



**Vermont Department of Environmental Conservation**  
Watershed Management Division  
1 National Life Drive, Main-2  
Montpelier VT 05620-3522

*Agency of Natural Resources*

Eamon.Twohig@vermont.gov  
[phone] 802-490-6189

December 17, 2015

Jeffrey Strong, Director of Public Works  
Town of Springfield  
96 Main Street  
Springfield, VT 05156

RE: Certification of Solid Waste Management Facility

Dear Mr. Strong,

Enclosed please find the original signed copy of Solid Waste Management Facility Certification #F1504, authorizing the Town of Springfield to manage biosolids produced by the municipal wastewater treatment facility via composting and distribution.

**Final Action/Rights to Appeal to the Environmental Court:** Pursuant to 10 V.S.A. Chapter 220, any appeal of a decision must be filed with the clerk of the Environmental Court within 30 days of the date of the decision. The appellant must submit the Notice of Appeal and include the applicable filing fee, payable to the State of Vermont.

The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Court; and must be signed by the appellant or their attorney. In addition, the appeal must give the address or location and description of the property, project or facility with which the appeal is concerned and the name of the applicant or any permits involved in the appeal.

The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings.

For further information, see the Vermont Rules for Environmental Court Proceedings, available on line at [www.vermontjudiciary.org](http://www.vermontjudiciary.org). The address for the Environmental Court is 32 Cherry Street, 2nd Floor, Suite 303, Burlington VT 05401 (Tel: 802-951-1740 Fax: 802-657-4292).

Please read this certification carefully. If you have any questions or comments, please contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "Eamon Twohig", with a long horizontal line extending to the right.

Eamon Twohig  
Residuals Management Section

C: Rich Chambers, Chief Operator, Town of Springfield  
Rachel E.R. Marvin, PE, Aldrich + Elliot, PC  
Southern Windsor/Windham Counties Solid Waste Management District  
Southern Windsor County Regional Planning Commission  
State of Vermont District #2 Environmental Commission

Enc: Solid Waste Facility Certification #F1504

**SOLID WASTE MANAGEMENT FACILITY  
CERTIFICATION  
10 V.S.A. §6605**

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**PERMITEE/ OPERATOR:** Town of Springfield, VT  
**AUTHORIZED REPRESENTATIVE:** Jeffrey Strong, Director of Public Works  
**FACILITY I.D. NUMBER:** SW-166  
**CERTIFICATION NUMBER:** F1504  
**PROJECT I.D. NUMBER:** NS95-0042  
**FACILITY DESIGNATION:** TST0101- composting facility  
TST0102- belt filter press  
SST0201- storage for compost (drying bed)  
SST0202- storage for compost (pole barn)  
**CERTIFICATION PERIOD:** Date of signature through December 31, 2025

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**PURPOSE OF CERTIFICATION:** The purpose of this Certification is to ensure that the solid waste management facility (Facility) operated by the Town of Springfield, Vermont (Permittee), for the management of wastewater treatment sewage sludge (biosolids) via composting and distribution, operates in accordance with the conditions set forth herein to protect the public health and safety and the environment.

**FACILITY DESCRIPTION:** The solid waste management facility (Facility) includes those structures necessary for the proper management of wastewater treatment sludge (biosolids) that are generated at the Town of Springfield's (Permittee's) wastewater treatment facility (WWTF) via dewatering and composting in an aerated static pile composting system.

**FACILITY LOCATION:** The dewatering components are located on the Permittee's WWTF property in Springfield, Vermont. The compost facility is located on land owned by the Permittee that is adjacent to the WWTF.

**FACILITY OPERATION:** Anaerobically digested sewage sludge will be dewatered, treated by high temperature composting for pathogen and vector attraction reduction, and stored in a covered area on the compost site, adjacent to the WWTF. The Permittee shall receive results of the testing requirements and confirm that the material meets the metals, pathogen reduction and vector attraction reduction standards prior to release of the product to the general public. Biosolids will be distributed and marketed by the Town, acting as its own marketing agent.

