

# **Soil and Ground Water Biennial Certification Forms and Instructions Training**

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

Christina Page, Co-Moderator  
Training Committee, Chair



# Continuing Education Credits (CECs)

SRP Licensing Board **has not yet approved**  
**3.5 Regulatory CEC**  
for this Training Class

## 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 HAS NOT 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*



# CECs: What's the Process?

**Since the SRPL Board Has NOT approved CECs for the course...**

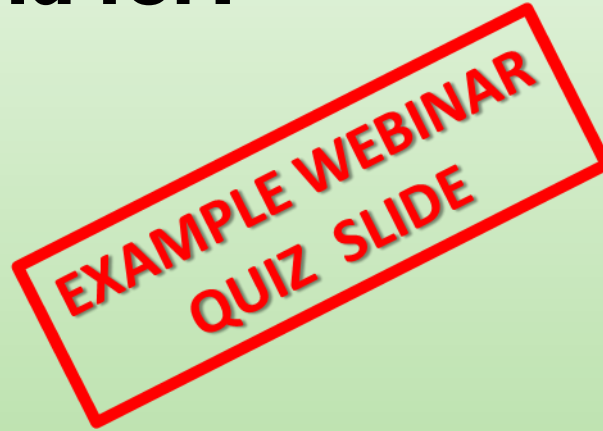
The certificate process will occur **AFTER** the course has been approved by the SRPL Board



# Test Your Knowledge

**What does the acronym BRAP stand for?**

- A. Brainy Really Active Professionals
- B. Bears Revolt Against People
- C. Bureau of Remedial Action Permitting



# Test Your Knowledge

**What does the acronym BRAP stand for?**

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# Question and Answer Segments

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



# Chat Function

- Please use the chat function 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/7WHTKYL>





**NJDEP Soil and Ground Water Remedial Action  
Protectiveness/Biennial Certification Forms  
and Instructions Training  
July 14, 2021**

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## NJ Licensed Site Remediation Professionals Association

Thank You to Our Partners

### —◆◆— Diamond Partners —◆◆—



### —◆◆— Platinum Partners —◆◆—



### —◆◆— Academic Institution Partner —◆◆—



## Gold Partners





Silver Partners





# Upcoming LSRPA Courses, Events & Initiatives

- **July 20, 2021 – Member Regulatory Roundtable** (.5 Reg/1 Tech CECs)  
**Fill Material Guidance for SRP Sites**  
Rodger Ferguson, LSRP, PennJersey Environmental Consulting
- **August 5, 2021 – 2021 Standards Rule: Issues and Application** (1 Reg/1 Tech CECs)  
Candace Baker, LSRP, Langan Engineering and Environmental  
Michael Gonshor, LSRP, Roux Associates  
Brandi Gray, LSRP, Langan Engineering and Environmental  
Scott Drew, LSRP, Geosyntec Consultants
- **September 15, 2021 – PCB Remediation: What Environmental Practitioners Should Know** (1 Reg/2 Tech CECs)  
Keith Gagnon, LSRP, LSRP Consulting LLC  
Rodger Ferguson, LSRP, PennJersey Environmental Consulting





# Upcoming Event

**SAVE THE DATE- JULY 22, 2021**

LSRPA, AEG-NYP, AHMP-NJ, BCONE, and NJSWEP are hosting a joint networking event!  
Established and aspiring professionals from our organizations are welcome.  
Sponsored by AWT, Mount Group & SGS North America, Inc.



Please Join Us in the Capital City Club Suite!  
Trenton Thunder- Home of the Triple-A Buffalo Bisons 2021 Season  
1 Thunder Road, Trenton, NJ 08611  
July 22, 2021  
Gates Open @ 6pm, First Pitch @ 7pm  
Tickets \$40/Person - Food & First Drink Are On Us!  
\$5 Parking Available

For more information/questions about the event contact:  
Ken Haduch | 609-403-7514 | [ken.haduch@erm.com](mailto:ken.haduch@erm.com)







# Upcoming Event



## BATTLE AT THE BEACH! CORNHOLE TOURNAMENT



**August 26**  
**4pm – 9pm**  
**Jenkinson's North**

3 Broadway, Point Pleasant Beach, NJ

• Barbecue • Bar • Networking • Fireworks •

**CHARITY CORNHOLE  
TOURNAMENT,  
NETWORKING &  
FIREWORKS**

### **TICKETS**

\$120 per player (member team)

\$140 per player (non-member team)

"Two players per team"

### **SPONSORSHIP OPPORTUNITIES AVAILABLE**

Register early. Due to limited  
availability this event is  
expected to sell out quickly.

### **SPONSORS**

Jenkinson's

WARD Boards

Your company name could be  
here!

**REGISTER AT [LSRPA.ORG](http://LSRPA.ORG)**

Proceeds Benefit:





# Upcoming Event

**Save the Date**  
OCTOBER 7, 2021  
Mercer Oaks  
West Windsor, NJ

**LSRPA & NJSWEP**

HOSTS  
**6th**  
ANNUAL

**GOLF & NETWORKING  
EVENT**

PROCEEDS TO  
BENEFIT THE  
LSRPA & NJSWEP  
SCHOLARSHIP  
FUNDS  
For more information,  
please visit [lsrpa.org](http://lsrpa.org)  
or [njswep.org](http://njswep.org)

  **Society of Women  
Environmental  
Professionals**  
NEW JERSEY CHAPTER

During this time of the COVID-19 pandemic, we will be following CDC guidelines and NJ Executive Orders at this event, including practicing social distancing and using face coverings when necessary to protect health and safety.





New Jersey Licensed Site  
Remediation Professionals  
Association



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Licensed Site  
Remediation  
Prof Assoc

@NJLSRPA

**Stay connected through [lsrpa.org](http://lsrpa.org) and these social media platforms.**







**Thank You!**

# Introduction

Gary Sanderson, Chief  
Bureau of Remedial Action Permitting  
[gary.sanderson@dep.nj.gov](mailto:gary.sanderson@dep.nj.gov)



# Members of the Committee

## DEP

- Mike Gaudio, Chair
- Marty Goodwin
- Rob Hoch
- Mike Infanger
- Dave Miele
- Lynne Mitchell
- Gary Sanderson
- Ryan Stubits
- Adam Tomasik

## STAKEHOLDERS

- Caryn Barnes
- Julian Davies
- John Engdahl
- Mark Fisher
- Bill Hose
- Rayna Laiosa
- Rich Lake
- Neil Rivers
- Kathi Stetser



# Thank you



# General Changes

Lynne Mitchell, Assistant Director  
Remediation Review Element



[Lynne.Mitchell@dep.nj.gov](mailto:Lynne.Mitchell@dep.nj.gov)

609-649-0635



# Updated Form Header

1. Updated DEP logo
2. Removed LSRP/Subsurface Evaluator checkboxes
3. Changed Name of Form from "Remedial Action Protectiveness/Biennial Certification Form – Ground Water" to "Ground Water Remedial Action Protectiveness/Biennial Certification Form"\*

	<b>New Jersey Department of Environmental Protection</b> Site Remediation and Waste Management Program <b>REMEDIAL ACTION PROTECTIVENESS / BIENNIAL CERTIFICATION FORM – GROUND WATER</b> <input type="checkbox"/> LSRP <input type="checkbox"/> Subsurface Evaluator (UHOT)
	<b>New Jersey Department of Environmental Protection</b> Site Remediation and Waste Management Program <b>GROUND WATER REMEDIAL ACTION PROTECTIVENESS/ BIENNIAL CERTIFICATION FORM</b>

\* Similar change of name on all soil forms



# Section A

## Site Name and Location

1. Changed "Case Tracking Numbers" to "Ground Water Remedial Action Permit (RAP) Number"
2. Removed "Municipal Block and Lot Numbers of the entire Site"

### SECTION A. SITE NAME AND LOCATION

Site Name: \_\_\_\_\_  
List all AKAs: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
Municipality: \_\_\_\_\_  
County: \_\_\_\_\_  
Program Interest (PI) Number(s): \_\_\_\_\_  
Case Tracking Number(s): \_\_\_\_\_  
Municipal Block and Lot Numbers of the entire Site: \_\_\_\_\_

### SECTION A. SITE NAME AND LOCATION

Site Name: \_\_\_\_\_  
List all AKAs: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
Municipality: \_\_\_\_\_  
County: \_\_\_\_\_  
Program Interest (PI) Number(s): \_\_\_\_\_  
Ground Water Remedial Action Permit (RAP) Number: \_\_\_\_\_





# Section B

## Fees

- Added: “Have all outstanding Ground Water RAP annual fees been paid?” to first option
- Second option reworded, added the fees for before and after the fiscal year
- Included a note referring user to Compliance Notice

### SECTION B. FEES

- ☐ Ground Water Remedial Action Protectiveness/Biennial Certification Form for a Ground Water RAP .....(No Fee)  
Have all outstanding Ground Water RAP annual fees been paid?..... ☐ Yes ☐ No

- ☐ Post-NFA Cases (Sites without a Ground Water RAP): Ground Water Remedial Action Protectiveness/Biennial Certification Form

**Note:** A Ground Water RAP Initial Application is required to be submitted with this form. Please see the Compliance Notice: Post-NFA cases requiring remedial action permits, which includes the fee breakdown:  
[https://www.nj.gov/dep/srp/enforcement/post\\_nfa\\_compliance\\_notice.pdf](https://www.nj.gov/dep/srp/enforcement/post_nfa_compliance_notice.pdf).

	Effective on or Before June 30, <u>2021</u>	Effective July 1, 2021
MNA -	\$4,470	\$5,130
Active System-	\$4,030	\$5,240





# Section C

## Fee Billing Contact Person

- Reworded “Changed Since Last Submission...” box and “Effective Date of Change” field

<b>SECTION C. FEE BILLING CONTACT PERSON</b>		
<input type="checkbox"/> Changed Since Last Submission of the Ground Water Remedial Action Protectiveness/Biennial Certification Form		
Date of RAP Contact Information Change Form Submission: _____		
Business Name: _____		
First Name of Contact: _____		Last Name of Contact: _____
Title: _____		
Phone Number: _____	Ext.: _____	Fax: _____
Mailing Address: _____		
Municipality: _____	State: _____	Zip Code: _____
Email Address: _____		



# Section D

## Person Responsible for Conducting the Remediation

- Replaced old section "Current Owner of the Site" (name and address block)

### SECTION D. PERSON(S) RESPONSIBLE FOR CONDUCTING THE REMEDIATION

1. Has the mailing address changed for the Person(s) Responsible for Conducting the Remediation that is currently listed on the Ground Water RAP for the site? ..... ☐ Yes ☐ No  
If "Yes", provide the date of the Ground Water RAP Modification Application submission: ..... \_\_\_\_\_
2. Has the Contact Person/Information changed since the last submittal of the Ground Water Remedial Action Protectiveness/Biennial Certification Form? ..... ☐ Yes ☐ No  
If "Yes", provide the date of the RAP Contact Information Change Form submission: ..... \_\_\_\_\_



# Section E

## Current Owner(s) of the Site

- Replaced old section "Current Operator of Site" (name and address block)

### SECTION E. CURRENT OWNER(S) OF THE SITE

- Has the Property Owner changed from what is currently listed on the Ground Water RAP for the site? ☐ Yes ☐ No  
If "Yes", provide the date of the RAP Transfer/Change of Property  
Ownership Application submission: .....
- Has the mailing address changed for the Property Owner that is currently listed  
on the Ground Water RAP for the site? ..... ☐ Yes ☐ No  
If "Yes", provide the date of the Ground Water RAP Modification Application submission: .....
- Has the Contact Person/Information changed since the last submittal of the Ground Water Remedial Action  
Protectiveness/Biennial Certification Form? ..... ☐ Yes ☐ No  
If "Yes", provide the date of the RAP Contact Information Change Form submission: .....



