Table J-1
Summary of Level-A
Validated Groundwater
Data

Table J-1. Summary of Level-A validated groundwater samples

Organics (total = 61) Date	Sample Number	Inorganics (total = 103) Date	Sample Number	Radionuclides (total = 39) Date	Sample Number
12-Apr-94	AGW00401AV	12-Apr-94	AGW00401A1	12-Apr-94	AGW00401EH
12-Apr-94	AGW00401FF	12-Apr-94	AGW00401AM	13-Apr-94	AGW00301FX
12-Apr-94	AGW00401HN	12-Apr-94	AGW00401TT	13-Apr-94	AGW00301R8
13-Apr-94	AGW00301AV	13-Apr-94	AGW00301A1	20-Mar-95	AGW01301EH
13-Apr-94	AGW00301FF	13-Apr-94	AGW00301AM	20-Mar-95	AGW01301R8
13-Apr-94	AGW00301HN	13-Apr-94	AGW00301T1	20-Mar-95	AGW01301RI
18-May-94	AGW00201AV	13-Apr-94	AGW00301TT	20-Mar-95	AGW01401EH
18-May-94	AGW00201FF	19-May-94	AGW00201A1	20-Mar-95	AGW01401R8
18-May-94	AGW00201HN	19-May-94	AGW00201AM	20-Mar-95	AGW01401RI
20-Mar-95	AGW01301AV	19-May-94	AGW00201T1	9-May-95	AGW01001FX
20-Mar-95	AGW01301FF	19-May-94	AGW00201TT	9-May-95	AGW01001R8
20-Mar-95	AGW01301HN	20-Mar-95	AGW01301A1	9-May-95	AGW01101FX
20-Mar-95	AGW01301JP	20-Mar-95	AGW01301AM	9-May-95	AGW01101R8
20-Mar-95	AGW01401AV	20-Mar-95	AGW01301PH	9-May-95	AGW01201FX
20-Mar-95	AGW01401FF	20-Mar-95	AGW01301SD	9-May-95	AGW01201R8
20-Mar-95	AGW01401HN	20-Mar-95	AGW01301T1	16-May-95	AGW01701EH
20-Mar-95	AGW01401JP	20-Mar-95	AGW01301T7	16-May-95	AGW01701R8
9-May-95	AGW01001AV&E7	20-Mar-95	AGW01301TT	16-May-95	AGW01701RI
9-May-95	AGW01101AV	20-Mar-95	AGW01401A1	16-May-95	AGW01801EH
9-May-95	AGW01101FF	20-Mar-95	AGW01401AM	16-May-95	AGW01801R8
9-May-95	AGW01101HN	20-Mar-95	AGW01401PH	16-May-95	AGW01801RI
9-May-95	AGW01101JP	20-Mar-95	AGW01401SD	31-Jul-95	AGW02001EH
9-May-95	AGW01201AV	20-Mar-95	AGW01401T1	31-Jul-95	AGW02001R8
9-May-95	AGW01201FF	20-Mar-95	AGW01401T7	31-Jul-95	AGW02001RI
9-May-95	AGW01201HN	20-Mar-95	AGW01401TT	31-Jul-95	AGW2101EH
9-May-95	AGW01201JP	9-May-95	AGW01101A1	31-Jul-95	AGW2101R8
10-May-95	AGW01001FF	9-May-95	AGW01101AM	31-Jul-95	AGW2101RI
10-May-95	AGW01001HN	9-May-95	AGW01101PH	28-Aug-95	AGW02401FX
10-May-95	AGW01001JP	9-May-95	AGW01101SD	28-Aug-95	AGW02401R8
16-May-95	AGW01701AV	9-May-95	AGW01101T1	29-Aug-95	AGW02301FX
16-May-95	AGW01701FF	9-May-95	AGW01101T7	29-Aug-95	AGW02301R8
16-May-95	AGW01701HN	9-May-95	AGW01101TT	29-Aug-95	AGW02501FX
16-May-95	AGW01701JP	9-May-95	AGW01201A1	29-Aug-95	AGW02501R8
16-May-95	AGW01701UH	9-May-95	AGW01201AM	25-Oct-95	AGW02701EH
16-May-95	AGW01801AV	9-May-95	AGW01201PH	25-Oct-95	AGW02701R8
16-May-95	AGW01801FF	9-May-95	AGW01201SD	25-Oct-95	AGW02701RI
16-May-95	AGW01801HN	9-May-95	AGW01201T1	25-Oct-95	AGW02801EH
16-May-95	AGW01801JP	9-May-95	AGW01201T7	25-Oct-95	AGW02801R8
16-May-95	AGW01801UH	9-May-95	AGW01201TT	25-Oct-95	AGW02801RI
31-Jul-95	AGW02001AV	10-May-95	AGW01001A1		
31-Jul-95	AGW02001FF	10-May-95	AGW01001AM		
31-Jul-95	AGW02001HN	10-May-95	AGW01001PH		
31-Jul-95	AGW02001JP	10-May-95	AGW01001SD		
31-Jul-95	AGW02101AV	10-May-95	AGW01001T1		
31-Jul-95	AGW02101FF	10-May-95	AGW01001T7		
31-Jul-95	AGW02101HN	10-May-95	AGW01001TT		
31-Jul-95	AGW02101JP	16-May-95	AGW01701AM		

