



**New Jersey Department of Environmental Protection
Site Remediation Program
Presumptive and Alternative Remedy Technical Guidance
July 2011**

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PRESUMPTIVE AND ALTERNATE REMEDY TECHNICAL GUIDANCE

1. INTENDED USE OF GUIDANCE DOCUMENT

This technical guidance is designed to help the person responsible for conducting remediation to comply with the New Jersey Department of Environmental Protection (Department) requirements established by the Technical Requirements for Site Remediation (Technical Rules) N.J.A.C. 7:26E. This technical guidance will be used by many different people involved in the remediation of a contaminated site, such as Licensed Site Remediation Professionals (LSRP), Non-LSRP environmental consultants and other environmental professionals. Therefore, the generic term “investigator” will be used to refer to any person that uses this technical guidance to remediate a contaminated site on behalf of a remediating party, including the remediating party itself.

The procedures for a person to vary from the technical requirements in regulation are outlined in the Technical Rules at N.J.A.C. 7:26E-1.7. Departure from guidance must be documented and adequately supported with data or other information. In applying technical guidance, the Department recognizes that professional judgment may result in a range of interpretations on the application of the guidance to site conditions.

This technical guidance supersedes previous Department guidance issued on this topic at N.J.S.A. 26:10C-16.

This technical guidance was prepared with stakeholder input. The following people were on the committee who prepared this document:

Lynne Mitchell – New Jersey Department of Environmental Protection

John Oberer – GZA GeoEnvironmental, Inc., Licensed Site Remediation Professional Program Association (LSRPA)

Neil Rivers – Langan Engineering & Environmental Services, NJ Builders Association

Ann Wolf – New Jersey Department of Environmental Protection

This technical guidance is to be used in concert with all applicable laws, rules and other Department guidance. Courtesy copies of the Department’s rules, including the Administrative Requirements for the Remediation of Contaminated Sites (ARRCS) rule, N.J.A.C. 7:26C, and amendments to the Technical Rules, N.J.A.C. 7:26E, are available on the Department’s website at www.nj.gov/dep/rules/. In addition, a courtesy copy of the Site Remediation Reform Act (SRRA), N.J.S.A. 58:10C et seq. and other statutes are posted at www.state.nj.us/dep/srp/.

2. PURPOSE

The purpose of this document is to assist investigators in implementing presumptive remedies and alternative remedies. A presumptive remedy is a remedy that can be implemented at a contaminated site without the need for Departmental approval. An alternative remedy is a remedy that must receive Departmental approval before it can be implemented and can only be proposed when the presumptive remedy is impractical due to conditions at the site or when the alternative remedy will be equally protective over time. Presumptive remedies may be used at any site if desired by the person responsible for conducting the remediation even if they are not required pursuant to the Technical Rules. If a presumptive remedy is not required, then an alternative remedy cannot be proposed.

Pursuant N.J.S.A. 58:10B-12(g), the Department is required to establish presumptive remedies for any remediation initiated after May 7, 2010, at a site or area of concern (AOC) where new construction is proposed for residential purposes; for use as a licensed child care center or as a public school, private school, or charter school; or where there will be a change in the use of the site to residential, child care, or public school, private school, or charter school purposes. It is necessary that a remedial action conducted at these facilities is an unrestricted use remedy, presumptive remedy or an alternative remedy that is pre-approved by the Department prior to implementation.

3. DOCUMENT OVERVIEW

This document describes the use of presumptive remedies where there will be new construction or a change in use at a contaminated site or AOC and where the site or AOC is planned for residential purposes, for use as a licensed child care center or as a public school, private school or charter school. This document also provides technical guidance in developing alternative remedies and preparing a Remedial Action Work Plan (RAWP) for the AOC that is subject to the presumptive remedy requirements.

4. GENERAL PRESUMPTIVE REMEDY CRITERIA

4.1 Applicability

Pursuant to N.J.S.A. 58:10B-12(g), the Department is required to establish presumptive remedies for any remediation initiated after May 7, 2010, at a site or AOC where new construction is proposed for residential purposes; for use as a licensed child care center or as a public school, private school, or charter school; or where there will be a change in the use of the site to residential, child care, or public school, private school, or charter school purposes.

The phrase "initiate remediation" refers to the start of the remediation process in accordance with the definition of remediation:

"Remediation" or "remediate" means all necessary actions to investigate and cleanup or respond to any known, suspected, or threatened discharge, including, as necessary, the preliminary assessment, site investigation, remedial investigation and remedial action.

