

**SUBSTITUTE FOR  
SENATE BILL NO. 1196**

A bill to amend 1994 PA 451, entitled  
"Natural resources and environmental protection act,"  
by amending section 11104 (MCL 324.11104), as amended by 2001 PA  
165, and by adding sections 11132 and 11514b.

**THE PEOPLE OF THE STATE OF MICHIGAN ENACT:**

1           Sec. 11104. (1) "Operator" means the person responsible for  
2 the overall operation of a disposal, treatment, or storage facility  
3 with approval of the department either by contract or license.

4           (2) "Site identification number" means a number that is  
5 assigned by the United States ~~environmental protection agency~~  
6 **ENVIRONMENTAL PROTECTION AGENCY** or the United States ~~environmental~~  
7 ~~protection agency's~~ **ENVIRONMENTAL PROTECTION AGENCY'S** designee to  
8 each generator, each transporter, and each treatment, storage, or  
9 disposal facility. If the generator or transporter or the

1 treatment, storage, or disposal facility manages wastes that are  
2 hazardous under this part and the rules promulgated under this part  
3 but are not hazardous under the solid waste disposal act, site  
4 identification number means an equivalent number that is assigned  
5 by the department.

6 (3) "Solid waste" means that term as it is defined in part  
7 115.

8 (4) "Storage" means the holding of hazardous waste for a  
9 temporary period ~~—~~at the end of which the hazardous waste is  
10 treated, disposed of, or stored elsewhere.

11 (5) "Storage facility" means a facility or part of a facility  
12 where managed hazardous waste, as defined by rule, is subject to  
13 storage. A generator who accumulates managed hazardous waste, as  
14 defined by rule, on site in containers or tanks for less than 91  
15 days or a period of time prescribed by rule is not a storage  
16 facility.

17 (6) "Surface impoundment" or "impoundment" means a treatment,  
18 storage, or disposal facility or part of a treatment, storage, or  
19 disposal facility that is a natural topographic depression, human-  
20 made excavation, or diked area formed primarily of earthen  
21 materials, although it may be lined with human-made materials, that  
22 is designed to hold an accumulation of liquid wastes or wastes  
23 containing free liquids, and that is not an injection well. Surface  
24 impoundments include, but are not limited to, holding, storage,  
25 settling, and aeration pits, ponds, and lagoons.

26 (7) **"TECHNOLOGICALLY ENHANCED NATURALLY OCCURRING RADIOACTIVE**  
27 **MATERIAL" OR "TENORM" MEANS NATURALLY OCCURRING RADIOACTIVE**

1 MATERIAL WHOSE RADIONUCLIDE CONCENTRATIONS HAVE BEEN INCREASED AS A  
2 RESULT OF HUMAN PRACTICES. TENORM DOES NOT INCLUDE ANY OF THE  
3 FOLLOWING:

4 (A) SOURCE MATERIAL, AS DEFINED IN SECTION 11 OF THE ATOMIC  
5 ENERGY ACT OF 1954, 42 USC 2014, AND ITS PROGENY IN EQUILIBRIUM.

6 (B) MATERIAL WITH CONCENTRATIONS OF RADIUM-226, RADIUM-228,  
7 AND LEAD-210 EACH LESS THAN 5 PICOCURIES PER GRAM.

8 (8) ~~(7)~~—"The solid waste disposal act" means title II of  
9 Public Law 89-272. , ~~42 U.S.C. 6901, 6902 to 6907, 6911, 6912 to~~  
10 ~~6914a, 6915 to 6916, 6921 to 6939e, 6941, 6942 to 6949a, 6951 to~~  
11 ~~6956, 6961 to 6964, 6971 to 6979b, 6981 to 6987, 6991 to 6991i, and~~  
12 ~~6992 to 6992k.~~

13 (9) ~~(8)~~—"Transporter" means a person engaged in the off-site  
14 transportation of hazardous waste by air, rail, highway, or water.

