

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.<sup>1</sup> 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

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<sup>1</sup> 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).

### **Motions to Correct Hearing Transcripts**

On April 14, 2011, IEPA filed a motion to correct the first hearing's transcript, which the hearing officer granted on the record at the second hearing. Tr.2 at 7. On June 10, 2011, IEPA filed a motion to correct the second hearing's transcript, which is granted. Accordingly, the Board directs the Clerk's Office to do the following: (1) have the respective docket entries for the first and second hearing transcripts reflect the granting of IEPA's corresponding motion to correct; and (2) physically and electronically attach to the respective fronts of the first and second hearing transcripts both this portion of the Board's opinion and IEPA's corresponding motion to correct.

### **Filing Public Comments on the First-Notice Proposal**

First-notice publication in the *Illinois Register* of these proposed rule changes will start a period of at least 45 days during which anyone may file a public comment with the Board, regardless of whether the person has already filed a public comment. The Board encourages persons to file public comments on the proposed amendments. The docket number for this rulemaking, R11-9, should be indicated on the public comment.

Public comments must be filed with the Clerk of the Board. Public comments may be filed at the following address:

Pollution Control Board  
John Therriault, Assistant Clerk  
JRTC  
100 W. Randolph Street, Suite 11-500  
Chicago, IL 60601

In addition, public comments may be filed electronically through the Clerk's Office On-Line (COOL) on the Board's Web site at [www.ipcb.state.il.us](http://www.ipcb.state.il.us). Any questions about electronic filing through COOL should be directed to the Clerk's Office at (312) 814-3629.<sup>6</sup>

The transcripts of the Springfield and Chicago hearings were received by the Board on April 6 and June 1, 2011, respectively, and promptly placed in COOL. Many other documents from this rulemaking are also available through COOL, including Board opinions and orders, hearing officer orders, pre-filed testimony, and public comments.

### **Abbreviations Used in this Opinion**

Abbreviations used by the Board in this opinion include the following:

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<sup>6</sup> All filings with the Clerk must be served on the hearing officer and on those persons on the Service List for this rulemaking. The most recent version of the R11-9 Service List is available on COOL.

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CLERK'S OFFICE

APR 14 2011

STATE OF ILLINOIS  
Pollution Control Board

ORIGINAL

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

R11-9  
(Rulemaking-Land)

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)**

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  
Litigation Division  
Illinois Attorney General's Office  
69 W. Washington St., 18<sup>th</sup> 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 Correct the Transcript a copy of each of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL  
PROTECTION AGENCY

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

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
)  
) R11-9  
PROPOSED AMENDMENTS TO ) (Rulemaking-Land)  
TIERED APPROACH TO CORRECTIVE )  
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(35 Ill. Adm. Code 742) )  
)

**ORIGINAL**  
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**APR 14 2011**  
**STATE OF ILLINOIS**  
**Pollution Control Board**

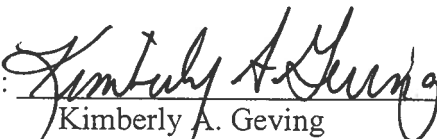
**MOTION TO CORRECT THE TRANSCRIPT**

NOW COMES the Illinois Environmental Protection Agency ("Illinois EPA") by one of its attorneys, Kimberly A. Geving, and pursuant to 35 Ill. Adm. Code 101.604 moves the hearing officer in this matter to correct the transcript of March 29, 2011 as follows:

<u>Transcript</u>		
<u>Page</u>	<u>Line</u>	<u>Correction</u>
4	11	Change "3" to "4"
13	15	Change "contaminates" to "contaminants"
17	11	Change "confirmance" to "conformance"
19	10	Change "fiscal" to "physical"
20	15	Change "as" to "at"
21	11	Change "2010" to "2012"
38	6	Change "directive" to "direct"
63	5	Change "studies in reports" to "studies and reports"
63	20	Change "system" to "distance"
65	15	Add the word "sampling" after "representative"
67	3	Change "line" to "l" and change "inch" to "H"
71	24	Change "act of" to "active"
73	8	Change "our" to "other"
75	15	Change "affective" to "advective"
75	23	Change "affective" to "advective"
76	6	Change "reason" to "reasonable"
80	5	Change "two or" to "Tier"
80	14	Change "?" to "."
80	21	Change "regulating" to "regulated"
85	15	Change "Institution" to "Institutional"
86	16	Change "in" to "and"
86	19	Change "stimey" to "stymie"

Respectfully submitted,

ILLINOIS ENVIRONMENTAL  
PROTECTION AGENCY

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

Dated: April 12, 2011

1021 N. Grand Ave. East  
P.O. Box 19276  
Springfield, Illinois 62794-9276  
(217) 782-5544

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CLERK'S OFFICE

APR 14 2011

STATE OF ILLINOIS  
Pollution Control Board  
**ORIGINAL**

STATE OF ILLINOIS )  
 )  
COUNTY OF SANGAMON )

**PROOF OF SERVICE**

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

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

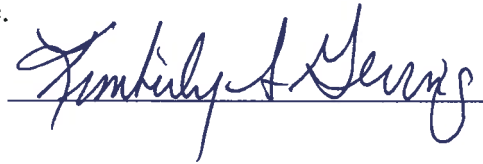
Mitchell Cohen  
Chief Legal Counsel  
Illinois Dept. of Natural Resources  
One Natural Resources Way  
Springfield, Illinois 62702-1271

Matt Dunn  
Environmental Enf./Asbestos  
Litigation Division  
Illinois Attorney General's Office  
69 W. Washington St., 18<sup>th</sup> Floor  
Chicago, Illinois 60602

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

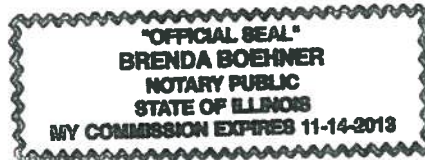
and mailing them (First Class Mail) from Springfield, Illinois on April 12, 2011, with sufficient postage affixed as indicated above.



SUBSCRIBED AND SWORN TO BEFORE ME

This 12<sup>th</sup> day of April, 2011.

  
Notary Public



12/7/2010	DCEO / Sec. of State	*Letter from DCEO stating they are unable to undertake an economic impact study	
12/1/2010	Other	*Letter to Director Ribley of DCEO Requesting Economic Impact Study	
12/1/2010	Motion	Agency's Motion for Leave from Filing Requirement	
11/22/2010	Other	*Electronic version of Proposed Amendments submitted by the IEPA (see Clerk's Office)	
11/18/2010	Order	Order of the Board by T. E. Johnson: Accept rulemaking proposal for hearing	
11/18/2010	Appearance	Appearance of Alec M. Davis for Illinois Environmental Regulatory Group (electronic filing)	
11/9/2010	Initial Filing	Proposed Amendments (< 4MB, 172 Pages)	
11/9/2010	Initial Filing	Motion for Acceptance; Appearance of Kimberly A. Geving; Certification of Origination; Statement of Reasons; and List of Studies and Reports Used in Regulatory Development	

## Service List

Party Name	Address	City/State/Zip	Phone/Fax
<b>IEPA Petitioner</b>	1021 North Grand Avenue East P.O. Box 19276	Springfield IL 62794-9276	217/782- 5544 217/782- 9807
<ul style="list-style-type: none"> <li>Kimberly A. Geving - Assistant Counsel</li> </ul>			
<b>Hodge Dwyer &amp; Driver Complainant</b>	3150 Roland Avenue Post Office Box 5776	Springfield IL 62705-5776	217/523- 4900 217/523- 4948
<ul style="list-style-type: none"> <li>Katherine D. Hodge</li> <li>Monica T. Rios</li> </ul>			
<b>Mayer, Brown LLP Interested Party</b>	71 South Wacker Drive	Chicago IL 60606-4637	312/782- 0600 312/701- 7711
<ul style="list-style-type: none"> <li>Kevin G.</li> </ul>			

Desharnais			
<b><u>Sidley Austin LLP</u></b> <b>Interested Party</b>	One South Dearborn Suite 900	Chicago IL 60603	312/853-7000 312/853-7036
<ul style="list-style-type: none"> <li>William G. Dickett</li> </ul>			
<b><u>EPI</u></b> <b>Interested Party</b>	16650 South Canal	South Holland IL 60473	
<ul style="list-style-type: none"> <li>Bob Mankowski</li> </ul>			
<b><u>Illinois Environmental Regulatory Group</u></b> <b>Interested Party</b>	215 East Adams Street	Springfield IL 62701	217/522-5512 217/522-5518
<ul style="list-style-type: none"> <li>Alec M. Davis</li> </ul>			
<b><u>Chemical Industry Council of Illinois</u></b> <b>Interested Party</b>	1400 East Touhy Avenue Suite 110	DesPlaines IL 60019-3338	
<ul style="list-style-type: none"> <li>Lisa Frede</li> </ul>			
<b><u>Bellande &amp; Sargis Law Group, LLP</u></b> <b>Interested Party</b>	19 South LaSalle Street Suite 1203	Chicago IL 60603	312/853-8701 312/853-8702
<ul style="list-style-type: none"> <li>Mark Robert Sargis</li> </ul>			
<b><u>Hanson Engineers, Inc.</u></b> <b>Interested Party</b>	1525 South Sixth Street	Springfield IL 62703-2886	217/788-2450 217/788-2503
<ul style="list-style-type: none"> <li>Tracy Lundein</li> </ul>			
<b><u>Conestoga-Rovers &amp; Associates</u></b> <b>Interested Party</b>	8615 West Bryn Mawr Avenue	Chicago IL 60631	773/380-9933 773/380-6421
<ul style="list-style-type: none"> <li>Douglas G. Soutter</li> </ul>			
<b><u>Office of the Attorney General</u></b> <b>Interested Party</b>	Environmental Bureau 69 W. Washington, 18th Floor	Chicago IL 60602	312/814-0660 312/814-2347
<ul style="list-style-type: none"> <li>Matthew J. Dunn - Division Chief</li> </ul>			
<b><u>Seyfarth Shaw</u></b> <b>Interested Party</b>	131 South Dearborn Street Suite 2400	Chicago IL 60603-5803	312/460-5000 312/460-7000
<ul style="list-style-type: none"> <li>Craig B. Simonsen - Paralegal</li> <li>Phil Comella</li> </ul>			
<b><u>Navy Facilities and Engineering Command</u></b> <b>Interested Party</b>	201 Decatur Avenue Building 1A	Great Lakes IL 60088-2801	847/688-2600 847/688-2319
<ul style="list-style-type: none"> <li>Mark Schultz - Regional Environmental Coordinator</li> </ul>			
<b><u>Illinois Pollution</u></b>	100 W.	Chicago	312/814-