The person responsible for conducting remediation at an existing school, child care center or residence is not required to use a presumptive remedy. The only portion of the site subject to presumptive remedies is that area where there will be new construction of, or change in use to, a school, child care center or residence and is used for those purposes. If a portion of a building is being converted to a child care center then all areas of the building where the children have access, including the parking lot, would be subject to presumptive remedy requirements. The remainder of the building would not be required to use a presumptive remedy.

4.2 Technical Rule Requirements

The person responsible for conducting the remediation should apply the criteria noted below to all sites with new construction or change in use to a school, child care center or residence:

- All remedial action permit requirements must be met pursuant to N.J.A.C. 7:26C-7.1.
- All remedies must comply with applicable federal, state, and local requirements pursuant to N.J.A.C. 7:26E-1.3.
- Free and/or residual product must be removed and/or treated pursuant to N.J.A.C. 7:26E-6.1(d).
- Ground water, surface water and sediment contamination must be addressed pursuant to N.J.A.C. 7:26E.
- Volatile organic contaminants and other mobile contaminants, including contaminants in soils that have or may impact ground water, must be addressed pursuant to N.J.A.C. 7:26E.

4.3 Presumptive Remedies in Table 5.1

Each presumptive remedy listed on Table 5.1 consists of engineering and institutional controls divided into four major components consisting of a physical barrier, buffer, visible demarcation and inspection. The amount of material in the barrier layer should be added to the material in the buffer layer to equal the material that is needed for the presumptive remedy. The applications of these terms are further explained below:

- **Physical barrier** is either a durable surface material or a clean fill layer that prevents direct human contact to the contaminated material(s).

- **Buffer layer** consists of a separate additional clean fill layer (top soil, fill dirt, gravel, etc.) of another specified thickness that provides added protection from exposure in the event of breaches of the physical barrier. The buffer layer is placed immediately below the barrier with no space in between the layers.
- **Visible demarcation** such as a visible contamination boundary marker (e.g., orange plastic snow fence) or geotextile fabric, that provides a visible warning to those conducting intrusive activities. The purpose of the visible demarcation is to serve notification of the vertical limit of the engineering control and beginning of the contaminated zone. The geotextile fabric may limit upward contaminant migration and provides a better physical barrier to the contamination below compared to the orange plastic snow fencing.
- **Inspection, monitoring and maintenance requirements** of a deed notice and remedial action permit provide a mechanism for protection of public health and for disruption/restoration procedures to support the long term effectiveness of the remedy.

5. REMEDIAL ACTIONS

Presumptive remedies were developed based upon consideration of the historical use of the property, the nature and extent of the contamination at the site, the future use of the site and other factors deemed relevant by the Department. The presumptive remedies are minimum requirements.

In circumstances where more than one contamination type/subcategory exists at a site or AOC, the person responsible for conducting the remediation should select the most stringent remedy appropriate to address the contamination.

5.1 Discrete Area Discharges

Discrete area discharges are areas of contamination that can readily be remediated by excavation and off-site disposal using routinely available construction equipment and conventional techniques. A discrete area discharge comprises a volume of 300 cubic yards or less of contaminated soil. The person responsible for conducting the remediation should remove and/or treat the contamination to unrestricted use levels.

The unrestricted use remedy is independent of contamination type(s) and does not include site-wide, ubiquitous, large-scale contaminated soil areas. Discrete area discharges do not apply to unexploded ordnance, chlorinated dioxins and furans, hexavalent chromium and those landfills that should submit a RAWP to the Department for review and approval. Discrete discharges do not apply to historic fill material. Some examples of discrete area discharges include, but are not limited to, contaminated soils originating from an above or below ground drum, overfills or leaks of associated underground storage tanks/aboveground storage tank systems, and surface spills of a regulated hazardous substance.