**APPLICATION REVIEW:** The application for recertification of the Permittee's biosolids management plan and facilities was reviewed in accordance with the Vermont Solid Waste Management Act, was reviewed in accordance with the Vermont Solid Waste Act, 10 V.S.A. §§6601 et seq., and the Vermont Solid Waste Management Rules, effective March 15, 2012 (Rules). The application is on file in the office of the Agency of Natural Resources (Department) in Montpelier, Vermont.

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**FINDINGS**

1. Certification for the Applicant's solid waste management facility (Facility) is required by 10 V.S.A. §6605 and Section 6-303 of the Rules.
2. On September 4, 2015, the Applicant submitted an application to the Agency of Natural Resources, Department of Environmental Conservation (Department) for recertification of an existing solid waste facility. The application included a plan for the management of wastewater treatment sludge (biosolids), entitled, *"Wastewater Treatment and Biosolids Composting Facility- Application for Solid Waste Management Facility Full Recertification"*, dated August 2015.
3. The application was prepared by Rachel E.R. Marvin, P.E., of Aldrich + Elliot , PC, Essex Jct., VT, a professional engineer registered to practice in Vermont.
4. In accordance with 10 V.S.A. §6605(f), the Applicant provided notice of the application to the Town of Springfield.
5. The application for recertification was found to be administratively complete on September 11, 2015.
6. The Applicant provided public notice of the application and a solicitation of public comment on the application materials, as required by 6-305(a)(2) of the Rules. On September 16, 2015, notice was provided by direct mail to the parties established in the Rules and by publication of the notice in the *Springfield Reporter* and in the *Rutland Herald*. No comments were received.
7. A draft Certification and Fact Sheet were developed by the Department for the Facility in November 2015. The Secretary actively solicited comment on the draft certification and fact sheet via the public comment period, which ran from November 24 to December 15, 2015. Notice was provided by direct mail to the parties established in the Rules and by publication of the notice in the *Springfield Reporter* and in the *Rutland Herald*. No comments were submitted to the Department.

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**CONDITIONS AND REQUIREMENTS FOR OPERATION**

- A. The Permittee shall perform all actions necessary for the proper management of biosolids in accordance with the Plan and the provisions of this Certification.
- B. The dewatering, composting, and storage facilities identified in the Plan are the only facilities authorized under this Certification.
- C. Biosolids generated by the Permittee's WWTF is the only waste authorized for management via composting at the Facility. Management of other regulated solid wastes at the Facility without prior written approval from the Secretary shall constitute grounds for revocation of this Certification.
- D. The Permittee is specifically authorized to contract Hartigan, Inc for landfill disposal of biosolids or compost product that does not meet standards or causes nuisances or other problems. The Permittee may use other suitable and certified in-state or out-of-state facilities for biosolids or compost management/disposal with prior written approval from the Secretary.
- E. The Permittee shall comply with the provisions, requirements and standards set forth in 10 V.S.A. §§6601 et. seq. and the Rules, except as expressly provided herein.

**COMPLIANCE SCHEDULE**

- F. On or before December 31, 2025, the Permittee shall either submit an application for recertification of the Facility, or submit a plan documenting the strategy for closure of the Facility.

**MATERIALS, MANAGEMENT, AND MONITORING REQUIREMENTS**

- G. The Permittee shall comply with all the conditions of Subchapter 5 of the Rules, including but not limited to assuring that the facility will not result in emissions of objectionable odors beyond the property lines of the premises.
- H. The Permittee shall comply with all the facility operation standards, requirements and conditions specified in Subchapter 7 of the Rules.
- I. The biofilter detailed in the Plan shall be maintained in satisfactory operating condition for the purpose of odor control.
- J. The Permittee shall not compost more than 1.90 dry tons per day of dewatered biosolids at the Facility.