# Section F

## Attached Documents

- Replaced old section “Current Lessee of Site” (name and address block) with 8 checkboxes

### SECTION F. ATTACHED DOCUMENTS

Attach electronic copies of the following documents in an email to [srp\\_submissions@dep.nj.gov](mailto:srp_submissions@dep.nj.gov)\*:  
(Check all that apply)

*\*See instructions for how to handle submissions associated with a Post-NFA Case*

The form sections (G, H, and I) will be covered by Adam and Mike



# Soil Section K and Ground Water Section L

## Other Information Provided

- Use section to list any other pertinent information to support the Ground Water Remedial Action Protectiveness/Biennial Certification Form
- This section should include:
  - a discussion of any new information
  - ground water data as it relates to the protectiveness of the ground water remedial action for the site



# Soil Section L

## Ground Water Section M

### Person with Primary Responsibility for Permit Compliance/Person Responsible for Monitoring the Protectiveness of the Remedial Action Information and Certification

- (Old section K or L) Added "Person with Primary Responsibility for Permit Compliance..." to title of section
- Changed "Full Legal Name of Person Responsible for Monitoring the Protectiveness of The Remedial Action" to "Affiliation/Name of Organization"
- Removed checkboxes for permittee and co-permittee
- **Old Section K or L:** Subsurface Evaluator Certification removed



# Thank You



# Soil Remedial Action Biennial Certifications

Adam Tomasik

Bureau of Remedial Action Permitting

[Adam.Tomasik@dep.nj.gov](mailto:Adam.Tomasik@dep.nj.gov)





## **Section G: Deed Notice/Declaration of Environmental Restriction (DER)/Notice In-Lieu Of Deed Notice Information**

- Added "...Notice In-Lieu of Deed Notice Information" to title of section
- Questions 1 through 3 reworded
- Removed questions 5 through 10



# Section G: Deed Notice/DER/ Notice In-Lieu Of Deed Notice Information (cont'd)

Questions 1 through 3 reworded:

1. Provide the filing date of the current Deed Notice/DER or the issuance of the Notice In-Lieu of DN: \_\_\_\_\_

2. For the current Deed Notice/DER, provide the Book and Page numbers in which the Deed Notice/DER was filed at the county recording office:

Book and Page Numbers: \_\_\_\_\_

3. Since the Deed Notice/DER was filed, did the Municipal Block and Lot number(s) of the Deed Notice/DER change? ..... ☐ Yes ☐ No

If "Yes", attach a current Tax Map of the property and list the former and new Municipal Block and Lot numbers of the Deed Notice/DER below:

Former Municipal Block and Lot Number(s): \_\_\_\_\_

New Municipal Block and Lot Number(s): \_\_\_\_\_



# Section G: Deed Notice/DER/ Notice In-Lieu Of Deed Notice Information (cont'd)

Removed questions 5 through 10:

5. Did you provide hard copies of this form to the municipal and county clerks for each municipality and county in which the site is located; the local, county and regional health department for each municipality and county in which the site is located; each current owner of the site; each current operator of the site; the Pinelands Commission as applicable; and the Highlands Commission as applicable? .....
6. Did you provide to NJDEP copies of this form in paper and electronically in Adobe PDF format? ...
7. Is this Deed Notice/DER for Historic Fill material at the site? .....  
If "Yes," is the Historic Fill material impacting the ground water at the site? .....



# Section G: Deed Notice/DER/ Notice In-Lieu Of Deed Notice Information (cont'd)

Removed questions 5 through 10 continued...

8. If Historic Fill material is impacting the ground water, has the CEAWRA Fact Sheet Form been submitted to the NJDEP? .....  
*If "No," attach a completed CEAWRA Fact Sheet Form to this form.*
9. Have you evaluated all relevant Soil Remediation Standards and guidance related to soil that have been modified subsequent to the filing of the Deed Notice/DER or the last submittal of the Soil Remedial Action Protectiveness/Biennial Certification Form, whichever is more recent? .
10. Has the Deed Notice/DER restricted area been accurately mapped on NJ-GeoWeb?.....  
*If "No", then submit a GIS compatible map of the Deed Notice/DER restricted area by email to [srpgis\\_dn@dep.state.nj.us](mailto:srpgis_dn@dep.state.nj.us).*



# Section H: Site Use, Changes, and Disturbances

Items that have been changed or removed:

- Name changed from “Land Use, Changes, and Disturbances” to “Site Use, Changes, and Disturbances”
- Questions 2, 3, and 4 were removed



# Section H:

## Site Use, Changes, And Disturbances

1. Indicate current site use:

- |                                      |  |   |  |
|--------------------------------------|--|---|--|
| <input type="checkbox"/> Industrial  | <input type="checkbox"/> Child Care Facility | <input type="checkbox"/> Park or Recreational Use | <input type="checkbox"/> Solar Panels                |
| <input type="checkbox"/> Residential | <input type="checkbox"/> Hospital            | <input type="checkbox"/> Vacant                   | <input type="checkbox"/> Other: <input type="text"/> |
| <input type="checkbox"/> Commercial  | <input type="checkbox"/> Landfill            | <input type="checkbox"/> Government Facility      |  |
| <input type="checkbox"/> School      | <input type="checkbox"/> Agricultural        | <input type="checkbox"/> Road/Right of Way        |  |



# Section H:

## Site Use, Changes, And Disturbances

5. Since the Soil RAP was issued, did the comparison conducted pursuant to N.J.A.C. 7:26C-7.8(b)3 require the submission of a Soil RAP Modification Application?

### **N.J.A.C 7:26C-7.8(b)3**

Comparing New Jersey laws, remediation standards, and other regulations applicable at the time the engineering or institutional control was established with any relevant subsequently promulgated or modified laws, regulations, or remediation standards to determine whether:

- i. Any subsequently promulgated or modified laws, regulations, or remediation standards apply to the site; and
- ii. Each engineering and institutional control is consistent with the requirements of the subsequently promulgated or modified laws, regulations, and remediation standards; and





# Section H:

## Site Use, Changes, And Disturbances

6. Did the comparison conducted above reveal a change in the Soil Remediation Standards? .

If "Yes", did the Soil Remediation Standards change by an order of magnitude? .....

If "Yes", does the change require a modification  
of the institutional or engineering control? .....

If "Yes", provide the date of Soil RAP Modification Application Submission: .....

**Attach** a contaminant concentration table that compares Soil Remediation  
Standard changes and order of magnitude analysis.





# Section H:

## Site Use, Changes, And Disturbances

**Contaminants of Emerging Concern (CECs):** The permittee(s) is required to evaluate whether there is the potential that the compounds listed below may have been manufactured, used, handled, stored, disposed or discharged at the AOC(s) associated with the Soil RAP. Evaluation does not mean analysis. Evaluation means using your professional judgement to determine if the compounds are potential contaminants of concern at the AOC(s) associated with the Soil RAP. The evaluation of these compounds should be the same as any other compound. Additional information on CECs can be found at <https://www.nj.gov/dep/srp/emerging-contaminants/>.



# Section H:

## Site Use, Changes, And Disturbances

7. Is 1,4-dioxane a potential contaminant of concern at the AOC(s) associated with the Soil RAP and does it require further remedial investigation? .....
8. Is perchlorate a potential contaminant of concern at the AOC(s) associated with the Soil RAP and does it require further remedial investigation? .....
9. Are per- and polyfluoroalkyl substances (PFAS), including but not limited to perfluorononanoic acid (PFNA), perfluorooctanoic acid (PFOA), and perfluorooctane sulfonic acid (PFOS) potential contaminants of concern at the AOC(s) associated with the Soil RAP and does it require further remedial investigation? .....
10. Is 1,2,3-trichloropropane (1,2,3-TCP) a potential contaminant of concern at the AOC(s) associated with the Soil RAP and does it require further remedial investigation? .....

**Attach** the results of the required emerging CECs evaluation:

If "Yes" to any of the questions 7 to 10 above, then provide a discussion of how this issue is being addressed:



# Questions?



# **Ground Water Remedial Action Protectiveness/Biennial Certification (Bi-Cert) Forms**

Michael Gaudio, Supervisor  
Bureau of Remedial Action Permitting

[Michael.Gaudio@dep.nj.gov](mailto:Michael.Gaudio@dep.nj.gov)



# Section G – Remedial Action and CEA/WRA Information

## New Questions:

- Ground Water Monitoring Plan (Question #s 1.a.2 and 1.b.2)
- Ground Water Contaminant Plume Behavior (Question #s 1.a.5 and 1.b.5)
- Appropriateness of the Ground Water Remedial Action – MNA or Active (Question #s 1.a.7 and 1.b.7)
- GWQS Comparison (Question #s 10 and 11)
- CECs (Question #s 12 to 15)



# Section G – Remedial Action and CEA/WRA Information

3. Since the last submittal of the Ground Water Remedial Action Protectiveness/Biennial Certification Form, has any ground water contamination been determined to have migrated onto the site/property from an off-site source that is not included in the Ground Water RAP? ...

If “Yes”, provide the communication center number that was received when called into the Hotline and a discussion of the issue below.

Hotline Communication Center Number:

Discussion:





# Section G – Remedial Action and CEA/WRA Information

4. Has the ground water flow direction changed at the site such that the sentinel well(s) is no longer downgradient and protective of all receptors? .....

If “Yes”, provide the date of Ground Water RAP Modification submission with the required additional ground water delineation data: .....



# Section G – Remedial Action and CEA/WRA Information

9. Has a replacement monitoring well(s) been installed since the last submittal of the Ground Water Remedial Action Protectiveness/Biennial Certification Form? ..... ☐ Yes ☐ No

If “**Yes**”, was the replacement well installed within 10 feet of the former well location? ..... ☐ Yes ☐ No

If “**No**”, then either:

Provide the justification supporting the protectiveness of the ground water remedial action in Section L below

or

Provide the date of the Ground Water RAP Modification Application submission:.....

