ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
ADMINISTRATIVE CODE

CHAPTER 335-7
APPENDIX A STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS

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APPENDIX A
STANDARD LIST OF PRIMARY DRINKING WATER CONTAMINANTS FOR CCR

Contaminant	MCL	Amount Detected
Bacteriological		
Total Coliform Bacteria	< 5%	
Turbidity	TT	
Fecal coliform and *E. coli*	0	
Fecal Indicators (enterococci or coliphage)	TT	
Radiological		
Beta/photon emitters (mrem/yr)	4	
Alpha emitters (pCi/l)	15	
Combined radium (pCi/l)	5	
Uranium	30 ppb	
Inorganic Chemicals		
Antimony	6 ppb	
Arsenic	10 ppb	
Asbestos (MFL)	7	
Barium	2 ppm	
Beryllium	4 ppb	
Bromate	10 ppb	
Cadmium	5 ppb	
Chloramines	4 ppm	
Chlorine	4 ppm	
Chlorine dioxide	800 ppb	
Chlorite	1 ppm	
Chromium	100 ppb	

Copper	AL=1.3 ppm	
Cyanide	200 ppb	
Fluoride	4 ppb	
Lead	AL=15 ppb	
Mercury	2 ppb	
Nitrate	10 ppm	
Nitrite	1 ppm	
Total Nitrate and Nitrite	10 ppm	
Selenium	50 ppb	
Thallium	2 ppb	
Organic Chemicals		
Acrylamide	TT	
Alachlor	2 ppb	
Atrazine	3 ppb	
Benzene	5 ppb	
Benzo(a)pyrene [PAHs]	200 ppt	
Carbofuran	40 ppb	
Carbon tetrachloride	5 ppb	
Chlordane	2 ppb	
Chlorobenzene	100 ppb	
2,4-D	70 ppb	
Dalapon	200 ppb	
Dibromochloropropane	200 ppt	
o-Dichlorobenzene	600 ppb	
p-Dichlorobenzene	75 ppb	
1,2-Dichloroethane	5 ppb	
1,1-Dichloroethylene	7 ppb	
cis-1,2-Dichloroethylen	70 ppb	
trans-1,2-Dichloroethylene	100 ppb	
Dichloromethane	5 ppb	
1,2-Dichloropropane	5 ppb	
Di (2-ethylhexyl) adipate	400 ppb	
Di (2-ethylhexyl) phthalates	6 ppb	
Dinoseb	7 ppb	
Dioxin [2,3,7,8-TCDD]	30 ppq	
Diquat	20 ppb	
Endothall	100 ppb	
Endrin	2 ppb	
Epichlorohydrin	TT	
Ethylbenzene	700 ppb	
Ethylene dibromide	50 ppt	
Glyphosate	700 ppb	
HAA5 (haloacetic acids 5)	60 ppb	
Heptachlor	400 ppt	
Heptachlor epoxide	200 ppt	
Hexachlorobenzene	1 ppb	
Hexachlorocyclopentadiene	50 ppb	
Lindane	200 ppt	
Methoxychlor	40 ppb	
Oxamyl [Vydate]	200 ppb	

Pentachlorophenol	1 ppb	
Picloram	500 ppb	
Polychlorinated biphenyls (PCBs)	500 ppt	
Simazine	4 ppb	
Styrene	100 ppb	
Tetrachloroethylene	5 ppb	
Toluene	1 ppm	
TOC (Total Organic Carbon	TT	
TTHMs [Total trihalomethanes]	80 ppb	
Toxaphene	3 ppb	
2,4,5-TP (Silvex)	50 ppb	
1,2,4-Trichlorobenzene	70 ppb	
1,1,1-Trichloroethane	200 ppb	
1,1,2-Trichloroethane	5 ppb	
Trichloroethylene	5 ppb	
Vinyl Chloride	2 ppb	
Xylenes	10 ppm	

