Table 3-13
Preliminary Remediation Goals for Soil
Riverside Industrial Park Superfund Site
Newark, New Jersy

Chemical of Potential Concern[1]	Based on Target ILCR = 10-6
Volatile Organic Compounds (VOCs)	
Benzene	
Cumene	
Ethyl Benzene	
2-Hexanone	
Toluene	
1,1,1-Trichloroethane	
Trichloroethene	---
Total Xylenes	---
Semivolatile Organic Compounds (SVOCs)	
PAHs (High MW)	
Benzo(a)anthracene	
Benzo(a)pyrene	
Benzo(b)fluoranthene	
Benzo(g,h,i)perylene	
Benzo(k)fluoranthene	
bis(2-Ethylhexyl)phthalate	
Carbazole	
Chrysene	
Dimethylphthalate	
Di-n-butylphthalate	
Fluoranthene	
Indeno(1,2,3-cd)pyrene	
Naphthalene	---
Pyrene	
Polychlorinated biphenyls (PCBs)	
PCBs (total)	
Aroclor-1254	
Aroclor-1260	
Aroclor-1262	
Inorganics	
Aluminum	
Antimony	
Arsenic	
Barium	
Cadmium	
Chromium (total)	
Chromium VI	
Copper	NC
Cyanide (total)	
Lead	---
Manganese	
Mercury	
Nickel	
Selenium	
Vanadium	
Zinc	
Additional Chemicals	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	

Table 3-13
Preliminary Remediation Goals for Soil
Riverside Industrial Park Superfund Site
Newark, New Jersey

Human Health RBCs[2, 3, 4]																			
Visitor				**Indoor Worker**					**Risk Based Concentrations[3]**				**Outdoor Worker**	Risk Based Concentrations[3]				**Utility Worker**	
Based on Target ILCR 10-5	**Based on Target ILCR 10-4**	Based on Target HQ = 1	Based on IEUBK Model	Based on Target ILCR = 10^{-6}	Based on Target ILCR 10^{-5}	Based on Target ILCR 10^{-4}	Based on Target HQ = 1	Based on ALM Model	**Based on Target ILCR = 10-6**	**Based on Target ILCR 10-5**	**Based on Target ILCR 10-4**	**Based on Target HQ = 1**	RBC Based on ALM Model	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1	RBC Based on ALM Model	Based on Target ILCR = 10-6
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
---	---	--	--	0.02	0.18	1.80	0.05	--	--	--	--	--	--	--	--	--	--	--	--
---	---	--	--	--	--	--	6.50	--	--	--	--	--	--	--	--	--	--	--	--
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---	---	--	--	0.62	6.20	62	22	--	--	--	--	--	--	--	--	--	--	--	--
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NC	NC	526	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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---	---	--	567	--	--	--	--	1,050	--	--	--	--	784	--	--	--	--	3,292	--
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Table 3-13
Preliminary Remediation Goals for Soil
Riverside Industrial Park Superfund Site
Newark, New Jersy

