ATTACHMENT 5

Potential Chemical-Specific Data Quality Objectives and Preferred Maximum Method Quantitation Limits for Soil/Sediment

Analyte	Abbreviation	CAS #	Human Health Screening Values				Most Stringent Health Criteria (mg/kg)	Ecological Screening Values (Terrestrial) (mg/kg)	Eco SV Source	Preferred Maximum Method Quantitation Limit Soil (mg/kg)*	Lab MDL (mg/kg)	Lab Reporting Limit (mg/kg)
			Residential Soil (mg/kg)		Industrial Soil (mg/kg)							
			ME-DEP PRG	Region IX PRG	ME-DEP PRG	Region IX PRG						
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX		-	4.4	-	16	4.4	5.8	A	2.2	0.177	0.200
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	2691-41-0	-	3100	-	31000	3100	43	H	22	0.0297	0.200
2,4,6-Trinitrotoluene (4)	2,4,6-TNT	118-96-7	-	16	-	57	16	8	B	2.0	0.0203	0.100
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	-	1800	-	18000	1800	0.38	F	0.19	0.00976	0.100
1,3-Dinitrobenzene	1,3-DNB	99-65-0	-	6.1	-	62	6.1	0.66	F	0.33	0.00524	0.100
2,4-Dinitrotoluene (1)	2,4-DNT	121-14-2	-	0.72	4	2.5	0.72	1.28	F	0.36	0.0335	0.100
2,6-Dinitrotoluene (1)	**2,6-DNT**	**606-20-2**	**-**	**0.72**	**4**	**2.5**	**0.72**	**0.033**	**F**	**0.017**	**0.0178**	**0.100**
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	-	12	-	120	12	5.3	H	2.7	0.0251	0.100
2-Nitrotoluene	2-NT	88-72-2	-	0.88	-	2.2	0.88	4.1	H	0.44	0.0215	0.200
3-Nitrotoluene	3-NT	99-08-1	-	730	-	1000	730	5.3	H	2.7	0.0553	0.200
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	-	12	-	120	12	-	-	6.0	0.0153	0.100
4-Nitrotoluene	4-NT	99-99-0	-	12	-	30	12	9.4	H	4.7	0.0901	0.200
Nitrobenzene	NB	98-95-3	-	20	520	100	20	40	C	10	0.0158	0.100
Nitroglycerin	NG	55-63-0	-	35	-	120	35	150	H	18	0.43	5.0
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	-	610	-	6200	610	2	H	1.0	0.0105	0.200
Pentaerythritol Tetranitrate	PETN	78-11-5	-	-	-	-	-	21000	H	10500	0.03943	0.500
Aluminum	Al	7429-90-5	-	76000	-	100000	76000	50	C	25	2.67	20.0
Antimony	**Sb**	**7440-36-0**	**-**	**31**	**-**	**410**	**31**	**0.30**	**A**	**0.15**	**0.32**	**2.0**
Arsenic	**As**	**7440-38-2**	**10**	**0.39**	**30**	**1.6**	**0.39**	**10**	**C**	**0.20**	**0.46**	**2.0**
Barium	Ba	7440-38-2	10000	5400	10000	67000	5400	330	A	165	0.015	0.5
Beryllium	Be	7440-41-7	4	150	10	1900	4	1.1	C	0.55	0.0023	0.2
Cadmium	Cd	7440-43-9	27	37	23	450	27	1.6	C	0.80	0.023	0.6
Calcium	Ca	7440-70-2	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	5.24	100.0
Chromium (2)	Cr	7440-47-3	-	210	-	450	210	7.9	A	4.0	0.04	0.5
Cobalt	Co	7440-48-4	-	900	-	1900	900	13	A	6.5	0.064	0.5
Copper	Cu	7440-50-8	650	3100	600	41000	600	40	C	20	0.062	1.0
Iron	Fe	7439-89-6	-	23000	-	100000	23000	N/A	-	11500	2.47	15.0
Lead	Pb	7439-92-1	375	400	700	800	375	16	A	8.0	0.24	1.0
Magnesium	Mg	7439-95-4	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	1.71	25.0
Manganese	Mn	7439-96-5	-	1800	-	19000	1800	152	A	76	0.017	0.5
Mercury	Hg	7439-97-6	60	23	610	310	23	0.10	C	0.05	0.02	0.03
Molybdenum	Mo	7439-98-7	950	390	10000	5100	390	-	-	195	0.11	0.5
Nickel	Ni	7440-02-0	3800	1600	10000	20000	1600	38	A	19	0.14	1.0
Potassium	K	7440-09-7	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	2.15	25.0
Selenium	**Se**	**7782-49-2**	**950**	**390**	**10000**	**5100**	**390**	**0.50**	**A**	**0.25**	**0.48**	**2.0**
Silver	Ag	7440-22-4	950	390	10000	5100	390	2.0	C	1.0	0.048	0.3