K. Only biosolids that meet the following prequalification standards may be composted at the Facility. No biosolids may be composted at the Facility which:

- (1) contains any regulated parameter with a concentration greater than that listed below, when tested at the frequency established in Table 1 of this Certification; or

<u>Parameter</u>	<u>Concentration (mg/kg, dry wt.)</u>
arsenic	15.0
cadmium	21.0
chromium	1200.0
copper	1500.0
lead	300.0
mercury	10.0
molybdenum	75.0
nickel	420.0
selenium	100.0
zinc	2800.0
PCB (total)	10.0

- (2) contains any regulated parameter greater than the standards established at §7-208 (b) - Table 1 of the Vermont Hazardous Waste Management Regulations (effective March 2013), as demonstrated by the most recent TCLP extraction and analysis

- (3) have not been stabilized via anaerobic digestion and meets one of the following criteria:

- (i) the mass of volatile solids in the biosolids is reduced by a minimum of thirty-eight percent (38%), as determined by the appropriate methodology described in *“Environmental Regulations and Technology - Control of Pathogens and Vector Attraction in Sewage Sludge”* (EPA-625/R-92/013, Revised October 1999, U.S.E.P.A., Cincinnati, OH 45268); or
- (ii) when the 38% volatile solids reduction established in (c)(i), above, cannot be met, a sample of the previously digested biosolids may be subjected to additional digestion under anaerobic conditions in a laboratory bench-scale unit for an additional forty (40) days at a temperature between 30°C and 37°C. At the end of the forty day period, the volatile solids in the sample subjected to additional digestion are reduced by less than seventeen percent (17%).

L. Prior to its release from the Facility, compost shall be cured for a minimum of thirty (30) days following its removal from the aerated static piles.

- M. The Permittee shall not release finished compost from the Facility for marketing and distribution if it does not meet the following standards:
- (a) pathogen indicator organism density determinations demonstrate that
    - (i) the density of fecal coliform bacteria, as determined from a representative composite sample of each batch of finished compost, shall be less than one thousand (1000) Most Probable Number (MPN) per gram of total solids (dry weight basis). Samples shall be obtained a maximum of fourteen (14) days prior to release of the material from the Facility; or
    - (ii) the density of *Salmonella sp.* bacteria, as determined from a representative composite sample of each batch of finished compost, shall be less than three (3) MPN per four (4) grams of total solids (dry weight basis). Samples shall be obtained a maximum of fourteen (14) days prior to release of the material from the Facility; and
  - (b) monitoring during the active composting process, which shall be a minimum of twenty-one (21) days, demonstrates that the temperature of the mixture was greater than 55°C for a minimum of three (3) days. Temperature monitoring shall be conducted as established in Condition N of this Certification; and
  - (c) a chemical analysis of the finished compost product conducted in accordance with Table 1 of this Certification demonstrates that none of the following regulated constituents exceeds the following ceiling concentrations:

<u>Parameter</u>	<u>Concentration (mg/kg, dry wt.)</u>
arsenic	15.0
cadmium	21.0
chromium	1200.0
copper	1500.0
lead	300.0
mercury	10.0
molybdenum	75.0
nickel	420.0
selenium	100.0
zinc	2800.0
PCB (total)	10.0

- N. The temperature of the actively composting piles shall be monitored at a sufficient number of locations and varying depths within the piles to assure that all compost has met the time and temperature requirements of Condition M (b) are attained.
- O. Finished compost may be stored prior to distribution only in the storage areas designated in the Plan as authorized in this Certification. No final product shall remain on-site of the Facility for more than one year following placement in either storage area. Final product that remains on-site of the Facility for one year following placement in storage shall be either immediately distributed in accordance with the marketing and distribution plan and Condition M (a) of this Certification or shall be immediately disposed via the contingency option established in Condition D of this Certification by the Permittee.
- P. Biosolids sampling and testing shall be done in accordance with 6-702(a)(10) of the Rules, which specifies the waste sampling requirements and waste sampling standards for biosolids to be composted. The required sampling and testing frequencies are presented in Table 1 of this Certification. Additional parameters or increased frequency may be required by the Secretary. Testing shall be for the total form of the metals in the waste and reported as milligrams per kilogram (mg/kg), dry weight.
- Q. The Permittee shall have received and reviewed all analytical results for pathogen and metals testing prior to the release of finished product for distribution or marketing. The Permittee shall use the results of the quarterly testing of compost product to determine an appropriate application rate for the material. The application rate shall be included in the label or brochure which accompanies the product.
- R. The Permittee shall segregate material which does not meet the pathogen reduction specifications of Condition M (a) and/or (b) of this Certification from material which does meet those standards. The Permittee may either temporarily stockpile this inadequately composted material on the composting pad (if it does not interfere with the balance of storage for biosolids and compost product meeting standards); incorporate the inadequately composted material into the composting system for reprocessing; or send the inadequately composted material to an authorized contingency contractor for disposal.
- S. The Permittee shall segregate material which does not meet the metals quality specifications of Condition M (c) of this Certification. The Permittee shall dispose of this material via an authorized contingency contractor as authorized in Condition D of this Certification.
- T. The final product is considered to be an unregulated commodity once the following requirements are met:
- (a) all standards established in Condition M of this Certification have been met; and