15 (10) ~~(9)~~—"Treatment" means any method, technique, or process,  
16 including neutralization, designed to change the physical,  
17 chemical, or biological character or composition of any hazardous  
18 waste, to neutralize the waste, to recover energy or material  
19 resources from the waste, or to render the waste nonhazardous or  
20 less hazardous, safer to transport, store, or dispose of, amenable  
21 to recovery, amenable to storage, or reduced in volume. Treatment  
22 includes any activity or processing designed to change the physical  
23 form or chemical composition of hazardous waste so as to render it  
24 nonhazardous.

25 (11) ~~(10)~~—"Treatment facility" means a facility or part of a  
26 facility where managed hazardous waste, as defined by rule, is  
27 subject to treatment.

1           (12) ~~(11)~~—"Updated plan" means the updated state hazardous  
2 waste management plan prepared under section 11110.

3           (13) ~~(12)~~—"Vehicle" means a transport vehicle as defined in 49  
4 ~~C.F.R.~~ CFR 171.8.

5           SEC. 11132. (1) EXCEPT AS OTHERWISE PROVIDED IN THIS SECTION,  
6 A PERSON SHALL NOT DELIVER TO A LANDFILL IN THIS STATE FOR DISPOSAL  
7 AND THE OWNER OR OPERATOR OF A LANDFILL SHALL NOT PERMIT DISPOSAL  
8 IN THE LANDFILL OF TENORM WITH ANY OF THE FOLLOWING:

9           (A) A CONCENTRATION OF RADIUM-226 MORE THAN 50 PICOCURIES PER  
10 GRAM.

11           (B) A CONCENTRATION OF RADIUM-228 MORE THAN 50 PICOCURIES PER  
12 GRAM.

13           (C) A CONCENTRATION OF LEAD-210 MORE THAN 260 PICOCURIES PER  
14 GRAM.

15           (2) EXCEPT AS OTHERWISE SPECIFIED IN THE LANDFILL OPERATING  
16 LICENSE, THE OWNER OR OPERATOR OF A LANDFILL SHALL NOT PERMIT A  
17 DELIVERY OF TENORM FOR DISPOSAL AT THE LANDFILL UNLESS THE  
18 GENERATOR HAS PROVIDED THE FOLLOWING INFORMATION IN WRITING TO THE  
19 OWNER OR OPERATOR OF THE LANDFILL:

20           (A) THE CONCENTRATIONS OF RADIUM-226, RADIUM-228, LEAD-210,  
21 AND ANY OTHER RADIONUCLIDE IDENTIFIED USING GAMMA SPECTROSCOPY, OR  
22 AN EQUIVALENT ANALYTICAL METHOD, IN THE TENORM BASED ON TECHNIQUES  
23 FOR REPRESENTATIVE SAMPLING AND WASTE CHARACTERIZATION APPROVED BY  
24 THE DEPARTMENT.

25           (B) AN ESTIMATE OF THE TOTAL MASS OF THE TENORM.

26           (C) AN ESTIMATE OF THE TOTAL RADIUM-226 ACTIVITY, THE TOTAL  
27 RADIUM-228 ACTIVITY, AND THE TOTAL LEAD-210 ACTIVITY OF THE TENORM.

1 (D) THE PROPOSED DATE OF DELIVERY.

2 (3) THE DEPARTMENT MAY TEST TENORM PROPOSED TO BE DELIVERED TO  
3 A LANDFILL.