Table J-1. Summary of Level-A validated groundwater samples

Organics (total = 61) Date	Sample Number	Inorganics (total = 103) Date	Sample Number	Radionuclides (total = 39) Date	Sample Number
31-Jul-95	AGW02101UH	16-May-95	AGW01701C2		
28-Aug-95	AGW02501V4	16-May-95	AGW01701HF		
29-Aug-95	AGW02301V4	16-May-95	AGW01701ND		
29-Aug-95	AGW02401V4	16-May-95	AGW01701S3		
25-Oct-95	AGW02701AV	16-May-95	AGW01701T1		
25-Oct-95	AGW02701FF	16-May-95	AGW01701TT		
25-Oct-95	AGW02701HN	16-May-95	AGW01801AM		
25-Oct-95	AGW02701JP	16-May-95	AGW01801C2		
25-Oct-95	AGW02701UH	16-May-95	AGW01801HF		
25-Oct-95	AGW02801AV	16-May-95	AGW01801ND		
25-Oct-95	AGW02801FF	16-May-95	AGW01801S3		
25-Oct-95	AGW02801HN	16-May-95	AGW01801T1		
25-Oct-95	AGW02801JP	16-May-95	AGW01801TT		
25-Oct-95	AGW02801UH	31-Jul-95	AGW02001AM		
		31-Jul-95	AGW02001C2		
		31-Jul-95	AGW02001HF		
		31-Jul-95	AGW02001ND		
		31-Jul-95	AGW02001S3		
		31-Jul-95	AGW02001T1		
		31-Jul-95	AGW02001TT		
		31-Jul-95	AGW02101AM		
		31-Jul-95	AGW02101C2		
		31-Jul-95	AGW02101HF		
		31-Jul-95	AGW02101ND		
		31-Jul-95	AGW02101S3		
		31-Jul-95	AGW02101T1		
		31-Jul-95	AGW02101TT		
		28-Aug-95	AGW02501HF		
		28-Aug-95	AGW02501LA		
		28-Aug-95	AGW02501ND		
		28-Aug-95	AGW02501T1		
		28-Aug-95	AGW02501TT		
		29-Aug-95	AGW02301HF		
		29-Aug-95	AGW02301LA		
		29-Aug-95	AGW02301ND		
		29-Aug-95	AGW02301T1		
		29-Aug-95	AGW02301TT		
		29-Aug-95	AGW02401HF		
		29-Aug-95	AGW02401LA		
		29-Aug-95	AGW02401ND		
		29-Aug-95	AGW02401T1		
		29-Aug-95	AGW02401TT		
		25-Oct-95	AGW02701AM		
		25-Oct-95	AGW02701C2		
		25-Oct-95	AGW02701HF		
		25-Oct-95	AGW02701ND		
		25-Oct-95	AGW02701S3		

