

REMEDIATION STANDARDS

General Overview



Barry Frasco

7/15/08

REMEDIATION STANDARDS RULEMAKING ACTIVITY

Rule Adoption

- ▶ Rule adopted by the Commissioner on May 6, 2008
- ▶ Published in the New Jersey Register - June 2, 2008
(40 N.J.R. 3187(a))
- ▶ Courtesy Copy on DEP Web Site at:
http://www.nj.gov/dep/rules/adoptions/adopt_080602a.pdf
- ▶ Free Electronic Copy of Rule on LexisNexis
<http://www.lexisnexis.com/njoal/>

REMEDIATION STANDARDS RULE CITATION

Remediation Standards

- ▶ N.J.A.C. 7:26D
- ▶ Courtesy Copy on DEP Web Site at:
<http://www.nj.gov/dep/srp/regs/rs/>

Technical Requirements for Site Remediation

- ▶ N.J.A.C. 7:26E
- ▶ Courtesy Copy on DEP Web Site at:
<http://www.nj.gov/dep/srp/regs/techrule/>

SOIL REMEDIATION STANDARDS GUIDANCE DOCUMENTS

Basis and Background Documents

- ▶ Updated Ingestion/Dermal and Inhalation Exposure Pathway Documents
- ▶ Located on the DEP Web Site at:
<http://www.nj.gov/dep/srp/regs/rs/>

REMEDIATION STANDARDS RULE STRUCTURE

**Application of Standards (Compliance) Will Be
Future Rulemaking in “The Technical
Requirements For Site Remediation” N.J.A.C.
7:26E**

- ▶ **Until rule proposal, the Department have prepared guidance documents**

REMEDIATION STANDARDS RULE STRUCTURE

With the Exception to the Impact to Ground Water Exposure Pathway, The Rule Was Adopted With Minimal Changes

The Impact to Ground Water Standards Were Not Adopted.

REMEDIATION STANDARDS RULE STRUCTURE

How Will the Department “Handle” the Impact to Ground Water Exposure Pathway?

- ▶ **The Department Will Evaluate This Exposure Pathway on a Site by Site Basis.**
 - **This Is in Conformance With the Brownfield Act (NJSA 58:10b-12a)**
- ▶ **The Department Has Prepared Guidance Documents Which Will Assist the Regulated Community Is Developing Site Specific Impact to Ground Water Soil Remediation Standards**

SOIL REMEDIATION STANDARDS GUIDANCE DOCUMENTS

**Guidance Documents - Located on the DEP
Web Site at:**

<http://www.nj.gov/dep/srp/guidance/rs/>

- ▶ **Phase In Period Guidance with Link to the Soil Cleanup Criteria (SCC)**
- ▶ **Order of Magnitude Guidance**
- ▶ **Ingestion-Dermal Alternative Remediation Standards and Compliance Guidance**
- ▶ **Inhalation alternative remediation standards and compliance guidance - with links to spreadsheets**

SOIL REMEDIATION STANDARDS GUIDANCE DOCUMENTS

Guidance Documents - Located on the DEP Web Site at: <http://www.nj.gov/dep/srp/guidance/rs/>

- ▶ **Introduction Impact to Ground Water Guidance**
- ▶ **Synthetic Precipitation Leachate Procedure (SPLP) Guidance with Spreadsheet**
- ▶ **Soil Water Partition Equation Guidance**
- ▶ **Dilution Attenuation Factor (DAF) Guidance with Spreadsheet**
- ▶ **Immobile Chemicals Guidance**
- ▶ **Observed ground water conditions**
- ▶ **SESOIL (vadose zone modeling) Guidance**
- ▶ **SESOIL/AT123D (vadose zone/saturated zone modeling) Guidance**

SOIL REMEDIATION STANDARDS GUIDANCE DOCUMENTS

**Guidance Documents - Located on the DEP
Web Site at:**

<http://www.nj.gov/dep/srp/guidance/rs/>

- ▶ **Chemical Properties Table**
- ▶ **Chromium Guidance**
- ▶ **Total Petroleum Hydrocarbons (TPHC) Guidance**

SOIL REMEDIATION STANDARDS PHASE IN GUIDANCE

Phase In Requirements for the New Soil Remediation Standards are Found in the Technical Regulations at N.J.A.C. 7:26E-1.3(d)1

The person responsible for conducting the remediation must remediate a site to the remediation standards at N.J.A.C. 7:26D and the impact to ground water soil remediation standards developed on a site-by-site basis pursuant to N.J.S.A. 58:10B-12a; or