Risk Based Concentrations[3]			Construction Worker	Ecological RBCs[5]	ARARs[6]	HIDE COLUMN		Representative Historical Fill Average Value[7]	To Be Considered NJDEP Impact to Groundwater Soil Remediation Standards[8]	Human Health PRGs[9]	Sitewide
Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1	RBC Based on ALM Model			LOWER of HH RBC and ARAR	Lower of RBC and ARAR				
--	--	--	--	--	5	5	5.00	--	0.01	5	
--	--	--	--	0.04	NA	0	0.04	--	--	NA	
--	--	--	--	0.27	110,000	110,000	0.27	--	13	110,000	
--	--	--	--	0.36	NA	0	0.36	--	--	NA	
--	--	--	--	0.15	91,000	91,000	0.15	--	7	91,000	
--	--	--	--	0.04	NA	0	0.04	--	0.3	NA	
--	--	--	--	---	10	0.05	10.00	--	0.01	0.02	
--	--	--	--	0.10	170,000	6.50	0.10	--	19	6.50	
						0					
--	--	--	--	1.10	NA	0	1.10	--	--	NA	
--	--	--	--	1.10	17	17	1.10	1.37	0.8	17	
--	--	--	--	1.10	2	2	1.10	1.89	0.2	2	
--	--	--	--	1.10	17	17	1.10	1.91	2	17	
--	--	--	--	1.10	30,000	30,000	1.10	--	NA	30,000	
--	--	--	--	1.10	170	170	1.10	1.79	25	170	
--	--	--	--	0.02	140	140	0.02	--	1,200	140	
--	--	--	--	0.07	96	96	0.07	--	NA	96	
--	--	--	--	1.10	1,700	1,700	1.10	--	80	1,700	
--	--	--	--	0.35	NA	0	0.35	--	--	NA	
--	--	--	--	0.01	68,000	68,000	0.01	--	760	68,000	
--	--	--	--	1.10	24,000	24,000	1.10	--	1,300	24,000	
--	--	--	--	1.10	17	17	1.10	1.41	7	17	
--	--	--	--	---	17	6	17.00	--	25	0.62	
--	--	--	--	1.10	18,000	18,000	1	--	840	18,000	
						0					
--	--	--	--	0.04	1	1	0.04	--	0.2	1	
--	--	--	--	0.04	1	1	0.04	--	--	1	
--	--	--	--	0.04	1	1	0.04	--	--	1	
--	--	--	--	0.04	1	1	0.04	--	--	1	
						0					
--	--	--	--	50	NA	0	50	--	6,000	NA	
--	--	--	--	0.27	450	450	0.27	--	6	450	
--	--	--	--	---	19	19	19	--	19	19	
--	--	--	--	330	59,000	59,000	330	--	2,100	59,000	
--	--	--	--	0.36	78	78	0.36	11	2	78	
--	--	--	--	23	NA	0	23	--	--	NA	
--	--	--	--	0.34	NA	0	0.34	--	--	NA	
--	--	--	--	28	45,000	526	28	--	11,000	526	
--	--	--	--	0.10	680	680	0.10	--	20	680	
--	--	--	441	11	800	800	11	574	90	800	
--	--	--	--	220	5,900	5,900	220	--	65	5,900	
--	--	--	--	0.01	65	65	0.01	--	0.1	65	
--	--	--	--	38	23,000	23,000	38	--	48	23,000	
--	--	--	--	0.52	5,700	5,700	1	--	11	5,700	
--	--	--	--	7.80	1,100	1,100	8	--	NA	1,100	
--	--	--	--	46	110,000	110,000	46.00	580	930	110,000	
						0					
--	--	--	--	0.0000032	NA	0	0.00	--	--	NA	

Table 3-13
Preliminary Remediation Goals for Soil
Riverside Industrial Park Superfund Site
Newark, New Jersy

Basis for Human Health PRG	Ecological PRGs Lots 67 and 69[9]	Basis for Ecological PRG
ARAR	5	ARAR
--	0.04	Ecological RBC
ARAR	0.27	Ecological RBC
--	0.36	Ecological RBC
ARAR	0.15	Ecological RBC
--	0.04	Ecological RBC
ILCR 10^{-6}	0.05	HQ = 1
HQ = 1	0.10	Ecological RBC
--	1.10	Ecological RBC
ARAR	1.10	ESC
ARAR	1.10	ESC
ARAR	1.10	ESC
ARAR	1.10	Ecological RBC
ARAR	1.10	ESC
ARAR	0.02	Ecological RBC
ARAR	0.07	Ecological RBC
ARAR	1.10	Ecological RBC
--	0.35	Ecological RBC
ARAR	0.01	Ecological RBC
ARAR	1.10	Ecological RBC
ARAR	1.10	ESC
ILCR 10^{-6}	6	ILCR 10^{-5}
ARAR	1.10	Ecological RBC
ARAR	0.04	Ecological RBC
ARAR	0.04	Ecological RBC
ARAR	0.04	Ecological RBC
ARAR	0.04	Ecological RBC
--	50	Ecological RBC
ARAR	0.27	Ecological RBC
ARAR	19	ARAR
ARAR	330	Ecological RBC
ARAR	0.36	ESC
--	23	Ecological RBC
--	0.34	Ecological RBC
HQ = 1	28	Ecological RBC
ARAR	0.10	Ecological RBC
ARAR	1.10	ESC
ARAR	220	Ecological RBC
ARAR	0.01	Ecological RBC
ARAR	38	Ecological RBC
ARAR	0.52	Ecological RBC
ARAR	7.80	Ecological RBC
ARAR	46	ESC
--	0.0000032	Ecological RBC