Potential Chemical-Specific Data Quality Objectives and Preferred Maximum Method Quantitation Limits for Soil/Sediment

Analyte	Abbreviation	CAS #	Human Health Screening Values				Most Stringent Health Criteria (mg/kg)	Ecological Screening Values (Terrestrial) (mg/kg)	Eco SV Source	Preferred Maximum Method Quantitation Limit Soil (mg/kg)*	Lab MDL (mg/kg)	Lab Reporting Limit (mg/kg)
			Residential Soil (mg/kg)		Industrial Soil (mg/kg)							
			ME-DEP PRG	Region IX PRG	ME-DEP PRG	Region IX PRG						
Sodium	Na	7440-23-5	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	24.20	250.0
Strontium	Sr	7440-24-6	-	47000	-	100000	47000	-	-	23500	NA	2
Thallium	**Tl**	**7440-28-0**	**-**	**5.2**	**-**	**67**	**5.2**	**1.0**	**C**	**0.50**	**0.58**	**3.0**
Titanium	Ti	7440-32-6	-	100000	-	100000	100000	-	-	50000	0.034	2.5
Vanadium	V	7440-62-2	-	78	-	1000	78	2.0	C	1.0	0.063	1.0
Zinc	Zn	7440-66-6	1500	23000	1500	100000	1500	50	C	25	0.61	2.0
Zirconium	Zr	7440-67-7	-	-	-	-	-	-	-	-	NA	20

* If laboratory cannot meet any of the preferred QLs with routine SW846 methodology (as supported by MDLs that are no greater than 1/3 QL), laboratory's QL must be identified in Laboratory submittal as failing to meet the QL. Some screening values cannot be obtained with routine methodology to the QL. In those cases, the QL achievable with a routine SW846 methodology would be accepted.

(1) Carcinogenic DNT mixture values used if more conservative than noncarcinogenic isomer-specific values
(2) Total chromium values used if available. All Region III values are based on hexavalent chromium.
(3) Lower of the industrial values provided (industrial w/o dermal vs. industrial/outdoor)
(4) Noncancer RBCs at an HI of 0.1 provided because screening at an HI of 0.1, in accordance with Region III guidance, will result in noncancer RBCs being lower than the cancer RBCs

Region IX PRGs, dtd 28 December 2004
ME-DEP PRGs, dtd May 1996

Eco Screening Value Sources:
A USEPA EcoSSLs
B Los Alamos Nuclear Lab Screening Level
C USEPA Region IV Eco Screening Values
D San Francisco Regional Water Quality Control Board Surface Water Screening Values
E USEPA Region III Freshwater Screening Benchmarks
F USEPA Region V Ecological Data Quality Levels
G Talmage, et. al. 1999
H Los Alamos National Laboratory (LANL), ECORISK Database, 2004