4 (4) IF REQUESTED BY THE OWNER OR OPERATOR OF A LANDFILL IN AN  
5 APPLICATION FOR THE RENEWAL OF OR A MAJOR MODIFICATION TO AN  
6 OPERATING LICENSE, THE DEPARTMENT MAY AUTHORIZE WITH CONDITIONS AND  
7 LIMITS IN THE OPERATING LICENSE THE DISPOSAL OF TENORM WITH  
8 CONCENTRATIONS OF RADIUM-226 MORE THAN 50 PICOCURIES PER GRAM,  
9 RADIUM-228 MORE THAN 50 PICOCURIES PER GRAM, OR LEAD-210 MORE THAN  
10 260 PICOCURIES PER GRAM, OR ANY COMBINATION THEREOF, BUT NOT MORE  
11 THAN 500 PICOCURIES PER GRAM FOR EACH RADIONUCLIDE. AN OPERATING  
12 LICENSE UNDER THIS PART WITH SUCH AN AUTHORIZATION CONSTITUTES A  
13 LICENSE FROM THE STATE'S RADIATION CONTROL AUTHORITY UNDER PART 135  
14 OF THE PUBLIC HEALTH CODE, 1978 PA 368, MCL 333.13501 TO 333.13537,  
15 IF THE CONDITIONS AND PROCEDURES FOR ISSUANCE OF THE OPERATING  
16 LICENSE UNDER THIS PART ARE SUFFICIENT TO SATISFY THE LICENSING  
17 REQUIREMENTS OF PART 135 OF THE PUBLIC HEALTH CODE, 1978 PA 368,  
18 MCL 333.13501 TO 333.13537.

19 (5) A REQUEST UNDER SUBSECTION (4) SHALL INCLUDE ALL OF THE  
20 FOLLOWING:

21 (A) A RADIATION SAFETY PROGRAM THAT ADDRESSES ALL OF THE  
22 FOLLOWING:

23 (i) PERSONNEL RADIATION PROTECTION.

24 (ii) WORKER TRAINING.

25 (iii) RADIATION SURVEYS.

26 (iv) RADIATION INSTRUMENT CALIBRATION.

27 (v) RECEIPT AND DISPOSAL OF RADIOACTIVE MATERIAL.

1 (vi) EMERGENCY PROCEDURES.

2 (vii) RECORD KEEPING.

3 (B) A REPORT EVALUATING THE RISKS OF EXPOSURE TO RESIDUAL  
4 RADIOACTIVITY THROUGH ALL RELEVANT PATHWAYS USING A GENERALLY  
5 ACCEPTED INDUSTRY MODEL SUCH AS THE ARGONNE NATIONAL LABORATORY  
6 RESRAD FAMILY OF CODES OR, IF APPROVED BY THE DEPARTMENT, ANOTHER  
7 MODEL. THE REPORT SHALL EVALUATE POTENTIAL RADIATION DOSES TO SITE  
8 WORKERS AND MEMBERS OF THE PUBLIC DURING SITE OPERATION AND AFTER  
9 SITE CLOSURE. THE REPORT SHALL USE REASONABLE SCENARIOS TO EVALUATE  
10 THE DOSE TO MEMBERS OF THE PUBLIC.

11 (C) A DESCRIPTION OF ANY STEPS NECESSARY TO ENSURE THE ANNUAL  
12 DOSE TO MEMBERS OF THE PUBLIC DURING LANDFILL OPERATION AND AFTER  
13 SITE CLOSURE WILL BE LESS THAN 25 MILLIREM.

14 (D) A DESCRIPTION OF AN ENVIRONMENTAL MONITORING PROGRAM UNDER  
15 SUBSECTION (6).

16 (6) IF TENORM IS DISPOSED AT A LANDFILL, THE OPERATOR OF THE  
17 LANDFILL SHALL CONDUCT A MONITORING PROGRAM THAT COMPLIES WITH ALL  
18 OF THE FOLLOWING:

19 (A) RADIOLOGICAL MONITORING OF SITE WORKERS AND AT THE  
20 LANDFILL PROPERTY BOUNDARY ARE CONDUCTED AS SPECIFIED IN THE  
21 LICENSE.

22 (B) RADIUM-226, RADIUM-228, AND LEAD-210 ARE INCLUDED AMONG  
23 THE PARAMETERS ANALYZED IN LEACHATE AND GROUNDWATER AT THE  
24 FREQUENCY SPECIFIED IN THE LICENSE.

