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CHAPTER 21  
ATTACHMENT V  
Closure Plan

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**NR 664.0112 Closure Plan, and  
NR 664.0118 Long-term Care Plan  
R Stresau Laboratory Inc.  
Spooner, WI  
EPA ID# WID020488011  
FID# 866009320**

In accordance with NR 670.014(2)(m) and NR 664.0112, the owner or operator of a hazardous waste management facility shall have a written closure plan that identifies the steps necessary to perform partial or final closure of the facility, or both, at any point during its active life. Further, in accordance with NR 664.0118, the owner or operator of a hazardous waste disposal unit shall have a written long-term care plan. This closure plan for R Stresau Laboratories Inc. (Stresau) outlines procedures and requirements for closing the thermal treatment unit (TTU) at the facility, while the Long-term Care Plan outlines the activities that will be carried on after closure of each disposal unit and the frequency of these activities. The information provided herein addresses the closure requirements specified in Subchapter G of NR 664, and long-term care requirements specified in Subchapter X of NR 664. Provisions of the closure plan are designed to achieve the closure performance standards specified in NR 664.0111, and the provisions of the Long-term Care Plan are designed to achieve the environmental performance standards specified in NR 664.0601.

### **Description of the HWMU to be Closed**

The TTU area which is utilized for OB/OD treatment of hazardous wastes is the hazardous waste management unit (HWMU) that is the subject of these plans. The TTU area is

Further description of the TTU is provided in Chapter 4 of the FPOR.

### **HWMU Closure Procedures 664.0112(2)(a)**

Should Stresau permanently discontinue OB/OD treatment, the following procedures will be implemented to close the TTU.

- A physical inspection of the TTU and a review TTU records.
- Proper management and disposal of hazardous waste residue including, if applicable, contaminated surfaces, TTU equipment, run off tank, and decontamination equipment.
- Sampling to verify the closure performance standards of NR 664.0111 have been achieved.
- Submittal of a final closure certification and, if required, supporting documentation.

The following sections describe these closure procedures in more detail. Wisconsin Administrative Code (WAC) Chapter's NR 140 and NR 720 will be utilized to determine the appropriate cleanup levels in groundwater and soil, respectively, have been achieved.

### **Facility Closure Methods and Decontamination Procedures 664.0112(2)(b) & 664.0112(2)(d)**

While there are anticipated reductions in the amount of reactive waste entering the TTU, there is no anticipated partial closure of the TTU and it will remain operational in its entirety through its useful life. Should the decision be made to permanently discontinue the TTU at the present site in its entirety, the

following procedures outlined in this section will be implemented to close the TTU area. The maximum extent of which operations will require closure is the current configuration and area of the TTU. The TTU does not intend to expand the TTU area during its operational life, however, should it be decided in the future to expand the TTU area, a permit modification will be submitted and amendment made to these plans.

Prior to commencement of TTU closure activities, the operating and inspection records for the TTU will be reviewed and a visual inspection will be conducted to confirm the closure activities specified in this plan will meet the performance standards of NR 664.0111 or require modification. The intent of the records review is to identify whether any previous spills or releases, defects, deterioration, damage, or other hazards affecting containment or treatment occurred during the operational life of the TTU during which hazardous waste was treated. If records indicate any such incidents occurred, additional sampling locations may be incorporated into the closure plan. Similarly, the intent of the visual inspection is to assess the physical condition of the TTU area. This will include, but not limited to, inspection of the concrete pad for any existing cracks or conditions that could indicate a pathway for a release, timber curb secondary containment condition, and visual inspection of the steel sleeve for similar attributes. Stresau will also engage in the following actions:

1. Stresau shall notify the WDNR-Spooner office, in writing, one-hundred-eighty (180) days prior to beginning the final closure of the TTU.
2. Verify that all waste requiring treatment in the TTU has been performed prior to commencing closure activities. Refer to the "Management of Hazardous Waste Inventory at Closure" section below.
3. Retain a Wisconsin licensed P.E. to oversee closure activities. Retain qualified subcontractors, as needed, to perform closure activities.
4. Conduct visual inspection of the TTU and review TTU records to confirm approach of the closure plan remains appropriate. Make modifications to the closure plan based on inspection and records review if necessary.
5. Decontaminate the \_\_\_\_\_ by first sweeping and collecting all residual ash, followed by rinsing with a mildly basic chelating solution (such as EDTA or other solution appropriate for lead/cadmium wastes) a minimum of three (3) times.
6. The collected rinse water is to be analyzed at a Wisconsin certified laboratory for waste characteristics.
7. Should the collected rinse water prove to be contaminated, steps 5 & 6 shall be repeated until the rinse water is tested as non-hazardous.
8. Hazardous rinse water shall be transported to an appropriate wastewater handling facility for treatment; Non-hazardous wastewater shall be land spread or otherwise disposed of at the direction of the WDNR.
9. The \_\_\_\_\_ are to be removed and scrapped.

10. The [redacted] are to be sand filled and capped with concrete. The concrete slab will be left in place.
11. Surface and subsurface soil samples are to be taken and analyzed for contamination. Samples are to be taken at the surface and 1-foot below the surface, at three (3) locations (northeast, southeast and south) in the vicinity of the [redacted]
12. If the soil laboratory results are in exceedance of applicable regulatory standards, the soil is to be remediated or removed, per current WDNR requirements.
13. Groundwater samples will be collected from monitoring wells located closest to the TTU; MW-1, MW-2, MW-3, and MW-8.
14. Unless an extension is approved by WDNR, closure activities are to be completed within 180-days after receiving the final volume of hazardous wastes to be treated in the TTU. Submit closure certification to WDNR within 60 days of completion of final closure. Closure certification to be submitted by a qualified professional engineer, signed by the owner/operator, and sent to WDNR via registered mail.
15. On-site WDNR inspection to verify clean closure.
16. Monitoring wells to be closed in place, or to remain, pending laboratory results and at WDNR decision.

**Maximum Inventory of Hazardous Waste On-Site 664.0112(2)(c)**

The table below summarizes the estimated maximum inventory of hazardous waste that could potentially be stored onsite over the active life of the Facility. Maximum inventory is itemized per storage area. Refer to Chapter 4 of the FPOR for further details regarding onsite storage of hazardous waste.

**Onsite Hazardous Waste Storage Inventory Summary**

Hazardous Waste Storage Area	Maximum Inventory
	1,500 pounds TTU ash.
TTU	N/A <sup>(1)</sup>
<u>Notes:</u> <sup>(1)</sup> Not applicable. The TTU itself is not used for storage of hazardous waste.	

**Management of Hazardous Waste Inventory at Closure 664.0112(2)(c)**

Once the notification of intent to close the TTU and/or facility has been submitted, the facility will ensure that all remaining hazardous waste stored onsite is either shipped offsite for disposal or is treated in the TTU prior to commencement of closure activities. The methods for removing, transporting, treating, storing, and disposing of all hazardous waste generated onsite will follow those described in Chapters 4, 5, 6, 8, 10, and 18 of the FPOR.

Stresau will properly manage, characterize, and dispose of all wastes generated during closure activities. All waste will be disposed of offsite at an appropriately licensed facility. Waste generated during closure activities may include:

- Demolition debris (wood, steel)
- Containerized waste
- Soil
- Personal protective equipment
- Decontamination wash water

**Other Activities Necessary for Closure 664.0112(2)(e)**

Groundwater sampling from the area monitoring wells is proposed to occur as part of closure and post closure. Refer to “Post Closure, Long-Term Care Plan” section below for anticipated monitoring post closure. During closure, one round of groundwater samples will be analyzed for parameters consistent with previous site investigation reports, work plans, and WDNR approvals. Refer to Chapter 10 of the FPOR. Groundwater analytical data will be compared to the groundwater quality standards of NR 140 for evaluation of site groundwater quality.

**Closure Schedule 664.0112 (2)(f)**

The following tables propose an anticipated closure schedule for the TTU area and closure of the facility and an anticipated schedule for closure documentation and certification. Partial or final closure activities will be completed within 180 days after final onsite OB/OD treatment of remaining energetics.

**Proposed Closure Schedule**

<b>Closure Activity</b>	<b>No. of Days to Complete</b>
<b>Closure Preparation</b>	
Retain WI PE to oversee closure activities, conduct TTU visual inspection and records review	60
Retain qualified subcontractors as necessary	30
<i>Subtotal Closure Preparation</i>	<i>90</i>
<b>TTU Decontamination and Closure</b>	
Decontaminate	10
Decontamination wash waster analysis	15
Removal of	5
Fill and cap	5
<i>Subtotal TTU Decontamination and Closure</i>	<i>35</i>
<b>Sampling and Analysis and Corrective Action</b>	
Soil sampling and analysis	14
Contaminated soil corrective actions (removal/disposal), if necessary	20
Groundwater sampling and analysis	21
<i>Subtotal Sampling and Analysis and Corrective Action</i>	<i>55</i>
<b>Total Days to Complete Closure</b>	<b>180</b>

**Proposed Closure Documentation and Certification Schedule**

<b>Closure Documentation and Certification <sup>(1)</sup></b>	<b>No. of Days to Complete</b>
Prepare and submit closure documentation and certification to WDNR	60
On-site WDNR inspection for verification	2
Close (abandon) monitoring wells <sup>(2)</sup>	30
<b>Total Days to Complete Closure Documentation</b>	<b>92</b>
<b>Notes:</b> <sup>(1)</sup> Closure documentation and certification will be submitted within 60 days of completion of closure activities. The proposed anticipated closure documentation timeline is outside the 180-day requirement for completion of closure. Timeline does not consider time allotted for WDNR to complete review of required submittals. Therefore, days to complete may not reflect consecutive days. <sup>(2)</sup> Monitoring wells may remain in place to perform post-closure monitoring in accordance with the Long-term Care Plan. Wells will be abandoned once closure approved by WDNR and groundwater monitoring is deemed not required by WDNR.	

**Alternative Requirements for Closure 664.0112(2)(h)**

No alternative requirements pertaining to closure of HMWUs or the facility have been established or required by the WDNR.

**Closure Notification Requirements 664.0112(4)(a)**

The WDNR will be notified in writing of the intent to close the facility at least 180 days prior to commencement of final closure activities. All hazardous waste will be removed from the facility within 90 days of final OB/OD treatment of remaining energetics onsite.

**Closure Certification 664.0115**

Within 60 days of completion of final closure, Stresau will submit to the WDNR, by registered mail, a certification that the HMWU or facility, as applicable, has been closed in accordance with the approved closure plan. The certification will be signed by Stresau and a qualified professional engineer. If requested by the WDNR, documentation supporting the professional engineer’s certification will be furnished to the WDNR until the WDNR releases Stresau from the financial assurance requirements for closure under NR 664.0143(11).

**Amendment of Closure Plan 664.0112(3)**

Should an amendment to the closure plan be required, Stresau will submit written notification of its request for an operating license modification in accordance with NR 664.0112(3).

**Post Closure, Long-Term Care Plan NR 664.0118 and 664.0603**

After making all reasonable efforts to remove or decontaminate surface and sub-surface soils around the TTU area undergoing closure, post-closure long-term care includes the following activities:

- Monitoring Activities: groundwater monitoring program.
- Maintenance Activities: integrity of the cap and final cover.

- Maintenance Activities: monitoring well abandonment.

#### ***Groundwater Monitoring Program***

A groundwater monitoring program shall be continued on an annual basis for a period of two (2) years following the date of closure. Groundwater monitoring samples will be analyzed for parameters consistent with previous site investigation reports, work plans, and WDNR approvals. Refer to Chapter 10 of the FPOR. Samples shall be sent to a State accredited lab for analysis. Results from the lab analysis will be detailed in a final report with findings and conclusions, provided to WDNR.

Pending review by WDNR, further activities would be performed in accordance with any corrective action program issued by the Department. For purposes of closure cost estimates, the long-term care monitoring is included in the final cost.

#### ***Integrity Maintenance***

The TTU area will be adequately decontaminated and all contaminated soils will be removed. While there are no anticipated post-closure impacts expected, minimal maintenance will be performed on the filled and capped area. The TTU area is located at a higher elevation than land surrounding it. The closed area will have a concrete surface covering the filled area. The infiltration rate of soil surrounding the area is high. The concrete cap will be inspected for cracks, fractures, holes, and weak areas, on a quarterly basis. Any cracks, fractures, holes, or weak areas will be patched within 30 days of the observation. For purposes of closure cost estimates, the long-term care maintenance is included in the final cost.

#### ***Maintenance – Monitoring Well Abandonment***

Wells will be abandoned once closure is approved by WDNR and groundwater monitoring is deemed no longer required by WDNR. Well abandonment will be performed by a state licensed contractor in accordance with state regulations. Abandonment reports will be provided to the state upon completion. For purposes of closure cost estimates, well abandonment is included in the final cost.





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CHAPTER 21  
ATTACHMENT W  
SEH Certification

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Building a Better World  
for All of Us®

March 13, 2023

RE: R. Stresau Laboratory, Inc.  
Feasibility and Plan of Operation Report  
SEH No. 169178-STRES

Wayne Hanson, President and Owner  
R. Stresau Laboratory, Inc.  
N8265 Medley Road  
Spooner, WI 54801

Dear Mr. Hanson:

R. Stresau Laboratory Inc. (Stresau) retained Short Elliott Hendrickson Inc. (SEH®) to assist with the preparation and submittal of the updated Feasibility and Plan of Operation Report (FPOR) required for the renewal and extension of Stresau's current Thermal Treatment Unit (TTU) Hazardous Waste License (#06024). Stresau submitted a renewal request to the Wisconsin Department of Natural Resources (WDNR) in April, 2016. There has been numerous correspondence and meetings between WDNR, USEPA, and Department of Defense (DOD) representatives after the submittal. WDNR issued a *Feasibility and Plan of Operation Report Second Call-in Letter* (Call-in Letter) to Stresau dated January 18, 2022, which clarified "requirements relating to the submittal of a complete and updated license package". Based on our review of correspondence subsequent to the 2016 submittal, and information gathered from Stresau, SEH believes the updated FPOR has been prepared in general accordance with applicable plan and operational requirements of chs. NR 664 and 670, Wis. Adm. Code.

SEH and Stresau had several discussions with WDNR regarding the format and content of the updated FPOR and assumes the format and content will be generally acceptable to the WDNR for the following reasons, at a minimum:

- WDNR requested the updated FPOR include the materials considered, reviewed, discussed, and referenced since the initial renewal submittal in 2016. The FPOR package developed by SEH incorporates those available items into one submittal package in general accordance with applicable plan and operational requirements of chs. NR 664 and 670, Wis. Adm. Code.
- The FPOR package includes applicable items as identified on the WDNR TSD License Completeness Checklist. The Checklist is being included with the FPOR submittal.
- Stresau has performed and updated the required waste determinations, and retains sufficient documentation supporting each determination.
- Stresau does not accept waste from off-site sources for treatment in the TTU.
- Stresau conducted research and evaluation on alternatives to open burn / open detonation (OB/OD) as it applies to the facility. One alternate treatment method was identified to be feasible and safe, and will be implemented, referred to as
- Stresau will continue to assess alternatives to OB/OD throughout the licensing period, including transportation for off-site treatment.

Engineers | Architects | Planners | Scientists

Short Elliott Hendrickson Inc., 10 North Bridge Street, Chippewa Falls, WI 54729-2550  
SEH is 100% employee-owned | [www.sehinc.com](http://www.sehinc.com) | 715.720.6200 | 888.908.8166 fax

Thank you for the opportunity to assist Stresau with this important submittal. Please do not hesitate to contact me if you have any questions regarding SEH's development and review of the FPOR application. My number is 715-492-0828 and my email is jajohnson@sehinc.com.

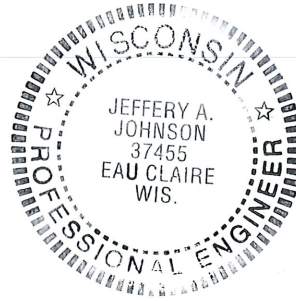
Sincerely,



Jeffery Johnson, PE  
Senior Engineer II (Licensed in IA, MN, NE, TX, WI)

JAJ/BKO

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CHAPTER 21  
ATTACHMENT X  
History of License Activities

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RECEIVED OCT 13 2006



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor  
Scott Hassett, Secretary  
John Gozdziwski, Regional Director

Northern Region Headquarters  
810 W. Maple Street  
Spooner, Wisconsin 54801  
Telephone 715-635-2101  
FAX 715-635-4105  
TTY Access via relay - 711

October 16, 2006

Mr. Richard Hoff  
Stresau Laboratory, Inc.  
N8265 Medley Road  
Spooner, WI 54801-7819

HW/LIC  
FID# 866009320  
Washburn Co.

Subject: Hazardous Waste Operating License Renewal for Hazardous Waste Treatment  
R. Stresau Laboratory, Inc., Spooner, WI  
EPA ID# WID020488011  
License # 0624 (Miscellaneous Unit)

Dear Mr. Hoff:

With the issuance of this letter, the Wisconsin Department of Natural Resources (WDNR) is confirming that the relicensing of the R. Stresau Laboratory, Inc. (Stresau) hazardous waste management treatment unit, license number 0624, is complete. On October 11, 2006, a notice of intent to license was published in the Wisconsin State Journal and the Spooner Advocate. A radio announcement was broadcast on WCSW (940 am) the same day.

Hazardous waste licenses are issued and regulated under the provisions of chs. NR 660-670, Wis. Adm. Code. This hazardous waste license requires compliance with chs. NR 660-670, Wis. Adm. Code, the feasibility and plan of operation report, the September 28, 2006, feasibility and plan of operation report determination, and all subsequent plan modifications issued by the WDNR.

You may continue to apply for renewal of the license annually, for a period of up to ten (10) years from October 16<sup>th</sup>, 2006, the official date of the re-issued operating license (October 16, 2006 + 10 years = October 16, 2016). If you plan to continue to operate the licensed unit at this facility following the end of the ten year period, you are required to submit all reports and plans necessary for re-issuance of the operating licenses at least 180 days prior to the 10-year anniversary of the revised operating license. To facilitate timely re-issuance, submission of the necessary reports and plans at least one year prior to the 10-year expiration date is recommended.

If you have any questions or concerns, please contact Jill Schoen at 715-839-2788, or [jill.schoen@wisconsin.gov](mailto:jill.schoen@wisconsin.gov), or contact me at 715-365-8946, or [connie.antonuk@wisconsin.gov](mailto:connie.antonuk@wisconsin.gov).

Sincerely,

Connie Antonuk  
Regional Air and Waste Leader  
Northern Region

cc: Jim Ross – NOR, Spooner  
Pat Chabot/Dave Kollasch - WA/3  
Jill Schoen – WCR, Eau Claire  
Harriet Croke - U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL 60604  
Mary Palmann – NOR, Rhinelander



April 16, 2015

Richard Hoff  
Stresau Laboratory, Inc.  
N8265 Medley Rd.  
Spooner, WI 54801-7819

RE: Feasibility and Plan of Operation Report Call-in Letter  
Stresau Laboratory, Inc.  
EPA ID# WID020488011  
FID# 866009320  
License # 6024 for Hazardous Waste Treatment

Dear Mr. Hoff:

On October 16, 2006, the Department re-issued an operating license for treating hazardous wastes to Stresau Laboratory, Inc. (Stresau) located at N8265 Medley Rd. in Spooner, Wisconsin 54801. If Stresau plans to continue operating its licensed hazardous waste facility beyond the end of the 10-year effective period of the license or October 16, 2016, Stresau must submit a revised Feasibility and Plan of Operation Report (FPOR) to the Department 180-days prior to the license expiration date, which is April 19, 2016.

In accordance with s. 289.31, Wis. Stats., and s. NR 670.050(1), Wisconsin Administrative Code (WAC), the Department may issue annual renewals of a hazardous waste operating license for an effective period of up to 10 years. If the licensee chooses to operate or maintain a hazardous waste facility after the 10-year effective period ends, the licensee must re-submit a license application at least 180-days before the end of the effective period, as specified in s. NR 670.010(8), WAC. The license application is to include all additions, revisions or modifications to the EPA Part A form and FPOR. The requirements for the FPOR are in ss. NR 670.014 to NR 670.029, WAC. If the licensee submits a timely and complete license application, s. NR 670.051, WAC, allows the conditions of an expired operating license to continue in force until the Department takes final action on the complete application. The continued operating license remains fully effective and enforceable.

Please be aware that without an operating license, Stresau will not be able to continue operating the hazardous waste treatment facility. Operation of this unit must cease by the day the license expires or by October 16, 2016. Closure must be performed in accordance with the approved closure plan and the applicable requirements of ch. NR 664, subch. G, WAC. The Department must be notified of Stresau's intent to close their facility at least 180 days prior to the expiration date of the license, in accordance with s. NR 664.0112(4), WAC.

The remainder of this letter identifies what items must be addressed and included in the license application. The Department recommends that the license application be prepared by an environmental consultant with experience and expertise in the area of hazardous waste licensing.

*General.* The FPOR must contain general information as required in s. NR 670.014, WAC, and the specific information required for containers, tank systems and miscellaneous units in ss. NR 670.015, 670.016, and 670.023 WAC. In addition, the report must contain the technical information required in applicable sections of ch. NR 664, WAC. It is important that the FPOR be complete and technically adequate. All technical data must be certified by a registered professional engineer. Failure to provide an adequate submittal may result in an unfavorable determination.

The Department has developed a licensing checklist to help you prepare a complete and technically adequate license application. The licensing checklist will be emailed to you as an Excel spreadsheet. To facilitate the review of your license application, indicate the section or page(s) in the licensing checklist where the required information is to be found in the report. Submit the completed checklist with the license application.

United States Environmental Protection Agency (U.S. EPA) has drafted guidance documents entitled “*Hazardous Waste Treatment, Storage and Disposal Facilities (TSDF) Regulations: A User-Friendly Reference Document for RCRA Subtitle C Permit Writers and Permittees (January 2012)*” available at: <http://www.epa.gov/epawaste/hazard/tsd/permit/tsd-regs/tsdf-ref-doc.pdf> and “*Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Wastes*” available at: <http://www.epa.gov/epawaste/hazard/tsd/permit/tsd-regs/tsdf-wap-guide-final.pdf>. You and your consultant may find this guidance useful.

Two copies of the license application must be signed in accordance with the plan submittal requirements of ss. NR 670.010(1) and NR 670.011, WAC, before they are submitted to the Department. Submit the copies and the appropriate plan review fee to Wisconsin Department of Natural Resources, Attention: Michael Ellenbecker, 9531 Rayne Road, Suite IV, Sturtevant, WI 54177. In addition, submit one copy to the U.S. EPA, Attention: Mr. Jae Lee, LR-8J, 77 West Jackson Blvd., Chicago, IL 60604. The Department encourages Stresau to submit the FPOR as a readable PDF document as this will accelerate the Department’s review of FPOR. Please submit this document with the copy provided to Michael Ellenbecker.

*Environmental Assessment/Wetlands.* An environmental assessment is required under ch. NR 150, WAC, for a FPOR of this type. Specific requirements that must be included in the FPOR that are necessary for completing this environmental assessment can be found in s. NR 670.014(2)(x)2., WAC. To aid in determining the need for an environmental impact report or impact statement, the FPOR must include a discussion that adequately addresses the items specified in that section. The Department cannot issue a feasibility and plan of operation determination without having completed an environmental assessment. In addition, the facility must demonstrate compliance with ch. NR 103, WAC, water quality standards for wetlands.