<b>Reott Law Offices, LLC</b> <b>Interested Party</b>	35 East Wacker Drive Suite 650	Chicago IL 60601	312/332-7544
<ul style="list-style-type: none"> <li>Raymond T. Reott</li> <li>Jorge T. Mihalopoulos</li> </ul>			
<b>Environmental Management &amp; Technologies, Inc.</b> <b>Interested Party</b>	3010 Gill Street	Bloomington IL 61704	309/661-2300 309661-2306
<ul style="list-style-type: none"> <li>Craig Gocker - President</li> </ul>			
<b>Chicago Department of Law</b> <b>Interested Party</b>	30 N. LaSalle Street Suite 900	Chicago IL 60602	312/742-3990 312/744-6798
<ul style="list-style-type: none"> <li>Charles A. King - Assistant Corporation Counsel</li> </ul>			
<b>SRAC</b> <b>Interested Party</b>	2510 Brooks Drive	Decatur IL 62521	
<ul style="list-style-type: none"> <li>Harry Walton</li> </ul>			
<b>Burns &amp; McDonnell Engineering Company, Inc.</b> <b>Interested Party</b>	210 South Clark Street, Suite 2235 The Clark Adams Building	Chicago IL 60603	6306751625
<ul style="list-style-type: none"> <li>Lawrence L. Fieber - Principal</li> </ul>			
Total number of participants: 28			

## Notice List

Party Name	Address	City/State/Zip	Phone/Fax
<b>Drinker Biddle &amp; Reath</b> <b>Interested Party</b>	191 N. Wacker Drive Suite 3700	Chicago IL 60606-1698	312/569/1000 312/569-3000
<ul style="list-style-type: none"> <li>Sheila H. Deely</li> <li>Stephanie Jackson</li> </ul>			
<b>Jones, Day, Reavis &amp; Pogue</b> <b>Interested Party</b>	77 West Wacker Drive	Chicago IL 60601-1692	312/782-3939 312/782-8585
<ul style="list-style-type: none"> <li>LaNail C. Griffin</li> </ul>			
<b>Illinois Power Company</b> <b>Interested Party</b>	500 South 27th Street P.O. Box 511	Decatur IL 62525-1805	217/424-6833
<ul style="list-style-type: none"> <li>Brian Martin</li> </ul>			
<b>Hinshaw &amp; Culbertson</b> <b>Interested Party</b>	416 Main Street 6 th Floor	Peoria IL 61602	309/674-1025 309/674-9328

ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
TIERED APPROACH TO CORRECTIVE	)	R11-9
ACTION OBJECTIVES (TACO)	)	(Rulemaking-
INDOOR INHALATION AMENDMENTS	)	and
TO ILL. ADM. CODE 742	)	<b>RECEIVED</b>
		<b>CLERK'S OFFICE</b>

JUN 01 2011

REPORT OF THE PROCEEDINGS **STATE OF ILLINOIS Pollution Control Board**

above entitled cause before Hearing Officer Richard McGill, called by the Illinois Pollution Control Board, taken by Steven Brickey, CSR, for the State of Illinois, 100 West Randolph Street, Chicago, Illinois, on the 24th day of May, 2011, commencing at the hour of 9:00 a.m.

A P P E A R A N C E S

MR. RICHARD MCGILL, Hearing Officer  
MR. ANAND RAO,  
MS. ANDREA MOORE  
MS. CARRIE ZALEWSKI  
MR. THOMAS JOHNSON  
MR. TANNER GIRARD  
MS. ALISA LIU

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
BY: MS. KIMBERLY A. GEVING  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, Illinois 62794-9276  
(217) 782-5544

ILLINOIS ENVIRONMENTAL REGULATORY GROUP  
BY: MR. ALEC M. DAVIS  
215 East Adams Street  
Springfield, Illinois 62701  
(217) 522-5512

ALSO PRESENT: MR. GARY P. KING  
MS. TRACEY E. HURLEY  
MS. HEATHER N. NIFONG  
MS. JOYCE MUNIE  
MR. THOMAS HORNSHAW  
MR. MOHAMMED ZILLUR RAHMAN  
MS. BHOOMA SUNDAR  
MR. BRIAN MARTIN

REPORTED BY:

Steven J. Brickey, CSR  
CSR License No. 084-004675

E X H I B I T S

Marked for  
Identification

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1                   MR. MCGILL: Good morning. I'd like  
2 to welcome you all to this Illinois Pollution  
3 Control Board Hearing in Chicago. My name is  
4 Richard McGill and I'm the Hearing Officer for  
5 this rulemaking proceeding docketed as R11-9.

6                   The caption Tiered Approach to  
7 Corrective Action Objectives (TACO) Indoor  
8 Inhalation Amendments to 35 Ill. Adm. Code 742.

9                   In November of last year, the  
10 Board received a rulemaking proposal from the  
11 Illinois Environmental Protection Agency to amend  
12 the Board's TACO rules in order to add the indoor  
13 inhalation exposure route to TACO's risk-based  
14 methodology.

15                   The first hearing in this  
16 proceeding was held in Springfield on March 29th,  
17 2011. Today is the second hearing and no  
18 additional hearings are presently scheduled. Also  
19 present today on behalf of the Board is Member  
20 Thomas Johnson, the lead Board member for this  
21 rulemaking, Chairman Tanner Girard and from the  
22 Board's technical unit Anand Rao and Alisa Liu and  
23 we will be joined by Board Members Andrea Moore  
24 and Carrie Zalewski shortly .

1 I would also like to take a  
2 moment to introduce three law students who are  
3 presently interning at the Board that are sitting  
4 in the back row predictably. Kristen Carl is a  
5 third year student at DePaul University College of  
6 Law. A waive there, Kristen. Is Nick here yet?  
7 Nick Garlisch will be joining us. He is a third  
8 year at Chicago Kent College of Law. The two of  
9 them have been interning with the Board for a  
10 semester and they will be continuing their  
11 internship in the summer and I would like to  
12 welcome Ethan Pressley, a third year student at  
13 Vermont Law School and he just started this week  
14 so he'll be interning with the Board over the  
15 summer. Welcome.

16 Would any of the Board members  
17 present like to make any remarks at this time? To  
18 promote the efficiency of today's hearing, I  
19 directed the filing of pre-filed testimony,  
20 pre-filed questions and pre-filed answers. IEPA  
21 and the Site Remediation Advisory Committee, or  
22 (SRAC), timely filed their respective pre-filed  
23 testimony. The Board received no pre-filed  
24 questions. We will begin today by taking IEPA's

1 motion to correct the first hearing transcript.  
2 Then, we will address IEPA's pre-filed materials  
3 followed by questions for IEPA's witnesses who  
4 will respond as a panel.

5 Then, we will take up SRAC's  
6 pre-filed questions for SRAC's witnesses. On May  
7 20th, 2011, I issued a Hearing Officer order  
8 attaching Board staff questions for the witnesses  
9 of IEPA and SRAC. Any participant, however, may  
10 ask questions of these witnesses. There are some  
11 copies of that Hearing Officer order at the side  
12 of the room to my right.

13 After the testimony of and  
14 questions for the witnesses of IEPA and SRAC, we  
15 will allow anyone else to testify time permitting.  
16 Those testifying will be sworn in and may be asked  
17 questions about their testimony. For those who  
18 wish to testify, but did not pre-file testimony,  
19 we have a witness signup sheet also located at the  
20 side of the room to my right.

21 If business remains at the end  
22 of today, we have reserved Hearing Room 9-040 in  
23 this building beginning at 9:00 a.m. tomorrow.  
24 Otherwise, we will conclude this hearing today

1 with a brief discussion of the pre-first notice  
2 public comment filing deadline.

3 Today's proceeding is governed  
4 by the Board's procedural rules. All information  
5 is relevant and not repetitious or privileged it  
6 will be admitted into the record. For the court  
7 reporter transcribing this proceeding, please  
8 speak up and do not speak too quickly or talk over  
9 one another. Are there any questions about our  
10 procedures? Seeing none, I'll move onto several  
11 preliminary matters concerning IEPA.

12 First, on April 14, 2011, IEPA  
13 filed a motion to correct the March 29, 2011,  
14 hearing transcript. There has been no response to  
15 that motion. Is there any objection to granting  
16 IEPA's motion? Seeing none, that motion is  
17 granted. Turning to IEPA's pre-filed testimony,  
18 is there any objection to entering into the record  
19 as if read the April 29, 2011, pre-filed testimony  
20 of Gary King, Heather Nifong or Tracey Hurley?  
21 Seeing none, it is so entered.

22 I will now take up whether to  
23 admit each of these related pre-filed documents  
24 into the record as hearing exhibits. Is there any



1 objection to admitting as a hearing exhibit the  
2 pre-filed testimony of Gary King or any of its  
3 attachments? Seeing none, that is admitted as  
4 Hearing Exhibit 5. Is there any objection to  
5 admitting as a hearing exhibit the pre-filed  
6 testimony of Heather Nifong or any of its  
7 attachments? Seeing none, that is admitted as  
8 Hearing Exhibit 6.

9 Is there any objection as to  
10 admitting as a hearing exhibit the pre-filed  
11 testimony of Tracey Hurley? Seeing none, that is  
12 admitted as Hearing Exhibit 7. Is there any  
13 objection to admitting as a hearing exhibit IEPA's  
14 errata sheet number two which was filed with the  
15 pre-filed testimony of April 29? Seeing none,  
16 that is admitted as Hearing Exhibit 8.

17 (Document marked as Hearing  
18 Exhibit No.'s 5-8 for  
19 identification.)

20 MR. MCGILL: At this point, I would  
21 ask the court reporter to please swear in IEPA's  
22 witnesses collectively.

23

24

1 WHEREUPON:

2 GARY KING, TRACEY HURLEY, HEATHER NIFONG, JOYCE  
3 MUNIE, THOMAS HORNSHAW, MOHAMMED ZILLUR RAHMAN  
4 called as witnesses herein, having been first duly  
5 sworn, deposeth and saith as follows:

6 MR. MCGILL: Thank you. Now, I ask  
7 IEPA's attorney, Kimberly Geving's, to begin the  
8 Agency's presentation.

9 MS. GEVING: I'd first like to do  
10 introductions of our witness panel today. Some  
11 are sitting at the table and some are sitting  
12 behind me. So immediately to my left is Tracey  
13 Hurley, who is an environmental toxicologist.  
14 Immediately to my right is Heather Nifong,  
15 programs adviser for the Division of Remediation  
16 Management. To Heather's right is Gary King, the  
17 manager of the Division of Remediation Management.  
18 Behind me and to my left is Mohammed Rahman, who  
19 is project manager in the Leaking Underground  
20 Storage Tank section, Dr. Tom Hornshaw, who is a  
21 manager of the Toxicity Assessment Unit and Joyce  
22 Munie, who is the manager of the Remedial Project  
23 Management section.

24 Also on the table where the

1 Hearing Officer has his notice list, I have put  
2 copies of everything to date in our filings in  
3 this matter. So if anybody need copies, those are  
4 over there. At this time, I'd also like to make a  
5 motion to admit our errata sheet number three into  
6 the record.

7 MR. MCGILL: And do you have a  
8 witness who will be discussing that?

9 MS. GEVING: We do. Ms. Hurley will  
10 be doing some oral testimony on that since that  
11 came in after the pre-filing deadline. We did not  
12 do any pre-filing testimony.

13 MR. MCGILL: Is there any objection  
14 to that motion? Seeing none, errata sheet number  
15 three will be Hearing Exhibit No. 9. Thank you.

16 (Document marked as Hearing  
17 Exhibit No. 9 for  
18 identification.)

