

1 **NATIONAL DRINKING WATER ADVISORY COMMITTEE (NDWAC)**
2 **LEAD AND COPPER WORKING GROUP ON PUBLIC EDUCATION (WGPE)**

3
4 **Meeting 1 Summary**

5
6 **October 5-6, 2005**

7
8 **Welcome and Agenda Review**

9 Abby Arnold, RESOLVE Senior Mediator, welcomed the members of the National Drinking
10 Water Advisory Committee (NDWAC) Lead and Copper Working Group on Public Education
11 (WGPE) to its first meeting and began introductions. Steve Heare, Director, Drinking Water
12 Protection Branch, EPA Office of Groundwater and Drinking Water (OGWDW), also welcomed
13 and thanked the working group members.

14
15 Ms. Arnold reviewed the meeting agenda and objectives of the meeting, which were:

- 16 • To become familiar with each other and Working Group charge;
- 17 • To review and agree on Working Group's organizational protocols;
- 18 • To review requirements of Lead and Copper Rule Sections pertaining to Public
19 Education;
- 20 • To review and discuss basic principles of risk communication, and clarify how these
21 elements can apply to lead and copper;
- 22 • To review examples of "good" public education materials, as shared by Working Group
23 members; and
- 24 • To decide and clarify the product the Work Group will produce, tasks and proposed
25 schedule.

26
27 **Background on the Lead and Copper Rule and Action Level**

28 **Background on the Lead and Copper Rule and Action Level**

29
30 Ron Bergman, Chief, Drinking Water Protection Branch, EPA OGWDW, gave a presentation on
31 the background of the Lead and Copper Rule (LCR), and the role of public education in the rule.
32 (Mr. Bergman's presentation, "Public Education and the Lead and Copper Rule," is attached.)
33 Eric Burneson, Chief, Target and Analysis Branch, Standards and Risk Management Division,
34 EPA OGWDW, also presented on the origin and meaning of the LCR's action level. (Mr.
35 Burneson's presentation, "Basis for Lead Action Level, FRN 56 no 110, p 26490, June 7, 1991"
36 is attached.)

37
38 Mr. Bergman explained that there will be a short-term regulatory action to revise the LCR that
39 OGWDW would like to propose the rule in early 2007, and finalize the rule in early 2007 (EPA's
40 handout on the "Drinking Water Lead Reduction Plan, March 2005" is attached.) From a list of
41 issues identified in a comprehensive review and recommendations gathered in expert workshops,
42 EPA has identified a set of actions for which there is existing data to justify a regulatory change.
43 The WGPE's work may fit in with these short-term rule revisions. Two public education
44 oriented revisions are already being considered:

- After taking household water samples, water systems must notify residents of the lead sampling results; and
- If a water system has information indicating that flushing strategy outlined in the LCR is not an appropriate remedy, it can work with the state to modify flushing times.

Once the WGPE completes its recommendations and the NDWAC sends EPA the final version, those may be included in the proposed final interim rule, which is scheduled for early 2007.

To help illustrate the difference between a maximum contaminant level (MCL) and an action level, Steve Heare, Director of the Drinking Water Protection Division, compared three different contaminants commonly found in drinking water that employ three different regulatory approaches:

	Arsenic	Cryptosporidium	Lead
Source of Contamination	Well or other source water (pre-treatment)	Source water	Could be present in source water (small %); from distribution system or plumbing
Where measured for compliance	Before water enters the distribution system	At the end of the filtration process, before distribution system	At the (household) consumer's tap
Public Health Goal (Maximum Contaminant Level Goal, MCLG)	0	0	0
EPA Regulatory Standard	Maximum Contaminant Level (MCL) = 10 µg/L	Treatment Technique, 99% removal (measure of turbidity)	Treatment Technique (corrosion control) plus Action Level = 15 in no more than 10% of tap samples
Basis for Standard	Combination of data on health risk, economics, and available technology	Efficacy of filtration and disinfection (treatment technique) rather than health-based standard	A treatment level that is cost-effective and technically feasible for a water system to achieve

To regulate lead in drinking water, EPA established a public health goal (known as a MCLG or Maximum Contaminant Level Goal) for lead of zero. In setting enforceable standards (known as MCL or Maximum Contaminant Levels), the agency must also consider economics and available technology. Lead presents an additional regulatory challenge, because its source is frequently service lines or lead-based solder in home plumbing, which a water system does not control. Further, while some contaminants like arsenic have predictive models on exposure and the lifetime risk of cancer, comparable risk assessment evaluations are not available for lead.