*Local Approval and Negotiation/Arbitration.* Stresau must notify local municipalities to determine if any new or additional requirements apply to the facility; receive confirmation from the municipality that Stresau is complying with any local requirements; and, determine if a waiver from local approval requirements will be issued. If you determine that your facility is required to obtain local approvals under s. 289.22, Wis. Stats., you may not submit your FPOR until the 120-day waiting period has expired or you have obtained a waiver from the waiting period from the local governing body. Therefore, it is important to make this determination immediately. If you are required to obtain local approvals and enter into the negotiation and arbitration process for siting a hazardous waste facility under s. 289.33, Wis. Stats., a copy of the Waste Facility Siting Board standard notice must accompany any written request for local approvals to each affected municipality (s. 289.22(2), Wis. Stats.). A copy of the standard notice can be obtained at: <http://dha.state.wi.us/home/WFSB/Forms/standard%20notice.pdf>. In addition, your request for local approvals must be sent by certified mail. A copy of the local approval request to each affected municipality and its returned certified mail receipt must be sent to the Waste Facility Siting Board and must be included in the FPOR. The Siting Board address is located on the letterhead of the notice. You may wish to consult with your company's legal counsel on these sections of the statutes.

In addition to seeking local approvals, ss. NR 670.007(1) and NR 670.431, WAC, require Stresau to hold at least one public meeting prior to submitting the FPOR to the Department. The purpose of the public meeting is to inform the community of the proposed hazardous waste activities and to solicit questions from the community regarding the proposed activities. The meeting is to be public noticed at least 30 days prior to the meeting taking place. Details of



the public notice and other procedural matters relating to the pre-application public meeting and notice requirements can be found in s. NR 670.431, WAC.

*Confidentiality.* If any information is submitted under a claim of confidentiality, the confidentiality requirements of s. 291.15, Wis. Stats., and ss. NR 2.19 and NR 2.195, WAC, must be followed.

*Needs.* The Department is also required by s. 289.28, Wis. Stats., to determine the need for a hazardous waste facility. The Department must consider the approximate service area of the proposed facility, taking into account the economics of waste collection, transportation, and disposal; the quantity of waste suitable for handling at the proposed facility generated within that service area; and, the design capacity for certain facilities located within that anticipated service area. This information must also be included in the FPOR, as specified in s. NR 670.014(2)(x)3., WAC

*Noncompliance with Plans or Orders.* Under s. 289.34, Wis. Stats., the Department may not approve a FPOR or issue an operating license for a hazardous waste facility if the applicant or any person owning 10% or greater legal or equitable interest in the applicant or the assets of the applicant either: 1) is named in or is subject to a plan approved, or an order issued, by the Department regarding any solid waste facility or hazardous waste facility in this state and is not in compliance with the terms of the plan or order; or, 2) owns or previously owned a 10% or greater legal or equitable interest in a person or the assets of a person who is named in and subject to a plan approved, or an order issued, by the Department regarding any solid waste facility or hazardous waste facility in this state and the person is not in compliance with the terms of the plan or the order. Stresau must provide information to the Department, as specified in s. NR 670.014(2)(x)1., WAC, to show that it complies with the above statute.

*Corrective Action.* In accordance with ch. NR 664, subch. F, WAC, facilities seeking a hazardous waste operating license are required to initiate corrective action as necessary to protect human health and the environment. Chapter NR 706, WAC, also requires notification of hazardous substance discharges. If any releases are known to have occurred since the Department issued its feasibility and plan of operation approval the facility must document that information as part of the FPOR and include a plan for addressing the releases, as specified in s. NR 670.014(3), WAC. If no known releases have occurred, that should be documented as well.

In accordance with s. 291.37(2), Wis. Stats, the Department may require by an order or license condition, the nature of the corrective action required, a period for achieving compliance with the corrective action requirements and a period for the owner or operator to establish proof of financial responsibility for the cost of corrective action.

In order for the license application to be complete, the FPOR must include the current status of corrective action activities at Stresau, including a description, schedule and detailed cost estimate for corrective action activities still needed at Stresau, and a financial responsibility mechanism that covers the estimated cost for corrective action activities.

The license application must include the following information on investigation or remediation activities for each corrective action management unit at the facility:

1. The current status of investigation and/or remediation activities, including a description of on-going site investigations, remedies that have been implemented or long-term operation and maintenance activities.
2. A description of the investigation and remediation activities that are expected to occur during the 10 year licensing period. Include a proposed schedule projected through the 10 year licensing period, detailed cost estimates for the proposed work, and if appropriate, an evaluation of likely remedial alternatives .
3. In addition, include cost estimates for any on-going activities, such as long-term monitoring or for operating in-place remedial systems.


*Suggested Format.* The Department has the following suggestions in regard to the format of the FPOR.

1. Use the Wisconsin Administrative Code NR 660 to 670 and the license checklist as a guide for developing the table of contents for the FPOR. The Department strongly encourages that the FPOR follows the enclosed license checklist, so that each item in the checklist corresponds to an item in the FPOR. In the FPOR include the code citation from the checklist as this will accelerate the Department's review of FPOR (see example below). In

addition, prepare a Table of Contents that clearly identifies the sections of FPOR where information is located with page numbers.

- i. NR 670.014(2)(k)3 – Flood Plains
  - ii. Stresau is not located within a 100 year flood plain; therefore, the requirements of NR 670.014(2)(k)4 and 5 do not apply. See the FEMA Floodplain map in Appendix T.
2. Use a page numbering system where every page is marked with the page number, including the chapter and the date so revised pages are clearly identified. For example, a page numbering system of *5-13 (rev. 12-23-11)*, indicates Chapter 5, page 13 includes revisions made on December 23, 2011. Please refrain from the use of using roman numerals for numbering pages.
3. Provide a portable document format (PDF) file for all information submitted. The PDF file needs to mirror the hard or paper copy of the FPOR. Include a Table of Contents, which is "hot" so clicking on any entry takes you directly to the spot in a FPOR and ensure that all text is searchable.
4. Include in a section or appendix a history of the licensing activities for Stresau since the issuance of the feasibility and plan of operation approval on January 31, 2006. Documentation should include the Department's January 31, 2006 FPOR conditional approval, any subsequent modification approvals, and other pertinent correspondence related to licensing activities at Stresau.
5. Submit full size plan sheets (24 inches by 36 inches) for all drawings submitted. Place the full size plan sheets in a separate binder and reference the plan sheets in the text of the FPOR.
6. Provide a narrative describing the various non hazardous waste license operations at the facility.
7. Ensure that all information submitted is legible and free from visual artifacts.
8. Where applicable ensure that all maps and drawings contain the following elements: Title, Border around all 4 sides of the drawing and drawn using straight lines, Legend or key for every symbol on the map, Scale, Directions (compass rose), Location and labeling of areas, Symbols to signify certain areas of interest, Date of publication and Source of information.

If you have any questions regarding these requirements or wish to arrange a meeting to discuss the licensing process, please contact Michael Ellenbecker at (262) 884-2342 or by email at [michael.ellenbecker@wisconsin.gov](mailto:michael.ellenbecker@wisconsin.gov).



Edward K Lynch, PE, Chief  
Hazardous Waste & Mining Section  
Bureau of Waste and Materials Management



Michael J. Ellenbecker, Hazardous Waste Program Coordinator  
Hazardous Waste & Mining Section  
Bureau of Waste and Materials Management

cc: Jill Schoen – Eau Claire  
Steve Ashenbrucker – Park Falls  
Jae Lee – U.S. EPA Region 5  
Waste Facility Siting Board  
N Region File

**WISCONSIN DEPARTMENT OF NATURAL RESOURCES  
HAZARDOUS WASTE LICENSE APPLICATION (FPOR)  
COMPLETENESS AND TECHNICAL EVALUATION CHECKLIST  
GENERAL AND SPECIFIC REQUIREMENTS FOR  
CONTAINERS, TANKS AND MISCELLANEOUS UNITS**

**Facility Name :** R Stresau Laboratory Inc.

**FID # :** 866009320

**US EPA ID #:** WID020488011

**Date Application Received :**

**DNR Reviewer :**

**Review Dates :**

Use this checklist as a guide to determine if the Feasibility and Plan of Operation Report (FPOR) is complete and technically adequate for the storage or treatment of hazardous waste in containers, tanks, or miscellaneous units. The license applicant should indicate the location of the required information in the FPOR. The DNR license reviewer will review the information provided and determine if it is complete and technically adequate.

Note: More detailed information is given in the Wisconsin Administrative Code citation listed for each item. The inspection forms at <http://www.dnr.state.wi.us/org/aw/wm/publications/index.html> may also be used as a guide for AA/BB/CC requirements.

**PART I - GENERAL REQUIREMENTS**

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section A. General Requirements NR 670.010 to NR 670.014</b>				
A.1. Two copies of license application submitted. NR 670.010(1)	X			Shipped via UPS 04/18/16
A.2. Appropriate plan review and license fees submitted. NR 670.010(12)				Per Mike Ellenbecker, wait for WDNR invoice
A.3. Report signed by a president, secretary, treasurer or vice president of a corporation or other approved signatory. NR 670.011(1)	CH. 20			
A.4. Signature includes certification statement. NR 670.011(4)	CH. 20			
A.5. Claims of confidentiality are met. NR 670.012	NA			
A.6. Summary of pre-application meeting, list of attendees/addresses and copies of written comments or materials submitted during meeting. NR 670.014(2)(v)	NA			Per Mike Ellenbecker 02/23/16 email, not needed.
A.7. Documentation showing compliance with local approval requirements. NR 670.014(2)(w)	CH. 2			Att. 21a
A.8. Complete Part A application. NR 670.013	CH. 18			Att. 21p

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
A.9. Technical data, such as design drawings and specifications and engineering studies are certified by WI registered PE. NR 670.014(1)	NA			
A.10. General description of facility. NR 670.014(2)(a)	CH. 1			
A.11. Description of procedures, structures or equipment used to prevent hazards in unloading operations. NR 670.014(2)(h)1.	CH. 10A			
A.12. Description of procedures, structures or equipment used to prevent runoff from hazardous waste handling areas or to prevent flooding. NR 670.014(2)(h)2.	CH. 10D			
A.13. Description of procedures, structures or equipment used to prevent contamination of water supplies. NR 670.014(2)(h)3.	CH. 10D			
A.14. Description of procedures, structures or equipment used to mitigate effects of equipment failure or power outages. NR 670.014(2)(h)4.	CH. 11			
A.15. Description of procedures, structures or equipment used to prevent exposure of personnel. NR 670.014(2)(h)5.	CH. 13			Att. 21h
A.16. Description of procedures, structures or equipment used to the atmosphere. NR 670.014(2)(h)6.	NA			
A.17. Traffic patterns, estimated traffic volume, traffic control, access road surfacing and load bearing capacity. NR 670.014(2)(j)	CH. 15			
A.18. Chemical and physical analyses of the hazardous waste and debris to be handled at the facility. NR 670.014(2)(b)	CH. 6			Att. 21c
A.19. Chemical and physical analyses contains all information that must be known to treat, store or dispose of the waste according to NR 664 requirements. NR 670.014(2)(b)	CH. 6			Att. 21c
A.20. Justification of any request for a waiver of the preparedness and prevention requirements of NR 664 subch. C. NR 670.014(2)(f)	NA			

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
A.21. Description of precautions taken to prevent accidental ignition or reaction of ignitable, reactive or incompatible wastes, including A.22 to A.24. NR 670.014(2)(i)	CH. 14			
A.22. Ignitable and reactive waste is separated and protected from sources of ignition or reaction. NR 664.0017(1)	CH. 14			
A.23. Smoking and open flame are confined to specially designated locations when handling ignitable or reactive waste. NR 664.0017(1)	CH. 14			
A.24. "No Smoking" signs are conspicuously placed where there is a hazard from ignitable or reactive waste. NR 664.0017(1)	CH. 14			
A.25. Documentation demonstrating compliance with A.22. to A.24., including references to published scientific or engineering literature, data from trial tests, waste analysis or the results of treatment of similar waste by similar treatment under similar operating conditions. NR 664.0017(3)	CH. 14			Reference DoD 4145.26-M Contractors' Safety Manual
<b>Section B. Noncompliance with Plans or Orders NR 670.014(2)(x)1.</b>				
B.1. Identification of all persons owning ≥10% legal or equitable interest in the applicant or their assets. NR 670.014(2)(x)1.a	CH. 4			
B.2. Identification of all WI solid or hazardous waste facilities for which applicant or other identified person is named in or subject to a department order or plan approval. NR 670.014(2)(x)1.b.	CH. 4			
B.3. Identification of all WI solid or hazardous waste facilities owned by the applicant or other identified person who owns or previously owned ≥10% interest in the assets. NR670.014(2)(x)1.c.	CH. 4			
B.4. Statement regarding whether or not all plan approvals and orders relating to all identified facilities are being complied with. NR 670.014(2)(x)1.d.				
<b>Section C. Environmental Impact Review NR 670.014(2)(x)2.</b>				

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
C.1. Purpose, history, background, relevant local, state and federal permits or approvals and zoning changes for the project. NR 670.014(2)(x)2.a.	CH. 4			
C.2. Description of proposed physical changes related to terrestrial resources, such as soil placement, construction of roads, surface water drainage and sedimentation controls. NR 670.014(2)(x)2.b.1)	NA			
C.3. Description of proposed physical changes related to aquatic resources, such as impacts to streams, wetlands or other water bodies. NR 670.014(2)(x)2.b.2)	NA			
C.4. Description of proposed physical changes related to the construction of buildings and other structures. NR 670.014(2)(x)2.b.3)	NA			
C.5. Description of proposed physical changes related to air emissions and water discharges during facility construction, operation and closure. NR 670.014(2)(x)2.b.4)	NA			
C.6. Description of proposed physical changes related to any other changes anticipated with facility development. NR 670.014(2)(x)2.b.5)	NA			
C.7. Maps, plans or other materials needed to clarify the information provided for C.2. to C.6. NR 670.014(2)(x)2.b.6)	NA			
C.8. Description of the affects on the existing physical environment, such as topography, surface water drainage, hydrogeologic conditions, geology. NR 670.014(2)(x)2.c.1)	NA			
C.9. Description of the affects on existing dominant aquatic and terrestrial plant and animal species and habitats. NR 670.014(2)(x)2.c.2)	NA			
C.10. Description of the affects on existing land use, dominant features, and zoning in the area. NR 670.014(2)(x)2.c.3)	NA			
C.11. Description of the affects on existing social and economic conditions, such as ethnic or cultural groups. NR 670.014(2)(x)2.c.4)	NA			

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
C.12. Description of the affects on other existing special resources, such as archaeological, historical, state natural areas, or prime agricultural lands. NR 670.014(2)(x)2.c.5)	NA			
C.13. Discussion of the probable adverse and beneficial physical impacts associated with facility design, construction and operation. NR 670.014(2)(x)2.d.1)	NA			
C.14. Discussion of the probable adverse and beneficial biological impacts such as destruction and creation of habitat, alteration of physical environment and impacts to endangered or threatened species. NR 670.014(2)(x)2.d.2)	NA			
C.15. Discussion of the probable adverse and beneficial impacts on land use. NR 670.014(2)(x)2.d.3)	NA			
C.16. Discussion of the probable adverse and beneficial social and economic impacts to local residents, cultural groups and communities and industries served by the facility. NR 670.014(2)(x)2.d.4)	NA			
C.17. Discussion of probable adverse and beneficial impacts on other special resources, such as archaeological, historical, state natural areas and prime agricultural lands. NR 670.014(2)(x)2.d.5)	NA			
C.18. Discussion of probable adverse impacts that cannot be avoided, such as groundwater and surface water impacts, modifications of topography, loss of agricultural or forest land, displacement of wildlife and adverse aesthetic impacts for people in and around the facility. NR 670.014(2)(x)2.d.6)	NA			
C.19. Identify, describe and discuss feasible alternatives such as taking no action, enlargement, reduction or modification of the project. NR 670.014(2)(x)2.e.	NA			
C.20. Needs determination, per s. 289.28, Wis. Stat. NR 670.014(2)(x)3.	NA			
<b>Section D. Groundwater Protection NR 670.014(3)</b>				
D.1. If all regulated units meet NR 664.0090(2), this Section is not applicable.	NA			

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
D.2. Summary of groundwater monitoring data from interim license period. NR 670.014(3)(a)	NA			
D.3. Uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, groundwater flow direction and rate, and basis of identification. NR 670.014(3)(b)	NA			
D.4. Topographic map delineating waste management area, property boundary, point of compliance and proposed location of monitoring wells. NR 670.014(3)(c)	NA			
D.5. Description of contamination plume that entered the groundwater from a regulated unit at the time of the application, delineation of the extent of the plume on the topographic map and identification of hazardous constituent concentrations in the plume. NR 670.014(3)(d)	NA			
D.6. Detailed plans and engineering report describing the proposed groundwater monitoring program to be implemented per NR 664.0097. NR 670.014(3)(e)	NA			
D.7. If hazardous constituents have not been detected in the groundwater at the time of the license application, sufficient information, supporting data and analyses to establish a detection monitoring program which meets NR 664.0098. NR 670.014(3)(f)	NA			
D.8. If hazardous constituents have been detected in the groundwater at the point of compliance at the time of the license application, sufficient information, supporting data and analyses to establish a compliance monitoring program meeting NR 664.0099. NR 670.014(3)(g)	NA			
D.9. If hazardous constituents have been measured in the groundwater exceeding concentration limits in NR 664.0094 Table 1 or if groundwater monitoring conducted at the time of the license application at the waste boundary indicates the presence of hazardous waste constituents from the facility, sufficient information, supporting data and analyses to establish a corrective action program meeting NR 664.0100. NR 670.014(3)(h)	NA			



Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section E. Corrective Action and Solid Waste Management Units NR 670.014(4)</b>				
E.1. If applicable, information regarding groundwater protection if there is a release from a SWMU. NR 670.014(3)	NA			
E.2. Topographic map showing location of SWMU. NR 670.014(4)(a)1.	NA			
E.3. Designate type of SWMU. NR 670.014(4)(a)2.	NA			
E.4. General dimensions and structural description of SWMU. NR 670.014(4)(a)3.	NA			
E.5. When the SWMU was operated. NR 670.014(4)(a)4.	NA			
E.6. All wastes managed at the SWMU are specified. NR 670.014(4)(a)5.	NA			
E.7. All available information pertaining to releases of hazardous waste constituents from hazardous waste units. NR 670.014(4)(b)	NA			
E.8. Results of sampling and analysis of surface or groundwater, soil and air sampling if the department determines a RFA is necessary. NR 670.014(4)(c)	NA			
<b>Section F. Location Standards NR 670.014(2)(k) and NR 670.014(2)(s)</b>				
F.1. Identify if facility is in a 100-year floodplain and source of data. NR 670.014(2)(k)3.	CH. 16			
F.2. Copy of federal insurance administration flood map, or calculations and maps if FIA map is not available. NR 670.014(2)(k)3.	CH. 16			Att. 21m
F.3. Identify 100-year flood level and other flooding factors (wave action) considered in design, construction, operation or maintenance of facility to withstand washout from 100 year flood. NR 670.014(2)(k)3.	NA			
F.4. If facility is located in 100 year flood plain, engineering analysis of various hydrodynamic and hydrostatic forces. NR 670.014(2)(k)4.a. AND	NA			
F.5. Structural or other engineering studies showing design of operational units and flood protection devices and how they will prevent washout. NR 670.014(2)(k)4.b. OR	NA			

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
F.6. Description of procedures to move hazardous waste before flooding, including timing; new approved or licensed location; resources needed; and, potential of discharge during move. NR 670.014(2)(k)4.c.	NA			
F.7. If a facility located in a 100-year floodplain is not designed, constructed, operated and maintained to prevent washout, a demonstration that procedures in effect to move the waste safely to a location that is not vulnerable to flood waters before flood waters reach the facility. NR 664.0018(2)(a)	NA			
F.8. If an existing facility is not in compliance with F.7., a plan and schedule to bring the facility into compliance. NR 670.014(2)(k)5.	NA			
F.9. A dated topographic map showing a distance of 1,000 feet around the facility, with a scale of no more than 1 inch to 200 feet, and contour intervals that clearly shows pattern of surface water flow of waste management unit. NR 670.014(2)(s)	NA			
F.10. Map shows map scale and date. NR 670.014(2)(s)1.	NA			
F.11. Map shows 100 year flood plain area. NR 670.014(2)(s)2.	NA			
F.12. Map shows surface waters, including intermittent streams. NR 670.014(2)(s)3	NA			
F.13. Map shows surrounding land uses (residential, commercial, agricultural, recreational). NR 670.014(2)(s)4	NA			
F.14. Map shows wind rose (prevailing wind speed and direction). NR 670.014(2)(s)5	NA			
F.15. Map shows map orientation. NR 670.014(2)(s)6	NA			
F.16. Map shows legal boundaries of the hazardous waste facility. NR 670.014(2)(s)7	NA			
F.17. Map shows access control (fence, gates). NR 670.014(2)(s)8	NA			
F.18. Map shows location of injection or supply wells on-site and off-site. NR 670.014(2)(s)9	NA			
F.19. Map shows buildings and storage, treatment or disposal operations. NR 670.014(2)(s)10.	NA			

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
F.20. Map shows other structures such as recreation areas, runoff control systems, roads, sewers, loading, unloading areas, etc. NR 670.014(2)(s)10.	NA			
F.21. Map shows barriers for drainage or flood control. NR 670.014(2)(s)11.	NA			
F.22. Map shows location of operational units where hazardous waste will be treated, stored or disposed. NR 670.014(2)(s)12.	NA			
F.23. Facility is not located in a wetland. NR 670.014(2)(k)6.b.	CH. 16			
F.24. Facility is not located in a critical habitat for threatened or endangered species. NR 670.014(2)(k)6.a.	NA			
<b>Section G: Waste Analysis Plan Requirements NR 670.014(2)(c)</b>				
G.1. Procedures for obtaining chemical and physical analyses of hazardous waste managed at facility. NR 664.0013(1)(a)	CH. 6			
G.2. Analysis by WI certified labs. NR 664.0013(1)(a)1.	CH. 6			Att. 21c
G.3. Description of other data to be used rather than lab analysis. NR 664.0013(1)(b)	NA			
G.4. For off-site waste, analysis upon receipt to verify waste matches description on manifest. NR 670.0013(1)(d)	NA			
G.5. Parameters for which waste will be analyzed and rationale. NR 664.0013(2)(a)	NA			
G.6. Test methods that will be used. NR 664.0013(2)(b)	NA			
G.7. Sampling methods to obtain representative sample. NR 664.0013(2)(c)	NA			
G.8. Frequency of repeating initial analysis to ensure it is accurate and up to date. NR 664.0013(2)(d)	NA			
G.9. At a minimum, analysis is repeated if the process generating the waste has changed or when the inspection upon receiving the waste does not match the description on the manifest. NR 664.0013(1)(c).	NA			
G.10. For off-site waste, the waste analysis generators agree to supply. NR 664.0013(2)(e)	NA			

