

Public Hearing for WVDEP Proposed Interpretive Rule
Rule 60CSR9

Date: Tuesday, February 10, 2026

Time: 6:00PM

Location: Virtual (Google Meet): meet.google.com/sia-igbn-qfm

Attendees

Name	Organization (if applicable)
Terry Fletcher	WVDEP – Public Information Office
Erin Brittain	WVDEP – Office of Environmental Remediation
Ross Brittain	WVDEP – Office of Environmental Remediation
Casey Korbini	WVDEP – Office of Environmental Remediation
Jennifer Liddle	WVDEP – Office of Environmental Remediation
Curtis Phillips	WVDEP – Office of Environmental Remediation
Kevin Richardson	WVDEP – Office of Environmental Remediation
Ben Fancher	Fairmont State University
Nathaniel Hitt	WV Rivers Coalition
Kelsey Leibli	Fairmont State University
Erica McCoy	Fairmont State University
Lani Wean	Mom’s Clean Air Force
Karri Willis	Potesta
Karren Wood	Tetra Tech, Inc.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENT PROTECTION
OFFICE OF ENVIRONMENTAL REMEDIATION
VIRTUAL PUBLIC HEARING

* * * * *

IN RE: AMENDMENT TO EXISTING RULE
VOLUNTARY REMEDIATION and REDEVELOPMENT DE MINIMIS
STANDARDS, 60 CSR 09

* * * * *

BEFORE: TERRY FLETCHER, Chief Communications Officer

HEARING: Tuesday, February 10, 2026
6:00 p.m.

LOCATION: Department of Environmental Protection
601 57th Street Southeast
Charleston, WV 25304

COMMENTER: Nathaniel Hitt

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A P P E A R A N C E S

CASEY KORBINI

ROSS BRITTAIN

ERIN BRITTAIN

Staff for the Office of Environmental Remediation

I N D E X

OPENING REMARKS

By Mr. Fletcher

5 - 7

COMMENTS

By Mr. Hitt

7 - 10

CLOSING REMARKS

By Mr. Fletcher

10 - 11

CERTIFICATE

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E X H I B I T S

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NONE OFFERED

P R O C E E D I N G S

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3 MR. FLETCHER: All right. I've got 6:05
4 on my clock, so we'll go ahead and get started. Of
5 course, we can always catch folks up who may join a
6 little bit late.

7 So, good evening everyone. My name is
8 Terry Fletcher; I'm the Chief Communications Officer for
9 the West Virginia Department of Environmental Protection.
10 I want to welcome everyone to the DEP's virtual public
11 hearing for a proposed amendment to 60 CSR 09, Voluntary
12 Remediation and Redevelopment De Minimis Standards. With
13 me tonight is staff from the DEP's Office of
14 Environmental Remediation, including Casey Korbini, Erin
15 Brittain, and Ross Brittain.

16 The purpose for this public hearing is to
17 allow you to share your comments or information about the
18 proposed amendment with the DEP. Please note that no
19 decision will be made this evening. All comments
20 submitted before the end of the comment period, both
21 written and those provided here tonight, will be recorded
22 and made part of the public record. That will then be
23 reviewed and considered by staff, and you will be
24 notified of the agency's final determination. To ensure

1 that we have an accurate record of everyone in attendance
2 tonight, we ask that you please provide your name and
3 contact information in the meeting chat. You can do that
4 by clicking the small text bubble icon in the bottom
5 right corner of your screen, and this will also help you
6 receive a notification of the agency's final
7 determination once it's been made. So if you have a
8 minute, I'd ask that you please do that at your leisure
9 so that we have your information. If you don't feel
10 comfortable sharing that in the meeting chat, you can
11 submit that information to Casey Korbini, and her email
12 address is on the screen there if you don't feel
13 comfortable sharing it in the meeting chat. Getting
14 ahead of myself there.