- (b) the product is transferred in ownership, or used by the Permittee in a manner that is no longer storage.

**RECORD KEEPING AND REPORTING**

- U. The Permittee shall maintain, at a minimum, the following records:
  - (a) Information necessary to demonstrate that the prequalification standards established in Condition K of this Certification have been met; and
  - (b) The daily batch temperatures, including the high and low temperatures recorded. These records shall be kept in a readable form for inspection, and any problems with temperature maintenance must be reported; and
  - (c) Each batch's composition and records of temperature and residence time. The charts shall clearly indicate the zone for each layer that meets the requirements for pathogen reduction; and
  - (d) Adequate records demonstrating that all batches attain a temperature of 55°C or greater for a minimum period of three consecutive days; and
  - (e) Analytical records of either Salmonella sp. or fecal coliform testing in the finished compost; and
  - (f) Records for all batches of material not meeting the standards that indicate how that material was managed or disposed.
- V. The Permittee shall submit quarterly reports to the Department by the 15<sup>th</sup> day of the month following the end of each quarter (April 15, July 15, October 15, and January 15).
- W. All sampling and monitoring results shall be included with the appropriate quarterly submittal to the Department.
- X. The Permittee shall keep all records regarding activities, management practices, complaints, and observations in a secure, dry place for a minimum period of five (5) years after expiration of this Certification.
- Y. Any discharge or emission from the Facility not expressly authorized under the terms and conditions of this Certification shall be reported by the Permittee within twenty-four (24) hours of its occurrence, or on the next business day, to the Department, the local health officer, and the select person(s) of the affected municipality(ies).



- Z. Complaints regarding odors, or other emissions or discharges from the Facility received by the Permittee shall be reported to the Department within twenty-four (24) hours, or on the next business day, with a report of the measures taken to resolve the situation. The Secretary reserves the right to require the Permittee to utilize all reasonable measures including, but not limited to, those measures set forth in this Certification and the management plan, to remediate problems associated with odors or other nuisance conditions resulting from the operation of any of the facilities certified herein.
- AA. Upon receipt of any chemical or biological analysis, as required by this Certification, reporting an exceedence of any applicable state or federal biosolids quality standards, the Permittee shall take the following actions:
- (a) within five (5) working days of receipt of the analytical result notify the Secretary, in writing, of the exceedence; and
  - (b) within five (5) working days of receipt of the analytical result, resample the affected media and submit the sample to an independent lab for a confirmatory analysis; and
  - (c) within five working days of receipt of the result of the confirmatory analysis, submit the analytical result to the Department; and
  - (d) on the appropriate form with the next quarterly report, submit a written evaluation of the original analytical result and the result of the confirmatory analysis, along with a description of all actions taken to investigate and eliminate the cause of the exceedence.
- BB. The Permittee shall provide prior written notice to the Secretary of any changes planned in the biosolids management practices.
- CC. The Permittee shall make any other reports that may be reasonably required by the Secretary during the term of this certification.

