



Presumptive and Alternative Remedies Guidance

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What is a presumptive remedy

- A presumptive remedy is a pre-approved remedy that can be used "as is"
- They are listed on Table 5.1





What we will cover today

- Presumptive remedies
 - Case examples of presumptive remedies
- Alternative remedies
 - Case examples of alternative remedies
- Q & A





Presumptive Remedies

- **What** – Section 35g of SRRA requires the DEP to establish presumptive remedies for sensitive populations
- **When** - Remediation initiated at an entire site or area of concern after May 7, 2010
- **Where** - New construction of, or change in use to, a school, child care center or residence





Rules and guidance for presumptive remedies

- The proposed Technical Rules will include presumptive remedy requirements at N.J.A.C. 7:26E-5.3
- Guidance now includes “should” items that will be incorporated into rule





Rules and guidance for presumptive remedies

- Until May 2012, when the rules are adopted, use the guidance to comply with the requirements of SRRA
- After May 2012 the guidance will be changed to support with the new “shall” rule requirements





What's in the guidance?

- Presumptive remedies that can be “taken off the shelf” and implemented for different types of contamination
- Procedures to develop alternative remedies
 - Alternative remedies must be pre-approved by the Department
 - Submit Alternative Remedial Action form to Bureau of Initial Notice and Case Assignment (form under development)





When are Presumptive Remedies used?

Presumptive remedies are used at the remedial action selection phase (RAWP), when there will be new construction of, or change in use to a:

- School
- Child care center
- Residence





What are the remedial options?

- Unrestricted use remedy (No DEP pre-approval)
- Presumptive remedy (No DEP pre-approval)
- Alternative remedy (DEP pre-approval of RAWP is required)

And...





Cases that will require DEP approval prior to building residential, school or child care facility

- Site contains contamination with dioxins & furans, hexavalent chromium or unexploded ordinance (UXO)
- Containment of free product is proposed
- Site is a landfill that does not require leachate or gas collection and treatment
- Site is a landfill that requires leachate or gas collection and treatment (development is limited to multi-family residence only)





Landfill building prohibition

The construction of single family residences, schools or child care centers is prohibited when a landfill requires controls for the management of landfill gas or leachate.





When must a presumptive remedy be used?

Remediation initiated after May 7, 2010 at an entire site or area of concern that has:

- New construction of or change in use to
 - Schools
 - Child care centers and
 - Residences





What does “initiate remediation” mean?

- **Initiate remediation** means the start of the remediation process including
 - Discovering a discharge
 - Any ISRA triggering event
 - Calling the hotline
 - Submitting a discharge notification form
- **Remediation** means all necessary actions to investigate and cleanup or respond to a discharge





What does “new construction ” and “change of use” mean?

- **New construction** means any new building or an addition to an existing building that will extend the footprint
- **Change of use** means an existing building not previously used as a school, child care center or residence will be used for that purpose
 - Includes when a school, child care center or residence moves from an upper floor to the lowest level floor in a building





Other presumptive remedy issues

- The presumptive remedy is only required at the portion of the site that is subject to presumptive remedy requirements
- A presumptive remedy may be used (but is not required) at any other contaminated site





Remember - General Requirements of Technical Rules Still Apply

- Remediation of free and residual product
- Remediation of soil, ground water, surface water and sediment contamination
- Requirement to obtain remedial action permits, as applicable





Table 5.1 - The heart of the presumptive remedy guidance

- Lists presumptive remedy options for
 - Different types of contamination
 - Different building and site use scenarios
- Currently in guidance
- Will be incorporated into the Technical Rules





What is in Table 5.1?

Contamination type

Subcategories/Scenarios

Presumptive Remedy/ Remediation Goal

Remedial Action-Schools, Child Care Centers, and Type II and Type I Residential





When will remediation to unrestricted use standards be required?

- Areas of concern that are **discrete discharges**
 - A discrete discharge is an AOC that is estimated to contain less than 300 yards³ of contaminated soil
- Widespread PCB contamination at **Residential Type I** properties





What does “Residential Type II” and “Type I” mean?

