

Updates to the Fill Material Guidance for SRP Sites and Updates to the Historically Applied Pesticide Technical Guidance Training

March 9, 2022

Christina Page, Co-Moderator
Training Committee, Chair

Alissa Ambacher, Co-Moderator
Training Committee, Ass't Chair



Continuing Education Credits (CECs)

SRP Licensing Board **has approved**
0.5 Regulatory CECs
2.0 Technical CECs
for this Training

Attendance Requirements:

- **Webinar participants:** must be logged-in for the entire session and answer 3 out of 4 poll questions (randomly inserted in the presentation)



CECs: What's the Process?

Since the SRPL Board approved CECs for the course:

- DEP compiles a list of “webinar” participants eligible for CECs and provides the list to the LSRPA
- LSRPA will email eligible participants a “Link” to an LSRPA webpage with certificate access instructions
- Certificates are issued by the LSRPA after paying a *\$25 processing fee*

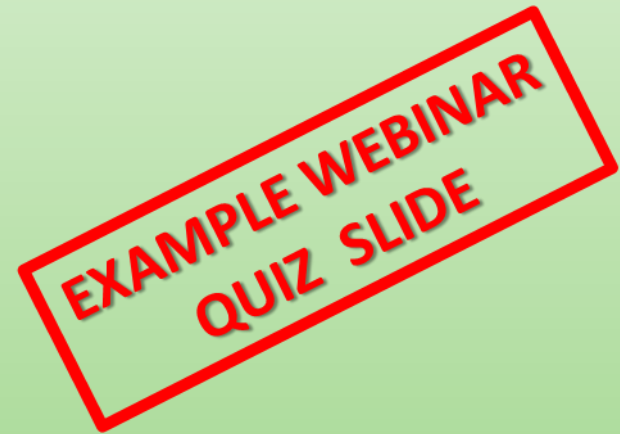


Test Your Knowledge

True or False:

Today is Rodger Ferguson's birthday

- A. True
- B. False



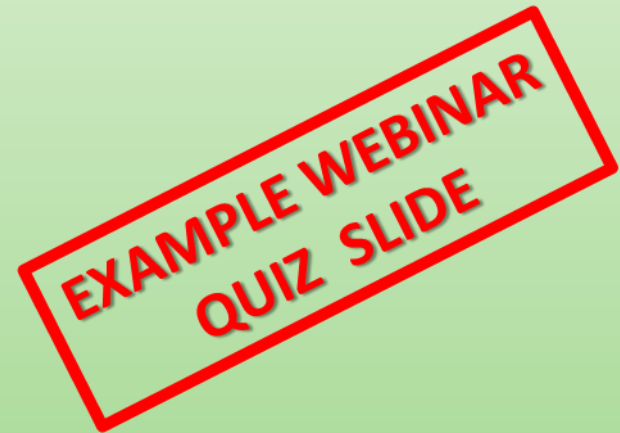
Test Your Knowledge

True or False:

Today is Rodger Ferguson's birthday

A. True

B. False



Question and Answer Segments

- Questions will be read aloud by the moderator as time permits
- Any questions are not addressed during the presentation, will be answered via email



Chat Function

- Please use the chat to advise the Department of technical issues with the presentation
- Please do not use the chat function to comment on presentations or to answer other attendee's questions



Remember!

Please fill out the Course Evaluation here:

<https://www.surveymonkey.com/r/RVW732V>





Updates to the Fill Material Guidance for SRP Sites and Updates to the Historically Applied Pesticides Guidance Training

**March 9, 2022
Course #2022-012**

**LSRPs: 2 Technical/.5 Regulatory CECs
Professional Engineers: 2.5 CPCs**



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Upcoming LSRPA Courses & Events

- **March 15, 2022 – LSRPA Regulatory Roundtable** (1 Tech and .5 Regulatory CECs – LSRPs)
Recycled Concrete Aggregate (RCA): What Every LSRP and Their Client Needs to Know
Joseph J. Hochreiter, Jr., SEC, LLC
Lawrence Jacobs, Esq., Wilentz Goldman
Moderator: Kassidy Klink, Peak Environmental
- **March 16, 2022 – Response Action Outcome (RAO) Updates for LSRPs**
(2 Regulatory CECs – LSRPs)
Brandi Gray, LSRP, Langan Engineering & Environmental Inc.
Sonya Ward, LSRP, H2M Architects & Engineering
Candace Baker, LSRP, Langan Engineering & Environmental Inc.
- **March 24, 2022 – Aspiring Professionals Series**
Visual Understanding of Groundwater Contamination
Andrew Cohen, Environmental Resources Management (ERM)
Moderator: Sonya Y. Ward, H2M architects + engineers

Visit [LSRPA.org](https://www.LSRPA.org) for details and registration



Upcoming LSRPA Courses & Events

➤ **March 29, 2022 – Women in Environmental Professions (A Joint Event with NYCBP, BCONE and NJSWEP)**

Schenine Mitchell, USEPA

Ezgi Karayel, vEKtor and NYC Brownfield Partnership

Candace Baker, Langan and LSRPA

Linda Shaw, Esq., Knauf Shaw and NYS Environmental Section of the Bar

Moderator: Lina Rivetti, a NJSWEP Scholarship recipient

➤ **March 31, 2022 – NJDEP Training on Chapter 2 Updates to the Field Sample Procedures Manual**

➤ **April 20, 2022 – Due Diligence in New Jersey** (2 Tech and 2 Regulatory CECs – LSRPs)

Visit [LSRPA.org](https://www.lsrpa.org) for details and registration



Upcoming LSPRA Courses & Events





New Jersey Licensed Site
Remediation Professionals
Association



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Stay connected through lsrpa.org and these social media platforms.





Thank You!

Overview and Pre-Approval Process

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Fill Committee Members

NJDEP

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Carrie McGowan, Kennedy Jenks
Neil Rivers, LSRP, Langan
Brian Montag, Partner, K&L Gates
Kathleen Murray, TERA Inc.



Training Outline

- Overview
- Pre-Approval Process
- Alternative Fill- Offsite
- Alternative Fill On-Site
- Material Considerations – apply to both off-site and on-site alt fill
- Clean Fill
- Fill Use plan/Appendix B Checklist



Overview

- New Fill Guidance Version 4.0 October 2021 replaces Version 3.0 August 2015
- Incorporates the pre-approval process (N.J.A.C. 7:26E contained in Tech Rules revised August 2018)
- Limitation: Fill Guidance only applies to sites under SRWMP oversight (does not apply to construction site or landfills). Be aware of “Dirty Dirt” SW legislation
- This version, similar to prior version, endorses the provisions of the Like-On-Like and 75th percentile – use of alt fill should not make contamination at the site worse
- Use of alt fill must be protective of human health and environment



Pre-Approval - Off-Site Alt Fill

Triggers for written pre-approval for import of **off-site** alt fill –
N.J.A.C. 7:26E-5.2(c) 1 through 3.