Potential Chemical-Specific Data Quality Objectives and Preferred Maximum Method Quantitation Limit for Surface Water/ Groundwater													
Analyte	**Abbreviation**	**CAS #**	**Human Health Screening Values**				**Federal Ambient Water Quality (ug/L)**		**Ecological Screening Values (ug/L)**	**Eco SV Source**	**Most Stringent Criteria (ug/L)**	**Preferred Maximum Method Quantitation Limit Aqueous (ug/L)***	**Lab MDL (mg/kg)**	**Lab Reporting Limit (mg/kg)**
			Tap Water (ug/L)		**Federal Drinking Water Criteria (ug/L)**									
			ME-DEP MEG	**Region IX PRG**	**MCLs**	**HA**	**CMC**	**CCC**						
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	121-82-4	-	0.61	-	2	4000	190	360	E	0.61	0.31	0.081	0.52
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	2691-41-0	-	1800	-	400	-	330	150	E	150	75	0.14	0.52
2,4,6-Trinitrotoluene (4)	2,4,6-TNT	118-96-7	3.5	2.2	-	2	560	<40	100	E	1.8	0.90	0.016	0.26
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	-	1100	-	-	30	14	11	G	11	5.5	0.12	0.26
1,3-Dinitrobenzene	1,3-DNB	99-65-0	-	3.6	-	1	110	30	20	G	1.0	0.50	0.037	0.26
2,4-Dinitrotoluene (1)	**2,4-DNT**	**121-14-2**	**0.5**	**0.099**	**-**	**5 (6)**	**0.11**	**-**	**310**	**C**	**0.098**	**0.049**	**0.073**	**0.26**
2,6-Dinitrotoluene (1)	**2,6-DNT**	**606-20-2**	**0.5**	**0.099**	**-**	**5 (6)**	**18,500**	**-**	**81**	**E**	**0.098**	**0.049**	**0.11**	**0.26**
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	-	7.3	-	-	-	-	20	G	7.3	3.7	0.066	0.26
2-Nitrotoluene	2-NT	88-72-2	-	0.049	-	-	-	-	-	-	0.049	0.023	0.20	0.52
3-Nitrotoluene	3-NT	99-08-1	-	120	-	-	-	-	750	E	120	60	0.31	0.52
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	-	7.3	-	-	-	-	-	-	7.3	3.7	0.13	0.26
4-Nitrotoluene	**4-NT**	**99-99-0**	**-**	**0.66**	**-**	**-**	**-**	**-**	**1900**	**E**	**0.62**	**0.31**	**0.36**	**0.52**
Nitrobenzene	NB	98-95-3	3.5	3.4	-	-	27,000		270	C	3.4	1.7		0.057
Nitroglycerin	NG	55-63-0	-	4.8	-	5	1,700	200	138	E	4.8	2.4	0.081	2.00
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	-	360	-	-	-	-	5800	H	360	75	0.18	0.52
Pentaerythritol Tetranitrate	PETN	78-11-5	-	-	-	-	-	-	85000	E	85000	42500	0.08	1.30
Aluminum	**Al**	**7429-90-5**	**1430**	**36000**	**50 (5)**	**-**	**-**	**-**	**-**	**-**	**50**	**25**	**25.4**	**200**
Antimony	Sb	7440-36-0	3	15	6	-	-	-	6.0	D	3.0	3.0	2.5	20
Arsenic	**As**	**7440-38-2**	**10**	**0.045**	**10**	**-**	**-**	**-**	**0.14**	**D**	**0.045**	**0.023**	**2.4**	**20**
Barium	Ba	7440-38-2	2000	2600	2000	-	-	-	1000	D	1000	500	0.19	5.0
Beryllium	Be	7440-41-7	-	73	4	-	-	-	2.7	D	2.7	1.4	0.042	2.0
Cadmium	Cd	7440-43-9	3.5	18	5	-	-	-	2.2	D	2.2	1.1	0.17	6.0
Calcium	Ca	7440-70-2	-	-	-	-	-	-	-	-	-	-	77.7	1000
Chromium (2)	Cr	7440-47-3	-	110	100	-	-	-	50	D	50	25	0.45	5.0
Cobalt	Co	7440-48-4	-	730	-	-	-	-	3.0	D	3.0	1.5	0.72	5.0
Copper	Cu	7440-50-8	1300	1500	1300/1000 (5)	-	-	-	9.0	D	9.0	4.5	1.4	10
Iron	Fe	7439-89-6	-	11000	300 (5)	-	-	-	-	-	300	150	17.4	150
Lead	**Pb**	**7439-92-1**	**10**	**-**	**15**	**-**	**-**	**-**	**2.5**	**D**	**2.5**	**1.3**	**2.1**	**10**
Magnesium	Mg	7439-95-4	-	-	-	-	-	-	-	-	-	-	11.6	250
Manganese	Mn	7439-96-5	500	880	50 (5)	300	-	-	-	-	50	25	0.18	5.0
Mercury	Hg	7439-97-6	2	11	2	-	-	-	0.77	D	0.77	0.39	0.10	0.2
Molybdenum	Mo	7439-98-7	35	180	-	40	-	-	-	-	35	20	1.5	5.0
Nickel	Ni	7440-02-0	140	730	-	100	-	-	52	D	52	26	0.87	10
Potassium	K	7440-09-7	-	-	-	-	-	-	-	-	-	-	12.6	250