- **Residential Type II** means a residence where there are areas under the control or authority of someone, other than the occupant, who can stop the occupants from disturbing any engineering control
 - Apartment buildings
 - Common areas in condo complex
 - Rental units
- **Residential Type I** means a residence that is not Type II





Components of a Presumptive Remedy - Engineering and Institutional Controls

- Barrier – Prevents exposure
- Buffer – Provides an additional level of protection in case of a barrier breach
- Demarcation – Provides visual identification of the vertical limit of an engineering control
- Monitoring & Maintenance – Ensures the integrity of engineering and institutional controls over time





What will be required to address vapor intrusion

- New Construction: the installation of subslab depressurization system per Vapor Intrusion Guidance (VIG) regardless of whether a vapor concern exists
- Existing Structures when there is a change in use: a vapor intrusion investigation per the VIG





Case Example 1

Former Car Dealership & Repair Shop

Existing site conditions

- Drywell – soil and ground water contaminated with chlorinated solvents and metals
- VOCs in ground water
- Historic Fill

Planned redevelopment

- New construction of apartment complex
- Building will cover most of property except for maintenance area and landscaping





Case Example 1

Discrete area discharge

Drywell

- Presumptive remedy - address as a discrete area discharge
 - Remedial investigation estimates approx. 250 yards³ of contaminated soil
 - Excavate AOC to comply with residential direct contact soil remediation standards





Case Example 1

VOC contaminated ground water

- Presumptive remedy
 - install a subslab depressurization system per Vapor Intrusion Guidance (VIG) capable of conversion to active system
 - Sample after building construction
 - Convert passive system to active system based upon sample results
- If necessary, conduct off-site vapor intrusion investigation per the Technical Rules and Vapor Intrusion Guidance (VIG)