If there are discrete area discharges within a larger area of contamination that will be remediated to restricted use standards, pursuant to a Department approved alternative remedy then the person responsible for conducting the remediation may remediate the discrete area discharge to restricted use standards. For example, contamination from a discharge of heating oil from an aboveground storage tank commingled with historic fill contamination, without an immediate environmental concerns, free and/or residual product remediation, vapor intrusion (VI) conditions, soil impact to ground water standards/criteria, ground water impacts, and/or ecological concerns, can submit to the Department for an alternative remedy to cap the area. If multiple discrete area discharges exist at the site or AOC, it may become impractical based on the site conditions to utilize the presumptive remedy. The person responsible for conducting the remediation can propose an alternative remedy in accordance with section 6 below. The alternative remedy may be either a suitable capping remedy from Table 5.1 of the Technical Rules, consolidation of contaminated soil in accordance with the Department's Fill Guidance document or another alternative remedy in accordance with section 6 below.

5.2 Historic Fill and Other Discharged Contaminants Not Otherwise Excluded

The presumptive remedies for historic fill, diffuse anthropogenic pollutants, coal tar and other discharged contaminants, not otherwise excluded, are listed on Table 5.1 of this guidance. Discharged contaminants excluded from Table 5.1 are mobile chemicals, polychlorinated biphenyls (PCBs), chromium, dioxin and furans. These remedies consist of restricted use with institutional and engineering controls for all schools, child care centers, and residential properties. The person responsible for conducting the remediation may

remediate historic fill contamination to the unrestricted standards. If the specific intended use of an area at a school, child care center or a residence is not indicated on a row of Table 5.1, then the person responsible for conducting the remediation should propose an alternative remedy.

5.3 Polychlorinated Biphenyls

PCBs are federally regulated under the Toxic Substance Control Act (TSCA) at 40 CFR 761.61. The presumptive remedy for PCBs can be found on Table 5.1 of the Technical Rules. All presumptive remedies must comply with all federal TSCA rules and regulations. TSCA stipulates a range of self-implementing cleanup levels based upon future high and low occupancy scenarios that are identified in 40 CFR 761.61 (a)4. Pursuant to 40 CFR 761.61(c), the person responsible for conducting remediation must obtain United State Environmental Protection Agency written approval for remedial actions that do not meet the federal self-implementing criteria.

5.4 Landfills

Pursuant to the Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-12(g), the construction of single family residences, schools, or child care centers is prohibited on a landfill that undergoes remediation if engineering controls are required for the management of landfill gas or leachate.

5.5 Remedial Action Work Plans Requiring Departmental Pre-approval

The investigator should obtain the Department's written approval of a remedial action prior to implementation by proposing a RAWP prepared pursuant to the Technical Rules for the following:

- containment of free product
- unexploded ordnance
- chlorinated dioxins and furans
- hexavalent chromium
- landfills not referenced in section 5.4
- an alternative remedy as detailed in section 6 below

5.6 Vapor Intrusion

The recommendations in 5.6.1 and 5.6.2 below should be met regardless of whether a trigger exists to conduct a vapor investigation pursuant to the Vapor Intrusion Guidance (VIG) Document or to install a vapor mitigation system.

5.6.1 New Construction

For all new construction where residences, schools, or child care centers are planned on sites where remediation was initiated on or after May 7, 2010, a vapor barrier and passive subsurface depressurization system suitable for conversion to an active system should be installed. If a trigger does not exist pursuant to the VIG and if vapor contaminants are unlikely to enter the space used by the sensitive receptor, then an alternative remedy that is equally protective may be proposed.

5.6.2 Existing Buildings

For any existing buildings where conversions to residences, schools, or child care centers are planned on a site where remediation was initiated on or after May 7, 2010, a vapor intrusion investigation should be conducted prior to the change in use, in accordance with the VIG and remediation implemented if necessary.

6. ALTERNATIVE REMEDIES

6.1 Administrative Procedures for Obtaining Approval of an Alternative Remedy

As per N.J.S.A. 58:10B-12(g), Department pre-approval is required prior to implementation of an alternative remedy. The mechanism for obtaining approval requires the submission of an Alternative Remedy in the format of a RAWP to the Department with the Alternative Remedy form. Alternative remedies may be proposed for an entire site or for an AOC. The following topics should be addressed in the RAWP:

- A written analysis explaining: (1) why the presumptive remedy is impractical due to site conditions or (2) how the alternative remedy would be equally protective over time as the presumptive remedy
- A detailed description of the alternative remedy including specifications for engineering and institutional controls and a plan for monitoring and maintenance of such controls pursuant to N.J.A.C. 7:26E and N.J.A.C. 7:26C
- A written discussion of how the alternative remedy is protective of human health, safety and the environment

The investigator that is seeking approval of an AOC-specific alternative remedy should provide all AOC-specific information and any other site-related information necessary to demonstrate the requirements noted above.