19 MS. GEVING: At this time, I would  
20 like to proceed with the testimony and errata  
21 sheet number three because I don't think that we  
22 have any summaries today. Tomorrow will be  
23 testimony. Ms. Hurley?

24 MS. HURLEY: I will be providing

1 testimony in support of errata sheet number three.  
2 The tier one remediation objectives for  
3 ethylbenzene and naphthalene that are currently  
4 listed in Appendix B, Tables H and I are based on  
5 a noncarcinogenic endpoint. Both of those  
6 chemicals are classified as 2b carcinogens by the  
7 International Agency for Research on Cancer and,  
8 therefore, they meet the definition of a  
9 carcinogen that's listed in Section 742.200.

10 So errata sheet three presents  
11 recalculated remediation objectives based on a  
12 carcinogenic endpoint. The changes are as  
13 follows: In Appendix B, Table H for the chemical  
14 ethylbenzene, the following corrections should be  
15 made. For soil gas residential, the values should  
16 be 1.3 with a footnote of C. For the soil gas  
17 industrial/commercial, the value should be 9.3  
18 also with a footnote of C. For groundwater  
19 residential, the value should be 0.37 with a  
20 footnote of C and for groundwater  
21 industrial/commercial, the value should be 1.4C.  
22 For the chemical naphthalene, the following  
23 changes should be made. For soil gas residential,  
24 0.11C. For soil gas industrial/commercial, 0.75C.

1 For groundwater residential, 0.075C and for  
2 groundwater industrial/commercial 0.32C.

3 For Appendix B, Table I for the  
4 chemical ethylbenzene the following changes should  
5 be made. For soil gas residential, the value  
6 should be 150 with a footnote of D. Soil gas  
7 industrial/commercial 1,100D. For groundwater  
8 residential, 1.3D and for groundwater  
9 industrial/commercial, 8.1D and for the chemical  
10 naphthalene, the following changes should be made.  
11 For soil gas residential, the values should be  
12 14D. For soil gas industrial/commercial, 100D.  
13 For groundwater residential, 1.8D and for  
14 groundwater industrial/commercial, 13D and that  
15 concludes the changes in errata three.

16 MS. GEVING: We have nothing further  
17 and are ready for questions.

18 MR. MCGILL: Thank you. At this  
19 point, we'll move onto questions for IEPA's panel.  
20 If you are a member of the public and have a  
21 question, please signal me and after I acknowledge  
22 you, state your name and, if applicable, any  
23 organization you are representing here today and  
24 your title. Before the Board proceeds with its

1 questions, does anybody else have any questions  
2 for IEPA's panel of witnesses? Seeing none, we'll  
3 move on with the Board's questions.

4 Please feel free to raise your  
5 hand if you have a question at any point along the  
6 way. As I mentioned in a May 20 Hearing Officer  
7 order, the Board staff attached three pages of  
8 questions for IEPA's witnesses and at this point  
9 we're going to run through those questions. We'll  
10 read each one and hear the IEPA's response.

11 MS. LIU: Good morning. Question  
12 number one. Please respond to the following  
13 questions posed in US EPA's August 10th, 2010,  
14 letter to IEPA attached as Exhibit 2 to the  
15 pre-filed supplemental testimony of Gary King.  
16 Item A, quote, in those cases where TACO cannot be  
17 applied due to the free product, won't Illinois  
18 EPA need to develop some guidance per data  
19 collection, i.e., soil gas, sub-slab soil gas,  
20 indoor air, to evaluate the potential vapor  
21 intrusion problem above free product if dwellings  
22 and buildings are already present?

23 MR. KING: This question focuses on  
24 data collection needs relative to vapor intrusion

1 issues. We have in the past generally put issues  
2 of data collection within either the rules or  
3 sight specific materials for specific programs.  
4 We have not put those kinds of things in the TACO.  
5 So that's why you're not seeing anything  
6 specifically related to that here.

7 MR. MCGILL: Could you just give --  
8 say specific programs just for the record what are  
9 you referring to?

10 MR. KING: We'd be referring to the  
11 programs that the TACO rule covers which are, I  
12 believe, in 742.105.

13 MS. LIU: Item B, quote, if the TACO  
14 procedures and the J&E model cannot be applied in  
15 the free product situation, how might remediation  
16 objective values be established, end quote?

17 MR. KING: This question to some  
18 extent is mixing apples and oranges under the TACO  
19 rule. In order to get closure under TACO, the  
20 free product has to be -- that's a speed bump.  
21 We've always characterized it as a speed bump and  
22 as such until the free product has been removed or  
23 dealt with in a way that is not free product  
24 anymore you can't even go to the next step in the

1 process.

2 So until -- let me start over on  
3 that. Once the free product has been removed,  
4 then you can go to the next step by establishing  
5 remediation objectives and then in that case the  
6 site could opt for pathway exclusions under the  
7 criteria that we've set out in the proposal.

8 MS. GEVING: I have a follow-up  
9 question. Mr. King, when you mentioned the  
10 terminology "speed bump," could you elaborate on  
11 what you mean by that?

12 MR. KING: In the subpart portion C  
13 of Part 742, there are revisions. I believe it's  
14 742.305 that lists various criteria that have to  
15 be met before a project can be resolved. Hence,  
16 we have just traditionally called them speed  
17 bumps. One of those provisions in 742.305 is the  
18 requirement to remove free product.

19 MS. GEVING: Thank you.

20 MR. RAO: So going back to the  
21 earlier question when you said the other programs  
22 will address the free product. So in terms of  
23 removing free product, you go with whatever  
24 requirements are set forth in maybe the USG rules



1 or the SRP rules and then you want the TACO for  
2 our rules, is that how it is going to play out?

3 MR. KING: Right. That's correct.

4 MR. RAO: Thank you.

5 MS. LIU: Item C, quote, for a  
6 situation where contaminated vapors need to be  
7 addressed for off site residential dwellings, how  
8 will an owner be capable of imposing a distance  
9 exclusion of five feet for soil and groundwater or  
10 the requirement for building control technology on  
11 a residential land owner, end quote?

12 MR. KING: We face this type of  
13 issue relative to the other program requirements  
14 relative to TACO and SRP and LUST and the clean up  
15 programs we administer. Once contamination has  
16 moved off site, is moved away from the land that  
17 is owned by the person who is responsible for the  
18 contamination, it is a difficult thing to address,  
19 but that's why we were cognizant of that  
20 difficulty when we established TACO, but putting  
21 in provisions for institutional controls in the  
22 rules so that an on site land owner can work out  
23 an arrangement with an off site land owner  
24 relative to use limitations of that property.

1                   We have a similar sort of issue  
2 when you're talking about off site groundwater for  
3 drinking water purposes. If the contaminated  
4 groundwater is off site, then there has to be some  
5 kind of institutional control that effectively  
6 restricts the ability of somebody to drink that  
7 contaminated groundwater. Otherwise, you cannot  
8 proceed to complete the clean up process and get a  
9 no further remediation letter.

10                   MR. MCGILL: So looking back at this  
11 US EPA question, an institutional control like  
12 that limiting the use of the off site, say,  
13 neighboring property would be a hurdle that the  
14 responsible party has to clear before it can get  
15 an NFR letter?

16                   MR. KING: That's correct.

17                   MR. MCGILL: And you mentioned a  
18 couple acronyms like SRP and LUST. If you could  
19 just, for the record, explain those?

20                   MR. KING: When I use the acronym  
21 SRP, that stands for Site Remediation Program and  
22 when I use the acronym LUST, or L-U-S-T, I'm  
23 referring to the Leaking Underground Storage Tank  
24 program.

1                   MR. MCGILL: Thank you. I had a  
2 somewhat related question and that's not in the  
3 Hearing Officer order attachment, but I think it  
4 makes sense to ask it now.

5                   At the first hearing, there was  
6 a discussion about Title VI(b) right to know  
7 provisions of the Environmental Protection Act,  
8 which I think you testified were amended in 2009  
9 to include soil gas. IEPA's proposed definition  
10 in this rulemaking of soil gas is identical to  
11 that from Title VI(b) and I'll give the citation  
12 for the record, 415 ILCS 5/25 D-1. Just to make  
13 certain, did IEPA take its proposed language from  
14 25 D-1 of the Act?

15                  MR. KING: No, the legislature  
16 copied our language.

17                  MR. MCGILL: I was wondering if the  
18 Agency thinks there's any merit in having its soil  
19 gas definition in TACO reflect the verbatim  
20 statutory language in the Act and I just ask you  
21 to consider that. If you have a reaction now,  
22 that's great. Otherwise, you can address that in  
23 public comment.

24                  MS. GEVING: I don't see any problem

1 with referencing the statute given that the  
2 language is identical. I don't know that we were  
3 taking our authority for the definition from that  
4 Act. I think it was vice versa. So I guess I  
5 leave that to the Board's decision.

6 MR. MCGILL: I express no opinion.  
7 I just pointed it out. Just to close this loop.  
8 Once the indoor inhalation provisions of TACO are  
9 adopted, does IEPA expect it would propose  
10 amendments to the Board's Part 1600 community  
11 relations rules to account for soil gas?

12 MR. KING: We will do that  
13 eventually. However, because, at that point, we  
14 will have a statutory provision that will be  
15 controlling. We will begin to implement the right  
16 to know statutes in accordance with its terms  
17 using the TACO rules as a base even before we  
18 propose the amendment to the right to know rules.

19 MR. MCGILL: Thank you.

20 MR. RAO: We'll move back to our  
21 pre-filed questions and question number two. In a  
22 footnote of US EPA's August 12th, 2010 letter to  
23 IEPA, US EPA states that OSWER, that is US EPA's  
24 Office of Solid Waste and Emergency Response, is

1 committed to issuing the final vapor intrusion  
2 guidance by November 30th, 2012.

3 When this guidance becomes  
4 available, it is suggested that Illinois EPA could  
5 screen sites based on default empirical  
6 attenuation factors rather than relying solely on  
7 the J&E model.

8 Question A, conceptually when  
9 screening sites, what are the differences between  
10 doing so based on default empirical attenuation  
11 factors as opposed to relying solely on the J&E  
12 model?

13 MR. KING: Well, the differences are  
14 based on the type of methodology that is used in  
15 each case. The problem with a default empirical  
16 attenuation factor is it's not chemical specific,  
17 it's not soil specific, it's not clear how that  
18 data and where it was collected is going to relate  
19 to the situations we have in Illinois.

20 So we're concerned that the  
21 default empirical attenuation factor approach that  
22 US EPA has talked about has a generic sort of  
23 approach, is not going to be more accurate, it's  
24 probably going to be less accurate relative to the

1 situations we face in Illinois.

2 MR. RAO: You use the term accurate,  
3 would default empirical attenuation factors, would  
4 that make the remediate objectives more  
5 conservative or stringent or how would you view  
6 that?

7 MR. KING: I suppose it will depend  
8 on where they end up with the work that they're  
9 doing that's leading up to this November 30th  
10 deadline, but the preliminary indications that  
11 we've seen is they're just going to apply a single  
12 multiplication factor whether it's going to be ten  
13 or a hundred or a thousand. Whatever it is,  
14 they're just going to look at this data which  
15 really now when you look at it is just on a graph.  
16 It looks kind of like a thousand stars clustered  
17 all over the place on a graph and it doesn't  
18 really give much insight as to how to develop a  
19 regulatory approach.