15 Okay. So the comment period for the
16 proposed amendment opened on Friday, January 9, 2026, and
17 it closes at the conclusion of this public hearing.
18 Again, comments can be submitted to Casey Korbini at the
19 email address on the screen, and if you mail them, they
20 can be mailed via the mailing address on the screen as
21 well. So, for official comments, each commenter will be
22 given five minutes to speak. And if you'd like to
23 provide comments, we'd ask that you use the raise hand
24 function, *6 to unmute your line. If you're

1 participating via phone call, I'll call on folks on the
2 order that I have them on the screen, and then, if time
3 allows, we can circle back to allow for additional
4 testimony. We do ask that so we can successfully achieve
5 the purpose of this hearing that everyone be respectful
6 and considerate of each other, and refrain from using
7 foul language and name-calling, and from interrupting
8 others while they are speaking. We also ask that you
9 keep your comments on the topic of this proposed
10 amendment so that our time together is used efficiently.
11 If you have written comments in addition to your verbal
12 comments, you're welcome to email them to the appropriate
13 contact listed earlier.

14 All right. Thank you for bearing with me
15 through those opening remarks and instructions. I'll now
16 open the floor for commenters. If you'd like to provide
17 a comment, please use the raise hand function, and we
18 will call on you. Do we have anyone that would like to
19 provide official comments?

20 MR. HITT: Hi, this is Than Hitt here in
21 Jefferson County. I'd like to do that, but I --- the
22 raise hand function is invisible to me on my mobile
23 device, if that's okay with you all.

24 MR. FLETCHER: Sure, you can go ahead.

1 MR. HITT: All right. Thanks. Well, it's
2 good to be with you. I appreciate this, this forum. My
3 name is Nathaniel Hitt. My nickname is Than, and I'm the
4 senior scientist with West Virginia Rivers Coalition.
5 We've reviewed the VRP De Minimis Standards, and I want
6 to start out by saying how much we appreciate how much
7 work has gone into the development of these standards.
8 There's a lot of research and expertise that goes into
9 this, and we definitely appreciate that. We also
10 acknowledge that it's been since 2021, since these have
11 been updated. So, there has been, you know, developments
12 in the scientific literature that justify these new
13 changes.

14 First off, our first point is that we
15 concur with the hierarchy of toxicity data that you are
16 considering. This is important because it starts with
17 EPA's IRIS data set. That is a vital data set. That
18 really is the best available information. And I want to
19 make this point that there is a bill moving through the
20 West Virginia legislature currently that could
21 fundamentally jeopardize the ability of DEP to use IRIS
22 or similar risk-based epidemiological research for these
23 standards. I encourage you to develop and to evaluate
24 the potential impact of House Bill 4949. This is also

1 Senate Bill 475, and to evaluate that from the
2 perspective of DEP programs, including VRP, and to
3 communicate that with --- your findings with legislative
4 leaders. And I should also note that we've submitted
5 written comments, and I'm going to highlight a few key
6 points from our written comments.

7 Second of all, you know, we appreciate
8 that, you know, there are many assumptions going on in
9 the toxicity analysis here. One of the assumptions is
10 the notion that groundwater is maintained at 13 degrees
11 Celsius. That is relevant for the vapor intrusion
12 screening levels, VISLs. And when we look at data from
13 West Virginia, you find that's really an underestimate of
14 true groundwater temperatures across the state. And
15 we're concerned that that may be an underestimate of the
16 actual volatilization rates for vapor intrusion screening
17 levels. So we encourage you to investigate that.

18 In addition, we see that you've chosen to
19 develop standards for two of the forever chemicals, the
20 PFAS, forever chemicals. And we acknowledge that, you
21 know, we agree that's an important thing to do given
22 their toxicity, their known toxicity. But we noticed, of
23 course, that you did not develop standards for the other
24 PFAS chemicals that are included in the EPA's hazard

1 index. And so we'd encourage you to do so because the
2 scientific work on those is compelling. There's
3 certainly evidence that the other flavors, if you will,
4 of PFAS have toxic endpoints.