6.2 Developing Alternative Remedies

When developing an alternative remedy, give consideration to how a presumptive remedy in Table 5.1 for the same intended end use would be constructed. This should include the three major engineering control components and the institutional control.

6.3 Equally Protective Over Time

When developing an alternative remedy that is equally protective over time, an end use may have more than one presumptive remedy available. Consider each of the four components: barrier, buffer, demarcation and monitoring, listed in section 4.3 to evaluate ways to compensate for one component being more or less protective than the corresponding component of another option. This type of evaluation should then be used to develop a proposal for the alternative remedy. For example, geo-textile fabric may be used instead of a visible boundary marker; two feet of fill material used instead of four feet of fill material; or an increased monitoring program may be appropriate to offset a barrier or buffer layer of lesser thickness by identifying the need for corrective action. The engineering controls must be suitable for the anticipated wear and use. The overall alternative remedy should consider all four components outlined above and meet the objective of preventing exposure. The RAWP should explain how the alternative remedy would be equally protective over time.

If an engineering control already exists at the site that does not meet the requirements listed in Table 5.1, the engineering control may not need to be removed and replaced. An alternative remedy may be proposed detailing why the existing engineering control is equally protective or how the existing engineering control can be improved, enhanced or augmented to meet the requirement of being equally protective.

6.4 Impractical Due to Conditions at the Site

The Department will consider various site specific factors, including the nature and severity of these factors, when evaluating the impact on the practicability of implementing the unrestricted use remedy or presumptive remedy at a given site. Combinations of several of the factors below, or other factors, may increase the cost of remediation to the degree that an unrestricted use remedial action or the presumptive remedy may become cost prohibitive.

- The presence of steep slopes, unsuitable subsoils or other physical constraints that will affect the implementability or long-term effectiveness of the remedy.
- The remedy will be prohibited or environmentally undesirable due to proximity to wetlands or flood plains.
- The remedy will require excavation near or beneath structures (either on the site or on adjacent sites) that would jeopardize the stability or integrity of such structures.
- The need for substantial dewatering that will affect the implementability or feasibility of the remedy.
- A discrete area discharge is contained within a widespread area of contamination such as historic fill.
- The remedy will require excavation of bedrock.
- The remedy will require extensive excavation support (e.g., shoring, sheeting).
- The remedy will damage or otherwise compromise the integrity of an existing remedy or engineering control.
- The remedy will render the site unusable.
- The site includes multiple discrete area discharges.
- The remedy will require extended disruption to public service, public utilities or other vital infrastructure improvements.

The RAWP should identify and explain the site-specific conditions that led to the conclusion that the unrestricted use remedial action or the presumptive remedy is impractical due to conditions at the site. Where the determination is based upon cost, the underlying technical factors should also be discussed. In addition, the RAWP should include all site-specific data that will assist the Department in its evaluation and approval of the impractical due to site condition determination and the alternative remedy.

6.5 Multiple Discrete Area Discharges

The total area of the site or AOC should be compared with the number of discrete area discharges and the total area of each discharge. The ranges of multiple discrete area discharges that may be considered appropriate for an alternative remedy are as follows:

- sites that are less than 10 acres in size and contain more than one discrete area discharge per acre
- sites that are between 10 and 50 acres in size and contain more than one discrete area discharge per two acre, with a minimum of 10 discrete area discharges
- sites that are larger than 50 acres in size and contain more than one discrete area discharge per five acres with a minimum of 25 discrete area discharges

6.6 Vapor Intrusion

In developing an alternative remedy for VI, the investigator should consider the presence of volatile organic compounds (VOCs) on site, as well as VOCs known or suspected to be migrating onto the site or AOC from on-site and off-site sources. The degree to which the VOCs have been delineated, their likely fate and transport, the existence of a clean water lens, and the presence of preferential migration pathways should be considered as outlined in the Department's VIG and the receptor evaluation provisions of the Technical Rules. This information should be presented in the RAWP when describing the equivalent protectiveness of the alternative remedy.

APPENDIX A

GLOSSARY

GLOSSARY

Refer to the Technical Rules at N.J.A.C. 7:26E-1.8 and the Administrative Requirements for the Remediation of Contaminated Sites at N.J.A.C. 7:26C-1.3 for additional definitions.