Table 3-13
Preliminary Remediation Goals for Soil
Riverside Industrial Park Superfund Site
Newark, New Jersy

Notes:

ARAR - Applicable or Relevant and Appropriate Requirements

NA - Not available

1. Soil concentrations are presented in units of milligrams per kilogram (mg/kg)
2. The soil RBCs for carcinogenic effects (Incremental Lifetime Cancer Risk; ILCR) are based on a target cancer risk range of 10^{-6} to 10^{-4}. The soil RBCs for non-cancer hazards (Hazard Quotient; HQ) are based on a target hazard index of 1. See Table 3-7 and 3-12 for calculation of risk-based concentrations.

3 See Section 3.7.2 for further discussion on derivation of the child visitor lead RBC.

4. RBCs for lead were developed using the Adult Lead Model (ALM) for the indoor worker, outdoor worker, utility worker, and construction worker. Calculations are presented in Tables 3-8 through 3-11.
5. Ecological RBCs are the ecological screening criteria (ESC) as presented in the Screening Level Ecological Risk Assessment by Ramboll Inc. (April 2020)
6. ARARs are the New Jersey nonresidential direct contact soil remediation standards, as presented in Table 1B of NJAC 2:26D
7. Representative historical fill values are from retracted New Jersey Department of Protection (NJDEP), N.J.A.C. 7:26E Technical Requirements for Site Remediation, Table 4-2, (November 2009). While these values are no longer supported by NJDEP, they are listed here as a point of comparison.
8. ARARs applicable to non-residential use of soil include the NJDEP NRDCSRS (N.J.A.C. 7:26D-4.3). NJDEP "Guidance Document for Development of Impact to Groundwater Soil Remediation Standards" is a soil TBC. Site-specific Impact to Groundwater Soil Screening Levels (IGWSSLs) were not developed for a soil-fill comparison because ARARs were available for α
9. PRGs were selected based on the following:
   a. Human Health: Lowest concentration between human health RBC (lowest value between HQ=1 or 10^{-6} cancer risk or lead model) if available and the ARAR (if available). For lead, the ARAR was selected as the final PRG; see report text for explanation.
      Ecological (Lots 67 and 69 only): Lowest concentration between human health RBC, ecological RBC and ARAR, as available.
   b. If human health and/or ecological RBC value in (a) is lower than the NJDEP historical fill average value (if available), then the human health and/or ecological PRG was set at the historical fill average value.

Table 3-13
Preliminary Remediation Goals for Soil
Riverside Industrial Park Superfund Site
Newark, New Jersy

RBC = risk-based concentration
-- = not a chemical of potential concern for receptor/pathway

omparison and exceedance determination.

Table 3-13
Preliminary Remediation Goals for Soil
Riverside Industrial Park Superfund Site
Newark, New Jersy

ED_005342_00000141-00007

Table 3-13
Preliminary Remediation Goals for Soil
Riverside Industrial Park Superfund Site
Newark, New Jersy

ED_005342_00000141-00008

Table 2-4
Preliminary Remediation Goals for Groundwater
L&RR Superfund Site, North Smithfield, Rhode Island

Chemical of Potential Concern[1]	Risk Based Concentrations[2]			
	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1
Copper	NC	NC	NC	5.3E+02
Lead	---	---	---	---

Notes:

1. Soil concentrations are presented in units of milligrams per kilograms(mg/kg) for chemicals of concern identified for a visitor in the Baseline Human Health Risk Assessment.
2. Risk based concentrations are a calculated value, see Table X-x for calculation.
   The soil PRGs for carcinogenic (Incremental Lifetime Cancer Risk; ILCR) are based on a risk range of 1E-06 to 1E-04 and noncarcinogenic (Hazard Quotient; HQ) based on a target hazard index of one.
3. PRGs for lead were developed using the IEUBK model. See Table X for IEUBK model outputs.
4. ARARs are based on the New Jersey nonresidential direct contact soil remediation standard.
5. The Preliminary Remediation Goal (PRG) was selected according to the following hierarchy:

