrective Action Objectives (35 Ill. Adm. Code 742)*, R9-09 at 12-13, Answers 11(d)-(f) (Ill.Pol.Control.Bd. Jan. 15, 2009). Consequently, many responsible parties are considering the proposed amended regulations as if they were in force today because failure to do so could potentially result in the rejection of their Remedial Action Completion Reports ("RACR"). An NFR letter issued for those projects, prior to the effective date of these amendments, may provide no indication of the fact that the indoor inhalation exposure route and/or the updated ROs were evaluated, above and beyond what was required by the currently applicable regulations.

Alternatively, the implementation of these amendments could potentially impact on-going projects, for which the clean-up efforts have proceeded and been completed under the currently applicable regulations, but which have not yet received their NFR letter, requiring them to return to their sites and perform additional work, if the applicable ROs had changed, or if they had not evaluated the indoor inhalation pathway. It seems unfair to require responsible parties, who have diligently complied with the regulatory requirements applicable at the time of their action, to be denied an NFR letter on the basis that the Agency was still considering their completion report at the time these proposed amendments are adopted.

IV. RECOMMENDATIONS

Based on the concerns described above, SRAC recommends that in reviewing this proposal, the Board consider the possibility of including some clarification regarding the schedule for implementation in the final regulation. Such a schedule would provide a degree of certainty regarding both which regulatory requirements are applicable to any

particular on-going remediation project, as well as certainty regarding the status of future NFR letters.

SRAC would suggest that the applicability of the proposed amendments to a particular remediation project be based on the date of submission of a complete and acceptable RACR. Those sites that have submitted their RACR prior to the effective date of the amendments currently under consideration would be subject to the requirements applicable at the time of RACR submission. Accordingly, SRAC would suggest that NFR letters issued for completed projects should explicitly state that the site met the requirements contained in the Tiered Approach to Corrective Action Objectives regulation as of the date of the submission of the RACR. Additionally, it would also be useful for current on-going projects which are evaluating the indoor inhalation exposure route to have the option to request that the NFR letter issued for that site specify that the indoor inhalation exposure route was evaluated.

V. CONCLUSION

Again, I would like to thank the Agency for its willingness to work with SRAC, and consider the averaging issue, as well as other issues that we have raised in the past. I believe that having the option available to perform soil averaging, in the appropriate situations, will prove to be beneficial to remediation projects. I also believe that the issues identified regarding the content of NFR letters and the impact of implementation on on-going projects can be adequately addressed through an approach such as I have suggested.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO TIERED	)	R09-9
APPROACH TO CORRECTIVE ACTION	)	(Rulemaking-Land)
OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	

ILLINOIS EPA's PRE-FILED RESPONSES TO QUESTIONS SUBMITTED BY RAYMOND T. REOTT AND THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP

QUESTIONS FROM RAYMOND REOTT

Question 1: Which studies or data, if any, submitted to the Board correlate the proposed predicted indoor concentrations in the Johnson & Ettinger model to actual indoor air sampling? Of those studies, which correlate the proposed model to actual indoor sampling at sites in Illinois?

Answer 1: The principal document is U.S. EPA's OSWER Draft Guidance, *Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils*, published in 2002. None of the publications referenced by Illinois EPA, including U.S. EPA's Draft Guidance, are specific to actual sites in Illinois; that is not the intent of these documents.

Question 2: Why should depth to contamination matter for the outdoor inhalation pathway where the outdoor inhalation pathway for contamination deeper than 10 feet is excluded based upon 10 feet of any overlying clean soil, even sand, 35 Ill. Admin. Code 742 §1105(c)(3)(C)(iii), but not matter in Tier 1 for the proposed indoor inhalation pathway?

Answer 2: Illinois EPA used different fate and transport models to develop these two pathways. As a result of Illinois EPA's work in developing the indoor inhalation proposal, the

Recent Research on Vapor Intrusion). If so, why are those criticisms not appropriate to consider as the Board evaluates whether to adopt regulatory standards based on the Johnson & Ettinger model?

Answer 7: Yes, Illinois EPA did review those articles. It is appropriate for the Board to consider any relevant information.

Question 8: Why is Illinois EPA proposing to apply the Johnson & Ettinger model to Illinois LUST sites when USEPA recommends against its use for LUST sites?

Answer 8: Key contaminants addressed in the LUST program – BTEX, MTBE, and naphthalene – are volatile chemicals. The program exclusion suggested here would not be consistent with TACO because TACO is a cross-program methodology that does not care whether the environmental release comes from a tank or a drum or a spill.

Question 9: Why is Illinois proposing to use the Johnson & Ettinger model in other contexts where USEPA does not recommend its use such as sites with buried pipelines where significant lateral flow of vapors occurs and sites with very shallow groundwater where the groundwater wets the building foundation? (USEPA's User Guide for Evaluating Subsurface Vapor Intrusion into Buildings, Feb. 22, 2004, p. 69-70).

Answer 9: Illinois EPA is not recommending the use of this model where the underlying assumptions of the model are violated. At sites where there are known preferential pathways, as mentioned in the above question, the J&E model will not be used and the specific evaluation must take into account the site specific conditions, i.e. the nature and extent of the preferential pathways. This also applies to situations where the groundwater level is very shallow.

Question 10: What is the effect on the Tier 1 values in Table G of assuming that the default building has a basement rather than slab on grade construction?

Answer 10: It raises the Tier 1 values.

Question 11: Did Illinois EPA review any studies of typical building size in Illinois before choosing the assumed dimensions in the proposed rule?

Answer 11: Illinois EPA did not use a typical building size because that would be an average and not sufficiently protective. Using an average approach would have required conditioning of every No Further Remediation letter based on building size. Illinois EPA based its default dimensions on older, smaller homes and small retail sites.

QUESTIONS FROM THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP

Question 1: What actions will the Agency take is an indoor inhalation issue is discovered at a leaking underground storage tank ("LUST") site where the owner or operator has already been issued a No Further Remediation ("NFR") letter for a prior release?

a. What actions will the Agency take if the indoor inhalation issue is related to the prior release?
b. Can the prior LUST incident be re-opened?
c. Would the owner or operator report the indoor inhalation issue as a new release?

Answer 1: The Agency's intent is not to reopen LUST site, due to an indoor inhalation issue, for which an NFR Letter has been issued. If the tank owner or operator wishes to address an indoor inhalation issue at a LUST site and to obtain a new NFR Letter, the owner or operator would need to enroll the site in the Agency's Site Remediation Program (or Voluntary Cleanup Program).

a. The owner or operator would be referred to the Site Remediation Program.

b. No. The LUST incident will not be reopened.

c. No. The indoor inhalation issue should not be reported as a new release.

Question 2: Will corrective action to address the indoor inhalation pathway be eligible for reimbursement from the LUST Fund for releases where an NFR letter has already been issued?

Answer 2: No. If the owner or operator of a LUST site enrolls the site in the Site Remediation Program, the owner or operator would be responsible for paying corrective action costs at the site.

Question 3: Will the Illinois Pollution Control Board's LUST regulations need to be amended to address issues related to reimbursement from the LUST Fund for indoor inhalation activities?

Answer 3: Yes. The LUST Program regulations will need to be amended to address issues related to reimbursement for the sites that have not received an NFR Letter.

Question 4: In the past, the Agency has indicated that it will void NFR letters at sites where an indoor inhalation issue is discovered. Is there an alternative process by which the indoor inhalation issue can be addressed at the site without voiding the NFR letter?

Answer 4: The owner or operator should enroll the site in the Site Remediation Program for an NFR Letter addressing the indoor inhalation exposure route.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

MARCH 17, 2009

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO:	)	R09-9
TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (35 Ill. Adm. Code 742)	)	(Rulemaking-Land)

REPORT OF PROCEEDINGS had before the ILLINOIS POLLUTION CONTROL BOARD held on March 17, 2009, at 9:30 o'clock a.m. at the Thompson Center, Room 11-500, Chicago, Illinois.

Second, U.S. EPA September 2005 document entitled, "Review of Recent Research On Vapor Intrusion." Any objection as entering that as a hearing exhibit? Seeing none, that will be Hearing Exhibit 22.

Finally, U.S. EPA Oswer, O-S-W-E-R, Directive 9610.17, March 1, 1995, document entitled, "Use of Risk Based Decision-Making in U.S. T-Corrective Programs". Any objection entering that as a hearing exhibit? Seeing none, that will be Hearing Exhibit 23.

With that, I would ask the court reporter to please swear in the Agency's witnesses collectively.

(Witnesses sworn.)

HEARING OFFICER MCGILL: Thank you. I would now ask Agency Attorney Kimberly Geving to begin -- is that the pronunciation?

MS. GEVING: Yes.

Good morning. I'm going to make introductions before we go into summaries. To my immediate left is the Dr. Atul Salhotra, Director of the Risk Assessment & Management Group. To my immediate right is Heather Nifong, the program's

advisor for the Division of Remediation Management. To Heather's right is Tracey Hurley, Environmental Toxicologist. One more to the right Dr. Tom Hornshaw, manager of the Toxicity Assessment Unit. To Dr. Hornshaw's right is Andy Frierdich, Project Manager in the State's Site's Unit. To Andy's right, Gary King, Acting Chief of the Bureau of Land. To Gary's right, Hernando Albarracin, Manager of the Leaky Underground Storage Tank Section. And finally to his right, Joyce Munie, Manager of the Remedial Project Management Section.