20 MR. RAO: So --

21 MR. KING: We just seem -- at this  
22 point, we certainly think that the J&E model uses  
23 the kind of concepts that we've used in TACO since  
24 1997. In using those scientific principals, we

1 think is a better approach from just trying to  
2 pick a number out based on a nationwide dataset.

3 MR. RAO: You may have answered the  
4 second part of our question, but I'm just going to  
5 go ahead and ask it. Basically, would adding such  
6 default empirical attenuation factors to TACO in  
7 the future necessitate fundamental changes to the  
8 vapor intrusion approach being proposed by US EPA  
9 in this rulemaking that is if you choose to go  
10 with those empirical values that the guidance  
11 comes up with?

12 MR. KING: It's going to be a  
13 significant change because then -- I mean, one way  
14 to approach it is you could treat it as an add on  
15 to the existing system, but that would cause a lot  
16 of confusion in terms of administration of the  
17 rule. If you were just going to totally supplant  
18 the J&E model approach with this empirical  
19 attenuation factor approach, you know, it will --  
20 we'd have to completely redo the rule that we  
21 have.

22 MS. LIU: As a corollary to that  
23 question, then would Illinois EPA ever propose  
24 revisions to rules using those default empirical

1 attenuation factors or would they elect not to?

2 MR. KING: As we implement this  
3 rule, we'll be gathering data on sites and as we  
4 gather data on sites, we may get to a point where  
5 we can have an empirical approach that makes sense  
6 for Illinois. The biggest problem that we've seen  
7 in the database right now is -- it's a total of 41  
8 sites across the entire nation, none of which are  
9 in Illinois. Only two of which are in the  
10 Midwest. So trying to take vapor intrusion data  
11 from sites in Texas or Florida, particularly  
12 Texas, where a lot of sites have been trying to  
13 apply that in Illinois where we've got a  
14 substantially different -- where he have  
15 substantially different site geologies generally.  
16 We thought that was problematic to do that.

17 MS. GEVING: Our witness panel has  
18 prepared sort of a list of five items why it would  
19 be inappropriate and I'd like to let Heather read  
20 those into the record so you have that for your  
21 benefit as well.

22 MS. NIFONG: US EPA's vapor  
23 intrusion database preliminary evaluation of  
24 attenuation factors dated March 2008 is unsuitable



1 for the following reasons. Number one, US EPA's  
2 report is a Preliminary Draft document. We cannot  
3 base regulations on draft materials that cannot be  
4 quoted as that would be technically and legally  
5 indefensible. Besides, it is not a document on  
6 which US EPA has requested or received public  
7 comments nor is it a peer reviewed document.

8 MR. MCGILL: I'm sorry. If you can  
9 speak up. It's hard to hear with the air  
10 conditioning on.

11 MS. NIFONG: In no way does it  
12 represent consensus amongst practitioners. Number  
13 two, consistent with US EPA's 2002 OSWER Draft  
14 Guidance for vapor intrusion, the preliminary  
15 document uses generic attenuation factors  
16 regardless of soil type and chemical of concern.  
17 Illinois's risk-based methodology emphatically  
18 rejects the one size fits all approach. Instead,  
19 we use the J&E model to calculate attenuation  
20 factors that are chemical and soil specific.

21 Number three, in the 2008  
22 report, the empirical dataset is limited to 41  
23 sites, none of which are located in Illinois.  
24 Fewer than five percent of these sites are located

1 in Region 5.

2 Number four, US EPA's online  
3 groundwater datasets showed a range of attenuation  
4 factors that span seven orders of magnitude.  
5 Variability to this extent would be technically  
6 indefensible. Additionally, the attenuation  
7 factors from the datasets are not correlated to  
8 building HVAC use, weather patterns or other  
9 potentially significant influences and, lastly,  
10 number five, US EPA's empirical data comes in part  
11 from indoor air samples. Bias from indoor air  
12 sources and ambient air are not sufficiently  
13 accounted for.

14 MR. MCGILL: We'll move on with our  
15 next question. If you could identify yourself for  
16 the record, please?

17 MS. SUNDAR: I'm Bhooma Sundar. I'm  
18 with US EPA Region 5. I work with IEPA on the  
19 data introduction issues. I just wanted to  
20 highlight --

21 THE COURT REPORTER: If you could  
22 come up to the front.

23 MR. MCGILL: Yes, it's a little hard  
24 to hear.

1 MS. SUNDAR: I just wanted to  
2 highlight the difference between the US EPA 2002  
3 attenuation guidance and the one that is proposed  
4 to be finalized in November 2012. I just wanted  
5 to highlight a few differences. Can I go to the  
6 board and explain?

7 MR. MCGILL: Yes. I think if you  
8 weren't just going to pose a question, but wanted  
9 to offer something for the record would you mind  
10 getting sworn in?

11 MS. SUNDAR: This is just for  
12 clarification purposes.

13 MR. MCGILL: If you don't want to be  
14 sworn in, then it will just be treated as an oral  
15 public comment.

16 MS. SUNDAR: Okay.

17 MR. MCGILL: If you're sworn in,  
18 then you can be questioned about it and it gives  
19 more weight than a public comment.

20 MS. SUNDAR: At this point, because  
21 the guidance is still being developed, I request  
22 this just to be a public comment.

23 MR. MCGILL: Fair enough. Go ahead.

24 MS. SUNDAR: May I use the board?

1 MR. MCGILL: I'm sorry?

2 MS. SUNDAR: Can I use the  
3 blackboard?

4 MR. MCGILL: Sure. If you could  
5 please describe for the court reporter --

6 MS. SUNDAR: I'm a toxicologist so  
7 I'd be more comfortable going with the conceptual  
8 model.

9 MR. MCGILL: About how much time did  
10 you need?

11 MS. SUNDAR: Ten minutes or five  
12 minutes.

13 MR. MCGILL: You know, are you  
14 available for the rest of the morning or did you  
15 have to leave?

16 MS. SUNDAR: Yeah.

17 MR. MCGILL: If you wouldn't mind if  
18 we take that up just because we have witnesses who  
19 pre-filed and we wanted to get through that and I  
20 don't think we'll lose any great coherency in the  
21 record if we just save that for later this  
22 morning.

23 MS. SUNDAR: Sure.

24 MR. MCGILL: I appreciate your

1 understanding. Thank you.

2 MR. JOHNSON: It won't be too much  
3 later.

4 MR. MCGILL: Thanks. Let me just  
5 move on with my next question for IEPA. This is  
6 question one regarding Section 742.105  
7 applicability. IEPA modifies its original  
8 proposal to express more clearly that neither the  
9 building structure nor products within the  
10 building will be evaluated under the vapor  
11 intrusion pathway.

12 Specifically, IEPA's errata  
13 sheet number two now proposes that Section  
14 742.105(i) read as follows. An evaluation of the  
15 indoor inhalation exposure route under this part  
16 addresses the potential of containments present in  
17 soil gas and groundwater to reach human receptors.  
18 It does not evaluate whether contamination within  
19 a building either in the building structure itself  
20 or in products within the building may be creating  
21 human health risks, end quote.

22 Please clarify whether a  
23 contamination in the building structure itself or  
24 in products within the building would nevertheless

1 be evaluated to establish background levels when  
2 sampling indoor air under tier three.

3 MR. KING: We were a little bit  
4 confused by the question because normally when you  
5 would think of background levels we'd be talking  
6 about the general nature of air quality outside of  
7 a building in the ambient air. That's what we  
8 would more consider to be background. In talking  
9 about the air inside the building, the standard  
10 practice is to conduct a building survey to  
11 identify possible contributing sources that may  
12 interfere or we found analytical results.

13 Our pre-filed testimony today  
14 had an example of a survey that has been developed  
15 by the Minnesota Pollution Control Agency that  
16 demonstrates the steps that need to be taken to --  
17 as far as the building survey to identify those  
18 chemicals that could have an adverse impact on any  
19 kind of demonstration of contamination coming into  
20 the building relative to a -- from a subsurface  
21 source.

22 That's the practice we would  
23 envision and if somebody was going to do a tier  
24 three analysis looking at indoor air, they would

1 have to go through and make that kind of  
2 demonstration because otherwise you're in a  
3 situation where you can have false positives or  
4 you could have false negatives as well.

5 MS. LIU: Mr. King, I apologize for  
6 the use of the word background. I think what was  
7 really intended was just to show the difference  
8 between what is in the building that was  
9 contributed by a building or things inside the  
10 building that are not attributable to the source  
11 of the vapor intrusion. With that in mind, is  
12 there a wording change that you might be able to  
13 propose to this definition that would at least  
14 encompass the idea that would be associated with  
15 the possible indoor air sampling under tier three?

16 MR. KING: Could we come back to  
17 that a little later? I'd like to look at what our  
18 language is in tier three and maybe we could  
19 address that later.

20 MR. MCGILL: Sure.

21 MR. RAO: To go to the next  
22 question, it's in Section 742.935 indoor  
23 inhalation exposure route. I think in errata  
24 sheet number two the agency proposed a change to

1 this section. Regarding the proposed changes to  
2 Section 742.935(b)3, (c)3 and (d)3, in errata  
3 sheet number two, should the phrase soil  
4 parameters simply be added to IEPA's originally  
5 proposed language rather than replacing the phrase  
6 soil types?

7 MR. KING: The answer there is no.  
8 We felt that soil type is covered by the term  
9 geology which is used in the section cited above  
10 and geology includes soil parameters.

11 MR. RAO: Okay. Thanks. We just  
12 wanted to clarify that when you meant soil types  
13 that we knew something --

14 MR. KING: We don't think that.

15 MR. RAO: Okay.

16 MS. LIU: Ms. Nifong, Exhibit 2 to  
17 your pre-filed testimony is entitled Costs  
18 Associated With Soil Vapor Investigations Illinois  
19 Environmental Protection Agency. On page two of  
20 Exhibit 2 under site two, the last sentence of the  
21 first paragraph states that, quote, the driver for  
22 this site was alleged odors. Should that be  
23 odors, O-D-O-R-S?

24 MS. NIFONG: Yes.



1 MR. MCGILL: These are questions on  
2 the maintenance requirements for building control  
3 technologies. Question one. IEPA explains that  
4 it has developed maintenance requirements for each  
5 of the four building control technologies allowed  
6 under Subpart L. IEPA attached those requirements  
7 and states that they, quote, would be used as  
8 appropriate and future no further remediation or  
9 NFR letters issued by Illinois EPA, end quote.

10 For each of the four BCT's, the  
11 corresponding NFR maintenance requirements state  
12 among other things that, quote, if at any time the  
13 -- given the BCT is rendered inoperable, the  
14 responsible party shall notify building occupants  
15 and workers in advance of intrusive activities  
16 innumrating the contaminant concerns known to be  
17 present and shall require building occupants and  
18 workers to implement protective measures  
19 consistent with good industrial hygiene practice,  
20 end quote.