Pre-approval required when alt fill:

- 1) Does not comply with Like-On-Like – donor material contains a contaminant not present at receiving AOC.
- 2) Does not comply with 75th percentile of existing contaminants at receiving AOC
- 3) Causes an exceedance of the pre-remediation topography at the receiving AOC



Pre-Approval – On-Site Alt Fill

Trigger for written pre-approval for the relocation of **on-site** alt fill – N.J.A.C. 7:26E 5.2 (d) 2. Pre-approval required:

- If the contaminants in the donor material are not present at the receiving AOC (like-on-like is NOT met) at concentrations above the remediation standards

Pre-approval is NOT required when contaminants in donor material are also present at receiving AOC (like-on-like is met) as per N.J.A.C. 7:26E-5.2(d)1

The relocation of on-site donor material to a clean area of the site is prohibited



Off-Site & On-Site Pre-Approval

- On-site & Off-Site written pre-approval requests must include the information outlined in N.J.A.C. 7:26E-1.7(a) as part of the pre-approval request
- N.J.A.C. 7:26E 1.7(a) requires the following technical information and submission of a variance form:
- Regulatory citation, a description of how proposed variance deviates from regulatory requirement, and rationale for variance and documentation that the variance will:
 - Provide results verifiable and reproducible
 - Achieve the objective of the cited tech requirement
 - Further attainment of the purpose of the specific remedial phase



Off-Site & On-site Pre-Approval

- IMPORTANT: As per N.J.A.C. 7:26E 1.7 (b) 6., the PRCR cannot vary from a requirement to obtain the Dept's prior written approval
- As per N.J.A.C. 7:26E 1.7 (b) 7, the PRCR cannot vary from the requirements of N.J.A.C. 7:26E-5.2 (b) – may not vary from the requirement to obtain pre-approval if not meeting Like-On-Like, 75th percentile, or using alt fill above pre-remediation topography elevations



Pre-Approval Process

Off-Site Alt Fill

The pre-approval process is outlined in Section 4.9 and consist of four steps

- Step 1: conference call – discuss conceptual approach; identify potential major concerns
- Step 2: Technical meeting to discuss approach in more detail. Have concerns in Step 1 been addressed? The “project design” should be complete to the extent that areas to be filled, volumes needed, final elevations, etc. are available. Consult Appendix B checklist



Pre-Approval Process

Off-Site Alt Fill

- Step 3 – Development of Administratively complete Pre-Approval proposal
 - Includes a narrative describing why alt fill is needed to implement the remedial action
 - Include a discussion of how site receiving criterial (like-on-like & 75th percentile) were developed with supporting tables and figures
 - Applicable supporting information listed in Appendix B
 - Public notification as required by ARRCs



Pre-Approval Process

Off-Site Alt Fill

- Step 4 – Pre-approval proposal is submitted to DEP via the ePORTAL as part of a RAW with the pre-approval proposal being a component of the Fill Use Plan
- It should be noted that the submission of Fill Use Plan as part of a RAW is required pursuant to N.J.A.C. 7:26E 5.2 (h)
- The Department anticipates a 45- day review period for **complete** submissions



Use of Alt Fill above Pre-Remediation Topography

- Remediation needs are the primary goal of the use of alt fill. Is the use of alt fill as part of the remedial action described?
- Redevelopment projects requiring alt fill should incorporate design features and strategies to **minimize** alt fill volume to only that required to implement the remedial action
- Use of alt fill up to 100-year flood plain elevation places engineering controls (soil caps, building slabs, parking lots, etc.) above flood elevation



Use of Alt Fill above Pre-Remediation Topography (cont'd)

- Is grading being conducted with existing material to minimize volume of alt fill needed?
- Is alt fill needed to increase grade to meet stormwater/flood hazard requirements?
- Is fill needed to address essential redevelopment features?
- Are there unique construction obstacles or physical hazards driving the need for alt fill?
- PE input – backfill excavation vs. steep slopes, unstable soils, adjacent to water bodies (erosion/wave activity)
- Community acceptance/public notification **



Use of Alt Fill not in Compliance with Like-on-Like

- Use of alt fill with contaminants not already at receiving AOC could constitute a new discharge/de facto landfill
- How many contaminants in donor material do not comply with like-on-like?
- What is the volume of alt fill not in compliance with like-on-like?
- Analytical fraction (VO, Metals, BN)?
- Site-specific; technical justification by LSRP
- Protectiveness



Use of Alt Fill not in Compliance with 75th Percentile

- Use of contaminants in donor alt fill at concentration above the receiving AOCs 75th percentile would make the AOC worse
- Frequency of contaminant the exceeds 75th percentile; magnitude of exceedance
- Site-specific; technical justification by LSRP
- Protectiveness



Community Acceptance & Public Notification

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Community Acceptance & Public Notification

Plan for community and local government concerns about the use of alternative fill

- ARRCs requirements [N.J.A.C. 7:26C-1.7(i and k)]
- Avoid project delays – communicate early!



Community Acceptance & Public Notification

ARRCS [N.J.A.C. 7:26C-1.7(k)]: Public notification is required when the use of alternative fill is subject to NJDEP pre-approval [N.J.A.C. 7:26E-5.2(c)].

Notify:

- Property owners within 200 feet of site boundary
- Local mayor and municipal clerk
- County-designated solid waste coordinator
- County health department and local health agency



Community Acceptance & Public Notification

- Per ARRCs, must include information about:
 - Type of contaminants in the alternative fill
 - Concentrations of contaminants in the alternative fill
 - The proposed use and volume of the alternative fill
 - The controls designed to reduce or eliminate exposure
- Provide Fill Use Plan (FUP), or a simpler format suited to the laymen



Test Your Knowledge

True or False:

Per ARRCs, the type of contaminants in the alt fill must be included in the community acceptance & public notification information.

- A. True
- B. False

Test Your Knowledge

True or False:

Per the ARRCs Rule, the type of contaminants in the alternative fill must be included in the community acceptance and public notification information.