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335-7-B **Appendix B - Regulated Contaminants.**

APPENDIX B

REGULATED CONTAMINANTS FOR CCR

Contaminant (units)	**MCLG**	**MCL**	**Major Sources**
Total Coliform Bacteria	N/A	TT	Naturally present in the environment
E. coli	MCLG = 0 MCL - Routine and repeat samples are total coliform-positive and either is E. coli-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.		Human and animal fecal waste
Fecal Indicators (enterococci or coliphage)	N/A	TT	Human and animal fecal waste
Fecal Indicators (GWR)			
i. *E. coli*	0	TT	Human and animal fecal waste
ii. Enterococci	None	TT	
iii. coliphage	None	TT	
GWR TT Violations	None	TT	Human and animal fecal waste
Viruses, *Giardia*	0	TT	Human and animal fecal waste

Legionella	0	TT	Found naturally in water, multiplies in heating systems
Beta/photon emitters (mrem/yr)	0	4	Decay of natural and man-made deposits
Alpha emitters (pCi/l)	0	15	Erosion of natural deposits
Combined radium (pCi/l)	0	5	Erosion of natural deposits
Uranium	0	30 ppb	Erosion of natural deposits
Antimony	6 ppb	6 ppb	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	0	10 ppb	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Asbestos (MFL)	7	7	Decay of asbestos cement water mains; Erosion of natural deposits
Barium	2	2 ppm	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beryllium	4 ppb	4 ppb	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries

Cadmium	5 ppb	5 ppb	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints
Chromium	100 ppb	100 ppb	Discharge from steel and pulp mills; Erosion of natural deposits
Copper	1.3	AL = 1.3 ppm	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Cyanide	200 ppb	200 ppb	Discharge from steel/ metal factories; Discharge from plastic and fertilizer factories
Fluoride	4	4ppm	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Lead	0	AL = 15 ppb	Corrosion of household plumbing systems; Erosion of natural deposits
Mercury	2 ppb	2 ppb	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland

Nitrate	10	10 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposit
Nitrite	1	1 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium	50 ppb	50 ppb	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Thallium	0.5 ppb	2 ppb	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories
Turbidity	n/a	TT	Soil runoff
2,4-D	70 ppb	70 ppb	Runoff from herbicide used on row crops
2,4,5-TP(Silvex)	50 ppb	50 ppb	Residue of banned herbicide
Acrylamide	0	TT	Added to water during sewage/wastewater treatment
Alachlor	0	2 ppb	Runoff from herbicide used on row crops
Atrazine	3 ppb	3 ppb	Runoff from herbicide used on row crops
Benzo(a)pyrene [PAHs]	0	200 ppt	Reaching from linings of water storage tanks and distribution lines
Carbofuran	40 ppb	40 ppb	Leaching of soil fumigant used on rice and alfalfa

Chlordane	0	2 ppb	Residue of banned termiticide
Dalapon	200 ppb	200 ppb	Runoff from herbicide used on rights of way
Di (2-ethylhexyl)adipate	400 ppb	400 ppb	Discharge from chemical factories
Di (2-ethylhexyl) phthalate	0	6 ppb	Discharge from rubber and chemical factories
Dinoseb	7 ppb	7 ppb	Runoff from herbicide used on soybeans and vegetables
Diquat	20 ppb	20 ppb	Runoff from herbicide use
Dioxin [2,3,7,8-TCDD]	0	30 ppq	Emissions from waste incineration and other combustion; Discharge from chemical factories
Endothall	100 ppb	100 ppb	Runoff from herbicide use
Endrin	2 ppb	2 ppb	Residue of banned insecticide
Epichlorohydrin	0	TT	Discharge from industrial chemical factories; Added to water during treatment process An impurity of some water treatment chemicals.
Glyphosate	700 ppb	700 ppb	Runoff from herbicide use
Heptachlor	0	400 ppt	Residue of banned pesticide.
Heptachlor epoxide	0	200 ppt	Breakdown of heptachlor
Hexachlorobenzene	0	1 ppb	Discharge from metal refineries and agricultural chemical factories