21 Question A(i), would BCT  
22 inoperability as contemplated here and in proposed  
23 Section 742.1200(e) cover both unplanned, for  
24 example, malfunction, and planned inoperability?

1 MR. KING: Yes.

2 MR. MCGILL: Question A(ii). What  
3 is contemplated by quote, intrusive activities,  
4 end quote?

5 MR. KING: That was a word choice.  
6 The term intrusive activities is the carryover  
7 from words we've used with the other engineering  
8 barrier sections that the Board rules and we  
9 really looked at that and tried to figure out what  
10 might be a better word choice, but intrusive  
11 activities seemed broad enough and gave an  
12 appropriate sense because what we're talking about  
13 is activities that would affect the potential of  
14 flow of contaminants into a building such as  
15 somebody disturbing the foundation or if they have  
16 to go below the basement level or go below the  
17 foundation to repair utilities or install  
18 utilities. So I don't know. I mean, that's kind  
19 of the sense of what we were doing with that  
20 terminology. I don't think we need to expand it  
21 to include kind of the laundry list of potential  
22 things that would be considered intrusive. I  
23 think it's going to be pretty self evident.

24 MR. MCGILL: So by intrusive

1 activities, would you include in that phrase just  
2 going in and conducting air samples in office  
3 space, for example, where occupants are?

4 MR. KING: No, that would not be  
5 intrusive with regards to the structure itself  
6 whether any contaminants would be coming into the  
7 building structure.

8 MR. MCGILL: Thank you. Question B,  
9 please compare IEPA's proposed approach with that  
10 of existing 35 Ill. Adm. Code 742.1100(d) on  
11 engineered barriers. For example, the former  
12 refers to building occupants and workers while the  
13 latter refers to construction workers.

14 MR. KING: We made that distinction  
15 because the BCT's, building control technologies,  
16 relate to the inside of structures and engineered  
17 barriers are outside of structures.

18 MR. MCGILL: Question C(i), upon a  
19 BCT becoming inoperable, should the responsible  
20 party also be required to notify IEPA?

21 MR. KING: We don't think so.

22 MR. MCGILL: I take it there's no  
23 notification requirement now with respect to  
24 engineered barriers when notice is given to

1 construction workers?

2 MR. KING: Right.

3 MR. MCGILL: So they don't have to  
4 notify IEPA?

5 MR. KING: No.

6 MR. MCGILL: And the fact that  
7 building occupants might be involved in this  
8 scenario doesn't change your way of thinking?

9 MR. KING: No. Because we are -- at  
10 that point, we're at a post NFR stage. We've  
11 already gone through an analysis of the site.  
12 There's been appropriate cleanup activities that  
13 have occurred. It didn't seem to fit with the way  
14 the programs operate to have those kinds of  
15 notices coming in. What would we do with them?  
16 We're not going to immediately -- every time  
17 there's some question about utilities being worked  
18 on, we're not going to want to get a notice and  
19 then send people out and have somebody check on  
20 that or have to worry about whether people are  
21 sending them notices.

22 It just seemed like a paperwork  
23 exercise that was not going to lead to more  
24 protection of human health in the environment.

1                   MR. MCGILL:   Okay.  I'm sorry.  Go  
2    ahead, Counsel.

3                   MS. GEVING:  Isn't it true, though,  
4    that we actually do conduct random inspections to  
5    make sure that they're still in compliance with  
6    their engineering barrier requirements even though  
7    there's no explicit requirement for them to notify  
8    us there's a problem?

9                   MR. KING:  The answer to that  
10   question is yes.  We do have a program where we go  
11   out and look at post NFR sites to see what the  
12   compliance situation is generally and, to date,  
13   the compliance rate has been very high.  We don't  
14   -- it's very rare that we have to take some kind  
15   of direct action relative to sites after an NFR  
16   letter has been issued.

17                  MR. MCGILL:  And I think this came  
18   up at the first hearing.  The nature of that sort  
19   of follow up inspection for engineered barriers  
20   that's done on a drive by basis or can we observe  
21   from a road or how is that conducted?

22                  MR. KING:  Generally, that's  
23   observable from the road, but, you know, it's  
24   going to depend on the nature of the site.  With

1 the large site, if there's an engineered barrier  
2 that's not immediately visible, you'd have to make  
3 arrangements to go onto the property and check  
4 that out.

5 MR. MCGILL: I think that may be  
6 part of where the question is coming from if the  
7 building control technologies would not be visible  
8 on a drive by basis, would IEPA need to be  
9 notified. Given your response, would BCT's  
10 follow-up inspections be a part of that program,  
11 do you anticipate?

12 MR. KING: Yes. What we've done  
13 currently is we've also tried to have our  
14 follow-up inspections focus on sites where there  
15 might be a -- might be an increased risk  
16 situation. For instance, if you've -- if we've  
17 issued an NFR letter to a site where there's a  
18 school at and there's an engineered barrier as  
19 part of the construction activities, that would be  
20 a site that would tend to get more focus relative  
21 to looking at the engineered barrier post NFR  
22 situation and that would be the type of site as  
23 well that if we had a BCT involved, we would want  
24 to have a higher priority as far as a follow-up

1 inspection.

2 MR. MCGILL: Given your -- I'm  
3 sorry. Again, if you could just identify  
4 yourself.

5 MR. HARLEY: For the record, Keith  
6 Harley. Attorney for Little Village Environmental  
7 Justice Organization. On the subject of schools  
8 and the use of brownfield sites for school  
9 construction, I wanted to pose the Board's  
10 question, more specifically, C(i). Upon a BCT  
11 becoming inoperable at a school site, should the  
12 responsible party be required to notify the  
13 Illinois EPA?

14 MR. KING: We have not constructed  
15 the proposal that way.

16 MR. HARLEY: I understand that, but  
17 I'm asking for your opinion.

18 MR. KING: Keith, I don't think so.  
19 Just from like I say before I don't think we want  
20 to see -- I don't think it's necessary to send  
21 notification. That might be something in the  
22 future that we may have to consider as far as a  
23 rulemaking proposal depending on how things go as  
24 far as how we implement this rule. At this point,

1 I'm not seeing really the need for that.

2 MR. HARLEY: And that's true despite  
3 the greater susceptibility of children who would  
4 be the users of the building?

5 MR. KING: Well, I mean, I think  
6 we've designed the program relative to the most  
7 sensitive uses. So maybe somebody else could help  
8 me on that.

9 MR. HARLEY: The list of design  
10 limits are based on the application of BCT and  
11 what we're talking about is a situation where BCT  
12 is inoperable.

13 MR. KING: I mean, is there -- in  
14 part, we've looked at the types of -- if you're  
15 looking at the types of control technology that we  
16 have, we're looking at, for instance, if you're  
17 looking at a vented floor or you're talking about  
18 a ceiling system that's going underneath the floor  
19 of the building, I guess I'm just not -- I guess  
20 I'm just not seeing the need to have it in the  
21 rule.

22 MR. HARLEY: Thank you.

23 MR. MCGILL: C2 --

24 MR. KING: If I --



1 MR. MCGILL: I'm sorry. Go ahead.

2 MR. KING: Keith, it would not -- if  
3 we were looking at a specific site and -- I don't  
4 think -- I don't think there's anything in the  
5 rules that would prohibit us from -- on a specific  
6 site to have -- have some -- you know, some  
7 additional requirement if it was perceived there  
8 was a higher level of risk related to that  
9 project.

10 MR. MCGILL: Mr. King, is that  
11 something that you would suggest would go into the  
12 NFR letter as a condition as opposed to into the  
13 rulemaking?

14 MR. KING: That's true. And it  
15 would be a better place for doing that kind of  
16 requirement in Part 740 wherein particular we  
17 have -- I don't recall the subpart for it, but as  
18 I recall there's a subpart that deals with schools  
19 and perhaps that would be a better place to put  
20 that kind of provision.

21 MR. HARLEY: The inspection program  
22 that you're describing --

23 MR. MCGILL: Go ahead, Mr. Harley.

24 MR. HARLEY: The inspection program

1 that you're describing is not required by  
2 regulation, is it?

3 MR. KING: No, it is not.

4 MR. HARLEY: Thank you.

5 MR. KING: Excuse me. Which one?

6 MR. HARLEY: The random inspections  
7 as it relates to engineered barriers.

8 MR. KING: No, that is not required  
9 by law in the rule.

10 MR. HARLEY: So you could go years  
11 without doing an inspection, for example, of a  
12 school site?

13 MS. MUNIE: Joyce Munie with the  
14 Illinois EPA. Chicago is required to certify  
15 their engineered barriers and would be also --

16 THE COURT REPORTER: I'm sorry. I  
17 can't hear you.

18 MR. MCGILL: If you could speak in  
19 our direction.

20 MS. MUNIE: The City of Chicago is  
21 required to certify their engineered barriers  
22 every five years and would be required also for  
23 their building control technology that they're  
24 still operable.

1                   MR. MCGILL: I'm sorry. That's a  
2 requirement from where?

3                   MS. MUNIE: It's in the -- I think  
4 it's in 740. We can find out for sure where it's  
5 required.

6                   MR. MCGILL: And specific to the  
7 City of Chicago?

8                   MS. MUNIE: Specific to the City of  
9 Chicago and to their engineered barriers.

10                  MR. HARLEY: Would that include then  
11 the BCT?

12                  MS. MUNIE: We would include BCT's  
13 in that.

14                  MR. HARLEY: I'm sorry?

15                  MS. MUNIE: We would include  
16 building control technologies with that unit.

17                  MR. HARLEY: Within the NFR letter?

18                  MS. MUNIE: Any change we would make  
19 to 740 would include that kind of change.

20                  MR. MCGILL: By 740, you're  
21 referring to 35 Ill. Adm. Code 740 Site  
22 Remediation Program?

23                  MS. MUNIE: Yes.

24                  MR. HARLEY: Thank you.

1 MR. MCGILL: Along those lines, is  
2 the Agency anticipating a rulemaking proposal for  
3 any amendments to 740 related to BCT's?

4 MR. KING: Yes.

5 MR. MCGILL: Do you have a timeline  
6 for this submission?

7 MS. GEVING: We don't have a  
8 timeline at this point for this provision. There  
9 are a lot of rules going on and we want to see  
10 when this one concludes and that's the best I can  
11 give you for now.

12 MR. MCGILL: Fair enough. Question  
13 two I'll just read, but since you responded in the  
14 negative it's applicable. If so, should that  
15 notification requirement be in the NFR letter or  
16 the regulation (TACO or an underlying program) or  
17 both? So I will move onto question C3. Please  
18 discuss any similar notification requirements  
19 imposed under TACO or the underlying programs such  
20 as the Leaking Underground Storage Tank Program or  
21 Site Remediation Program.

22 MR. KING: The -- in general, the  
23 only post NFR notifications required under LUST or  
24 SRP are the requirements to notify us that the NFR

1 letter was recorded on the deed and if they relied  
2 on the ground water ordinance, that they properly  
3 notify the municipality. There are no  
4 requirements to notify us if they inspect an  
5 engineered barrier and determine it needs to be  
6 fixed. They just have to fix the problem.

7 MR. MCGILL: Is there a point at  
8 which the failure to fix that problem would result  
9 in the voidance of an NFR letter?