Table J-1. Summary of Level-A validated groundwater samples

Organics (total = 61) Date	Sample Number	Inorganics (total = 103) Date	Sample Number	Radionuclides (total = 39) Date	Sample Number
		25-Oct-95	AGW02701T1		
		25-Oct-95	AGW02701TT		
		25-Oct-95	AGW02801AM		
		25-Oct-95	AGW02801C2		
		25-Oct-95	AGW02801HF		
		25-Oct-95	AGW02801ND		
		25-Oct-95	AGW02801S3		
		25-Oct-95	AGW02801T1		
		25-Oct-95	AGW02801TT		

Table J-2
INEEL-Specific and
Appendix IX Lists of
Groundwater Monitoring
M-2-1

Table J-2a. List of Proposed Monitoring Parameters

Parameter	Method	CRDL (mg/L)
pH	SW[3] 9040/9045	0.5 - 14.0
Specific Conductance	EPA 120.1[1]	N/A
Total Dissolved Solids	EPA 160.1	50.0
Total Organic Carbon	415.2/SW 9060	1.0/1.0
Total Organic Halides	450.1	0.005
Dioxins/Furans	SW 2890	0.01 µg/L
Aluminum		
Antimony	EPA 200.8[1]	0.0004
Arsenic	SW 7060	0.01
Barium	EPA 200.8/200.7	0.002
Beryllium	EPA 200.8	0.0003
Cadmium	EPA 200.7	0.001
Calcium	EPA 200.7 or SW 6010	0.001/5.0
Chromium	EPA 200.7 or SW 6010	0.007/0.01
Cobalt		
Copper		
Iron	EPA 200.7/236.1/236.2 or SW 6010	0.1/0.01
Lead	SW 7421	0.005
Magnesium	SW 6010	5.0
Manganese		
Mercury	EPA 245.1/.2	0.0002
Nickel	EPA 200.8	0.0005
Potassium	SW 6070	5.0
Selenium	EPA 270.2	0.002
Silver	SW 6010	0.01
Sodium	SW 6010	5.0
Thallium	EPA 200.8 or SW 7841	0.0003
Tin		
Zinc	SW 6010	0.02
Chloride	EPA 300.0[1] or SM[2] 407	0.5
Nitrate	EPA 300.0	0.01
Sulfate	EPA 300.0 or SM 426	0.2
Carbonate	SM 403 (w/alkalinity)	1.0
Bicarbonate	SM 403 (w/alkalinity)	1.0
Total Alkalinity	EPA 510.1	5
Uranium Isotopes		
Gross Alpha	SW 9310	10. pCi/L
Gross Beta	SW 9310	5. pCi/L
Gamma Spectrometry		

1 100, 200 and 300 series methods in "Methods of Chemical Analysis of Water and Wastes," EPA-600/4-79-020, 1979

2 SM = Standard Methods for the Examination of Water and Wastewater

3 SW = SW846, EPA Method 8015; EPA, 1986

4 Prescribed Procedures for the Measurement of Radioactivity in Drinking Water (EPA 600/4-80-032), (EPA, 1982).

Table J-2b. Appendix IX groundwater monitoring list.

[Appendix IX added by 52 FR 25946, July 9, 1987]

Common name [1]	CAS RN [2]	Chemical abstracts service index name [3]	Suggested methods [5]	PQL (µg/L) [6]
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-	8100	200
			8270	10
Acenaphthylene	208-96-8	Acenaphthylene	8100	200
			8270	10
Acetone	67-64-1	2-Propanone	8240	100
Acetophenone	98-86-2	Ethanone, 1-phenyl-	8270	10
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile	8015	100
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-	8270	10
Acrolein	107-02-8	2-Propenal	8030	5
			8240	5
Acrylonitrile	107-13-1	2-Propenenitrile	8030	5
			8240	5
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1α,4α,4aβ,5α,8α,8aβ)-	8080	0.05
			8270	10
Allyl chloride	107-05-1	1-Propene, 3-chloro-	8010	5
			8240	100
4-Aminobiphenyl	92-67-1	[1,1'-Biphenyl]-4-amine	8270	10
Aniline	62-53-3	Benzenamine	8270	10
Anthracene	120-12-7	Anthracene	8100	200
			8270	10
Antimony	(Total)	Antimony	6010	300
			7040	2,000
			7041	30
Aramite	140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester	8270	10
Arsenic	(Total)	Arsenic	6010	500
			7060	10
			7061	20
Barium	(Total)	Barium	6010	20
			7080	1,000
Benzene	71-43-2	Benzene	8020	2
			8240	5