Barrier: the layer of material of an engineering control that is on top of the buffer layer.

Buffer: the layer of material of an engineering control that is between the barrier and visible demarcation or contaminant as applicable.

Change of use: change of use of an AOC to a school, child care center or residence. Change of use also applies if the school, child care center or residence moves from an upper floor to the lowest level floor in the building.

Child care center: a center as defined at N.J.S.A. 30:5B-1 et seq.

Clean fill: material to be used in a remedial action that meets all soil remediation standards, site-specific alternative standards, or site-specific interim standards; does not contain extraneous debris or solid waste; and does not contain free liquids. This also includes any material that meets all criteria or action levels for contaminants without standards, such as asbestos, radiation, hexavalent chromium, and dioxins. This material can be "soil" or "non-soil".

DAP: Diffuse anthropogenic pollutants/pollution means broadly distributed contaminants, often arising from multiple sources, which have been historically generated by human activities. DAP generally arises from atmospheric deposition, but may also contain contributions from random, non-attributable, non-point sources. DAP contaminants typically include polynuclear aromatic hydrocarbons and in some cases metals, which may be present above health-based soil remediation standards.

Discrete area discharge: a discharge that only results in less than or equal to 300 cubic yards of contaminated soil.

Historic Fill material is not a discrete area discharge.

Durable surface materials: means a surface that inhibits exposure to the subsurface contaminants.

Equally protective over time: achieving the same remedial action objectives as the presumptive remedy.

Geotextile fabric: a permeable fabric made of woven or non-woven (needle punch or heat bonded) polyester or polypropylene which, when used in association with soil, has the ability to separate, filter, reinforce, protect, or drain.

Impractical Due To Conditions At The Site: as discussed in section 6.4

Loose fill surface: a playground surfacing material as defined in the U.S. Consumer Product Safety Commission's Handbook for Public Playground Safety (Pub. No. 325 dated 2008 or subsequent current version).

New construction: the construction of a building or other site improvement including an addition to an existing building that will extend the footprint of the building.

Passive vapor systems: a vapor barrier as described in the Department Vapor Intrusion Guidance and a passive sub-surface depressurization system that can be converted, if necessary, to an active system pursuant to the Department's Vapor Intrusion Guidance. The Department's Vapor Intrusion Guidance can be found at www.nj.gov/dep/srp/guidance/vaporintrusion/.

Residential type I: any residence not a residential type II.

Residential type II: an area under the control or authority of an entity or person, other than the occupant, with the legal authority to preclude anyone from disturbing an engineering control.

School: a public school or private school as defined in N.J.S.A. 18A:1-1, or a charter school established pursuant to N.J.S.A. 18A:36A.

Unitary material: a playground surfacing material as defined in the U.S. Consumer Product Safety Commission's Handbook for Public Playground Safety (Pub. No. 325 dated 2008 or subsequent current version).

"Unrestricted use remedial action" means any remedial action for soil that does not require the continued use of either engineering or institutional controls to meet the established health risk or environmental standards.

Visible contamination boundary marker: a demarcation that consists of a synthetic, durable material that can be easily seen when uncovered while digging.

Visible Demarcation: method of visibly depicting the boundary between the buffer layer of engineering control and the contaminated material.

Widespread Contamination: contamination that is not a discrete area discharge.

APPENDIX B

ACRONYMS

ACRONYMS

AOC	area of concern
ARRCS	Administrative Requirements for the Remediation of Contaminated Sites
CFR	Code of Federal Regulations
DAP	diffuse anthropogenic pollutants
LSRP	Licensed Site Remediation Program
N.J.A.C.	New Jersey Administrative Code
N.J.S.A.	New Jersey Statutes Annotated
PCB	polychlorinated biphenyls
RAWP	Remedial Action Work Plan
SRRA	Site Remediation Reform Act
TSCA	Toxic Substance Control Act
VI	vapor intrusion
VIG	Vapor Intrusion Guidance
VOC	volatile organic compounds