And with that, I will turn it over for very quick summaries on the testimony we've pre-filed.

MS. NIFONG: At the request of the Board back at the hearing in Springfield, you had asked us to reconsider the definition of "Residential Property," and so we have revised that, and I will read it to you briefly.

(READING:) "Residential Property means any real property that is used for habitation by individuals or where children have the opportunity for exposure to

contaminants through soil injection or inhalation, indoor or outdoor, at educational facilities, healthcare facilities, childcare facilities or recreational areas."

We've also added new definitions for geological terms. And so we have definitions for capillary fringe, saturated zones and water table. We are also adding a fourth term "unconfined aquafir." All of those terms come from the United States Geological Survey Water Basics Glossary of Terms. Would you like my to read those definitions as well?

HEARING OFFICER MCGILL: It's up to you.

MS. NIFONG: The definition for capillary fringe, means the zone above the water table in which water is held by surface tension. Water in the capillary fringe is under pressure less than atmospheric.

Saturated zone means a subsurface zone in which all the interstices or voids are filled with water under pressure greater than that of the atmosphere.

Finally, there's a whole lot of text changes that, both internal to the Agency and external to the Agency, were recommended to us or suggested to us. We agreed with the whole bunch of them, and they are as you see in there.

That concludes my summary.

MS. GEVING: Next would be the summary by Tracey Hurley on those changes in Errata Sheet 3 and then Errata Sheet 4.

MS. HURLEY: Good morning. During the last hearing, set of hearings we received questions from the Board on Appendix C, Table B and Appendix C, Table D about the "Source" column. So in response to those concerns, we are changing the source for the symbols RFC, RFDO, SFO and you are URF in Appendix C, Table B. And symbols RfDI, RDo, SFi, SFo in Appendix C, Table D. The source will now refer readers to the Illinois EPA's website, and that contains tables of the toxicity values, and those tables are updated quarterly.

Also during the last set of hearings, the hearing officer asked for the sources of the default physical and chemical parameters that were listed in Appendix C, Table

J and E, the units after the 1000 conversion factor in the denominator should be micrograms per milligram, and this is a correction to a change that was made in Errata Sheet 3.

That concludes my testimony.

HEARING OFFICER MCGILL: Thank you. Before we open it up generally, I just have one question.

You mentioned the Illinois EPA website as being added, I think, to one of the tables or appendices in Errata 3. What is it, if you click on that link, what is it that it takes you to, a list of sources?

MS. HURLEY: It takes you to the actual values. It's an EXCEL spreadsheet, and it will list the actual values for the different parameters for each chemical in TACO.

HEARING OFFICER MCGILL: Okay. You say that changes though, the website information?

MS. HURLEY: It's updated quarterly -- updated quarterly.

HEARING OFFICER MCGILL: You don't think that will be changing the rule, though? I mean, let's say, the values and the rule are

not --

MS. HURLEY: No, the values and the rule are not updated quarterly. The Tier I values are not updated quarterly.

HEARING OFFICER MCGILL: Okay. Thank you. The Board has questions it wanted to pose to some of the Agency witnesses, but we'd like to open it up first to any members of the public who may have any questions for any of these witnesses? Again, some questions have been posed to them in pre-file form and there have been responses, so any follow-up or any new questions?

MR. DAVIS: Alex Davis on behalf of the Illinois Environmental Regulatory Group. I actually don't have any follow-ups on the pre-filed questions, but in response to Ms. Hurley's testimony just now in your questioning I was curious to know, what exactly is it that's being updated quarterly?

MS. HURLEY: The toxicity values will be updated quarterly, if there are changes with U.S. EPA or IEPA, whatever sources is used for the toxicity data, they are updated quarterly. Our values on the website are updated to reflect

references the Illinois EPA TACO program, and my question was, that since the Agency's proposal intends to use the J&E model for remediation at petroleum U.S. T-sites, as well other sites, if you could just please comment on whether the use of the model is consistent with this Oswer directive?

MR. KING: Here's the way we approached that issue. Again, we have tried to, since 1997, adopt the approach that the environment does not care what unit has been artificially designated relative to where that contaminant is coming from. If the contaminant is in the environment and it comes from a tank, U.S. T-tank or comes from another tank in the ground or comes from some drum that's been disposed of, we want to look at the contaminants. I mean, from our standpoint, one of the contaminants that we deal with relative to underground storage tanks and petroleum products is again Benzene. Well, what are we supposed to do now? Do we include Benzene or not include Benzene. Are we going to say we deal with Benzene if it comes from a littoral release but we're not going to deal with

Benzene if it comes from a petroleum release? If we were to do that, that would be inconsistent with the way we've approached TACO for all these years. You know, we don't say in the rule that we're going to have Benzene apply to this program, and we don't say that we're going to have TCE apply to that other program. We've just always taken the philosophy that a come contaminant in the environment needs to be addressed, regardless of the legal designation that people have given it. So, yes, the U.S. EPA has said that. I don't know, they made some problematic reasons for doing that. It doesn't seem to fit into the context of the way we had put our rule together.

MS. LIU: I think one of the things the U.S. EPA noted about the J&E model was that it didn't account for attenuation like biodegradation, which is something you would want to see with Benzene in particular. If over the course of several years, natural attenuation has occurred at a petroleum unit T-site where an NFR letter was issued that required a building control technology, would the owner have the opportunity after several years to reevaluate that site and

perhaps request a revised NFR if that building control technology was no longer needed?

MR. KING: That's absolutely true, and that's been true across the TACO since it started. If circumstances change and the contaminants have attenuated and it's no longer an issue, then the context of the NFR letter can be changed.

MS. LIU: Thank you.

MS. GEVING: I have one follow-up question. Mr. King, what would be the procedure for getting a reevaluation of that NFR letter?

MR. KING: If the evaluation occurred in the tank program, then that reevaluation would occur in the site remediation program. Because once you have, the way the tank rules are set up, once you have an NFR letter, you get one of those and you don't come back into the LUST program.

MS. GEVING: That's Leaky Underground Storage Tank Program.

MEMBER RAO: Mr. King, I have one more for you. This relates to the J&E model. This is referring to your response to Mr. Reott's

MR. KING: I don't believe we have a similar statement to that in Tier 3. That statement would only apply to Tier 2. It would not apply to Tier 3.

MEMBER RAO: I have one more question. Again, it is related to Mr. Reott's concern of the buildings chosen by IEPA for the J&E model. If site specific parameters produce significantly different results, could you please clarify the opportunity the medial applicants have to use a site specific approach when choosing the site of the building.

MR. KING: That can be done under Tier 3, if they wanted to do a site specific building. However, one of the reasons why we steered away from that, under Tier 1 is you would end up conditioning every NFR letter based on the size of the building, which would then mean that building would have to stay there kind of thing, and it would really limit the transferability of those NFR letters. So we think that's -- obviously with some buildings where they are very large, particularly with an industrial-commercial building, a very large building, it would be

it's applied relative to those sites. We're sensitive to what Mr. Harden talked about in his proposal. What we were seeing a little bit difficult for us to handle is that TACO doesn't set up those timing kind of issues to do what he suggested. It will require us to go into the SRP rules, Part 740 to make those changes. I don't think we can do that in 742. I mean, I suppose -- I am not advocating this as an approach, but I suppose the Board could make some mention of it in their opinions, that that was something for us to consider. We made a couple of things pretty clear to persons who are performing clean-ups under our programs relative to vapor intrusion issues. The first is that there's been considerable lead time relative to completing projects under the existing rules. I mean, we started discussing this effort with people outside the Agency, well, at least a year ago, if not earlier than that. And we filed the proposal in September. I'm not expecting that the Board is going to have an adopted rule until the fall of this year. I mean, I'm just kind of gauging what I would expect your schedule to be, perhaps at the earliest from the kind of looks I'm

we're trying to deal with that in this method.

MS. GEVING: May I ask a follow-up question. Mr. King, in the instance where the parties come in and voluntary wish to address a vapor intrusion pathway at this time, is there some language that we are going to put in the NFR letters that would address that they've looked at the pathway?

MR. KING: Yes, we are putting in language to that effect now.

MS. GEVING: Thank you.

MR. DAVIS: I have a follow-up as well. One of the concerns is, regarding the, you know, as is always the case when implementing a rule that's not finalized, is the fact that it changes over time. We've seen four errata sheets now. What do you recommend those applicants shoot for? If someone is performing indoor inhalation originally age, for the original proposed values contained in the tables that may be have consequently changed, What would you recommend then?

MR. KING: What we've always done, and the principle place this is occurring is in

If you could identify yourself?

MR. ELLIOTT: Mark Elliott, MH Environmental.

Mr. King, did you imply that you cannot alter the size of the building under a Tier 2 evaluation, that that can only be conducted under Tier 3?

MR. KING: That's correct.

MR. ELLIOTT: Why, I guess would be the question? I mean, Tier 2, as I understand it, is supposed to be -- the flexibility built into it to use more site specific factors, and I would think that building size would be one of the most relevant factors as far as that's concerned. I mean, the more things that get shoved into Tier 3, which has been very difficult to get anything through, let's be honest about it --

HEARING OFFICER MCGILL: Sir, I'm going to have to ask you to pose the question or I can go ahead and swear you in if you want this to be considered testimony.

MR. ELLIOTT: That's fine. I guess my question is why are we limiting the size of the building under Tier 2 when flexibility is supposed

to be built into that?