10 MR. KING: Yes, that would -- we  
11 would immediately proceed with a voidance of that  
12 or we could proceed with an enforcement case for a  
13 violation of the terms of the NFR letter.

14 MR. MCGILL: So the violation of an  
15 NFR letter could be the subject of a normal  
16 enforcement action?

17 MR. KING: That's the interpretation  
18 that we received.

19 MR. MCGILL: Are there any other  
20 questions for any of the IEPA's witnesses? I know  
21 there was a question we were going to go back to.  
22 Would you like to go off the record for a moment  
23 if you'd like to confer?

24 MR. KING: If we could, please.

1                   MR. MCGILL:  Sure.  Why don't we go  
2 off the record.

3                                 (Whereupon, a break was taken  
4                                 after which the following  
5                                 proceedings were had.)

6                   MR. MCGILL:  Why don't we go back on  
7 the record?  We were about to conclude the portion  
8 of the hearing addressing questions to the IEPA's  
9 witnesses and there was a question that IEPA  
10 wanted to get back to.  So I'll turn it back over  
11 to Mr. King.

12                   MR. KING:  Yes.  The question that  
13 we wanted to have -- just to confer on a little  
14 bit was the question about how you would be  
15 evaluating indoor air under tier three and how  
16 you'd be looking at the levels that are already in  
17 there from the building of products in the  
18 building and what I wanted to -- the reason I want  
19 to take a little bit of time I wanted to see if we  
20 had something specifically on that within the  
21 context of what we've proposed in tier three and  
22 we do not.

23                                 However, I don't think we need  
24 to do that because that really is going to -- it

1 really is going to be part of the practice of how  
2 you go about looking at a site and evaluating  
3 whether you've got a complete pathway from  
4 contamination to receptors within a building so  
5 you need to look at what contaminants are already  
6 in the building in order to make that evaluation  
7 so we just considered that as part of the practice  
8 of investigating the site and it would not need to  
9 be additional references to that concept in tier  
10 three.

11 MR. RAO: I think one of the reasons  
12 that we came up with this question was the  
13 language that is proposed here explicitly states  
14 that it does not evaluate a contamination within  
15 the building or the products itself or the  
16 products in the building maybe creating human  
17 health risks. I know this language is in the  
18 context of risky human receptors, but what you're  
19 saying is it doesn't conflict with any evaluation  
20 that is done as a matter of sampling when you look  
21 or when you evaluate the products that are present  
22 within the building or any contamination in the  
23 building itself.

24 MR. KING: I don't think there's

1 any -- I don't think there's a conflict with what  
2 we're doing.

3 MR. MCGILL: Okay. Can I approach  
4 it this way? Your rulemaking proposal is it  
5 correct to say it's designed to address indoor  
6 inhalation of vapors coming only from either soil  
7 gas or groundwater?

8 MR. KING: That's correct.

9 MR. MCGILL: So if someone has a  
10 building or structure itself or the products in  
11 the building may be causing an indoor inhalation  
12 problem and it's known that there is nothing  
13 coming from the subsurface, would that be outside  
14 of the scope of this rulemaking proposal?

15 MR. KING: Yes.

16 MR. MCGILL: When you said completed  
17 pathway, could you just describe what that means?

18 MR. KING: When I use the term  
19 completed pathway, I'm referring to the situation  
20 where containments have mobilized from the  
21 subsurface and have moved through the subsurface  
22 and then into the building structure where then  
23 they can be breathed within the air within that  
24 structure.



1                   MR. MCGILL: Thank you. Are there  
2 any other questions for any of the IEPA's  
3 witnesses? Seeing none, I'd like to thank the  
4 Agency for their participation and we'll go off  
5 the record while we have the second remediation  
6 advisory witness step up to the table.

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

9                   MR. MCGILL: Why don't we go back on  
10 the record. I will now move onto several  
11 preliminary matters regarding the Site Remediation  
12 Advisory Committee. Is there any objection to  
13 entering as if read the May 3rd, 2011, pre-filed  
14 testimony of Brian Martin? Seeing none, that is  
15 so entered. Is there any objection to admitting  
16 as a hearing exhibit the pre-filed testimony of  
17 Brian Martin? Seeing none, that is admitted as  
18 Hearing Exhibit 10.

19                   (Document marked as Hearing  
20 Exhibit No. 10 for  
21 identification.)

22                   MR. MCGILL: I would now ask the  
23 court reporter to please swear in Mr. Martin.

24                   WHEREUPON:

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BRIAN MARTIN

called as a witness herein, having been first duly sworn, depose and saith as follows:

MR. MCGILL: Thank you. I will now turn it over to Alec Davis, general counsel for the Illinois Environment Regulatory Group, who is assisting with this presentation.

MR. DAVIS: Thank you. I don't have really anything further to say other than thank you for the opportunity.

MR. MCGILL: Mr. Martin's testimony has been entered as if read. If you have a summary, you're welcome to provide that.

MR. MARTIN: I have nothing to add beyond my testimony.

MR. MCGILL: I understood that you might want to reference or have entered as a hearing exhibit a 2002 US EPA OSWER draft vapor intrusion guidance?

MR. MARTIN: Yes. I was going to refer to that in the context to one of the answers to one of the Board's questions.

MR. MCGILL: Fair enough.

MR. MARTIN: I can answer that now

1 or --

2 MR. MCGILL: Okay. We'll move on  
3 then with questions for Mr. Martin. Does anyone  
4 present have any questions before the Board  
5 proceeds with its questions? Seeing none, the  
6 Board will pose its questions.

7 MR. RAO: Mr. Martin, on page four  
8 of your pre-filed testimony, you state that  
9 sampling should not be required unless there's an  
10 established exposure pathway from the source to  
11 the indoor inhalation exposure route. Further,  
12 you note that mandatory indoor sampling without  
13 establishing a completed pathway would be a  
14 technical leap that assumes a complete pathway in  
15 the absence of data.

16 Question one, please elaborate  
17 upon when indoor sampling should be required?

18 MR. MARTIN: I apologize for some of  
19 the confusion with that statement about indoor  
20 station unless there's an established pathway.  
21 What I meant to say was that it's SRAC's position  
22 that indoor air sampling should never be a  
23 requirement. The indoor air pathway should be  
24 evaluated in the context of TACO overall not just

1 with respect to this particular pathway, but all  
2 of the other requirements that go into TACO in  
3 terms of defining the source, doing the historical  
4 research on the site, identifying potential  
5 contaminants and so on and we believe as with  
6 other exposure routes such as drinking water,  
7 thermal contact and so on, you should follow a  
8 logical procession of the source of contaminants  
9 to the soil to the groundwater to the soil gas and  
10 into the structure.

11                   You shouldn't leap ahead and go  
12 right to indoor air sampling. We see a lot of  
13 problems with that potential approach. You  
14 don't -- if you find contaminants as we expect you  
15 will in many cases due to indoor sources, you do  
16 not have data to support the conclusion that such  
17 contaminants could have come from the environment  
18 or from the subsurface.

19                   Conversely, if a remedial  
20 applicant were to go out and do indoor air  
21 sampling without having all the supporting data  
22 and information and do it within the context of  
23 the tier three evaluation in conjunction with IEPA  
24 if the applicant were to find some contaminated

1 levels that were below a risk -- a calculated risk  
2 threshold, it's not likely that the Agency would  
3 grant an NFR letter without all of that supporting  
4 documentation. That wouldn't be sufficient on its  
5 own. So we don't see the need for doing the  
6 indoor air sampling regardless if the results  
7 would come back positive or negative.

8 MR. RAO: So you're not saying in  
9 your testimony that some of these requirements  
10 need to be put into the Agency's rule?

11 MR. MARTIN: I'm not saying that.  
12 I'm saying -- I believe it's page -- the previous  
13 page in my testimony under section three, indoor  
14 air sampling should not be required under tiers  
15 one or two. We agree with the IEPA that it should  
16 be an option to be evaluated under tier three if  
17 necessary on a site specific basis.

18 MR. RAO: Just a few minutes ago  
19 Mr. King explained what completed pathway means in  
20 the context of this proposal and you also used the  
21 term completed pathway in your testimony. Could  
22 you explain what you meant by completed pathways  
23 pretty much as what Mr. King just explained now?

24 MR. MARTIN: I concur with

1 Mr. King's definition. You have three parts to an  
2 exposure pathway. You have contaminants, the  
3 route of exposure and the receptor and as long as  
4 all three of those components are present and  
5 there's a reasonable expectation that the receptor  
6 can come in contact with a contaminant, we would  
7 consider that pathway to be okay.

8 MR. RAO: Thank you.

9 MR. MCGILL: So under your  
10 definition, you would not need indoor air sampling  
11 to confirm that the pathway has been completed?  
12 That the gas is --

13 MR. MARTIN: If you follow the  
14 contaminants from its source through groundwater  
15 and soil and so on into soil gas and you have soil  
16 gas data or groundwater data from the subsurface  
17 suggesting that you exceeded the risk-based  
18 thresholds within the TACO indoor inhalation,  
19 that's a significant concern that should be  
20 addressed regardless of what the indoor air  
21 concentrations may be.

22 MR. MCGILL: So that would be a  
23 completed pathway?

24 MR. MARTIN: Potentially, yes. You

1 would have to address that before you get your NFR  
2 letter either through the use of the building  
3 control technology or maybe an institutional  
4 control or environmental land use control  
5 prohibiting the structure and so on.

6 MR. MCGILL: I believe you indicated  
7 that your response to those questions you were  
8 relying upon or you were going to refer to the US  
9 EPA 2002?

10 MR. MARTIN: I apologize for that.  
11 I overlooked. One comment I want to make with  
12 respect to my response to question A is in  
13 reviewing US EPA's 2002 guidance, their draft  
14 guidance, they make a statement on page 11 that  
15 responds to question F. We do not recommend that  
16 indoor air quality monitoring be conducted prior  
17 to going through the steps recommended in this  
18 guidance. And if you go back and refer to those  
19 steps as they describe them, it's very similar to  
20 the TACO process with the evaluation of the  
21 contaminants, the environmental conditions and so  
22 on. So we believe that approach is consistent  
23 with what US EPA recommended in their 2002  
24 guidance.

1 MS. LIU: Mr. Martin, are you aware  
2 of any proposed changes that might come through in  
3 their final guidance in 2012 that would change the  
4 position in which the indoor air quality sampling  
5 would be within that evaluation process?

6 MR. MARTIN: I haven't seen their  
7 proposed changes so I haven't responded to that.

8 MS LIU: Thank you.

9 MR. MCGILL: Were you interested in  
10 making that draft 2002 guidance hearing an  
11 exhibit?

12 MR. MARTIN: We have a copy  
13 available. We can do that.

14 MR. DAVIS: I'd like to so move.

15 MR. MCGILL: Just for ease of  
16 reference, Mr. Davis has made a motion to enter as  
17 a hearing exhibit the 2002 US EPA OSWER draft  
18 vapor intrusion guidance from November 2002. Any  
19 objection to that motion? Seeing none, that will  
20 be hearing -- that's admitted as Hearing Exhibit  
21 11.