APPENDIX IX—GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
Benzo[a]anthracene; Benzanthracene	56-55-3	Benz[a]anthracene	8100	200
			8270	10
Benzo[b]fluoranthene	205-99-2	Benz[e]acephenanthrylene	8100	200
			8270	10
Benzo[k]fluoranthene	207-08-9	Benzo[k]fluoranthene	8100	200
			8270	10
Benzo[ghi]perylene	191-24-2	Benzo[ghi]perylene	8100	200
			8270	10
Benzo[a]pyrene	50-32-8	Benzo[a]pyrene	8100	200
			8270	10
Benzyl alcohol	100-51-6	Benzenemethanol	8270	20
Beryllium	(Total)	Beryllium	6010	3
			7090	50
			7091	2
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3β,4α,5β,6β)-	8080	0.05
			8250	10
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2β,3α,4β,5α,6β)-	8080	0.05
			8250	40
delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3α,4β,5α,6β)-	8080	0.1
			8250	30
gamma-BHC; Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-,(1α,2α,3β,4α,5α,6β)-	8080	0.05
			8250	10
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1'-[methylenebis (oxy)]bis[2-chloro-	8270	10
Bis(2-chloroethyl)ether	111-44-4	Ethane, 1,1'-oxybis(2-chloro-	8270	10
Bis(2-chloro-1-methylethyl) ether; 2,2'-Dichlorodisopropyl ether	108-60-1	Propane, 2,2'-oxybis(1-chloro-	8010	100
			8270	10
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester	8060	20
			8270	10
Bromodichloromethane	75-27-4	Methane, bromodichloro-	8010	1
			8240	5
Bromoform; Tribromomethane	75-25-2	Methane, tribromo-	8010	2
			8240	5
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-	8270	10
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	8060	5
			8270	10
Cadmium	(Total)	Cadmium	6010	40
			7130	50
			7131	1
Carbon disulfide	75-15-0	Carbon disulfide	8240	5
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8010	1
			8240	5
Chlordane	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	8080	0.1
			8250	10
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-	8270	20
Chlorobenzene	108-90-7	Benzene, chloro-	8010	2
			8020	2
			8240	5
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro-α-(4-chlorophenyl)-α-hydroxy-, ethyl ester	8270	10
p-Chloro-m-cresol	59-50-7	Phenol, 4-chloro-3-methyl-	8040	5
			8270	20
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-	8010	5
			8240	10
Chloroform	67-66-3	Methane, trichloro-	8010	0.5
			8240	5
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-	8120	10
			8270	10
2-Chlorophenol	95-57-8	Phenol, 2-chloro-	8040	5
			8270	10

[Appendix IX]

APPENDIX IX—GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-	8270	10
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-	8010	50
			8240	5
Chromium	(Total)	Chromium	6010	70
			7190	500
			7191	10
Chrysene	218-01-9	Chrysene	8100	200
			8270	10
Cobalt	(Total)	Cobalt	6010	70
			7200	500
			7201	10
Copper	(Total)	Copper	6010	60
			7210	200
m-Cresol	108-39-4	Phenol, 3-methyl-	8270	10
o-Cresol	95-48-7	Phenol, 2-methyl-	8270	10
p-Cresol	106-44-5	Phenol, 4-methyl-	8270	10
Cyanide	57-12-5	Cyanide	9010	40
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-	8150	10
4,4'-DDD	72-54-8	Benzene 1,1'-(2,2-dichloroethylidene)bis(4-chloro-	8080	0.1
			8270	10
4,4'-DDE	72-55-9	Benzene 1,1'-(dichloroethylidene)bis(4-chloro-	8080	0.1
			8270	10
4,4'-DDT	50-29-3	Benzene 1,1'-(2,2,2-trichloroethylidene)bis(4-chloro-	8080	0.1
			8270	10
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	8270	10
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene	8100	200
			8270	10
Dibenzofuran	132-64-9	Dibenzofuran	8270	10
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-	8010	1
			8240	5
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-	8010	100
			8240	5
			8270	10
1,2-Dibromoethane; Ethylene dibromide	106-93-4	Ethane, 1,2-dibromo-	8010	10
			8240	5
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	8060	5
			8270	10
o-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-	8010	2
			8020	5
			8120	10
			8270	10
m-Dichlorobenzene	541-73-1	Benzene, 1,3-dichloro-	8010	5
			8020	5
			8120	10
			8270	10
p-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-	8010	2
			8020	5
			8120	15
			8270	10
3,3'-Dichlorobenzidine	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro-, (E)-	8240	5
Dichlorodifluoromethane	75-71-8	Methane, dichlorodifluoro-	8010	10
			8240	5
1,1-Dichloroethane	75-34-3	Ethane, 1,1-dichloro-	8010	1
			8240	5
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,2-dichloro-	8010	0.5
			8240	5