MR. KING: Well, I thought I explained our reason. You may not agree with our reasoning, but that's the reasons we put forward for doing it that way. We felt if you are going to vary the building size, then you are truly looking at a very site specific issue that's going to effect the long-term status of the buildings at that site long into the future. And let's do that under Tier 3 so that we're truly evaluating all the factors relative to that specific site.

MR. ELLIOTT: How is the fact that the building size as evaluated under Tier 2 or Tier 3 alter the fact that the NFR has to be structured for the size of the building? I don't understand how using it under Tier 2 versus Tier 3, the size makes it different as to how it has to be dealt with?

MR. KING: Because we will condition the NFR letter on the size of the building. And if you are saying that you are getting an NFR letter based on a building that is larger than what has been included in part of our assumptions, then you will not have, not be allowed to have a

smaller building on that site. That site will be prohibited from having a smaller building, and that will certainly effect the nature of how that property can be transferred in the future. And it will certainly effect the nature of the NFR letter. That's why we want to do that under Tier 3, as opposed to Tier 2 or Tier 1.

MR. ELLIOTT: Again I, would question how is that different than any other alterations to a property when it transfers as far as changing an NFR, i.e., moving a parking lot engineering barrier or something like that, how is that changed doing it under Tier 3 versus Tier 2?

MR. KING: Well, if you are talking about an engineered barrier, if an engineered barrier has been included under the existing system, that's part of the remediation efforts, and you are then changing the nature of the remediation project.

MR. ELLIOTT: Again, I don't understand the distinction. How is changing the size of the building versus any other alteration to the site that effects the NFR, I don't understand the difference. I guess I'm a little

confused.

HEARING OFFICER MCGILL: Maybe, let me try to ask the question. It will be helpful background. What sort of site specific information is taken into account at the Tier 2 level? What is site specific information, just for background purposes, get some examples.

MR. KING: I would have to go through -- I would have to go into the equations then.

MR. KING: Part of the -- just to give you a couple examples.

HEARING OFFICER MCGILL: What we're going to do is just go off the record for five minutes. The court reporter needs to take a break. If you want to look that up. I've got 11:20. We'll start right back up in five minutes.

(Whereupon, a discussion was had off the record.)

HEARING OFFICER MCGILL: Why don't we go back on the record. We were just posed a question to the Agency's witnesses about where variability in building size can be taken into account, Tier 2 or Tier 3. So why don't we pick

HEARING OFFICER MCGILL: Thank you. Do you know if SRAC is considering filing any proposed rule language on its transitional concerns on NFR letters?

MR. MARTIN: I'm not aware of any proposal beyond what we suggested in my testimony, but we'd certainly be willing to talk to the Agency at a future date about that.

MEMBER GIRARD: Could I ask a question. Is SRAC concerned about the building size parameter being only a consideration in the Tier 3 clean-up?

MR. MARTIN: No we've had discussions on that issue, and we generally feel that the Agency's approach is appropriate because we believe that will result in an unrestricted NFR when you use the default assumptions. We wouldn't want to see a case where NFR's become limiting to certain building size.

HEARING OFFICER MCGILL: All right. Any additional questions for Mr. Martin? Seeing none, I'm just going to take care of a little paperwork.

I mentioned that the pre-filed

administered without a lot of oversight. For every site that's in a state program, there's probably ten sites that are not in a state program that are using TACO. They are using TACO to reach decisions wholly or apart whether they need to get it parlor. So the Agency's participation here is really the tip of the iceberg in terms of number of people effected by what happens to this rulemaking. That's a good thing because it conserves Agency resources at a time when they are stretched very thin for the sites that are most critical. It allows the majority of the sites, the vast majority of the sites to process through the problems in real estate transactions in all sorts of settings without having to resort to Tier 2 or Tier 3 kind of analysis with the Agency's participation. The proposal here I believe would change that significantly. The reason it would do that is because after, you know, more than ten years of experience with a very successful program, the Agency's proposal would change the clean-up standard tenfold in most of Illinois. That is a serious, serious change, and that's the point of the separate chart, Exhibit 26, which I

think Mr. McGill has passed out and you have before you.

What I did in Exhibit 26 was I picked some of the most common chemicals out of the 69 chemicals that are subject this rulemaking. Grouped them by topics. So that the first group are those most commonly involved in U.S. T-clean-ups. The middle group is most commonly involved when you have chlorinated solvent problems, typical industrial facilities, and the last couple were ones that were interesting outliners that are involved in lots of different types of problems. Most of Illinois has a groundwater ordinance at this point. If you look at the population in Illinois, you look at the number of communities that have approved groundwater ordinances, most of Illinois has chosen to adopt groundwater ordinances. That has in turn meant that the groundwater clean up objectives and the migration to groundwater pathway have become much less important in terms of driving actual commercial activity in people's decisions. Particularly the City of Chicago is a great example where, you know, those issues really

are quite secondary in a lot of other context where otherwise people would be forced to spend a great deal of money on it. That's particularly important in the groundwater context because cleaning up soil is sort of one level of experience. Cleaning up groundwater is totally different in orders of magnitude kind of problem. The Agency's change would drive people into cleaning up groundwater in much of Illinois, and would force them to address issues because of the tenfold change in clean-up standards that would be otherwise not dealt with in the current scenarios that are out there. This will effect people who have done their clean-ups years ago. The next time they go to sell their buildings, they will be forced to reopen. It will effect everybody who has anything in process certainly. It will effect anybody that has anything that's contemplated. The Agency's proposal has the flexibility to go through Tier 2 and Tier 3 analysis, but those are not without costs. And having a bad Tier 1 table, it's probably worse than having no table at all in some ways because it would drive everybody into Tier 2 and Tier 3 at a time when frankly your

upon the analysis that was done at that time that soils below ten feet were not as likely to have an impact on someone standing on the surface. The same analysis should be applied here, and instead of going in the other direction to revise the outdoor rules to drop the ten-foot barrier, you know, the Agency should be looking in this direction and doing something here that's consistent with what we've done historically and what the Board has adopted historically for outdoor inhalation.

Just to comment on the exchange between Mr. Martin and Mr. King about Tier 2 in building size restrictions, why not simply give the building owner a choice. If he wants his NFR letter to be considered in a Tier 2 analysis on the size of the building, why not let him? I mean, in a long development context you are going to develop every square foot of the property that you can. You are, if you are green field site, you are building a new building, you are going to build it out to whatever the lot lines are or the setback zone, if there's setback zone. If that's what the building owner wants, why not give them

that flexibility. It doesn't seem that difficult to administer.

In terms of how to establish compliance, one of the issues in the current rule is it really does not give you an opportunity to use indoor air testing effectively to measure compliance. I agree very much with the testimony submitted by GeoKinetics. I think that indoor air testing, if done in a representative way, is less intrusive, acts as less of an issue frankly where it is doing invasive, where you have drilling issues and utilities and pipes and things you might hit below the surface. It's much easier to put a Summa canister into a building, take a measurement. I think the ultimate effect of the rule could be adverse on building energy conservation programs because we will encourage people to recreate systems, create flow through buildings in order to address perceived but not real indoor air problems instead. They are going to be pumping air through their building as part of the building control technology in the way that is going to cost them on the energy side. You know, in short, I guess I think we're being asked

to look at a proposal to solve a problem that may or may not exist in Illinois. There really is -- if there was such a severe problem that it justified a tenfold decrease in the soil clean-up standard, we would see many, many, many indoor inhalation in the city. I just don't see it. I don't see it in my legal practice. I don't see it in the sites that are evaluating transactional context. I don't see it in litigation. I don't see it. It doesn't mean it can't happen. It doesn't mean there aren't serious indoor inhalation problems, like Hartford, Illinois, but frankly those sites are capably being approached and addressed by existing standards. They don't need this rulemaking to address them. This rulemaking, I think, has the potential to undermine a lot of good. For that reason, I urge the Board to proceed very cautiously with the Agency's proposal. Thank you.

HEARING OFFICER MCGILL: Thank you. The Board has some questions for Mr. Reott but we'd like to open it up to the audience first. Does anyone have any questions for Mr. Reott? Mr. King?

question about that.

In terms of other states, are you aware of any that have, what would be comparable to a Tier 1 level for indoor air?

MR. KING: Yes, there are some states that do that. They do a Tier 1 level.

HEARING OFFICER MCGILL: Do you know how they, can that be used to exclude the pathway or is that part of the information that's developed?

MR. KING: No, they can be used to exclude the pathway. Maybe I'm going to get some other information right here. We were just conferring in talking about the fact that indoor air is normally looked at as a last step after everything else has been characterized because of the fact it can be intrusive and you want to exhaust the other options first.

HEARING OFFICER MCGILL: I'm sorry, you are talking about other state programs or the Agency's approach?

MR. KING: Other states.

HEARING OFFICER MCGILL: It would be helpful, obviously we are doing some of our own

so are looking for guidance in how to deal with them in Illinois. The ASTM standard practice document -- again, that's one of our submittals -- in talking about how practitioners are to evaluate the indoor inhalation pathway, they instruct practitioners to look to their state environmental Agency for procedures. So we think it's imperative that practitioners are going to have something to look at, and whether or not the Board adopts the Agency's proposal, property transactions are going to look for, are going to look for some methodology to address indoor inhalation. You know, we think the methodology that we have has, builds on TACO as we've implemented it for the last decade, and will be an effective approach to dealing with this pathway for the future.