A. True

B. False

Community Acceptance & Public Notification

- ARRCs [N.J.A.C. 7:26C-1.7(i)]: Provide RAWP to local government agencies, when requested
 - Per Technical Regulations [N.J.A.C. 7:26E-5.2(h)]: RAWP must include a Fill Use Plan (FUP) whenever alternative or clean fill will be part of the remedial action



Community Acceptance & Public Notification

Other local and regional boards may have additional requirements.

- Local Planning or Zoning Board
- Highlands Council
- Pinelands Commission
- Meadowlands District



Community Acceptance & Public Notification

Document delivery of FUP/summary letter with FUP submission to NJDEP, including:

- Return receipts or similar evidence of delivery
- Correspondence/municipal resolutions
- Notify NJDEP when FUP changes due to public input



Questions?



Break



Alternative Fill from Off-Site Sources: Sampling and Data Evaluation at the Receiving Site

Rodger Ferguson, LSRP

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Receiving AOC Sampling

- For both on-site and off-site
- Remedial Investigation sampling data
- Should be grab samples
- There is additional guidance on use of composite samples
- Will likely be a non-parametric data set and not normally distributed



General Data Handling

- Consistent handling of non-detected data (if any)
- Appendix A of this Guidance



75th Percentile

Sample No.	Conc. in mg/kg
1	2.2
2	5.3
3	10
4	19
5	21
6	25
7	52
8	612

Where the 75th Percentile is:
=PERCENTILE(B2:B9,0.75)

Mean	93
75th Perc.	32



95th Percent Upper Confidence Limit

- Suitable for determining the receiving site max soil concentrations from the RI data

Requires NJDEP pre-approval



95th Percent Upper Confidence Limit

- Use USEPA's ProUCL (version 5.1)
 - <https://www.epa.gov/land-research/proucl-software>
 - Import from an Excel spreadsheet or copy/paste RI data
 - Limitations on number of discrete results
 - Should be more than 20 samples – but it can work with less
 - Handles non-detected data (i.e., < Method Detection Limit)
 - Does a whole bunch of other cool stuff, too



95th Percent Upper Confidence Limit

- Our example sample set of 56 data points:

18.4	22	359	134	41	25.1	10.8	20.4	13.8	18.1	23.7	115
11.5	13	11.9	13.5	44	75.9	21.1	22.5	27.7	18.9	19.5	19.5
21.2	8.84	6.72	17.8	26.9	25.5	9.49	25	14.9	17.1	23.4	22.8
23.7	41	110	262	12.9	19.1	31.6	13.6	22.2	14.6	10.8	7.39
11.7	15.2	134	21.7	25.3	30.3	17.7	28.2				

- Note that there are no non-detected data



ProUCL v 5.1 Setup

ProUCL 5.1 - [WorkSheet.xls]

File Edit Stats/Sample Sizes Graphs Statistical Tests Upper Limits/BTVs UCLs/EPCs Windows Help

Navigation Panel

Name
WorkSheet.xls

	0	1	2	3	4	5	6	7	8	9	10	11	12
	TMD												
1	18.4												
2	11.5												
3	21.2												
4	23.7												
5	11.7												
6	22												
7	13												
8	8.84												
9	41												
10	15.2												
11	359												
12	11.9												
13	6.72												
14	110												
15	134												
16	134												
17	13.5												
18	17.8												

Log Panel
LOG: 1:49:03 PM >[Information] worksheet.wst created!

To Run ProUCL:

Select:

- Edit
 - Configure Display
 - Full Precision
- Statistical Tests
 - Outliers
- UCLs/EPCs
 - All

Outlier Test

Outlier Tests for Selected Uncensored Variables

User Selected Options									
Date/Time of Computation				ProUCL 5.12/1/2022 2:21:35 PM					
From File			WorkSheet.xls						
Full Precision			ON						
Rosner's Outlier Test for TMD									
Mean			38.8						
Standard Deviation			60.79						
Number of data			56						
Number of suspected outliers			1						
			Potential	Obs.	Test	Critical	Critical		
#	Mean	sd	outlier	Number	value	value (5%)	value (1%)		
1	38.8	60.25	359	11	5.315	3.172	3.528		
For 5% Significance Level, there is 1 Potential Outlier									
Potential outliers is: 359									
For 1% Significance Level, there is 1 Potential Outlier									
Potential outliers is: 359									

95th UCL – Outliers Removed

UCL Statistics for Uncensored Full Data Sets											
User Selected Options											
Date/Time of Computation			ProUCL 5.13/1/2022 4:11:43 PM								
From File			20220301 Appendix A Example.xls								
Full Precision			ON								
Confidence Coefficient			95%								
Number of Bootstrap Operations			2000								
TMD_R6											
General Statistics											
Total Number of Observations					49	Number of Distinct Observations					45
						Number of Missing Observations					0
Minimum					6.72	Mean					20.06204
Maximum					44	Median					19.5
SD					8.31969	Std. Error of Mean					1.188527
Coefficient of Variation					0.414698	Skewness					0.919743

95th UCL – Outliers Removed

Normal GOF Test											
Shapiro Wilk Test Statistic					0.934071	Shapiro Wilk GOF Test					
5% Shapiro Wilk Critical Value					0.947	Data Not Normal at 5% Significance Level					
Lilliefors Test Statistic					0.093411	Lilliefors GOF Test					
5% Lilliefors Critical Value					0.1256	Data appear Normal at 5% Significance Level					
Data appear Approximate Normal at 5% Significance Level											
Suggested UCL to Use											
95% Student's-t UCL					22.0555						

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Questions?



Alternative Fill from Off-Site Sources (cont'd): Sampling at the Donor Site

Amanda Gettelfinger, Research Scientist
Bureau of Environmental Evaluation and Risk Assessment
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Sampling at the Donor Site Area of Concern

Objective: to fully characterize and understand the disposition of alternative fill (uniformity and contaminant concentrations)

- Donor material may be from in-state and out-of-state sources; characterization protocols remain the same for either
 - Should sufficient characterization data exist (i.e., completed Remedial Investigation), sampling may not be required



Sampling at the Donor Site Area of Concern

Characterization

- Frequencies are determined by volume
- Frequencies are independent for each source of donor material
 - Different sites
 - Different AOCs at the same site
- Samples should be biased toward worst-case material concentrations, where possible
- Sample collection should be representative of entire pile/area



Sampling Frequency Modifications

Table 1: Sampling Frequency Guide for Alternative Fill

Two sampling frequencies:

- 1) Default Sampling – generally used for donor material with little or no prior characterization data.
- 2) Reduced Sampling – used where there has been some prior assessment of the fill source (PA/SI, RI, RA). Justification for use of the reduced frequency required.