5 In addition, along those lines, the PFOS
6 standard that was developed, it was based on a non-cancer
7 model. But EPA, to our understanding, has identified
8 PFOS to be a likely carcinogen, and other World Health
9 Organization entities and researchers have as well. So
10 we would encourage you to consider a cancer response
11 model instead of the non-cancer model. And just finally,
12 one point that it was unclear to us how the groundwater
13 standards applied to the PFAS criteria, given that there
14 are no groundwater standards for PFAS in West Virginia,
15 to our knowledge. So we'd love clarification about that.

16 And again, just thank you for your time
17 and attention to this. There's so much work that goes
18 into these updates, and we look forward to working with
19 you moving forward.

20 MR. FLETCHER: Thank you.

21 Do we have any other commenters?

22 If you're having trouble with the raise
23 hand function, you're welcome to just say your name, and
24 we can start you off.

1 Okay. Going once, going twice.

2 Okay. All right. If there are no more
3 speakers, we will now close the DEP's virtual public
4 hearing for the proposed amendment to 60 CSR 09,
5 Voluntary Remediation and Redevelopment De Minima
6 Standards, as well as the associated comment period.
7 Again, please make sure that your name and contact
8 information is either in the meeting chat or with someone
9 with DEP, so, again, that we can contact you once the
10 final determination has been made.

11 I want to thank everyone for your interest
12 and for taking the time to attend this hearing. Have a
13 good evening.

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15 HEARING CONCLUDED

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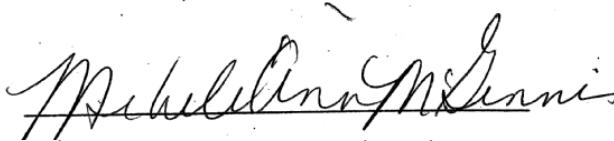
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1 CERTIFICATE

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3 I hereby certify that the transcript of the
4 proceedings contained herein is a true and accurate
5 transcription as transcribed under my supervision from
6 the recorded audio provided to Sargent's, that
7 Sargent's staff was not personally present at the time
8 of the recording, that the transcription was reduced
9 to writing, and that this is a true and correct
10 transcript of the same to the best of Sargent's staff
11 ability.

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15 Michele Ann McGinnis,

16 Manager
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WEST VIRGINIA RIVERS

9 February 2026

Casey Korbini
131A Peninsula Street
Wheeling, WV 26003
Sent via email: dep.comments@wv.gov

Dear reader,

On behalf of WV Rivers Coalition members, we appreciate the opportunity to comment on the 2026 proposed updates to the WV Voluntary Remediation and Redevelopment Program (VRP) De Minimis Standards. We appreciate the importance of the VRP to encourage environmental decontamination and redevelopment, and we agree that updated scientific research and new federal regulations compel the current update to the standards that were last revised in 2021.

We concur with the hierarchy of toxicity data DEP adopts in the de minimis framework. The EPA IRIS dataset is the best available dataset and is curated by subject matter experts, and therefore the IRIS reference dose (RfD), reference concentration (RfC), cancer slope factors, and other parameters should be prioritized when available. However, we call your attention to a bill currently moving through the WV legislature (HB4949/SB475) that would functionally prohibit the use of IRIS data – or any epidemiological risk analysis research – to develop VRP standards for some chemicals such as per- and polyfluoroalkyl (PFAS) substances. We note that passage of this bill may require DEP to abandon IRIS data and therefore would require DEP to exclude the best available scientific information when developing and implementing VRP standards. **We therefore request that DEP (1) evaluate the potential impact of HB4949/SB475 on the VRP and other programs, and (2) communicate their findings to legislative leaders.**

We appreciate the importance of model assumptions for establishing de minimis standards. One critical assumption for Vapor Intrusion Screening Levels (VISL) is that groundwater is maintained at 13°C, but this may underestimate actual groundwater temperatures in West Virginia. For instance, a survey of groundwater conditions in West Virginia¹ revealed a mean temperature of 18.4°C (n=139) with somewhat cooler groundwater temperatures in the southern portion of the state (mean = 17.8°C). The study documented a few samples near 13°C, but these were outliers rather than representative average values. The implication is that the **VSP benchmarks may underestimate actual volatilization rates for VISLs.**