**Attach** the construction specifications for each new well.





# Section G – Remedial Action and CEA/WRA Information

Questions/information removed:

- Expected duration of active remediation
- CEA/WRA specific information
- Form being submitted pursuant to a Ground Water RAP
- CEA/WRA GIS shape mapped
- Paper and electronic copies of form

Note: Active treatment system shutdown changed from 24 hours to 48 hours to be consistent with the Ground Water RAP Guidance



# Section H – Site Use, Changes, and Disturbances

## SECTION H. SITE USE, CHANGES, AND DISTURBANCES

1. Indicate current site use:

☐ Industrial

☐ Residential

☐ Commercial

☐ School

☐ Child Care Facility

☐ Hospital

☐ Landfill

☐ Agricultural

☐ Park or Recreational Use

☐ Vacant

☐ Government Facility

☐ Road/Right of Way

☐ Solar Panels

☐ Other:



# Section H – Site Use, Changes, and Disturbances

2. Has the site use(s) changed since the last submittal of the Ground Water Remedial Action Protectiveness/Biennial Certification Form? .....



# Section H – Site Use, Changes, and Disturbances

## Questions/information removed:

- Past and intended future site use selection list
- Describe current and intended future use of site
- Presumptive Remedy (Soil)



# Section I – Current or Planned Water Use Within the Well Search Area

7. Are any Point of Entry Treatment (POET) water systems currently installed at any buildings as a result of this ground water contamination? (If a POET water system was installed, but not required for the remediation, check “No”) .....

Note: A Ground Water RAP Modification Application is required if currently not included in the Ground Water RAP for the site.



# Section I – Current or Planned Water Use Within the Well Search Area

5. Has the required well search identified any wells installed within one mile up-gradient, side-gradient, and down-gradient of the CEA/WRA since the last submittal of the Ground Water Remedial Action Protectiveness/Biennial Certification Form? .....

Attach the results of the required updated well search to this form, including a scaled map and a table indicating which wells were previously evaluated.

If “Yes”, check all that apply:

- |                                     |                                     |  |                                     |
|-------------------------------------|-------------------------------------|--|-------------------------------------|
| <input type="checkbox"/> Potable    | <input type="checkbox"/> Industrial | <input type="checkbox"/> Community Supply Well     | <input type="checkbox"/> Irrigation |
| <input type="checkbox"/> Geothermal | <input type="checkbox"/> Production | <input type="checkbox"/> Non-Community Supply Well |                                     |

If you checked one of the above, was it necessary to sample the well pursuant to N.J.A.C. 7:26 E-1.14? .....



# Section I – Current or Planned Water Use Within the Well Search Area

## SECTION I. CURRENT OR PLANNED WATER USE WITHIN THE WELL SEARCH AREA

### 1. Water use within the CEA/WRA when CEA/WRA was established *(check all that apply)*

- ☐ Potable
- ☐ Well Head Protection Area
  - ☐ Tier 1
  - ☐ Tier 2
  - ☐ Tier 3
- ☐ Irrigation
- ☐ Industrial
- ☐ Geothermal
- ☐ Not Applicable



### 2. Current water use within the CEA/WRA Boundaries *(check all that apply)*

- ☐ Potable
- ☐ Well Head Protection Area
  - ☐ Tier 1
  - ☐ Tier 2
  - ☐ Tier 3
- ☐ Irrigation
- ☐ Industrial
- ☐ Geothermal
- ☐ Not Applicable



# Section J – Vapor Intrusion

## **New Questions #5 and #6:**

- VI Long-Term Monitoring Plans – Buildings with soil gas contamination remaining, but VI pathway is incomplete
- Indeterminate VI Pathway Status – Buildings that were not fully evaluated for VI due to current site operations using the same contaminants of concern

## **Important Notes for Questions #2 and #3:**

- Space added for discussion of the VI sampling results or the reasons for not evaluating the VI pathway





# Section J – Vapor Intrusion

4. Have any vapor intrusion engineering controls/mitigation systems been installed as a result of this ground water contamination? (If a system was installed, but not required for the remediation (i.e., there is not a complete VI pathway requiring the system), check “No”) .....

Note: A Ground Water RAP Modification Application is required if currently not included in the Ground Water RAP for the site.



# Test Your Knowledge

**When replacing a monitoring well, the replacement should be within how many feet of the original?**

- A. 20 feet
- B. 10 feet
- C. 15 feet

# Test Your Knowledge

When replacing a monitoring well, the replacement should be within how many feet of the original?

- A. 20 feet
- B. 10 feet**
- C. 15 feet

# Questions?





# Financial Assurance

Michael Infanger, Supervisor  
Bureau of Remedial Action Permitting  
[michael.infanger@dep.nj.gov](mailto:michael.infanger@dep.nj.gov)



# Financial Assurance Requirements

## Legislative Mandate

Site Remediation Reform Act – established permitting program to regulate operation, maintenance, and inspection of engineering or institutional controls

- **N.J.S.A. 58:10C-19 establishes FA**

**If you see N.J.S.A 58:10B-3 (Brownfields) on a document,  
it is not FA!**



# FA – Types of Mechanisms

- 1. Remediation Trust Fund** - cash held in escrow
- 2. Line of Credit** - open line of cash available
- 3. Letter of Credit** - promise of cash to a beneficiary (DEP)
- 4. Environmental Insurance** - claims based available funds to DEP

**TEMPLATES AVAILABLE ON WEBSITE!**




# New for RFS/FA

## Return of Surety Bond with SRRA 2.0

- Model Surety Documents have been developed
- ARRCS Rule must be amended
- The Department is allowing Surety Bonds before ARRCS amendment



# On the Forms Web Page

▶ <b>Petroleum UST Fund Application (Unregulated)</b> (Including Residential Heating Oil Tanks)	<a href="#">Form</a> pdf 396 Kb	<a href="#">Instructions</a> pdf 185 Kb	1.2 - 9/17/2018
● <b>Project Summary Sheet Spreadsheet</b> Note: See the <a href="#">SRP Financial Assistance Petroleum UST Fund page</a> for more information & guidance.	<a href="#">Spreadsheet</a> xls 60 Kb		1.0
▶ <b>Public Notification and Outreach form</b> Note: The Public Notification and Outreach form may now be uploaded in a service, see the links in the <a href="#">NJDEP Online Services section</a> above. This form is for mail-in submission only, not for use with the NJDEP Online service.	<a href="#">Form</a> pdf 221 Kb	<a href="#">Instructions</a> pdf 158 Kb	1.9 - 6/22/2020
▶ <b>Remedial Timeframe Notification</b>	<a href="#">Form</a> pdf 192 Kb	<a href="#">Instructions</a> pdf 163 Kb	1.3 - 9/17/2018
▶ <b>Remediation Cost Review and RFS-FA Form</b>	<a href="#">Form</a> pdf 273 Kb	<a href="#">Instructions</a> pdf 220 Kb	2.2 - 9/23/2020
● <b>RFS/FA Model Financial Mechanism Language</b>	<a href="#">RFS Guide Page</a>		
● <b>Self Guarantee Application</b>	<a href="#">Form</a> pdf 58 Kb	<a href="#">Instructions</a> pdf 34 Kb	1.3 - 6/12/2014
▶ <b>Site and Contact Information Update Form</b> (Name change. Was "Name and Address Change Reporting" form)	<a href="#">Form</a> pdf 174 Kb	<a href="#">Instructions</a> pdf 45 Kb	1.3 - 10/18/2017



# RFS/FA Guidance Website

## What are acceptable RFS and Financial Assurance (FA) mechanisms?

All RFS and FA mechanisms must comport with the format and language of the model documents found at the links below.

### Remediation Funding Source (RFS)

- [Remediation Trust Fund Agreement](#) - Please see [N.J.A.C. 7:26C-5.4](#) for specific requirements.
- [Line of Credit Agreement](#) - Please see [N.J.A.C. 7:26C-5.6](#) for specific requirements.
- [Letter of Credit](#) - Please see [N.J.A.C. 7:26C-5.7](#) for specific requirements.
- Environmental Insurance Policy - Please see DEP's regulatory requirements at [N.J.A.C. 7:26C-5.5](#).
- [Self Guarantee Application](#) - Please see the Self Guarantee Application Instructions for more information and [N.J.A.C. 7:26C-5.8](#) for specific requirements. **(Not for use as Financial Assurance.)**
- Loan or Grant from the [Hazardous Discharge Remediation Fund](#) - Please see [N.J.A.C. 7:26C-5.2](#) for specific requirements.
- [Surety Bond](#) - Please see N.J.S.A. 58:10B-3.i for specific requirements.

### Financial Assurance (FA) - *(To be used for Remedial Action Permits only)*

- [Remediation Trust Fund Agreement for FA](#) - Please see [N.J.A.C. 7:26C-5.4](#) for specific requirements.
- [Line of Credit Agreement for FA](#) - Please see [N.J.A.C. 7:26C-5.6](#) for specific requirements.
- [Letter of Credit for FA](#) - Please see [N.J.A.C. 7:26C-5.7](#) for specific requirements.
- Environmental Insurance Policy - Please see DEP's regulatory requirements at [N.J.A.C. 7:26C-5.5](#).
- [Surety Bond](#) - Please see N.J.S.A. 58:10B-3.i for specific requirements.



### Direct Oversight

- [Remediation Trust Fund Agreement for Direct Oversight](#) - Please see [N.J.A.C. 7:26C-14.2\(b\)](#) for specific requirements.

# FA Reporting Requirements

## Remediation Cost Review – Due Biennially

- Documents and reaffirms the amount of FA that is being maintained
- If there are any changes to the cost estimate, the actions taken must be indicated on the Remediation Cost Review and RFS/FA form (Section C – Check all that apply!)



# Estimating FA Amount

## **Costs of maintaining the engineering control including:**

- Maintenance/inspection of cap/engineering control
- Ground Water – include servicing, labor, power, sampling parameters
- Biennial reporting and permit fees

## **Value is calculated over the duration of the engineering control**

- Permanent Engineering control represented as 30 years
- Minimum value \$30,000.00



# Annual Valuations

- **Valuations/Verifications (apply to Line of Credit, Remediation Trust Fund, Surety Bond, Environmental Insurance Policy)**
- **Due Annually**
  - Provides current value of mechanism
  - Verifies mechanism is still valid and will be in effect for next 12 months
  - Letters of credit do not require annual valuation



# FA and Residential Condominium Association

## **If the Permittee is a residential condominium association:**

- FA mechanism is not required to be secured if documentation of annual association budget reflects amount dedicated to operation, maintenance, and inspection of engineering controls equal to estimated amount required
- The association should indicate the line item(s) that contain the permit costs





# **Send Valuations to BRAP NO RFS/FA FORM**

**Valuation letters from RTF trustees, banks, or insurance companies  
Condo association budgets**

Make address as simple as possible:

USPS Address

for overnight couriers, etc.

FA Coordinator, BRAP 5<sup>th</sup> Floor  
Mail Code 401 – 05S  
P.O. BOX 420  
TRENTON NJ 08625

FA Coordinator, BRAP 5<sup>th</sup> Floor  
Mail Code 401 – 05S  
401 East State Street  
TRENTON NJ 08608



# Changes in FA Amount or Mechanism Type

## **Requires the filing of a Remediation Cost Review & RFS/FA Form**

- Reductions or increases require an update detailed cost estimate
- Replacement FA mechanism in a consistent amount only require the form

**This does not require a Soil/Ground Water permit modification!**



# Amendments of Financial Instruments

## Remediation Trust Fund Agreements

- Amendments allowed pursuant to Section 16
- Just as easy to submit a new agreement

**Line of Credit** – a new document will usually be required

**Surety Bond / EIP** – check with provider



# Letters of Credit

**Most Common Form of FA**

**Any Change Requires An Amendment – Requires Approval**

**Let The FA Coordinator Know It's Coming!**

**Also Inform The FA Coordinator If A Non-Renewal Notice Is Coming**

FA Coordinator = Michael Infanger

[https://nj.gov/dep/srp/srra/srra\\_contacts.htm](https://nj.gov/dep/srp/srra/srra_contacts.htm)



# Thank You





# Remedial Action Protectiveness Evaluation for Soil

Kathi Stetser, LSRP

GEI Consultants, Inc.