22 (Document marked as Hearing  
23 Exhibit No. 11 for  
24 identification.)



1 MR. MCGILL: Are there any other  
2 questions for Mr. Martin? Seeing none, why don't  
3 we go off the record for a moment.

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

6 MR. MCGILL: At this point, why  
7 don't we go back on the record and we've concluded  
8 our testimony after acquiring of the audience  
9 there is no one else interested in testifying  
10 today.

11 So, at this point, I would ask  
12 for oral public comment from Ms. Bhooma Sundar of  
13 the United States Environmental Protection Agency.  
14 Ms. Sundar, if you wouldn't mind just stepping up  
15 so that we could hear you better. You indicated  
16 that you wanted to be able to write on the  
17 chalkboard. So if you would just for the court  
18 reporter please try to describe what you're  
19 writing on the board and just preliminarily I want  
20 to ask are you here on your own behalf today or  
21 are you representing US EPA?

22 MS. SUNDAR: I'm a work group member  
23 for both OSWER and the LUST program, the Leaking  
24 Underground Storage Tanks so I just want to

1 highlight the developments in this guidance LUST  
2 and since the guidance is not finalized I don't  
3 want to represent EPA today.

4 MR. MCGILL: And the guidance you're  
5 referring to is not finalized, which guidance is  
6 that?

7 MS. SUNDAR: That would be the OSWER  
8 vapor intrusion guidance. It's still in the draft  
9 form. I don't want to be connected to that.

10 MR. MCGILL: I'm afraid you're going  
11 to be transcribed so we will be connecting you,  
12 but I understand your point. You're not  
13 representing the Agency today. Fair enough.

14 MS. SUNDAR: I'm a toxicologist and  
15 a human health risk professor and I'm also a  
16 project manager and I've been providing technical  
17 assistance for about 13 project managers on the  
18 vapor intrusion issues and recently I remediated  
19 about 120 homes in Hammond, Indiana, on the vapor  
20 intrusion problems. So I'm also a work group  
21 member with the office of the Leaking Underground  
22 Storage Tanks and we are in the process of  
23 finalizing the guidance. So I wanted to emphasize  
24 how the final guidance might compare with IEPA's

1 guidance. So I just wanted to provide some  
2 conceptual models to highlight my points. So --

3 MR. MCGILL: Just for the record.  
4 I've asked if Ms. Sundar could follow up her  
5 presentation today with a written public comment  
6 that might better capture some of the items she's  
7 putting on the blackboard.

8 MS. SUNDAR: So, conceptually, this  
9 is how it goes. This facility and during a spill  
10 of a mismanagement of operations, there's a  
11 leaking tank, underground storage tank. This is  
12 the free product that is coming out from the  
13 facility and this is the hot spot of concentrated  
14 chemicals sitting underneath the facility and this  
15 is the groundwater moving and the groundwater gets  
16 mixed with the free product and it gets carried  
17 away. It migrates beyond this boundary. We call  
18 this your off site. So this is on site within the  
19 facility boundary and this is off site and this  
20 moves into the residential neighborhood or the  
21 commercial neighborhood.

22 So this is the free product and  
23 this is the dissolved plume and the dissolved  
24 plume further migrates. I wanted to make a

1 differentiation between petroleum vapor intrusion  
2 and the chlorinated vapor intrusion.

3                   There are two types of  
4 chemicals. There's a fundamental difference  
5 between the petroleum vapor intrusion and the  
6 chlorinated vapor intrusion. Say, for example, if  
7 there's an underground storage tank and gasoline  
8 is leaking if you see this dissolved plum, the  
9 length is much lesser than the chlorinated vapor  
10 plume. That's because of a process called  
11 biodegradation. The box when present with the  
12 right conditions say, for example, there is enough  
13 oxygen and moisture they chew up on the gasoline  
14 and the contamination is tremendously reduced by  
15 the natural process called biodegradation.

16                   However, with chlorinated  
17 chemicals, that does not happen. These chemicals  
18 are called recalcitrant chemicals and the bacteria  
19 doesn't chew up on these chlorinated chemicals.  
20 So the chlorinated chemicals mostly come from  
21 metal degreasing facilities or from dry cleaner  
22 facilities. So there is a fundamental difference  
23 between how the vapor is carried in a petroleum  
24 biodegradation scenario and the chlorinated vapor

1 biodegradation scenario.

2                   So the length of migration for  
3 the petroleum plume is much lesser than the  
4 chlorinated plume. That's the fundamental  
5 difference. That's with the horizontal migration  
6 and with the vertical migration there seems to be  
7 a lot of difference and that's what the group is  
8 working on. So what they have found is by looking  
9 at a number of sites there are about 400  
10 underground storage tanks that have been looked at  
11 and it's being predicted that if this free product  
12 is 30 feet beneath the building by the time it  
13 comes to the surface, most often the chemical is  
14 chewed up by the bacteria and with the dissolved  
15 contamination -- if the contamination has migrated  
16 further down -- if the contamination is five feet  
17 beneath the surface, that's enough of a distance  
18 to chew the bacteria.

19                   So depending upon the nature of  
20 the chemical whether it's a free product or it's a  
21 dissolved contamination, the distance means a lot.  
22 I think IEPA catches on this aspect, but from a  
23 different perspective from this. This is the  
24 developing trend within the vapor intrusion

1 community for the petroleum vapor contaminants.  
2 How about -- with the chlorinated vapor  
3 contaminants there is no distance exclusion.  
4 Whether it is 5 feet or 30 feet vertically or 50  
5 feet horizontally, it doesn't matter. There is a  
6 huge potential for the vapor to move horizontally  
7 and vertically into the building.

8                   So now I've highlighted the  
9 difference between the chlorinated and the  
10 petroleum vapors with respect to developing the  
11 2002 guidance. What are the recommended changes  
12 when the guidance is going to be finalized? So  
13 basically the 2002 guidance is divided into three  
14 tiers. Tier one, tier two and tier three. So  
15 under tier one, all the chemicals that are capable  
16 of vaporization from the groundwater into the side  
17 vapor zone they are categorized as tier one and  
18 all that we have to do is say if there is a  
19 potential for the vapors to get into the building  
20 or not.

21                   So that's tier one. That's  
22 purely based on vaporization and the vapor  
23 pressure and in the tier two comes the generic  
24 attenuation factors. The tier two is divided into

1 two fractions. The first one is based on the  
2 generic attenuation factors. That was the first  
3 question in the second part and the second part is  
4 to do with the J&E model. So, in 2002, this is  
5 what was proposed for the groundwater for a  
6 chemical say, for example, if there is a truckload  
7 filling it's a dry cleaning compound if there is a  
8 thousand micro -- if there is one PPM or a  
9 thousand mg/L of PCE's present in the ground water  
10 how much can enter into an occupied building?

11 So they say that by the time the  
12 vapor gets from the groundwater into the indoor  
13 air, it is reduced by a concentration of a  
14 thousand foot. So that's why it is called 0.001.  
15 For sub-slab -- for the soil gas, it was 0.01.  
16 For the sub-slab, it was 0.1 and for homes with  
17 crawl spaces, it's 1.

18 So there is a gradient. As you  
19 move closer to the surface to the occupied area,  
20 there is a higher potential for the vapors to go  
21 in. So this is what has been proposed in the 2002  
22 guidance and except for the soil gas, nothing has  
23 changed. Dr. King mentioned that the 2008  
24 database paper said that about 41 sites have been

1 examined with the actual measured concentrations.  
2 They compared the groundwater concentration, with  
3 the sub-slab concentrations, with the indoor air  
4 concentrations, and identified that in -- so in 41  
5 sites about 900 buildings were examined across the  
6 country.

7 Obviously, not much was included  
8 from Chicago or Illinois, but all these buildings  
9 were examined and they came up with this  
10 conclusion that whether the sub-slab or from the  
11 soil gas -- this is how it goes.

12 This is the occupied surface and  
13 this is the basement. This is the first floor,  
14 this is groundwater and this is soil gas. So the  
15 2002 guidance is that if there are a hundred  
16 molecules of PCE's present, then at least ten  
17 enters into the basement. This is going to be the  
18 final guidance. Previously, it said if there is a  
19 hundred molecules of PCE's present in the soil gas  
20 only one would enter it. So that is the  
21 significant change that is going to happen from  
22 2002 guidance to provisional guidance.

23 MR. MCGILL: I'm sorry. Could you  
24 just repeat what will enter the basement in the



1 anticipated final guidance?

2 MS. SUNDAR: Of the hundred  
3 molecules present in the soil gas, ten will enter  
4 the basement. That's what is proposed. That's  
5 why it's not finalized, but this is based on  
6 protecting 95 percent of the homes. However, if  
7 you look at the order distribution 50 percent of  
8 the homes provide a good protection which means of  
9 the hundred molecules that are present in soil  
10 gas, only one enters the basement. So as you move  
11 up the tier, you want to start from a hundred  
12 person protection here and you want to get at  
13 least 95 percent protection here and in tier three  
14 you become more site specific.

15 So you tend to go towards the 50  
16 person protection of the homes that you're  
17 evaluating. Again, that answer could be reduced  
18 by site specific actual measurements. That's why  
19 you need the data to make sure whether the homes  
20 are -- has the potential for the vapor intrusions  
21 or not. So with the 2012 guidance, only the soil  
22 gas is going to change. 0.01 attenuation is going  
23 to be 0.1. 100 to 10 versus 100 to 1. The  
24 guidance has given us the screening criteria for

1 all these medials for groundwater, for the soil  
2 gas, for the sub-slat soil gas, for the indoor  
3 air. The guidance has certain numbers to compare  
4 with its human indoor air concentration and it's  
5 backed say, for example, if the allowed indoor  
6 concentration is benzene is 3.2 micrograms for the  
7 crawl space is the same 3.2 micrograms. For the  
8 sub-slat, it is 32 micrograms. For the soil gas,  
9 it's 320 micrograms. For the groundwater, adding  
10 the Henry coefficient, it is -- I believe it is 20  
11 micrograms benzene in the water.

12 MR. MCGILL: I'm sorry. Could you  
13 just repeat the -- which coefficient?

14 MS. SUNDAR: The Henry law  
15 coefficient. It's the way groundwater goes into  
16 the vapor phase. After a side passes into this --  
17 when a side fails this criteria, it's moving up  
18 from tier two, but Part B then you apply the  
19 Johnson and Ettinger model. So far, it's based on  
20 the pre-attenuation factors. Now, you are  
21 bringing in the model and the model is based on  
22 the observed criteria. Say, for example, the soil  
23 type. If it is clay, if it is sand or if it's a  
24 mix of these soil types, then the voracity varies.

1 If it is sand -- the site between the sand is  
2 really high so the soil gas can move up much  
3 faster, but if it's a type of clay, then the soil  
4 gas cannot move up.

5 So the Johnson and Ettinger  
6 model takes into consideration all the soil type  
7 and then it estimates a soil gas concentration.  
8 So starting with the groundwater, it calculates  
9 based on the Henry coefficient how much of this  
10 water molecules can be transferred. The  
11 contaminants within the water can be transferred  
12 into the soil vapors zone and depending on the  
13 soil type how much can move up further and then  
14 depending on the building type whether the  
15 building has sub-slab or it has a basement with  
16 the dirt floor or it's just crawl space and it  
17 takes into consideration there might be a few  
18 cracks in the foundation building.