25 (C) PENETRATING RADIATION, RADIOACTIVITY IN AIR, AND RADON IN  
26 AIR ARE MEASURED AS SPECIFIED IN THE OPERATING LICENSE IF THE  
27 LANDFILL IS USED TO DISPOSE OF TENORM WITH A CONCENTRATION OF

Senate Bill No. 1196 as amended December 12, 2018

1 RADIUM-226 MORE THAN 50 PICOCURIES PER GRAM, RADIUM-228 MORE THAN  
2 50 PICOCURIES PER GRAM, OR LEAD-210 MORE THAN 260 PICOCURIES PER  
3 GRAM.

4 (D) RESULTS OF ALL MONITORING REQUIRED UNDER THIS SUBSECTION  
5 ARE INCLUDED IN THE ENVIRONMENTAL MONITORING REPORTS REQUIRED UNDER  
6 RULES PROMULGATED UNDER THIS PART AND THE FACILITY OPERATING  
7 LICENSE.

8 (7) THE OWNER OR OPERATOR OF A LANDFILL SHALL SUBMIT TO THE  
9 DEPARTMENT BY MARCH 15 EACH YEAR A REPORT THAT SUMMARIZES THE  
10 INFORMATION OBTAINED UNDER SUBSECTION (2) FOR ALL TENORM DISPOSED  
11 AT THE LANDFILL DURING THE PREVIOUS CALENDAR YEAR.

12 (8) THE OWNER OR OPERATOR OF A LANDFILL SHALL DO BOTH OF THE  
13 FOLLOWING:

14 (A) ENSURE THAT ALL TENORM IS DEPOSITED AT LEAST 10 FEET BELOW  
15 THE BOTTOM OF THE FUTURE LANDFILL CAP.

16 (B) MAINTAIN RECORDS OF THE LOCATION AND ELEVATION OF TENORM  
17 DISPOSED OF AT THE LANDFILL.

18 SEC. 11514B. (1) [A  
19 ] PERSON SHALL NOT DELIVER TO A TYPE II LANDFILL IN THIS STATE FOR  
20 DISPOSAL AND THE OWNER OR OPERATOR OF A TYPE II LANDFILL SHALL NOT  
21 PERMIT DISPOSAL IN THE LANDFILL OF TECHNOLOGICALLY ENHANCED  
22 NATURALLY OCCURRING RADIOACTIVE MATERIAL WITH ANY OF THE FOLLOWING:

23 (A) A CONCENTRATION OF RADIUM-226 MORE THAN 50 PICOCURIES PER  
24 GRAM.

25 (B) A CONCENTRATION OF RADIUM-228 MORE THAN 50 PICOCURIES PER  
26 GRAM.

27 (C) A CONCENTRATION OF LEAD-210 MORE THAN 260 PICOCURIES PER

1 GRAM.

2 (2) THE OWNER OR OPERATOR OF A TYPE II LANDFILL SHALL NOT  
3 PERMIT A DELIVERY OF TENORM FOR DISPOSAL AT THE LANDFILL UNLESS THE  
4 GENERATOR HAS PROVIDED THE FOLLOWING INFORMATION IN WRITING TO THE  
5 OWNER OR OPERATOR OF THE LANDFILL:

6 (A) THE CONCENTRATIONS OF RADIUM-226, RADIUM-228, LEAD-210,  
7 AND ANY OTHER RADIONUCLIDE IDENTIFIED USING GAMMA SPECTROSCOPY, OR  
8 AN EQUIVALENT ANALYTICAL METHOD, IN THE TENORM BASED ON TECHNIQUES  
9 FOR REPRESENTATIVE SAMPLING AND WASTE CHARACTERIZATION APPROVED BY  
10 THE DEPARTMENT.

11 (B) AN ESTIMATE OF THE TOTAL MASS OF THE TENORM.