SOIL REMEDIATION STANDARDS PHASE IN GUIDANCE

To the Soil Cleanup Criteria (SCC) that were in effect prior to June 2, 2008 when:

- ▶ **The remediating party has submitted a remedial action workplan or a remedial action report before December 2, 2008 that establish the SCCs as the standards for the site
and**
- ▶ **The remedial action workplan or a remedial action report is in compliance with the Technical Rules, N.J.A.C. 7:26E-6
and**
- ▶ **The SCC for the site are not greater by an order of magnitude or more, than the soil remediation standards adopted by N.J.A.C. 7:26D.**

SOIL REMEDIATION STANDARDS PHASE IN GUIDANCE

A remedial action workplan (RAWP) or a remedial action report (RAR) **will** be considered in compliance with the Technical Rules, N.J.A.C. 7:26E-6 when the Department has reviewed the report and has:

- ▶ Approved the RAWP or RAR; **or**
- ▶ Issued a Notice of Deficiency (NOD) and the remediating party rectifies all deficiencies to the Department's satisfaction within the timeframe specified by the Department; **and**
- ▶ The remedial action is conducted within the timeframe specified in the RAWP.

SOIL REMEDIATION STANDARDS PHASE IN GUIDANCE

A remedial action workplan (RAWP) or a remedial action report (RAR) **will not** be considered in compliance with the Technical Rules, N.J.A.C. 7:26E-6 when the Department has reviewed the report and has issued a Notice of Violation (NOV) to the remediating party. Under this situation, the remediating party must remediate the site to the remediation standards at N.J.A.C. 7:26D and the impact to ground water soil remediation standards developed on a site-by-site basis pursuant to N.J.S.A. 58:10B-12a.

SOIL REMEDIATION STANDARDS

Order Of Magnitude

N.J.S.A. 58:10B-12j. Upon the approval by the department of a remedial action workplan, ... the department **may not** subsequently require a change to that workplan ...in order to compel a different remediation standard due to the fact that the established remediation standards have changed; however, the department **may** compel a different remediation standard if the difference between the new remediation standard and the remediation standard approved in the workplan... plan **differs by an order of magnitude.**

SOIL REMEDIATION STANDARDS

Order Of Magnitude

N.J.S.A. 58:10B-13e. ... whenever contamination at a property **is remediated in compliance** with any soil, or any groundwater or surface water remediation standards that were in effect or approved by the department at the completion of the remediation, **no person, except** as otherwise provided in this section, **shall be liable** for the cost of any additional remediation that may be required by a subsequent adoption by the department of a more stringent remediation standard for a particular contaminant. **...only a person who is liable** to clean up and remove that contamination... shall be liable for any additional remediation costs necessary to bring the site into compliance with the new remediation standards except that no person **shall be so liable** unless the difference between the new **remediation standard** and the level or concentration of a contaminant at the property **differs by an order of magnitude.**

ORDER OF MAGNITUDE CONTAMINANTS

Residential Direct Contact

	<u>SCC</u>	<u>SRS</u>	<u>PQL</u>
Bis(2-chloroisopropyl)ether	2300	23	0.2
Bromodichloromethane	11	1	0.005
<u>Chloroform</u>	19	0.6	0.005
Chloromethane	520	4	0.005
Dibromochloromethane	110	3	0.005
1,4-Dichlorobenzene	570	5	0.005
1,1-Dichloroethane	570	11	0.005
<u>4-Methylphenol</u>	2800	31	0.2
<u>Naphthalene</u>	230	6	0.2
1,1,2,2-Tetrachloroethane	34	1	0.005
1,1,2-Trichloroethane	22	2	0.005

Note: all values are mg/kg (ppm)

ORDER OF MAGNITUDE CONTAMINANTS

Nonresidential Direct Contact

	<u>SCC</u>	<u>SRS</u>	<u>PQL</u>
Bis(2-chloroisopropyl)ether	10000	67	0.2
Bromodichloromethane	46	3	0.005
Bromomethane	1000	59	0.005
<u>Chloroform</u>	28	2	0.005
Chloromethane	1000	12	0.005
Dibromochloromethane	1000	8	0.005
1,4-Dichlorobenzene	10000	13	0.005
1,1-Dichloroethane	1000	24	0.005
Hexachlorocyclopentadiene	7300	110	0.2
<u>4-Methylphenol</u>	10000	340	0.2
<u>Naphthalene</u>	4200	17	0.2
1,1,2,2-Tetrachloroethane	70	3	0.005
1,1,2-Trichloroethane	420	6	0.005