Note: Further reductions beyond the reduced frequency are permitted. Further reductions require adequate technical justification. Consultation with the Department prior to fill importation is highly recommended.



Analytical Requirement Modifications

- Default analytical requirements
 - TAL/TCL+30 and EPH
- Modifications – technical justification required (better existing data = more justification for modified analytical)
 - PA/Site review and/or existing data (SI, RI, data from Office of Dredging and Sediment Technology (ODST), etc.). Note that all other requirements of Tech Regs required to be met



Composite Sampling

- Acceptable uses of composite data
 - For dredged material data obtained to support ODST (supplemental data may be needed to meet Fill Guidance e.g., analyses, frequencies, discrete sampling)
 - As a supplement to discrete sampling requirements listed in Table 1, or to reduce the quantity of discrete samples required to characterize fill



Provisions for Use of Composite Data

Per Section 4.5.1:

1. A minimum of 70% of donor material volume should be characterized using discrete sampling, per Table 1
2. The volume of donor material that a composite sample represents should not exceed a volume greater than 5 times a discrete sample volume per Table 1
3. The composite sample should not be comprised of more than 5 discrete sub-samples of equal sample weight



Provisions for Use of Composite Data (cont.)

4. Composite sampling should be implemented such that samples are collected throughout the donor material to ensure the entire volume is adequately characterized
5. The donor site composite sample data should be compared to the receiving AOC *arithmetic mean*, and not the 75th percentile



Provisions for Use of Composite Data (cont'd)

6. If the composite data for a specific volume of donor material exceeds the applicable acceptance criteria, the entire volume of donor material associated with the composite sample should be rejected for use at the receiving AOC

Detailed example provided in Appendix D



Considerations for the Use of Composite Data

- The donor site/AOC should be well characterized
- A scaled site plan of composite sample location should be included in the Fill Use Plan
- Sampling methodologies should be in accordance with the Field Sampling Procedures Manual and data should be of known quality
- Composite samples are not acceptable for VOC characterization



Appendix D – Composite Sampling

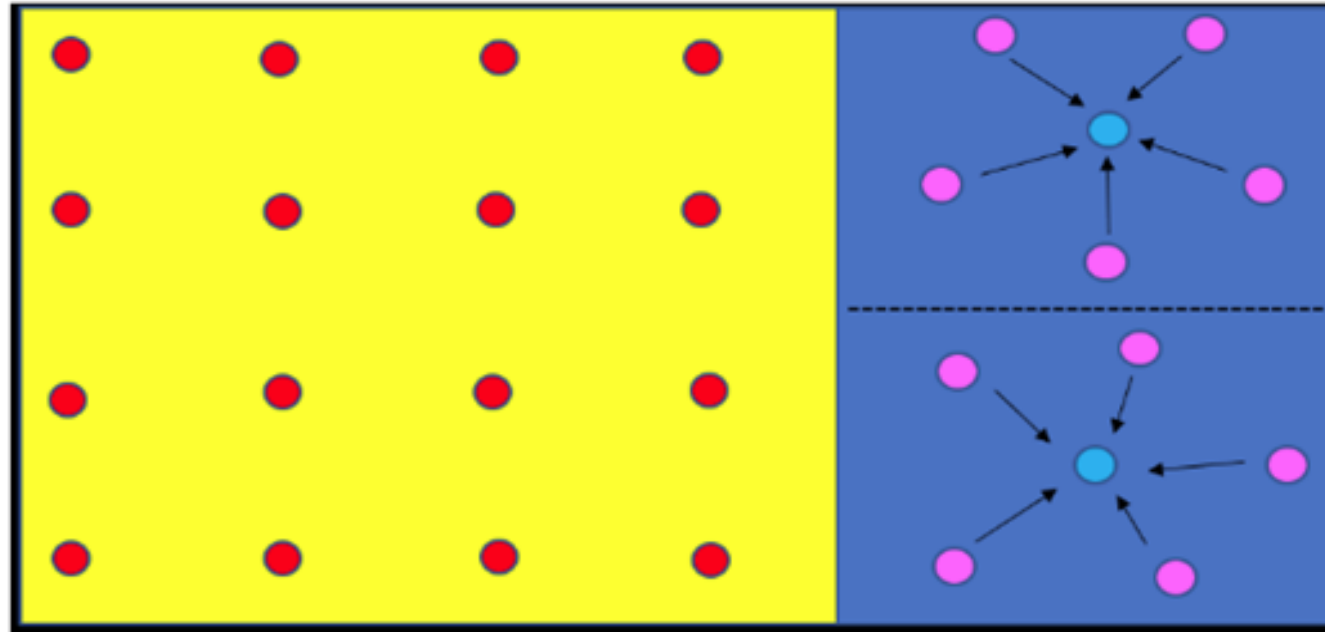
- Example: 10,000 cubic yards of donor material for characterization
 - 24 discrete samples would be required to characterize a 10,000 cubic yard pile, per Table 1
 - To implement composite sampling, per section 4.5.1, discrete samples should represent at least 70% of the samples listed in Table 1. $(0.7 \times 24) = 16$ discrete samples should be collected over 70% of the volume
 - Composite samples maybe used to characterize the remaining 30%



