



Louisiana Cleanup Standards for Contaminated Groundwater

The Louisiana Department of Environmental Quality (LDEQ) has developed a Risk Evaluation/Corrective Action Program (RECAP) to address risks to human health and the environment posed by the release of chemical constituents to the environment. This is LDEQ's primary statutory mandate for remediation activities. It is clear in Louisiana's Environmental Quality Act that risk to human health and the environment must be evaluated in the remedial decision-making process.

RECAP uses risk evaluation to: (1) determine if corrective action is necessary for the protection of human health and the environment, and (2) identify constituent levels in impacted media that do not pose unacceptable risks to human health or the environment, i.e. RECAP Standards.

RECAP consists of a tiered framework composed of a Screening Option and three Management Options. This tiered approach allows site evaluation and corrective action efforts to be tailored to site conditions and risks. As the Management Option level increases, the approach becomes more site-specific and, hence, the level of effort required to meet the objectives of the Option increases. Although the level of effort required for each Option varies, each Option achieves a common goal: protection of human health and the environment.

Attached are the Screening Option tables that can be used to determine if additional evaluation and/or corrective action is warranted. The lower of the appropriate toxicity based value (Soil_SSni or Soil_SSi) and ground water protection value (Soil_SSGW) shall be used for soil.

See our Web Site at <http://www.deq.louisiana.gov/portal/DIVISIONS/UndergroundStorageTankandRemediationDivision/RemediationServices/RECAP.aspx> for additional information or contact the Underground Storage Tank and Remediation Division at (225) 219-3536.

Compound	GW_SS* mg/L	note
Acenaphthene	0.037	N
Anthracene	0.043	W
Arsenic	0.01	MCL
Barium	2	MCL
Benzene	0.005	MCL
Benz(a)anthracene	0.0078	Q
Benzo(a)pyrene	0.0002	MCL
Benzo(b)fluoranthene	0.0048	Q
Benzo(k)fluoranthene	0.0025	W

1,1-Biphenyl	0.03	N
Cadmium	0.005	MCL
Carbon Disulfide	0.1	N
Chromium(III)	0.1	MCL
Chromium(VI)	0.1	MCL
Chrysene	0.0016	W
Dibenz(a,h)anthracene	0.0025	Q
Dibenzofuran	0.01	Q
Ethylbenzene	0.7	MCL
Fluoranthene	0.15	N
Fluorene	0.024	N
Indeno(1,2,3-cd)pyrene	0.0037	Q
Lead (inorganic)	0.015	MCL
Mercury (inorganic)	0.002	MCL
MTBE	0.02	T/O
Naphthalene	0.01	Q
Nickel	0.073	N
Pyrene	0.018	N
Toluene	1	MCL
Vanadium	0.026	N
Xylenes (total)	10	MCL
Zinc	1.1	N

Aliphatics C6-C8	3.2	N
Aliphatics >C8-C10	0.15	Q
Aliphatics >C10-C12	0.15	Q
Aliphatics >C12-C16	0.15	Q
Aliphatics >C16-C28	7.3	N
Aromatics >C8-C10	0.15	Q
Aromatics >C10-C12	0.15	Q
Aromatics >C12-C16	0.15	Q
Aromatics >C16-C21	0.15	Q
Aromatics >C21-C28	0.15	Q
TPH-G	0.15	Q
TPH-D	0.15	Q
TPH-O	0.15	Q

* GW_SS - Groundwater Screening Standard protective of a current or potential public water supply

M - Based on EPA's Maximum Contaminant Level (MCL) for drinking water

N - Based on non-carcinogenic health effects

Q - Based on analytical quantitation limit

S - Soil level protective of groundwater for inorganic constituents based on the maximum concentration for the beneficial use of sewage sludge

T/O – EPA taste/odor advisory value

W - Solubility limit is less than health based limit thus default to solubility limit

Contact: Tom Harris or Samuel Broussard, Louisiana Department of Environmental Quality, Office of Environmental Compliance, 225-219-3536.

E-mail: tom.harris@la.gov or samuel.broussard@la.gov

Web Site: <http://www.deq.louisiana.gov/portal/DIVISIONS/UndergroundStorageTankandRemediationDivision/RemediationServices/RECAP.aspx>

For additional information visit the Web Site or contact the **Underground Storage Tank and Remediation Division** at (225) 219-3536.

Louisiana Cleanup Standards for Contaminated Soil

The Louisiana Department of Environmental Quality (LDEQ) has developed a Risk Evaluation/Corrective Action Program (RECAP) to address risks to human health and the environment posed by the release of chemical constituents to the environment. This is LDEQ's primary statutory mandate for remediation activities. It is clear in Louisiana's Environmental Quality Act that risk to human health and the environment must be evaluated in the remedial decision-making process.

RECAP uses risk evaluation to: (1) determine if corrective action is necessary for the protection of human health and the environment, and (2) identify constituent levels in impacted media that do not pose unacceptable risks to human health or the environment, i.e. RECAP Standards.

RECAP consists of a tiered framework composed of a Screening Option and three Management Options. This tiered approach allows site evaluation and corrective action efforts to be tailored to site conditions and risks. As the Management Option level increases, the approach becomes more site-specific and, hence, the level of effort required to meet the objectives of the Option increases. Although the level of effort required for each Option varies, each Option achieves a common goal: protection of human health and the environment.