12 (C) AN ESTIMATE OF THE TOTAL RADIUM-226 ACTIVITY, THE TOTAL  
13 RADIUM-228 ACTIVITY, AND THE TOTAL LEAD-210 ACTIVITY OF THE TENORM.

14 (D) THE PROPOSED DATE OF DELIVERY.

15 (3) THE DEPARTMENT MAY TEST TENORM PROPOSED TO BE DELIVERED TO  
16 A LANDFILL.

17 (4) THE OWNER OR OPERATOR OF A TYPE II LANDFILL SHALL SUBMIT  
18 TO THE DEPARTMENT AN ANNUAL REPORT THAT SUMMARIZES THE INFORMATION  
19 OBTAINED UNDER SUBSECTION (2) FOR ALL TENORM DISPOSED AT THE  
20 LANDFILL DURING THE PREVIOUS STATE FISCAL YEAR.

21 (5) THE OWNER OR OPERATOR OF A TYPE II LANDFILL THAT DISPOSES  
22 OF TENORM WITH A CONCENTRATION OF RADIUM-226 MORE THAN 25  
23 PICOCURIES PER GRAM, A CONCENTRATION OF RADIUM-228 MORE THAN 25  
24 PICOCURIES PER GRAM, OR A CONCENTRATION OF LEAD-210 MORE THAN 25  
25 PICOCURIES PER GRAM SHALL DO ALL OF THE FOLLOWING:

26 (A) ENSURE THAT ALL TENORM IS DEPOSITED AT LEAST 10 FEET BELOW  
27 THE BOTTOM OF THE FUTURE LANDFILL CAP.



1 (B) MAINTAIN RECORDS OF THE LOCATION AND ELEVATION OF TENORM  
2 DISPOSED OF AT THE LANDFILL.

3 (C) CONDUCT A MONITORING PROGRAM THAT COMPLIES WITH ALL OF THE  
4 FOLLOWING:

5 (i) RADIOLOGICAL MONITORING OF SITE WORKERS AND AT THE  
6 LANDFILL PROPERTY BOUNDARY ARE CONDUCTED AS SPECIFIED IN THE  
7 LICENSE.

8 (ii) RADIUM-226, RADIUM-228, AND LEAD-210 ARE INCLUDED AMONG  
9 THE PARAMETERS ANALYZED IN LEACHATE AND GROUNDWATER AT THE  
10 FREQUENCY SPECIFIED IN THE LICENSE.

11 (iii) RESULTS OF ALL MONITORING REQUIRED UNDER THIS SUBSECTION  
12 ARE INCLUDED IN THE ENVIRONMENTAL MONITORING REPORTS REQUIRED UNDER  
13 RULES PROMULGATED UNDER THIS PART AND THE FACILITY OPERATING  
14 LICENSE.

15 (6) AS USED IN THIS SECTION, "TECHNOLOGICALLY ENHANCED  
16 NATURALLY OCCURRING RADIOACTIVE MATERIAL" OR "TENORM" MEANS  
17 NATURALLY OCCURRING RADIOACTIVE MATERIAL WHOSE RADIONUCLIDE  
18 CONCENTRATIONS HAVE BEEN INCREASED AS A RESULT OF HUMAN PRACTICES.  
19 TENORM DOES NOT INCLUDE ANY OF THE FOLLOWING:

20 (A) SOURCE MATERIAL, AS DEFINED IN SECTION 11 OF THE ATOMIC  
21 ENERGY ACT OF 1954, 42 USC 2014, AND ITS PROGENY IN EQUILIBRIUM.

22 (B) MATERIAL WITH CONCENTRATIONS OF RADIUM-226, RADIUM-228,  
23 AND LEAD-210 EACH LESS THAN 5 PICOCURIES PER GRAM.

24 Enacting section 1. This amendatory act takes effect 90 days  
25 after the date it is enacted into law.

26 Enacting section 2. This amendatory act does not take effect  
27 unless Senate Bill No. 1195 of the 99th Legislature is enacted into

1 law.