Appendix D – Composite Sampling

Red dots

represent discrete samples (16) characterizing the 7,000 yd³



Pink dots

represent the sub-samples that make up the composite sample

Blue dots

represent the 2 composite samples characterizing the remaining 3,000 yd³

Composite Sampling Approach

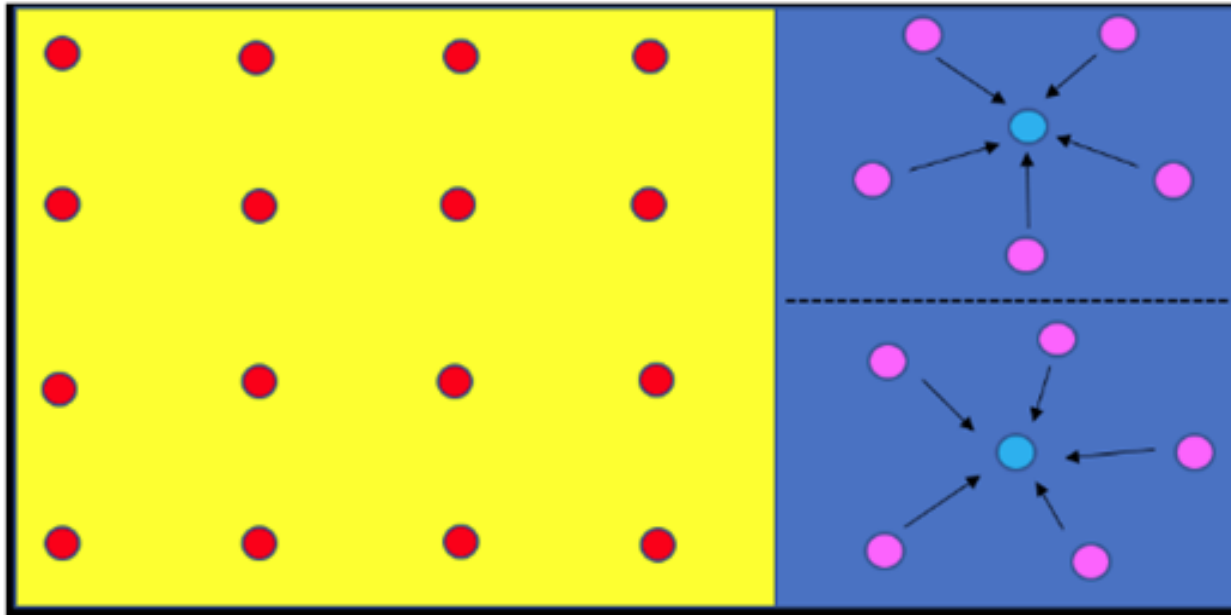
Total Stockpile Area = 10,000 yd³

Yellow area (70%) = 7,000 yd³

Blue area (30%) = 3,000 yd³



Appendix D – Composite Sampling



Composite Sampling Approach

Total Stockpile Area = 10,000 yd³

Yellow area (70%) = 7,000 yd³

Blue area (30%) = 3,000 yd³

In a sampling scheme where composite samples will be used to characterize a portion of a 10,000 yd³ pile, each composite sample should represent no more than 2,080 yd³.

A composite sample should not be comprised of more than 5 sub-samples. Each sub-sample should not represent more than 416 yd³.

$$5 \times 416 = 2,080$$



Appendix D – Composite Sampling

Reminders

- Composite sample data should be compared to the receiving AOC's mean
- If composite sample exceeds the AOC's mean, volume represented by composite sample must be eliminated for consideration as donor material



Alternative Fill from Off-Site Sources (cont'd): Migration to Ground Water Pathway/ Donor Material

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Migration to Ground Water and Surface Water Evaluation for Off-Site Sources

- Donor material < MGWSRS
 - No further evaluation needed
 - May be used as alternative fill provided in compliance with other standards, criteria, or screening levels



Migration to Ground Water and Surface Water Evaluation for Off-Site Sources

- Donor material $\geq$ MGWSRS
 - Evaluate using Synthetic Precipitation Leaching Procedure (SPLP) for MGW
 - SESOIL and Immobile Chemicals methodologies not applicable
 - Use of SPLP generates site-specific ARS which requires submission of ARS form



Migration to Ground Water and Surface Water Evaluation for Off-Site Sources

- The finding of no ground water contamination at the donor AOC cannot be used as the sole basis for assuming no migration to ground water at the receiving AOC
- MGW evaluation applies to alternative fill obtained from both the saturated and unsaturated zones - saturated fill may be placed above the water table at the receiving AOC



Migration to Ground Water and Surface Water Evaluation for Off-Site Sources

Alternative Remediation Standards Technical Guidance for Soil and Soil Leachate for the Migration to Ground Water Exposure Pathway

https://www.nj.gov/dep/srp/guidance/srra/ars_migration_to_gw_guidance.pdf

Alternative or Interim Remediation Standard and/or Screening Level Application Form

https://www.nj.gov/dep/srp/srra/forms/alt_soil_remediation_standard_application.pdf?version_2_4



Alternative Fill from Off-Site Sources (cont'd): Materials Considerations PCBs

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PCBs in Alternative Fill

- Per *Coordination of NJDEP and USEPA PCB Remediation Policies* document (found in Site Remediation Guidance Library), importation of fill material with >1 mg/kg PCBs is prohibited
- On-site movement of PCB material >1 mg/kg between AOCs acceptable per like-on-like and 75th percentile requirements



PCBs in Alternative Fill

PCBs in crushed concrete for on-site reuse

- Must meet like-on-like and 75th percentile requirements
- Toxic Substances Control Act (TSCA) requirements apply to concentrations >1 mg/kg



Test Your Knowledge

TSCA requirements apply to concentrations of PCBs greater than:

- A. 10 mg/kg
- B. 1 mg/kg
- C. 3 mg/kg
- D. 20 mg/kg

Test Your Knowledge

TSCA requirements apply to concentrations of PCBs greater than:

- A. 10 mg/kg
- B. 1 mg/kg**
- C. 3 mg/kg
- D. 20 mg/kg

PCBs – Other Issues

- For PCBs exceeding 50 mg/kg, contact the Department for guidance
- TSCA trigger for PCBs as bulk remediation waste is 1 mg/kg. If PCBs at the site exceed 1 mg/kg from a post 1978 discharge, or > 50 mg/kg from any discharge, then TSCA is applicable



Questions?



A-901 License, Beneficial Use Determinations (BUDs) & Acceptable Use Determinations (AUDs)

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Bureau of Solid Waste Permitting

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A-901 Applicability

- “Dirty Dirt” Law
 - On 1/21/20, new “Dirty Dirt” law requires those providing soil and fill recycling services to obtain A-901 license
 - NJDEP is developing regulations regarding the law but in the interim is interpreting the law to provide certain exemptions including work done by LSRPs
 - Guidance and FAQs about the law are available on NJDEP website (www.nj.gov/dep/dshw)



A-901 Applicability of Soil & Fill Recycling Services

A-901 License Not Required for LSRPs

- As long as a LSRP or a Certified Subsurface Evaluator (SSE) is retained to provide overall management and oversight of a site remediation project that is being conducted pursuant to either ARRCs, N.J.A.C. 7:26C, and the Technical Requirements, N.J.A.C. 7:26E, or the Heating Oil Tank System Remediation Rules, N.J.A.C. 7:26F, that LSRP or SSE does not need an A-901 license to manage the solid and hazardous waste from that site



Beneficial Use Determinations (BUDs)