APPENDIX IX—GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
1,1-Dichloroethylene; Vinylidene chloride	75-35-4	Ethene, 1,1-dichloro-	8010	1
			8240	5
trans-1,2-Dichloroethylene	156-60-5	Ethene, 1,2-dichloro-, (E)-	8010	1
			8240	5
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-	8040	5
			8270	10
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-	8270	10
1,2-Dichloropropane	78-87-5	Propane, 1,2-dichloro-	8010	0.5
			8240	5
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-	8010	20
			8240	5
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro-, (E)-	8010	5
			8240	5
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα,2β,2aα,3β,6β,6aα,7β,7aα)-	8080	0.05
			8270	10
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	8060	5
			8270	10
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	8270	10
Dimethoate	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	8270	10
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	8270	10
7,12-Dimethylbenz[a]anthracene	57-97-6	Benz[a]anthracene, 7,12-dimethyl-	8270	10
3,3'-Dimethylbenzidine	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-	8270	10
alpha, alpha-Dimethylphenethylamine	122-09-8	Benzenemethanamine, α,α-dimethyl-	8270	10
2,4-Dimethylphenol	105-67-9	Phenol, 2,4-dimethyl-	8040	5
			8270	10
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	8060	5
			8270	10
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-	8270	10
4,6-Dinitro-o-cresol	534-52-1	Phenol, 2-methyl-4,6-dinitro-	8040	150
			8270	50
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro-	8040	150
			8270	50
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-	8090	0.2
			8270	10
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-	8090	0.1
			8270	10
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	8150	1
			8270	10
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester	8060	30
			8270	10
1,4-Dioxane	123-91-1	1,4-Dioxane	8015	150
Diphenylamine	122-39-4	Benzenamine, N-phenyl-	8270	10
Disulfoton	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)-ethyl]ester S-	8140	2
			8270	10
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3α,5aβ,6α,9α,9aβ)-	8080	0.1
			8250	10
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3α,5aα,6β,9β,9aα)-	8080	0.05
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3,3-dioxide	8080	0.5
			8270	10
Endrin	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα,2β,2aβ,3α,6α,6aβ,7β,7aα)-	8080	0.1
			8250	10
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1α,2β,2aβ,4β,4aβ,5β,6aβ,6bβ,7R*)-	8080	0.2
			8270	10

[Appendix IX]

APPENDIX IX—GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PCL (µg/L) [6]
Ethylbenzene	100-41-4	Benzene, ethyl-	8020	2
			8240	5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015	10
			8240	5
			8270	10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester	8270	10
Famphur	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl]-O,O-dimethyl ester	8270	10
Fluoranthene	206-44-0	Fluoranthene	8100	200
			8270	10
Fluorene	86-73-7	9H-Fluorene	8100	200
			8270	10
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	8080	0.05
			8270	10
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a,-hexahydro-, (1aα,1bβ,2a,5a,5aβ,6β,6aα)	8080	1
			8270	10
Hexachlorobenzene	118-74-1	Benzene, hexachloro-	8120	0.5
			8270	10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	8120	5
			8270	10
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	8120	5
			8270	10
Hexachloroethane	67-72-1	Ethane, hexachloro-	8120	0.5
			8270	10
Hexachlorophene	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	8270	10
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone	591-78-6	2-Hexanone	8240	50
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno[1,2,3-cd]pyrene	8100	200
			8270	10
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-	8015	50
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1α,4α,4aβ,5β,8β,8aβ)-	8270	10
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-	8090	60
			8270	10
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-	8270	10
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta-[cd]pentalen-2-one, 1,1a,1,3a,4,5,5,5a,5b,6-decachlorooctahydro-	8270	10
Lead	(Total)	Lead	6010	40
			7420	1,000
			7421	10
Mercury	(Total)	Mercury	7470	2
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-	8015	5
			8240	5
Methapyrilene	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	8270	10
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2,trichloroethylidene)bis[4-methoxy]-	8080	2
			8270	10
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-	8010	20
			8240	10
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-	8010	1
			8240	10
3-Methylcholanthrene	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	8270	10
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-	8010	15
			8240	5
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-	8010	5
			8240	5