APPENDIX C

Table 5.1

Contamination type	Subcategories/Scenarios	Presumptive Remedy/ Remediation Goal	Remedial Action-Schools, Child Care Centers, and Type II Residential	Remedial Action - Type I Residential
<p>Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3</p>	<p>1) Play Areas Loose Fill Surface (e.g., mulch, sand, etc.)</p>	<p>Restricted Use</p>	<p>Option #1. Barrier - Minimum of one foot clean loose fill material; Buffer - Minimum of one foot clean loose fill material; Demarcation - Geotextile fabric; and Inspection - Quarterly</p> <p>Option #2. Barrier - Minimum of two feet clean loose fill material; Buffer - Minimum of two feet clean loose fill material; Demarcation - Visible contamination boundary marker or geotextile fabric; and Inspection - Semi-annual</p>	<p>Same engineering control requirement as schools, child care centers and Type II Residential</p>

Contamination type	Subcategories/Scenarios	Presumptive Remedy/ Remediation Goal	Remedial Action-Schools, Child Care Centers, and Type II Residential	Remedial Action - Type I Residential
<p>Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3</p>	<p>1) Play Areas Unitary Material Surface (e.g., Tile, Rubber Mat, Artificial Turf)</p>	<p>Restricted Use</p>	<p>Option #1. Barrier - Proposed surface of unitary material and a minimum of six (6) inches crushed stone; Buffer - Minimum of six (6) inches crushed stone; Demarcation - Geotextile fabric; and Inspection - Annual</p> <p>Option #2. Barrier - Proposed surface of unitary material and a minimum of four (4) inches of concrete or asphalt; Buffer - Four (4) inches of sub base; Demarcation - Visible contamination boundary marker; and Inspection - Annual</p> <p>Option #3. Barrier - Proposed surface of unitary material and a minimum of one (1) foot clean fill; Buffer - Minimum of one (1) foot clean fill; Demarcation - Visible contamination boundary marker; and Inspection - Annual</p>	<p>Same engineering control requirement as schools, child care centers and Type II Residential</p>

Contamination type	Subcategories/Scenarios	Presumptive Remedy/ Remediation Goal	Remedial Action-Schools, Child Care Centers, and Type II Residential	Remedial Action - Type I Residential
Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3	<p>1)Play Areas</p> <p>Other Unpaved Playing Surfaces (e.g., athletic fields)</p>	Restricted Use	<p>Option #1. Barrier - Vegetative cover with a minimum of one foot clean fill; Buffer - Minimum of one foot clean fill; Demarcation - Geotextile fabric; and Inspection - Annual</p> <p>Option #2. Barrier - Vegetative cover with a minimum of two feet clean fill; Buffer - Minimum of two feet clean fill; Demarcation - Visible contamination boundary marker; and Inspection - Annual</p>	Same engineering control requirement as schools, child care centers and Type II Residential
Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3	<p>2) Concrete or Asphalt Surfaces: e.g., Driveways, Roadways, Parking, Walkways, Bicycle Paths, etc.</p>	Restricted Use	<p>Barrier - Minimum of four (4) inches of concrete or asphalt; Buffer Minimum of four (4) inches of sub base; Demarcation - Visible contamination boundary marker; and Inspection - Annual</p>	Same engineering control requirement as schools, child care centers and Type II Residential

Contamination type	Subcategories/Scenarios	Presumptive Remedy/ Remediation Goal	Remedial Action-Schools, Child Care Centers, and Type II Residential	Remedial Action - Type I Residential
Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3	3) Building Footprint - New Construction	Restricted Use	<p>Option #1 Barrier - Minimum of four (4) inches of concrete; Buffer - Minimum four (4) inches of sub base; Demarcation - Visible contamination boundary marker; and Inspection -Annual</p> <p>Option #2 (for crawl spaces) Barrier - Minimum of one (1) foot clean fill and vapor barrier; Buffer - Minimum of one (1) foot clean fill; Demarcation - Visible contamination boundary marker; and Inspection - Semi-annual</p>	Same engineering control requirement as schools, child care centers and Type II Residential
Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3	3) Building Footprint - Existing	Restricted Use	<p>Option #1 Barrier - Minimum of four (4) inches of concrete; Buffer - Minimum four (4) inches of sub base; Demarcation - Not required ; and Inspection - Annual</p> <p>Option #2 (for crawl spaces and basements with a dirt floor) Barrier - Minimum of one (1) foot clean fill and vapor barrier; Buffer - Minimum of one (1) foot clean fill; Demarcation - Visible contamination boundary marker; and Inspection - Semi-annual</p>	Same engineering control requirement as schools, child care centers and Type II Residential