- Clean or alternative soil and fill recyclable materials as defined in the Dirty Dirt Law (such as soil, concrete, brick & block) may be used as fill and be in compliance with solid waste regulations without needing to obtain CAO/BUD as long as its use is approved by the receiving site's LSRP
- If a fill material exceeds the Remediation Standards and does not meet the definition of "soil and fill recyclable materials" in the Dirty Dirt Law, then a BUD is required

See Section 3.9 of the Alt Fill Guidance



Acceptable Use Determination (AUD)

- AUDs Required for Dredged Material and Processed Dredged Material (PDM) (see Alt. Fill Guidance section 3.9)
 - Dredged material and PDM do not require CAO/BUD from the Solid Waste Program but do require an AUD from the Department's Office of Dredging and Sediment Technology for the donor source



Material Considerations

RCRA

Dredge Materials

Historic Fill

Dioxin

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Material Considerations

- RCRA Waste
 - Only nonhazardous material can be used at a receiving AOC. Use of hazardous waste fill material is prohibited (N.J.A.C. 7:26E-5.2(f) and a variance is not allowed (N.J.A.C. 7:26e-1.7(b)8). When contaminant concentrations are substantially elevated, TCLP may be necessary for evaluation and determination.
- Dredge Material
 - Dredged material (DM), including processed DM (PDM) is evaluated the same as other fill sources. Data for evaluation can be used from a completed SI/RI and/or NJDEP's ODST. Further supplemental sampling and analysis may be needed.
 - Note: DM supplier must have an AUD from ODST. The receiving AOC does not need an AUD, but a final RAWP for the receiving site is required by ODST for fill placement.



Material Considerations

- Historic Fill
 - Historic Fill (HF) defined by N.J.A.C. 7.26E-1.8 may be used as alternative fill
 - Characterization is needed
 - MGW evaluation is needed if donor AOC has contaminated GW. SPLP may be needed to confirm if contaminant levels are high (Section 4.6)
- Dioxin
 - Dioxin sampling is only required if donor material is suspected to be contaminated with dioxins (the Site or donor AOC is contaminated or within a migration pathway)



Material Considerations Asphalt Millings

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Asphalt Millings

Applicable to areas defined as AOC

- Use as Engineering Control - Asphalt millings permitted as component of engineering control at an AOC at an SRP site:
 - As a sub-base aggregate under roads, parking lots or building/slabs foundations and sidewalks
 - As an unbound surfacing material if an appropriate additive is utilized to stabilize and contain the asphalt millings
- Use as Alternative Fill - Provided it is like-on-like, 75th percentile, and MGW evaluation



Asphalt Millings

- Non-AOC Areas:
 - 2018 “Recycled Asphalt Pavement” (RAP) Legislation
 - NJDOT RAP Study
 - Allowable Unbound RAP Uses:
 - Quarry reclamation
 - Base/Sub-base materials
 - Surface materials
 - Uses of asphalt millings that are outside of the purview of the SRP, but do not meet the standards specified in the legislation, would be subject to review and approval by the Division of Sustainable Waste Management



Questions?



Break



On-Site Movement of Alternative Fill

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Alternative Fill from On-Sites Sources

Identical Elements from Off-Site Sources

- Sampling
 - Default sampling, reduced sampling frequency w/ justification, composite sampling
- Material considerations



Movement of On-Site Alternative Fill without Pre-Approval

- Pursuant to N.J.A.C. 7:26E-5.2(d)1, alternative fill from an on-site source may be moved without prior written approval from the Department provided that the individual contaminants present in both the alternative fill and receiving area of concern at concentrations above applicable remediation standards. (Like-on-Like is being met)
- The Department will allow exceptions to the 75th percentile requirement if all four of the following requirements are met:
 - Consolidation will not result in or increase of GW contamination
 - Consolidation will not result in creation of VI pathway
 - Alt fill does not contain hazardous waste
 - Alt fill does not contain any free liquid



Test Your Knowledge

True or False:

The Department will allow exceptions to the 75th percentile requirement as long as four requirements are met:

- A. True
- B. False

Test Your Knowledge

True or False:

The Department will allow exceptions to the 75th percentile requirement as long as four requirements are met:

A. True

B. False

Movement of On-Site Alternative Fill with Pre-Approval

- Movement of alt fill to a clean area of the site is prohibited
- Department may allow on-site movement exceptions to the LOL and 75th percentile, but pre-approval and technical justification is required, as per N.J.A.C. 7:26E-5.2(d)2
- Department may allow exceptions to the LOL and 75th percentile if the prior four requirements for without preapproval are met, and the additional conditions:
 - **Clean area is created** that meets both residential ingestion-dermal and inhalation, and MGW standards at the donor AOC by the movement of alt fill to the receiving AOC

AND

- **Total area of contamination is reduced** by 25% in the areal extent of contamination at the donor AOC



Exceptions for 75th Percentile and Movement of Historic Fill at SRP Redevelopment Sites

- Special consideration is given for historic fill relocation across property lines are given to SRP redevelopment sites that include multiple contiguous properties containing historic fill (i.e., Brownfields Redevelopment Area)
- Sampling at both donor and receiving areas are required and HF should be investigated at a sampling frequency of 4 samples per acre as outlined in the Historic Fill Technical Guidance
- Onsite historic fill movement can be performed following:
 - Donor and receiving areas meet the like-on-like requirement. If LOL is not met (7:26E-5.2(b)1, pre-approval is required pursuant to N.J.A.C. 7:26E-5.2(c)
 - It will not result in, or increase, ground water contamination
 - Placement of historic fill is protective of public health, safety, and the environment
 - All historic fill at the site is remediated in accordance with the Tech Rules



FAQs

- Can I deviate from 75th percentile for onsite movement?
 - Yes.
 - If you are moving alt fill to a receiving area that meets the LOL, then no pre-approval is necessary
 - If LOL is not met, then pre-approval is necessary and the two conditions below are required:
 - Clean area is created
 - Total areal extent of contamination is reduced by 25% at the donor AOC



Clean Fill

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Clean Fill Definition

"Clean fill" means material to be used in a remedial action that meets all soil remediation standards, site-specific alternative standards, or site-specific interim standards, does not contain extraneous debris or solid waste, and does not contain free liquids. This also includes any material that meets all criteria or action levels for contaminants without standards, available on the Department's website at www.nj.gov/dep/srp. This material can be soil or non-soil.