19 So through the cracks, the vapor  
20 is moving in from the soil vapor and then when it  
21 gets into the building how much of the indoor air  
22 exchange is taking place and how much of the  
23 exposure the individual is going to be having say,  
24 for example, 350 days for a resident or 250 days

1 for a worker scenario. So the exposure factors  
2 are combined with the actual -- with the estimated  
3 indoor air concentration and then we come up with  
4 the rest. So that's what the J&E model does.  
5 There is a big difference when we apply the J&E  
6 model with the chlorinated vapors and the  
7 petroleum vapors so this is where the question  
8 comes up, I think. If the 2012 guidance is  
9 finalized, how would it effect the IEPA numbers  
10 whether it will be less conservative or more  
11 conservative? It's both.

12 If the numbers are finalized and  
13 if we go with generally generic attenuation  
14 factors for chlorinated chemicals like PCE, TCE  
15 and other chemicals, the IEPA numbers might be  
16 less conservative, but with the chlorinated vapors  
17 the IEPA numbers will be more conservative because  
18 the vapor intrusion guidance is going to take into  
19 consideration the biodegradation product vapor  
20 intrusion. So the J&E model is no longer going to  
21 be applied for the petroleum vapor controlling  
22 chemicals. They are going to come up with  
23 something called the biovapor model which takes  
24 into consideration the biodegradation and, of

1 course, it depends on the amount of oxygen in the  
2 water soil, but in such a case what happens is  
3 even if there is a hundred thousand molecules of  
4 benzene in the soil gas only ten will enter into  
5 the building because of the biodegradation. The  
6 way it is calibrated, the J&E doesn't take into  
7 consideration and it definitely will be tied with  
8 the cost of vapor intrusion and the components.  
9 So that might be something you may want to look at  
10 once this guidance gets finalized.

11 MS. ZALEWSKI: When did you say the  
12 guidance would be?

13 MS. SUNDAR: November 30th, 2012.

14 MR. MCGILL: Can you just clarify in  
15 response to Mr. Rao's question I think you said  
16 one was more stringent, one less stringent. Could  
17 you just restate that again? This is the  
18 anticipated final guidance. But compared to the  
19 IEPA's proposal --

20 MS. SUNDAR: For the chlorinated, it  
21 will be less stringent -- for chlorinated, let's  
22 put it this way. IEPA numbers will be less  
23 stringent for chlorinated chemicals and more  
24 stringent for petroleum chemicals.

1                   MR. RAO: As long as the J&E model  
2 is being used?

3                   MS. SUNDAR: Yes.

4                   MR. MCGILL: Thank you. You're not  
5 subject to cross examination, but if there are any  
6 questions, would you be willing to hear them and  
7 respond if you care to?

8                   MS. SUNDAR: I just have a question  
9 for Mr. King. You mentioned this already in the  
10 progress rule about the petroleum vapors how they  
11 behave and you mentioned that the contractors are  
12 allowed to use the biodegradation factors already?

13                   MR. MCGILL: Go ahead. You're still  
14 under oath.

15                   MR. KING: Yes. What we did with  
16 our proposal is because of the timing that we put  
17 it together we put in a provision that allows  
18 someone to come in with a demonstration that there  
19 is active biodegradation going on because in our  
20 previous testimony we talked about biovapor -- the  
21 biovapor model as a model that we have been  
22 evaluating relative to that kind of demonstration.

23                                   So we have -- we're aware that  
24 the J&E model is conservative relative to

1 petroleum because it does not account for  
2 biodegradation, but we have included a provision  
3 that allows for biodegradation to be addressed on  
4 a site specific basis relative to petroleum.

5 MS. SUNDAR: So that's -- if it's  
6 already included, then I think it's covered.

7 MR. MCGILL: Thank you.

8 MR. RAO: Mr. King, would that be  
9 under tier three demonstration you were talking  
10 about?

11 MR. KING: I believe we put it into  
12 the 300 series. It's in Sections 742.310 and  
13 742.312.

14 MS. GEVING: You can find those  
15 references in our errata sheet number two.

16 MS. LIU: Mr. King, can I ask you if  
17 you agree with Ms. Sundar's conclusion -- that the  
18 generic attenuation factors that IEPA's  
19 attenuation factors will be less stringent for  
20 chlorinated contaminants?

21 MR. KING: If you're looking  
22 strictly at a multiplication, the numbers that we  
23 have in our proposal calculate out less  
24 conservatively than just multiplying everything by

1 a thousand. And, again, for the reasons that I  
2 talked about before that US EPA is having to do a  
3 nationwide guidance document to help people who  
4 are remediating sites or regulating folks across  
5 the country so they've got to have a little  
6 different point of view then what I think we  
7 should do in developing a regulation, not a  
8 guidance document, a regulation, that is looking  
9 at how things are to be addressed in Illinois.

10 So as we were saying before, we  
11 felt just to apply a nationwide factor that  
12 doesn't account for our regulatory process that  
13 we've had in TACO and does not account for the  
14 type of geology we have in Illinois versus what  
15 the average nationwide effect we just think the  
16 approach that we have used is better than just  
17 trying to apply a nationwide single multiplication  
18 number.

19 MR. MCGILL: Mr. King, I believe you  
20 touched on this in the first hearing, but when the  
21 US EPA guidance document is finalized, is IEPA  
22 going to take a fresh look at that and consider  
23 whether any TACO amendments are appropriate based  
24 on that guidance?



1 MR. KING: Yes, that's correct.

2 What Bhooma has related is similar to what is  
3 consistent with what I have been hearing the  
4 direction that things were headed. However, once  
5 the final document comes out, we certainly want to  
6 look at what was the data and information that  
7 went into building those conclusions and for us I  
8 think it's that data and information that's more  
9 important than just the conclusions being reached.

10 MR. MCGILL: Thank you.

11 MS. GEVING: Ms. Sundar, have you as  
12 part of this work group started the peer review  
13 process for 2012 yet?

14 MS. SUNDAR: We haven't put it  
15 together yet. We are in the process of compiling  
16 all the information.

17 MS. GEVING: But at some point it  
18 will be vetted?

19 MS. SUNDAR: Yes, it will be  
20 available November 2011.

21 MS. GEVING: Thank you.

22 MR. MCGILL: Ms. Sundar, could you  
23 just, again, mention the work group? You  
24 mentioned you're on a couple different work

1 groups. Can you state those again?

2 MS. SUNDAR: I'm with the OSWER work  
3 group, Office of Solid Based Emergency Response  
4 and with the Office of Underground Storage Tanks  
5 work group. So OSWER is focusing on chlorinated  
6 chemicals and UST is focusing on petroleum  
7 chemicals.

8 MR. MCGILL: Thank you very much.  
9 We appreciate your public comment today and you're  
10 welcome to supplement that with written public  
11 comment.

12 MS. SUNDAR: Thank you.

13 MR. MCGILL: I'm aware Mr. Harley  
14 has a document that he was interested in moving  
15 into the record as a hearing exhibit. Mr. Harley  
16 could you just describe that document for me,  
17 please?

18 MR. HARLEY: Yes. For the record,  
19 I'm making a motion to enter as an exhibit a  
20 document entitled Addressing Vapor Intrusion at  
21 Remediation and Redevelopment Sites in Wisconsin.

22 MR. MCGILL: Do you have any extra  
23 copies of that?

24 MR. HARLEY: I have multiple copies.

1 How many do you want? So this is a document  
2 entitled Addressing Vapor Intrusion at Remediation  
3 and Redevelopment Sites in Wisconsin dated  
4 December 2010 identified as PUB-RR-800 Wisconsin  
5 Department of Natural Resources. Any objection to  
6 entering this as a hearing exhibit?

7 MS. GEVING: I would just like to  
8 point out that it's apparent from page two that  
9 it's just a guidance document. I'd just like to  
10 clarify that point for the record. Program  
11 guidance. Mr. Harley?

12 MR. HARLEY: Just in response, I  
13 didn't feel it was necessary to enter Wisconsin's  
14 regulatory language into the record. It speaks  
15 for itself, but the guidance document I felt was a  
16 helpful edition.

17 MR. MCGILL: Thank you. Any  
18 objection to entering -- to admitting this  
19 document as a hearing exhibit? Seeing none, it is  
20 so admitted as Hearing Exhibit 12.

21 (Document marked as Hearing  
22 Exhibit No. 12 for  
23 identification.)

24 MR. MCGILL: Can we go off the

1 record, please?

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

4 MR. MCGILL: Why don't we go back on  
5 the record. Just for the record, is there anyone  
6 else who wishes to testify or pose any questions  
7 today?

8 MR. MARTIN: I have a question just  
9 based on comments we just heard about US EPA's  
10 upcoming guidance. It's for Mr. King. It looks  
11 like there may be some differences between the  
12 current proposal in Illinois and US EPA's final  
13 guidance, whenever that comes out. Would a  
14 remedial applicant be able to apply the new  
15 guidance when it's final under tier three and the  
16 proposed alternative in the existing regulations  
17 that it has?

18 MR. KING: That would seem to be  
19 a -- that would be something that we could  
20 consider, yes.

21 MR. MCGILL: Thank you. Any other  
22 questions, comment, testimony? Seeing none, I'll  
23 address a few procedural issues before we adjourn.  
24 Anyone may file written public comments on this

1 rulemaking with the Clerk of the Board up to at  
2 least 45 days after any first notice proposal is  
3 published in the Illinois Register.

4                   However, to ensure that your  
5 public comment is considered by the Board in any  
6 first notice decision, I'm setting a pre-first  
7 notice public comment filing deadline of July  
8 13th.

9                   I would ask that the mailbox  
10 rule will not apply to that. So we will need --  
11 the Clerk of the Board will need to receive the  
12 public comment no later than July 13th. Public  
13 comments may be filed with the clerk in paper or  
14 through the Board's web based clerk's office  
15 online known as COOL.


16                   Please note that all filings  
17 with the clerk must also be served on the Hearing  
18 Officer and on those persons on the service list  
19 for this rulemaking. Copies of the transcript of  
20 today's hearing should be available on the Board's  
21 website by June 3rd. Are there any other matters  
22 that need to be addressed at this time? Seeing  
23 none, I would like to thank everyone for  
24 participating today and this hearing is adjourned.

1 STATE OF ILLINOIS )  
2 ) SS.  
3 COUNTY OF COOK )  
4

5 I, Steven Brickey, Certified Shorthand  
6 Reporter, do hereby certify that I reported in  
7 shorthand the proceedings had at the trial  
8 aforesaid, and that the foregoing is a true,  
9 complete and correct transcript of the proceedings  
10 of said trial as appears from my stenographic  
11 notes so taken and transcribed under my personal  
12 direction.

13 Witness my official signature in and for  
14 Cook County, Illinois, on this 15<sup>th</sup> day of  
15 June, A.D., 2010.

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STEVEN BRICKEY, CSR  
8 West Monroe Street  
Suite 2007  
Chicago, Illinois 60603  
Phone: (312) 419-9292  
CSR No. 084-004675

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