Hexachlorocyclopentadiene	50 ppb	50 ppb	Discharge from chemical factories
Lindane	200 ppt	200 ppt	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor	40 ppb	40 ppb	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl [Vydate]	200 ppb	200 ppb	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs [Polychlorinated biphenyls]	0	500 ppt	Runoff from landfills; Discharge of waste chemicals
Pentachlorophenol	0	1 ppb	Discharge from wood preserving factories
Picloram	500 ppb	500 ppb	Herbicide runoff
Simazine	4 ppb	4 ppb	Herbicide runoff
Toxaphene	0	3 ppb	Runoff/leaching from insecticide used on cotton and cattle
Benzene	0	5 ppb	Discharge from factories; Leaching from gas storage tanks and landfills
Carbon tetrachloride	0	5 ppb	Discharge from chemical plants and other industrial activities
Chlorobenzene	100 ppb	100 ppb	Discharge from chemical and agricultural chemical factories

Dibromochloropropane	0	200 ppt	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
o-Dichlorobenzene	600 ppb	600 ppb	Discharge from industrial chemical factories
p-Dichlorobenzene	75 ppb	75 ppb	Discharge from industrial chemical factories
1,2-Dichloroethane	0	5 ppb	Discharge from industrial chemical factories
1,1-Dichloroethylene	7 ppb	7 ppb	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene	70 ppb	70 ppb	Discharge from industrial chemical factories
trans-1,2-Dichloroethylene	100 ppb	100 ppb	Discharge from industrial chemical factories
Dichloromethane	0	5 ppb	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane	0	5 ppb	Discharge from industrial chemical factories
Ethylbenzene	700 ppb	700 ppb	Discharge from petroleum refineries
Ethylene dibromide	0	50 ppt	Discharge from petroleum refineries
Styrene	100 ppb	100 ppb	Discharge from rubber and plastic factories; Leaching from landfills

Tetrachloroethylene	0	5 ppb	Leaching from PVC pipes; Discharge from factories and dry cleaners
1,2,4-Trichlorobenzene	70 ppb	70 ppb	Discharge from textile-finishing factories
1,1,1-Trichloroethane	200 ppb	200 ppb	Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane	3 ppb	5 ppb	Discharge from industrial chemical factories
Trichloroethylene	0	5 ppb	Discharge from metal degreasing sites and other factories
TTHM [Total trihalomethanes]	N/A	80 ppb	By-product of drinking water chlorination
Toluene	1	1 ppm	Discharge from petroleum factories
Vinyl Chloride	0	2 ppb	Leaching from PVC piping; Discharge from plastics factories
Xylenes	10	10 ppm	Discharge from petroleum factories; Discharge from chemical factories
Total organic carbon	N/A	TT	Naturally present in the environment
Bromate	0	10 ppb	By-product of drinking water chlorination
Chloramines	MRDLG = 4	MRDL = 4 ppm	Water additive used to control microbes
Chlorine	MRDLG = 4	MRDL = 4 ppm	Water additive used to control microbes
Chlorite	800 ppb	1 ppm	By-product of drinking water chlorination

Chlorine Dioxide	MRDLG = 80	MRDL = 800 ppb	Water additive used to control microbes
Haloacetic Acids (HAA5)	N/A	60 ppb	By-product of drinking water disinfection

Key

AL =Action Level
GWR = Ground Water Rule
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
MFL = million fibers per liter
mg/l = milligrams per liter, or parts per million
mrem/year = millirems per year (a measure of radiation absorbed by the body)
pCi/l = picocuries per liter (a measure of radioactivity)
ppb = parts per billion or micrograms per liter
ppm = parts per million or milligrams per liter
ppq = parts per quadrillion or picograms per liter
ppt = parts per trillion or nanograms per liter
TT = Treatment Technique