Attached are the Screening Option tables that can be used to determine if additional evaluation and/or corrective action is warranted. The lower of the appropriate toxicity based value (Soil_SSni or Soil_SSi) and ground water protection value (Soil_SSGw) shall be used for soil.

See our website at <http://www.deq.louisiana.gov/portal/DIVISIONS/UndergroundStorageTankandRemediationDivision/RemediationServices/RECAP.aspx> for additional information or contact the Underground Storage Tank and Remediation Division at (225) 219-3536.

Compound	Soil_SSni* mg/kg	note	Soil_SSi** mg/kg	note	Soil_SSGw*** mg/kg	note
Acenaphthene	370	N	6100	N	220	A
Anthracene	2200	N	48000	N	120	A
Antimony	3.1	N	82	N	12	L1
Arsenic	12	D	12	D	100	L
Barium	550	N	14000	N	2000	L
Benzene	1.5	C	3.1	C	0.051	A
Benz(a)anthracene	0.62	C	2.9	C	330	A
Benzo(a)pyrene	0.33	Q	0.33	C	23	A
Benzo(b)fluoranthene	0.62	C	2.9	C	220	A

Benzo(k)fluoranthene	6.2	C	29	C	120	A
1,1-Biphenyl	230	P	230	P	190	A
Cadmium	3.9	N	100	N	20	L
Carbon Disulfide	36	N	250	N	11	A
Chromium(III)	12000	N	310000	N	100	L
Chromium(VI)	23	N	610	N	100	L
Chrysene	62	C	290	C	76	A
Dibenz(a,h)anthracene	0.33	Q	0.33	Q	540	A
Dibenzofuran	29	N	150	P	24	A
1,1-Dichloroethene (mixture)	13	N	91	N	0.085	A
cis-1,2-Dichloroethene	4.8	N	34	N	0.49	A
trans-1,2-Dichloroethene	6.9	N	48	N	0.77	A
2,4-Dinitrotoluene	8.9	N	98	N	1	A
Ethylbenzene	160	N	230	P	19	A
Fluoranthene	220	N	2900	N	1200	A
Fluorene	280	N	5400	N	230	A
Indeno(1,2,3-cd)pyrene	0.62	C	2.9	C	9.2	A
Lead (inorganic)	400	B	1400	B	100	L
Mercury (inorganic)	2.3	N	61	N	4	L
MTBE	650	N	4700	N	0.077	A
Naphthalene	6.2	N	43	N	1.5	A
Nickel	160	N	4100	N	1500	L1

Pyrene	230	N	5600	N	1100	A
Toluene	68	N	470	N	20	A
Vanadium	55	N	1400	N	520	L1
Xylenes (total)	18	N	120	N	150	P
Zinc	2300	N	61000	N	2800	S
Aliphatics C6-C8	1200	N	8000	N	10000	O,T
Aliphatics >C8-C10	120	N	880	N	5300	A
Aliphatics >C10-C12	230	N	2000	O,T	10000	O,T
Aliphatics >C12-C16	370	N	3800	N	10000	O,T
Aliphatics >C16-C35	7100	N	10000	O,T	10000	O,T
Aromatics >C8-C10	65	N	510	N	65	A
Aromatics >C10-C12	120	N	1100	N	100	A
Aromatics >C12-C16	180	N	2100	N	200	A
Aromatics >C16-C21	150	N	1700	N	2100	A
Aromatics >C21-C35	180	N	2500	N	10000	O,T
TPH-GRO	65	N,I	510	N, I	65	A
TPH-DRO	65	N,I	510	N, I	65	A
TPH-ORO	180	N,I	2500	N,I	10000	N,I

*Soil_SSni - Soil Screening for Non-industrial

** Soil_SSi - Soil Screening Standard for Industrial

*** Soil_SSgw - Soil Screening Standard for Groundwater

A - Based on algorithm contained in Appendix H

B - Based on EPA's biokinetic and adult lead cleanup level models for lead

C - Based on carcinogenic health effects

D - DEQ established background level plus one standard deviation = 11.5

I - TPH Standards are only applicable when used in conjunction with Standards for indicator compounds

L - Soil level protective of groundwater for inorganic constituents based on leachability

L1 - Soil level protective of groundwater for inorganic constituents based on GW 1 because TCLP value not listed
N - Based on non-carcinogenic health effects
O - Ceiling value based on aesthetic considerations
P - Soil Saturation Limit is less than health based level thus default to soil saturation limit
Q - Based on analytical quantitation limit
S - Soil level protective of groundwater for inorganic constituents based on the maximum concentration for the beneficial use of sewage sludge
T - TPH shall not exceed 10,000

Contact: Tom Harris or Samuel Broussard, Louisiana Department of Environmental Quality, Office of Environmental Compliance, 225-219-3536.

E-mail: tom.harris@la.gov or samuel.broussard@la.gov

Web Site: <http://www.deq.louisiana.gov/portal/DIVISIONS/UndergroundStorageTankandRemediationDivision/RemediationServices/RECAP.aspx>

For additional information see the Web Site or contact the **Underground Storage Tank and Remediation Division** at (225) 219-3536.