1 Thus, rather than setting a maximum contaminant level (MCL) for lead, EPA instituted an action
2 level. The action level approach was chosen because water systems do not control many of the
3 sources of lead. Understanding that zero is the public health goal, EPA sought to identify an
4 effective treatment technique and a treatment level at which as much lead as possible could be
5 removed from or kept out of drinking water, while also making the program feasible and cost-
6 effective for water systems nationwide. As with all standards setting, including for MCLs, EPA
7 had to estimate the cost of the regulation at a particular level and justify the cost of contaminant
8 reduction at that level.

9
10 To establish the action level, EPA reviewed information from representative water systems,
11 efficacy of different treatment technologies, and cost effectiveness of these technologies.¹ EPA
12 identified the action level at 15 µg/L because they expected this was a standard that water
13 systems should be able to maintain through an effective corrosion control program.

14
15 As of January 1997, all large systems (serving over 50,000 consumers) must have installed state-
16 approved optimal corrosion control treatment (CCT). EPA also requires monitoring to ensure
17 that the treatment technique is effectively implemented. If more than 10% of household tap
18 samples exceed 15 µg/L, different actions are triggered, depending on the size of the water
19 system. In small systems, an exceedance triggers a requirement for installation of optimized
20 CCT, and perhaps additional steps. Large systems must optimize CCT and take other steps such
21 as replacement of lead service lines.

22
23 In addition to these steps aimed at reducing the corrosivity of water that reaches household taps,
24 exceeding the action level triggers a public education requirement. Public education on lead in
25 drinking water is important because its source is on both sides of the consumer-utility interface.
26 If CCT does not reduce lead levels below the action level, consumers may need to flush and/or
27 filter their water and take other steps to reduce their exposure.

28
29 Though the action level for lead was not based on health data, EPA also wanted to understand
30 how their regulation of lead would be protective of public health. The agency used modeling to
31 estimate how the institution of the lead action level reduced lead exposure to a sensitive
32 subpopulation of children ages 0-6.² EPA predicted what lead exposure would be with no water
33 treatment, and then estimated a child's net reduction in lead intake if the action level were met
34 through corrosion control. This model estimated that an action level of 15 µg/L would reduce by
35 half the percentage of children with blood lead levels above 10 µg/dL.³ As health agencies such
36 as the CDC do not collect data on lead paint in households, it is difficult for EPA to confirm this
37 prediction. Mr. Burneson emphasized that EPA conducted this analysis after selecting the action
38 level. The study helped EPA evaluate the chosen action level and confirm it would be an
39 effective strategy.

¹ EPA gathered data from 39 medium-sized water systems. Approximately 96% of these systems were able to keep in the 90th percentile in the range of 10-20 µg/L. Thus, EPA concluded that 15 µg/L represented the feasible level for public water systems.

² To control for non-drinking water exposures to lead as much as possible, the study excluded children expected to have significant exposure to lead paint. The study was based on EPA data.

³ 10 µg/dL does not represent a no-effects level, and children can still have neurological damage from lead at even lower blood levels.

1
2 Discussion:

3
4 **Communication of the Lead Action Level.** WGPE members noted that the public does not
5 necessarily understand the significance of an action level and the origin of this number.
6 Explaining the action level, including what it does and does not mean, is a risk communication
7 challenge. Members should discuss whether and how to explain the lead action level so it is clear
8 to consumers and does not lead to false judgments about their water supply, subsequent sampling
9 results, and relative risk of different concentrations (i.e., “What’s the difference between 14 and
10 16 and 60 and 100 µg/L?”).