APPENDIX IX—GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
Methyl ethyl ketone; MEK	78-93-3	2-Butanone	8015	10
			8240	100
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-	8010	40
			8240	5
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	8015	2
			8240	5
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester	8270	10
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-	8270	10
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	8140	0.5
			8270	10
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	2-Pentanone, 4-methyl-	8015	5
			8240	50
Naphthalene	91-20-3	Naphthalene	8100	200
			8270	10
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134-32-7	1-Naphthalenamine	8270	10
2-Naphthylamine	91-59-8	2-Naphthalenamine	8270	10
Nickel	(Total)	Nickel	6010	50
			7520	400
o-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline	99-09-2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline	100-01-6	Benzenamine, 4-nitro-	8270	50
Nitrobenzene	98-95-3	Benzene, nitro-	8090	40
			8270	10
o-Nitrophenol	88-75-5	Phenol, 2-nitro-	8040	5
			8270	10
p-Nitrophenol	100-02-7	Phenol, 4-nitro-	8040	10
			8270	50
4-Nitroquinoline 1-oxide	56-57-5	Quinoline, 4-nitro-, 1-oxide	8270	10
N-Nitrosodi-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-	8270	10
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-	8270	10
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-	8270	10
N-Nitrosodipropylamine; Di-n-propylnitrosamine	621-64-7	1-Propanamine, N-nitroso-N-propyl-	8270	10
N-Nitrosomethylethylamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosomorpholine	59-89-2	Morpholine, 4-nitroso-	8270	10
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-	8270	10
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-	8270	10
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-	8270	10
Parathion	56-38-2	Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester	8270	10
Polychlorinated biphenyls; PCBs	See Note 7	1,1'-Biphenyl, chloro derivatives	8080	50
			8250	100
Polychlorinated dibenzo-p-dioxins; PCDDs	See Note 8	Dibenzo[b,e][1,4]dioxin, chloro derivatives	8290	0.01
Polychlorinated dibenzofurans; PCDFs	See Note 9	Dibenzofuran, chloro derivatives	8280	0.01
Pentachlorobenzene	608-93-5	Benzene, pentachloro-	8270	10
Pentachloroethane	76-01-7	Ethane, pentachloro-	8240	5
			8270	10
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-	8270	10
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040	5
			8270	50
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)	8270	10
Phenanthrene	85-01-8	Phenanthrene	8100	200
			8270	10
Phenol	108-95-2	Phenol	8040	1
			8270	10
p-Phenylenediamine	106-50-3	1,4-Benzenediamine	8270	10
Phorate	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	8140	2
			8270	10

[Appendix IX]

