

**Remediation Standards External Stakeholder Committee**

**Meeting Summary for October 14, 2014**

**1pm in Public Hearing Room (PHR)**

Attendees: see attached list

1. Introductions

- a. T. Sugihara (TS) welcomed the audience of 15 DEP personnel and 20 external stakeholders (SH), and explained that the SH group would be running this meeting, The New Jersey Department of Environmental Protection (Department) would listen to the technical presentations and respond as needed. TS asked for any comments on the September meeting minutes, and upon receiving none approved them as final for posting. He asked the SH group to keep meeting minutes which would be combined with Department's minutes for posting. He then introduced Assistant Commissioner Mark Pedersen (MP) for opening remarks.
- b. MP – Reviewed Remediation Standards Amendment effort (RSA) perspectives:
  - Discussed concerns and conversations of it being “one sided” – but clarified that this was necessary for the Department to get information out to start the discussion.
  - Discussed that some items and questions may be beyond scope of RSA as pointed out in last RSA external stakeholder meeting, but these issues would be captured and brought by TS to MP via briefings.
  - He also stressed that we would listen to all SH concerns, but not necessarily incorporate all suggested changes.
  - MP responded to “Why develop standards for VI & IGW, if it is not currently broken?” – Main reason is for those that don't comply. The Department cannot enforce or recover costs unless they are standards.
  - Discussed the opportunity to look at narrative standards to not take away any tools currently available.
- c. Steve Chranowski (SC)
  - On behalf of stakeholders, thanked department for last meeting, room set-up, and opportunity for stakeholder input over the next few monthly meetings.
  - This will allow for an improved RSA process by allowing for more interaction and input to create a better end product for the RSA.

2. Screening Levels versus Standards- Migration to Ground Water (MGW) Presentation – Kevin Long (KL)

Presentation Summary – Take advantage of opportunity to enhance the flexibility Licensed Site Remediation Professionals (LSRPs) have using screening levels to guide site-specific investigations in determining the need for remedial action. MGW Soil Screening Levels (SSLs) designed for use during the early stages of a site evaluation, when information about subsurface conditions may be limited. The Licensed Site Remediation Professional Association (LSRPA) recommends that the Department maintain the generic soil-migration-to-groundwater screening levels as screening levels and, in guidance, capture the process LSRPs should use in evaluating the exposure pathway including acceptable options for developing site-specific soil migration to groundwater screening levels and the utility of actual groundwater data in determining the need for remedial action.

a. Paul Sanders (PS) – Technical Question

- Partition Equation is concentration based; not infinite mass – could include entire thickness – no time variable in equation
- KL response – US Environmental Protection Agency (USEPA) Guidance: Why does the equation for the screening level not include a time variable? Because the use of equilibrium partitioning in modeling pore water concentrations is steady-state. It assumes that the soil concentration and pore concentration water remain constant overtime. This equilibrium partitioning concept is also used in deriving the groundwater vapor intrusion screening levels where the soil gas concentration immediately above the water table is assumed to remain constant with time (i.e., in equilibrium with groundwater concentrations).
- PS does not agree. SESOIL has a finite mass in one dimension.
- Swatti Toppin (ST) – Also pointed out that they are proposing leachate standards.
- Barry Frasco (BF) – Stated that the Department still has active MGW committee – issues can be sent to ST and Steve Posten (SP)
- BF also stated these options will remain even if adopted as standards – Rule will need to emphasize that there are other options.
- Lisa Campe (LC) – The Groundwater Quality Standards are based upon an exposure scenario in which groundwater is assumed to be consumed over a long-period of time (i.e., 70 years).
- PS: The Department doesn't assume time period.
- KL: In developing screening levels for this exposure pathway (i.e., soil leaching to groundwater), USEPA assumed steady state (i.e., constant soil concentration) because the values were to be used as screening levels - early in the process. By design they are intentionally overly conservative so as to facilitate the “screening out” of areas from needing further investigation, needing groundwater monitoring wells, etc.

b. John Brennan (JB) – asked about if MGW was adopted as a standard, how would it impact the order of magnitude?

- BF – Explain how compliance was obtained. No O&M issue if site specific value developed. If GW is clean, then MGW is a non-issue.