11
12 **Sampling Protocols in the LCR.** Some WGPE members asked about sampling protocols
13 outlined in the LCR for the monitoring of lead levels in drinking water. EPA clarified that
14 sampling protocols are part of long-term discussions about the LCR, rather than the short-term,
15 targeted changes in the LCR. EPA recognizes the importance of sampling and criteria for
16 identifying the worst case lead households for testing purposes.

17
18 **60-day Notification.** Members also discussed the 60-day window for notifying consumers of
19 action level exceedances. 60-day notification can lead to increased confusion in communities,
20 where not all consumers have access to information sources such as newspapers, water bills, and
21 email or the internet. As a result, some residents hear second-hand information that may be
22 incomplete or misleading. While EPA is not planning to change this timeframe for notification in
23 its short-term LCR revisions, the WGPE may choose to consider recommendations about public
24 education other than the notification triggered by an exceedance, which has only affected 4% of
25 utilities. There may be a role for more general, ongoing public education.

26
27 **Lead in School Drinking Water.** EPA explained that lead levels in schools are important
28 because of the at-risk population. However, the purpose of monitoring is to target households
29 with the highest levels of lead in their water. There is a non-regulatory program under the
30 Federal Lead Contamination Control Act of 1988, with guidance for states on conducting a
31 school sampling program.

32
33
34 **Review of Ground Rules**

35 WGPE members made slight changes to the draft ground rules and agreed to operate by them.
36 (The revised “National Drinking Water Advisory Committee Lead and Copper Working Group
37 on Public Education Operational Protocols” are attached.)
38
39
40

41 **Elements of Communicating Risk to the Public**

42 Lisa Ragain, Center for Risk Science and Public Health, George Washington University, gave a
43 presentation outlining factors of communicating risk and public perceptions of risk. (Ms.
44 Ragain’s presentation, “Risk Communication Foundations,” is attached.)
45

1 Risk management of drinking water regulations and compliance involves complex technical
2 information and scientific uncertainty about health effects and contaminant levels. Risk
3 communication should be proactive and interactive – anticipating, seeking, and responding to
4 public concerns in a transparent manner. Rather than a set of brochures, public relations, or
5 media strategies, risk communication is the comprehensive approach integrating scientific
6 information about risk with the public’s perception of risk factors.

7
8 Risk perception is shaped by personal, social, and cultural factors, and is generally more
9 influenced by individuals’ level of dread (extent to which hazard is feared) and knowledge of a
10 hazard than by the public health significance (number of people exposed to the hazard). While
11 the public’s perception of risk may differ from expert opinion, risk communication should be
12 designed to answer the following questions:

- 13 • What does the public know about the risk?
- 14 • What do they want to about the risk?
- 15 • How do they want to know it?

16
17 To answer these questions, dialogue and collaboration is needed between “senders” of
18 information (such as water systems) and “receivers,” including a broad audience. The ultimate
19 audience of risk communications should be identified by looking at the community broadly, as
20 well as investigating demographics and populations susceptible to specific contaminants. Ideally,
21 risk communication between senders and receivers should be a dialogue and information
22 exchange, rather than one-way communication.

23 24 **Good Examples of Communicating Risk to the Public**⁴

25 Working Group members shared examples of good public education materials with each other
26 and discussed the elements of good risk communication methods and formats, including design,
27 message/content, method of delivery, and evaluation. (Flipchart notes on this conversation
28 regarding “what works” are attached.)

29
30 WGPE members discussed design as one key element, noting that materials should have a design
31 that:

- 32 • is as brief and attractive as possible;
- 33 • targets key audiences (including consumers for whom English is not a primary language,
34 susceptible populations, etc.);
- 35 • is consistent with previous and subsequent materials and is thus recognizable by consumers
36 as relating to the same issue;
- 37 • includes multiple logos of different cooperating agencies;
- 38 • includes relevant photographs or other images;
- 39 • has a question and answer format;
- 40 • is “tiered,” with the key message on the front page and additional information inside, such as
41 an insert with mandatory language and/or information in multiple languages

42
43 In addition to these desirable design qualities, the content of the message delivered in public
44 education materials should

⁴ The lists in this section represent a brainstorm session by the group rather than consensus recommendations.