The proposed de minimis standards include two PFAS “forever chemicals”, and we concur that standards are needed for these contaminants given their known toxicity². DEP chose to develop standards for perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) based on federal priorities and the development of federal maximum contaminant levels (MCLs). However, **we encourage DEP also to consider the toxicity of chemicals used to develop the PFAS Hazard Index**, including perfluorohexane sulfonate (PFHxS), perfluorononanoic acid (PFNA), and HFPO-dimer acid “Gen X” chemicals. We note that DEP has the authority to develop state standards for pollutants lacking federal regulation if there is a scientific justification³. Each of the PFAS chemicals in the Hazard Index has demonstrated toxicity in multiple studies^{4 5 6}, and therefore **regulation of these pollutants is justified** to serve DEP’s mission of protecting human health and the environment.

The proposed de minimis standard for PFOS was developed based on a non-cancer response model for residential soil (0.0063 mg/kg) and industrial soil (0.082

¹ Law, R.K., M.W. Murphy, and E. Choudhary. 2017. Private well groundwater quality in West Virginia, USA—2010. *Science of the Total Environment* 586:559–565. [10.1016/j.scitotenv.2017.02.018](https://doi.org/10.1016/j.scitotenv.2017.02.018)

² <https://www.epa.gov/chemical-research/research-and-polyfluoroalkyl-substances-pfas>

³ W. Va. Code § 22-1-3a,

⁴ U.S. Environmental Protection Agency. 2025. IRIS Toxicological Review of Perfluorohexanesulfonic Acid (PFHxS) and Related Salts (Final Report, January 13, 2025). EPA/635/R-25/012. Washington, DC: U.S. EPA.;

⁵ U.S. Environmental Protection Agency. 2021. Human Health Toxicity Values for Hexafluoropropylene Oxide (HFPO) Dimer Acid and Its Ammonium Salt (GenX Chemicals) (EPA Document No. 822-R-21-010). Washington, DC.

⁶ U.S. Environmental Protection Agency. 2024. IRIS Toxicological Review of Perfluorononanoic Acid (PFNA) and Related Salts (Public Comment and External Review Draft, March 2024). EPA/635/R-24/031. Washington, DC: U.S. EPA.

mg/kg). However, we note that EPA has determined PFOS is “likely to be carcinogenic to humans” and has developed cancer slope factors for PFOS⁷. Therefore, **we encourage DEP to apply a cancer response model for this contaminant.** Likewise, the use of a cancer response model for PFOA is justified for this reason, and the proposed standards correctly adopt this framework for PFOA.

We request clarification on the PFOS and PFOA proposed de minimis values based on “groundwater standards” in Table 2. Each of these is proposed at 0.004 ug/L, but the basis for this is unclear given that neither of these pollutants are included in state groundwater standards under 47CSR12 to our knowledge. We also note that groundwater movement in karst terrain and alluvial aquifers increases the risks of contaminant mobilization across large regions^{8 9}, and therefore we **encourage DEP to increase the numerical margin-of-safety for VRP groundwater standards in karst terrain and alluvial aquifers.**

Thank you for considering these comments. Please feel free to contact me for clarification or additional information.

Sincerely,

Jennie Smith
Executive Director, WV Rivers Coalition

cc. Nathaniel Hitt, PhD; Senior Scientist
Maria Russo, Policy Specialist

⁷ U.S. Environmental Protection Agency. 2024. Final Human Health Toxicity Assessment for Perfluorooctane Sulfonic Acid (PFOS) and Related Salts. EPA Document No. 815-R-24-007. Washington, DC: U.S. EPA. Published April 2 2024.

⁸ https://karstwaters.org/wp-content/uploads/2016/12/SP19_Final-reduced.pdf

⁹ McAdoo, M.A., Kozar, M.D., and M.V. Mathes. 2024. Water-quality indicators of surface-water-influenced alluvial aquifers, Ohio River Basin. U.S. Geological Survey Scientific Investigations Report 2023-5139. Washington, DC.