- JB – Concerned with future LSRP review.
  - BF – Regardless of value, critical to explain why it is protective.
- c. KL – Why were the previous impact-to-groundwater values (i.e., from 2008) issued by the Department as screening levels and not remediation standards?
- BF – Proposed as Standards in 2007; but options for developing Alternative Remediation Standards (ARSs) were not yet available.
  - ST – The Department required to develop MGW standards by statute.
  - SP – Need for regulatory authority.
  - MP - Changing to standards allows a “level of predictability.” Need to figure out how narrative standard can give flexibility.
  - SP – Current rule says they are not standards, but are to be developed site by site. See 7:26C-1.1(b). Rule provides authority to enforce development of site-specific MGW
- d. George Tyler (GT) – Pointed out differences between guidance and rule. Utilizing standards versus screening levels puts burden on LSRP, property owner, and investors. Evaluation of guidance (screening levels (SL)) versus standards leads to a discouragement of Brownfield redevelopment. Current system is not broken so why change and create issues with redevelopment efforts.
- TS – Our position throughout this process has been to follow the Brownfield and Contaminated Site Remediation Act, and we don’t understand the concern that the system will be changed once we adopt the screening levels as standards. We’ll still use the same tools as we do now, that won’t change. Rule will point to guidance for how to comply.
  - GT – I agree with all TS just said, except that the underpinning is a shift from guidance to rule and that creates a negative impact on the process because a legal difficulty is created. It really changes the landscape on how it is interpreted from business perspective.
  - Robin Austermann (RA) – Brownfield Act requires development of standards, but does not yet require numerical standards
  - BF – Semantics is the issue here; the screening levels are currently de facto standards, so we don’t understand why it’s a big problem. If it’s used as a de facto standard, why not make it a standard?
  - RA – It becomes a legal issue. If it is a standard, there are definitive legal ramifications with applications of the numerical standards.
  - JB – SLs prompt LSRPs to consider the potential impact
3. Screening levels versus Standards- Vapor Intrusion (VI) Presentation – Scott Drew (SD)  
The current state of science precludes standards for vapor intrusion

- Recent Environmental Science and Technology article about Chloroform VI and Bleach use.
- Current direct sampling approach for VI is not appropriate for single sample compliance.

Presentation Summary: Indoor Air (IA) measurements require a multiple lines of evidence (MLE) approach. Basic research is on-going in this field. The USEPA and the majority of States use a screening levels approach. Current regulations and technical guidance allow for professional judgment, yet require mandatory action and timeframes. Screening levels are appropriate for evaluating the VI Pathway.

- a. Diane Groth (DG): Moving SLs to standards would not negate MLE approach
  - SD – There is a difference between a screening level and a standard for LSRP interpretations.
  - TS – Does not see the validity of the argument. Data variability is recognized.
  - PS – The validity of VI is not affected if made a standard. VI research is based on radon, and is just as valid.
  
- b. LC – VI is unlike other standards. IASLs directly tied to toxicology. Cautions against picking on one leg of the triad.
  - BF – applies to any toxicological factor.
  - SC – becomes an emotional issue with homeowner versus scientific. Bright line when indoor air not in compliance with a standard versus screening level.
  - GT – Big difference between regulation and guidance. Once there is rule, then there is a presumption of negligence. The Department needs to demonstrate a need for the change from SLs to Standards as ramifications are negative to process.
  - BF – It is the same number regardless of standard or SL. Intent is to give stronger enforcement basis.
  - GT – Screening Levels versus Standards have to be looked at in terms of application and legal ramifications including cost.
  
- c. KL – Sees paradox on this issue. The intended utility of the values are at issue. The difference between screening levels and remediation standards should be explained especially given NJDEP's inconsistency in what values are to remain as screening levels and what are to be remediation standards (e.g., groundwater and soil gas vapor intrusion SCREENING LEVELS versus soil migration to groundwater remediation STANDARDS).
  - BF – All of the groundwater VI SLs are greater than or equal to the GWQS. Since there is an obligation to remediate groundwater to achieve GWQS, the Department doesn't feel it necessary to change the GW VI SLs to standards. Also, groundwater and soil gas are not the media to which receptors are directly exposed to when considering vapor intrusion. Since the receptors are directly exposed to indoor air we believe they should be treated as standards.