MEMBER RAO: Mr. King, in the context of what you just said, for real estate transactions or for practitioners, the ASTM standards have to contact the U.S. EPA, have to get more guidance on the issue, the state in the proposal that we have before us, it doesn't have indoor air cleaning levels at Tier 1. So do you

HEARING OFFICER MCGILL: You are talking about calculating?

MR. KING: A remediation objective.

MEMBER MOORE: Is that only for Tier 3?

MR. KING: It would be for Tier 3.

HEARING OFFICER MCGILL: That would be Tier 3.

MS. GEVING: I think Dr. Salhotra would like to make additional comments, perhaps not in capacity of the Agency, but on behalf of his own business as a consultant.

MR. SALHOTRA: Is that appropriate?

HEARING OFFICER MCGILL: Sure with that understanding, go ahead.

Maybe you could restate your name and your company.

MR. SALHOTRA: My name is Atul Salhotra. I'm vice president of Ram Group, which is a division of Gannett Fleming, Inc. I'm going to make several comments.

HEARING OFFICER MCGILL: I'm sorry to interrupt. You have been sworn in earlier. I wanted to, for the record, note that.

at once in that respect.

HEARING OFFICER MCGILL: Ms. Geving?

MS. GEVING: Mr. King, isn't a factor that we considered, that ASTM also came out with a publication dated March 7, 2008, that specifically addressed vapor intrusion?

MR. KING: Yes, I think that's a good comment. Yes, that's another document that obviously was not in existence in '97. It really is a recognition on a national basis that for the need to have an indoor inhalation approach within states.

MS. GEVING: Did that document also further outline the science that made us feel more comfortable with implementing that pathway in Illinois?

MR. KING: That's true.

HEARING OFFICER MCGILL: Dr. Salhotra?

MR. SALHOTRA: Yes, I think another way to look at this, ten years ago if you went to a national conference in our business, you would rarely hear about indoor vapor intrusion. I don't think today you can go to any conference in the

correlate the field data when you do resident indoor sampling, and that's of concern because the proposal is to adopt a Tier 1 Table that's based upon this model working. And if there's concerns that it doesn't actually produce real world data, you know, maybe the model needs to be tweaked some. The Agency has tweaked the model for Illinois with temperature already by changing the temperature in the model. That's something that's more specific to Illinois. I think the model would be greatly improved by the same thing on the soil front, and instead of going backwards from the original FOC proposal, which had a higher FOC going backwards now to an even lower number, I think represents moving further away from what are representative Illinois conditions to something that's a laboratory theoretical thing. Everybody is talking about it in conferences. If you have tables that are really wildly over-conservative because they are concerned about its impact on projects, that doesn't mean it's a real problem. It's not the same. The answer is not always the same.

HEARING OFFICER MCGILL: Can I ask a

MR. REOTT: I don't see any reason why not. That is the ultimate answer. Why use a model to try to predict the number, when you have the actual number. It's a much better surrogate, I guess, for the air that the people are breathing. I'm not suggesting we ignore real health issues. I'm suggesting that's a better way of looking at what they are really exposed to. Given the General Assembly's mandate for what you are trying to do here.

HEARING OFFICER MCGILL: Would you still have all of the subsurface information, soil and groundwater, under the approach that you just suggested or is that not even gathered then?

MR. REOTT: The extent to which it's gathered is going to depend on the site on what the issues are and then also whether you are in a state program or not. A lot of people are going to be able to screen themselves out and never get into a state program, because they are going to be able to use TAC. One of the real advantages is it's a very predictable, a regulated community use. It is widely used without getting involved with the state, conserves enormous state

MR. MCGILL: If you could go ahead and do that now. Thank you.

MR. OLSTA: All right. This is the response to the pre-filed questions by Michael Reott, dated March 4th, 2009. This letter's been prepared to address the questions that were directed to Geokinetics in the above-referenced submittal. For ease of reference, each question is repeated below followed by our response.

Question number 12, what is the relative cost of using a 60 mil vapor barrier at typical sites, compared to the 6 and 10 mil barriers referenced in the proposed rule and your testimony?

Answer number 12, the installed cost of a 60 mil spray applied or HDPE vapor barrier is typically on the order of $1.50 to $2.25 per square foot. The installed cost of a 6 to 10 mil LDPE vapor barrier with overlapped or taped seams is typically on the order of $.30 to $.50 per square foot. The lower unit costs are more typical of larger installations. Examples, warehouses, commercial buildings, multifamily structures, et cetera. While the higher unit costs would be more typical of a single-family residence and small

retail commercial buildings.

Question number 13, what is Geokinetics' experience with testing indoor air quality for contaminants for vapors from sub-slab soil and/or groundwater contamination? Would a system of interior air quality standards, as suggested by Versar (phonetic) in its February 24th, 2009, comment letter be workable in Illinois?

Response number 13, measurement of the VOC levels and interior air spaces can provide a direct indication of potential exposure risks. Actual levels for many contaminants and indoor air have been published by the USEPA and other regulatory agencies based upon incremental carcinogenic risk of whatever standardized exposure and somewhat standardized exposure assumptions.

This approach is useful in addressing the question: Does an unacceptable exposure risk exist? However, indoor air sampling and analysis can only identify an existing problem. It can not anticipate one in advance. It is often necessary to evaluate site conditions for a proposed building and determine in mitigative measures are required. Problems identified after the completion

of construction are typically more difficult to address.

Comment number 14, has Geokinetics ever compared its indoor air monitoring quality data to the predicted values from the Johnson and Ettinger model?

Response number 14, yes. Where we have comparative data, the standard J & E model typically predicts higher VOC and/or methane gas levels than were actually meshed in the indoor air. This appears to be attributable to the assumptions and simplifications utilized in the model that are generally of a conservative nature.

Comment number 15, does Geokinetics have any experience with the costs of the various building control technologies referenced in the proposed rule?

Response number 15, yes. We have installed each type of system referenced in Section 742.1210 of the draft guidelines. The cost of sub-slab and submembrane depressurization systems can vary significantly depending upon the site conditions and building characteristics. The installation cost for sub-slab depressurization

systems are often lower than those for submembrane systems, although long term operating and maintenance costs are typically significantly higher. As a result, the net present value cost for both systems are often comparable, and typically range from approximately $1.50 to $3.50 per square foot of slab on grade area.

The discussion of vapor mitigation alternatives and technical consideration is attached for your reference. We hope this information is helpful to you. Please do not hesitate to contact any of the undersigned or myself if you have any questions or comments.

MR. MCGILL: Thank you. Are there any questions for Mr. Olsta? Mr. King.

MR. KING: I wanted to talk about the -- we're talking about testimony as well as a question?

MR. MCGILL: Sure. Go ahead.

MR. KING: Mr. Olsta, one of the things that we were, kind of, curious about relative to the discussion on submembrane depressurization, the comment was made that 6 mil was too thin, and you're recommending 60 mil. We were concerned about

the feasibility of installing a 60 mil liner, basically, in a crawl space, and we talked at break about that. I was wondering if you could comment on that.

MR. OLSTA: Yes. I did ask this question to our people in California, which have done the most projects, and they have indicated that had they have done some installations of the 60 mil spray applied membrane in existing buildings and crawl spaces. So I can request from them some case study references, details to provide to you, to the Agency, and to the Board.

MR. KING: That would be -- I think that would be very useful for us to, kind of, think through this as part of the rules.

MR. MCGILL: Thank you.

MR. RAO: Mr. Olsta, just as a follow-up to Mr. King's question, is there any thickness in between 6 and 60 mil?

MR. OLSTA: There are various thicknesses for the geo synthetics and the spray applied. They would have obviously different properties. Typically the -- particularly the diffusion and puncture resistance would be related

to the thickness. So any decrease from 60 mils would typically result in an increase in diffusion and less puncture resistance during construction.

MR. RAO: In the pre-filed testimony, I think -- you know, it's not your testimony, but you had indicated that Geokinetics had significant expedience and you mentioned thousands of sites that they have handled, and I was wondering if you have any information in a database as to, you know, what kind of issues you dealt with in terms of, you know, were they all related to this membrane, the thickness of 6 mils, or were there different thicknesses that were evaluated of as a part of this experience?

MR. OLSTA: I can try to get some more details from Geokinetics on the breakdown for those numbers.

MR. RAO: Okay. That would be helpful.

MR. MCGILL: Ms. Geving?

MS. GEVING: For purposes of illustration for the Board, we can enter this into the record as an exhibit, if you have no objection. It's not from your company, but it is a 60 mil

May 5, 2009

Mr. Richard McGill
Illinois Pollution Control Board
100 West Randolph Board
Suite 11-500
Chicago, Illinois 60601

RE: **Case No**: R2009-009
Case Type: Rulemaking
Media Type: Land
County: Statewide
Case Name: In the Matter of: Proposed Amendments to Tiered Approach to Corrective Action Objectives (35 Ill Adm. Code 742)
Board Member: Johnson, T.E.
Hearing Officer: McGill, R.
Status: Board Order

Dear Mr. McGill:

Environmental Resources Management, Inc. (ERM) prepared this letter to comment on the subject case.

It appears that the TACO equations J&E 1 and J&E 2 are not consistent with the USEPA's equations because they do not include exposure time (ET) (*8 hr/24 hr for industrial-commercial worker or 24 hr/24 hr for residential*) in the denominator. Omission of this value in the industrial-commercial worker calculation will result in TACO Tier 2 indoor air remediation objectives that are lower than the USEPA worker ambient air screening values. In essence it allows the calculation of only residential remediation objectives.