- 1 • disassociate action level (15 ppb) from health outcomes, which are not directly related;
- 2 • convey that the consumer can take action;
- 3 • set the context for and explain the multiple sources of lead;
- 4 • discuss the impacts of nutrition on lead absorption;

5

6 WGPE members also discussed the importance of how messages are delivered to consumers,
7 noting that

- 8 • Who delivers the message is important because of trust issues, and pre-established links such
9 as community centers, churches, visiting nurses, and WIC programs, should be used as
10 communication partners;
- 11 • Timing of message is important, and should be ongoing to explain the status of fixes and
12 establish an information link between utilities and consumers even before a crisis;
- 13 • There are many options to explore including, billboards, newspaper articles and ads, bus ads,
14 postcards, birthday cards and other incentive-based mailings (with coupons), door hangers,
15 community meetings, open houses,

16

17 Finally, members discussed evaluation as a key component of a public education program.

18 Several members noted that it would be useful for utilities or other organizations to collect data
19 on what is effective, in order to learn from methods and revise materials if necessary.

20

21 During this conversation, the WGPE also noted several principles of successful public education:

- 22 • Encourages the public to take action to protect public health
- 23 • Is flexible for local situations – adaptable, flexible
- 24 • Equips utilities and provide them with tools they need to communicate to consumers
- 25 • Puts public health risks in drinking water in context of public health risks from multiple
26 exposure sources
- 27 • Meets needs of diverse populations
- 28 • Recognizes different audiences
- 29 • Has a scalable message – urgency of activity is associated with level of exceedance and
30 includes different messages for different levels of risk
- 31 • Provides a holistic public education approach to risk education for drinking water, rather
32 than contaminant by contaminant
- 33 • Timely, concise, clear
- 34 • Language is compelling (causes action) but not alarming (causing inappropriate action
- 35 • Readability at appropriate literacy level – can incorporate visual, audio, not just written –
36 5th grade standard
- 37 • EFFECTIVE – tied to evaluation – must be measurable
 - 38 a. Based on other models
 - 39 b. Based on scientific and research principles, not just guesses
 - 40 c. Who’s going to do it?
 - 41 d. As you move ahead on tools, to the extent you can, use proven/successful
42 methods that have been successful in communities you’re trying to reach – tie
43 it to experience
- 44 • Approach can be tiered – not all information has to be in every piece.
 - 45 a. Some info available by request

- 1 b. Multiple mailings?
- 2 c. As opposed to current mandatory language – all has to be in there.
- 3 • Should be in-scale for all systems (economically, etc)

6 **Envisioning the WGPE Product**

7 The WGPE discussed a potential outline for their recommendations, including:

- 8
- 9 1. Background
- 10 2. Rationale for Principles, including why public education is important and why the
- 11 WGPE is proposing principles
- 12 3. List of prioritized principles for public education programs and the Lead and Copper
- 13 Rule
- 14 4. Public Education Requirements in the Revised Lead and Copper Rule
- 15 a) Required components/topics (Differentiate between size of systems)
- 16 b) Required language
- 17 c) How compliance will be evaluated
- 18 5. Recommended Guidance, including templates that outline examples of content,
- 19 format, method of delivery, and evaluation
- 20 6. Enforcement component

22 *Regulations and Guidance*

23 The WGPE discussed the difference between how states view guidance versus regulatory
24 language and requirements. One member shared that some states incorporate rule guidance into
25 their regulations. This creates a fuzzy area that utilities could challenge, but tend to accept. Thus,
26 a document that the federal government issues as guidance can, effectively, become law at the
27 state level.

28

29 Another member noted that guidance can also be helpful. For example, if the state has a template
30 available in a guidance document, the agency can have it on hand to revise and send to a water
31 system in case of an exceedance. Having a guidance to accompany these templates would make
32 the state's job easier, allow flexibility, and would be preferable to regulatory language. Another
33 member added that guidance allows his agency to learn and change templates over time to be
34 more effective.

35

36 In response to a question about timing for EPA's publication of the revised LCR and guidance,
37 Mr. Heare explained that the agency typically issues guidance subsequent to publication of a
38 final rule. In some cases, EPA will attempt to publish the two documents simultaneously or
39 within 90 days, depending on workload, contractor resources, and other factors.