Case Example 1

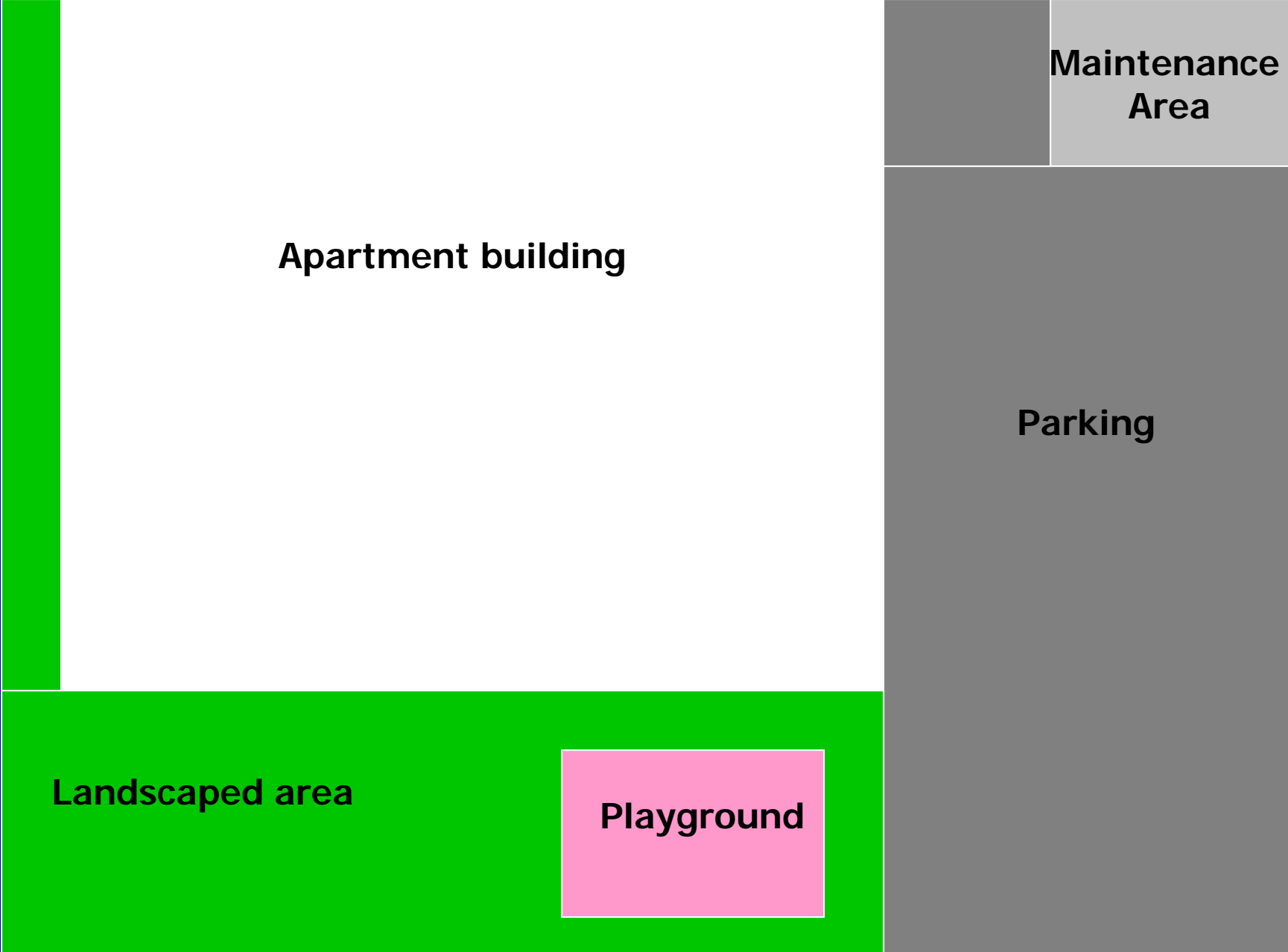
Historic Fill

- Presumptive remedy per Table 5.1 for Residential Type II based on development planned
 - Building
 - Landscaped areas
 - Maintenance areas
 - Playground

Remember: Any remediation other than unrestricted use will require a remedial action permit and engineering controls



Case Example 1 – Planned use





Case Example 1

Historic Fill – Area under building

Presumptive Remedy Table 5.1

	<u>Option 1</u>	<u>Option 2</u>
• Barrier	4" concrete	1' clean fill, vapor barrier
• Buffer	4" sub base	1' clean fill
• Demarcation	Visible boundary marker	Visible boundary marker
• Inspection Schedule	Annual	Semi-annual





Case Example 1

Historic Fill – Landscaped Areas

Presumptive Remedy Table 5.1

	<u>Option 1</u>	<u>Option 2</u>
• Barrier	1' clean fill	2' clean fill
• Buffer	1' clean fill	2' clean fill
• Demarcation	Geotextile fabric	Visible boundary marker
• Inspection Schedule	Semi-Annual	Annual





Case Example 1

Historic Fill – Maintenance

Area Presumptive Remedy Table 5.1

- Barrier 4" concrete or asphalt
- Buffer 4" sub base
- Demarcation Visible boundary marker
- Inspection Schedule Annual





Case Example 1

Historic Fill Playground w/mulch

Presumptive Remedy Table 5.1

	<u>Option 1</u>	<u>Option 2</u>
• Barrier	1' clean fill	2' clean fill
• Buffer	1' clean fill	2' clean fill
• Demarcation	Geotextile fabric	Visible boundary marker
• Inspection Schedule	Quarterly	Semi-Annual