Clean Fill

Similar Elements from Alternative Fill

- Sampling
 - Default sampling, reduced sampling frequency w/ justification (Table 2)
 - Composite sampling
- Material Considerations
 - Elevated Natural Background Consideration. Like on like still applies
- MGW
 - MGW evaluation should not be needed, but if donor material concentrations are above applicable SRS MGW, then an evaluation is needed



Quarry Materials

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Quarry Materials

Certified Quarry/Mine Materials

- “Certified” quarry/mine material delivered to a site undergoing remediation may be relied upon by the investigator for the purpose of issuing a Response Action Outcome (RAO) without sampling
- Certification must be prepared by an “authorized” quarry/mine under applicable state law, e.g., NJDOL, NYSDEC, PADEP



Quarry Materials

- Only “licensed” quarry/mining material may be certified, which includes sand, gravel, or rock:
 - Excavated from undisturbed geologic formations;
 - Not located on or impacted by other contaminant sources;
 - Not comingled with any other material;
 - Not known or suspected of being contaminated;
 - Not adversely impacted by discharges of hazardous materials or chemical application;
 - Not affected by conditions or processes that would result in the introduction of contaminants into the licensed quarry/mine material in concentrations above regulatory concern;
 - Not affected by conditions or processes that would increase the concentrations of contaminants already present in the licensed quarry/mine material to concentrations above regulatory concern



Quarry Materials

- The investigator should review the certification, which should indicate the source of the delivered licensed quarry/mine material and state that the licensed quarry/mine material has not been subject to a discharged hazardous substance at any time
- Sand, gravel, or rock from unauthorized quarries/mines or from authorized quarries/mines without a certification need to be evaluated according to Section 6 of the guidance to demonstrate successful compliance with the definition of clean fill set forth in the Technical Rules at N.J.A.C. 7:26E-1.8



Quarry Materials

- Certification of quarry/mine material does not preclude testing by an investigator or other interested party
- The investigator shall document the description, quantity, and location (address and contact information) of the quarry/mine material in the RAR (or other applicable key document) by providing a copy of the quarry/mine material certification and all supporting documentation



Questions?



Fill Use Plan

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Fill Use Plan

NJDEP continues to receive FUPs that are well short of NJDEP requirements and expectations

- NJDEP will not review incomplete FUPs
- The FUP is not just a materials acceptance protocol
- When departing from guidance, provide the technical rationale supporting LSRP's application of professional judgment



Fill Use Plan

Appendix B outlines information required for FUP

- Identifies FUP components when using Alternative Fill, Clean Fill, and Quarry/Mine material
 - Includes a submittal checklist for Alternative Fill FUPs
- If items are not applicable, say so in FUP
- If information about the donor site is not yet known, it should be provided in the RAR



Fill Use Plan - Reminders

Provide cut and fill calculations that:

- Support the volume of Alternative Fill needed
- Demonstrate that the planned volume of Alternative Fill is no greater than is needed for the remedial action



Fill Use Plan - Reminders

Include grading plans depicting current and planned final elevations

- Identify FEMA 100-year flood elevation
- Clearly identify boundaries of the receiving AOC



Fill Use Plan - Reminders

Demonstrate compliance with like-on-like and 75th percentile/95% UCL criteria

- Provide laboratory data and sorted spreadsheets
- From both donor site (if known) and receiving AOC



Fill Use Plan - Reminders

Consultation with PE is encouraged, where needed

- Grading plans, flood elevations
- Geotechnical suitability, slope stability
- Cap design, suitability for future use
 - Also consider NJDEP's Capping Guidance



Fill Use Plan - Reminders

Provide NJDEP with documentation of public notification

- Demonstrate delivery of FUP/summary letter
- Notify NJDEP when the FUP changes due to public input



Independent Professional Judgement

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Independent Professional Judgement

SRRA at §14C created the hierarchy of:

- NJ Statute
- NJDEP Regulation
- NJDEP Guidance
- Other Guidance including
 - USEPA or other states
 - “other relevant, applicable, and appropriate methods and practices”

See: N.J.A.C. 7:26I-6.3 Professional Competency



Independent Professional Judgement

Document, Document, Document!

- SRRA requires it in the next key document
- Submissions should include:
 - Clear Table of Contents & Section Headings
 - Provide Detailed information – the Reviewer Does Not Know Your Site
 - Provide multiple lines of evidence – including exculpatory evidence
 - Submit copies of previous submittals or sections of submittals if relevant to your conclusion



Common Questions

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Common Questions

Does the source of donor material have to be identified as a component of the Fill Use Plan?

- No, the DEP understands that the availability of fill material varies from “day to day.”
- However, the identification of the receiving AOC/boundaries, the contaminants present and their 75th percentile (receiving criteria), volume estimates, elevation limits (100 yr flood plain), etc. do need to be documented in the Fill Use Plan
- The sources of the fill material, final volumes, sampling data used to show compliance with receiving criteria, final as-built engineering plans, shipping manifests, etc. need to be submitted with RAR



Common Questions

Can off-site alternative fill be imported and utilized across entire site?

- Fill Guidance is based on the importation of alt fill and use at a *Receiving AOC*. If entire site is deemed an AOC (i.e., historic fill), then *YES*, alt fill can be use site wide
- Limited sampling data is often associated with Historic Fill as an AOC. Additional sampling may be required to adequately characterize the historic fill across the entire site to identify the contaminants present (Like-On-Like) and their concentrations (calculation of 75th percentile)



Common Questions

When evaluating topsoil data for a Site, should the Investigator utilize the May 2021 SRS or the site-specific standards established in the RAW and FUP?

- The May 2021 Remediation Standards established the “lock in,” except for an order of magnitude change, if a RAW or RAR was submitted before November 17, 2021
- See N.J.A.C. 7:26D-1.4(b)3



Common Questions

When evaluating a source of clean fill, can averaging of sampling data be utilized for compliance with the SRS? For example, if an adequately characterized soil stockpile exhibits low-level exceedance(s) (i.e., less than an order of magnitude above its standard) of a compound, can this exceedance be averaged over the dataset for the stockpile?

- Averaging cannot not be used to address these exceedances



Common Questions

- Soil sample results containing contaminant(s) above the most stringent SRS, and the volumes of soil associated with those samples, does not meet the definition of clean fill and should not be brought to the site
- The material that doesn't meet the definition of clean fill (N.J.A.C. 7:26E-1.8) cannot be brought to the site as clean fill
- Professional judgement can be used to determine which of the soil is clean or has exceedances, but not for averaging



Questions?