It is not clear if this is an oversight or intentional. If you have any questions, please feel free to contact me directly at 847-258-8983.

Sincerely,

Keith R. Fetzner

Keith R. Fetzner, P.G.
Senior Project Manager

May 27, 2009

Illinois Pollution Control Board
Clerk's Office
James R. Thompson Center
100 West Randolph Board, Suite 11-500
Chicago, Illinois 60601

And participants on the Service List (via First Class Mail)

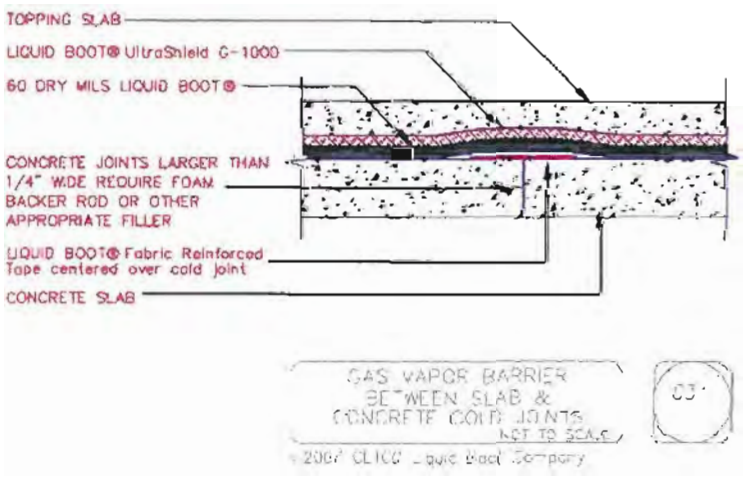
Re: **Case No**: R2009-009
Case Name: In the Matter of: Proposed Amendments to Tiered Approach to Corrective Action Objectives (35 Ill Adm. Code 742)
Board Member: Johnson, T.E.
Hearing Officer: McGill, R.

Dear Board Members:

CETCO has prepared the following responses to questions posed at the March 17, 2009 hearing held in Chicago, IL.

Question from Gary King, Illinois Environmental Protection Agency (IEPA): IEPA is concerned about the feasibility of installing a 60-mil liner in a crawl space. I was wondering if you could comment on that.

Response: CETCO 60-mil spray applied membrane has been installed in three existing basements: Wesleyan U, Middleton, CT; Belgravia Redevelopment, South Haven, MI and Residential Basement, Biddeford, ME. A typical installation cross section is shown in following detail G3.1 with overlaying geotextile and a minimum 2-inch topping slab.



The 60-mil membrane could also be installed over a prepared dirt crawl space with similar overlaying geotextile and topping slap.

Question from Mr. Anand Rao, IPCB: You indicated that GeoKinetics had significant experience and you mentioned thousands of sites that they have handled. I was wondering if you have any information in a database as to what kind of issues were dealt with related to (a 60-mil) membrane, 6-mil membrane or other membrane that were evaluated as part of this experience.

Response: Per Glen Tofani, GeoKinetics, they do not have a database. However, based upon their plans on file and billing records of VOC and methane vapor intrusion mitigation projects, he made the following estimate:

- minimum 60-mil: 90%
- minimum 12-mil: 10%
- <12-mil: 0%

The <60-mil vapor barriers were for low concentration VOC or methane projects dating back to the mid-1990s and earlier. More recent projects were all minimum 60-mil vapor barriers.

Question from Ms. Kimberly Geving, IEPA: If you are spray (applying) how do you make sure it's all the same thickness? Do you do periodic measurements after it's sprayed on once it's dry?

Response: Yes, current CETCO brownfield membrane/liner specification guidelines state the following: "The membrane must be cured at least overnight before inspecting for dry-thickness. ON CONCRETE/SHOTCRETE/MASONRY & OTHER HARD SURFACES Membrane may be checked for proper thickness with a blunt-nose depth gauge, taking one reading every 500 square feet. Record the readings. Mark the test area for repair, if necessary. If necessary, test areas are to be patched over with LIQUID BOOT® to a 60 mils minimum dry thickness, extending a minimum of one inch (1") beyond the test perimeter. DIRT AND OTHER SOFT SUBSTRATES. Samples may be cut from the membrane and geotextile sandwich to a maximum area of 2 square inches. Measure the thickness with a mil-reading caliper, per 500 square feet. Deduct the plain geotextile thickness to determine the thickness of LIQUID BOOT® membrane. Mark the test area for repair. Voids left by sampling are to be patched with geotextile overlapping the void by a minimum of two inches (2"). Apply a thin tack coat of LIQUID BOOT® under the geotextile patch. Then spray or trowel apply LIQUID BOOT® to an 60 mils minimum dry thickness, extending at least three inches (3") beyond geotextile patch."

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R09-9
PROPOSED AMENDMENTS TO	)	(Rulemaking-Land)
TIERED APPROACH TO CORRECTIVE	)	
ACTION OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	
	)	

ORIGINAL

PCB 4

NOTICE

Dorothy Gunn, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601
(Via First Class Mail)

Bill Richardson
Chief Legal Counsel
Illinois Dept. of Natural Resources
One Natural Resources Way
Springfield, Illinois 62702-1271
(Via First Class Mail)

Matt Dunn
Environmental Bureau Chief
Office of the Attorney General
James R. Thompson Center
100 W. Randolph, 12th Floor
Chicago, Illinois 60601
(Via First Class Mail)

Richard McGill
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601
(Via First Class Mail)

Participants on the Service List
(Via First Class Mail)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the Illinois Environmental Protection Agency's ("Illinois EPA") Pre-First Notice Comments a copy of each of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Kimberly A. Geving
Assistant Counsel
Division of Legal Counsel

Finally, in Appendix B, Tables E and F, change the Class II value to 0.007[c] (which would be the same as the Class I value). **NOTE to the Board**: these changes are NOT reflected in the copy of the rules or on the CD submitted to the Board with these comments since we did not formally make these changes in an Errata Sheet to this rulemaking. If the Board chooses to accept these changes, they will need to be added to the rules.

6. At the second hearing, on pages 23-24 of the transcript from the morning (I will reference the morning transcript as TR1 and the afternoon transcript as TR2)(TR1 at 24), Mr. Davis asked Ms. Hurley a few questions regarding the source that the Illinois EPA uses to update the toxicity data. At the time of hearing, Ms. Hurley was not certain if the source was actually listed on the Illinois EPA's website or not. The Hearing Officer asked us if we could clarify that in our public comment. The answer is yes; the source is listed on the toxicity tables on the Illinois EPA's website.

7. At the second hearing on page 34 of the transcript (TR1 at 34), the Board asked the Illinois EPA whether it thought there would be a significant cost impact if a party chooses to go to Tier 3. Attached as Exhibit 1 to these Comments we have included a document prepared by our expert witness, Atul Salhotra, which outlines costs that were incurred at four different sites. The purpose of these case studies is to attempt to give the Board an illustration of what types of costs may be encountered as a result of adding the indoor inhalation exposure route. The Illinois EPA contends that the public policy argument for adding this exposure route far outweighs any additional costs that may be incurred as a result of its addition to the regulations.

8. At the second hearing on pages 35-36 of the transcript (TR1 at 35-36), Mr. Rao asked Mr. King questions about the J&E parameters in Appendix C, Table M for the width, height, and length of the building. Mr. King stated that we would look at that and make any necessary change. In order to address the site-specific question, we should have added the following language under the "Tier 1 or Calculated Value" column for these parameters:

   H_B Under both Slab on Grade and Basement add " in Tier 3" after "Site-Specific". L_B add " in Tier 3" after "Site-Specific". Q_{bldg} Under both Slab on Grade and Basement add " in Tier 3" after "Site-Specific". W_B add " in Tier 3" after "Site-Specific". Please note that we have addressed this issue and included it in the revised version of the rules that are being submitted on CD to the Board along with these Comments.

9. At the second hearing on pages 46-49 (TR1 at 46-49), Mr. Elliott asked a series of questions regarding why one cannot alter the size of the building under a Tier 2 evaluation and why that must be addressed in Tier 3. The Illinois EPA feels that this issue was adequately addressed at hearing. However, we would like to reiterate that we believe that if one is going to look at building size, that is a very site-specific issue that should be addressed under a Tier 3 evaluation where all factors that are highly site-specific get addressed. If one were to alter the building size, which changes the assumptions of the J&E model, the NFR Letter would need to restrict current and future building sizes. This diminishes the usefulness of the liability release and makes it inappropriate for widespread use under Tier 2.

10. At the second hearing on page 69 (TR1 at 69), Mr. Reott made the statement that : "Most of Illinois has a groundwater ordinance at this point." His statement was apparently

made to support his argument that the Agency's changes are too conservative and would "drive people into cleaning up groundwater in much of Illinois, and would force them to address issues because of the tenfold change in clean-up standards that would be otherwise not dealt with in the current scenarios that are out there." (TR1 at 70). The Illinois EPA wishes to rebut Mr. Reott's argument that most of the State has a groundwater ordinance. In fact, as of April 2009, according to the Secretary of State's website, there are 1,209 incorporated areas in the State of Illinois. Of those, approximately 139 towns and cities in Illinois have an approved citywide ordinance for purposes of an acceptable institutional control under TACO. An additional 61 towns or cities have only an approved limited area ordinance under TACO. Of those 61 towns and cities with approved limited area ordinances, 39 have only 1 area of the town covered; 10 have 2 areas covered; 5 have 3 areas covered; 1 has 4 areas covered; 3 have 5 areas covered; 2 have 7 areas covered; and 1 has 9 areas covered. This in no way comes close to "most of Illinois" being covered by a groundwater ordinance. Therefore, the Illinois EPA contends that its proposal to address this medium for purposes of the indoor inhalation exposure route is a critical element of the proposal.