- KL – When considering soil migration to groundwater pathway the medium of direct receptor exposure is groundwater (i.e., consumption of groundwater). Based on the argument just made, how is changing them from SLs to remediation standards not inconsistent with the Department’s decision to keep the soil gas SLs and GW VI SLs as screening levels?
  - TS – Remediation is determined by the levels in the media directly impacting the receptor. This justifies making IASLs into standards.
- d. Rayna Laiosa (RL) – How do you explain that when indoor air exceeds the standard, there is no need to act? There will be no opportunity to use MLE.
- BF – This is being done now, off site sources – no responsibility to remediate.
  - RL – USEPA is overstepping authority with VI.
  - LC – SL is a trigger to investigate more.
  - BF – Calculated based on assumptions
  - KL – “Screening levels” are intended to be concentrations below which there is no need to further consider (or investigate). Concentrations above screening levels don’t necessarily mean that remedial action is warranted. It simply means that further consideration is warranted. By comparison concentrations above “remediation standards” would represent concentrations that would require remedial action.
  - LC – Alternative air supplies are not available. Regulating exposure medium versus source.
  - MP – If the numeric component becomes the standard, the narrative needs to address this issue.
  - John Donohue (JD) – From a time perspective, we need to move on.
4. Concerns for Soil Standards Development Presentation – Joanne Held (JH). Risk Assessment work is not definitively precise.

Summary Points:

- a. JH – Toxicity Hierarchy – Integrated Risk Information System (IRIS) first makes sense, but there are other studies that can take priority. The Department should explain hierarchy and why they have deviated for transparency.
- b. JH – Class C carcinogens – 10 fold adjustment is better than uncertain slope factor.
- c. JH - Exposure assessment – USEPA Guidance does not reflect NJ exposures (ie. fenceline and EJ) .
- d. JH – Relaxing exposure assumptions is not preferred. 26 years is not long enough.

## 5. Hierarchy of Toxicity Presentation – SC

Presentation Summary: Ensure that hierarchy of toxicity information is utilized. If deviated, the Department needs to clearly explain why for transparency purposes and include cost / benefit analysis for more stringent standards than Federal per “Common Sense Principles” in Executive Order No.2 by Chris Christie. There is a need to document these deviations (ie – ethyl benzene). Review of all new peer reviewed science and modes of action should take place as part of transparency for documenting deviation.

- a. DG – Background: MLE are still available for Ethyl Benzene and other compounds for compliance (rat kidney data). California Environmental Protection Agency (Cal EPA) – peer reviewed basis, well documented and revised in 2011; used National Toxicity Program (NTP) study 1999. The Department used professional judgment and included in USEPA Regional Screening Level tables (IRIS 1991).
  - SC – Cal EPA rat data based on greater than 200 ppm inhalation exposure. IRIS review has started and additional peer review science shows differences in exposure modes of action between rodents and humans.
  - Linda Cullen (LC2) – Routine to use higher concentrations in NTP study. Costly animal studies. Lack of EPA resources causes delays in review and thought process. It could take 7-15 years for toxicity data to be part of IRIS USEPA process. Therefore, the Department decided to use NTP study and Cal EPA as best science available.
  
- b. KL – The Department seems to be taking a different approach with dioxin (i.e., TCDD) as is being proposed for ethyl benzene. Specifically, Cal EPA has derived cancer toxicity values for TCDD. USEPA has also used these cancer toxicity values in deriving their Regional Screening Levels. We are having difficulty in understanding why one approach is being taken for ethyl benzene but an apparent opposite approach is being used for TCDD. In order to be transparent, we would recommend that the Department consider applying a consistent logic and to explain the basis of the logic used.
  - LC2 – Stakeholders are not privy to all the information. We use dioxin in NJ Risk Assessments. Who is in better place but NJDEP?
  - KL – Looking to try and understand the logic in process being applied. So far it has not been explained clearly.
  - LC2 – Cal EPA toxicity data used by other programs.
  - Anne Hayton (AH) – Dioxin has “special significance” since 1980s. Part 1 Dioxin assessment 2012 – Ref Dose, and work continues. The Department is not going to step in front of EPA reassessment, especially since we are talking about establishing remediation standards and not screening levels. Setting a cancer-based standard on dioxin will be delayed until EPA has completed their assessment.