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
G.11. If ignitable, reactive or incompatible wastes are managed, the waste analysis methods used to comply with NR 664.0017(3). NR 664.0013(2)(f)	CH. 6			
G.12. If the facility is subject to NR 664 subch. AA standards for process vents, the test methods and procedures used to comply with NR 664.1034(4). NR 664.0013(2)(f)	NA			
G.13. If the facility is subject to NR 664 subch. BB standards for equipment leaks, the test methods and procedures used to comply with NR 664.1063(4). NR 664.0013(2)(f)	NA			
G.14. If the facility is subject to NR 664 subch. CC standards for containers or tanks, the waste determination procedures in NR 664.1083. NR 664.0013(2)(f)	NA			
G.15. The testing performed to determine if the waste meets or exceeds LDR standards, as required by NR 668.07. NR 664.0013(2)(f)	NA			
G.16. Information if seeking exemption to subch. CC requirements. NR 664.0013(2)(h)	NA			
G.17. For off-site waste, procedures used to inspect, and if necessary, analyze each movement of waste to ensure it matches the identity of the waste designated on the manifest. NR 664.0013(3)	NA			
<b>Section H: Security Requirements NR 670.014(2)(d)</b>				
H.1. Security procedures to prevent unknowing entry by a 24 hour surveillance system which continuously monitors and controls entry. NR 664.0014(2)(a) OR,	CH. 7			
H.2. The artificial or natural barrier surrounding active portions of facility and other means of controlled entry, such as gates or locked entrance AND NR 664.0014(2)(b)	CH. 7			
H.3. The placement of "Danger – Unauthorized Persons Keep Out" signs at entrances and other locations. NR 664.0014(3)	CH. 7			
H.4. Demonstration that the above security requirements are not necessary. NR 664.0014(1)	NA			
<b>Section I. General Inspection Requirements NR 670.014(2)(e)</b>				

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
I.1. Description of the equipment and devices inspected. NR 664.0015(2)(a)	CH. 8			
I.2. Description of problems checked during the inspection. NR 664.0015(2)(c)	NA			
I.3. Inspection schedule for closed vent system and control device, required by NR 664.1033. NR 670.014(2)(d)	NA			
I.4. Inspection schedule for subch. BB pumps in light liquid service, required by NR 664.1052. NR 670.014(2)(d)	NA			
I.5. Inspection schedule for subch. BB compressors, required by NR 664.1053. NR 670.014(2)(d)	NA			
I.6. Inspection schedule for subch. BB pumps and valves in heavy liquid service, pressure relief devices and connectors, required by NR 664.1058. NR 670.014(2)(d)	NA			
I.7. The inspection frequency for pumps, valves, pressure relief devices or connectors subject to subch. BB is adequate to prevent environmental or human health incidents. NR 664.0015(2)(d)	NA			
I.8. Areas subject to spills inspected daily when in use. NR 664.0015(2)(d)	NA			
I.9. Inspection frequency for other areas based on deterioration of equipment and probability of environmental or human health incident if problem goes undetected between inspections. NR 664.0015(2)(d)	NA			
I.10. Schedule to remedy ensures problem does not lead to environmental or health hazard. NR 664.0015(3)	NA			
I.11. Inspection log will be kept for at least 3 years and includes date and time of inspection; inspector name; observations made; date and type of remedial actions. NR 664.0015(4)	NA			
<b>Section J. Contingency Plan Requirements NR 670.014(2)(g)</b>				
J.1. Copy of Contingency Plan. NR 670.014(2)(g)	CH. 12			
J.2. Plan is designed to minimize hazards to human health or the environment in the event of a release. NR 664.0051(1)	CH. 12			
J.3. Provisions in the plan will be carried out immediately if release threatens human health or the environment. NR 664.0051(2)	CH. 12			

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
J.4. Describes actions facility personnel will take if a release. NR 664.0052(1)	CH. 12			
J.5. If using SPCC, it has been amended to incorporate hazardous waste provisions. NR 664.0052(2)	NA			
J.6. Describes arrangements with local emergency agencies, hospitals and contractors. NR 664.0052(3)	CH. 12			
J.7. Current list of emergency coordinator (primary and alternate) names, addresses and home/office phone numbers. NR 664.0052(4)	CH. 12			
J.8. Current list of emergency equipment, describing location, physical description and capability of each item. NR 664.0052(5)	CH. 12			
J.9. Evacuation plan, signals to begin evacuation and alternate routes. NR 664.0052(6)	CH. 12			
J.10. Copy of plan kept at facility and copy sent to police and fire depts., hospital, and state and local response teams. NR 664.0053	CH. 12			
J.11. Plan will be reviewed and amended, as necessary. NR 664.0054	CH. 12			
J.12. Emergency coordinator always on premises or on call. NR 664.0055	CH. 12			
J.13. Emergency coordinator is thoroughly familiar with plan, site operations, waste types handled, facility records and layout. NR 664.0055	CH. 12			
J.14. Emergency coordinator has authority to commit resources to carry out contingency plan. NR 664.0055	CH. 12			
J.15. Emergency coordinator activates alarms and notifies state or local agencies. NR 664.0056(1)	CH. 12			
J.16. Emergency coordinator identifies the character, sources, amount and extent of release. NR 664.0056(2)	CH. 12			
J.17. Emergency coordinator assesses possible hazards to human health and environment. NR 664.0056(3)	CH. 12			
J.18. Emergency coordinator notifies local authorities if evacuation is necessary. NR 664.0056(4)(a)	CH. 12			
J.19. Emergency coordinator notifies emergency response officials of release outside of facility. NR 664.0056(4)(b)	CH. 12			

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
J.20. Emergency coordinator takes reasonable measures to ensure fire, explosion or release do not occur or spread to other hazardous waste. NR 664.0056(5)	CH. 12			
J.21. Emergency coordinator monitors for leaks, pressure build-up, and gas generation if operations stop. NR 664.0056(6)	CH. 12			
J.22. Emergency coordinator arranges for treatment, storage, or disposal of materials after emergency. NR 664.0056(7)	CH. 12			
J.23. Emergency coordinator ensures no incompatible waste is treated, stored or disposed until cleanup is completed. NR 664.0056(8)(a)	CH. 12			
J.24. Emergency coordinator ensures all emergency equipment is clean and fit for use before operations resume. NR 664.0056(8)(b)	CH. 12			
J.25. Owner or operator notifies department and state and local authorities before resuming operations. NR 664.0056(9)	CH. 12			
J.26. Implementation of plan will be noted in operating log and incident report sent to WDNR in 15 days. NR 664.0056(10)	CH. 12			
<b>Section K. Training Plan Requirements NR 670.014(2)(L)</b>				
K.1. Outline of both introductory and continuing training programs to prepare persons to operate or maintain facility in a safe manner. NR 670.014(2)(L)	CH. 9			Att. 21h
K.2. Training program teaches personnel hazardous waste management procedures relevant to the positions in which they are employed. NR 664.0016(1)(b)	CH. 9			Att. 21h
K.3. Training program ensures facility personnel can respond effectively to emergencies by familiarizing them with emergency procedures, equipment and systems. NR 664.0016(1)(c)	CH. 9			Att. 21h
K.4. Personnel complete training within 6 months of being in new position and before working in unsupervised positions. NR 664.0016(2)	CH. 9			Att. 21h

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
K.5. Training documentation includes job title, job description, type and amount of training to be given and training that is completed. NR 664.0016(4)	CH. 9			Att. 21h
K.6. Brief description of how training will be designed to meet actual job tasks. NR 670.014(2)(L)	CH. 9			Att. 21h
<b>Section L. Closure Plan Requirements NR 670.014(2)(m)</b>				
L.1. Copy of Closure Plan. NR 670.014(2)(m)	CH. 19			
L.2. Description of how each unit will close during partial or final closure to minimize the need for further maintenance. NR 664.0112(2)(a)				
L.3. Description of how each unit will close during partial or final closure to control, minimize or eliminate post-closure escape of hazardous waste constituents. NR 664.0112(2)(a)				
L.4. Description of the maximum extent of operations during the active life of the facility. NR 664.0112(2)(b)				
L.5. Estimate of maximum inventory during active life of facility. NR 664.0112(2)(c)				
L.6. Description of methods used to remove, transport, treat, store, and dispose of all hazardous waste during partial and final closure. NR 664.0112(2)(c)				
L.7. Identification of the types of off-site hazardous waste management units to be used. NR 664.0112(2)(c)				
L.8. Detailed description of steps needed to remove or decontaminate all hazardous waste residues and contaminated equipment, structures and soils during partial and final closure. NR 664.0112(2)(d)				
L.9. Detailed description of other activities necessary to ensure all partial and final closures satisfy the closure performance standards. NR 664.0112(2)(e)				
L.10. During closure of container areas, all hazardous waste and residues will be removed from the containment system; remaining contaminated structures and soil will be decontaminated or removed. NR 664.0178				



Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
L.11. During closure of tank systems, all waste residues, contaminated containment system components, soils, structures and equipment is decontaminated or removed. NR 664.0197(1)				
L.12. Schedule for closure of each hazardous waste management unit and final closure of the facility. NR 664.0112(2)(f)				
L.13. The estimated year of final closure if the financial mechanism is a trust fund and the facility expects to close before the operating license expires. NR 664.0112(2)(g)				
L.14. Alternative requirements for closure established by the department. NR 664.0112(2)(h)				
L.15. Department will be notified at least 180 days prior to partial or final closure. NR 664.0112(4)(a)				
L.16. Within 90 days of receiving the final volume of hazardous waste, all hazardous waste is treated, or removed from the unit or facility. NR 664.0113(1)				
L.17. Partial and final closure activities are completed within 180 days after receiving the final volume of hazardous waste. NR 664.0113(2)				
L.18. All contaminated equipment, structures, and soils will be properly disposed of or decontaminated. NR 664.0114				
L.19. Within 60 days of completing final closure, a certification of closure will be sent to the department. NR 664.0115				
<b>Section M: Closure Cost Estimate and Financial Responsibility NR 670.014(2)(o)</b>				
M.1. The most recent detailed written closure cost estimate in current dollars for closing the facility in accordance with the approved closure plan. NR 664.0142(1)	<b>CH. 19</b>			
M.2. Cost estimate equals the cost of final closure when facility operations make closure the most expensive. NR 664.0142(1)(a)				
M.3. Cost estimate is based on hiring a third party to close the facility. NR 664.0142(1)(b)				

Licensing Standard and Code Citation	Location In Report (Page/Section/NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
M.4. Cost estimate does not incorporate any salvage value of hazardous waste, structures, equipment, land or assets. NR 664.0142(1)(c)				
M.5. Closure estimate does not include a zero cost for hazardous waste that might have economic value. NR 664.0142(1)(d)				
M.6. Facility has established financial assurance that covers the closure cost estimate. NR 664.0143				
M.7. The financial assurance mechanism meets all applicable requirements in NR 664.0143.				
M.8. If a new facility, the financial assurance is submitted 60 days prior to initial receipt of waste. NR 670.014(2)(o)				
<b>Section N: Pollution Liability Insurance NR 670.014(2)(q)</b>				
N.1. Copy of the insurance policy or other documentation demonstrating liability coverage. NR 670.014(2)(q)	<b>ATT. 210</b>			
N.2. Financial responsibility covers bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility. NR 664.0147(1)				
N.3. Coverage for sudden accidental occurrences of at least \$1 million per occurrence with annual aggregate of at least \$2 million. NR 664.0147(1)				
N.4. If a new facility, documentation showing the amount of insurance to be in place before the initial receipt of waste. NR 670.014(2)(q).				

**From:** [Panofsky, David S - DNR](#)  
**To:** [Jeffery Johnson](#)  
**Subject:** FW: FPOR  
**Date:** Friday, September 30, 2022 10:35:17 AM  
**Attachments:** WDNR FPOR Check-off 2016.pdf

---

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Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

**David Panofsky**

Pronouns: He, His, Him

Phone: (608) 867-7775

[David.panofsky@wisconsin.gov](mailto:David.panofsky@wisconsin.gov)

---

**From:** Ellenbecker, Michael J - DNR <[Michael.Ellenbecker@wisconsin.gov](mailto:Michael.Ellenbecker@wisconsin.gov)>  
**Sent:** Wednesday, April 20, 2016 8:03 AM  
**To:** Panofsky, David S - DNR <[David.Panofsky@wisconsin.gov](mailto:David.Panofsky@wisconsin.gov)>  
**Subject:** FW: FPOR

Dave I will drop off the FPOR tomorrow.

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**Mike Ellenbecker**

Phone: (262) 884-2342

[Michael.ellenbecker@wi.gov](mailto:Michael.ellenbecker@wi.gov)

---

**From:** Rich Hoff [<mailto:rhoff@stresau.com>]  
**Sent:** Tuesday, April 19, 2016 3:37 PM  
**To:** Ellenbecker, Michael J - DNR  
**Subject:** RE: FPOR

Mike - I forgot to add the check-off sheet - it's attached. If you need anything else, please let me know. Thanks!

**Richard Hoff**

Compliance Specialist | [Stresau Laboratory, Inc.](#) | [rhoff@stresau.com](mailto:rhoff@stresau.com)

N8265 Medley Road, Spooner, WI 54801 | Office: 715-635-2777 | Fax: 715-635-7979



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**From:** Ellenbecker, Michael J - DNR [<mailto:Michael.Ellenbecker@wisconsin.gov>]

**Sent:** Tuesday, April 19, 2016 3:05 PM  
**To:** Rich Hoff <[rhoff@stresau.com](mailto:rhoff@stresau.com)>  
**Subject:** RE: FPOR

Rich I received your box today

**We are committed to service excellence.**

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Mike Ellenbecker

Phone: (262) 884-2342

[Michael.ellenbecker@wi.gov](mailto:Michael.ellenbecker@wi.gov)

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**From:** Rich Hoff [<mailto:rhoff@stresau.com>]  
**Sent:** Monday, April 18, 2016 1:30 PM  
**To:** Ellenbecker, Michael J - DNR  
**Subject:** FPOR

Mike,

Two copies of our FPOR were shipped via UPS to you today. There is one box with two binders in it. In the first binder, there is a CD case with a digital version of the FPOR on it. Let me know if you have questions or require anything further. Thanks!

**Richard Hoff**

Compliance Specialist | [Stresau Laboratory, Inc.](http://StresauLaboratory.com) | [rhoff@stresau.com](mailto:rhoff@stresau.com)

N8265 Medley Road, Spooner, WI 54801 | Office: 715-635-2777 | Fax: 715-635-7979



State of Wisconsin  
DEPARTMENT OF NATURAL RESOURCES

101 S Webster  
Madison WI 53703

Scott Walker, Governor  
Cathy Stepp, Secretary  
Telephone 608-266-2621  
Toll Free 1-888-936-7463  
TTY Access via relay - 711



April 27, 2016

File Ref: FID 866009320  
WASHBURN  
HW / CORR

Mr. Richard Hoff  
Stresau Laboratory, Inc.  
N8265 Medley Rd.  
Spooner, WI 54801

SUBJECT: Acknowledgment of a proposed Feasibility And Plan Of Operation Report.

Dear Mr. Richard Hoff:

This letter is to acknowledge the receipt of a proposed Feasibility And Plan Of Operation Report dated April 11, 2016, for Stresau Laboratory, Inc. located at N8265 Medley Rd, Spooner, WI, 54801 7819, DNR license/identification number 6024. The submittal was received by the Department on April 21, 2016, and is in regards to the following:

1. Plan review – Hazardous Waste Miscellaneous Unit #6024 (thermal treatment unit)

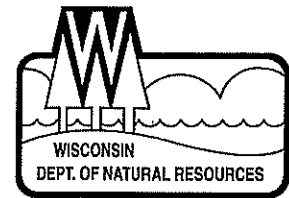
Wisconsin statutes and codes set out a timeframe of 60 days for our review of this submittal, after our receipt of a complete application and appropriate review fee. An invoice is attached to this letter. Based on our current workload, we estimate we will be able to either provide you with a decision or determine that this submittal is incomplete within 60 days. If workload or staffing changes prevent us from meeting this timeframe, we will inform you as soon as possible.

I am the lead review staff person assigned to this project. Please feel free to contact me with any questions you have at (608) 267-3540.

Sincerely,

David Panofsky, P.E.  
Air Management Engineer  
Waste and Materials Management Program

cc: Facility File  
Mike Ellenbecker – SER Sturtevant



February 23, 2017

File Ref: FID 866009320  
WASHBURN  
HW / CORR

Mr. Richard Hoff  
R. Stresau Laboratory, Inc.  
N8265 Medley Rd.  
Spooner, WI 54801

Subject: Meeting Follow-up; Alternatives Assessment/Evaluation  
Stresau Laboratory, Inc.  
EPA ID #: WID020488011  
FID #: 866009320

Dear Mr. Hoff:

Thank you for meeting with Susan Lindem, Ed Lynch and me at Stresau on February 15, 2017. We appreciate your willingness to provide us with a better understanding of your business and the unique challenges of waste disposal. Seeing samples of some of your finished products was especially helpful.

The purpose of this letter is to briefly summarize our conversation and discuss next steps.

At the meeting, we discussed several of your waste streams focusing on characterization, generation and current waste management practices. The waste streams generated fall into three (3) categories; daily waste, and general manufacturing waste. Each of these waste streams has unique characteristics and current disposal practices. A summary of the waste stream and disposal practices follows: Daily waste consists of all materials which may be contaminated by energetic materials. This includes gloves, clean-up wipes, paper towels, packaging, air filters, and vacuum bags. These materials are desensitized in fuel oil, strained and destroyed in the open burn/open detonation (OB/OD) unit (also called the thermal treatment unit (TTU)); material which can no longer be used because of customer specifications.

General manufacturing waste includes products and material rejects or off specification materials as defined by the customer. These materials are destroyed by

Stresau Laboratory is required to apply for a renewal of its hazardous waste treatment license every ten years per s. NR 670.050(1), Wis. Adm. Code. In evaluating the treatment license, the Department is required to review the application and make a determination in accordance with ss. NR 670.010-670.014 and s. NR 670.023, Wis. Adm. Code.

#### Assessment/Evaluation of Alternatives

During our meeting, we stated that as part of the hazardous waste licensing renewal process, we review the type of technology proposed. In the process of reviewing the information submitted by Stresau to date, the department discovered examples of a number of advanced technologies that have been implemented at former OB/OD sites across the country. Many of these technologies have become available on a commercial basis to treat energetic reactive waste. Technologies such as contained burn units are also scalable. We agreed at the meeting that you would provide

us within 90 days of the date of this letter with a detailed assessment/evaluation of alternative treatment technologies to OB/OD.

This assessment/evaluation should cover alternative on-site management technologies as well as management of these wastes at an off-site location. The assessment/evaluation must expand on and update what was submitted in the FPOR and discuss in detail both costs and benefits of alternatives evaluated and an assessment of each of those technologies.

At the meeting you received a copy of a recent letter from the American Chemical Society letter to U.S. EPA questioning the practice of OB/OD. You also received a copy of the Alternatives Treatment Options for Open Burning of Explosive Wastes at the Holston Army Ammunition plant. To aid in your review of available technologies, some of which are scalable to suit your needs at Stresau, here are some further references:

- “Results of the Camp Minden Dialogue Process Facilitators’ Report March 13, 2015” <https://www.epa.gov/la/camp-minden-dialogue> - Camp Minden, Louisiana;
- Badger Army Ammunition Plant in Wisconsin. Technologies reviewed in the air permit application included mechanical and chemical removal; chemical deactivation; biological deactivation; fluid penetration; demolition; and enclosed burning. In the end, an alternative method of treatment was chosen (<http://www.dtic.mil/dtic/tr/fulltext/u2/p017719.pdf>); and
- “Evaluation of Alternative Technologies to Open Detonation for Treatment of Energetic Wastes at the Naval Air Weapons Station, China Lake, California January 2004” <http://www.dtic.mil/dtic/tr/fulltext/u2/a422227.pdf> - China Lake, California.

In addition, The Army Corps of Engineers published a summary guide “Alternatives to Open Burning/Open Detonation of Energetic Materials” in 1998 and this may still be useful (USACERL Technical Report 98/104) as a starting point. You were also provided with the contact information with a U.S. EPA official, Kenneth Shuster ([Shuster.kenneth@epa.gov](mailto:Shuster.kenneth@epa.gov); 703/308-8759) who has been active with the Department of Defense on OB/OD issues and alternative technologies. Mr. Shuster is a good source of information for DNR and we encourage you to contact him.

As mentioned at the meeting, under Air Management Program rules, open burning of explosive or dangerous material is prohibited under Ch. NR 429, Wis. Adm. Code unless there are no other safe means of disposal.

### **Waste Characterization and Counting**

With respect to reactive waste, a discussion of deactivation versus desensitization (defining these terms so we have a common understanding) and whether all or any of these waste streams remain D003 following desensitization would be helpful. You should identify the methodology of how waste is determined to be hazardous waste for purpose of OB/OD. Reactive waste is defined in our code in s. NR 661.23, Wis. Adm. Code. In reviewing this information, please consider whether there are ways to desensitize these waste as they are generated that would allow them to be managed as solid waste, thereby reducing the amount of hazardous waste generated and need for onsite management of reactive waste. In addition, please identify the rationale for each of the materials included in your email of July 13, 2016 being considered reactive. We encourage you to also discuss this with the Mr. Shuster as he may be able to provide some useful guidance.

Towards the end of the meeting, we discussed your annual reports. It appears that you do not include the total weight of all wastes being treated in the TTU, presumably all D003 wastes. Currently, only net explosive weight appears to be reported, but all wastes treated in the TTU must be reported with annual hazardous waste report certification. Also, all hazardous waste generated at your facility must be considered when making your generator status determination.

Summary

As promised, attached to this letter is a list of incompleteness items compiled as part of the initial review of the FPOR.

The department remains committed to providing Stresau with as much assistance as possible in order for you to prepare the Assessment/Evaluation of Alternatives report and, more importantly, implement one or more alternatives to open burning. We will schedule a follow up call with you the week of February 27<sup>th</sup> to check in on progress and answer any questions. We look forward to working with you.

Please contact me to discuss any of the above. I can be reached at (608) 267-3540 or by e-mail at [david.panofsky@wisconsin.gov](mailto:david.panofsky@wisconsin.gov).

Sincerely,

A handwritten signature in black ink that reads "David S. Panofsky". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

David S. Panofsky, P.E.  
Hazardous Waste Management Engineer

cc: Wane Olson – e-copy Stresau Laboratory, Inc.  
Ed Lynch – e-copy WA/5  
Mike Ellenbecker – e-copy Hazardous Waste Program Coordinator - Sturtevant  
Jill Schoen – e-copy Hazardous Waste Supervisor Eau Claire  
Susan Lindem – e-copy Air Management Program Supervisor Eau Claire  
Jae Lee – e-copy US EPA Region 5  
Ken Shuster – e-copy US EPA

enc.



## **GENERAL ISSUE**

The Department had difficulties in determining the completeness of this FPOR due to the fact that the checklist provided did not include any of Part II – Unit Requirements.

## **ITEMS OF INCOMPLETENESS**

### **PART I - GENERAL REQUIREMENTS**

#### **Section A. General Requirements per NR 670.010 to NR 670.014**

- A.9. Technical data, such as design drawings and specifications and engineering studies are certified by WI registered PE. NR 670.014(1).
- A.16. Description of procedures, structures or equipment used to the atmosphere. NR 670.0014(2)(h)6.