11. At the second hearing, Mr. Reott raised a concern about the application of the Johnson & Ettinger model in the Underground Storage Tank ("UST") program (TR1 at 73-74) because USEPA does not apply the model to UST sites. USEPA states in its User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings that the model is not recommended for use at UST sites. USEPA further explains that the model does not account for contaminant attenuation (which includes biodegradation). However, in the Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from

Groundwater and Soils, USEPA has developed screening levels for benzene, ethyl benzene, toluene, and xylene ("BETX"). These contaminants are commonly found at UST sites as well as at other sites. USEPA seems to be contradicting itself because there is no information to suggest that these contaminants will behave differently at UST sites than at other sites. Therefore, Illinois EPA does not see the logic in treating these contaminants differently because they originated at UST sites. TACO currently has remediation objectives for ingestion, outdoor inhalation, and migration to groundwater for the BETX contaminants and does not differentiate between the origins of the contamination. Illinois EPA recognizes that petroleum contaminants will degrade over time. However, at this time, there is no generally acceptable quantitative attenuation factor available. If an attenuation factor does become available, it can be incorporated into TACO. Until then, attenuation of petroleum contaminants can be considered under Tier 3. Additionally, if after several years, it is found that the contaminants have attenuated and are no longer an issue, then the context of the NFR letter can be revised (Gary King testimony, TR1 at 28-29).

12. At the second hearing, Mr. Reott (TR1 at 79) and Mr. Pokorny (TR2 at 5-9) raised the issue of indoor air sampling. From their testimony, it appears that both Mr. Reott and Mr. Pokorny believe that TACO should allow for the use of indoor air samples as a measure of compliance in Tier 1. Illinois EPA believes that indoor air sampling should be a Tier 3 issue because indoor air sampling is problematic for several reasons. (The equations for calculating indoor air remediation objectives are provided as J&E1 and J&E2 in Appendix C, Table L, if someone chooses to perform an indoor air quality assessment.)

Richard McGill - Follow up to call regarding procedural question 2009-9

PC# 6

From: "Geving, Kim" <Kim.Geving@Illinois.gov>
To: "Richard McGill" <MCGILLR@ipcb.state.il.us>
Date: 6/9/2009 11:02 AM
Subject: Follow up to call regarding procedural question

Richard,

After our discussion with you the end of last week, our technical staff had a lengthy call with our consultant, Atul, regarding the best way to go about addressing the issues that arose as a result of ERM's public comment. At the conclusion of that conference call, the Agency changed its position regarding how to approach this matter. We have decided that the best course of action would be to leave the existing proposal as it is. We fear that attempting to open up other issues at this point in the regulatory process would substantially delay the adoption of the vapor intrusion provisions and would not be in the best interests of protecting human health.

The Agency believes that our existing proposal should stay on course for four reasons:

1. Our use of the SSL guidance is more protective of human health in that it uses an exposure time for the construction worker of 24 hours versus RAGS's use of an 8 hour exposure duration. RAGS uses the theory that even though you are breathing harder, you are not bringing in any more contamination than you would at a normal rate of respiration. We believe that theory is counterintuitive. SSL addresses this issue in its supplemental guidance (published in December 2002). You may wish to look at 4-21 (Chapter 4.0 deals with Developing SSLs for Non-Residential Exposure Scenarios.) This issue is also addressed at 5-19. (Chapter 5.0 discusses Calculation of SSLs for Construction Worker Scenario.)

2. This new information from RAGS did not come out until January 2009, well after we submitted our proposal.

3. Under the existing proposal, a party may propose to use the 8 hour exposure time (as raised in ERM's public comment) under a Tier 3 scenario.

4. Our proposal is more conservative overall, and thus more protective.

We appreciate your guidance on the procedural issues we discussed over the phone last week. I understand that there is more substance in this follow up email and that the Board may be inclined to post this email as a public comment from the Agency.

Regards,

Kim Geving, Assistant Counsel

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R09-9
PROPOSED AMENDMENTS TO	)	(Rulemaking-Land)
TIERED APPROACH TO CORRECTIVE	)	
ACTION OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	
	)	

NOTICE

Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601
(Via Federal Express)

Mitchell Cohen
Chief Legal Counsel
Illinois Dept. of Natural Resources
One Natural Resources Way
Springfield, Illinois 62702-1271
(Via First Class Mail)

Matt Dunn
Environmental Bureau Chief
Office of the Attorney General
James R. Thompson Center
100 W. Randolph, 12th Floor
Chicago, Illinois 60601
(Via First Class Mail)

Richard McGill
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601
(Via First Class Mail)

Participants on the Service List
(Via First Class Mail)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the Illinois Environmental Protection Agency's ("Illinois EPA") Status Report a copy of each of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Kimberly A. Geving
Assistant Counsel
Division of Legal Counsel

DATE: February 4, 2010

1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

(217) 782-5544

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R09-9
PROPOSED AMENDMENTS TO	)	(Rulemaking-Land)
TIERED APPROACH TO CORRECTIVE	)	
ACTION OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	

STATUS REPORT

On October 5, 2009, the Illinois Environmental Protection Agency ("Illinois EPA") filed a motion with the Illinois Pollution Control Board ("Board"), pursuant to 35 Ill. Adm. Code 101.514, requesting a partial stay be granted in the above captioned matter. In its motion, the Illinois EPA committed to filing status reports with the Board every three months detailing its progress.

On November 5, 2009, the Board granted the Illinois EPA's motion for a partial stay and accepted its proposed status report schedule.

In compliance with its commitment to file a status report every three months, the Illinois EPA, by and through one of its attorneys, Kimberly A. Geving, hereby files its first status report.

I. Overview of the Illinois EPA's Progress

Since filing its motion to stay the indoor inhalation portion of the TACO rulemaking in October 2009, the Illinois EPA has been engaged in reexamining the assumptions and parameter inputs used in applying the Johnson and Ettinger model to calculate indoor inhalation remediation objectives.

To address U.S. EPA's concerns, the Illinois EPA has reevaluated the influence of advection in the migration of volatile chemicals into buildings. Our activities have consisted of literature reviews, discussions with vapor intrusion experts, and consideration of other States' approaches to vapor intrusion.

The Illinois EPA has developed a strategy to revise its indoor inhalation proposal. On January 28, 2010, Illinois EPA communicated a summary of this strategy to U.S. EPA by phone. On February 3, 2010, the Illinois EPA met with the Site Remediation Advisory Committee ("SRAC") to present the strategy, answer questions, and accept comments from SRAC members. The Illinois EPA is now engaged in putting the strategy into action by editing the existing indoor inhalation proposal for re-submittal to the Board.

II. Next Step

The Illinois EPA will continue to work on a revised proposal. In the event that it does not have an amended proposal completed by May 5, 2010, the Illinois EPA will file a second status report with the Board detailing its progress.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

BY: _____
Kimberly A. Geving
Assistant Counsel
Division of Legal Counsel

Dated: February 4, 2010
1021 N. Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544

STATE OF ILLINOIS)
)
COUNTY OF SANGAMON)

PROOF OF SERVICE

I, the undersigned, on oath state that I have served the attached Status Report upon the persons to whom they are directed, by placing a copy of each in an envelope addressed to:

Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601

Mitchell Cohen
Chief Legal Counsel
Illinois Dept. of Natural Resources
One Natural Resources Way
Springfield, Illinois 62702-1271

Matt Dunn
Environmental Bureau Chief
Office of the Attorney General
James R. Thompson Center
100 W. Randolph, 12th Floor
Chicago, Illinois 60601

Richard McGill
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601

Participants on the Service List

and mailing them (First Class Mail, with the exception of the Clerk, which went Federal Express) from Springfield, Illinois on February 4, 2010, with sufficient postage affixed as indicated above.

SUBSCRIBED AND SWORN TO BEFORE ME
This 4th day of February, 2010.