40 Guidance question – does guidance = requirements in some states?

41 We should clarify those things which we think should be voluntary rather than requirements.

43 *Partnership*

44 Members discussed the importance of partnerships and shared responsibility between utilities
45 and consumers. As the source of lead in drinking water can sometimes be most effectively

1 controlled by consumer action, it is critical for public education to not only communicate health
2 risks but actions to empower consumers to act.

3
4 Members recognized the caveat that many people in large cities may face obstacles to their
5 understanding of lead and copper issues and therefore taking action to protect their own health.
6 For example, renters and children attending schools and daycare centers often do not receive
7 water bills containing information on lead in drinking water. Consumers in rural areas also face
8 obstacles to receiving information, and may need alternate methods of delivery such as posting at
9 post offices, grocery stores, and schools. The WGPE should recognize these obstacles and
10 consider how public education and partnerships can overcome them and empower all consumers.

11
12 WGPE members also discussed partnership between not only utilities and consumers, but also
13 public health workers, other agencies, universities, and associations. Collaborating on a common
14 public education message about lead could be a useful partnership activity.

15 *Campaign/Branding Approach*

16
17 Members discussed a “campaign” approach to public education on lead and copper and
18 increasing awareness about exposure from a range of sources and potential health risks. A
19 campaign approach could benefit small systems by providing free public education materials to
20 pass on to their consumers.

21
22 One member highlighted that the percentage of systems with lead problems and exceedances is
23 low, and thus a national campaign may not be the best use of resources. The WGPE wants to
24 keep in mind that systems of different sizes and locations may have different needs and goals.
25 For example, while there are potential benefits for small systems, they may not be able to
26 contribute funds to participate in such a campaign.

27
28 One member suggested that a campaign idea could be framed as a conceptual approach to public
29 education rather than an LCR requirement recommended by the WGPE. There are many existing
30 lead public campaigns, and drinking water partners should start thinking about whether and how
31 communication could be more cohesive so consumers hear the message more clearly.

32
33 WGPE members also observed that, to be effective, public education programs need funding to
34 accompany requirements and guidance. A member pointed out that public education about a
35 health issue tends to encourage funding prioritization to address that issue.

36 37 38 **Principles and Rule Subgroups**

39 The WGPE agreed to split into two subgroups to discuss recommendations in two areas:

- 40 1. the rationale and principles of public education on lead and copper; and
- 41 2. the Rule structure and language.

42 *Principles Subgroup*

43
44 In their report-out to the plenary, Principles Subgroup members explained that the principles
45 section to be developed could have multiple purposes, including appearing in the principles

1 section of the recommendations; informing the Rationale, Rule, and Guidance sections;
2 informing EPA's revision of the LCR and eventual revision of guidance; and for a voluntary
3 evaluation of public education programs.

4
5 The Principles Subgroup shared that it will develop a prioritized list that will distinguish between
6 a) general principles of an effective public education program for lead and copper and b)
7 principles of an effective LCR. It will also develop a brief "Rationale" section to put the
8 principles in context. Three subgroup members agreed to work on the next draft of these working
9 products.

10
11 *Rule Subgroup*

12 The Rule Subgroup discussed the challenges of communicating to the public about an action
13 level in a way that would educate consumers without creating confusion. The subgroup generally
14 agreed that simplicity in communication is a goal, but also that a lack of information could add to
15 public confusion. They will continue to discuss whether required language should include a short
16 description of the action level or whether there is a better way to describe an exceedance.

17
18 Two subgroup members will work on a proposal for a tiered public education approach, to
19 include draft recommendations about ongoing public education, required notification and
20 education in the event of an exceedance, and follow-up communication after an exceedance.

21
22 The WGPE discussed the idea of an "ongoing" public education program. One member pointed
23 out that lead is not the only key health concern nationwide and may be a very small issue in
24 some areas, so requiring ongoing communications about this particular contaminant may not
25 make sense. Other members suggested that recommendations about ongoing education for lead
26 could serve as a model programs for other contaminants of concern. Some members also pointed
27 out that, if there is an ongoing education component of the draft proposal, it could be as simple
28 as a line in consumer confidence report. Further, the Principles Subgroup had also discussed the
29 concept of ongoing education, and the idea of ongoing dialogue and partnerships could be
30 conveyed through the principles recommendations.