#### **Section F. Location Standards per NR 670.014(2)(k) and NR 670.014(2)(s) (Some of this information may be provided on the same map)**

- F.9. A dated topographic map showing a distance of 1,000 feet around the facility, with a scale of no more than 1 inch to 200 feet, and contour intervals that clearly shows pattern of surface water flow of waste management unit. NR 670.014(2)(s)
- F.10. Map shows map scale and date. NR 670.014(2)(s)1.
- F.12. Map shows surface waters, including intermittent streams. NR 670.014(2)(s)3
- F.13. Map shows surrounding land uses (residential, commercial, agricultural, recreational). NR 670.014(2)(s)4
- F.14. Map shows wind rose (prevailing wind speed and direction). NR 670.014(2)(s)5
- F.15. Map shows map orientation. NR 670.014(2)(s)6
- F.16. Map shows legal boundaries of the hazardous waste facility. NR 670.014(2)(s)7
- F.17. Map shows access control (fence, gates). NR 670.014(2)(s)8
- F.18. Map shows location of injection or supply wells on-site and off-site. NR 670.014(2)(s)9
- F.19. Map shows buildings and storage, treatment or disposal operations. NR 670.014(2)(s)10.
- F.20. Map shows other structures such as recreation areas, runoff control systems, roads, sewers, loading, unloading areas, etc. NR 670.014(2)(s)10.
- F.21. Map shows barriers for drainage or flood control. NR 670.014(2)(s)11.
- F.22. Map shows location of operational units where hazardous waste will be treated, stored or disposed. NR 670.014(2)(s)12.
- F.23. Facility is not located in a wetland. NR 670.014(2)(k)6.b.
- F.24. Facility is not located in a critical habitat for threatened or endangered species. NR 670.014(2)(k)6.a.

#### **Section I. General Inspection Requirements per NR 670.014(2)(e)**

- I.2. Description of problems checked during the inspection. NR 664.0015(2)(c)
- I.8. Areas subject to spills inspected daily when in use. NR 664.0015(2)(d)
- I.9. Inspection frequency for other areas based on deterioration of equipment and probability of environmental or human health incident if problem goes undetected between inspections. NR 664.0015(2)(d)
- I.10. Schedule to remedy ensures problem does not lead to environmental or health hazard. NR 664.0015(3)
- I.11. Inspection log will be kept for at least 3 years and includes date and time of inspection; inspector name; observations made; date and type of remedial actions. NR 664.0015(4)

#### **Section L. Closure Plan Requirements per NR 670.014(2)(m)**

- L.2. Description of how each unit will close during partial or final closure to minimize the need for further maintenance. NR 664.0112(2)(a)
- L.3. Description of how each unit will close during partial or final closure to control, minimize or eliminate post-closure escape of hazardous waste constituents. NR 664.0112(2)(a)

- L.4. Description of the maximum extent of operations during the active life of the facility. NR 664.0112(2)(b)
- L.5. Estimate of maximum inventory during active life of facility. NR 664.0112(2)(c)
- L.6. Description of methods used to remove, transport, treat, store, and dispose of all hazardous waste during partial and final closure. NR 664.0112(2)(c)
- L.7. Identification of the types of off-site hazardous waste management units to be used. NR 664.0112(2)(c)
- L.8. Detailed description of steps needed to remove or decontaminate all hazardous waste residues and contaminated equipment, structures and soils during partial and final closure. NR 664.0112(2)(d)
- L.9 Detailed description of other activities necessary to ensure all partial and final closures satisfy the closure performance standards. NR 664.0112(2)(e)
- L.10. During closure of container areas, all hazardous waste and residues will be removed from the containment system; remaining contaminated structures and soil will be decontaminated or removed. NR 664.0178
- L.11. During closure of tank systems, all waste residues, contaminated containment system components, soils, structures and equipment is decontaminated or removed. NR 664.0197(1)
- L.12. Schedule for closure of each hazardous waste management unit and final closure of the facility. NR 664.0112(2)(f)
- L.13. The estimated year of final closure if the financial mechanism is a trust fund and the facility expects to close before the operating license expires. NR 664.0112(2)(g)
- L.14. Alternative requirements for closure established by the department. NR 664.0112(2)(h)
- L.15. Department will be notified at least 180 days prior to partial or final closure. NR 664.0112(4)(a)
- L.16. Within 90 days of receiving the final volume of hazardous waste, all hazardous waste is treated, or removed from the unit or facility. NR 664.0113(1)
- L.17. Partial and final closure activities are completed within 180 days after receiving the final volume of hazardous waste. NR 664.0113(2)
- L.18. All contaminated equipment, structures, and soils will be properly disposed of or decontaminated. NR 664.0114
- L.19. Within 60 days of completing final closure, a certification of closure will be sent to the department. NR 664.0115

**Section M: Closure cost estimate and financial responsibility per NR 670.014(2)(o)** – this closure plan must address the closure of the TTU and surrounding area that may have been effected by it operation.

- M.2. Cost estimate equals the cost of final closure when facility operations make closure the most expensive. NR 664.0142(1)(a)
- M.3. Cost estimate is based on hiring a third party to close the facility. NR 664.0142(1)(b)
- M.4. Cost estimate does not incorporate any salvage value of hazardous waste, structures, equipment, land or assets. NR 664.0142(1)(c)
- M.5. Closure estimate does not include a zero cost for hazardous waste that might have economic value. NR 664.0142(1)(d)
- M.6. Facility has established financial assurance that covers the closure cost estimate. NR 664.0143
- M.7. The financial assurance mechanism meets all applicable requirements in NR 664.0143.
- M.8. If a new facility, the financial assurance is submitted 60 days prior to initial receipt of waste. NR 670.014(2)(o)

## **PART II – UNIT REQUIREMENTS**

### **Section J: Standards for Miscellaneous Units – Storage and Treatment per NR 670.023**

- J.4. Prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in the groundwater or subsurface environment, considering items J.5. to J.13. NR 664.0601(1)
- J.5. The volume and physical and chemical characteristics of the waste in the unit, including potential for migration through soil, liners or other containing structures. NR 664.0601(1)(a)
- J.9. Proximity to and withdrawal rates of current and potential groundwater users. NR 664.0601(1)(e)
- J.11. Potential of migration or deposition of waste constituents into subsurface physical structures and into the root zone of food-chain crops and other vegetation. NR 664.0601(1)(g)

- J.12. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(1)(h)
- J.13. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(1)(i)
- J.14. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, wetlands, or on soil surface, considering J.15.- J.25. NR 664.0601(2)
- J.16. Effectiveness and reliability of containing, confining and collecting systems and structures in preventing migration. NR 664.0601(2)b.
- J.18. Precipitation patterns in the region. NR 664.0601(2)d.
- J.19. Quantity, quality and direction of groundwater flow. NR 664.0601(2)e.
- J.20. Proximity of the unit to surface waters. NR 664.0601(2)f.
- J.21. Current and potential uses of nearby surface waters and any water quality standards established for those surface waters. NR 664.0601(2)g.
- J.22. Existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils. NR 664.0601(2)(h)
- J.24. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(2)(j)
- J.25. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(2)(k)
- J.26. Prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering J.27. to J.33. NR 664.0601(3)
- J.27. Volume, physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates. NR 664.0601(3)a.
- J.28. Effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air. NR 664.0601(3)b.
- J.29. Operating characteristics of the unit. NR 664.0601(3)c.
- J.30. Atmospheric, meteorologic and topographic characteristics of the unit and the surrounding area. NR 664.0601(3)d.
- J.31. Existing quality of the air, including other sources of contamination and their cumulative impact on the air. NR 664.0601(3)e.
- J.32. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(3)f.
- J.33. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(3)g.
- J.34. Inspection procedures and frequencies minimize or prevent releases that may have adverse effects on human health or the environment. NR 664.0602
- J.35. Detailed hydrologic, geologic and meteorologic assessments and land-use maps for the region surrounding the site that address and ensure compliance of the unit with each factor in J.4. to J.33. NR 670.023(2)
- J.36. Only preliminary hydrologic, geologic and meteorologic assessments are submitted if the applicant demonstrates they do not violate the environmental performance standards in J.4. to J.33. NR 670.023(2)
- J.37. Information on the potential pathways of exposure of humans or environmental receptors to hazardous waste constituents and the potential magnitude and nature of exposures. NR 670.023(3)
- J.38. For treatment units, a report on a demonstration of the effectiveness of the treatment based on laboratory or field data. NR 670.023(4)
- J.39. Additional information necessary to evaluate if the unit complies with the environmental performance standards in J.4 to J.33., as determined by the department. NR 670.023(5)

## **ITEMS NOT TECHNICALLY ADEQUATE**

### **PART I - GENERAL REQUIREMENTS**

#### **Section L. Closure Plan Requirements per NR 670.014(2)(m)**

- L.15. Department will be notified at least 180 days prior to partial or final closure. NR 664.0112(4)(a). A closure time frame is not specifically listed in the FPOR.

- L.16. Within 90 days of receiving the final volume of hazardous waste, all hazardous waste is treated, or removed from the unit or facility. NR 664.0113(1). Clarify how the closure schedule in Chapter 19 will meet the requirements of s. NR 664.0113(1).
- L.17. Partial and final closure activities are completed within 180 days after receiving the final volume of hazardous waste. NR 664.0113(2). Clarify how the closure schedule in Chapter 19 will meet the requirements of s. NR 664.0113(2).

**Section N: Pollution Liability Insurance per NR 670.014(2)(q)**

- N.3. Coverage for sudden accidental occurrences of at least \$1 million per occurrence with annual aggregate of at least \$2 million. NR 664.0147(1). Attachment 21o, provides only \$250,000 for each incident and \$1,000,000 in emergency response costs.

**PART II – UNIT REQUIREMENTS**

**Section J. Standards for Miscellaneous Units – Storage and Treatment per NR 670.023**

- J.7. The existing quality of groundwater, including other sources of contamination and their cumulative impact on groundwater. NR 664.0601(1)(c). Provide additional information on public or private water supply ground water quality within 1500 feet of the TTU.
- J.15. Volume and physical and chemical characteristics of the waste in the unit. NR 664.0601(2)a. TCLP testing on the hazardous ash for other RCRA organic constituents should be performed.
- J.31. Existing quality of the air, including other sources of contamination and their cumulative impact on the air. NR 664.0601(3)e. At a minimum the FPOR should state whether the county or portions of it, are in attainment or non-attainment of ambient air quality standards.
- J.40. If an existing miscellaneous unit located in a 100-year floodplain is not designed, constructed, operated and maintained to prevent washout, a demonstration that no adverse effects on human health or the environment will result if washout occurs, considering the volume and physical and chemical characteristics of the waste, and the concentrations and potential impacts of hazardous constituents on surface waters, sediments or soils. NR 664.0018(2)(a)2. It is not clear based on attachment 21m whether or not the miscellaneous unit is within the 100-year floodplain.



R Stresau Laboratory Inc.  
N8265 Medley Road, Spooner, WI 54801  
Phone: 715-635-2777  
Fax: 715-635-7979  
www.stresau.com

*“Excellence in Energetics”*

---

May 10, 2017

David S. Panofsky  
Environmental Engineer  
WDNR – Solid and Hazardous Waste Management  
101 S. Webster Street  
P. O. Box 7921  
Madison, WI 53707-7921

Re: Alternative Assessment/Evaluation  
EPA ID #: WID020488011  
FID #: 866009320

Dear Mr. Panofsky,

This letter, and accompanying material, are in reply to your requirement for Stresau to conduct an in-depth assessment and evaluation of our current practice of OB/OD in treating our generated reactive waste streams.

Along with your letter, you provided us with copies of letters and reference material to aid in our research. Unfortunately, the U.S. EPA official, Kenneth Shuster, did not reply to our request for assistance.

The research conducted and evaluation of the findings on alternatives to OB/OD as it applies to our facility, are detailed in the accompanying *Summary & Conclusion* and *Research & Evaluation Details*.

After reviewing the provided information, we're hopeful that you will be in agreement with our conclusion, and proceed with the re-permitting process. Please let me know if you have additional questions.

Truly yours,

Richard Hoff  
*Compliance Specialist*

Cc: Edward Lynch, P.E., WDNR  
Susan Lindem, WDNR  
Wane Olson, COO  
file

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Wisconsin Green Tier participant

## FPOR OB/OD Research & Evaluation Details

The following provides detail of the research and evaluation of alternatives to the current OB/OD practice at Stresau's Thermal Treatment Unit (TTU).

### *Waste Streams*

The waste streams currently processed at the TTU fall into one of three categories: 1) Daily Waste; 2) All of these are categorized as 'Reactive'<sup>1</sup> waste. The

*Daily Waste:* This is material collected each day of operation from a production building or area where

### *Alternatives to OB/OD: On-site Processing*

From research performed, it was noted that advances in the treatment and disposal of reactive materials has indeed progressed; however, many of them cannot be 'scaled down' proportionally to be effective or efficient.

As we are mainly involved in

- 
2. The US Army Corps of Engineers, Engineer Research and Development Center (ERDC) performed an evaluation for the

1.

*Alternatives to OB/OD: Off-site Disposal*

One alternative discussed to explore is off-site disposal of all or some of the reactive waste streams.

1.

2. Commercial Facility:

- a. WRR Environmental Services, Eau Claire, WI, is utilized to dispose of our TTU ash, and periodic lab packs. They cannot accept any reactive wastes.
- b. Clean Harbors, Colfax, LA, is permitted to accept and process  
or daily wastes. Disposal fees were quoted at \$75 per pound,  
plus an Estimated Recovery Fee of \$4,600 per shipment, not including pick-up and  
transportation costs.
- c. GD OTS, Joplin, MO, is permitted to accept and process and  
but not daily waste. Disposal fees were quoted at \$300 per pound. There is  
currently a 'waiting list' in excess of 6-months.



3. Transportation:

- a. Any reactive material that is shipped on a public highway must have a proper DOT classification (EX Number).
- b.
- d. Daily waste does NOT have an established EX Number.
- e. Reactive waste characterization to assign an EX Number is a long (often in excess of a year) and expensive process.
- f.
- g. Shipping to Clean Harbors, Colfax, LA, is quoted at \$6,035.00, plus loading time at a rate of \$107.00 per hour.
- h. Shipping to GD OTS, Joplin, MO, is quoted at \$2,500.00.

*Air Emissions Considerations:*

From the reference materials provided and suggested, it's apparent that air emissions, or the 'perception' of it, is of primary concern. However, from past modeling performed and more recent studies, this may not be as much of a concern – at least as far as Stresau's involvement. Supporting information as follows:

1. Environmental Analysis and Decision on the Need for an Environmental Impact Statement (EIS), Davis J. Kafura, Hazardous Waste Specialist, Wisconsin Department of Natural Resources – Northwest District (circa 2005): Refer to page 3, Item 8 – Emissions and Discharges (copy accompanying).
  - a. “A dispersion modeling and inhalation risk screening analysis for specific emissions, such as heavy metals, was conducted by DNR's Air Management Program. The modeling assumed a worst case scenario; all material placed into the unit was emitted into the air, the unit was operated for 4 hours per day 365 days per year. The point of maximum air quality impact was found to be near the Stresau property boundary, on it's northeast side. The dispersion modeling showed that the hazardous air pollutant concentrations were below the regulatory levels set forth in Chapter NR 445, Wis. Admin. Code, and the National Ambient Air Quality Standards for lead, particulate matter, nitrogen oxides and carbon monoxide.”
2. Dispersion modeling and inhalation risk screening analysis of hazardous air pollutant emissions from the Thermal Treatment Unit (TTU) at Stresau Laboratory, Inc. (FID866009320#), Orlando Cabrera-Rivera and Jeff Meyers, DNR, November 22, 1995. (copy accompanying).
3. *Debunking the Myth of Open Burning/Open Detonation's Environmental Unacceptability*, MacDonald B. Johnson, U.S. Army Dugway Proving Ground, Dugway, UT, and, Douglas P. Bacon, ECO, L.C., Salt Lake City, UT, *August, 1994*:
  - a. Page 1: “Introduction: For more than 40 years, open burning/open detonation (OB/OD) procedures have been the mainstay of energetic-ordnance disposal activities. Because these thermal treatment processes have been safe, reliable, expeditious, and economical, both government and industry felt little incentive until the early 1980s to develop other means for destroying the preponderance of unwanted munitions. In the last decade, however, OB/OD operations have been under a cloud of environmental suspicion, and provisions of the Resource Conservation and Recovery Act subpart X sparked

widespread concern that many or most OB/OD sites would be closed by the end of 1991. The ammunition community continues to bear these concerns.”

- b. Page 2: “Perception: The prevailing perceptions that OB/OD scientific team faced as the AMCCOM study began were complex. The beliefs that OB/OD operations were inherently dirty and environmentally unacceptable had been spoken so often that they had become unquestionable. Some regulators wondered if DoD was avoiding characterizing OB/OD emissions believing that any such study would confirm that open-air disposal was as bad as suspected. Others felt that predictive models could generate sufficient combustion-product data.”
- c. Page 11: “The Bottom Line – Environmental Suitability: Results show that OB/OD is a viable and effective means of destroying many unwanted conventional energetic materials. The high temperatures of detonation and burn fireballs (which incinerators or furnaces cannot achieve), destroy all dangerous compounds generated at the instant of explosion detonation and propellant ignition.

Open burning and open detonation disposal procedures are environmentally suited for many or most conventional energetic munitions. These thermal treatments are alive and well, and should not be misunderstood or ignored.”

- 4. *Production of dioxins and furans from the burning of excess gun propellant*: Isabella Poulin; Sonia Thiboutot; Sylvie Brochu; DRDC Valcartier TR 2009-365; Defence R&D Canada – Valcartier; January 2011 –
  - a. “Results: The tests that were carried out indicated that the production of dioxins and furans was not related to the combustion pattern, mass or composition of the propellant, but to the presence of the igniter. The accepted procedure published by the Canadian Forces requires the use of a railroad fuse (like the warning flares used on roads at night) to ignite the gun propellant, and this leads to the production of undesired contaminants.”

*Summary:*

- 1. Waste Streams: Stresau has three (3) distinct waste streams, each being reactive or containing reactive materials, but not necessarily compatible, requiring separate OB/OD.
- 2. Alternatives to OB/OD: On-site Processing:
  - a. Of the DoD facilities referenced and researched, all continue to OB/OD at various levels while some have adapted alternative practices.
  - b. In consideration of on-site alternatives, the \_\_\_\_\_ restricts disposal to only one (1) waste stream, and is cost prohibitive. The commercial incinerator may be able to process two (2) of the waste streams; however, this unit may prove unreliable, and is cost prohibitive for the amount of wastes generated.
- 3. Alternatives to OB/OD: Off-site Disposal
  - a. DoD facilities are prevented, by law, from accepting and processing of any material from off-site sources.

- b. Commercial facilities are currently not available, cannot process all three (3) waste streams and would prove to be cost prohibitive.
  - c. As not all wastes are properly categorized, DOT regulations would prevent shipping material off-site.
4. Air Emissions Considerations:
- a. From WDNR studies and reports, all air emissions are below Wisconsin Statute and federal levels, using 'worst case' scenario of burning 4 hours per day, 365 days per year. In reality, Stresau conducts an average of 40 burns per year.
  - b. Outside research and analysis concludes that OB/OD emissions do not generate hazardous emissions, mostly due to the high temperatures from explosion detonation and propellant ignition.
5. Conclusion:
- a. There are three (3) distinct waste streams to be disposed of, with compatibility being an issue.
  - b. Off-site disposal is either prohibited by law, or unreliable and cost prohibitive.
  - c. Transportation to off-site facilities cannot be made for all waste streams.
  - d. Research and analysis have proven that OB/OD does not generate hazardous emissions.
  - e. From this research and evaluation, Stresau concludes that re-permitting of the current TTU and continued operations is the most viable solution at this time.

## FPOR OB/OD Alternatives: Summary & Conclusion

### ***Summary:***

#### Waste Streams:

Stresau has three (3) distinct waste streams, each being reactive or containing reactive materials, but not necessarily compatible with one another, requiring separate OB/OD.

#### Alternatives to OB/OD: On-site Processing:

Of the DoD facilities referenced and researched, some have adapted alternative practices; however, all continue to OB/OD at various levels.

In consideration of on-site alternatives, the detonation chamber restricts disposal to only one (1) waste stream, and is cost prohibitive. The commercial incinerator may be able to process two (2) of the waste streams; however, this unit may prove unreliable, and is cost prohibitive for the amount of wastes generated.

#### Alternatives to OB/OD: Off-site Disposal

are prevented, by law, from accepting and processing of any material from off-site sources. Commercial facilities are currently not available, cannot process all three (3) waste streams and would prove to be cost prohibitive. As not all wastes are properly categorized, DOT regulations would prevent shipping material off-site.

#### Air Emissions Considerations:

Using 'worst case' scenario modeling of burning 4 hours per day, 365 days per year, all air emissions would be below Wisconsin Statute and federal regulatory levels, based upon WDNR studies and reports. Since Stresau conducts an average of 40 burns per year, emissions would be less than 10%, which would be an insignificant amount.

Outside research and analysis concludes that OB/OD emissions do not generate hazardous emissions, mostly due to the high temperatures from explosion detonation and propellant ignition.

**Note:** Refer to *FPOR OB/OD Research & Evaluation Details* for additional information on each section above.

***Conclusion:***

We process and dispose of three (3) distinct reactive waste streams in our TTU. For safety considerations, each of these must be destroyed in accordance with We continually strive to reduce the content and quantity of each waste stream, thereby minimizing the required OB/OD.

We regularly revisit the option of off-site disposal of some of our reactive waste material; however, this is severely restricted by DOT shipping classifications, concern for public safety during transportation, the regular availability of commercial disposal facilities and the ever increasing associated high cost of transportation and disposal.

Even with the vast amount of information provided concerning available, or potentially available, treatment technologies, the applicable options for on-site treatment are limited to only two. Neither of these two options can provide treatment for all three of our waste streams. Both of these options are very expensive to purchase and install, have high on-going maintenance costs and questionable reliability.

Extensive research performed on 'perceived' hazardous air emissions have reported no such emissions associated with open-burning, open-detonation of explosives and munitions. Given our low TTU permit limit and number of annual burns, we are at but a fraction of the 'worst case scenario'.

From this research and evaluation, Stresau concludes that re-permitting of the current TTU and continued operations is the most viable solution at this time.

State of Wisconsin  
DEPARTMENT OF NATURAL RESOURCES  
101 S. Webster Street  
Box 7921  
Madison WI 53707-7921

Scott Walker, Governor  
Daniel L. Meyer, Secretary  
Telephone 608-266-2621  
Toll Free 1-888-936-7463  
TTY Access via relay - 711



December 7, 2017

File Ref: FID 866009320  
WASHBURN  
HW / CORR

Mr. Wane Olson  
R. Stresau Laboratory, Inc.  
N8265 Medley Rd.  
Spooner, WI 54801

Subject: Alternatives Assessment/Evaluation Report  
Stresau Laboratory, Inc.  
EPA ID #: WID020488011  
FID #: 866009320

Dear Mr. Olson:

Thank you for the Alternative Assessment/Evaluation Report dated May 10, 2017, and received by the department on May 16, 2017. The report was a response to the department's request for an alternatives analysis to open burning of energetic wastes generated at Stresau Laboratory. This request was part of the Hazardous Waste Management Program review of Stresau's FPOR (feasibility and plan of operation report), which is an element of the renewal process for hazardous waste treatment licensing under s. NR 670.050(1), Wis. Adm. Code (Hazardous Waste Licensing and Decision Making Procedures). In evaluating the treatment license, the department is required to review the application and make a determination in accordance with ss. NR 670.010 to 670.014, and s. NR 670.023, Wis. Adm. Code.

On February 15, 2017, representatives of the department met with you and stated that as part of the hazardous waste licensing renewal process, the department reviews the type of technology proposed during the relicensing process. In the process of reviewing the information submitted by Stresau, the department determined that a number of alternative technologies have been implemented at OB/OD sites across the country. Many of these technologies have become available on a commercial basis to treat energetic reactive waste.

The report submitted by Stresau covered some alternative on-site management technologies, as well as management options for these wastes at one or more off-site locations. The report briefly touched on costs associated with one (not including set up and other expenses) and two off-site disposal facilities (with one or more of those facilities using OB/OD) and associated transportation expenses.