[kstetser@geiconsultants.com](mailto:kstetser@geiconsultants.com)



# Prior to Inspection

- Review the Permit and Deed Notice
- Evaluate the AOCs associated with the Deed Notice for contaminants of emerging concern
- Obtain interim inspection reports that have been conducted or required in the permit
- Obtain information related to cap disturbances/modifications



# Prior to Inspection (cont'd)

- Evaluate tax block/lot changes
- Conduct Order of Magnitude Evaluation
- Conduct Vapor Evaluation, if applicable
- Review last biennial certification
- Select who will conduct the inspection



# Inspection

- Inspect all areas that are covered by the permit
- Photograph both the good and the not so good
- Include in Bi-Cert that there was a disturbance
- Document any land use changes



# Inspection (cont'd)

- Have there been any changes to the remedy?
  - You will need a permit modification
  - You may have to terminate and re-file your deed notice
- Are any repairs required?
  - Provide a schedule



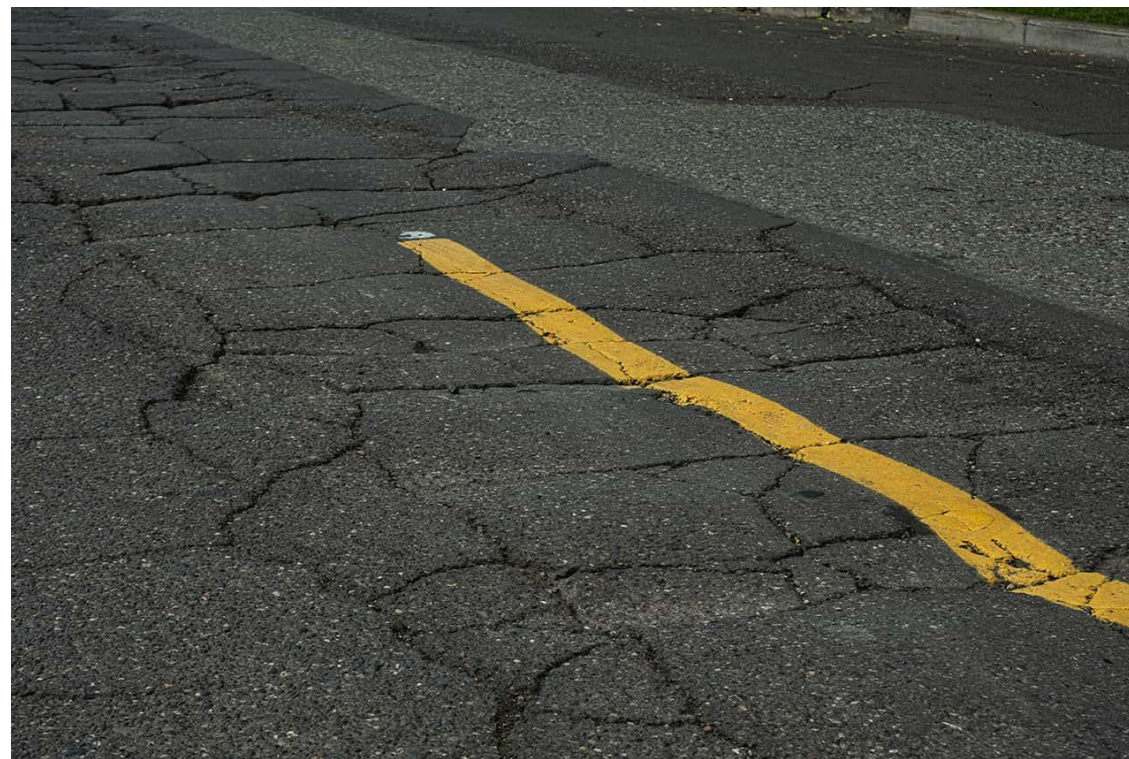


# Asphalt Cap





# Asphalt Cap





# Vegetative Cap





# Vegetative Cap



# Test Your Knowledge

## Is this remedy still protective?



**2019**

- A. Yes**
- B. No**
- C. Maybe**



**2021**



# Test Your Knowledge

## Is this remedy still protective?



2019

- A. Yes
- B. No
- C. Maybe**



2021



# Permeable/Impermeable



# Following Inspection and Review

## IS THE REMEDY STILL PROTECTIVE?

- Would an inspector recognize the remedy as detailed in the permit?
- Do you need repairs? Provide a schedule
- Do you need a permit modification?
- Do you need to terminate/refile Deed Notice?
- Is further sampling or evaluation needed?



# Thank You



# Remedial Action Protectiveness: Ground Water

Rich Lake, LSRP  
Geo-Technology Associates, Inc.  
[rlake@gtaeng.com](mailto:rlake@gtaeng.com)



# Primary Objectives of the Protectiveness Evaluation

- Have the conditions of the Remedial Action Permit been met?
- Is the ground water remedy (active or MNA) still appropriate?
- Is the remedy still protective of potential receptors to the ground water contamination?
- Are any changes to the Long-Term Monitoring Program or RAP needed?



# Have the Conditions of the Remedial Action Permit Been Met?

- Annual groundwater sampling:

SAMPLE ID:	DATE:	Benzene
MW1	1/7/2015	500
MW1	4/8/2015	350
MW1	9/9/2015	275
MW1	7/6/2016	225
MW1	10/6/2016	290
MW1	12/2/2017	75
MW1	2/26/2018	30
MW1	6/16/2018	25
MW1	9/22/2018	8.1
MW1	12/22/2018	24
MW1	2/26/2019	9
MW1	6/16/2019	2
MW1	9/22/2019	1.9
MW1	12/22/2019	5.5
MW1	6/20/2020	4
MW1	6/21/2021	7.2

- Evaluation of revised GWQS, CECs, VI/POET monitoring





# Is the Ground Water Remedy (Active or MNA) Still Appropriate?

- Primarily accomplished through review of ongoing ground water monitoring data
- IMPORTANT: Review the Remedial Action Report to gain an understanding of the case history and the lines of evidence used to demonstrate that the active or MNA remedy was appropriate at the time of issuance of the Remedial Action Permit!
- Also review prior Remedial Action Protectiveness/Biennial Certification submittals



# Is the Ground Water Remedy (Active or MNA) Still Appropriate?

## Evaluate concentration trends

- EXAMPLE: **Source Area Well data evaluation**

SAMPLE ID:	DATE:	Benzene
MW1	1/7/2015	500
MW1	4/8/2015	350
MW1	9/9/2015	275
MW1	7/6/2016	225
MW1	10/6/2016	290
MW1	12/2/2017	75
MW1	2/26/2018	30
MW1	6/16/2018	25
MW1	9/22/2018	8.1
MW1	12/22/2018	24
MW1	2/26/2019	9
MW1	6/16/2019	2
MW1	9/22/2019	1.9
MW1	12/22/2019	5.5
MW1	6/20/2020	4
MW1	6/21/2021	7.2

Data obtained in the last two events continues to show stable/downward concentration trend. Continue with remedy.

Remember, evaluation of data may be more complicated than depicted in this presentation...please consider evaluating the data using methods consistent with the original determination that the remedy was appropriate!!



# Is the Ground Water Remedy (Active or MNA) Still Appropriate?

Evaluate concentration trends

- EXAMPLE: **Source Area Well data evaluation**

SAMPLE ID:	DATE:	Benzene
MW1	1/7/2015	500
MW1	4/8/2015	350
MW1	9/9/2015	275
MW1	6/6/2016	305
MW1	10/6/2016	190
MW1	12/2/2017	75
MW1	2/26/2018	30
MW1	6/16/2018	61
MW1	9/22/2018	8.1
MW1	12/22/2018	23
MW1	2/26/2019	21
MW1	6/16/2019	42
MW1	9/22/2019	19
MW1	12/22/2019	12
MW1	6/20/2020	31
MW1	6/21/2021	29

Most recent sampling events show benzene concentrations that are higher than previous two sampling events.



# Is the Ground Water Remedy (Active or MNA) Still Appropriate?

## Evaluate concentration trends

- EXAMPLE: **Source Area Well data evaluation**

SAMPLE ID:	DATE:	Benzene
MW1	1/7/2015	500
MW1	4/8/2015	350
MW1	9/9/2015	275
MW1	6/6/2016	305
MW1	10/6/2016	190
MW1	12/2/2017	75
MW1	2/26/2018	30
MW1	6/16/2018	61
MW1	9/22/2018	8.1
MW1	12/22/2018	23
MW1	2/26/2019	21
MW1	6/16/2019	42
MW1	9/22/2019	19
MW1	12/22/2019	12
MW1	6/20/2020	31
MW1	6/21/2021	29

Evaluate historic trends!

In this example, June was selected for the annual sampling since it historically exhibited highest concentrations.

Assuming that it has been shown that no source remains, continue with remedy.



# Is the Ground Water Remedy (Active or MNA) Still Appropriate?

Evaluate plume stability:

- EXAMPLE: **Sentinel Well data evaluation**

SAMPLE ID:	DATE:	PCE
MW1	Jan-15	ND
MW1	Apr-15	0.2
MW1	Sep-15	ND
MW1	Jul-16	ND
MW1	Oct-16	0.1
MW1	Dec-17	ND
MW1	Feb-18	ND
MW1	Jun-18	ND
MW1	Sep-18	ND
MW1	Dec-18	ND
MW1	Feb-19	ND
MW1	Jun-19	ND
MW1	Sep-19	ND
MW1	Dec-19	ND
MW1	Jun-20	4
MW1	Jun-21	7.2

Data obtained in the last two events is not consistent with prior data and suggests an expanding plume.

Evaluate whether remedy is appropriate and whether receptors could be impacted.  
Need new sentinel well.