Notary Public

"OFFICIAL SEAL"
BRENDA BOEHNER
NOTARY PUBLIC
STATE OF ILLINOIS
MY COMMISSION EXPIRES 11-14-2013

10/7/2008	Other	Chairman Girard's Letter to Jack Lavin, Director, Department of Commerce and Economic Opportunity Requesting Economic Impact Study	[redacted]
9/16/2008	Order	Order of the Board by T. E. Johnson: Board accepts proposal for hearing and grants motion for relief from filing requirements	[redacted]
9/3/2008	Initial Filing	Agency's Motion for Acceptance; Certification of Origination; Motion for Leave From Filing Requirement; List of Studies and Reports Used in Regulatory Development; Statement of Reasons; Proposed Amendments; Appearance of Kimberly A. Geving for the Agency	[redacted]

Service List

Party Name	Address	City/State/Zip	Phone/Fax
Illinois Environmental Protection Agency **Interested Party** • Kimberly A. Geving - Assistant Counsel	1021 North Grand Avenue East P.O. Box 19276	Springfield IL 62794-9276	217/782-5544 217/782-9807
IEPA **Petitioner** • Kimberly A.Geving - Assistant Counsel	1021 North Grand Avenue East P.O. Box 19276	Springfield IL 62794-9276	217/782-5544 217/782-9807
Hodge Dwyer & Driver **Complainant** • Katherine D. Hodge	3150 Roland Avenue Post Office Box 5776	Springfield IL 62705-5776	217/523-4900 217/523-4948

• Monica T. Rios			
Mayer, Brown LLP **Interested Party** • Kevin G. Desharnais	71 South Wacker Drive	Chicago IL 60606-4637	312/782-0600 312/701-7711
EPI **Interested Party** • Bob Mankowski	16650 South Canal	South Holland IL 60473	
Chemical Industry Council of Illinois **Interested Party** • Lisa Frede	1400 East Touhy Avenue Suite 110	DesPlaines IL 60019-3338	
Bellande & Sargis Law Group, LLP **Interested Party** • Mark Robert Sargis	19 South LaSalle Street Suite 1203	Chicago IL 60603	312/853-8701 312/853-8702
Hanson Engineers, Inc. **Interested Party** • Tracy Lundein	1525 South Sixth Street	Springfield IL 62703-2886	217/788-2450 217/788-2503
Conestoga-Rovers & Associates **Interested Party** • Douglas G. Soutter	8615 West Bryn Mawr Avenue	Chicago IL 60631	773/380-9933 773/380-6421
Office of the Attorney General **Interested Party** • Matthew J. Dunn - Division Chief	Environmental Bureau 69 W. Washington, 18th Floor	Chicago IL 60602	312/814-0660 312/814-2347
Navy Facilities and Engineering Command **Interested Party** • Mark Schultz - Regional Environmental Coordinator	201 Decatur Avenue Building 1A	Great Lakes IL 60088-2801	847/688-2600 847/688-2319
Illinois Pollution Control Board **Interested Party** • - Clerk of the Board • Richard McGill - Hearing Officer	100 W. Randolph St. Suite 11-500	Chicago IL 60601	312/814-3620 312/814-3669

Commonwealth Edison **Interested Party** • Diane H. Richardson	10 South Dearborn Street 35FNW	Chicago IL 60603	
Clayton Group Services **Interested Party** • Monte Nienkerk	3140 Finley Road	Downers Grove IL 60515	
Weaver Boos & Gordon **Interested Party** • Elizabeth Steinhour	2021 Timberbrook Lane	Springfield IL 62702	
Andrews Environmental Engineering **Interested Party** • Kenneth W. Liss	3300 Ginger Creek Drive	Springfield IL 62711	
Missman Stanley & Associates **Interested Party** • John W. Hochwarter • Jeffrey Larson	333 East State Street	Rockford IL 61110-0827	
Trivedi Associates, Inc. **Interested Party** • Chetan Trivedi	2055 Steeplebrook Court	Naperville IL 60565	
Illinois Department of Natural Resources **Interested Party** • Stan Yonkauski • Mitchell Cohen - General Counsel	One Natural Resources Way	Springfield IL 62702-1271	217/782-1809 217/524-9640
Suburban Laboratories, Inc. **Interested Party** • Jarrett Thomas - V.P.	4140 Litt Drive	Hillside IL 60162	708-544-3260
Illinois Department of Transportation **Interested Party** • Steven Gobelman	2300 S. Dirksen Parkway Room 302	Springfield IL 62764	
McGuire Woods LLP	77 W. Wacker	Chicago	312/849-

Interested Party • David Rieser	Suite 4100	IL 60601	8100
Reott Law Offices, LLC **Interested Party** • Raymond T. Reott • Jorge T. Mihalopoulos	35 East Wacker Drive Suite 650	Chicago IL 60601	312/332-7544
Environmental Management & Technologies, Inc. **Interested Party** • Craig Gocker - President	3010 Gill Street	Bloomington IL 61704	309/661-2300 309661-2306
IL Environmental Regulatory Group **Interested Party** • Alec M. Davis	215 East Adams Street	Springfield IL 62701	217/522-5512 217/522-5518
Chicago Department of Law **Interested Party** • Charles A. King - Assistant Corporation Counsel	30 N. LaSalle Street Suite 900	Chicago IL 60602	312/742-3990 312/744-6798
SRAC **Interested Party** • Harry Walton	2510 Brooks Drive	Decatur IL 62521	
Burns & McDonnell Engineering Company, Inc. **Interested Party** • Lawrence L. Fieber - Principal	210 South Clark Street, Suite 2235 The Clark Adams Building	Chicago IL 60603	6306751625

Total number of participants: 28

Notice List

Party Name	Address	City/State/Zip	Phone/Fax
Drinker Biddle & Reath **Interested Party** • Sheila H. Deely • Stephanie Jackson	191 N. Wacker Drive Suite 3700	Chicago IL 60606-1698	312/569/1000 312/569-3000
Jones, Day, Reavis	77 West	Chicago	312/782-3939

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R09-9
PROPOSED AMENDMENTS TO	)	(Rulemaking-Land)
TIERED APPROACH TO CORRECTIVE	)	
ACTION OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	
	)	

NOTICE

Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601
(Via Federal Express)

Mitchell Cohen
Chief Legal Counsel
Illinois Dept. of Natural Resources
One Natural Resources Way
Springfield, Illinois 62702-1271
(Via First Class Mail)

Matt Dunn
Environmental Enf/Asbestos
Office of the Attorney General
Litigation Division
69 W. Washington Street, 18th Floor
Chicago, Illinois 60602
(Via First Class Mail)

Richard McGill
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601
(Via Federal Express)

Participants on the Service List
(Via First Class Mail)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the Illinois Environmental Protection Agency's ("Illinois EPA") Status Report a copy of each of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Kimberly A. Geving
Assistant Counsel
Division of Legal Counsel

• Kevin G. Desharnais			
EPI **Interested Party** • Bob Mankowski	16650 South Canal	South Holland IL 60473	
Illinois Environmental Regulatory Group **Interested Party** • Alec M. Davis	215 East Adams Street	Springfield IL 62701	217/522-5512 217/522-5518
Chemical Industry Council of Illinois **Interested Party** • Lisa Frede	1400 East Touhy Avenue Suite 110	DesPlaines IL 60019-3338	
Bellande & Sargis Law Group, LLP **Interested Party** • Mark Robert Sargis	19 South LaSalle Street Suite 1203	Chicago IL 60603	312/853-8701 312/853-8702
Hanson Engineers, Inc. **Interested Party** • Tracy Lundein	1525 South Sixth Street	Springfield IL 62703-2886	217/788-2450 217/788-2503
Conestoga-Rovers & Associates **Interested Party** • Douglas G. Soutter	8615 West Bryn Mawr Avenue	Chicago IL 60631	773/380-9933 773/380-6421
Office of the Attorney General **Interested Party** • Matthew J. Dunn - Division Chief	Environmental Bureau 69 W. Washington, 18th Floor	Chicago IL 60602	312/814-0660 312/814-2347
Navy Facilities and Engineering Command **Interested Party** • Mark Schultz - Regional Environmental Coordinator	201 Decatur Avenue Building 1A	Great Lakes IL 60088-2801	847/688-2600 847/688-2319
Illinois Pollution Control Board **Interested Party** • - Clerk of the Board • Richard McGill - Hearing Officer	100 W. Randolph St. Suite 11-500	Chicago IL 60601	312/814-3620 312/814-3669
Commonwealth Edison **Interested Party** • Diane H.	10 South Dearborn Street 35FNW	Chicago IL 60603	

Richardson			
Clayton Group Services **Interested Party** • Monte Nienkerk	3140 Finley Road	Downers Grove IL 60515	
Weaver Boos & Gordon **Interested Party** • Elizabeth Steinhour	2021 Timberbrook Lane	Springfield IL 62702	
Andrews Environmental Engineering **Interested Party** • Kenneth W. Liss	3300 Ginger Creek Drive	Springfield IL 62711	
Missman Stanley & Associates **Interested Party** • John W. Hochwarter • Jeffrey Larson	333 East State Street	Rockford IL 61110-0827	
Trivedi Associates, Inc. **Interested Party** • Chetan Trivedi	2055 Steeplebrook Court	Naperville IL 60565	
Illinois Department of Natural Resources **Interested Party** • Stan Yonkauski • Mitchell Cohen - General Counsel	One Natural Resources Way	Springfield IL 62702-1271	217/782-1809 217/524-9640
Suburban Laboratories, Inc. **Interested Party** • Jarrett Thomas - V.P.	4140 Litt Drive	Hillside IL 60162	708-544-3260
Illinois Department of Transportation **Interested Party** • Steven Gobelman	2300 S. Dirksen Parkway Room 302	Springfield IL 62764	
McGuire Woods LLP **Interested Party** • David Rieser	77 W. Wacker Suite 4100	Chicago IL 60601	312/849-8100
Reott Law Offices, LLC **Interested Party** • Raymond T. Reott • Jorge T. Mihalopoulos	35 East Wacker Drive Suite 650	Chicago IL 60601	312/332-7544
Environmental Management &	3010 Gill Street	Bloomington IL 61704	309/661-2300