### **GENERAL CONDITIONS**

- DD. Finished compost which has met the requirements of Conditions K, L, and M of this Certification shall no longer be regulated as a solid waste pursuant to 6-301(b)(5) of the Rules and may be marketed and distributed to the public for general use.
- EE. The Permittee shall comply with all existing federal and state laws, rules and regulations that apply to biosolids use and management practices and with the technical standards set forth in Section 405(d) of the federal Clean Water Act and in 40 CFR Part 503. If an applicable management practice or numerical limitation for pollutants in biosolids more stringent than existing federal and state regulations is promulgated under Section 405(d) of the Clean Water Act, this Certification shall be modified or revoked and reissued to conform to the

promulgated regulations. The Permittee shall comply with the limitations no later than the compliance specified in the applicable regulations as required by Section 405(d) of the Clean Water Act and 40 CFR Part 503.

- FF. This Certification does not convey any property rights of any sort or any exclusive privilege nor does it authorize any injury to private property or any invasion of personal rights.
- GG. This Certification is not alienable, transferable, or assignable without prior written approval of the Secretary. The request for such approval shall include an application for reissuance under the new name and a written agreement which specifies the date of transfer and includes the signatures of the authorized representatives.
- HH. If the Permittee anticipates that any compliance date or operating condition will not be met, the Permittee shall notify the Secretary in writing of this fact and reasons for the anticipated non-compliance at least five (5) days prior to the compliance date or conditions in question.
- II. This Certification may be modified during its term for cause with the written approval of the Secretary. If the Secretary determines that modification is appropriate, only the conditions subject to modifications are reopened. Until a modification is granted, all conditions set forth in this Certification remain in full force and effect, pursuant to Section 6-307(a) of the Rules.
- JJ. This Certification may be revoked, in whole or in part, during its term in accordance with the Rules.
- KK. The Permittee agrees to allow Agency personnel access to the Facility during normal business hours to perform such inspections or other activities pursuant to 10 V.S.A. §8005 as may be required to ensure compliance with this Certification, with all applicable statutes and with the Rules.
- LL. The Secretary retains the right to require the Permittee to perform any other action he or she deems necessary in accordance with 10 V.S.A. §6610a.

**TABLE 1**

**MINIMUM REQUIRED SAMPLING AND TESTING FREQUENCIES**

<u>PARAMETER</u>	<u>BIOSOLIDS</u>	<u>COMPOST PRODUCT</u>
Arsenic	Quarterly	Every 90 days <sup>1</sup>
Cadmium	Quarterly	Every 90 days <sup>1</sup>
Chromium	Quarterly	Every 90 days <sup>1</sup>
Copper	Quarterly	Every 90 days <sup>1</sup>
Lead	Quarterly	Every 90 days <sup>1</sup>
Mercury	Quarterly	Every 90 days <sup>1</sup>
Molybdenum	Quarterly	Every 90 days <sup>1</sup>
Nickel	Quarterly	Every 90 days <sup>1</sup>
Selenium	Quarterly	Every 90 days <sup>1</sup>
Zinc	Quarterly	Every 90 days <sup>1</sup>
Polychlorinated Biphenyls (PCBs) <sup>2</sup>	Annually	Annually
Total Kjeldahl Nitrogen	As necessary <sup>3</sup>	Quarterly
Ammonia Nitrogen	As necessary <sup>3</sup>	Quarterly
Nitrate Nitrogen	As necessary <sup>3</sup>	Quarterly
Total Phosphorus	As necessary <sup>3</sup>	Quarterly
Total Potassium	As necessary <sup>3</sup>	Quarterly
Percent Solids	As necessary <sup>3</sup>	Quarterly
pH	As necessary <sup>3</sup>	Quarterly
TCLP	Every ten years <sup>4</sup>	None
Pathogen density	None	Each Batch
Vector Attraction Reduction (VAR)	None	Each Batch

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NOTES:

- 1: The Permittee shall conduct sampling and analysis of the final product within ninety (90) days of the last analysis performed on the final product. The frequency of sampling and analysis shall be increased if necessary to demonstrate that all final product meets the appropriate standards.
- 2: The TOX (Total Organic Halide) analysis may be used to screen for PCB; if the TOX concentration is greater than or equal to the applicable regulatory standard, then an analysis specific for PCB shall be conducted.
- 3: Parameters analyzed as needed in order to maintain proper composting mixtures.
- 4: Sampling shall be done no later than ten years from the last time the TCLP analysis was conducted.
- None: No sampling or testing is required for that parameter in the specific media.