In addition to the Hazardous Waste Management Program review, the alternatives report was submitted to the Air Management Program in order to evaluate the alternatives in the context of ch. NR 429, Wis. Adm. Code (Malodorous Emissions and Open Burning). Open burning of explosive or dangerous material is prohibited under Ch. NR 429, Wis. Adm. Code unless there are no other safe means of disposal. The Air Management Program has determined that Stresau's OB/OD miscellaneous thermal treatment unit is open burning and the department believes there are other safe means of disposal commercially available, either on-site or off-site. Please refer to the attached memo dated July 10, 2017 for the Air Management determination.

As an outcome of the Air Program review, the Hazardous Waste Management Program can consider relicensing the miscellaneous unit when Stresau's FPOR proposes implementation of an alternative technology.

The department understands that any decision to change the way Stresau currently manages its various waste streams could impose new capital costs and operational challenges. We remain committed to providing Stresau with as much assistance as possible for a successful transition, within a reasonable time frame, to implement one or more alternatives to open burning. Please contact the department at your earliest convenience to schedule a meeting, answer any questions you may have, and to develop an implementation plan. We look forward to continuing to work with you on this important issue.

If you have any questions about this letter, please contact David Panofsky at (608) 267-3540 or by email at [david.panofsky@wisconsin.gov](mailto:david.panofsky@wisconsin.gov).

Sincerely,




Andrea Keller, Chief  
Hazardous Waste Prevention and Management Section  
Bureau of Waste and Materials Management

cc: Barbara Coulter – e-copy – Compliance Specialist R. Stresau  
James Yach – e-copy - Secretary's Director Northern Region - Rhinelander  
Joe Van Rossum – e-copy - Program Director Waste & Materials Management – WA/5  
David Panofsky – e-copy - WA/5  
Mike Ellenbecker – e-copy - Hazardous Waste Program Coordinator - Sturtevant  
Jill Schoen – e-copy - Hazardous Waste Supervisor - Eau Claire  
Susan Lindem – e-copy - Air Management Program Supervisor - Eau Claire

enc.

DATE: July 10, 2017

TO: Ed Lynch – WA/5

FROM: Kristin Hart – AM/77 

SUBJECT: Stresau Laboratory, Inc. – FID# 866009320, US EPA ID# WID020488011

The purpose of this memo is to provide input to the Hazardous Waste Program with respect to Stresau Laboratory's Alternative Assessment/Evaluation to open burning/open detonation (OB/OD) received by the department on May 16, 2017.

The Air Management Program is aware that the Hazardous Waste Management Program is reviewing a FPOR (feasibility and plan of operation report) for a miscellaneous hazardous waste treatment unit. We understand that this miscellaneous unit has been permitted through your program twice before (in 1996 and again in 2006). The Air Program weighed in a number of years ago on aspects of operation and also performed air pollutant dispersion modeling.

The Air Management Program describes the thermal treatment unit (TTU) as open burning and therefore subject to the open burning regulations contained in ch. NR 429, Wis. Adm. Code. Specifically, s. NR 429.04(1)(d), Wis. Adm. Code, prohibits open burning except "burning of explosive or dangerous material for which there is no other safe means of disposal."

Based on the information presented in the Alternative Assessment/Evaluation report; information submitted in the FPOR; and alternatives identified at Badger Army Ammunition Plant in Wisconsin, safe means of disposal are currently available. In addition, management at an off-site location might be possible, albeit with difficulty to classify and package wastes for shipment to hazardous waste facilities capable of managing these wastes.

The Air Management Program received a notice of intent to operate under s. NR 407.03(1m), Wis. Adm. Code, in January of 2016. This is an air pollution control operation permit exemption notice and certification by the facility that they meet the exemption criteria. It is not an approval by the air program. Sources claiming this exemption must keep the following records to assure compliance and maintain exempt status:

1. Keep records adequate to show that the facility's annual actual emissions remain below the exemption thresholds. Records should be kept on site for at least 5 years.
2. If a control device is used to reduce air pollution emissions, conduct monitoring and keep records of control device parameters as required in s. NR 439.055, Wis. Adm. Code.
3. Report emissions annually if required under ch. NR 438, Wis. Adm. Code.
4. Comply with all applicable requirements in NR 400 – 499, Wis. Adm. Code and any other applicable federal, state or local regulations.

Let me know if you have any questions.





January 24, 2018

File Ref: FID 866009320  
WASHBURN  
HW / CORR

Mr. Wane Olson  
R. Stresau Laboratory, Inc.  
N8265 Medley Rd.  
Spooner, WI 54801

Subject: On-Site Meeting; January 16, 2018  
Stresau Laboratory, Inc.  
EPA ID #: WID020488011  
FID #: 866009320

Dear Mr. Olson:

Thank you for meeting with Jill Schoen, David Panofsky and me at your facility on January 16, 2018, to discuss the department letter dated December 7, 2017. We appreciate your willingness to discuss Stresau's specific business constraints and the unique challenges of managing your energetic and reactive wastes. It was also beneficial to meet Barbara Coulter, your new environmental manager, along with Richard Hoff, your recently retired environmental manager.

The purpose of the meeting was to address the referenced letter in which the department stated that there are currently safe alternatives to OB/OD (open burn/open detonation). As such, the Hazardous Waste Prevention and Management Section will work with Stresau on the relicensing process, through a revised FPOR, when alternative technology or technologies have been proposed. This letter briefly summarizes our conversation and agreed upon next steps.

As stated during the meeting, there are commercially available energetic waste treatment technologies that have emerged since the last hazardous waste treatment license was granted, about ten years ago. While we recognize that not all technologies will be appropriate for your facility operations, available technologies such as alkaline hydrolysis, static kilns or detonation chambers, incineration and super critical water oxidation have been identified as alternatives to OB/OD.

The outcome of the meeting is summarized below:

- The department agreed to provide Stresau contact information (consultants or vendors) that may be of assistance regarding the implementation of alternative technologies for treatment of energetic wastes.
- The department agreed to continue to assist Stresau with the evaluation of potential regulatory issues (e.g., air permitting) relating to the implementation of proposed alternatives.
- Stresau agreed to provide the department, within six months of the date of the meeting, an actionable plan with detailed assessments of each waste stream and a comprehensive evaluation of alternatives to OB/OD, including potential treatment off-site for those waste streams. As part of this process, Stresau intends to draft and issue a request for proposal (RFP) appropriate to the scope of work anticipated, develop a timeline/schedule for meeting the 6-month commitment, and communicate progress with the department.

As previously stated, the department remains committed to providing Stresau with assistance, as appropriate, regarding implementation of one or more alternatives to open burning. David Panofsky will call Barbara the week of January 29<sup>th</sup> to check in on progress and answer any questions. We look forward to working with you.

Please contact me or David discuss any of the above. David can be reached at (608) 267-3540 or by e-mail at [david.panofsky@wisconsin.gov](mailto:david.panofsky@wisconsin.gov). My phone is (608) 267-3132 and e-mail [andrea.keller@wisconsin.gov](mailto:andrea.keller@wisconsin.gov).

Sincerely,



Andrea Keller, Chief  
Hazardous Waste Prevention and Management Section  
Bureau of Waste and Materials Management

cc: Barbara Coulter – e-copy – Compliance Specialist R. Stresau  
James Yach – e-copy - Secretary's Director Northern Region - Rhinelander  
Joe Van Rossum – e-copy - Program Director Waste & Materials Management – WA/5  
David Panofsky – e-copy - WA/5  
Mike Ellenbecker – e-copy - Hazardous Waste Program Coordinator - Sturtevant  
Jill Schoen – e-copy - Hazardous Waste Supervisor - Eau Claire  
Susan Lindem – e-copy - Air Management Program Supervisor - Eau Claire

## Marc Makela

---

**From:** Sholly, Dustin S - DNR <Dustin.Sholly@wisconsin.gov>  
**Sent:** Monday, February 17, 2020 4:06 PM  
**To:** Marc Makela  
**Cc:** Panofsky, David S - DNR  
**Subject:** Stresau OFR update (RE: DNR Required Documents)

Hey Marc,

Thanks for reaching out again, I apologize for not getting back to you with the required dates, as I promised.

First, Owner Financial Responsibility (OFR) is managed separately than all other requirements, it is not correlated with WAMS. I'm sorry to hear about your troubles, please keep in touch with Megan and submit your annual HW report when you're able.

Second, there are two things Stresau is required to maintain regarding OFR, which are outlined below. Both items shall automatically renew until we're notified otherwise. All OFR correspondence is handled by me, any documents may be sent to my attention at the address in my signature below.

- 1) **Closure: Letter of Credit #SLC-9248, with Johnson Bank, in the current amount of \$32,000.00, while the required minimum by 6/2/2020 is \$31,438.28 (currently overfunded by \$561.72)**
  - a. Updating Cost Estimate for Inflation:
    - i. Approved estimate on 2/28/2006 = \$24,507.00 (2006 dollars)
    - ii.  $\$24,507 * 1.2829$  (compound inflation factor) = \$31,438.28 (2020 dollars)
    - iii. NR 664.0142(2) specifies inflation adjustments to the cost estimate shall be made 60 days prior to the original mechanism's establishment.
      1. LOC # SLC-9248 was originally established on 6/2/2008.
      2. Therefore, **adjustments to the closure cost estimate must be made by April 3<sup>rd</sup> every year** (I'm providing this for 2020, \$31,438.28)
  - b. Updating Letter of Credit to match cost estimate:
    - i. NR 664.0143(4)(g) specifies the mechanism shall be adjusted within 60 days of the cost estimate increase
      1. Cost estimate increases on 4/3/2020 to \$31,438.28
      2. (If the adjusted cost estimate > the current LOC amount), **the LOC must be adjusted by June 2<sup>nd</sup>** (not necessary this year)
- 2) **Liability: Certificate of Liability Insurance for Policy #003157600, with Ironshore Specialty Insurance Company, issued on 5/13/2017.**
  - a. **Covers sudden accidental occurrences, \$1m per occurrence and \$2m annual aggregate**
  - b. Meets the minimum requirements in NR 664.0147
  - c. No need for inflation adjustments or renewal notices

**If there are any changes to the Closure LOC or Liability Insurance for any reason, we must approve those changes before they occur. If there are any changes to the closure cost estimate for any reason other than inflation (change in operation or so), please let us know ASAP.** If neither of those apply, **no further action is required until 4/3/2021**, when the closure cost estimate needs to be adjusted for inflation (if that amount exceeds \$32,000, adjusting the LOC will be necessary by 6/2/2021).

Feel free to give me a call if you'd like to discuss OFR further.

Best,  
Dustin

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**Dustin Sholly**

Owner Financial Responsibility Specialist – Waste and Materials Management  
Wisconsin Department of Natural Resources  
101 S. Webster St., Madison, WI 53703  
Phone: (608) 267-3133  
[dustin.sholly@wisconsin.gov](mailto:dustin.sholly@wisconsin.gov)



**From:** Heilman, Cheryl W - DNR <Cheryl.Heilman@wisconsin.gov>  
**Sent:** Thursday, June 10, 2021 2:14 PM  
**To:** Anders Helquist <AHelquist@weldriley.com>  
**Cc:** Sponseller, Bart A - DNR <Bart.Sponseller@wisconsin.gov>; Ellenbecker, Michael J - DNR <Michael.Ellenbecker@wisconsin.gov>; Bonar-Bridges, James I - DNR <James.BonarBridges@wisconsin.gov>; Keller, Andrea L - DNR <Andrea.Keller@wisconsin.gov>  
**Subject:** RE: Follow up on Stresau Call - Information from DNR and Possible Dates for Next Meeting

Hello Anders,

DNR has done some follow up ourselves on the issues we discussed in our last call and I've attached here a summary of what we have learned.

We would like to schedule another call with Stresau and Stresau's consultant to continue our discussions on a path forward.

Here are some times that currently work for DNR:

July 12 2-3 pm

July 13 10-11 am

July 14 10-noon

July 15 2-3 pm

We can discuss the agenda and would plan to send you one before the meeting, and we would certainly appreciate any response to the information I've attached here or other relevant information from DOT or DOD that we should be aware of ahead of time.

Give me a call as your time permits and we can set up our next meeting.

Thanks,

Cheryl

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**Cheryl Heilman**

General Counsel

Wisconsin Department of Natural Resources

101 S. Webster St.

Cell Phone: (608) 338-9156

[cheryl.heilman@wisconsin.gov](mailto:cheryl.heilman@wisconsin.gov)



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**From:** Anders Helquist <[AHelquist@weldriley.com](mailto:AHelquist@weldriley.com)>  
**Sent:** Thursday, May 20, 2021 7:58 AM  
**To:** Heilman, Cheryl W - DNR <[Cheryl.Heilman@wisconsin.gov](mailto:Cheryl.Heilman@wisconsin.gov)>  
**Cc:** Sponseller, Bart A - DNR <[Bart.Sponseller@wisconsin.gov](mailto:Bart.Sponseller@wisconsin.gov)>; Ellenbecker, Michael J - DNR <[Michael.Ellenbecker@wisconsin.gov](mailto:Michael.Ellenbecker@wisconsin.gov)>; Bonar-Bridges, James I - DNR <[James.BonarBridges@wisconsin.gov](mailto:James.BonarBridges@wisconsin.gov)>  
**Subject:** RE: Follow up on Stresau Call

Good morning Cheryl -- We'll get a summary out to you by early next week.

Thank you,  
Anders

Anders Helquist, Attorney  
Weld Riley, S.C.  
Phone: 715-839-7786  
Fax: 715-839-8609  
E-mail: [ahelquist@weldriley.com](mailto:ahelquist@weldriley.com)

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**From:** Heilman, Cheryl W - DNR <[Cheryl.Heilman@wisconsin.gov](mailto:Cheryl.Heilman@wisconsin.gov)>  
**Sent:** Wednesday, May 19, 2021 12:52 PM  
**To:** Anders Helquist <[AHelquist@weldriley.com](mailto:AHelquist@weldriley.com)>  
**Cc:** Sponseller, Bart A - DNR <[Bart.Sponseller@wisconsin.gov](mailto:Bart.Sponseller@wisconsin.gov)>; Ellenbecker, Michael J - DNR <[Michael.Ellenbecker@wisconsin.gov](mailto:Michael.Ellenbecker@wisconsin.gov)>; Bonar-Bridges, James I - DNR <[James.BonarBridges@wisconsin.gov](mailto:James.BonarBridges@wisconsin.gov)>  
**Subject:** Follow up on Stresau Call

Anders,

Thanks again for meeting with DNR today. As a follow up, could you provide a summary to us of the DOT regulatory issues and the DOD recommendations/requirements that you and Stresau representatives discussed in our call?

We will be sending you options for a date/time for our next call, likely some time in June. We will also be sending a proposed agenda and would like to continue the discussion in our next call with Stresau representatives and the consultant Stresau has retained.

Let me know when you might be able to send us a summary of the items we discussed today – we want to be sure we have reviewed the materials before our next call.  
Thanks!

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**Cheryl Heilman**

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## DNR Follow Up on EX Approvals for Transporting Waste – June 2021

In the department's call with Stresau on May 19, 2021, Stresau discussed the need for EX approval numbers should Stresau wish to consider transporting the hazardous wastes that Stresau generates for treatment and disposal at an off-site location.

To gain a better understanding of these EX approval numbers that are required by 49 CFR 173.56(b), which requires that all new  that are to be shipped to have an EX approval number that was issued by U.S. DOT, the department reviewed [PHMSA's website](#) and found a webpage which can be searched for the EX approval numbers that have been issued by U.S. DOT. Using the following search parameters

Hazardous Materials Approvals Search Page

Please use this search to find hazardous materials approvals.

Approval Number  Tracking Number

Company Name  Expiration Date

Proper Shipping Name (PSN)  Product

UN Number  Packaging Note

Hazard Class  Approval Type

State

Number of Results  results per page

the department found 17 EX approval numbers, 11 of which are active. Of these 11, the following 6 wastes may be useful to consider as Stresau further evaluates the options for its wastes.

1. **Schlumberger Technology Corporation - EX2011110783:** Mixed Explosive Manufacturing Wastes (e.g., paper, cardboard, floor sweepings, etc., ) with not more than 10 percent by mass HMX, RDX, HNS, PETN, CL-20, NONA, ONT, PYX, DODECA, Black Powder, Smokeless Powder, or AHT.
2. **Schlumberger Technology Corporation - EX2011110783:** Not more than 10% by weight Mixed Explosive Manufacturing Wastes (not less than 90% by weight Paper, Cardboard and Floor Sweepings) with up to 12 different explosive substances possible.
3. **Federal Cartridge Company a division of Alliant Techsystems Inc. (ATK) EX2012060509:** Floor Sweepings with Explosive Contamination (not more that 3% by weight explosive substances or articles).
4. **Federal Cartridge Company a division of Alliant Techsystems Inc. (ATK) EX2012060510:** Packaging Materials Contaminated with not more than 3% smokeless powder.
5. **Excelitas Technologies Corp. EX2016010222:** Waste Streams (bulk material/paper products/wipes/etc., or metallic components) wetted with not less than 25 percent by mass water and/or alcohol.



6. **ATK Launch Systems Inc. EX2002070119:** Waste Propellant Mixtures & Contaminated Wastes containing one or more of the following: WAK-2, VZV-1, WGA, CYH, DDP, EJC, FKM, VRP, VTG-5A, VTQ-3, WGF.

All of these EX approval numbers discuss a range of materials and types of material. This is consistent with language in 49 CFR 173.56(b), which states: "Except as provided in §§ 173.64, 173.65, and 173.67, no person may offer a new explosive for transportation unless that person has specified to the examining agency *the ranges of composition of ingredients and compounds*, showing the intended manufacturing tolerances in the composition of substances or design of articles which will be allowed in that material or device, and unless it has been examined, classed and approved as follows: ..."

To further assess whether a range of materials and types is acceptable U.S. DOT, the department had a virtual call with U.S. DOT's hazardous material experts Neal Suchak and Daniel Richards. Based on the department's conversation with Suchak and Richards, the department learned that Stresau may only need a few EX approval numbers for their daily wastes. Suchak explained that once U.S. DOT receives an EX application, it takes U.S. DOT approximately 120 days to process the EX application. Suchak explained that prior to sending an EX application, a company must have the daily waste examined and assigned a recommended shipping description, classification, and compatibility group by a person who has been approved by U.S. DOT to make this assessment. As Stresau's consultant, Safety Management Services, Inc., is approved by U.S. DOT to make these types of EX assessments, it is likely they will be qualified to develop the EX application(s) for Stresau.

As part of the conversation with U.S. DOT, the department asked about the

Suchak provided a [letter](#) dated October 15, 2009, that states "*All new compositions containing any amount of explosive material must be classed and approved by DOT, including compositions of diluted (desensitized) explosives or explosives combined or contaminated with other materials.*" This information is consistent with Stresau's clarification of daily waste as a D003 hazardous waste.

While additional review and information is required to reach a conclusion on the option of transporting Stresau's wastes, based on the information from DOT, the department recommends that Stresau work with Safety Management Services, Inc., to further evaluate options for transporting Stresau's waste to an off-site location as an alternative to the current TTU method of treatment and disposal.



January 18, 2022

Rob Dautermann, Chief Operations Officer

[rdautermann@stresau.com](mailto:rdautermann@stresau.com)

R. Stresau Laboratory, Inc.

N8265 Medley Rd.

Spooner, WI 54801-7819

RE: Feasibility and Plan of Operation Report Second Call-in Letter  
R. Stresau Laboratory, Inc.  
EPA ID# WID020488011  
FID# 866009320  
License # 6024 for Hazardous Waste Treatment

Dear Mr. Dautermann:

We are sending this letter to clarify requirements relating to the submittal of a complete and updated license package, after a productive conversation held on January 5, 2022 with representatives of R. Stresau Laboratory, Inc. (Stresau), the U.S. Department of Defense (DOD) and U.S. EPA. The agreed-upon intention of this license application package is to update the Part A form and Feasibility Plan of Operations Report (FPOR) to reflect current site conditions and to capture and document the progress Stresau has made relating to site assessment, waste characterization, minimization and management, and the evaluation of alternative technologies for treatment of generated wastes.

The shared goal of the updated application would be a stand-alone, updated application that would capture all of the work Stresau has accomplished to-date and that would include all required and relevant licensing elements. This may include updates of material submitted previously, including site maps, environmental assessments, and cost estimates. As part of the updated application, the department requests a comprehensive identification, evaluation, and characterization of generated hazardous wastes that Stresau currently generates and plans to treat on site. In conjunction with the waste characterization and determination effort submittals should provide details regarding all on-site waste handling, treatment and the associated Waste Analysis Plans (WAP).

The two main submittals for updating as part of the license application process are:

- An updated EPA Part A form, as specified in s. NR 670.002(15), Wis. Adm. Code.; and
- An updated Feasibility and Plan of Operation Report (i.e., RCRA Part B)

The minimum content requirements for the Part A application are established in s. NR 670.013, Wis. Adm. Code. The minimum content requirements for the FPOR are established in ss. NR 670.014 to NR 670.029, Wis. Adm. Code. Additionally, this updated application should include a proposed schedule for the evaluation and/or implementation of alternatives to OB/OD, specify limitations of how and when OB/OD might play a role in the transition to alternatives to OB/OD, or when OB/OD is utilized as a contingency when viable alternatives are not available.

As discussed during the January 5<sup>th</sup> call, the department is providing documentation to assist in identifying the elements of an updated application. We also are happy to schedule additional calls between DNR and Stresau representatives to discuss the documentation and updated information we are requesting. We appreciate the work that Stresau has been doing, the information that has been submitted in various letters to DNR since the 2016 FPOR, and

the information Stresau has conveyed in conversations with DNR over the past year. The documentation we are requesting for the updated, current and complete application can facilitate the relicensing process. We welcome further discussion regarding the documentation needed for waste characterization, WAPs and alternative treatments. There may be other submittals relating to the FPOR, the ongoing site assessment or additional work independently conducted by Stresau, that may merit inclusion or incorporation in the updated license application. The appendices described below are provided to identify the requested information and to provide assistance on how to navigate the regulatory requirements.

1. On April 16, 2015, the department sent Stresau a call-in letter to submit a Feasibility and Plan of Operation Report (FPOR) prior to the license expiration date of April 19, 2016 (attached as **Appendix A**). This call-in letter was associated with an operating license for treating hazardous wastes in a thermal treatment unit (TTU) considered open burning/open detonation (OB/OD) in a miscellaneous treatment unit under ch. NR 664 Subchapter X, Wis. Adm. Code. The call-in letter outlined the general requirements for a permit application and FPOR submittal.
2. Stresau submitted an FPOR and Part A application to the department on April 19, 2016. Following the submittal, and over the ensuing several months, Stresau worked closely with the department to address requests for additional information relating to the FPOR and to discuss progress, remaining items to address in the FPOR, and alternatives to OB/OD. The department sent Stresau a letter dated February 23, 2017 (**Appendix B**), which summarized the review, multiple communications and identified the required FPOR elements that needed further efforts.

While many elements of the 2016 submittal were complete and met regulatory licensing requirements, it is recommended that Stresau review their submittals and communications to the department since 2016, including submittals associated with site investigations conducted by US EPA and the department, to incorporate the work accomplished by Stresau and to document the elements of this work within the FPOR and Part A application, where required. Significant activity has occurred at the facility since the 2016 submittal, including work on waste characterization, waste minimization, alternatives evaluations, and corrective action site investigations. To facilitate the licensing process, this body of work should be integrated into an updated application package (Part A and the FPOR).