- KL – Agree that the Department’s approach for TCDD is appropriate. Still not clear why the approach with ethyl benzene is being handled differently. Also, as noted, we agree that there is a difference between remediation standards and screening levels.

c. TS – Provide new information and highlight points of concern.

6. Background for Polycyclic Aromatic Hydrocarbons (PAHs) and Metals Presentation – PAHs and Metals (RL & JB)

Objective: Due to past industrial and human activities, as well as natural background, PAHs and metals are detected in the environment at concentrations well above the residential and non-residential standards and/or migration to groundwater screening level. It is very common to detect “background” levels of PAHs and metals in soils. Develop background standards for PAHs and metals that are most associated with diffuse anthropogenic pollution (DAP) and Historic Fill.

- a. TS – Trying to isolate background from Hazsite database and the problem is that it can’t be done right now. Checking a new box on a form moving forward may provide for separation. Question: Would the regulated community mind another form / check box to allow the identification of background data. Of course, there is a cost to do this.
- b. SP – We would agree that checking a box would help.
- c. TS – Looking into extending Paul Sanders studies (long term and \$). Analysis was done across area types (rural & urban) and did not find huge impact of high numbers associated with background. TS did note that background for benzo(a)pyrene (BAP) in urban areas was 1.2 ppm.
  - KL – Has the Department considered estimating the upper end of the background concentration range statewide for other metals besides arsenic?
  - LC – Massachusetts uses 90<sup>th</sup> percentile for background (Fill & Natural Background)
  - BF – Statutory constraint with historic fill as a discharge. Allows for DAP, but not historic fill. Arsenic was a policy decision. Continuation of sludge application program caused the number to go from 8 mg/kg to 19 mg/kg.
  - LC2 – Requesting USEPA to look at benzo(a)pyrene toxicity. – external available for review. Toxicity value is very close to current.
  - Ted Toskos (TT) – Design of sampling plan did not consider current use. More work is needed.
  - TS – More work is needed in the urban areas; however, the 90 percentile will still be relatively low.

MEETING CLOSED AT 4 PM.

#### Follow-up

SC – Provide copies of presentations and agenda. Provide copy of meeting notes. SH will send a new agenda for November Meeting during week of 10/20. SH will send draft notes and presentations on week of 10/27.



10/14/2014 Remediation Standards Meeting Attendees

<u>Name</u>	<u>Company</u>
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LSRPA:

Lisa Campe	Woodard & Curran
Scott Drew	Geosyntec Consultants, Inc.
Rodger Ferguson	Pennjersey Environmental Consul.
Kevin Long	Environ Corporation
Carrie McGowan (via Go To)	EHS Support, LLC
Steve Posten	AMEC Environ. & Infrastructure.
Lisa Voyce (via GoTo)	HDR, Inc.

AEG:

Theodoros Toskos	AMEC
Niall Henshaw	Parsons

Environmental/EJ:

Joann Held	NESCAUM
Avery Grant	Concerned Citizens of Long Branch

SRIN:

Steve Chranowski	Chemistry Council of NJ
Rayna Laiosa	
Ashley Bell	Atlantic Richfield

Robin Austermann                  Shell

CIANJ:

John Brennan

Rose DeLorenzo

NJBIA:

George Tyler

NJBA:

Elizabeth George-Cheniara          NJBA

Fuel Merchants NJ:

John Donahue

NJDEP

Teruo Sugihara                          SRP/BEERA

Barry Frasco                              SRP

Swati Toppin                              BEERA

Diane Groth                                BEERA

John Ruhl                                    BEERA

David Barskey                              BEERA

Linda Cullen                                BEERA

Paul Sanders                                BEERA

Anne Hayton                                BEERA

Kathleen Kunze	BEERA
Allan Motter	BEERA
John Boyer	BEERA
Dave Barskey	BEERA
David Haymes	SRP
Mark Pedersen	SRP
Judith Andrejko	SRP