The Department issuance of this Solid Waste Management Facility Certification relies upon the data, judgment, and other information supplied by the operator, the hired professional consultants and other experts who have participated in the preparation of the application.

The Department makes no assurances that the system certified herein will meet performance objectives of the operator and no warranties or guarantees are given or implied.

The Department staff has reviewed the above project and application and finds it to conform with current technical standards. It is recommended that the foregoing findings be made and the Solid Waste Management Facility Certification be issued.

I do affirmatively make the findings as recommended by the staff and approve this Certification.

Dated this 17<sup>th</sup> day of December, 2015, at Montpelier, Vermont.

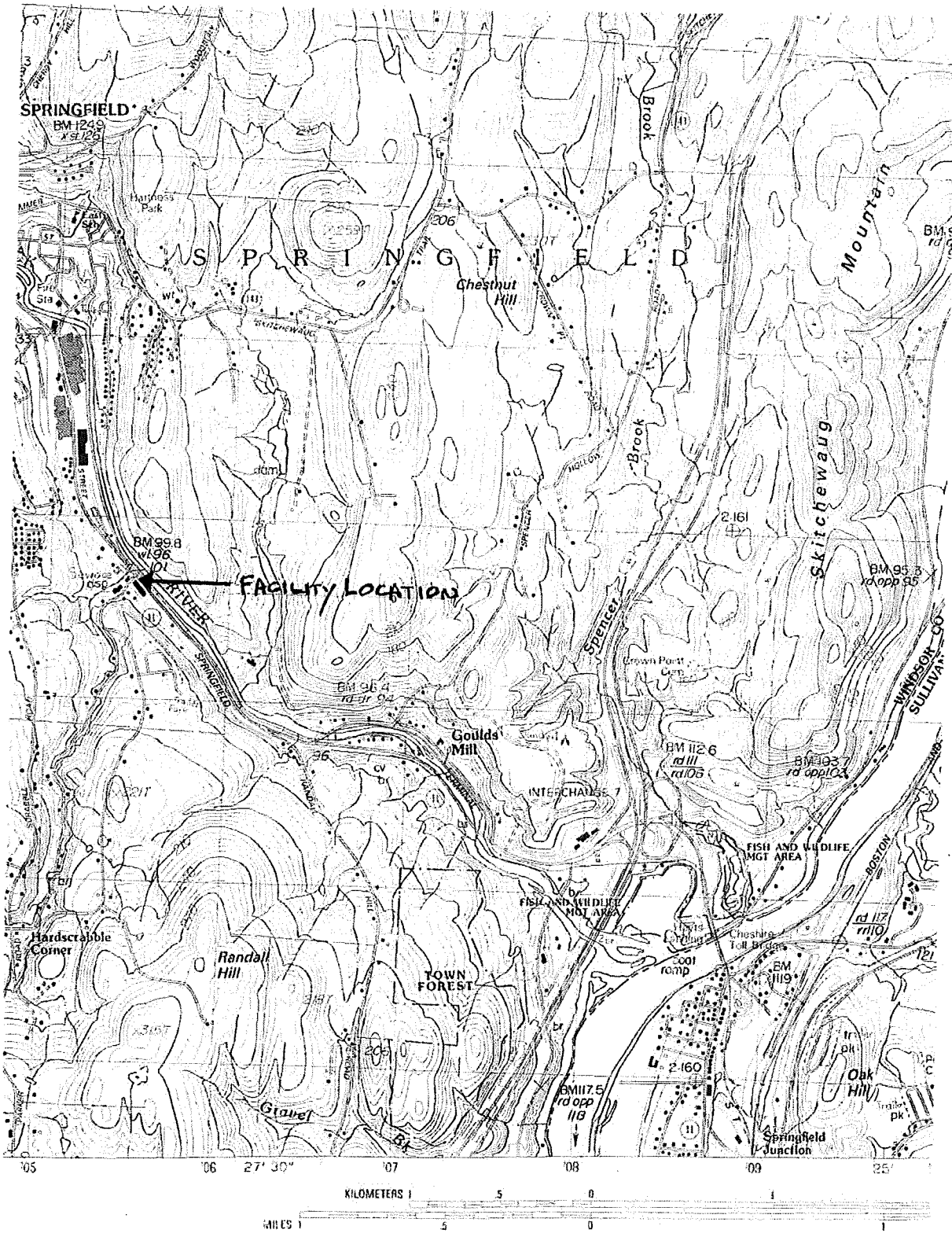
**AGENCY OF NATURAL RESOURCES**

Alyssa B. Schuren, Commissioner  
Department of Environmental Conservation

BY



Ernest F. Kelley, Program Manager  
Wastewater Management Program  
Watershed Management Division  
Department of Environmental Conservation



**APPENDIX I**

*“Procedure Designating Methods for Chemical and Biological Analyses for  
Residual Waste Management”*

Updates to this Procedure will be posted to the Residuals Management Section web  
page at:

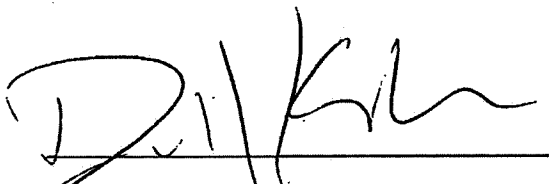
<http://www.watershedmanagement.vt.gov/ww/htm/residuals.htm>

**Vermont Agency of Natural Resources**  
**Department of Environmental Conservation**

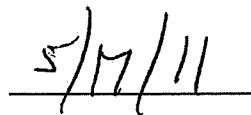
**Procedure Designating Methods for Chemical and Biological Analyses**  
**for Residual Waste Management**

This procedure establishes the acceptable test methods for the chemical and biological analysis of residual solid wastes, groundwater, soil, and plant tissue as may be required under Subchapter 14 of the Vermont Solid Waste Management Rules. Alternative test methods may be used for any analysis required by Subchapter 14 only with prior written approval by the Secretary of the Vermont Agency of Natural Resources or his/her designee.

For the purposes of Table 1 of this Procedure, "sludges" is defined to include wastewater treatment sludge and/or biosolids, septage, composted and heat dried biosolids products, and any other biosolids derived products.



David K. Mears, Commissioner – VTDEC



date

**TABLE A-1**

**Methods for the Analysis of Sludge, Short Paper Fiber, Wood Ash, and  
Water Treatment Residual Wastes**