- A complete and updated application package should minimize referencing previous submittals or documents related to earlier licensing efforts, or work generated in response to compliance evaluation activities.
  - Information or documentation generated from these earlier efforts may be relevant to the updated Part A and FPOR. For example, a specific waste stream with recently updated documentation relating to waste determination, characterization, UHCs, etc., would be added to both the Part A and the FPOR.
  - A complete application package will provide the facility and the department with a comprehensive plan of operation, streamlining the public notice and comment process as required under s. NR 670.410, Wis. Adm. Code.
3. A major component of the FPOR is the documentation of waste identification and determination, associated waste codes, underlying hazardous constituents and on-site generator and licensed treatment. These elements are the focus of **Appendix C**. Several of these elements will also need to be captured in the Part A form, such as waste codes and process codes (treatment). Significant work was conducted by Stresau since the 2016 licensing submittal, including responses to site investigations and shared communications regarding the D003 classification of reactive wastes. Both the Part A application and the FPOR will need to capture the work conducted to-date, for each discrete waste stream generated on site, and any further evaluation of the daily wastes as discussed during the January 5<sup>th</sup> meeting. The department will be happy to provide additional technical advice, including further discussion on the requirements of the Part A form (8700-23), and a format for how Stresau might organize the waste characterization information. We can discuss this further in a call with you.

An updated licensed facility checklist has been provided via electronic transmittal. While not required, this checklist is typically included in a FPOR submittal (as an appendix) and allows the facility and the department to easily identify the required elements, associated code, and their location within the FPOR. This checklist, along with discussions pertaining to the updated Part A form and FPOR elements, can be topics for the planned February call with Stresau.

As discussed during the January 5<sup>th</sup> call, the department can address the iterative nature of the concurrent site investigation underway with the Remediation and Redevelopment program, and potential associated remedial actions, through licensing conditions with agreed upon timeframes for completion. This allows for updates to elements such as closure plans, financial assurance, or monitoring requirements to be captured during future license modifications. However, these elements need to be addressed in the revised application based on current site conditions and known site status (example, newly added wells and environmental monitoring schedules and analyte lists).

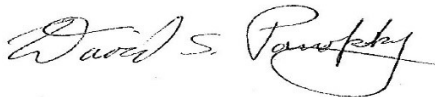
The department will continue to work with Stresau and our partnering agencies to identify any licensing elements that could benefit from a phased approach, similar to the site investigation discussion above, with an understanding that there are FPOR and Part A elements that must be comprehensive during this initial review and public noticing process.

We would like to arrange a call to continue our discussions and answer any questions concerning this letter. The department has some available time the week of January 31, and we will be working to schedule a follow-up discussion soon - In the meantime, if you have any questions regarding this letter or want to reschedule the time for a meeting, please contact David Panofsky at (608) 867-7775 or by email at [david.panofsky@wisconsin.gov](mailto:david.panofsky@wisconsin.gov).



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Andrea Keller, Section Chief  
Hazardous Waste Prevention & Management  
Waste & Materials Management Program



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David Panofsky, P.E.  
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cc: Wayne Hanson, President, Stresau (via email [whanson@stresau.com](mailto:whanson@stresau.com))  
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Stresau File

## Appendix C – Updated Application elements

### Waste determinations and records

#### Waste determinations

Waste characterization is required for each solid waste **at the point of waste generation**, before any dilution, mixing, or other alteration of the waste occurs.

The documentation of waste determinations is part of an FPOR. The records must include, but are not limited to, the following types of information: The results of any tests, sampling, waste analyses, or other determinations made; records documenting the tests, sampling, and analytical methods used to demonstrate the validity and relevance of such tests; records consulted in order to determine the process by which the waste was generated, the composition of the waste, and the properties of the waste; and records which explain the knowledge basis for the generator's determination on how the samples were collected, what they were analyzed for, and provide all laboratory analyses to the department utilizing the form in department publication WA-1152 Waste Determinations and Recordkeeping (available at <https://dnr.wi.gov/files/PDF/pubs/wa/WA1152.pdf>)

Acceptable knowledge may include:

- process knowledge (e.g. information about chemical feedstocks and other inputs to the production process);
- knowledge of products, by-products, and intermediates produced by the manufacturing process;
- chemical or physical characterization of wastes (e.g., documentation demonstrating “daily waste” at the points of generation repeatedly detonated, reacted violently, explosively decomposed at standard temperature and pressure);
- information on the chemical and physical properties of the chemical used or produced by the process or otherwise contained in the waste;
- testing that illustrates the properties of the waste; or other reliable and relevant information about the properties of the waste or its constituents.

Using knowledge when determining whether a waste material is hazardous waste or non-hazardous waste may be acceptable; however, it must be supported with documentation. Examples of supporting documentation include: Safety Data Sheets (SDSs), published information, process flow diagrams, chemical reaction diagrams, identified breakdown products, and other process reactions or chemical information. Typically, none of these documents are acceptable as stand-alone information for a waste determination, since most do not state conclusively whether the waste is hazardous or non-hazardous. Therefore, multiple document sources may be needed to support a knowledge-based determination.

Where chemical testing is being performed, representative samples (at least three) of each waste stream utilizing the Incremental Sampling Method (ISM) per NR 660.10(101), Wis. Adm Code, for analysis should be undertaken at a Wisconsin certified laboratory. For information on ISM sampling method, please consult <https://www.itrcweb.org/ISM-1>. Characterization should include a representative sample from the following waste streams:

- At the point of generation (such as at the workstation) when normal operating procedures are in place. This might include when the vacuum system is operating at a given workstation
- At the point of generation when daily waste is combined with the fuel oil
- At the point of generation when the fuel oil has been drained from the daily waste

- At the point of generation when any off-spec or overage products or powders or raw materials are determined to be wastes
- TTU ash as outlined below

### Records

Section NR 662.011(6), Wis. Adm. Code, requires a facility to maintain waste determination records that fully support the waste determination steps identified in s. NR 662.011, Wis. Adm. Code. These records must document knowledge of the waste and support the waste determination, as described in ss. NR 661.011(3) and (4), Wis. Adm. Code. The records must include, but are not limited to, the following types of information:

- a. Results of any tests, sampling, waste analyses, or other determinations made in accordance with s. NR 662.011, Wis. Admin. Code.
- b. Records documenting the tests, sampling, and analytical methods used to demonstrate the validity and relevance of such tests.
- c. Records consulted in order to determine the process by which the waste was generated, the composition of the waste, and the properties of the waste.
- d. Records which explain the knowledge basis for the generator's determination, as described in s. NR 661.011(4)(a), Wis. Adm. Code.

Adequate written documentation (records) should include a statement regarding the waste determination for each waste stream. It should state whether the waste is hazardous waste or non-hazardous waste and include copies of all information used to support the determination. Written documentation includes, but is not limited to:

- A description of each identified waste stream and process.
- Analytical sampling results including a description of how each representative sample was collected and managed, why the specific test method was chosen, and evidence that the lab was certified for the test method used.
- Records that justify and support knowledge-based determinations such as SDSs, published information, process flow diagrams, chemical reaction diagrams, identified breakdown products, and other process reactions or chemical information.

Re-evaluation of waste determinations should occur following process or material changes, or if the waste is highly variable, to verify that the original waste determination remains valid.

### Site specific requirements

For example, the following wastes require further documentation, which can be incorporated into the FPOR, to present complete and accurate waste determination that meets all requirements of s. NR 662.011, Wis. Adm. Code:

- a. Each constituent or component of the daily waste stream. This addresses the requirement that each discrete waste stream requires a waste determination, prior to being combined into the “daily waste.” This may include wipes, gloves, packaging, paper towels, PPE, filters, q-tips, wet wipes, etc.). While they may all be D003 wastes, there must be documentation on this determination and an identification of other hazardous characteristics (other associated waste codes) and UHCs – which may be based on either analytical results, knowledge or a combination.
- b. Contaminated fuel oil. The waste determination documentation submitted for this waste stream noted it as “listed” for D003. Reactivity (D003) is a “characteristic” rather than a “listing.” The waste determination requires an identification of other hazardous

- characteristics and UHCs. Note that disposal or treatment would include the burning of contaminated fuel oil.
- c. Spent water solution from workstation vacuum collection tubes. Based on Stresau's evaluation of the D003 waste determination (reliance on DOT explosives classification), this waste stream is also a D003 waste and requires updated waste determination records, and UHCs evaluation. Identification of management, treatment and disposal of this waste stream should be captured in the FPOR
  - d. Ash from the TTU. Some documentation manifests/LDRs indicated the waste as "listed" for D003. Reactivity (D003) is a "characteristic" rather than a "listing" and the use of the TTU is to remove the D003 characteristic. The waste determination requires an identification of other hazardous characteristics and UHCs.
  - e. The current waste determination checklist for the swiffer mop [heads] waste stream does not contain any information regarding whether the waste was a listed hazardous waste, as required by s. NR 662.011(3), Wis. Adm. Code. Note that waste determinations for listed hazardous waste must use generator knowledge that is relevant and reliable (i.e., verifiable) and that such information is organized or presented in a logical way that illustrates how it supports your conclusions.
  - f. Current waste determination checklists do not contain information indicating that Stresau collected representative samples of those wastes in which analytical testing was used for the waste determination (s. NR 662.011(4), Wis. Adm. Code). A "representative sample" means a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole. Documentation includes indicating how representative samples were collected of the TTU ash and any other waste in which analytical testing was used for the waste determination. For more information on representative samples and incremental sampling method go to:  
<https://www.itrcweb.org/ISM-1>.
  - g. Many of Stresau's waste determination checklists identify characteristic codes in the listed waste section (TTU Ash, Fuel Oil used for desensitization and Station Vacuum Collection Tube) and conversely listed codes in the characteristic waste section (Acetone). For example:
    - The TTU ash is identified as a listed hazardous waste, for the following characteristic waste codes: D005 (Barium), D006 (Cadmium), and D008 (Lead), and D003 (Reactive).
    - Fuel oil is marked as D003 in the listed waste section, but this is a characteristic not a listing.
    - The acetone shows that it is a characteristic hazardous waste due to F003. However, the F003 code does not appear in the listed question.

These waste determination checklists should be updated as part of the FPOR.

### **Identification of Underlying Hazardous Constituents – Generator and TSDF requirements**

Underlying Hazardous Constituents are any listed in s. NR 668.48, Wis. Adm. Code, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific (universal treatment standards (UTS)). Determinations of UHCs in hazardous waste streams should be conducted (repeated) as necessary to ensure that they are accurate and up to date.

**TSDF requirement:** Section NR 664.0013(1)(a), Wis. Adm. Code, requires a TSD facility, before treating, storing, or disposing of a hazardous waste, to have a detailed chemical and physical analysis of a representative sample of the hazardous waste.

- At a minimum, the analysis shall contain all of the information which must be known to treat, store, or dispose of the waste according to chapters NR 664 and 668 Wis. Adm. Code.

- Analytical information should identify all of the underlying hazardous constituents (UHC) listed in s. NR 668.48, Wis. Adm. Code, for the different types of hazardous waste burned or detonated in the TTU. This would also apply to the ash generated during the operation of the TTU.
- Hazardous waste that has a specified treatment method that is not Deactivation (DEACT) do not require treatment of UHCs (59 FR 47988 (September 19, 1994)).

The updated FPOR and Part A application should include the evaluation and identification of UHCs, for all generated and treated hazardous wastes. Documentation of the evaluation, submitted within the FPOR, could include:

- Results of chemical and physical samples analyzed by a laboratory certified or registered under ch. NR 149, Wis. Adm. Code (except for field analyses for pH, specific conductance and temperature).
- Data developed under ch. NR 661, Wis. Adm. Code, such as existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.
- Additional information provided by the treatment facility.
- Updated copies of land disposal restrictions (LDR) and updated copies of hazardous waste determinations required under s. NR 662.011, Wis. Adm. Code.

As the generator of the waste intended for treatment on site, the generator requirements found under s. NR 662.010(1)(b)3., Wis. Adm. Code, apply and should be captured in the FPOR. A generator may accumulate hazardous waste without a license when the generator complies with s. NR 668.09(1), Wis. Adm. Code, which requires a generator to determine the UHCs for characteristic hazardous waste which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standards in Table 1 of s. NR 668.48 Wis. Adm. Code.

When a determination is being made that the identified constituents are under the UHC reporting limits, substantive analytical documentation is required to support that determination. When a determination is made that a constituent is over the reporting limit, the determination can be supported by documentation other than analytical results. If there is reason why the waste cannot be tested to determine UHCs you can demonstrate using alternative data. UHC determination is required for all individual waste streams.

### **Waste Analysis Plan (WAP)**

EPA explains the significance of waste analysis plans in an [April 2015 guidance manual](#):

The cornerstone of the RCRA hazardous waste program is the requirement of generators and owner/operators of treatment, storage and disposal facilities (TSDFs) to properly identify and characterize, through waste testing and/or acceptable knowledge, all hazardous wastes that are generated, treated, stored, or disposed of at their site or facility. Waste testing involves identifying and verifying the chemical and physical characteristics and composition of a waste by performing a detailed chemical and physical analysis of a representative sample of the waste. A facility may also apply acceptable knowledge of the waste in lieu of testing the waste, as specified. Proper waste analysis is needed to:

- Determine whether your waste is a RCRA hazardous waste under applicable federal and state requirements (which can be more stringent and/or broader in scope than the federal program).
- Classify the waste according to RCRA.
- Ensure that the waste is managed properly and
- avoid commingling incompatibles.



- Ensure you are complying with permitted feedrate (e.g., metal feedrates) and other numerical limitations as applicable.

EPA guidance (recommended by U.S. EPA), includes examples:

<https://www.epa.gov/sites/default/files/2015-04/documents/tsdf-wap-guide-final.pdf>. Additionally, there is a checklist on page 116 of the guidance, referred to as the Part Three Checklist, that may be a useful tool for Stresau in exploring these RCRA requirements.

#### Site-specific recommendations:

A WAP is required when waste is treated to modify or remove a hazardous waste characteristic, such as the use of fuel oil/water to desensitize waste, as required under s. NR 668.07(1)e, Wis. Adm. Code. The WAP must be based on a detailed chemical and physical analysis of a representative sample of the waste being treated, testing frequency, and all documentation must be kept in the on-site files for review during subsequent inspections. Wastes shipped off-site must comply with the notification requirements of s. NR 668.07(1)c., Wis. Adm. Code. A WAP is not needed if this treatment is not occurring.

SLI's treatment of D003 wastes with fuel oil modifies the reactive characteristic of the daily waste for the purpose of meeting the LDR treatment standard under s. NR 668.40; however, the daily waste still remains a D003 hazardous waste. A WAP is required because the treatment of the daily waste with fuel oil changes the reactive characteristic.

Therefore, treatment of D003 wastes with fuel oil will require a WAP, but likely will not be considered a licensed activity (requiring a license).

Under s. NR 662.010(1)(b)3, Wis. Adm. Code, a generator may accumulate hazardous waste without a license when the generator complies s. NR 668.07(1)(e) Wis. Adm. Code, which requires a generator to develop and follow a written waste analysis plan (WAP) when treating waste or contaminated soil in tanks, containers, or containment buildings regulated under s. NR 662.015, 662.016, or 662.017, Wis. Adm. Code that meets applicable LDR treatment standards found at s. NR 668.40, Wis. Adm. Code.

Treatment of D003 waste in the licensed TTU will require a WAP as well. All WAPs must be based on a detailed chemical and physical analysis of a representative sample of the waste(s) being treated and contain all information and testing frequency necessary to treat the waste(s) in accordance with the requirements of chapter NR 668 Wis. Adm. Code. Note that as Stresau has identified their waste generation process as highly variable, the testing frequency for the TTU ash should reflect this variability to both meet LDR standards, accurately manifest the waste for the receiving facility and to inform site monitoring plans.

#### **TTU ash**

The waste stream generated during the operation of the licensed OB/OD unit (TTU ash) requires careful evaluation and accurate characterization, UHC identification, and compliance with the LDR requirements. Elements relating to this waste stream that should be identified and addressed in both the Part A form and the FPOR submittal, are outlined below.

#### Waste characterization

As noted above in the waste characterization section of this appendix, each waste stream must be adequately characterized, including identifying or testing for known or anticipated chemical constituents within the wastes per s. NR 662.011 Wis. Adm. Code. To satisfy these requirements, it is recommended, at minimum, that Stresau expand the existing waste determination analytical

testing to include chemical constituents (beyond RCRA metals and organics) associated with the materials being treated in the TTU, including:

- all daily wastes (including any and all solvents, filters, vacuum bags, packaging, PPE, wipes, towels, etc.),
- energetic or other scrap powders burned in the burn troughs, and
- energetic devices or any other manufacturing wastes or other materials treated in the TTU.

This chemical characterization of the ash should also include anticipated breakdown products due to anticipated thermal decomposition or newly created hazardous substances associated with conditions associated with the TTU. When developing your analytical testing regimen for this waste stream the department and U.S. EPA can provide further guidance and discussion on this issue. Note that as Stresau has identified their waste generation process as highly variable, the testing frequency for the TTU ash should reflect this variability to both meet LDR standards, accurately manifest the waste for the receiving facility and to inform site monitoring plans.

#### Land Disposal Record requirements – relating to TTU Ash

Under s. NR 662.010(1)(b)3., Wis. Adm. Code, a generator may accumulate hazardous waste without a license when the generator complies with s. NR 668.07(1)(b), Wis. Adm. Code, which requires the generator to must provide a one-time written notice to each treatment or storage facility receiving the initial waste shipment. The notice must include all of the following information, where applicable:

- a. EPA hazardous waste numbers and manifest number of first shipment.
- b. The waste is subject to the land disposal restrictions (LDRs).
- c. Identifying the constituents of concern for F001-F005, and F039. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.
- d. Identifying the underlying hazardous constituents (UHCs) in characteristic wastes.
- e. Applicable wastewater/ nonwastewater category.
- f. Subcategories made within a waste code based on waste-specific criteria.
- g. Waste analysis data (when available).

For example: review of LDR notifications (manifest number 014668839FLE) showed the subcategory for the wastes listed on lines 3 to 7 of the manifest were not identified; manifest number must be valid and subcategories on line 1 of the manifest must be identified (manifest number WIK367018).

#### **Part A form elements**

The information developed above will be needed to update the FPOR and the associated Part A form, and in providing the required assessment of any alternative treatments that Stresau has explored and any current and future potential disposal options.

Current form: [https://rcrapublic.epa.gov/rcrainfoweb/documents/part\\_a.pdf](https://rcrapublic.epa.gov/rcrainfoweb/documents/part_a.pdf)

EPA guidance and instructions: [https://www.epa.gov/sites/default/files/2021-05/documents/excerpt\\_part\\_a\\_rcra\\_subtitlec\\_forms\\_and\\_instructions\\_5\\_12\\_2021.pdf](https://www.epa.gov/sites/default/files/2021-05/documents/excerpt_part_a_rcra_subtitlec_forms_and_instructions_5_12_2021.pdf)

[Thermal Treatment Unit \(TTU\) and MuniRem Reagent \(MRR\) Chemical Processes...pdf](#)  
[MuniRem Reagent Process and Management Training Report with ITAR footer...pdf](#)  
[MuniRem Reagent Facility Implementation Report Rev A.pdf](#)

**From:** Anders Helquist  
**Sent:** Monday, February 28, 2022 4:44 PM  
**To:** Bonar-Bridges, James I - DNR <[James.BonarBridges@wisconsin.gov](mailto:James.BonarBridges@wisconsin.gov)>  
**Cc:** Heilman, Cheryl W - DNR <[Cheryl.Heilman@wisconsin.gov](mailto:Cheryl.Heilman@wisconsin.gov)>; Keller, Andrea L - DNR <[Andrea.Keller@wisconsin.gov](mailto:Andrea.Keller@wisconsin.gov)>; Sponseller, Bart A - DNR <[Bart.Sponseller@wisconsin.gov](mailto:Bart.Sponseller@wisconsin.gov)>; Panofsky, David S - DNR <[David.Panofsky@wisconsin.gov](mailto:David.Panofsky@wisconsin.gov)>; Ellenbecker, Michael J - DNR <[Michael.Ellenbecker@wisconsin.gov](mailto:Michael.Ellenbecker@wisconsin.gov)>  
**Subject:** Stresau Follow-Up Documents

Good afternoon James,  
Following-up on the call earlier today, please find attached three documents for the WDNR's review: the chemical processes and broader characterization of Stresau's operations and two MuniRem analysis documents related to process and implementation.

Due to the highly sensitive nature of the materials being disclosed, please know I have placed a "Confidential/Trade Secret" label on these documents. I will be following-up with a formal affidavit requesting confidential status on these documents.

We look forward to the Department's review and thank you in advance for your time and attention to this matter.

All the best,  
Anders



**Anders Helquist, Attorney**  
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**From:** Bonar-Bridges, James I - DNR <[James.BonarBridges@wisconsin.gov](mailto:James.BonarBridges@wisconsin.gov)>  
**Sent:** Sunday, March 27, 2022 3:52 PM  
**To:** Anders Helquist <[AHelquist@weldriley.com](mailto:AHelquist@weldriley.com)>  
**Cc:** Heilman, Cheryl W - DNR <[Cheryl.Heilman@wisconsin.gov](mailto:Cheryl.Heilman@wisconsin.gov)>  
**Subject:** [Stresau] Example waste characterization/WAP documents

Good afternoon Anders,

As part of the follow up from our last call, the department is providing several examples that may assist Stresau and their consultant in fulfilling several related licensing requirements outlined in the January 2022 call-in letter. We are in the process of identifying additional examples from other munitions manufacturing facilities that have similar D003 wastes.

[ATK Launch Waste Analysis Plan \(2019\)](#)

[ATK Launch Waste Characterization \(2019\)](#)

Best,  
James

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**James I. Bonar-Bridges**

Pronouns: he/him/his

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**From:** Anders Helquist <AHelquist@weldriley.com>  
**Sent:** Monday, May 9, 2022 4:44 PM  
**To:** Bonar-Bridges, James I - DNR <James.BonarBridges@wisconsin.gov>  
**Cc:** Heilman, Cheryl W - DNR <Cheryl.Heilman@wisconsin.gov>; Rob Dautermann <rdautermann@stresau.com>; Jon Knauss <jknauss@stresau.com>; Bruce Olson <bolson@sehinc.com>  
**Subject:** Waste Determination Follow-Up

Good afternoon James,  
Attached is a waste determination list that I think is close to what the WDNR was looking for from Stresau.

I don't think there will be much for discussion tomorrow, but when it makes sense for the Department, we can schedule a follow-up call to discuss this between Stresau, SEH, and the DNR.

Thank you,  
Anders



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**From:** [Bruce Olson](#)  
**To:** [Jeffery Johnson](#); [Brian Kent](#)  
**Subject:** FW: Thank You for Waste Determination Info  
**Date:** Friday, June 3, 2022 3:20:51 PM  
**Attachments:** [image001.png](#)  
[image003.png](#)  
[Copy of Waste Determinations \(TTU and Others\).xlsx](#)

---

FYI

---

**From:** Panofsky, David S - DNR <David.Panofsky@wisconsin.gov>  
**Sent:** Friday, June 3, 2022 2:40 PM  
**To:** Bruce Olson <bolson@sehinc.com>  
**Cc:** thierry.l.chiapello.civ@army.mil; Sasha Gerhard <gerhard.sasha@epa.gov>; Newland, Jesse <Newland.Jesse@epa.gov>; Ramaly, Todd <ramaly.todd@epa.gov>; Gonzalez, Norberto <Gonzalez.Norberto@epa.gov>; Keller, Andrea L - DNR <Andrea.Keller@wisconsin.gov>; Bonar-Bridges, James I - DNR <James.BonarBridges@wisconsin.gov>; Heilman, Cheryl W - DNR <Cheryl.Heilman@wisconsin.gov>; Sponseller, Bart A - DNR <Bart.Sponseller@wisconsin.gov>; AHelquist@weldriley.com  
**Subject:** Thank You for Waste Determination Info

The department appreciates receiving the waste determination spreadsheet list from Stresau last month. DNR would like to schedule a follow up technical conversation on this subject of waste determination and characterization and the documentation required for the renewal application.