Potential Chemical-Specific Data Quality Objectives and Preferred Maximum Method Quantitation Limit for Surface Water/ Groundwater														
Analyte	**Abbreviation**	**CAS #**	**Human Health Screening Values**				**Federal Ambient Water Quality (ug/L)**		**Ecological Screening Values (ug/L)**	**Eco SV Source**	**Most Stringent Criteria (ug/L)**	**Preferred Maximum Method Quantitation Limit Aqueous (ug/L)***	**Lab MDL (mg/kg)**	**Lab Reporting Limit (mg/kg)**
			Tap Water (ug/L)		**Federal Drinking Water Criteria (ug/L)**									
			ME-DEP MEG	**Region IX PRG**	**MCLs**	**HA**	**CMC**	**CCC**						
Selenium	**Se**	**7782-49-2**	**35**	**180**	**50**	**-**	**-**	**-**	**5.0**	**D**	**5.0**	**2.5**	**3.4**	**20**
Silver	**Ag**	**7440-22-4**	**35**	**180**	**100 (5)**	**100**	**-**	**-**	**0.34**	**D**	**0.34**	**0.17**	**0.71**	**3.0**
Sodium	Na	7440-23-5	20000	-	20000 (8)	-	-	-	-	-	20000	10000	183	2500
Strontium	Sr	7440-24-6	4200	22000	-	4000	-	-	-	-	4000	2000	0.60	2
Thallium	**Tl**	**7440-28-0**	**0.5**	**2.4**	**2**	**-**	**-**	**-**	**2.0**	**D**	**0.5**	**1.0**	**4.8**	**30**
Titanium	Ti	7440-32-6	-	150000	-	-	-	-	-	-	150000	75000	0.3	25
Vanadium	V	7440-62-2	-	36	-	-	-	-	19	D	19	9.5	0.52	10
Zinc	Zn	7440-66-6	2000	11000	5000 (5)	2000	-	-	120	D	120	60	2.4	20
Zirconium	Zr	7440-67-7	-	-	-	-	-	-	-	-	-	-	0.55	20

* If laboratory cannot meet any of these QLs with routine SW846 methodology (as supported by MDLs that are no greater than 1/3 QL), laboratory's QL must be identified in Laboratory submittal as failing to meet the QL. Some screening values cannot be obtained with routine methodology to the QL.

(1) Carcinogenic DNT mixture values used if more conservative than noncarcinogenic isomer-specific values
(2) Total chromium values used if available.
(3) Lower of the industrial values provided (industrial w/o dermal vs. industrial/outdoor)
(4) Noncancer RBCs at an HI of 0.1 provided because screening at an HI of 0.1, in accordance with Region III guidance, will result in noncancer RBCs being lower than the cancer RBCs
(5) All MCLs are primary except those with this footnote.
(6) All HAs are lifetime except those footnoted, which are based on 10-4 cancer risk
(7) Drinking Water Equivalent Level
(8) Drinking Water Advisory

Sources:

A USEPA EcoSSLs
B Los Alamos Nuclear Lab Screening Level
C USEPA Region IV Eco Screening Values
D San Francisco Regional Water Quality Control Board Surface Water Screening Values
E USEPA Region III Freshwater Screening Benchmarks
F USEPA Region V Ecological Data Quality Levels
G Talmage, et. al. 1999

Region IX PRGs, dtd 28 December 2004
ME-Maximum Exposure Guidelines (MEGs), dtd 20 January 2000