Contamination type	Subcategories/Scenarios	Presumptive Remedy/ Remediation Goal	Remedial Action-Schools, Child Care Centers, and Type II Residential	Remedial Action - Type I Residential
Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.4	4) Vegetative Cover e.g., Lawn Areas	Restricted Use	Barrier - A vegetative cover and a minimum of six (6) inches of clean fill; Buffer - Minimum of six (6) inches of clean fill; Demarcation - Visible contamination boundary marker; and Inspection - Semi-annual	<p>Option #1. Barrier - Vegetative cover and a minimum of one (1) foot clean fill; Buffer - Minimum of one (1) foot clean fill; Demarcation - Geotextile fabric; and Inspection - Quarterly Inspection.</p> <p>Option #2. Barrier - Vegetative cover and a minimum of two (2) feet clean fill; Buffer - Minimum of two (2) feet clean fill; Demarcation - Visible contamination boundary marker or geotextile fabric; and Inspection - Semi-annual Inspection</p>

Contamination type	Subcategories/Scenarios	Presumptive Remedy/ Remediation Goal	Remedial Action-Schools, Child Care Centers, and Type II Residential	Remedial Action - Type I Residential
Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3	5) Landscaped Areas	Restricted Use	<p>Option #1. Barrier - Minimum of one (1) foot clean fill; Buffer - Minimum of one (1) foot clean fill; * Demarcation - Geotextile fabric; and Inspection - Semi-annual</p> <p>Option #2. Barrier - Minimum of two (2) feet of clean fill; Buffer - Minimum of two (2) feet clean fill;* Demarcation - Visible contamination boundary marker; and Inspection - Semi-annual</p> <p>* Tree and/or shrub can be planted within barrier and/or buffer layer(s), but must maintain a minimum of one (1) foot clean fill on all sides and below the extent of planted root ball of larger plant materials.</p>	Same engineering control requirement as schools, child care centers and Type II Residential
Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3	6) Maintenance Areas/Dumpsters and Compactor Pad/Other Areas Restricted to Workers	Restricted Use	Barrier - Minimum of four (4) inches of concrete or asphalt; Buffer - Minimum of four (4) inches of sub base; Demarcation - Visible contamination boundary marker; and Inspection - Annual	Not Applicable

Contamination type	Subcategories/Scenarios	Presumptive Remedy/ Remediation Goal	Remedial Action-Schools, Child Care Centers, and Type II Residential	Remedial Action - Type I Residential
Historic Fill, DAP and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3	7) Underground Utility Corridors:	Restricted Use	<p>Piping & Conduits Placed in Trenches: Barrier - Clean fill from surface down to utility (minimum of one (1) foot); Buffer - Minimum of one (1) foot of clean fill below and around the sides of the utility; Demarcation - Visible contamination boundary marker along the bottom and sides of the trench; and Inspection - Annual</p> <p>Direct Burial Cable can be installed within barrier and/or buffer layer(s) but must maintain a minimum of one foot clean fill on sides and below installation.</p>	Same engineering control requirement as schools, child care centers and Type II Residential
Fill and/or all other discharged contaminants not otherwise excluded in N.J.A.C.7:26E-5.3	8) Contamination at depths greater than 10 feet with 10 feet of clean material covering the contamination	Restricted Use	Barrier - Minimum of five feet clean material; Buffer - Minimum of five feet clean material; Demarcation - None Required; and Inspection - Annual	Same engineering control requirement as schools, child care centers and Type II Residential

Contamination type	Subcategories/Scenarios	Presumptive Remedy/ Remediation Goal	Remedial Action-Schools, Child Care Centers, and Type II Residential	Remedial Action - Type I Residential
Widespread PCBs	Any Use	Unrestricted Use or Restricted use	<p>Remove and/or treat all PCB contamination to a minimum of 10 ppm. For any PCB contamination greater than 0.2 ppm and less than or equal to 10 ppm apply Option # 1 or Option # 2:</p> <p>Option #1. Barrier - Minimum of six (6) inches asphalt or concrete; Buffer -Minimum of 18 inches clean fill; Demarcation - Visible contamination boundary marker; and Inspection - Annual</p> <p>Option #2. Barrier - Minimum of 18 inches of clean fill; Buffer - Minimum of 10 inches of compacted soil pursuant to CFR 761.61(a)7; Demarcation - Geotextile fabric; and Inspection - Semi-annual</p>	Remove and/or treat to unrestricted levels pursuant to N.J.A.C. 7:26E-5.4(b)2