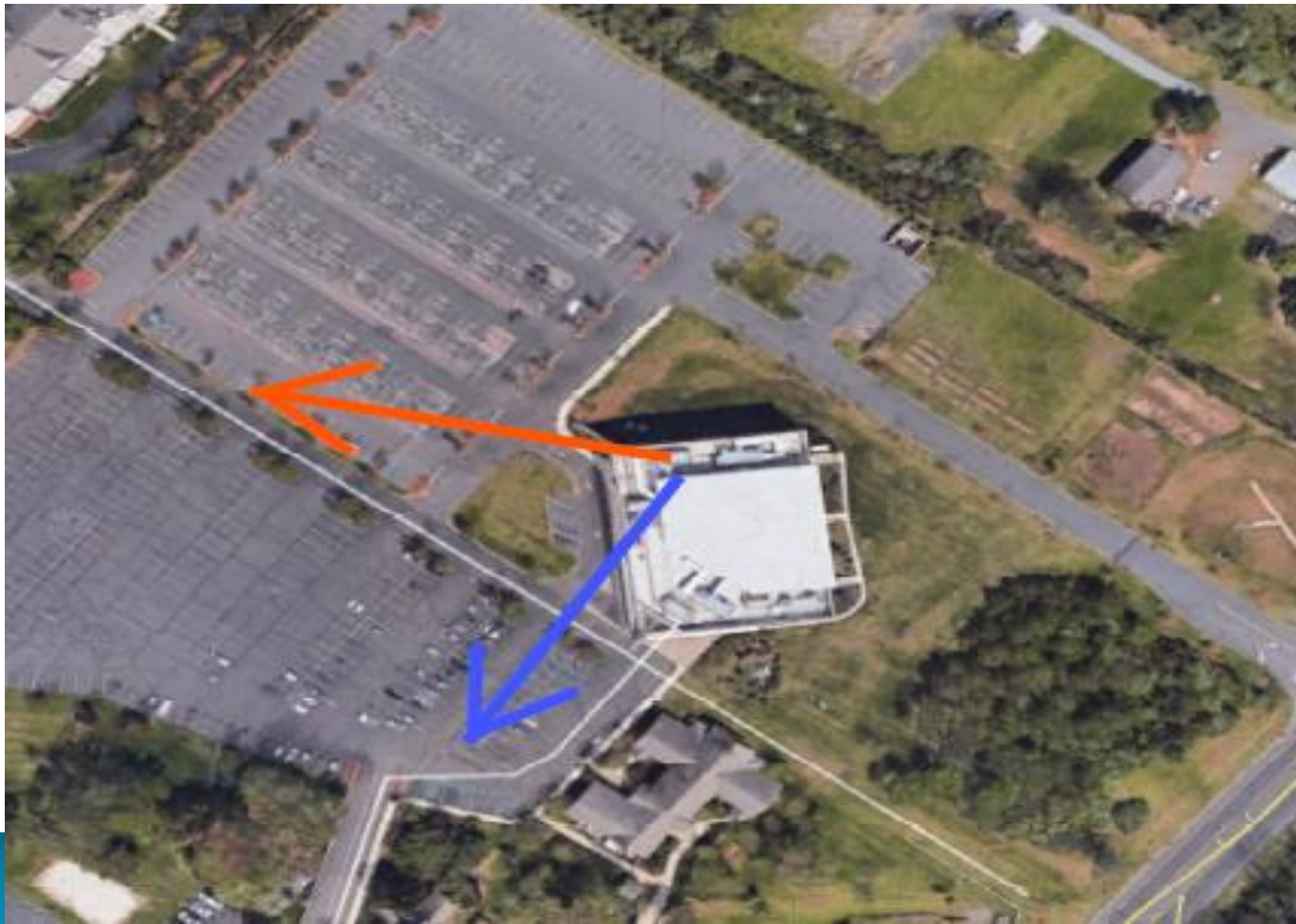
# Is the Remedy Still Protective of Potential Receptors to the Ground Water Contamination?

- Review prior receptor evaluations to understand what receptors were previously evaluated or addressed (prior sampling, POETs, vapor mitigation systems)
- Present data for POET/vapor mitigation system sampling
- Are there new receptors?
  - Construction of new buildings (vapor intrusion)
  - Installation of new drinking water wells
  - Changes in groundwater flow direction
  - Provide evaluation of these new receptors, including any sampling data (if obtained)



# Is the Remedy Still Protective of Potential Receptors to the Ground Water Contamination?

- EXAMPLE: Change in Groundwater Flow Direction



# Potential Outcomes of the Ground Water Remedial Action Protectiveness/Biennial Certification

- Continue the Long-Term Monitoring (LTM) Program
  - Some conditions may require a RAP Modification (e.g., new wells, changes in monitoring frequency outside of what may have been incorporated into the existing RAP)
- Implement Contingency Remedy
  - If existing remedy is determined not to be appropriate
  - Impacts to a new receptor may not trigger a contingency remedy, but likely requires RAP Modification
- Address CECs, order of magnitude issues
- Modify the CEA if needed
- Terminate RAP (achieved GWQS)



# Thank you



# Vapor Intrusion Protectiveness RAP Modification Scenarios

*When Do I Need to Modify a RAP due to  
Vapor Intrusion Concerns?*

John Engdahl

Ridge Environmental Management LLC

[john@ridgeenvmgmt.com](mailto:john@ridgeenvmgmt.com)





# Vapor Intrusion Protectiveness – GW Scenarios

- Groundwater Scenarios
  - Development
  - Building use change (unoccupied to occupied)\*
  - Building use change (non-residential to residential, school, or day care) \*
  - Plume moving
  - Proactive or Passive System to Active System

*\* Most common based on NJDEP's experience*



# Vapor Intrusion Protectiveness – GW Scenarios

- Development, Occupancy, & Use Change

*Section G, I & J of Initial GW RAP “Sets the Stage”*

## SECTION I. LAND USE (for overlying CEA)

### 1. Current Site Land Use (check all that apply)

- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Industrial | <input type="checkbox"/> Park or Recreational Use | <input type="checkbox"/> Child Care Facility |
| <input type="checkbox"/> Residential           | <input type="checkbox"/> Agricultural             | <input type="checkbox"/> Hospital            |
| <input type="checkbox"/> Commercial            | <input type="checkbox"/> Road/Right of Way        | <input type="checkbox"/> Vacant              |
| <input type="checkbox"/> Governmental Facility | <input type="checkbox"/> School                   | <input type="checkbox"/> Other _____         |

### 2. Off-site Land Use (check all that apply for Blocks/Lots included in the areal extent of the CEA)

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Industrial            | <input type="checkbox"/> Park or Recreational Use | <input type="checkbox"/> Child Care Facility |
| <input type="checkbox"/> Residential           | <input type="checkbox"/> Agricultural             | <input type="checkbox"/> Hospital            |
| <input type="checkbox"/> Commercial            | <input type="checkbox"/> Road/Right of Way        | <input checked="" type="checkbox"/> Vacant   |
| <input type="checkbox"/> Governmental Facility | <input type="checkbox"/> School                   | <input type="checkbox"/> Other _____         |

## SECTION J. AFFECTED RECEPTOR SUMMARY

1. Are there any buildings with an Indeterminate Vapor Intrusion Pathway status? ..... ☐ Yes ☒ No

If “Yes”, provide the location in the RAR (Section # and Figure #) that documents this issue: .....

2. Is there soil gas contamination above the Soil Gas Screening Levels beneath any buildings that require long-term monitoring? ..... ☐ Yes ☒ No

If “Yes”, provide the location in the RAR (Section # and Figure #) that documents this issue: .....

As indicated in Section F above, an electronic copy of the Vapor Intrusion Long-Term Monitoring Plan should be attached.

3. Are any vapor intrusion engineering controls/mitigation systems currently installed at any buildings as a result of this ground water contamination? ..... ☐ Yes ☒ No

If “Yes”, indicate the type of engineering control that was implemented: (check all that apply)

- ☐ Subsurface Depressurization System  
☐ Subsurface Ventilation System  
☐ Soil Vapor Extraction System  
☐ HVAC Positive Pressure  
☐ Other (specify): \_\_\_\_\_

As indicated in Section F above, an electronic copy of the OMM Plan for the vapor intrusion engineering control(s)/mitigation system(s) should be attached. The OMM Plan should clearly identify the building(s) and/or structure(s) and vapor intrusion engineering control(s)/mitigation system(s) that are in place (e.g., active or passive), including the address and block and lot of each impacted property.

4. Are any Point of Entry Treatment (POET) water systems currently installed at any buildings as a result of this ground water contamination? ..... ☐ Yes ☐ No

If “Yes”, an electronic copy of the OMM Plan for the POET water system(s) should be attached as indicated in Section F above. The OMM Plan should provide the address and lot and block of each property with a POET water system in place. The sampling of the POET water system(s) should be included in the Ground Water Monitoring Plan for the site.

5. Are any potable wells that do not have a POET water system currently being sampled regularly as a result of this ground water contamination? ..... ☐ Yes ☐ No

If “Yes”, include these potable wells in the Ground Water Monitoring Plan for the site.

# Vapor Intrusion Protectiveness – GW Scenarios

- Industrial Site with Vacant Neighbor



Property	Site	Neighbor
Development	Undeveloped to Developed	
Occupancy	Unoccupied to Occupied	
Use	Non-Residential to Residential, School, Day Care	





# Vapor Intrusion Protectiveness – GW Scenarios

- Biennial VI Protectiveness Questions – Section J, Question 3

**SECTION J. VAPOR INTRUSION**

1. Are compounds of potential vapor intrusion concern included in the CEA/WRA? ☒ Yes ☐ No  
If "Yes", then complete this section; otherwise proceed to the next section

2. Based on the most recent data available or ground water data collected for the Ground Water Remedial Action Protectiveness/Biennial Certification Form, are any contaminants of concern currently above the Vapor Intrusion Ground Water Screening Levels that require a vapor intrusion investigation pursuant to N.J.A.C. 7:26E-1.15? ☐ Yes ☒ No  
If "Yes", attach a table with the vapor intrusion sampling results, a scaled site map indicating the location of all structures investigated for vapor intrusion, and provide a discussion of those results below or provide a written explanation with the reasons for not evaluating the vapor intrusion pathway.

3. Were there any changes in property use for the site or surrounding properties that required a vapor intrusion investigation pursuant to N.J.A.C. 7:26C-7.9(b)7? ☐ Yes ☒ No  
If "Yes", attach a table with the vapor intrusion sampling results, a scaled site map indicating the location of all structures investigated for vapor intrusion, and provide a discussion of those results below or provide a written explanation with the reasons for not evaluating the vapor intrusion pathway:

4. Have any vapor intrusion engineering controls/mitigation systems been installed as a result of this ground water contamination? (If a system was installed, but not required for the remediation (i.e., there is not a complete VI pathway requiring the system), check "No") ☐ Yes ☐ No  
If "Yes", indicate the type of engineering control that was implemented: (check all that apply)

☐ Sub-Slab Depressurization System (SSDS)  
☐ Active ☐ Passive  
☐ Sub-Slab Ventilation System  
☐ Soil Vapor Extraction System  
☐ Other (specify):

**Attach** any vapor intrusion sampling results as required from the OMM Plan for the vapor intrusion engineering control(s)/mitigation system(s) for the permit, including the NJDEP Vapor Intrusion Mitigation Monitoring and Maintenance Checklist. Provide a scaled site map that clearly identifies the building(s) and/or structure(s) with the vapor intrusion engineering control(s)/mitigation system(s) in place, including the address and block and lot of each impacted property.

**Note:** A Ground Water RAP Modification Application should be submitted if the vapor intrusion engineering controls/mitigation systems is not included in the Ground Water RAP for the site.