Case Example 2

ISRA Industrial Establishment

Existing site conditions

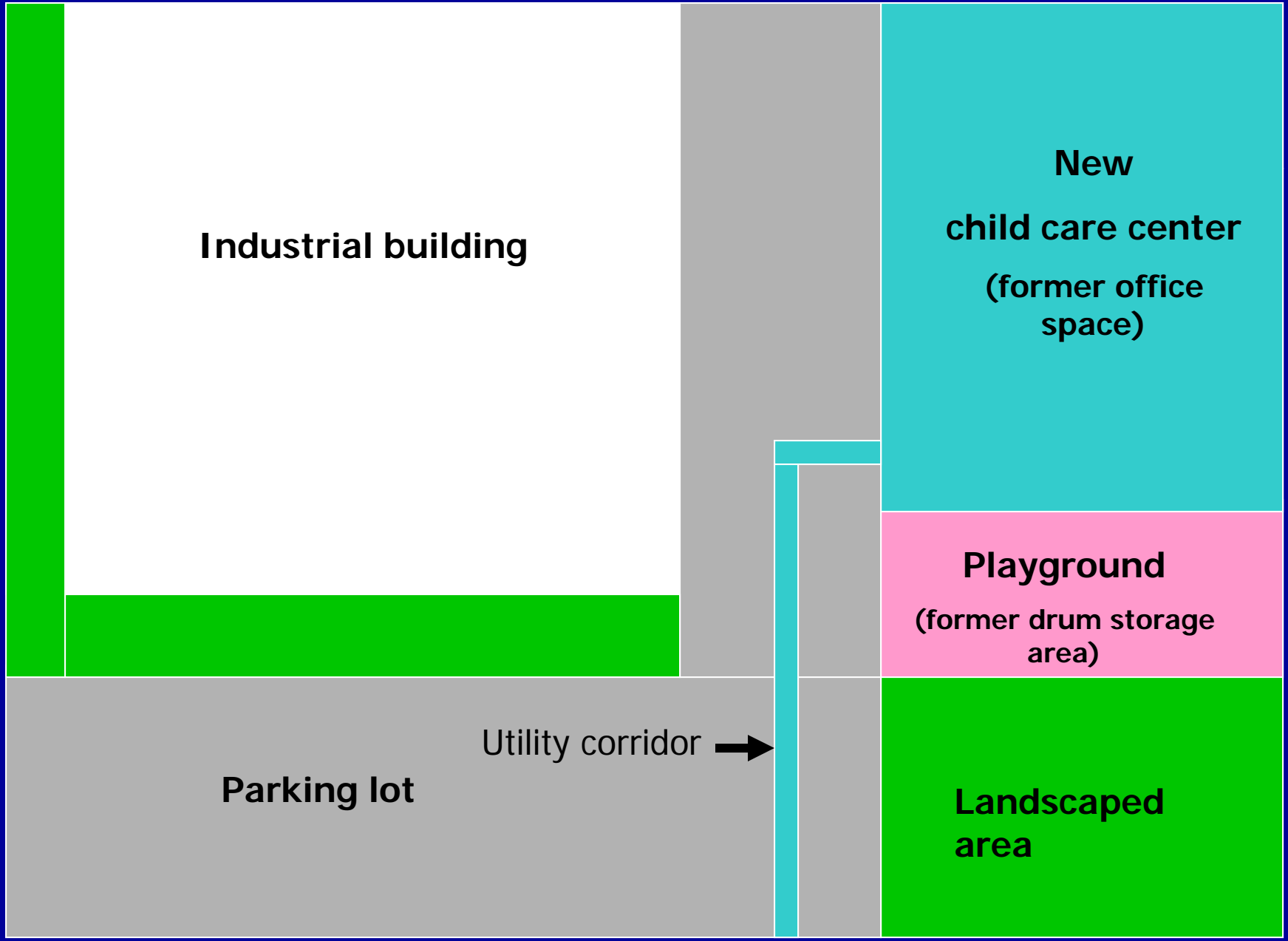
- Numerous AOCs at industrial building not requiring presumptive remedies
- Soil contaminated with metals
- VOCs in ground water

Planned redevelopment

- Convert former office space into new child care center
- Building new playground on former drum storage area



Case Example 2 – Planned use





Case Example 2 Drum Storage Area – Playground w/rubber matting

Presumptive Remedy Table 5.1

	<u>Option 1</u>	<u>Option 2</u>	<u>Option 3</u>
• Barrier Matting and...)	6" cr. stone	4" concrete	1' clean fill
• Buffer	6" cr. stone	4" subbase	1' clean fill
• Demarcation	Geotextile	Visible marker	Visible marker
• Inspection Schedule	Annual	Annual	Annual





Case Example 2

Utility Corridor - Piping & Conduits Placed in Trenches

Presumptive Remedy Table 5.1

- **Barrier** Min. 1 foot of clean fill from surface down to utility
- **Buffer** Min. 1 foot of clean fill below and around the utility
- **Demarcation** Visible boundary marker along the bottom and sides of the trench
- **Inspection Schedule** Annual





Does existing the site condition meet the criteria of Table 5.1?

- Compare existing conditions to presumptive remedy
 - Existing parking lot: 8 inches of asphalt over sand
 - Presumptive remedy: 4 inches of asphalt, 4 inches of subbase over visible boundary marker
- Meets (or exceeds) presumptive remedy - add annual monitoring





Alternative Remedies

- **What** – Section 35g(10) of SRRRA allows the use of alternative remedies under certain conditions
- **When** – After May 7, 2010, when the use of the presumptive remedy is impractical or alternative will be equally protective
- **Where** – New construction of, or change in use to, a school, child care center or residence





Alternative Remedies

- The remediating party may consider an alternative remedy when he/she
 - Can demonstrate that the alternative remedy will be as protective as the presumptive remedy over time
 - Determines it is impractical to implement a presumptive or unrestricted use remedy due to conditions at the site
- Alternative remedies must be preapproved by the Department





How to Submit an Alternative Remedy Proposal

- Submit Alternative Remedy Proposal in the format of a Remedial Action Work Plan (RAWP) for the portion of the site to be used for residence, school or child care
- Submit prior to RAWP for whole site
- Include the new Alternative Remedy form
- Whole site RAWP must include DEP's prior approval of the Alternative Remedy





Process to determine if remedy will be equally protective over time

- Evaluate presumptive remedy
- Determine which component needs to be changed
- Augment at least one component to compensate