60CSR9
VOLUNTARY REMEDIATION AND REDEVELOPMENT DE MINIMIS STANDARDS
RESPONSE TO COMMENTS

The WV Department of Environmental Protection (WVDEP), Office of Environmental Remediation (OER) commenced the public comment period for interpretive rule 60CSR9 on January 6, 2026. The public comment period concluded on February 10, 2026, after satisfying the minimum 30-day period. On February 10, 2026, at 6PM, a public hearing was held virtually. Members of the public were invited to participate online via Google Meet (meet.google.com/sia-igbn-qfm) or via telephone (608-422-4283 / PIN: 475 798 362#) to provide oral comments regarding the proposed revisions to interpretive rule 60CSR9.

Written comments were received regarding proposed revisions to rule 60CSR9 from Jennie Smith, Executive Director of the WV Rivers Coalition, and one (1) attendee present at the public hearing, Nathaniel Hitt, also provided verbal comments for the WV Rivers Coalition that reiterated the written comments. A summary of the comments is provided below, along with the agency's response. The full written and verbal comments can be found within the public hearing transcript, also part of the formal rulemaking record.

No changes were made to the rule as a result of the comments received.

COMMENT 1 (Jennie Smith, WV Rivers Coalition):

*We concur with the hierarchy of toxicity data DEP adopts in the de minimis framework. The EPA IRIS dataset is the best available dataset and is curated by subject matter experts, and therefore the IRIS reference dose (RfD), reference concentration (RfC), cancer slope factors, and other parameters should be prioritized when available. However, we call your attention to a bill currently moving through the WV legislature (HB4949/SB475) that would functionally prohibit the use of IRIS data – or any epidemiological risk analysis research – to develop VRP standards for some chemicals such as per- and polyfluoroalkyl (PFAS) substances. We note that passage of this bill may require DEP to abandon IRIS data and therefore would require DEP to exclude the best available scientific information when developing and implementing VRP standards. **We therefore request that DEP (1) evaluate the potential impact of HB4949/SB475 on the VRP and other programs, and (2) communicate their findings to legislative leaders.***

RESPONSE 1:

WVDEP-OER appreciates the comment and the reference to HB4949 and SB475. Based on a review of the current bill language, those measures address legislative rules and standards that have the force and effect of law. In contrast, the De Minimis Standards are contained in an interpretive rule and are used within the Voluntary Remediation Program, which is voluntary in nature. They do not establish enforceable cleanup standards and are not independently used as the basis for enforcement actions. As currently drafted, the bills do

not apply directly to the De Minimis Standards under 60CSR9. WVDEP-OER will continue to monitor this legislation for any changes that may affect program implementation.

COMMENT 2 (Jennie Smith, WV Rivers Coalition):

We appreciate the importance of model assumptions for establishing de minimis standards. One critical assumption for Vapor Intrusion Screening Levels (VISL) is that groundwater is maintained at 13°C, but this may underestimate actual groundwater temperatures in West Virginia. For instance, a survey of groundwater conditions in West Virginia revealed a mean temperature of 18.4°C (n=139) with somewhat cooler groundwater temperatures in the southern portion of the state (mean = 17.8°C). The study documented a few samples near 13°C, but these were outliers rather than representative average values. The implication is that the VSP benchmarks may underestimate actual volatilization rates for VISLs.

RESPONSE 2:

WVDEP-OER concurs with the concern that higher groundwater temperatures could lead to higher risks due to vapor intrusion from dissolved VOCs in groundwater. However, the Groundwater De Minimis Standards are not developed based on any assumed groundwater temperature. The Groundwater De Minimis Standards are based on ingestion of drinking water, dermal contact with potable water, and inhalation of volatiles emitting from potable water during shower and other water-based activities within the home. The groundwater temperature impacts the potential for vapor intrusion of volatiles originating from contaminated groundwater that get into the vadose zone and migrate upwards into buildings through cracks in foundations or other preferential pathways. Thus, this issue does not impact the Groundwater De Minimis Standards.