5. Is there soil gas contamination above the Soil Gas Screening Levels beneath any buildings that require long-term monitoring? ☐ Yes ☐ No  
If "Yes", attach documentation of building inspections and/or any vapor intrusion sampling results as required from the Vapor Intrusion Long-Term Monitoring Plan for the permit.

**Note:** A Ground Water RAP Modification Application should be submitted if the Vapor Intrusion Long-Term Monitoring Plan is not included in the Ground Water RAP for the site.

6. Are there any buildings with an Indeterminate Vapor Intrusion Pathway status? ☐ Yes ☐ No  
If "Yes", have annual inspections been completed to determine the change in use? ☐ Yes ☐ No

**Attach** a summary of the inspections and a scale site map clearly identifying the buildings with Indeterminate Vapor Intrusion Pathway status, including the address and block/lot of each building.

**Note:** A Ground Water RAP Modification Application should be submitted if the Indeterminate Vapor Intrusion Pathway status is not included in the Ground Water RAP for the site.

# Vapor Intrusion Protectiveness – GW Scenarios

- Moving Plume

*Section G, I & J of Initial GW RAP “Sets the Stage”*

## SECTION I. LAND USE (for overlying CEA)

### 1. Current Site Land Use (check all that apply)

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Industrial            | <input type="checkbox"/> Park or Recreational Use | <input type="checkbox"/> Child Care Facility |
| <input type="checkbox"/> Residential           | <input type="checkbox"/> Agricultural             | <input type="checkbox"/> Hospital            |
| <input checked="" type="checkbox"/> Commercial | <input type="checkbox"/> Road/Right of Way        | <input type="checkbox"/> Vacant              |
| <input type="checkbox"/> Governmental Facility | <input type="checkbox"/> School                   | <input type="checkbox"/> Other _____         |

### 2. Off-site Land Use (check all that apply for Blocks/Lots included in the areal extent of the CEA)

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Industrial             | <input type="checkbox"/> Park or Recreational Use | <input type="checkbox"/> Child Care Facility |
| <input checked="" type="checkbox"/> Residential | <input type="checkbox"/> Agricultural             | <input type="checkbox"/> Hospital            |
| <input type="checkbox"/> Commercial             | <input type="checkbox"/> Road/Right of Way        | <input type="checkbox"/> Vacant              |
| <input type="checkbox"/> Governmental Facility  | <input type="checkbox"/> School                   | <input type="checkbox"/> Other _____         |

## SECTION J. AFFECTED RECEPTOR SUMMARY

1. Are there any buildings with an Indeterminate Vapor Intrusion Pathway status? ..... ☐ Yes ☒ No

If “Yes”, provide the location in the RAR (Section # and Figure #) that documents this issue: .....

2. Is there soil gas contamination above the Soil Gas Screening Levels beneath any buildings that require long-term monitoring? ..... ☐ Yes ☒ No

If “Yes”, provide the location in the RAR (Section # and Figure #) that documents this issue: .....

As indicated in Section F above, an electronic copy of the Vapor Intrusion Long-Term Monitoring Plan should be attached.

3. Are any vapor intrusion engineering controls/mitigation systems currently installed at any buildings as a result of this ground water contamination? ..... ☐ Yes ☒ No

If “Yes”, indicate the type of engineering control that was implemented: (check all that apply)

- ☐ Subsurface Depressurization System  
☐ Subsurface Ventilation System  
☐ Soil Vapor Extraction System  
☐ HVAC Positive Pressure  
☐ Other (specify): \_\_\_\_\_

As indicated in Section F above, an electronic copy of the OMM Plan for the vapor intrusion engineering control(s)/mitigation system(s) should be attached. The OMM Plan should clearly identify the building(s) and/or structure(s) and vapor intrusion engineering control(s)/mitigation system(s) that are in place (e.g., active or passive), including the address and block and lot of each impacted property.

4. Are any Point of Entry Treatment (POET) water systems currently installed at any buildings as a result of this ground water contamination? ..... ☐ Yes ☐ No

If “Yes”, an electronic copy of the OMM Plan for the POET water system(s) should be attached as indicated in Section F above. The OMM Plan should provide the address and lot and block of each property with a POET water system in place. The sampling of the POET water system(s) should be included in the Ground Water Monitoring Plan for the site.

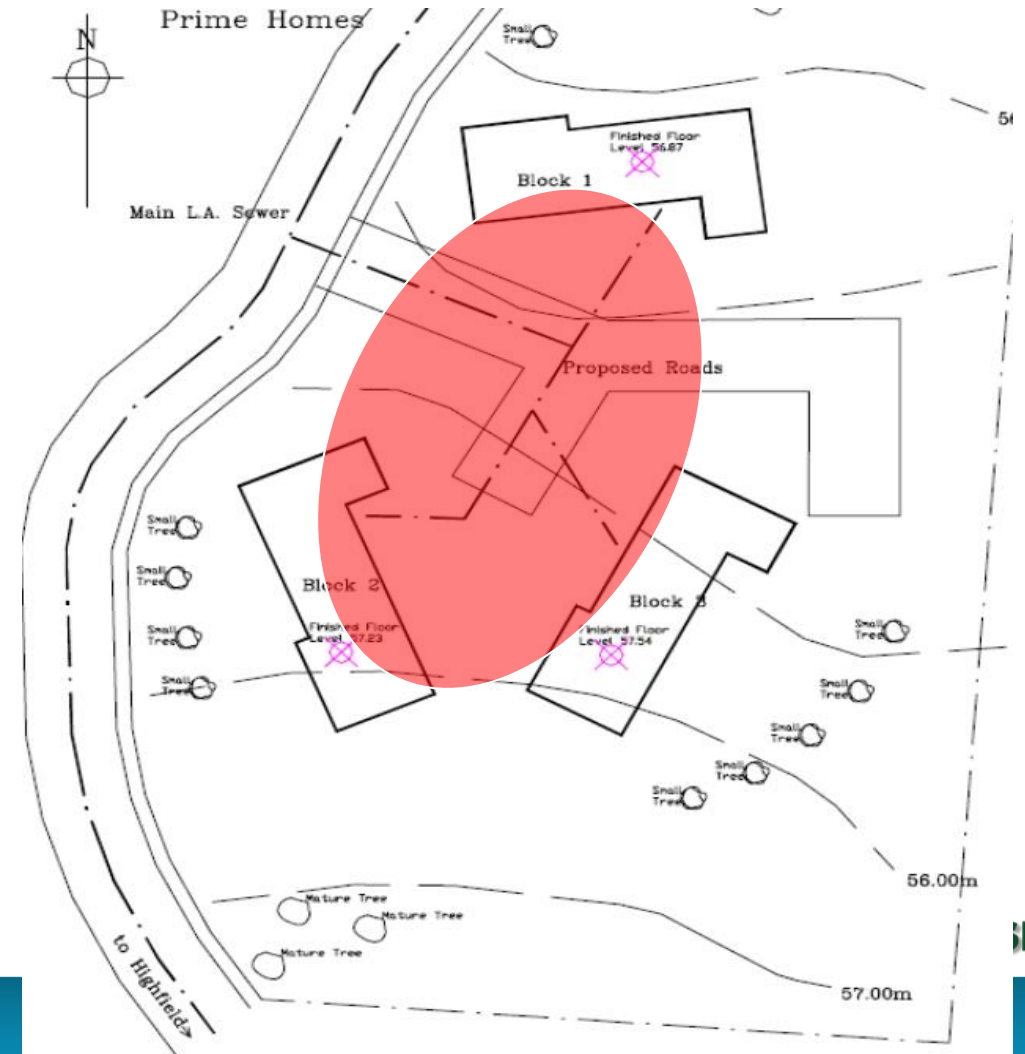
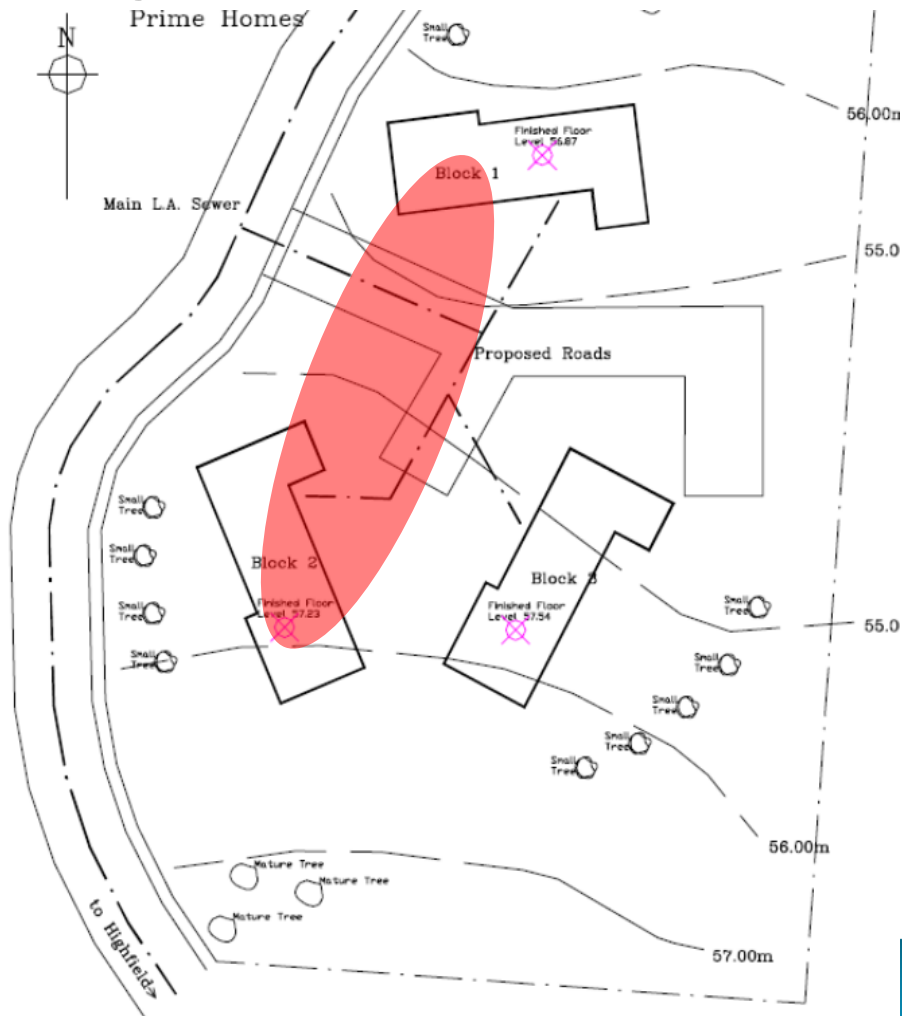
5. Are any potable wells that do not have a POET water system currently being sampled regularly as a result of this ground water contamination? ..... ☐ Yes ☐ No

If “Yes”, include these potable wells in the Ground Water Monitoring Plan for the site.