Technologies, Inc. **Interested Party** • Craig Gocker - President			309661-2306
Chicago Department of Law **Interested Party** • Charles A. King - Assistant Corporation Counsel	30 N. LaSalle Street Suite 900	Chicago IL 60602	312/742-3990 312/744-6798
SRAC **Interested Party** • Harry Walton	2510 Brooks Drive	Decatur IL 62521	
Burns & McDonnell Engineering Company, Inc. **Interested Party** • Lawrence L. Fieber - Principal	210 South Clark Street, Suite 2235 The Clark Adams Building	Chicago IL 60603	6306751625

Total number of participants: 28

Notice List

Party Name	Address	City/State/Zip	Phone/Fax
Drinker Biddle & Reath **Interested Party** • Sheila H. Deely • Stephanie Jackson	191 N. Wacker Drive Suite 3700	Chicago IL 60606-1698	312/569/1000 312/569-3000
Jones, Day, Reavis & Pogue **Interested Party** • LaNail C. Griffin	77 West Wacker Drive	Chicago IL 60601-1692	312/782-3939 312/782-8585
Illinois Power Company **Interested Party** • Brian Martin	500 South 27th Street P.O. Box 511	Decatur IL 62525-1805	217/424-6833
***Sorling, Northrup,Hanna,Cullen & Cochran, Ltd.** **Interested Party** • Stephen F. Hedinger	Suite 800 Illinois Building 607 East Adams, P.O. Box 5131	Springfield IL 62705	217/544-1144 312/522-3173
Hinshaw & Culbertson **Interested Party** • Jon S. Faletto	416 Main Street 6 th Floor	Peoria IL 61602	309/674-1025 309/674-9328
Mohan, Alewelt, Prillaman & Adami **Interested Party**	First of America Center 1 North Old	Springfield IL 62701-1323	217/528-2517 217/528-2553

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO TIERED	)	R09-9
APPROACH TO CORRECTIVE ACTION	)	(Rulemaking - Land)
OBJECTIVES (35 ILL. ADM. CODE 742)	)	

NOTICE OF FILING

TO: Mr. John T. Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 W. Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA ELECTRONIC MAIL)

Mr. Richard McGill
Hearing Officer
Illinois Pollution Control Board
100 W. Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA U.S. MAIL)

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the **RESPONSE OF THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP TO THE ILLINOIS EPA'S MOTION TO STAY PROCEEDINGS**, a copy of which is herewith served upon you.

Respectfully submitted,

Dated: October 19, 2009

By: /s/ Alec M. Davis
Alec M. Davis

Alec M. Davis
General Counsel
Illinois Environmental Regulatory Group
215 East Adams Street
Springfield, Illinois 62701
(217) 522-5512

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO TIERED	)	
APPROACH TO CORRECTIVE ACTION	)	R09-9
OBJECTIVES (35 ILL. ADM. CODE 742)	)	(Rulemaking – Land)

RESPONSE OF THE ILLINOIS ENVIRONMENTAL REGULATORY GROUP TO THE ILLINOIS EPA'S MOTION TO STAY PROCEEDINGS

NOW COMES the ILLINOIS ENVIRONMENTAL REGULATORY GROUP ("IERG"), by and through its attorney, Alec M. Davis, and pursuant to 35 Ill. Admin. Code 101.500(d), hereby responds to the Motion to Stay Proceedings filed by the Illinois Environmental Protection Agency ("Illinois EPA") on October 5, 2009. Motion to Stay Proceedings, *In the Matter of: Proposed Amendments to Tiered Approach to Corrective Action Objectives (35 Ill. Admin. Code 742)*, R09-9, (Ill.Pol.Control.Bd. Oct. 5, 2009), (hereafter "Motion," rulemaking hereafter referred to as "TACO rulemaking").

IERG supports the Agency's Motion, with regard to staying the portion of the proposal pertaining to vapor intrusion. However, IERG reiterates lingering concerns regarding the remaining proposed amendments and the implications associated with moving the amendments to first notice.

I. VAPOR INTRUSION AMENDMENTS

IERG understands that the impetus for the Illinois EPA's Motion is concern raised by the USEPA regarding the specifics of the proposed amendments pertaining to vapor intrusion. While IERG is not aware of the details of the USEPA's concerns, IERG understands the importance of Illinois' regulatory structure being considered favorably by USEPA, with regard

to the science underlying the proposal. Therefore, IERG supports the Agency's Motion, and offers its continued willingness to work with the Agency to achieve resolve.

II. INCLUSION OF CHEMICALS FROM THE GROUNDWATER RULEMAKING

The Illinois EPA, in its Motion, asks the Board to allow the remainder of the proposed amendments to continue forward to first notice. Motion at 2. IERG would ask that in doing so, the Board give due consideration to the concerns raised by IERG, in the Groundwater Quality Standards rulemaking, regarding the process relied upon by the Illinois EPA for selecting the various chemicals for regulation. *See* Comments of the Illinois Environmental Regulatory Group, *In the Matter of: Proposed Amendments to Groundwater Quality Standards, 35 Ill. Admin. Code 620,* R08-18 at 7-8 (Ill.Pol.Control.Bd. Sep. 12, 2008) (rulemaking hereafter referred to as "Part 620 rulemaking"). Specifically, in response to questioning at hearing, and upon review of the data relied upon by the Agency in making its determination to regulate various chemicals, IERG suggested that chemicals which are associated with only a few unique types of sites or processes, or those that have only been detected at a limited number of distinct locations throughout the state, would be better regulated on a site-specific basis, rather than requiring state-wide regulation. *Id.*

In the current TACO rulemaking, new chemicals have been added to the appendices, based upon their having been selected for regulation in the Part 620 rulemaking. *See* Pre-Filed Testimony of Tracey Hurley, *TACO rulemaking*, (Ill.Pol.Control.Bd. Nov. 14, 2008). IERG has not specifically raised the same objection in this rulemaking, because it was expected that the Part 620 rulemaking would move forward procedurally, and the issues would be addressed in that context. However, IERG respectfully asks the Board to note that this TACO rulemaking includes chemicals based upon their having been proposed in the Part 620 rulemaking. Because

the Board has not yet made a determination in the Part 620 rulemaking regarding the selection criteria for inclusion of various chemicals, IERG would request the Board to give due consideration to IERG's concerns as raised in the Part 620 rulemaking.

III. CONCLUSION

IERG would like to thank the Board for providing the opportunity to present this response to the Agency's Motion. IERG is supportive of the Board granting the Stay, as requested by the Agency. IERG does, however, request that the Board consider the information provided in the Part 620 rulemaking docket, R08-18, in addition to this docket, in making a determination to advance the remainder of the proposal to first notice.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
REGULATORY GROUP

Dated: October 19, 2009

By: /s/ Alec M. Davis
Alec M. Davis

Alec M. Davis
General Counsel
Illinois Environmental Regulatory Group
215 East Adams Street
Springfield, Illinois 62701
(217) 522-5512

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R09-9
PROPOSED AMENDMENTS TO	)	(Rulemaking-Land)
TIERED APPROACH TO CORRECTIVE	)	
ACTION OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	
	)	

NOTICE

Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601
(Via First Class Mail)

Mitchell Cohen
Chief Legal Counsel
Illinois Dept. of Natural Resources
One Natural Resources Way
Springfield, Illinois 62702-1271
(Via First Class Mail)

Matt Dunn
Environmental Enf/Asbestos
Office of the Attorney General
Litigation Division
69 W. Washington Street, 18th Floor
Chicago, Illinois 60602
(Via First Class Mail)

Richard McGill
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601
(Via First Class Mail)

Participants on the Service List
(Via First Class Mail)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the Illinois Environmental Protection Agency's ("Illinois EPA") Motion to Voluntarily Withdraw Proposal a copy of each of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Kimberly A. Geving
Assistant Counsel
Division of Legal Counsel

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENTS TO	)	R09-9
TIERED APPROACH TO CORRECTIVE	)	(Rulemaking-Land)
ACTION OBJECTIVES	)	
(35 Ill. Adm. Code 742)	)	
	)	

MOTION TO VOLUNTARILY WITHDRAW PROPOSAL

NOW COMES the Illinois Environmental Protection Agency ("Illinois EPA"), by and through one of its attorneys, Kimberly Geving, and pursuant to 35 Ill. Adm. Code 101.500, moves the Illinois Pollution Control Board ("Board") to grant Illinois EPA's Motion to Voluntarily Withdraw the entire docket in R09-9 (including the portion that was put on an order of stay in November 2009).

In support of its motion, Illinois EPA states that, as a matter of fact, since the Board granted the Illinois EPA's Motion To Stay Proceedings back in November 2009 to allow Illinois EPA time to address USEPA's concerns on the indoor inhalation portion of it proposal, substantial changes have been made to the provisions concerning indoor inhalation. Illinois EPA now believes it has developed a new proposal that will effectively address all of USEPA's concerns to their satisfaction. However, because more than two years has now elapsed since the Illinois EPA initially proposed its amendments in docket R09-9 (filed September 2, 2008), the amendments in the remainder of the proposal are now out of date and in need of further amendment.

The purpose of this motion is to request that the Board grant the Illinois EPA's Motion to Voluntarily Withdraw the Proposal in its entirety so that the Illinois EPA may resubmit a new proposal at a later time. It is Illinois EPA's intent to imminently file a new regulatory proposal addressing only the indoor inhalation provisions. Any additional amendments to Part 742 would follow at some later date.

WHEREFORE, the Illinois EPA respectfully requests that the Board grant its Motion to Voluntarily Withdraw Proposal.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: _____
Kimberly A. Geving
Assistant Counsel
Division of Legal Counsel