Historically Applied Pesticides

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HAP Committee Members

NJDEP

- Chris Dwyer Co-Chairperson (retired)
- Lynne Mitchell Chairperson
- Kevin Schick
- Ray Strassler
- Kathy Kunze (retired)
- Jeff Griesemer (retired)

Stakeholders

- Joe Sorge, J M Sorge, Inc.
- Neil Rivers, Langan Engineering and Environmental Services
- Rohan Tadas, Environmental Resolution Inc.
- Carrie McGowan, Kennedy Jenks
- Rich Lake, Geo-Technology Associates, Inc.
- Kathleen F. Stetser, GEI Consultants
- Barbara J. Koonz esq. Greenbaum, Rowe, Smith and Davis LLP



Section 2.0 What is HAP?

Historically Applied Pesticide(s)

- Includes arsenic, lead, DDT (and its metabolites, DDE and DDD), dieldrin, aldrin and chlordane
- Persistent in the environment
- Have not been widely used in many years

















What HAP is Not...

- HAP is not a historic pesticide mixing area or spill
- HAP is not a new or recent pesticide discharge

Additional information on how to identify areas of concern can be found in the ***Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling for Soil***, available at:

http://www.nj.gov/dep/srp/guidance/#si_ri_ra_soils



HAP Guidance Document

The HAP guidance document gives extra tools to investigate and remediate HAP:

- When to sample
- Functional areas
- Background investigations
- Remedial options - blending



Who has to Investigate?

If site use is changing to **school, childcare center, residence or playground**, HAP must be investigated and remediated using all relevant Regulations and Guidance (pursuant to N.J.A.C. 7:26C and N.J.A.C. 7:26E)

Otherwise, you do not need to investigate for HAP



Who Must Remediate?

If sampling results indicate HAP is present and exceeds applicable standards:

- Must remediate (pursuant to N.J.A.C. 7:26C and N.J.A.C. 7:26E)

OR

- May defer remediation at active agricultural or golf courses properties, until property is no longer used for agricultural purposes or as a golf course



What Standards Should be Used?

Compare soil sample results to the Soil Remediation Standards for the Ingestion/Dermal Exposure Pathway and the Soil Remediation Standards for the Inhalation Pathway

NOT

Soil Remediation Standard for the Migration to Ground Water Exposure Pathway (SRSMGW)

Note: SRSMGWs should only be used when determining if a ground water investigation is recommended



When Should a Ground Water Investigation be Conducted?

A ground water investigation is recommended when:

- Potable wells exist or will be installed at the site;
- HAP exceeds the **SRSMGW** and intersects the water table; or
- HAP are above the Soil Remediation Standards for the Ingestion/Dermal Exposure Pathway and the Soil Remediation Standards for the Inhalation Pathway within 2-feet of GW table, and not on the immobile chemicals list



On What Should the Functional Area be Based?

Base the horizontal functional area on:

- Patterns in the data
- The configuration of historic crop areas
- No limitations on the shape or size of the functional area (not based on future site use)
- Data from uncontaminated areas should not be included when compliance averaging



HAP Deferral Process and RAO Guidance

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When to Defer HAP

- Use the HAP Deferral form only for agricultural properties that will continue to operate as an agricultural property, or at golf courses that will continue to operate as golf courses
- HAP Deferral applies to sites when HAP is the only remaining AOC
- Other AOCs with sample results above standards should use the SI/RI/RA guidance documents to remediate prior to submission of the HAP Deferral Notice



When to Defer HAP

- HAP contaminated soil can be moved to another part of a site that will remain as an active golf course or for agricultural use
- Any soils moved to another part of a site that will not remain active will require a Deed Notice

As a reminder do not use the HAP Deferral Form for any other type of contamination



How to Defer HAP

- The investigator must report the presence of HAP constituents to the Department's Hotline
- The LSRP must submit a Confirmed Discharge Notification form
- The LSRP must submit the annual remediation fee, if not already done, using the Annual Remediation Fee online system



How to Defer HAP

- The LSRP must file the “Historically Applied Pesticides Notice” found in Appendix F of the HAP Guidance with the county clerk’s office
- Once the HAP Notice has been filed, then the HAP Deferral Request Form can be submitted to BCAIN



How to Defer HAP

- The annual remediation fee will continue to be assessed until the completed HAP Deferral Request Form is received by the Department
- Once received the remediation of HAP and the annual remediation fees are put on hold until the deferral is terminated



Termination of a HAP Deferral Filing

- When the use of the property changes, then remediation of the property is required
- The Termination of the HAP Notice Form should be filed in accordance with the model termination found in Appendix G of the HAP Guidance at the latest when remediation is completed
- The HAP Deferral form is also to be submitted when terminating a previously filed HAP Deferral

☐ Check here if you are submitting this form to terminate a previously filed HAP Deferral.

(If checked, a copy of the NJDEP's Termination Letter must be submitted with this form)



Response Action Outcome (RAO)

There are three scenarios in which to address HAP in an RAO:

- HAP is suspected at the site but **Not Investigated**
- HAP **Is Investigated** at a site. An RAO is being issued for other AOC(s) at the HAP site, or HAP is being Deferred and the site will remain in-use as an agricultural facility or golf course
- HAP is investigated and remediated



Historically Applied Pesticide Not Addressed Notice

- The Historically Applied Pesticides Not Addressed notice should be used anytime pesticides may have been historically applied at a site, but were **not investigated** as part of the remediation
- Don't use this Notice where the manufacturing, mixing, or other handling of these chemicals resulted in a discharge



Test Your Knowledge

True or False:

Use the notice “HAP Not Addressed” when the manufacturing, mixing, or other handling of these chemicals resulted in a discharge.

- A. True
- B. False

Test Your Knowledge

True or False:

Use the notice “HAP Not Addressed” when the manufacturing, mixing, or other handling of these chemicals resulted in a discharge.

A. True

B. False

Historically Applied Pesticide Not Addressed Notice

- The HAP Not Addressed Notice cannot be used if analytical data identify pesticides exceeding standards during any phase of the investigation
- This Notice cannot be used for properties going through a change of use to residences, schools, childcare centers, and/or playgrounds

For RAO-E only

Not appropriate for RAO-A without a completed PA



Known Onsite Contamination Source Not Yet Remediated

As with any other contamination at a site that will remain, the following RAO Notice should be used:

Known Onsite Contamination Source Not Yet Remediated

- When being deferred under section 5
- When HAP will remain an open AOC

An RAO should **not** be issued if HAP is being deferred
and

is the **only** AOC presently being investigated at the site



Questions?



Thank You

<https://www.surveymonkey.com/r/RVW732V>