Based on a review of the spreadsheet information by DNR and EPA, we offer the following questions and comments:

1. Most waste determinations provided in the spreadsheet are not at the point of waste generation. The determinations should happen *prior* to desensitization and comingling with other wastes in fuel oil, and then also after the waste is treated in the fuel oil. Per s. [NR 662.011\(1\), Wis. Adm. Code](#) *"The hazardous waste determination for each solid waste must be made at the point of waste generation, before any dilution, mixing, or other alteration of the waste occurs, and at any time in the course of its management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change."*
2. The fuel oil desensitization of wastes, considered on-site treatment, is relevant to waste determinations. Per [291.01\(21\), Wis. Stats](#), "Treatment" means any method, technique or process, including neutralization, which follows generation and which is designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize the hazardous waste or so as to render the waste nonhazardous, safer for transport, amenable for recovery, amenable for storage or reduced in volume. [Note that "Treatment" includes incineration].

Both EPA and DNR consider the use of fuel oil to desensitize D003 wastes to be treatment because it alters its properties, and this treatment subsequently generates a new waste stream. This new waste stream requires a detailed waste determination, including evaluation of D003 characteristics, as it *may* no longer be reactive. We can discuss this further during our next technical call.

3. What is the rationale for grouping the production building wastes such as (9, 15);



(3,4,5,6,10,12,17); (7); (2); (8)?

4. Regarding the wastes streams that are not identified as D003 wastes (Swiffers, mop water, mop water filters, vacuum water) it appears that these waste streams may include the presence of energetics. Although mop water and mop water filters have had analytical testing conducted, this analytical work did not appear to include the inclusion of energetic compounds. Has Stresau previously conducted analytical testing that included testing for energetics? How are these wastes different than the PPE, wipes, filters, swabs, and paper towels that are in contact with energetic materials? Is this distinction based on the amount of energetics found in these wastes streams or are other criteria being utilized for this determination?
5. What data supports the fact that \_\_\_\_\_ longer contain energetic materials as listed on line 25?
6. There are no descriptions of the “\_\_\_\_\_.” Are these configured energetic devices? Other waste energetic materials? If so, what are they specifically? (\_\_\_\_\_) What portions or amounts? The spreadsheet should have a unique line for each individual type of scrap waste and should identify where each scrap waste is generated and subsequently treated with the TTU as there are different units within the TTU (trough, detonation tube, etc.).
7. Please provide waste destinations (if any) for any manufacturing wastes that were determined to be nonhazardous wastes. Generator waste determined to be nonhazardous should be included/outlined and documented.
8. Can Stresau provide supporting documentation for the underlying hazardous constituent determination and identification for each waste stream?

Additional specific questions and comments from the team:

9. Appendix C of the January letter outlines the need for supporting documentation, especially with regard to generator knowledge, and associated discussion in the license renewal application. For example, with respect to the D003 determinations, supporting documentation including specifics on generator knowledge and/or analytical data is needed. For example, documentation demonstrating “daily waste” at the points of generation repeatedly detonated, reacted violently, explosively decomposed at standard temperature and pressure. What specific safety data sheets are applicable to the wastes in question?
10. Units permitted under Subpart X, and conducting thermal treatment such as the units in Stresau’s TTU, must follow s. [NR 665.0382, Wis. Adm. Code](#). Which of the Stresau characterized D003 wastes have the potential to detonate or would be \_\_\_\_\_  
This information is relevant because open burning and detonation is prohibited except for waste explosives which include wastes having the potential to detonate or would be classified as a \_\_\_\_\_  
What additional work has Stresau done and how does Stresau plan to report the alternative technology evaluation considered for *each* waste stream? Past discussions with SLI have indicated the potential for some wastes to be treated by Munirem®. Is this still an option being explored?
11. Stresau’s TTU does not meet one of the three required treatment technologies [RORGS (recovery of organics), CMBST (combustion), or POLYM (polymerization)] for D001 wastes that are high TOC (total organic carbon)). It appears that the ash waste generated from a TTU in which D001 hazardous waste was treated would require D001 to be identified on the ash waste LDR document. Based on the spreadsheet, and the use of fuel oil to desensitize waste, the D001 treatment standards appear to be applicable and should be reflected in the spreadsheet and on associated LDR documents for the ash.

Thank you and please contact me with options for setting up a technical discussion on the above foundational pieces.

David

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David S. Panofsky, PE

Environmental Engineer

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July 20, 2022

Dear Mr. Panofsky,

Thank you for your June 3, 2022 email with additional questions regarding Stresau's operations. Please see the below responses that we hope assist the WDNR as we continue to work collaboratively on the permit renewal process.

1. Thank you for this comment. As part of a final submission with the application materials, Stresau will provide the "pre-fuel oil" characterizations for wastes such as, but not limited to wipes, gloves, PPE, paper towels, swabs, filters, and other production materials contaminated with reactive materials.
2. We look forward to additional discussions with the WDNR regarding this matter. Since January 2021, we have held multiple calls with WDNR staff, including an outside consultant, regarding the reasons why those respective waste streams are properly classified as D003. Stresau remains focused and committed to reach consensus with the WDNR regarding our proper classification of those waste products (e.g., PPE, gloves, paper towels, wipes, swabs, etc) that are contaminated with known reactive materials during the manufacturing process.

When authorized by the WDNR through our permit renewal, we believe [redacted] (as noted previously and below) will be a substantial way to solve the reactive wastes in fuel oil issue and has the potential to reduce this issue in the future. We look forward to ongoing discussions with your office.

3. Grouped buildings have similar waste.

[redacted] contains a filtering site for mop water that is used to clean production floors. Mop water filters and non-reusable mop water contain reportable levels of lead and barium. Please see the Waste Determinations Worksheet under Waste Codes and Waste Determination Comments.

4 + 5. Regarding the Mop Water, Mop Water Filters, and Swiffer Wipes, these were classified differently due to when and how those items were used in the "production" process. For example, during a production shift, the wipes or swabs are used to clean and remove reactive materials at work stations. The work station and surrounding floor area, if necessary, are cleaned throughout the day when reactive materials are handled. Those wipes and swabs are used with the express purpose of clearing away energetic material from work stations or the floor so those waste materials can be and are placed in the fuel oil, to be safely treated in the TTU. In contrast, the Swiffers and/or mopping is done as a post-shift/end-of-shift cleaning measure to primarily ensure conductivity of the floors remains as a safety measure.

materials.) The purpose of the Swiffers and/or mopping is not necessarily to remove reactive materials from the floor, because those materials should be cleaned during and throughout the production shift itself.

With that said, and in response to your June 3 questions, as an additional safety measure, we tested our Test Residue (dynamic testing of components), Mop/Vacuum Water, Mop Water Filters, and Swiffer Wipes for the presence of energetics. An EXSPRAY test kit was used for the analysis. The Mop/Vacuum Water tested negative, and the Test Residue, Mop Water Filters, and Swiffer Wipes tested positive. For the samples that tested positive for energetics, they were treated with and tested again. All results came back negative.

Since we are now aware of the presence of reactive components in this waste stream, we will place these items in fuel oil for treatment in the TTU. As part of our permit renewal, once approved, we would propose and respectfully request that the Test Residue, Mop Water Filters, and Swiffer Wipes be treated with and tested before Lab Pack shipment instead of placement in the TTU. Because there is a presence of energetics, we would treat it as reactive until test results say otherwise.

6. The TTU Annual Report states the category of

inventory system of the We do have records through our that we take it from, not the specific section of the and the TTU used. could be added alongside the energetics on the Waste Determination Worksheet.

7. Nonhazardous wastes will be added to the Waste Determination Worksheet, such as packaging materials and chemicals determined nonhazardous through SDSs.

8. Stresau has and continues to use its generator knowledge for each reactive waste stream. To properly characterize and safely treat the applicable wastes, Stresau uses its decades of knowledge and experience in this industry to assess the underlying products used in its processes/the waste's origin, its composition (including its chemical and/or physical characterization and properties), and the processes producing the final product and the waste byproducts. On February 28, 2022, Stresau also provided a list of its assessment of the multiple underlying reactive components in its manufacturing processes to the WDNR for review.

9. In response to your request, the applicable SDSs for those underlying reactive components which are in the waste stream include but are not limited to:

We believe we previously sent all of these SDSs to the WDNR in December 2019. The files containing all of these SDS sheets are too large to attach to an email. Stresau will be glad to

send them via USPS on portable drive or DVD or through a virtual portal that the WDNR is comfortable with.

Stresau both avoids workplace accidents involving its multiple reactive points in its production process and engages in processes that minimize the potential for materials to "repeatedly detonate, react violently, or explosively decompose" outside of their end use. Stresau remains confused regarding the standard you reference in Appendix C regarding our need to show "repeated" instances of the reactive reaction and where this is in the NR Code. Based on our generator knowledge, the reactive-contaminated wastes are capable of

Unlike fuel oil is a desensitizer, not a deactivator. Desensitization does not mean the material is no longer reactive or that a reactive classification is improper. For example and analogous to use of fuel oil, the ATK Launch Systems Waste Analysis Plan Section 4.1.1 addresses the presence of explosives in the following statement.

Another statement (3.3.1) reasons that reactive material should not be routinely tested. "Reactive waste may carry several waste codes, but will always carry a D003 code for reactivity and such wastes are generally classified as explosives. Due to the inherent hazardous nature of reactive wastes, this material is not routinely sampled or analyzed as part of this WAP."

10. The D003 wastes that have the potential to detonate or would be classified as include the wastes that are contaminated with the following undisputedly reactive materials, and include but are not limited to:

(Please also see the February 28, 2022 list provided to the WDNR).

In addition to the chemical process list, on February 28, 2022, Stresau provided two substantive reports to the WDNR regarding its potential alternative technology evaluation ( ) for its existing and projected future waste streams to substantially reduce the amount of reactive waste using the TTU. As noted in Stresau's reports, after individualized assessments as to specific types of waste, there are limits to the technology, but with the proper procedures, personnel, and facilities in place, we believe will substantially reduce the number of reactive wastes entering the TTU. remains the most likely viable alternative to the TTU and Stresau plans to use as that alternative. In response to submitting the reports, Stresau continues to await feedback from the WDNR regarding Stresau's ability to phase in use of as part of a final approval in its permit renewal.

11. We have noted this comment and thank you.



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Thank you again for your review and consideration.

Sincerely,

Rob Dautermann, COO

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**From:** [Newland, Jesse](#)  
**To:** [Anders Helquist](#)  
**Cc:** [Rob Dautermann](#); [cheryl.heilman@wisconsin.gov](mailto:cheryl.heilman@wisconsin.gov)  
**Subject:** RE: CBI -- Stresau - MuniRem  
**Date:** Thursday, July 21, 2022 4:39:19 PM  
**Attachments:** [image001.png](#)

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Anders, files received, thank you. I appreciate you sending those in a timely manner. The material is being logged as CBI as required, and I will share with my Region 5 counterparts once I have vetted their CBI clearances.

Regards,

Jesse Newland  
Physical Scientist  
U.S. EPA Region 8, Land, Chemicals, & Redevelopment Division  
RCRA Branch, Hazardous Waste Unit  
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Compressed schedule M-Th  
He/Him

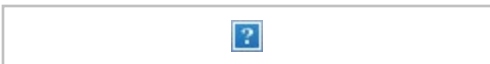
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**From:** Anders Helquist <AHelquist@weldriley.com>  
**Sent:** Thursday, July 21, 2022 3:18 PM  
**To:** Newland, Jesse <Newland.Jesse@epa.gov>  
**Cc:** Rob Dautermann <rdautermann@stresau.com>; cheryl.heilman@wisconsin.gov  
**Subject:** CBI -- Stresau - MuniRem

Jesse – following-up on today’s call, please see the attached documents regarding MuniRem at Stresau. Due to the highly sensitive nature of the materials being disclosed, please know we have placed a “Confidential/Trade Secret” label on these documents to treat them as CBI.

If there are additional materials Stresau needs to file to obtain CBI status with the EPA, please let me know immediately and thank you in advance.

Anders



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**From:** Panofsky, David S - DNR <David.Panofsky@wisconsin.gov>

**Sent:** Thursday, August 11, 2022 2:47 PM

**To:** rdautermann@stresau.com

**Cc:** Heilman, Cheryl W - DNR <Cheryl.Heilman@wisconsin.gov>; Sponseller, Bart A - DNR <Bart.Sponseller@wisconsin.gov>; Keller, Andrea L - DNR <Andrea.Keller@wisconsin.gov>; Burke, Alixandra J - DNR <alixandraj.burke@wisconsin.gov>; AHelquist@weldriley.com; Bruce Olson <bolson@sehinc.com>; Ellenbecker, Michael J - DNR <Michael.Ellenbecker@wisconsin.gov>; thierry.l.chiapello.civ@army.mil; Sasha Gerhard <gerhard.sasha@epa.gov>; Ramaly, Todd <ramaly.todd@epa.gov>; Gonzalez, Norberto <Gonzalez.Norberto@epa.gov>; Newland, Jesse <Newland.Jesse@epa.gov>

**Subject:** MuniRem Treatment

**Importance:** High

Thank you Mr. Dautermann.

Based on our conversation on July 21, 2022, the department is providing general information on generator treatment requirements that may potentially be exempt from licensing requirements.

We understand that Stresau has been continuing to evaluate and may wish to use MuniRem as an on-site, non-thermal treatment technology. It is our understanding that the potential treatment of

specific on-site generated hazardous wastes containing energetics, utilizing \_\_\_\_\_ would be to eliminate the reactive characteristic for the purpose of meeting the Land Disposal Restrictions (LDR) treatment standards under s. NR 668.40, Wis. Adm. Code.

Wisconsin's hazardous waste rules provide an exemption from hazardous waste facility licensing requirements for generators that treat their hazardous wastes on-site in hazardous waste accumulation tanks or containers during the applicable accumulation period (90 days for large quantity generators, 180 days for small quantity generators). This exemption is found in NR 670.001(3)(b), Wis. Adm. Code.

Wis. Adm. Code NR s. 670.001(3)(b)1. and .11 provide:

(b) Specific Exclusions. The following persons are among those who are not required to obtain a hazardous waste license:

1. Generators who accumulate hazardous waste on-site in compliance with all of the conditions for exemption provided in ss. NR 662.014, 662.015, 662.016, and 662.017.

....

11. A generator who treats waste in containers or tanks, provided the requirements of ss. NR 662.014, 662.016, and 662.017 are met.

It is our current understanding that Stresau is operating as a small quantity generator. For a small quantity generator, ss. NR 662.016 and 662.015, Wis. Adm. Code, provide the applicable conditions for exemption from licensing relating to the accumulation of hazardous waste.

In general, these requirements address:

- Generation amounts
- Satellite accumulation and accumulation (storage) limits
- Container conditions, management, inspections, etc.
- Tank conditions, management, inspections, construction, secondary containment, etc. [s. NR 665.0017, Wis. Adm. Code]
- Labeling and marking of containers and tanks
- Land Disposal Restrictions (LDR)
- Preparedness and prevention, emergency procedures

The Land Disposal Restrictions (LDR) requirements noted above require a Waste Analysis Plan (WAP) when generators treat waste to modify or remove a hazardous waste characteristic, such as the use of MuniRem to eliminate the D003 characteristic. [s. NR 668.07(1)(e), Wis. Adm. Code].

In accordance with Wis. Adm. Code s. NR 668.07(1)(e), the WAP must be kept in the generator's on-site files for review, and wastes shipped off-site (following treatment) must comply with the notification requirements of s. NR 668.07(1)(c), Wis. Adm. Code.

The department recommends the following elements be included in a WAP for wastes Stresau plans to treat with MuniRem:

- Description of the facility (specific processes and activities that generate the waste, or are used to manage the waste, hazardous wastes generated, hazardous waste management units).

- Identification of the waste constituents and other parameters to be evaluated for the waste streams, both before and after treatment, and the rationale for the selection of these parameters.
- Identification of how the generator will obtain a representative sample of the waste, both before and after treatment.
- Analytical methods to be used to evaluate the waste, both before and after treatment, what laboratory will be used.
- Testing frequency for the waste, both before and after treatment.
- Special procedural requirements – procedures the generator will follow to treat the waste and meet the applicable LDR standards. Procedures for retreating waste that does not meet LDR standards.

EPA's guidance manual titled "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Wastes" located at <https://www.epa.gov/sites/production/files/2015-04/documents/tsdf-wap-guide-final.pdf> contains additional information on how to perform waste analyses and develop WAPs.

The department recommends Stresau review the specific requirements of Wis. Adm. Code ss. NR 662.016 and 662.015 to determine what is needed for the facility's use of MuniRem to be in compliance with the requirements for an exemption from licensing for this treatment. While it is up to Stresau to meet the applicable Wis. Adm. Code requirements for an exemption, if Stresau does so, no department approval is required prior to the use of MuniRem.

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David S. Panofsky, PE

Environmental Engineer

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---

**From:** Rob Dautermann <[rdautermann@stresau.com](mailto:rdautermann@stresau.com)>

**Sent:** Wednesday, July 20, 2022 3:50 PM

**To:** Panofsky, David S - DNR <[David.Panofsky@wisconsin.gov](mailto:David.Panofsky@wisconsin.gov)>

**Cc:** Anders Helquist ([AHelquist@weldriley.com](mailto:AHelquist@weldriley.com)) <[AHelquist@weldriley.com](mailto:AHelquist@weldriley.com)>

**Subject:** Stresau Waste Determination - Response Letter

**Importance:** High

**CAUTION: This email originated from outside the organization.**

**Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Good afternoon Mr. Panofsky. Please see the attached letter from Stresau in support of our call tomorrow. If you have any questions, please let me know. Thanks.

**Rob Dautermann**

Chief Operating Officer | [Stresau Laboratory, Inc.](#) | [rdautermann@stresau.com](mailto:rdautermann@stresau.com)

N8265 Medley Road, Spooner, WI 54801 | Office: 715-635-2777 | Fax: 715-635-7979



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[Waste Determinations \(TTU and Others\) Submitted to DNR 9-7-22.xlsx](#)  
[Stresau WAP 9-7-2022.pdf](#)

**From:** Rob Dautermann  
**Sent:** Thursday, September 8, 2022 8:35 AM  
**To:** 'David.Panofsky@wisconsin.gov' <David.Panofsky@wisconsin.gov>  
**Cc:** Anders Helquist (AHelquist@weldriley.com) <AHelquist@weldriley.com>  
**Subject:** Stresau Waste Determinations & WAP

David,

My apologies for this being such short notice before our discussion later today. We have been expanding our Waste Determinations in the format requested by the Department and putting together our WAP. We believe there is still work to do and welcomes the Department's input.

**Rob Dautermann**

Chief Operating Officer | [Stresau Laboratory, Inc.](#) | [rdautermann@stresau.com](mailto:rdautermann@stresau.com)  
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**From:** [Panofsky, David S - DNR](#)  
**To:** [rdautermann@stresau.com](mailto:rdautermann@stresau.com); [Jeffery Johnson](#)  
**Cc:** [Keller, Andrea L - DNR](#); [Heilman, Cheryl W - DNR](#); [Newland, Jesse](#); [Ramaly, Todd](#); [Gonzalez, Norberto](#); [gerhard.sasha@epa.gov](mailto:gerhard.sasha@epa.gov); [Burke, Alixandra J - DNR](#); [Chiapello, Thierry L CIV USARMY HQDA DOD ESB \(USA\)](#)  
**Subject:** Comments on WAP and Determinations  
**Date:** Tuesday, October 18, 2022 2:39:35 PM  
**Attachments:** FW Stresau Waste Determination - Response Letter.msg  
Stresau Waste Determinations WAP.msg

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Dear Mr. Dautermann,

Thank you for providing us with the waste analysis plan (WAP) and an updated waste determinations spreadsheet. This information will provide an important foundation for moving forward with your licensing renewal efforts, including the evaluation of alternatives to OB/OD and the completion of the Part A application and the FPOR (Part B). Preliminary thoughts on the WAP and waste determinations are outlined below, to provide a basis for future technical working sessions or conversations. Team, if you have additional comments, feel free to share those comments with me to address during future technical discussions. We understand that Stresau is already working on several of the items.

### **Waste determinations**

General note: As previously outlined (June 3, 2022, email attached) there are generator treatment activities which can be exempt from licensing requirements and implemented without prior approval. For clarity, you may want to consider two separate WAPs, one for waste **generator** requirements and another for **licensed waste treatment**. If **generator** treatment activity is included within one WAP, as part of the FPOR, these new requirements will be part of a FPOR approval and will be considered elements of your licensed facility operations.

1. There is inconsistency between the WAP and the “waste determinations” spreadsheet. Additionally, some columns are confusing (such as past vs current disposal methods). Many comments provided by the department in July (included with Stresau response) do not appear to be incorporated into the waste determination spreadsheet, it may be helpful to revisit that communication.
2. Many wastes are not characterized at the point of waste generation. Additionally:
  - Wastes added to water or fuel would be a new point of waste generation.
  - Please provide the department the Pace Analytical waste determination results for the TTU ash.
  - Which specific wastes (at the point of waste generation) have the potential to detonate or are EPA team members can help in this area.
  - How are the mop water filters and the being managed? Waste determination, waste management, treatment/disposal? Please provide the department the documentation associated with these waste streams. Additionally, please describe why these wastes are or are not D003, under s. NR 661.0023, Wis. Adm. Code.

- Swiffers “not used for reactive waste cleanup” were identified. What evidence or procedures are established to verify that these Swiffers don’t have residual explosives? Perhaps this has already been addressed in the July submittal but has not been addressed in the “waste determination” version provided.
3. Regarding mop water solids, following evaporation, please describe why these wastes are or are not D003, under s. NR 661.0023, Wis. Adm. Code.
  4. A description for TTU ash states “Material which contained D003 or material classified as scrap or rejects containing D003, unable to be shipped off site is treated in TTU to remove D003.” We are aware of a variety of waste streams containing energetics that have been approved for transport with a Special Permit from the Pipeline and Hazardous Safety Administration of the U.S. Department of Transportation. Does Stresau intend to request an individual authorization letter for shipment?

### **Waste Analysis Plan**

The following questions or comments relate to the preliminary review of the draft WAP and may be starting points for further discussion.

5. What is the decision-making process for whether daily waste is placed in water vs. placed in fuel oil?
6. The use of fuel oil or water in desensitization is generator treatment and should be covered by a WAP.
7. The evaporator activity for managing mop wastewater is potentially waste treatment, that may need to be addressed in the WAP. What, if any, hazardous substances might be released during the evaporation process?
8. Waste fuel oil, used to treat D003 daily wastes, has a point of generation. How often is the fuel oil used before becoming a waste (if it is)? How do staff determine it is a waste (vs. reuse)?
9. General questions:
  - Is only generator knowledge used to ascertain whether energetics are no longer in the ash?
  - Are the TTU ash/residuals ever reburned?
  - What are spitback leads?

The above comments are provided as a starting point for a follow-up technical meeting, and we would be happy to explain in more detail either in person or through a Teams meeting. Looking forward to working together on these items and additional licensing questions as they arise.