Example 3

Former auto dealership and repair

Existing site conditions

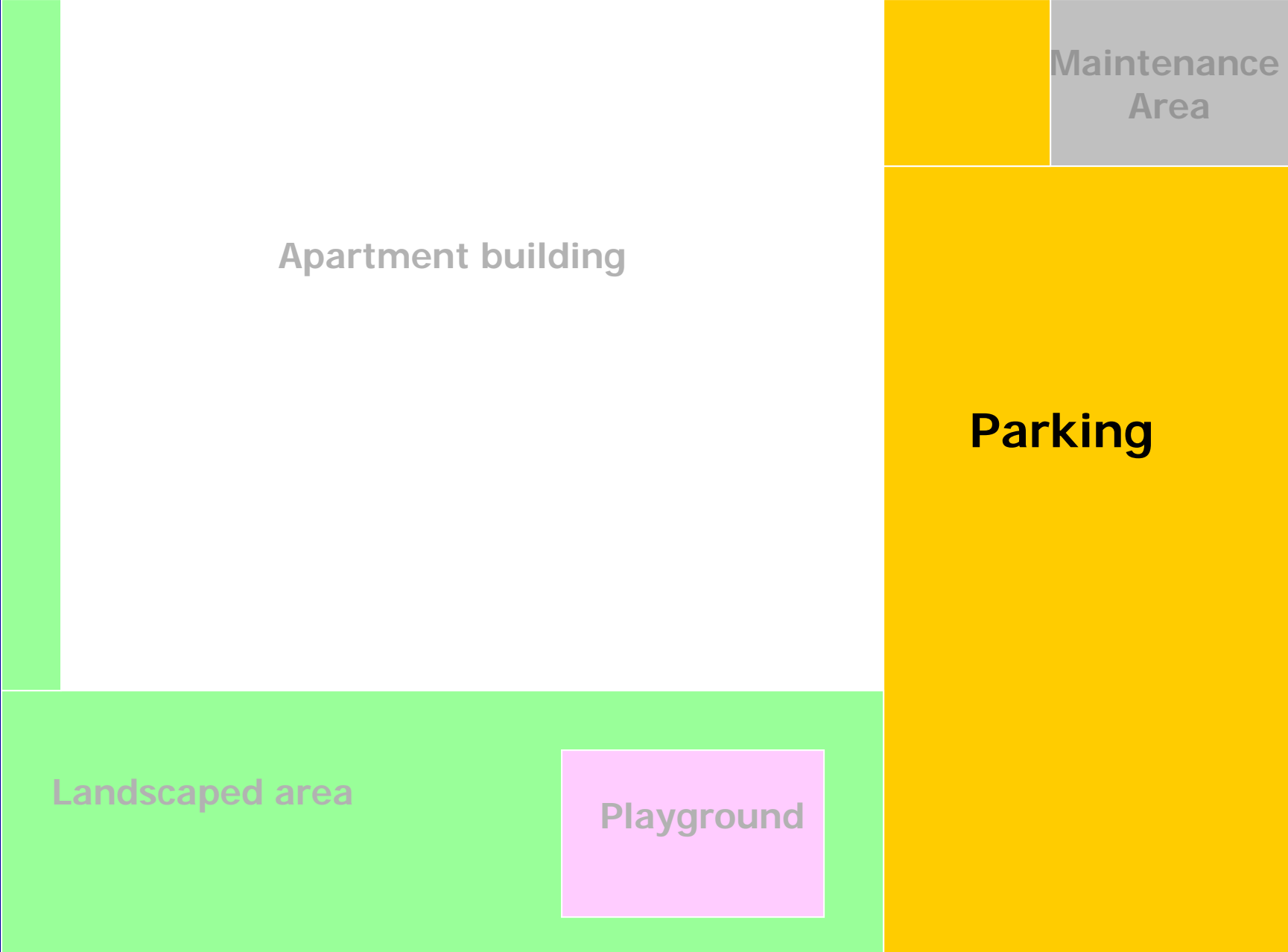
- Drywell – soil and ground water contaminated with chlorinated solvents and metals
- VOCs in ground water

Planned redevelopment

- Redevelopment to an apartment complex
 - New construction of building
 - **Reuse of existing parking area**



Case Example 3 – Planned use





Case Example 3

Evaluate presumptive remedy for the parking area

- Barrier - Minimum of 4" of concrete or asphalt
- Buffer - Minimum of 4" of sub base
- Demarcation - Visible boundary marker
- Inspection - Annual