Table 2-4
Preliminary Remediation Goals for Groundwater
L&RR Superfund Site, North Smithfield, Rhode Island

PRG Based on ALM Model[3]	ARARs mg/kg[4]	Selected PRGs[5]	Basis for PRG
---	4.5E+04		
	8.0E+02		

Table 2-4
Preliminary Remediation Goals for Groundwater
L&RR Superfund Site, North Smithfield, Rhode Island

Chemical of Potential Concern[1]	Risk Based Concentrations[2]			
	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1
Lead	---	---	---	---

Notes:

1. Soil concentrations are presented in units of milligrams per kilograms(mg/kg) for chemicals of concern identified for an outdoor worker in the Baseline Human Health Risk Assessment.
2. Risk based concentrations are a calculated value, see Table X-x for calculation.
   The soil PRGs for carcinogenic (Incremental Lifetime Cancer Risk; ILCR) are based on a risk range of 1E-06 to 1E-04 and noncarcinogenic (Hazard Quotient; HQ) based on a target hazard index of one.
3. PRGs for lead were developed using the IEUBK model. See Table X for IEUBK model outputs.
4. ARARs are based on the New Jersey nonresidential direct contact soil remediation standard.
5. The Preliminary Remediation Goal (PRG) was selected according to the following hierarchy:

Table 2-4
Preliminary Remediation Goals for Groundwater
L&RR Superfund Site, North Smithfield, Rhode Island

PRG Based on ALM Model[3]	ARARs mg/kg[4]	Selected PRGs[5]	Basis for PRG
784	8.0E+02		

Table 2-4
Preliminary Remediation Goals for Groundwater
L&RR Superfund Site, North Smithfield, Rhode Island

Chemical of Potential Concern[1]	Risk Based Concentrations[2]			
	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1
Lead	---	---	---	---

Notes:
1. Soil concentrations are presented in units of milligrams per kilograms(mg/kg) for chemicals of concern identified for an utility worker in the Baseline Human Health Risk Assessment.
2. Risk based concentrations are a calculated value, see Table X-x for calculation.
The soil PRGs for carcinogenic (Incremental Lifetime Cancer Risk; ILCR) are based on a risk range of 1E-06 to 1E-04 and noncarcinogenic (Hazard Quotient; HQ) based on a target hazard index of one.
3. PRGs for lead were developed using the IEUBK model. See Table X for IEUBK model outputs.
4. ARARs are based on the New Jersey nonresidential direct contact soil remediation standard.
5. The Preliminary Remediation Goal (PRG) was selected according to the following hierarchy:

Table 2-4
Preliminary Remediation Goals for Groundwater
L&RR Superfund Site, North Smithfield, Rhode Island

PRG Based on ALM Model[3]	ARARs mg/kg[4]	Selected PRGs[5]	Basis for PRG
3292	8.0E+02		

Table 2-4
Preliminary Remediation Goals for Groundwater
L&RR Superfund Site, North Smithfield, Rhode Island

Chemical of Potential Concern[1]	Risk Based Concentrations[2]			
	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1
Lead	---	---	---	---

Notes:
1. Soil concentrations are presented in units of milligrams per kilograms(mg/kg) for chemicals of concern identified for an construction worker in the Baseline Human Health Risk Assessment.
2. Risk based concentrations are a calculated value, see Table X-x for calculation.
The soil PRGs for carcinogenic (Incremental Lifetime Cancer Risk; ILCR) are based on a risk range of 1E-06 to 1E-04 and noncarcinogenic (Hazard Quotient; HQ) based on a target hazard index of one.
3. PRGs for lead were developed using the IEUBK model. See Table X for IEUBK model outputs.
4. ARARs are based on the New Jersey nonresidential direct contact soil remediation standard.
5. The Preliminary Remediation Goal (PRG) was selected according to the following hierarchy:

Table 2-4
Preliminary Remediation Goals for Groundwater
L&RR Superfund Site, North Smithfield, Rhode Island

PRG Based on ALM Model[3]	ARARs mg/kg[4]	Selected PRGs[5]	Basis for PRG
441	8.0E+02		