An increased groundwater temperature could impact the relevant Vapor Intrusion Screening Levels used by WVDEP-OER to screen out the potential for vapor intrusion or calculate the risks associated with vapor intrusion; however, WVDEP-OER is confident with the current default groundwater temperature of 13 degrees Celsius. This default temperature was developed based on the measured temperatures of groundwater at dozens of Voluntary Remediation Program sites across the state. Additionally, the U.S. EPA map of groundwater temperatures shows a range across WV of 11.1 degrees Celsius to 13.9 degrees Celsius, which is one of the lines of evidence used by WVDEP-OER to establish the default value of 13 degrees Celsius, and USGS data verifies that the average groundwater temperature in WV is around 13 degrees Celsius.

WVDEP-OER is concerned that this study by Law et al. (2010) did not have results similar to what has been found at Voluntary Remediation Program sites or by the U.S. EPA and USGS. Importantly, the water temperature of the private wells in the Law et al. (2010) study was collected in water that had already been filled into buckets from outside faucets in August or within the home. WVDEP-OER measures water temperature as it comes out of the ground for a more direct measurement that has not been impacted by transfer to the surface, especially in extremely warm conditions such as August. Thus, WVDEP-OER will maintain the current default value of 13 degrees Celsius for vapor intrusion risk assessment,

but will closely monitor the groundwater temperatures reported from the sites to determine if any changes are necessary to this default value.

COMMENT 3 (Jennie Smith, WV Rivers Coalition):

*The proposed de minimis standards include two PFAS “forever chemicals”, and we concur that standards are needed for these contaminants given their known toxicity. DEP chose to develop standards for perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) based on federal priorities and the development of federal maximum contaminant levels (MCLs). However, **we encourage DEP also to consider the toxicity of chemicals used to develop the PFAS Hazard Index**, including perfluorohexane sulfonate (PFHxS), perfluorononanoic acid (PFNA), and HFPO-dimer acid “Gen X” chemicals. We note that DEP has the authority to develop state standards for pollutants lacking federal regulation if there is a scientific justification. Each of the PFAS chemicals in the Hazard Index has demonstrated toxicity in multiple studies, and therefore regulation of these pollutants is justified to serve DEP’s mission of protecting human health and the environment.*

RESPONSE 3:

WVDEP-OER recognizes the concern about the number of PFAS compounds being proposed for addition to the De Minimis Standards compared to the thousands of PFAS compounds known to exist. WVDEP-OER originally planned to add all noted PFAS compounds for which U.S. EPA had promulgated Maximum Contaminant Levels (MCLs) to the De Minimis Standards. However, since the final National Primary Drinking Water Regulations for six PFAS became effective in April 2024, U.S. EPA has announced its intent to rescind the regulations and reconsider the regulatory determinations of PFHxS, PFNA, HFPO-DA (GenX), and the Hazard Index mixture of these three PFAS plus PFBS. A proposed rule to formally rescind MCLs and the Hazard Index for those PFAS compounds was prepared by U.S. EPA and submitted to the Office of Management and Budget for interagency review on February 24, 2026. Additionally, the Reference Dose (RfD) toxicity values used to develop the MCLs for the four short-chain PFAS compounds are currently being challenged in court, which leaves the toxicity and eventual MCLs and other regulations in great uncertainty. Adding PFAS compounds to the De Minimis Standards in these conditions will likely lead to having to remove them or modify them in the near future, which adds to programmatic confusion for applicants enrolled in the Voluntary Remediation Program.

Please note that under current Voluntary Remediation Program Guidance, WVDEP-OER Voluntary Remediation Program sites with PFAS utilize the U.S. EPA Regional Screening Levels (RSLs) that are available for more than 20 PFAS compounds that are not on the De Minimis Standards Table 60-9. Thus, sites can initially screen these additional compounds using the RSL values, much like they would do with the De Minimis Standards, and then conduct further risk assessment using Uniform or Site-Specific Standards as they wish, or they have the option to remediate the contamination down to the RSLs/De Minimis Standards.