31
32 One component of a tiered proposal will be to identify the relevant audience of public education
33 efforts after (and possibly before) an exceedance, including consumers (homeowners, renters,
34 etc.), regulators, local government, media outlets, and others.

35
36 Another important audience is the school community. While schools are not governed by the
37 LCR, they represent a key population and a group of consumers that should be informed of
38 actions to take and potential health risks. At the next WGPE meeting, EPA will arrange for a
39 presentation on the memorandum of understanding on schools and lead testing.

40
41 One member noted a concern that sampling requirements and lack of proper sampling number
42 and frequency could lead to occupants exposure without their knowledge. This member said that
43 systems have an obligation to inform occupants, especially when their health situation changes
44 (e.g., having a baby), and thus suggested that the WGPE should consider a basic program on lead
45 in water and other sources.

1 **Public Comment**

2 No members of the public asked to make comments to the WGPE.

3
4 **Next Steps and Agenda for Next Meeting**

5 The WGPE concluded its meeting by discussing next steps, including:

- 6
- 7 • *Background on the Lead and Copper Rule from the Federal Register.* EPA will pull
8 information on how 15 ppb was chosen as the action level and information about the IEUBK
9 model from the FRN (June 2001).
 - 10 • *Lead in Drinking Water in Schools and Childcare.* EPA (Lisa Christ) will assemble a fact
11 sheet.
 - 12 • *NSF Standard.* Regu will gather background information.
 - 13 • *Template Resources.* Jeanne will prepare a set of “template resources” based on state and
14 other models.
 - 15 • *Meeting Summary.* RESOLVE will draft a meeting summary of presentations and
16 discussions. This draft will be circulated for review by the WGPE.
 - 17 • *Draft WGPE Recommendations:*
 - 18 ○ RESOLVE will draft a “Background” section and circulate it to the WGPE for review
 - 19 ○ The Rules Subgroup will take the lead on drafting a visual and language on the tiered
20 approach.
 - 21 ○ The Principles Subgroup will revise and prioritize the list of principles started in the
22 meeting and draft a rationale paragraph.

23
24 Members also scheduled three meetings, to be held at RESOLVE in Washington, DC, as well as
25 4 conference calls:

- 26 • Principles Subgroup Conference Calls: October 24 (10-12 ET) and November 21 (10-12
27 ET)
- 28 • Rule Subgroup Conference Calls: October 25 (12-2 ET) and November 17 (10-12 ET)
- 29 • Meeting #2 – December 15-16, 2005
- 30 • Meeting #3 – February 1-2, 2006
- 31 • Meeting #4 – April 19-20, 2006

32
33 WGPE members expressed interest in the following topics at Meeting 2:

- 34 • A briefing from EPA on Drinking Water and Lead in Schools (including the MOU)
- 35 • Reviewing the Principles and Rule Subgroups’ draft working documents
- 36 • Looking at template examples and trying to synthesize these into potential examples to
37 include in WGPE recommendations

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3 EPA and RESOLVE thanked the WGPE members for their successful work and adjourned the
4 meeting.
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15 List of Attachments:

- 16
- 17 ▪ Presentation by Ron Bergman: “Public Education and the Lead and Copper Rule”
- 18
- 19 ▪ EPA’s handout on the “Drinking Water Lead Reduction Plan, March 2005”
- 20
- 21 ▪ Presentation by Eric Burneson: “Basis for Lead Action Level, FRN 56 no 110, p 26490,
- 22 June 7, 1991”
- 23
- 24 ▪ Presentation by Lisa Ragain: “Risk Communication Foundations”
- 25
- 26 ▪ National Drinking Water Advisory Committee Lead and Copper Working Group on Public
- 27 Education (WGPE) Operational Protocols
- 28
- 29 ▪ Meeting flipchart notes on “What Works” in public education and risk communication
- 30 materials
- 31
- 32
- 33