<u>Analyte</u>	<u>CAS #</u>	<u>Required Analytical Method(s)</u>	<u>Sample Container</u>	<u>Preservation</u>	<u>Reporting Units</u>
<b><u>Total Metals</u></b>					
Arsenic	7440-38-2	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Barium	7440-39-3	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Cadmium	7440-43-9	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Calcium	7440-70-2	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Chromium	7440-47-3	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Cobalt	7440-48-4	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Copper	7440-50-8	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Lead	7439-92-1	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Magnesium	7439-95-4	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Mercury	7439-97-6	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Molybdenum	7439-98-7	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Nickel	7440-02-0	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Selenium	7782-49-2	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Silver	7440-22-4	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
Zinc	7440-66-6	SW-846, 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt.
<b><u>TCLP</u></b>	multiple	SW-846, Method 1311	amber glass	cool to 4°C	mg/l
<b><u>Volatile Organics</u></b>	multiple	SW-846, Method 8260	amber glass	cool to 4°C	mg/kg dry wt.
<b><u>Semi-volatile Organics</u></b>	multiple	SW-846, Method 8270	amber glass	cool to 4°C	mg/kg dry wt.
<b><u>Polychlorinated aromatics</u></b>					
PCB-1242	53469-21-9	SW-846, Method 8081/8082	amber glass	cool to 4°C	mg/kg dry wt.
PCB-1254	11097-69-1	SW-846, Method 8081/8082	amber glass	cool to 4°C	mg/kg dry wt.
PCB-1221	11104-28-2	SW-846, Method 8081/8082	amber glass	cool to 4°C	mg/kg dry wt.
PCB-1232	11141-16-5	SW-846, Method 8081/8082	amber glass	cool to 4°C	mg/kg dry wt.
PCB-1248	12672-29-6	SW-846, Method 8081/8082	amber glass	cool to 4°C	mg/kg dry wt.
PCB-1260	11096-82-5	SW-846, Method 8081/8082	amber glass	cool to 4°C	mg/kg dry wt.
PCB-1016	12674-11-2	SW-846, Method 8081/8082	amber glass	cool to 4°C	mg/kg dry wt.
Chlorinated dibenzodioxins and dibenzofurans	multiple	SW-846, Method 1613B	amber glass w/ Teflon lined cap	cool to 4°C	pg/kg and parts per trillion TEQ
PCBs in short paper fiber	multiple	SW-846, Method 1668A	amber glass w/ Teflon lined cap	cool to 4°C	pg/kg and parts per trillion TEQ