APPENDIX IX—GROUND WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical Abstracts Service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
2-Picoline	109-06-8	Pyridine, 2-methyl-	8240	5
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	8270	10
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile	8270	10
			8015	60
Pyrene	129-00-0	Pyrene	8240	5
			8100	200
Pyridine	110-86-1	Pyridine	8270	10
			8240	5
Safrole	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-	8270	10
Selenium	(Total)	Selenium	6010	750
			7740	20
Silver	(Total)	Silver	7741	20
			6010	70
			7760	100
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	8150	2
Styrene	100-42-5	Benzene, ethenyl-	8020	1
			8240	5
Sulfide	18496-25-8	Sulfide	9030	10,000
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
2,3,7,8-TCDD; 2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-	8280	0.0
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-	8010	5
			8240	5
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-	8010	0.5
			8240	5
Tetrachloroethylene; Perchloroethylene; Tetrachloroethene	127-18-4	Ethene, tetrachloro-	8010	0.5
			8240	5
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-	8270	10
Tetraethyl dithiopyrophosphonate; Sulfotepp	3689-24-5	Thiodiphosphonic acid ([(HO)$_2$P(S)]$_2$O), tetraethyl ester	8270	10
Thallium	(Total)	Thallium	6010	400
			7840	1,000
			7841	10
Tin	(Total)	Tin	7870	8,000
Toluene	108-88-3	Benzene, methyl-	8020	2
			8240	5
o-Toluidine	95-53-4	Benzenamine, 2-methyl-	8270	10
Toxaphene	8001-35-2	Toxaphene	8080	2
			8250	10
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-	8270	10
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1-trichloro-	8240	5
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-	8010	0.2
			8240	5
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-	8010	1
			8240	5
Trichlorofluoromethane	75-69-4	Methane, trichlorofluoro-	8010	10
			8240	5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040	5
			8270	10
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010	10
			8240	5
O,O,O-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, O,O,O-triethyl ester	8270	10
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010	80
			7910	2,000
			7911	40

APPENDIX IX—GROUND-WATER MONITORING LIST [1]—Continued

Common name [2]	CAS RN [3]	Chemical abstracts service index name [4]	Suggested methods [5]	PQL (µg/L) [6]
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8240	5
Vinyl chloride	75-01-4	Ethene, chloro-	8010	2
			8240	10
Xylene (total)	1330-20-7	Benzene, dimethyl-	8020	5
			8240	5
Zinc	(Total)	Zinc	8010	20
			7950	50

[1] The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.

[2] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

[3] Chemical Abstracts Service registry number. Where "total" is entered, all species in the ground water that contain this element are included.

[4] CAS index names are those used in the 9th Cumulative Index.

[5] Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.

[6] Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in ground waters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

[7] Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.

[8] This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins. The PQL shown is an average value for PCDD congeners.

[9] This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans. The PQL shown is an average value for PCDF congeners.

[Appendix IX]

Table J-2c. WAG 9 groundwater analytes.

INORGANICS

Alkalinity	Conductivity	Silver
Aluminum	Copper	Sodium
Antimony	Cyanide	Specific Conductance
Arsenic	Dissolved Solids	Sulfate
Barium	Iron	TDS
Beryllium	Lead	TOC
Bic Alkaline	Magnesium	TOH
Cadmium	Manganese	TOX
Calcium	Mercury	Thallium
Carbonate	Nickel	Tin
Chloride	Nitrate	Vanadium
Chromium	Potassium	Zinc
Cobalt	Selenium	pH

ORGANICS

1,1,1,2-Tetrachloroethane	Acrolein	Hexachloroethane
1,1,1-Trichloroethane	Acrylonitrile	Hexachlorophene
1,1,2,2-Tetrachloroethane	Aldrin	Hexachloropropene
1,1,2-Trichloroethane	Allyl Chloride	Indeno(1,2,3-cd)pyrene
1,1-Dichloroethane	Alpha-BHC	Iodomethane
1,1-Dichloroethene	Aniline	Isobutyl alcohol
1,2,3-Trichloropropane	Anthracene	Isodrin
1,2,4,5-Tetrachlorobenzene	Aramite	Isophorone
1,2,4-Trichlorobenzene	Aroclor-1016	Isosafrole
1,2-Dibromo-3-chloropropane	Aroclor-1221	Kepone
1,2-Dibromoethane	Aroclor-1232	Methacrylonitrile
1,2-Dichlorobenzene	Aroclor-1242	Methapyrilene
1,2-Dichloroethane	Aroclor-1248	Methoxychlor
1,2-Dichloroethene (total)	Aroclor-1254	Methyl methacrylate
1,2-Dichloropropane	Aroclor-1260	Methyl parathion
1,3,5-Trinitrobenzene	Benzene	Methylene Chloride
1,3-Dichlorobenzene	Benzo(a)anthracene	Methylmethanesulfonate
1,3-Dinitrobenzene	Benzo(a)pyrene	N-Nirtosopiperidine
1,4-Dichlorobenzene	Benzo(b)fluoranthene	N-Nitroso-di-n-butylamine
1,4-Dioxane	Benzo(g,h,i)perylene	N-Nitroso-di-n-propylamine
1,4-Naphthoquinone	Benzo(k)fluoranthene	N-Nitrosodiethylamine
1,4-Phenylenediamine	Benzoic acid	N-Nitrosodimethylamine
1-Naphthylamine	Benzyl alcohol	N-Nitrosodiphenylamine
2,3,4,6-Tetrachlorophenol	Beta-BHC	N-Nitrosomethylethylamine
2,4,5-T	Bromodichloromethane	N-Nitrosomorpholine
2,4,5-TP (Silvex)	Bromoform	N-Nitrosopyrrolidine
2,4,5-Trichlorophenol	Bromomethane	Naphthalene
2,4,6-Trichlorophenol	Butylbenzylphthalate	Nitrobenzene
2,4-D	Carbon Disulfide	Parathion
2,4-Dichlorophenol	Carbon Tetrachloride	Pentachlorobenzene
2,4-Dimethylphenol	Chlordane (technical)	Pentachloroethane
2,4-Dinitrophenol	Chlorobenzene	Pentachloronitrobenzene
2,4-Dinitrotoluene	Chlorobenzilate	Pentachlorophenol