Author: Joe Alan Power
Statutory Authority: Code of Ala. 1975, §§22-23-33, 22-23-49, 22-22A-5, 22-22A-6.
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335-7-C **Appendix C - Health Effect And Required Language For Specific Contaminants.**

APPENDIX C

HEALTH EFFECT AND REQUIRED LANGUAGE FOR SPECIFIC CONTAMINANTS

Required language to be used in Public Notifications when drinking water standards or treatment requirements are not maintained.

(1) **Fecal Indicators (GWR – *E. coli*, enterococci, coliphage)** Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

(2) **Ground Water Rule (GWR) TT Violations** Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.

(3) **Coliform Assessment and/or Corrective Action Violations (rule 335-7-2-.22)** Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found.

[THE SYSTEM MUST USE THE FOLLOWING APPLICABLE SENTENCES.]

We failed to conduct the required assessment.
We failed to correct all identified sanitary defects that were found during the assessment(s).

(4) ***E. coli*. Assessment and/or Corrective Action Violations (rule 335-7-2-.22)** *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for *E. coli*, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found.

[*THE SYSTEM MUST USE THE FOLLOWING APPLICABLE SENTENCES.]*

We failed to conduct the required assessment.
We failed to correct all identified sanitary defects that were found during the assessment that we conducted.

(5) ***E. coli* (rule 335-7-2-.07)** *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.

(6) **Seasonal System TT Violations (rule 335-7-2-.07(7)** When this violation includes the failure to monitor for total coliforms or E. coli prior to serving water to the public, the mandatory language found at 141.205(d)(2) must be used. When this violation includes failure to complete other actions, the appropriate elements found in 141.205(a) to describe the violation must be used.

(7) **Turbidity (MCL)** Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

(8) **Turbidity (SWTR TT)** Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

(9) **Turbidity (IESWTR TT)** Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

(10) **Giardia lamblia (SWTR/IESWTR/LT1ESWTR), Viruses (SWTR/IESWTR/LT1ESWTR), Heterotrophic plate count (HPC) bacteria (SWTR/IESWTR/LT1ESWTR), Legionella (SWTR/IESWTR/LT1ESWTR), and Cryptosporidium (IESWTR/FBRR/LT1ESWTR)** Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

(11) **Antimony** Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

(12) **Arsenic** Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

(13) **Asbestos** Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

(14) **Barium** Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

(15) **Beryllium** Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

(16) **Cadmium** Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

(17) **Chromium** Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

(18) **Cyanide** Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

(19) **Fluoride** Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth, before they erupt from the gums.

(20) **Mercury** Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

(21) **Nitrate** Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

(22) **Nitrite** Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

(23) **Total Nitrate and Nitrite** Infants below the age of six months who drink water containing nitrate and nitrite in excess of the

MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

(24) **Selenium** Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

(25) **Thallium** Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

(26) **Lead** Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

(27) **Copper** Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

(28) **2,4-D** Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

(29) **2,4,5-TP (Silvex)** Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

(30) **Alachlor** Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

(31) **Atrazine** Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

(32) **Benzo(a)pyrene (PAHs)** Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

(33) **Carbofuran** Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.

(34) **Chlordane** Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver, or nervous system, and may have an increased risk of getting cancer.

(35) **Dalapon** Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

(36) **Di (2-ethylhexyl)** adipate Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience general toxic effects or reproductive difficulties.

(37) **Di(2-ethylhexyl) phthalate** Some people who drink water containing di (2-ethylhexyl) phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.

(38) **Dibromochloropropane (DBCP)** Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

(39) **Dinoseb** Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

(40) **Dioxin** Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

(41) **Diquat** Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

(42) **Endothall** Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.