Note: all values are mg/kg (ppm)

SOIL REMEDIATION STANDARDS

Order Of Magnitude Policy

Applies To:

- ▶ **Direct Contact Soil Remediation Standards**
- ▶ **Ground Water Remediation Standards**
- ▶ **Surface Water Remediation Standards**

Does Not Apply To:

- ▶ **Site-specific Impact to Ground Water Soil Remediation Standards**

SOIL REMEDIATION STANDARDS

Order Of Magnitude Policy

Any Increase in Remediation Standard Concentration

- ▶ **may be used at any time before or after NFA**
- ▶ **The person responsible for conducting the remediation may place a request to the Department that the new, higher concentration remediation standard be applied at the site.**

SOIL REMEDIATION STANDARDS

Order Of Magnitude Policy

Decrease in Remediation Standard Concentration – By less than an Order of Magnitude

a. Before RAWP or RAR approval

Follow the “Phase In Guidance” document.

b. After RAWP approval or issuance of NFA letter

The Department may not compel person to use any new soil remediation standard pursuant to the Brownfield Act N.J.S.A. 58:10B-12j and 13e

SOIL REMEDIATION STANDARDS

Order Of Magnitude Policy

Decrease in Remediation Standard Concentration - By an Order of Magnitude or More

a. Before RAWP or RAR approval

The person responsible for conducting the remediation must use the new soil remediation standards.

b. After RAW approval but prior to NFA approval

Department may compel the person responsible for conducting the remediation to use the new soil remediation standards pursuant to N.J.S.A. 58:10B-12j

c. After NFA approval

Department may compel the person responsible for the discharge of the hazardous substance to use the new soil remediation standards pursuant to N.J.S.A. 58:10B-13e

SOIL REMEDIATION STANDARDS

Order Of Magnitude Policy

When will the Department require the order of magnitude evaluation?

a. For sites with RAWP Approval but not NFA Approval

The assigned Department case manager will require the person responsible for conducting the remediation to conduct the order of magnitude evaluation and perform any additional remediation pursuant to (N.J.A.C. 7:26E-6.1(b)2) prior to the issuance of an NFA letter.

SOIL REMEDIATION STANDARDS

Order Of Magnitude Policy

b. For sites with NFA Approval

(1) Sites with engineering and/or institutional controls (conditional NFA)

The person responsible for maintaining the engineering and/or institutional control must perform the order of magnitude evaluation as part of the biennial certification pursuant to the Technical Requirements for Site Remediation, N.J.A.C. 7:26E-8.5 and 8.6

SOIL REMEDIATION STANDARDS

Order Of Magnitude Policy

b. For sites with NFA Approval

(2) Sites without engineering and/or institutional controls (unconditional NFA)

The order of magnitude evaluation will be conducted whenever a site “re enters” the Site Remediation Program (i.e., an ISRA trigger, child care facility license renewal, property sale that requires update of site conditions for loan approval, etc.) pursuant to N.J.A.C. 7:26E-3.2(a).

SOIL REMEDIATION STANDARDS

Development Of A Health-based TPHC Standard

Current Value (10,000 Ppm) Is Not Health Based

Committee Has Been Formed To:

- ▶ **Develop a health based soil remediation standard**
- ▶ **Develop an ecological based soil remediation cleanup guidance value**

SOIL REMEDIATION STANDARDS

Development Of A Health-based TPHC Standard

Guidance Document is Being Prepared

Only Addresses Diesel/Number 2 Fuel Oil

Direct Contact Soil Cleanup Criteria

- ▶ **4700 ppm**
- ▶ **1000 ppm trigger for Base Neutral + 10
analysis for 25% of all samples**

SOIL REMEDIATION STANDARDS

Development Of A Health-based TPHC Standard

Ecological Screening Level

- ▶ **1700 ppm**
- ▶ **Only applied if BEE indicates potential ecological impact**
- ▶ **If screening level exceeded - Need to develop a site specific ecological based soil remediation standard - 4000 ppm maximum**

SOIL REMEDIATION STANDARDS

Development Of A Health-based TPHC Standard

No Impact to Ground Water Criterion

- ▶ However current sheen policy still applies

<http://www.nj.gov/dep/srp/guidance/sheen/>

Phase In Guidance applies to new Diesel/No. 2 Criterion

Other Petroleum Products (No. 4 No.6)?

- ▶ Will be handled on a case specific basis