**TABLE A-1 (con't.)**

**Methods for the Analysis of Sludge, Short Paper Fiber, Wood Ash, and  
Water Treatment Residual Wastes**

<u>Analyte</u>	<u>CAS #</u>	<u>Required Analytical Method(s)</u>	<u>Sample Container</u>	<u>Preservation</u>	<u>Reporting Units</u>
<b><u>Pathogen Indicators</u></b>					
Fecal Coliform	na	SW-846, Method 1681	sterile glass or sterile plastic	cool to 4°C	MPN / g
Salmonella	na	SW-846, Method 1682	sterile glass or sterile plastic	cool to 4°C	MPN / 4 g
Helminth Ova	na	EPA 600/1-87-014	sterile glass or sterile plastic	cool to 4°C	viable ova/ 4 g
Enteric Viruses	na	ASTM D 4994-89	sterile glass or sterile plastic	cool to 4°C	PFU / 4 g
<b><u>Nutrients</u></b>					
Nitrate/Nitrite	NO <sub>3</sub> 1479-76-50 NO <sub>2</sub> 7697-37-2	SW-4500-NO <sub>3</sub> or SW-846 Method 9210 or EPA 353, 3000 series	glass or plastic	cool to 4°C	mg/kg dry wt. ( or %)
TKN	na	SM-4500-N <sub>org</sub> or EPA 351.3	glass or plastic	cool to 4°C	mg/kg dry wt. ( or %)
Ammonia	na	SM-4500-NH <sub>3</sub> or EPA 350	glass or plastic	cool to 4°C	mg/kg dry wt. ( or %)
Total Organic Nitrogen	na	calculation	glass or plastic	cool to 4°C	mg/kg dry wt. ( or %)
Total Phosphorus	7723-14-0	SM-4500-P or EPA 365	glass or plastic	cool to 4°C	mg/kg dry wt. ( or %)
Water Extractable phosphorus	7723-14-0	Universal Water Extractable P Test for Manure and Biosolids (see note below)	glass or plastic	cool to 4°C	mg/kg dry wt. ( or %)
Total Potassium	7440-97	SM-3500K or SW-846 6000/7000 series	glass or plastic	cool to 4°C	mg/kg dry wt. ( or %)
<b><u>Compost Stability</u></b>					
	na	TBD			
<b><u>Other</u></b>					
pH	na	SM-4500H	glass or plastic	cool to 4°C	Standard Units (S.U.)
Total Solids	na	SM-2540G	glass or plastic	cool to 4°C	%

**Note:**

*Determining Water Extractable Phosphorus in Animal Manure and Biosolids*

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Dan Sullivan, University of Oregon

[http://www.aasl.psu.edu/Water-soluble%20P%20Test%201\\_100%20rat](http://www.aasl.psu.edu/Water-soluble%20P%20Test%201_100%20rat)