Case Example 3.1

Determine how to modify buffer to make equally protective over time

Presumptive Remedy

- Barrier - Minimum of 4" of concrete or asphalt
- Buffer - Minimum of 4" of sub base

Current site conditions

- Barrier - 5" of concrete
- Buffer - 2" of sub-base

No modification of buffer needed - less total thickness but material more durable





Case Example 3.2

Determine how to modify barrier to make equally protective over time

Presumptive Remedy

- Barrier - Minimum of 4" of concrete or asphalt
- Buffer - Minimum of 4" of sub base

Current site conditions

- Barrier - 3" of concrete
- Buffer - 2" of sub-base

Propose to increase barrier thickness to 5" of concrete





Case Example 3.3

Determine how to modify demarcation to make equally protective over time

Presumptive Remedy

- Barrier - Minimum of 4" of concrete or asphalt
- Buffer - Minimum of 4" of sub base
- Demarcation – visible boundary marker
- Monitoring – annual

Current site conditions

- Barrier - 4" of concrete
- Buffer - 4" of sub-base
- Demarcation – none
- Monitoring – semi annual

Increase monitoring frequency





Case Example 3.4

Determine how to modify monitoring to make equally protective over time

Presumptive Remedy

- Barrier - Minimum of 4" of concrete or asphalt
- Buffer - Minimum of 4" of sub base
- Monitoring – annual

Current site conditions

- Barrier - 8" of concrete
- Buffer - 4" of sub-base
- Monitoring – biennial (every 2 years)

Decrease monitoring frequency





Process to determine if presumptive remedy is impractical due to site conditions

- Evaluate presumptive remedy
- Evaluate site conditions such as
 - Steep slopes, unsuitable soils
 - Shallow bedrock
 - Need for extensive dewatering
 - Wetlands/flood plain
 - Proximity of structures
- Propose alternative remedy that is protective





Approval of Alternative Remedy Based on Impracticality

Department will look for

- Excessive or substantial impact
- Combinations of multiple conditions
- Prohibitive cost as a result of these conditions





Site conditions that could affect the use of a presumptive remedy

May be one extreme condition or several site conditions making presumptive remedy impractical

- Existing buildings – structural integrity of building makes it impractical to remove discrete discharge or to raise the topography of the site
- Existing buildings on site and off can make it impractical to get equipment into area to remove sufficient contaminated soil





Site conditions that could affect the use of a presumptive remedy – continued...

- Need for extensive dewatering with no other options available for controlling the ground water conditions can make it impractical to remove contaminated soil
- Wetlands/flood plain ecological evaluation determination that contamination should remain in place or that capping is not allowed





Alternative Remedy Proposal

- Demonstrate that the presumptive or unrestricted use remedy is impractical due to conditions at the site
 - Be specific about all of the conditions at your site and why the remedy is impractical
 - Describe the alternative remedy, for example
 - Limited shallow excavation, or
 - Engineering and institutional controls
(Table 5.1)





Case Example 4 – Former junkyard

Existing site conditions

- Numerous discrete area discharges
 - Presumptive remedy is an unrestricted use remedy to remove contaminated soil in a discrete area discharge

Planned redevelopment

- Single family homes (Type I residential)





Case Example 4

Evaluate presumptive remedy for discrete area discharges

- Determine the number of discrete area discharges compared with the size of the site
- Determine whether other site conditions could limit the ability to implement the presumptive remedy
- “Swiss cheese effect”





In Summary

Presumptive Remedies apply to schools, child care centers and residences and when remediation is/was initiated after May 7, 2010

Alternative Remedies can be proposed in lieu of a presumptive remedy

- Must be equally protective over time as the applicable Presumptive Remedy or
- Show that Presumptive Remedy or the unrestricted use remedy is impractical due to conditions at the site

Prior approval of the Alternative Remedy must be obtained from the Department





Contact Information

Site specific questions contact

- Lynne Mitchell (609) 777-4169
Lynne.Mitchell@dep.state.nj.us
- The Department will consult on Alternative Remedy proposals

For additional guidance

- John Oberer – GZA GeoEnvironmental, Inc., LSRPA
(215) 591-3800 ext 3616 or (267) 464-3616 direct
- Neil Rivers – Langan Engineering & Env. Services
(609) 282-8013





Web Information

- Information is also available at <http://www.nj.gov/dep/srp/guidance/srra/>





Questions?