(43) **Endrin** Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

(44) **Ethylene dibromide** Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.

(45) **Glyphosate** Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

(46) **Heptachlor** Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

(47) **Heptachlor epoxide** Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

(48) **Hexachlorobenzene** Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.

(49) **Hexachlorocyclo-pentadiene** Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.

(50) **Lindane** Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

(51) **Methoxychlor** Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

(52) **Oxamyl (Vydate)** Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

(53) **Pentachlorophenol** Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.

(54) **Picloram** Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.

(55) **Polychlorinated biphenyls (PCBs)** Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

(56) **Simazine** Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

(57) **Toxaphene** Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their

kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

(58) **Benzene** Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

(59) **Carbon tetrachloride** Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

(60) **Chlorobenzene (monochlorobenzene)** Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

(61) **o-Dichlorobenzene** Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

(62) **p-Dichlorobenzene** Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.

(63) **1,2-Dichloroethane** Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

(64) **1,1-Dichloroethylene** Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

(65) **cis-1,2-Dichloroethylene** Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

(66) **trans-1,2-Dichloroethylene** Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.

(67) **Dichloromethane** Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

(68) **1,2-Dichloropropane** Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

(69) **Ethylbenzene** Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

(70) **Styrene** Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

(71) **Tetrachloroethylene** Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.

(72) **Toluene** Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

(73) **1,2,4-Trichlorobenzene** Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

(74) **1,1,1-Trichloroethane** Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

(75) **1,1,2-Trichloroethane** Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

(76) **Trichloroethylene** Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

(77) **Vinyl chloride** Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

(78) **Xylenes (total)** Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

(79) **Beta/photon emitters** Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.

(80) A**lpha emitters**(Gross alpha) Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

(81) **Combined radium (226 & 228)** Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

(82) **Uranium** Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

(83) **Total trihalomethanes (TTHMs)** Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

(84) H**aloacetic Acids (HAA)** Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

(85) **Bromate** Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

(86) **Chlorite** Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.

(87) **Chlorine** Some people who use drinking water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

(88) **Chloramines** Some people who use drinking water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.

(89) **Chlorine dioxide** where any 2 consecutive daily samples taken at the entrance to the distribution system are above the MRDL

Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

Add for public notification only: The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system which delivers water to consumers. Continued compliance with

chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.

(90) **Chlorine dioxide** where one or more distribution system samples are above the MRDL Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects.

Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

Add for public notification only: The chlorine dioxide violations reported today include exceedances of the EPA standard within the distribution system which delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.

(91) **Control of DBP precursors (TOC)** Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

(92) **Acrylamide** Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.

(93) **Epichlorohydrin** Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

(94) **Fluoride (SMCL)** This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/l) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [name] has a fluoride concentration of [insert value] mg/l. Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water

or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water. Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/l of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/l because of this cosmetic dental problem. For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.''

(95) **Standard Monitoring Violation Language** We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we "did not monitor or test'' or "did not complete all monitoring or testing'' for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time.

(96) **Standard Distribution Language** Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

(97) **Lead Public Education for Community Water Systems** The following information must be provided as required by this chapter: The Alabama Department of Environmental Management (ADEM) and (insert name of water supplier) are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by (insert date when corrosion control will be completed for your system). This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace each lead service line that we control if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at (insert water system's phone number). This brochure explains the simple steps you can take to protect

you and your family by reducing your exposure to lead in drinking water.

Health effects of lead. Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that will not hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination such as dirt and dust that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

Lead in Drinking Water. Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 per cent or more of a person's total exposure to lead. Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipe made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

Steps You Can Take in the Home To Reduce Exposure To Lead in Drinking Water. Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call (insert

phone number of water system and attach a list of ADEM certified laboratories in your area).

If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than (insert a cost estimate based on flushing two times a day for 30 days) per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

Try not to cook with or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify the Water Supply Branch of ADEM about the violation.

Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best

way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You may be able to identify the plumbing contractor by checking the record of building permits which should be maintained in the files of the (insert name of department that issues building permits). A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially controlled by the (insert name of the city, county, or water system that controls owns the line, we are required to provide you the owner of the privately-owned portion of the line with information on how to replace your the privately-owned portion of the service line, and offer to replace that portion of the line at you're the owner's expense and take a follow-up tap water sample within 14 days of the replacement. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within three business days of receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can

effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

Purchase bottled water for drinking and cooking.

You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

(insert the name of city or county department of public utilities) at (insert phone number) can provide you with information about your community's water supply, and a list of local laboratories that have been certified by ADEM for testing water quality;

(insert the name of city or county department that issues building permits) at (insert phone number) can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

(insert the name of the State Department of Public Health) at (insert phone number) or the (insert the name of the city or county health department) at (insert phone number) can provide you with information about the health effects of lead and how you can have your child's blood tested.

The following is a list of some State approved laboratories in your area that you can call to have your water tested for lead. (Insert names and phone numbers of at least two laboratories).

(98) **Lead Public Education for NTNC Water Systems.** The following information must be provided as required by this chapter: The Alabama Department of Environmental Management (ADEM) and (insert name of water supplier) are concerned about lead in your drinking water. Some drinking water samples taken from this facility have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by (insert date when corrosion control will be completed for your system). This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace each lead service line that we control if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation

please give us a call at (insert water system's phone number). This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

Health effects of lead. Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that will not hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination such as dirt and dust that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

Lead in Drinking Water. Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20 per cent or more of a person's total exposure to lead.

Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipe made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used at all, can contain fairly high levels of lead.

Steps You Can Take To Reduce Exposure To Lead in Drinking Water:

Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in the plumbing the more lead it may contain. Flushing the tap means running

the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your health. It usually uses less than one gallon of water.

Try not to cook with or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

The steps described above will reduce the lead concentrations in your drinking water. However, if you are still concerned, you may want to use bottled water for drinking and cooking.

You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

(insert the name or title of the appropriate facility official) at (insert phone number) can provide you with information about your facility's water supply, and; home; and

(insert the name of the State Department of Public Health) at (insert phone number) or the (insert the name of the city or county health department) at (insert phone number) can provide you with information about the health effects of lead and how you can have your child's blood tested.

(99) ***Cryptosporidium*** **Monitoring Violation** We are required to monitor the source of your drinking water for *Cryptosporidium*. Results of the monitoring are to be used to determine whether water treatment at the (treatment plant name) is sufficient to adequately remove *Cryptosporidium* from your drinking water. We are required to complete this monitoring and make this determination by (required bin determination date). We "did not monitor or test" or "did not complete all monitoring or testing" on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate *Cryptosporidium* removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the deadline required, (date). For more information, please call (name of water system contact) of (name of water system) at (phone number).

(100) **Failure to determine *Cryptosporidium* bin classification** We are required to monitor the source of your drinking water for

Cryptosporidium in order to determine by (date) whether water treatment at the (treatment plant name) is sufficient to adequately remove *Cryptosporidium* from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of (date). For more information, please call (name of water system contact) of (name of water system) at (phone number).
Author: Department of Environmental Management
Statutory Authority: Code of Ala. 1975, §§22-23-33, 22-22A-5, 22-22A-6.
History: New Appendix: Filed February 6, 2002; effective March 13, 2002. **Amended:** Filed April 25, 2003; effective May 30, 2003. **Amended:** Filed December 18, 2007; effective January 22, 2008. **Amended:** Filed April 21, 2009; effective May 26, 2009. **Amended:** Filed October 21, 2014; effective November 25, 2014

Ed. Note: Appendix A, Required Language, was repealed and Appendix D, Required Language, was adopted replacing Appendix A per certification Filed February 6, 2002. Appendix D was renamed Appendix C and Appendix C was repealed as per certification filed December 18, 2007; effective January 22, 2008.