# Vapor Intrusion Protectiveness – GW Scenarios

- Moving Plume



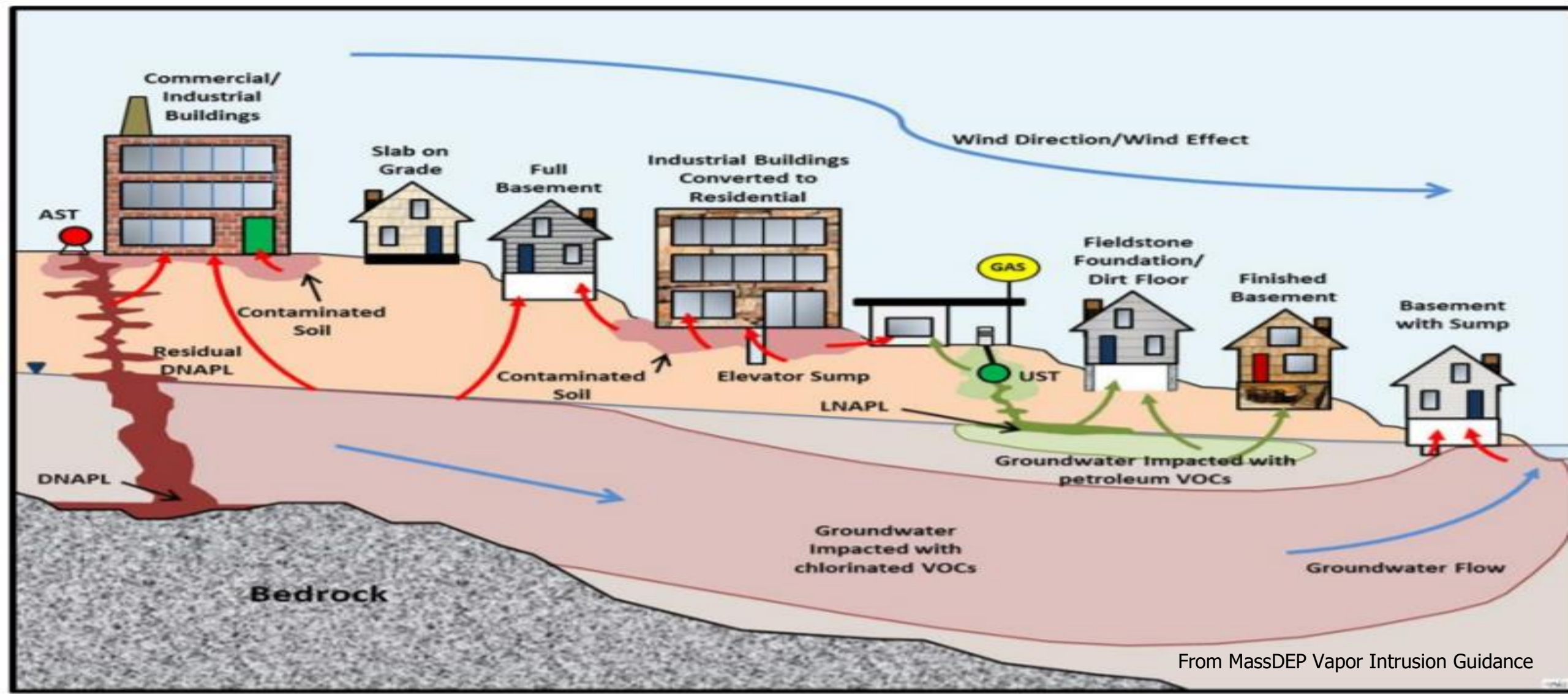
# Vapor Intrusion Protectiveness – GW Scenarios

- Biennial VI Protectiveness Questions – Section J, Question 2

SECTION J. VAPOR INTRUSION	
1. Are compounds of potential vapor intrusion concern included in the CEA/WRA? ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
If "Yes", then complete this section; otherwise proceed to the next section	
2. Based on the most recent data available or ground water data collected for the Ground Water Remedial Action Protectiveness/Biennial Certification Form, are any contaminants of concern currently above the Vapor Intrusion Ground Water Screening Levels that require a vapor intrusion investigation pursuant to N.J.A.C. 7:26E-1.15? ..... <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
If "Yes", attach a table with the vapor intrusion sampling results, a scaled site map indicating the location of all structures investigated for vapor intrusion, and provide a discussion of those results below or provide a written explanation with the reasons for not evaluating the vapor intrusion pathway.	
<div></div>	
3. Were there any changes in property use for the site or surrounding properties that required a vapor intrusion investigation pursuant to N.J.A.C. 7:26C-7.9(b)7? ..... <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If "Yes", attach a table with the vapor intrusion sampling results, a scaled site map indicating the location of all structures investigated for vapor intrusion, and provide a discussion of those results below or provide a written explanation with the reasons for not evaluating the vapor intrusion pathway:	
<div></div>	
4. Have any vapor intrusion engineering controls/mitigation systems been installed as a result of this ground water contamination? (If a system was installed, but not required for the remediation (i.e., there is not a complete VI pathway requiring the system), check "No") ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	
If "Yes", indicate the type of engineering control that was implemented: (check all that apply)	
<input type="checkbox"/> Sub-Slab Depressurization System (SSDS) <span style="float: right;">?</span>	
<input type="checkbox"/> Active <input type="checkbox"/> Passive	
<input type="checkbox"/> Sub-Slab Ventilation System	
<input type="checkbox"/> Soil Vapor Extraction System	
<input type="checkbox"/> Other (specify): <div></div>	
<b>Attach</b> any vapor intrusion sampling results as required from the OMM Plan for the vapor intrusion engineering control(s)/mitigation system(s) for the permit, including the NJDEP Vapor Intrusion Mitigation Monitoring and Maintenance Checklist. Provide a scaled site map that clearly identifies the building(s) and/or structure(s) with the vapor intrusion engineering control(s)/mitigation system(s) in place, including the address and block and lot of each impacted property.	
<b>Note:</b> A Ground Water RAP Modification Application should be submitted if the vapor intrusion engineering controls/mitigation systems is not included in the Ground Water RAP for the site.	
5. Is there soil gas contamination above the Soil Gas Screening Levels beneath any buildings that require long-term monitoring? ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	
If "Yes", attach documentation of building inspections and/or any vapor intrusion sampling results as required from the Vapor Intrusion Long-Term Monitoring Plan for the permit. <span style="float: right;">?</span>	
<b>Note:</b> A Ground Water RAP Modification Application should be submitted if the Vapor Intrusion Long-Term Monitoring Plan is not included in the Ground Water RAP for the site.	
6. Are there any buildings with an Indeterminate Vapor Intrusion Pathway status? ..... <input type="checkbox"/> Yes <input type="checkbox"/> No	
If "Yes", have annual inspections been completed to determine the change in use? ..... <input type="checkbox"/> Yes <input type="checkbox"/> No <span style="float: right;">?</span>	
<b>Attach</b> a summary of the inspections and a scale site map clearly identifying the buildings with Indeterminate Vapor Intrusion Pathway status, including the address and block/lot of each building.	
<b>Note:</b> A Ground Water RAP Modification Application should be submitted if the Indeterminate Vapor Intrusion Pathway status is not included in the Ground Water RAP for the site.	



# Vapor Intrusion Protectiveness – GW Scenarios



# Vapor Intrusion Protectiveness – GW Scenarios

- Proactive\* or Passive System to Active System

3. Are any vapor intrusion engineering controls/mitigation systems currently installed at any buildings as a result of this ground water contamination? ..... ☐ Yes ☒ No

If "Yes", indicate the type of engineering control that was implemented: (check all that apply)

- ☐ Subsurface Depressurization System
- ☐ Subsurface Ventilation System
- ☐ Soil Vapor Extraction System
- ☐ HVAC Positive Pressure
- ☐ Other (specify):

As indicated in Section F above, an electronic copy of the OMM Plan for the vapor intrusion engineering control(s)/mitigation system(s) should be attached. The OMM Plan should clearly identify the building(s) and/or structure(s) and vapor intrusion engineering control(s)/mitigation system(s) that are in place (e.g., active or passive), including the address and block and lot of each impacted property.

\* Proactive Vapor Intrusion Mitigation System defined in Section 6.1.1.6 of the Vapor Intrusion Technical Guidance Document



# Vapor Intrusion Protectiveness – Soil Scenarios

- Soil Scenarios
  - Development
  - Building use change (unoccupied to occupied)\*
  - Building use change (non-residential to residential, school, day care)\*
  - Proactive or Passive System to Active System
- Landfills

*\* Most common based on NJDEP's experience*





# Vapor Intrusion Protectiveness – CECs

- 1,4-Dioxane
- 1,2,4-Trimethylbenzene



# Thank You



# Transition from Active Remedy to MNA

## *Are We There Yet?*

Neil Rivers, LSRP

Langan Engineering & Environmental Services, Inc.

[nrivers@langan.com](mailto:nrivers@langan.com)



# Background

- Active remedy implemented
- Monitoring indicates treatment may no longer be needed
  - Lower source area concentrations
  - Plume is stable or shrinking
  - Plume geochemistry consistent with contaminant degradation



# So, What's Next?

- Consider potential receptors
  - Revisit the Conceptual Site Model
- Assess potential for success of natural attenuation
  - Evaluate the potential for rebound
  - Consider MNA and Ground Water SI/RI/RA Guidance





# Reminder!

- Continue with permit-specified monitoring
  - Many older GW RAPs do not have a monitoring plan designed for MNA evaluation or long-term MNA monitoring
  - Supplement for MNA evaluation, but an updated plan will eventually be needed
  - Consider remediation life cycle in future GW RAP applications



# Consider potential receptors

- Revisit the Conceptual Site Model
  - Will discontinuing active remediation alter the plume dynamics?
  - Changes in property or ground water use?
    - VI assessments
    - Sentinel well locations
    - Potable supply wells
    - Need to change monitoring program?



# Assess potential for MNA

- Refer to MNA and Ground Water SI/RI/RA Guidance
- Sample from throughout the plume
  - Evaluate “rebound” in treatment zone
  - Vertical and horizontal (lateral and downgradient) conditions
  - Account for seasonal variability/measure gw elevations
- Likely to need 8 rounds of post-treatment data
  - With at least 4 consecutive quarterly events



# Success! Submit Permit Modification

- Remedial Action Permit Modification Application form
- Cover letter/report explaining reason for modification
- Provide MNA monitoring results and modeling
  - Include depth to ground water and concentration data
  - Include ground water elevation contours
  - Include secondary and tertiary lines of evidence, if applicable
- CEA/WRA Fact Sheet form



# Success! Submit Permit Modification

- Updated Long Term Monitoring Plan
  - May not need some of the wells from the treatment zone
  - Adjust sampling frequency and analytical suite as needed
    - Protection of receptors
    - Decision-relevant data (selection of analytical parameters)
  - VI monitoring plan, if applicable
- OM&M plans for VI mitigation and POETs, as needed





# Transition from MNA to Closure

*Finally!*



# Background

- Ground water monitoring indicates compliance with GWQS  
or
- The modeled CEA duration is approaching



# Verify compliance with GWQS

- Minimum of two successive rounds of concentration data
  - At least one round biased to expected higher concentrations
    - Consider seasonal variability
  - Demonstrate compliance throughout the entire plume
    - Vertically and horizontally



# Success! Terminate CEA and RAP

- Remedial Action Permit Termination Application form
- Cover letter/report justifying termination
- Provide ground water monitoring results



# Success! RAO Update NOT Required

Limited Restricted Use RAO + GW RAP Termination =  
Unrestricted Use GW RAO





# Questions?



**BREAK**



# Frequently Asked Questions

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# Remedial Action Permit Schedule - Remedial Action Protectiveness/ Biennial Certification Form Submissions

**Question:** The monitoring wells in my Ground Water Remedial Action Permit (RAP)/Ground Water Monitoring Plan (GWMP) are inaccessible due to snow cover from the most recent blizzard. A 90-day extension is being requested to submit the Ground Water Remedial Action Protectiveness/Biennial Certification Form (Bi-Cert) for the site. Is this acceptable?