2,6-Dichlorophenol
2,6-Dinitrotoluene
2-Acetylaminofluorene
2-Butanone
2-Chloronaphthalene
2-Chlorophenol
2-Hexanone
2-Methylnaphthalene
2-Methylphenol
2-Naphthylamine
2-Nitroaniline
2-Nitrophenol
2-Picoline
3,3'-Dichlorobenzidine
3,3'-Dimethylbenzidine
3-Methylcholanthrene
3-Methylphenol
3-Nitroaniline
4,4'-DDD
4,4'-DDE
4,4'-DDT
4,6-Dinitro-2-methylphenol
4-Aminobiphenyl
4-Bromophenyl-phenylether
4-Chloro-3-methylphenol
4-Chloroaniline
4-Chlorophenyl-phenylether
4-Methyl-2-Pentanone
4-Methylphenol
4-Nitroaniline
4-Nitrophenol
4-Nitroquinoline-1-oxide
5-Nitro-o-toluidine
7,12-Dimethylbenz(a)-anthracen
Acenaphthene
Acenaphthylene
Acetone
Acetonitrile
Acetophenone
Chloroethane
Chloroform
Chloromethane
Chloroprene
Chrysene
Delta-BHC
Di-allate
Di-n-butylphthalate
Di-n-octylphthalate
Dibenz(a,h)anthracene
Dibenzofuran
Dibromochloromethane
Dibromomethane
Dichlorodifluoromethane
Dieldrin
Diethylphthalate
Dimethoate
Dimethylphthalate
Dinoseb
Diphenylamine
Disulfoton
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Endrin ketone
Ethyl methacrylate
Ethyl methanesulfonate
Ethylbenzene
Ethylcyanide
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Phenacetin
Phenanthrene
Phenol
Phorate
Pronamide
Propionitrile
Pyrene
Pyridine
Safrole
Styrene
Sulfotep
Tetrachloroethene
Thionazin
Toluene
Toxaphene
Trichloroethene
Trichlorofluoromethane
Vinyl Acetate
Vinyl Chloride
Xylene (ortho)
Xylene (total meta & para)
Xylene (total)
a,a-Dimethylphenethylamine
alpha-Chlordane
bis(2-Chloroethoxy)methane
bis(2-Chloroethyl)ether
bis(2-Chloroisopropyl)ether
bis(2-Ethylhexyl)phthalate
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
gamma-BHC (Lindane)
gamma-Chlordane
o,o,o-Triethylphosphorothioa
o-Toluidine
p-(Dimethylamino)azobenzene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
trans-1,4-Dichloro-2-butene

RADIONUCLIDES

ALPHA	Eu-152	Ru-106
Am-241	Eu-154	Sb-125
BETA	I-129	Sr-90
Ce-144	Np-237	Tc-99
Co-58	Pu-238	Tritium
Co-60	Pu-239/240	U-234
Cs-134	Pu-241	U-235
Cs-137	Ru-103	U-238