COMMENT 4 (Jennie Smith, WV Rivers Coalition):

*The proposed de minimis standard for PFOS was developed based on a non-cancer response model for residential soil (0.0063 mg/kg) and industrial soil (0.082 mg/kg). However, we note that EPA has determined PFOS is “likely to be carcinogenic to humans” and has developed cancer slope factors for PFOS. Therefore, **we encourage DEP to apply a cancer response model for this contaminant.** Likewise, the use of a cancer response model for PFOA is justified for this reason, and the proposed standards correctly adopt this framework for PFOA.*

RESPONSE 4:

WVDEP-OER recognizes the concern over potential cancer risks compared to the noncancer risks due to exposures to PFOA and PFOS. It should be noted that WVDEP-OER considers both cancer and noncancer effects in the development of the De Minimis Standards. The U.S. EPA Office of Water developed the Cancer Slope Factors (CSF) for both PFOA (29,000 per mg/kg*day) and PFOS (39.5 per mg/kg*day). Both of these CSF values were considered in the development of the De Minimis Standards by comparing the cancer-based standard to the non-cancer-based standard, and lowest value is always chosen for the De Minimis Standard. In the case of PFOA, the cancer-based standard was the lowest, as noted in the update. However, in the case of PFOS, the cancer-based Residential De Minimis Standard would be 0.013 mg/kg, but the non-cancer-based Residential De Minimis Standard is 0.0063 mg/kg. Thus, the cancer impacts of PFOS were properly considered in the development of the De Minimis Standards, but the non-cancer Reference Dose resulted in the lower standard and was therefore chosen for PFOS.

COMMENT 5 (Jennie Smith, WV Rivers Coalition):

*We request clarification on the PFOS and PFOA proposed de minimis values based on “groundwater standards” in Table 2. Each of these is proposed at 0.004 ug/L, but the basis for this is unclear given that neither of these pollutants are included in state groundwater standards under 47CSR12 to our knowledge. We also note that groundwater movement in karst terrain and alluvial aquifers increases the risks of contaminant mobilization across large regions, and therefore we **encourage DEP to increase the numerical margin-of-safety for VRP groundwater standards in karst terrain and alluvial aquifers.***

RESPONSE 5:

The comment is correct that neither PFOA nor PFOS are included in state groundwater standards under 47CSR12. The Voluntary Remediation and Redevelopment Rule (60CSR3) specifically states that De Minimis Standards for Groundwater shall be determined based on “Groundwater contaminant concentration limits established in the Legislative Rule... (47CSR12).” While 47CSR12 does not currently include any PFAS compounds, it is WVDEP-OER’s understanding that PFAS compounds may be added in the future. Importantly, the intent of the Voluntary Remediation and Redevelopment Rule (60CSR3) is not to establish any Groundwater De Minimis Standards that are more stringent than those required for drinking water, and the Groundwater Standards listed in 47CSR12 come directly from the MCLs established as National Primary Drinking Water Regulations under the federal Safe Drinking Water Act (SDWA). Thus, in keeping with the original intent of the

Voluntary Remediation and Redevelopment Rule (60CSR3), WVDEP-OER defaulted to the MCLs promulgated by U.S. EPA for PFOA and PFOS as their Groundwater De Minimis Standards because those concentrations are considered safe by federal regulation in the absence of state regulation. WVDEP-OER will monitor the situation regarding the MCLs for PFOA and PFOS, and other PFAS compounds, and will update the Groundwater De Minimis Standards as needed when changes occur.

Regarding concerns about contaminant mobilization across large regions in alluvial and karst aquifers, it is important to note that the migration of the contaminant plume does not affect the risks associated with drinking the water that are addressed in the Groundwater De Minimis Standards. The mobilization of contaminant plume concern is addressed via plume delineation during the site assessment phase of any Voluntary Remediation Program project. The risks of drinking the water are based on how much of the water the people consume and the concentrations of the contaminant in the water that establish the dose to which the people are exposed, which is not related to the size of the plume. During site assessment in the Voluntary Remediation Program, the size of the plume and the potentially exposed receptors (i.e., people with potable wells that originate from within the plume) are determined, and measures are taken to sever any current or future exposure pathways that could cause unacceptable harm.