**Answer:** No, the Department recommends sampling the monitoring wells as soon as possible, but maintaining the Ground Water RAP schedule and noting the issue in the Ground Water Bi-Cert Form due for the site.

**Please note that the next Ground Water Bi-Cert Form due should include the missing and regularly scheduled ground water sampling data**



# Ground Water Monitoring Plan

**Question:** A Ground Water RAP/GWMP was approved with sampling of all monitoring wells at the expiration of the CEA. Is it acceptable to only sample source area monitoring wells to see if they are still contaminated?

**Answer:** No, all monitoring wells in the Ground Water RAP/GWMP should be sampled at the expiration of the CEA.





# Ground Water Monitoring Plan

**Question:** A Ground Water RAP/GWMP was approved with no sentinel wells in it. Is this acceptable?

**Answer:** No, all Ground Water RAPs/GWMPs are required to have a clean downgradient sentinel well in it pursuant to N.J.A.C. 7:26C-7.5 to demonstrate the continued effectiveness and protectiveness of the MNA remedy and receptors for the duration of the permit. Therefore, a Ground Water RAP Modification Application should be submitted when ready.

**Please note that professional judgment can be provided as necessary for site-specific scenarios**



# Change in Remedial Action after RAP is Issued

**Question:** Can you obtain a Ground Water Permit-By-Rule (PBR) for injections after a MNA RAP is issued?

**Answer:** Yes, as long as the injections are not delivered by a continuously operating/long-term system which would require a modification to an active RAP. A PBR can be obtained through the Bureau of Ground Water Pollution Abatement (BGWPA). Any changes to the monitoring plan/CEA would require a RAP modification.



# Engineering Controls (cont'd)

**Question:** If there is disturbance to an EC is a RAP modification required?

**Answer:**

1. If the EC will be restored within 60 days, it should be documented in the next Soil Bi-Cert Form submitted pursuant to ARRCS Model Deed Notice 7A.iv.(D). The new Rule no longer requires a call to the NJDEP Hotline.
2. If the EC is changed and not restored to the original condition noted in the Deed Notice, then a permit modification is required.
3. If the EC will remain but an additional material is added above it (i.e., topsoil, asphalt, etc.), a RAP modification is not required. This needs to be documented in the Soil Bi-Cert Form to alert the NJDEP inspector.



# Soil RAP – Property Sales/ Subdivisions

**Question:** In a scenario where the PRCR that maintains responsibility for the Soil RAP no longer owns the property, and the property owner chooses to sell or subdivide the property, what is the PRCR obligated to do?

**Answer:** Since the PRCR and the Property Owner are both permittees on the Soil RAP, both are equally responsible for compliance (i.e., permit transfers, terminating the original Deed Notice, filing new Deed Notices, and applying for new Soil RAPs or a RAP Modification, as appropriate). PRCR, Co-Permittees and LSRP are all now required to sign Permit Forms to ensure all parties are “in the loop”.



# RAO

**Question:** Do I need to modify my Limited-Restricted/Restricted Use RAO after my RAP is terminated?

**Answer:** No, the RAP termination letter in addition to the prior RAO constitutes unrestricted use for the AOCs that were covered by the RAP.



# Test Your Knowledge

**Do you need a PBR to perform injections after an MNA RAP is issued?**

- A. Yes
- B. No



# Test Your Knowledge

**Do you need a PBR to perform injections after an MNA RAP is issued?**

**A. Yes**

B. No

# Contact Changes

**Question:** How can I simply switch the person with primary responsibility for permit compliance from one existing Co-Permittee to another existing Co-Permittee? Does this require a permit modification?

**Answer:** No, use the Remedial Action Permit Contact Information Change form, and it's **FREE!**



# Thank You



# Biennial Certification Evaluation of Contaminants of Emerging Concern

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Remediation Review Element

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# PRCR's Obligations for CECs

**A PRCR's obligations for CEC are no different than obligations for any other contaminant**

These include, but are not limited to:

- notification to the Department via the NJDEP Hotline for all discharges and, as necessary
- remediation of any such discharges pursuant to N.J.A.C. 7:26C-1.7



# Evaluation

**An evaluation must be conducted by an LSRP or other environmental professional for every site currently undergoing remediation**

The evaluation must include:

- determination if 1,4-Dioxane, perchlorate, PFAS or 1,2,3-TCP is a contaminant of concern and
- if further investigation or clean up is required

The evaluation does not necessarily require sampling; however, multiple lines of evidence should be considered to determine if sampling and subsequent remediation is required.





# Evaluation (cont'd)

**Results must be included in the next remedial action protectiveness certification for Department review**

See the Department's administrative guidance for PFOA and PFOS:

- Listserv dated March 13, 2019:  
[https://www.nj.gov/dep/srp/srra/listserv\\_archives/2019/20190313\\_srra.html](https://www.nj.gov/dep/srp/srra/listserv_archives/2019/20190313_srra.html)
- Listserv dated May 28, 2019:  
[https://www.nj.gov/dep/srp/srra/listserv\\_archives/2019/20190528\\_srra.html](https://www.nj.gov/dep/srp/srra/listserv_archives/2019/20190528_srra.html)



# Sites or Areas of Concern with a Final Remediation Document

- CECs must be evaluated for sites or AOCs that have a final remediation document with a restricted use or limited restricted use for the permit-applicable areas of concern (AOCs)
- The evaluation must be submitted with the next remedial action protectiveness certification
- A CEC evaluation is to be conducted for sites or AOCs that have a final remediation document with an unrestricted use at the time of the next triggering event



# Remedial Action Protectiveness Certification Evaluation

**If a source of CEC contamination is identified during the remedial action protectiveness certification evaluation:**

A determination regarding establishment of new timeframes will be made for the CEC incident in accordance with the most recent version of the Department's administrative guidance "Addressing Contaminants of Emerging Concern (CECs) and Remedial Investigation and Remedial Action Timeframes for Existing Cases"

**The existing soil or ground water Remedial Action Permit may not be used to manage the investigation of the newly identified CEC**



# Thank You



# Biennial Certification Evaluation of Contaminants of Emerging Concern (cont'd)

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# Evaluate vs. Investigate

To comply with the Tech Regs, **all contamination**, including all discharged **hazardous substances, hazardous wastes, and pollutants**, must be addressed. Contaminants of emerging concern, if discharged to the waters or onto the lands of the State, are **pollutants** that must be remediated using an LSRP, *even if the contaminant is not a hazardous substance*.

When the **site or AOC** under remediation is currently or was formerly occupied by facilities **that manufactured, stored, handled, or used contaminants of emerging concern**, LSRPs must **consider** these contaminants during the investigation and remedial action. LSRPs must **evaluate** the site for potential spills and releases through air, water, and waste discharges.

<https://www.nj.gov/dep/srp/emerging-contaminants/>





# Evaluate Lines of Evidence

- Site history, use, timelines
- Area of investigation (AOC/full site)
- Storage, manufacturing, handling, use
- PA/SI info, MSDS records, discharge records
- Public records, fire records, newspapers
- Well records/UCMRs
- Property ownership
- ITRC and industry info
- LSRP's professional judgement





<https://pfas-1.itrcweb.org/>



## History and Use of Per- and Polyfluoroalkyl Substances (PFAS) *continued*

Table 2-1. Discovery and manufacturing history of select PFAS

PFAS <sup>1</sup>	Development Time Period							
	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
PTFE	Invented	Non-Stick Coatings			Waterproof Fabrics			
PFOS		Initial Production	Stain & Water Resistant Products	Firefighting foam				U.S. Reduction of PFOS, PFOA, PFNA (and other select PFAS <sup>2</sup> )
PFOA		Initial Production	Protective Coatings					
PFNA					Initial Production	Architectural Resins		
Fluoro-telomers					Initial Production	Firefighting Foams		
Dominant Process <sup>3</sup>		Electrochemical Fluorination (ECF)						Fluoro-telomerization (shorter chain ECF)
Pre-Invention of Chemistry /			Initial Chemical Synthesis / Production			Commercial Products Introduced and Used		

### Notes:

1. This table includes fluoropolymers, PFAAs, and fluorotelomers. PTFE (polytetrafluoroethylene) is a fluoropolymer. PFOS, PFOA, and PFNA (perfluorononanoic acid) are PFAAs.
2. Refer to Section 3.4.
3. The dominant manufacturing process is shown in the table; note, however, that ECF and fluorotelomerization have both been, and continue to be, used for the production of select PFAS.

**Sources:** Prevedouros et al. 2006; Concawe 2016; Chemours 2017; Gore-Tex 2017; US Naval Research Academy 2017



# Evaluate Example- No Sampling Trigger

## Bi-Cert for AOC-Specific GW RAP

- Evaluate ONLY relevant AOC
- GW impacts: BTEX, MTBE
- Lines of evidence:
  - Closed gas station/tank farm release
  - Petroleum products only
  - Vegetated prior; vacant post
  - No history of fires
  - Public records/UCMR data; no CECs
- Document lines of evidence supporting professional judgement in Section L or attach a memo





# Evaluate Example- No Sampling Trigger

## Bi-Cert for Site-wide Soil RAP

- Several AOCs/Conditional RAOs (deed/cap)
- Lines of evidence:
  - Chemical facility
  - PA/SI, MSDSs, employee interviews – CECs not suspected to be manufactured, stored or used
  - Review product history and ITRC timelines
  - Public records/UCMR data; no CECs
  - AFFF system; concrete drains/floors; closed loop
  - No history of fires
- Document the lines of evidence to support your professional judgement in Section K or attach memo
- Revisit with each biennial recertification



# Evaluate Example – Sampling Trigger

- Assume previous example evaluation resulted in trigger to investigate
- Samples collected and CECs present (not background)
- Can you address in your Bi-Cert?

**Maybe**



# Can You Address CECs in Bi-Cert?

## Potentially **YES**

- CEC discharge coincident with permitted AOC
- Plume delineated
- GW within limit of CEA
- Soil impacts within I/E controls
- Controls are protective
- No additional investigation needed
- Update permit; reflect CECs

## Probably **NOT**

- CEC discharge different than permitted AOC
- Plume not delineated
- Plume geometry different
- Soil impacts not within I/E control
- Controls not protective
- Additional investigation needed
- Address as separate case/discharge

**If CECs require remediation that can't be completed during Bi-Cert timeframe – must go through RI/RA process**





# Thank You



# Questions?