Thank you,

David

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David S. Panofsky, P.E.

Environmental Engineer

Hazardous Waste Management

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CHAPTER 21  
ATTACHMENT Y  
WDNR Licensed Facility Checklist

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**WISCONSIN DEPARTMENT OF NATURAL RESOURCES  
HAZARDOUS WASTE LICENSE APPLICATION (FPOR)  
COMPLETENESS AND TECHNICAL EVALUATION CHECKLIST  
GENERAL AND SPECIFIC REQUIREMENTS FOR  
CONTAINERS, TANKS AND MISCELLANEOUS UNITS**

**Facility Name :** R Stresau Laboratory Inc.

**FID # :** 866009320

**US EPA ID #:** WID020488011

**Date Application Received :**

**DNR Reviewer :**

**Review Dates :**

Use this checklist as a guide to determine if the Feasibility and Plan of Operation Report (FPOR) is complete and technically adequate for the storage or treatment of hazardous waste in containers, tanks, or miscellaneous units. The license applicant should indicate the location of the required information in the FPOR. The DNR license reviewer will review the information provided and determine if it is complete and technically adequate.

Note: More detailed information is given in the Wisconsin Administrative Code citation listed for each item. The inspection forms at <http://www.dnr.state.wi.us/org/aw/wm/publications/index.html> may also be used as a guide for AA/BB/CC requirements.

**PART I - GENERAL REQUIREMENTS**

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section A. General Requirements NR 670.010 to NR 670.014</b>				
A.1. Two copies of license application submitted. NR 670.010(1)	NA			
A.2. Appropriate plan review and license fees submitted. NR 670.010(12)	NA			
A.3. Report signed by a president, secretary, treasurer or vice president of a corporation or other approved signatory. NR 670.011(1)	CH 20: 20-1			
A.4. Signature includes certification statement. NR 670.011(4)	CH 20: 20-1			
A.5. Claims of confidentiality are met. NR 670.012	ATT 21Z			
A.6. Summary of pre-application meeting, list of attendees/addresses and copies of written comments or materials submitted during meeting. NR 670.014(2)(v)	ATT 21X			
A.7. Documentation showing compliance with local approval requirements. NR 670.014(2)(w)	ATT 21A			
A.8. Complete Part A application. NR 670.013	ATT 21P			
A.9. Technical data, such as design drawings and specifications and engineering studies are certified by WI registered PE. NR 670.014(1)	ATT 21B			
A.10. General description of facility. NR 670.014(2)(a)	CH 1: 1-1; CH 4: 4-1			
A.11. Description of procedures, structures or equipment used to prevent hazards in unloading operations. NR 670.014(2)(h)1.	CH 10: 10-1			
A.12. Description of procedures, structures or equipment used to prevent runoff from hazardous waste handling areas or to prevent flooding. NR 670.014(2)(h)2.	CH 10: 10-2			
A.13. Description of procedures, structures or equipment used to prevent contamination of water supplies. NR 670.014(2)(h)3.	CH 10: 10-2			
A.14. Description of procedures, structures or equipment used to mitigate effects of equipment failure or power outages. NR 670.014(2)(h)4.	CH 11: 11-1			
A.15. Description of procedures, structures or equipment used to prevent exposure of personnel. NR 670.014(2)(h)5.	CH 13: 13-1			
A.16. Description of procedures, structures or equipment used to prevent releases to the atmosphere. NR 670.014(2)(h)6.	CH 4; CH 10e: 10-4; ATT 21B, 21E, 21J, 21M, 21S			
A.17. Traffic patterns, estimated traffic volume, traffic control, access road surfacing and load bearing capacity. NR 670.014(2)(j)	CH 15: 15-1			
A.18. Chemical and physical analyses of the hazardous waste and debris to be handled at the facility. NR 670.014(2)(b)	CH 5: 5-1; ATT 21S, 21T			
A.19. Chemical and physical analyses contains all information that must be known to treat, store or dispose of the waste according to NR 664 requirements. NR 670.014(2)(b)	CH 5: 5-1; ATT 21S, 21T			
A.20. Justification of any request for a waiver of the preparedness and prevention requirements of NR 664 subch. C. NR 670.014(2)(f)	NA			
A.21. Description of precautions taken to prevent accidental ignition or reaction of ignitable, reactive or incompatible wastes, including A.22 to A.24. NR 670.014(2)(i)	CH 14: 14-1			
A.22. Ignitable and reactive waste is separated and protected from sources of ignition or reaction. NR 664.0017(1)	CH 14: 14-1			
A.23. Smoking and open flame are confined to specially designated locations when handling ignitable or reactive waste. NR 664.0017(1)	CH 14: 14-1			
A.24. "No Smoking" signs are conspicuously placed where there is a hazard from ignitable or reactive waste. NR 664.0017(1)	CH 10: 10-1; CH 14: 14-1			

PART I - GENERAL REQUIREMENTS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
A.25. Documentation demonstrating compliance with A.22. to A.24., including references to published scientific or engineering literature, data from trial tests, waste analysis or the results of treatment of similar waste by similar treatment under similar operating conditions. NR 664.0017(3)	NA			
<b>Section B. Noncompliance with Plans or Orders NR 670.014(2)(x)1.</b>				
B.1. Identification of all persons owning ≥10% legal or equitable interest in the applicant or their assets. NR 670.014(2)(x)1.a	CH 4: 4-1			
B.2. Identification of all WI solid or hazardous waste facilities for which applicant or other identified person is named in or subject to a department order or plan approval. NR 670.014(2)(x)1.b.	CH 4: 4-1			
B.3. Identification of all WI solid or hazardous waste facilities owned by the applicant or other identified person who owns or previously owned ≥10% interest in the assets. NR670.014(2)(x)1.c.	CH 4: 4-1			
B.4. Statement regarding whether or not all plan approvals and orders relating to all identified facilities are being complied with. NR 670.014(2)(x)1.d.	CH 17: 17-1			
<b>Section C. Environmental Impact Review NR 670.014(2)(x)2.</b>				
C.1. Purpose, history, background, relevant local, state and federal permits or approvals and zoning changes for the project. NR 670.014(2)(x)2.a.	ATT 21Q; ATT 21R			
C.2. Description of proposed physical changes related to terrestrial resources, such as soil placement, construction of roads, surface water drainage and sedimentation controls. NR 670.014(2)(x)2.b.1)	NA			
C.3. Description of proposed physical changes related to aquatic resources, such as impacts to streams, wetlands or other water bodies. NR 670.014(2)(x)2.b.2)	CH 16: 16-1; ATT 21U			
C.4. Description of proposed physical changes related to the construction of buildings and other structures. NR 670.014(2)(x)2.b.3)	NA			
C.5. Description of proposed physical changes related to air emissions and water discharges during facility construction, operation and closure. NR 670.014(2)(x)2.b.4)	CH 10: 10-1; CH 19: 19-1			
C.6. Description of proposed physical changes related to any other changes anticipated with facility development. NR 670.014(2)(x)2.b.5)	NA			
C.7. Maps, plans or other materials needed to clarify the information provided for C.2. to C.6. NR 670.014(2)(x)2.b.6)	ATT 21U			
C.8. Description of the affects on the existing physical environment, such as topography, surface water drainage, hydrogeologic conditions, geology. NR 670.014(2)(x)2.c.1)	CH 3: 3-1; ATT 21Q			
C.9. Description of the affects on existing dominant aquatic and terrestrial plant and animal species and habitats. NR 670.014(2)(x)2.c.2)	ATT 21Q; ATT 21R			
C.10. Description of the affects on existing land use, dominant features, and zoning in the area. NR 670.014(2)(x)2.c.3)	ATT 21Q; ATT 21R			
C.11. Description of the affects on existing social and economic conditions, such as ethnic or cultural groups. NR 670.014(2)(x)2.c.4)	ATT 21Q; ATT 21R			
C.12. Description of the affects on other existing special resources, such as archaeological, historical, state natural areas, or prime agricultural lands. NR 670.014(2)(x)2.c.5)	ATT 21Q; ATT 21R			
C.13. Discussion of the probable adverse and beneficial physical impacts associated with facility design, construction and operation. NR 670.014(2)(x)2.d.1)	ATT 21Q; ATT 21R			
C.14. Discussion of the probable adverse and beneficial biological impacts such as destruction and creation of habitat, alteration of physical environment and impacts to endangered or threatened species. NR 670.014(2)(x)2.d.2)	ATT 21Q; ATT 21R			
C.15. Discussion of the probable adverse and beneficial impacts on land use. NR 670.014(2)(x)2.d.3)	ATT 21Q; ATT 21R			
C.16. Discussion of the probable adverse and beneficial social and economic impacts to local residents, cultural groups and communities and industries served by the facility. NR 670.014(2)(x)2.d.4)	ATT 21Q; ATT 21R			
C.17. Discussion of probable adverse and beneficial impacts on other special resources, such as archaeological, historical, state natural areas and prime agricultural lands. NR 670.014(2)(x)2.d.5)	ATT 21Q; ATT 21R			

PART I - GENERAL REQUIREMENTS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
C.18. Discussion of probable adverse impacts that cannot be avoided, such as groundwater and surface water impacts, modifications of topography, loss of agricultural or forest land, displacement of wildlife and adverse aesthetic impacts for people in and around the facility. NR 670.014(2)(x)2.d.6)	ATT 21Q; ATT 21R			
C.19. Identify, describe and discuss feasible alternatives such as taking no action, enlargement, reduction or modification of the project. NR 670.014(2)(x)2.e.	ATT 21Q; ATT 21R			
C.20. Needs determination, per s. 289.28, Wis. Stat. NR 670.014(2)(x)3.	ATT 21Q; ATT 21R			
<b>Section D. Groundwater Protection NR 670.014(3)</b>				
D.1. If all regulated units meet NR 664.0090(2), this Section is not applicable.	NA			
D.2. Summary of groundwater monitoring data from interim license period. NR 670.014(3)(a)	CH 10d(5); 10-3; ATT 21K			
D.3. Uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, groundwater flow direction and rate, and basis of identification. NR 670.014(3)(b)	CH 3: 3-2; ATT 21K			
D.4. Topographic map delineating waste management area, property boundary, point of compliance and proposed location of monitoring wells. NR 670.014(3)(c)	CH 1: 1-1; CH 4: 4-1; ATT 21U			
D.5. Description of contamination plume that entered the groundwater from a regulated unit at the time of the application, delineation of the extent of the plume on the topographic map and identification of hazardous constituent concentrations in the plume. NR 670.014(3)(d)	NA			
D.6. Detailed plans and engineering report describing the proposed groundwater monitoring program to be implemented per NR 664.0097. NR 670.014(3)(e)	CH 10d(5); 10-3; ATT 21K			
D.7. If hazardous constituents have not been detected in the groundwater at the time of the license application, sufficient information, supporting data and analyses to establish a detection monitoring program which meets NR 664.0098. NR 670.014(3)(f)	CH 10d(5); 10-3; ATT 21K			
D.8. If hazardous constituents have been detected in the groundwater at the point of compliance at the time of the license application, sufficient information, supporting data and analyses to establish a compliance monitoring program meeting NR 664.0099. NR 670.014(3)(g)	CH 10d(5); 10-3; ATT 21K			
D.9. If hazardous constituents have been measured in the groundwater exceeding concentration limits in NR 664.0094 Table 1 or if groundwater monitoring conducted at the time of the license application at the waste boundary indicates the presence of hazardous waste constituents from the facility, sufficient information, supporting data and analyses to establish a corrective action program meeting NR 664.0100. NR 670.014(3)(h)	CH 10d(5); 10-3; ATT 21K			
<b>Section E. Corrective Action and Solid Waste Management Units NR 670.014(4)</b>				
E.1. If applicable, information regarding groundwater protection if there is a release from a SWMU. NR 670.014(3)	NA			
E.2. Topographic map showing location of SWMU. NR 670.014(4)(a)1.	ATT 21U			
E.3. Designate type of SWMU. NR 670.014(4)(a)2.	CH 4: 4-1			
E.4. General dimensions and structural description of SWMU. NR 670.014(4)(a)3.	CH 4; ATT 21B, 21E, 21U			
E.5. When the SWMU was operated. NR 670.014(4)(a)4.	CH 4: 4-2			
E.6. All wastes managed at the SWMU are specified. NR 670.014(4)(a)5.	CH 5; CH 6; ATT 21T			
E.7. All available information pertaining to releases of hazardous waste constituents from hazardous waste units. NR 670.014(4)(b)	CH 5; CH 6; ATT 21T			
E.8. Results of sampling and analysis of surface or groundwater, soil and air sampling if the department determines a RFA is necessary. NR 670.014(4)(c)	CH 10; ATT 21K, 21Q, 21X			
<b>Section F. Location Standards NR 670.014(2)(k) and NR 670.014(2)(s)</b>				
F.1. Identify if facility is in a 100-year floodplain and source of data. NR 670.014(2)(k)3.	CH 16: 16-1; ATT 21U			
F.2. Copy of federal insurance administration flood map, or calculations and maps if FIA map is not available. NR 670.014(2)(k)3.	CH 16: 16-1; ATT 21U			
F.3. Identify 100-year flood level and other flooding factors (wave action) considered in design, construction, operation or maintenance of facility to withstand washout from 100 year flood. NR 670.014(2)(k)3.	CH 16: 16-1; ATT 21U			
F.4. If facility is located in 100 year flood plain, engineering analysis of various hydrodynamic and hydrostatic forces. NR 670.014(2)(k)4.a. AND	NA			

PART I - GENERAL REQUIREMENTS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
F.5. Structural or other engineering studies showing design of operational units and flood protection devices and how they will prevent washout. NR 670.014(2)(k)4.b. OR	CH 10d: 10-2			
F.6. Description of procedures to move hazardous waste before flooding, including timing; new approved or licensed location; resources needed; and, potential of discharge during move. NR 670.014(2)(k)4.c.	NA			
F.7. If a facility located in a 100-year floodplain is not designed, constructed, operated and maintained to prevent washout, a demonstration that procedures in effect to move the waste safely to a location that is not vulnerable to flood waters before flood waters reach the facility. NR 664.0018(2)(a)	NA			
F.8. If an existing facility is not in compliance with F.7., a plan and schedule to bring the facility into compliance. NR 670.014(2)(k)5.	NA			
F.9. A dated topographic map showing a distance of 1,000 feet around the facility, with a scale of no more than 1 inch to 200 feet, and contour intervals that clearly shows pattern of surface water flow of waste management unit. NR 670.014(2)(s)	ATT 21U			
F.10. Map shows map scale and date. NR 670.014(2)(s)1.	ATT 21U			
F.11. Map shows 100 year flood plain area. NR 670.014(2)(s)2.	ATT 21U			
F.12. Map shows surface waters, including intermittent streams. NR 670.014(2)(s)3	ATT 21U			
F.13. Map shows surrounding land uses (residential, commercial, agricultural, recreational). NR 670.014(2)(s)4	ATT 21U			
F.14. Map shows wind rose (prevailing wind speed and direction). NR 670.014(2)(s)5	ATT 21U			
F.15. Map shows map orientation. NR 670.014(2)(s)6	ATT 21U			
F.16. Map shows legal boundaries of the hazardous waste facility. NR 670.014(2)(s)7	ATT 21U			
F.17. Map shows access control (fence, gates). NR 670.014(2)(s)8	ATT 21U			
F.18. Map shows location of injection or supply wells on-site and off-site. NR 670.014(2)(s)9	NA			
F.19. Map shows buildings and storage, treatment or disposal operations. NR 670.014(2)(s)10.	ATT 21U			
F.20. Map shows other structures such as recreation areas, runoff control systems, roads, sewers, loading, unloading areas, etc. NR 670.014(2)(s)10.	ATT 21U			
F.21. Map shows barriers for drainage or flood control. NR 670.014(2)(s)11.	ATT 21U			
F.22. Map shows location of operational units where hazardous waste will be treated, stored or disposed. NR 670.014(2)(s)12.	ATT 21U			
F.23. Facility is not located in a wetland. NR 670.014(2)(k)6.b.	CH 16: 16-1; ATT 21U			
F.24. Facility is not located in a critical habitat for threatened or endangered species. NR 670.014(2)(k)6.a.	ATT 21Q; ATT 21R			
<b>Section G: Waste Analysis Plan Requirements NR 670.014(2)(c)</b>				
G.1. Procedures for obtaining chemical and physical analyses of hazardous waste managed at facility. NR 664.0013(1)(a)	CH 6: 6-1; ATT 21S			
G.2. Analysis by WI certified labs. NR 664.0013(1)(a)1.	ATT 21S			
G.3. Description of other data to be used rather than lab analysis. NR 664.0013(1)(b)	ATT 21S			
G.4. For off-site waste, analysis upon receipt to verify waste matches description on manifest. NR 670.0013(1)(d)	NA			
G.5. Parameters for which waste will be analyzed and rationale. NR 664.0013(2)(a)	ATT 21S			
G.6. Test methods that will be used. NR 664.0013(2)(b)	ATT 21S			
G.7. Sampling methods to obtain representative sample. NR 664.0013(2)(c)	ATT 21S			
G.8. Frequency of repeating initial analysis to ensure it is accurate and up to date. NR 664.0013(2)(d)	ATT 21S			
G.9. At a minimum, analysis is repeated if the process generating the waste has changed or when the inspection upon receiving the waste does not match the description on the manifest. NR 664.0013(1)(c).	ATT 21S			
G.10. For off-site waste, the waste analysis generators agree to supply. NR 664.0013(2)(e)	NA			
G.11. If ignitable, reactive or incompatible wastes are managed, the waste analysis methods used to comply with NR 664.0017(3). NR 664.0013(2)(f)	CH 5; CH 14; ATT 21S			
G.12. If the facility is subject to NR 664 subch. AA standards for process vents, the test methods and procedures used to comply with NR 664.1034(4). NR 664.0013(2)(f)	NA			

PART I - GENERAL REQUIREMENTS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
G.13. If the facility is subject to NR 664 subch. BB standards for equipment leaks, the test methods and procedures used to comply with NR 664.1063(4). NR 664.0013(2)(f)	NA			
G.15. The testing performed to determine if the waste meets or exceeds LDR standards, as required by NR 668.07. NR 664.0013(2)(f)	CH 6: 6-1; ATT 21S			
G.14. If the facility is subject to NR 664 subch. CC standards for containers or tanks, the waste determination procedures in NR 664.1083. NR 664.0013(2)(f)	NA (ATT 21S)			
G.16. Information if seeking exemption to subch. CC requirements. NR 664.0013(2)(h)	NA			
G.17. For off-site waste, procedures used to inspect, and if necessary, analyze each movement of waste to ensure it matches the identity of the waste designated on the manifest. NR 664.0013(3)	NA			
<b>Section H: Security Requirements NR 670.014(2)(d)</b>				
H.1. Security procedures to prevent unknowing entry by a 24 hour surveillance system which continuously monitors and controls entry. NR 664.0014(2)(a) OR,	CH 7: 7-1			
H.2. The artificial or natural barrier surrounding active portions of facility and other means of controlled entry, such as gates or locked entrance AND NR 664.0014(2)(b)	CH 7: 7-1			
H.3. The placement of "Danger – Unauthorized Persons Keep Out" signs at entrances and other locations. NR 664.0014(3)	CH 7: 7-1			
H.4. Demonstration that the above security requirements are not necessary. NR 664.0014(1)	CH 7: 7-1			
<b>Section I. General Inspection Requirements NR 670.014(2)(e)</b>				
I.1. Description of the equipment and devices inspected. NR 664.0015(2)(a)	CH 8: 8-1; ATT 21J			
I.2. Description of problems checked during the inspection. NR 664.0015(2)(c)	CH 8: 8-1; ATT 21J			
I.3. Inspection schedule for closed vent system and control device, required by NR 664.1033. NR 670.014(2)(d)	NA			
I.4. Inspection schedule for subch. BB pumps in light liquid service, required by NR 664.1052. NR 670.014(2)(d)	NA			
I.5. Inspection schedule for subch. BB compressors, required by NR 664.1053. NR 670.014(2)(d)	NA			
I.6. Inspection schedule for subch. BB pumps and valves in heavy liquid service, pressure relief devices and connectors, required by NR 664.1058. NR 670.014(2)(d)	NA			
I.7. The inspection frequency for pumps, valves, pressure relief devices or connectors subject to subch. BB is adequate to prevent environmental or human health incidents. NR 664.0015(2)(d)	NA			
I.8. Areas subject to spills inspected daily when in use. NR 664.0015(2)(d)	CH 8: 8-1; ATT 21J			
I.9. Inspection frequency for other areas based on deterioration of equipment and probability of environmental or human health incident if problem goes undetected between inspections. NR 664.0015(2)(d)	CH 8: 8-1; ATT 21J			
I.10. Schedule to remedy ensures problem does not lead to environmental or health hazard. NR 664.0015(3)	CH 8: 8-1; ATT 21J			
I.11. Inspection log will be kept for at least 3 years and includes date and time of inspection; inspector name; observations made; date and type of remedial actions. NR 664.0015(4)	CH 8: 8-1; ATT 21J			
<b>Section J. Contingency Plan Requirements NR 670.014(2)(g)</b>				
J.1. Copy of Contingency Plan. NR 670.014(2)(g)	CH 12: 12-1; ATT 21J			
J.2. Plan is designed to minimize hazards to human health or the environment in the event of a release. NR 664.0051(1)	CH 12: 12-1; ATT 21J			
J.3. Provisions in the plan will be carried out immediately if release threatens human health or the environment. NR 664.0051(2)	CH 12: 12-1; ATT 21J			
J.4. Describes actions facility personnel will take if a release. NR 664.0052(1)	CH 12: 12-1; ATT 21J			
J.5. If using SPCC, it has been amended to incorporate hazardous waste provisions. NR 664.0052(2)	NA			
J.6. Describes arrangements with local emergency agencies, hospitals and contractors. NR 664.0052(3)	ATT 21J			
J.7. Current list of emergency coordinator (primary and alternate) names, addresses and home/office phone numbers. NR 664.0052(4)	ATT 21J			

PART I - GENERAL REQUIREMENTS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
J.8. Current list of emergency equipment, describing location, physical description and capability of each item. NR 664.0052(5)	CH 10: 10-1; ATT 21J			
J.9. Evacuation plan, signals to begin evacuation and alternate routes. NR 664.0052(6)	ATT 21J			
J.10. Copy of plan kept at facility and copy sent to police and fire depts., hospital, and state and local response teams. NR 664.0053	ATT 21J			
J.11. Plan will be reviewed and amended, as necessary. NR 664.0054	CH 12: 12-1			
J.12. Emergency coordinator always on premises or on call. NR 664.0055	ATT 21J			
J.13. Emergency coordinator is thoroughly familiar with plan, site operations, waste types handled, facility records and layout. NR 664.0055	ATT 21J			
J.14. Emergency coordinator has authority to commit resources to carry out contingency plan. NR 664.0055	ATT 21J			
J.15. Emergency coordinator activates alarms and notifies state or local agencies. NR 664.0056(1)	ATT 21J			
J.16. Emergency coordinator identifies the character, sources, amount and extent of release. NR 664.0056(2)	ATT 21J			
J.17. Emergency coordinator assesses possible hazards to human health and environment. NR 664.0056(3)	ATT 21J			
J.18. Emergency coordinator notifies local authorities if evacuation is necessary. NR 664.0056(4)(a)	ATT 21J			
J.19. Emergency coordinator notifies emergency response officials of release outside of facility. NR 664.0056(4)(b)	ATT 21J			
J.20. Emergency coordinator takes reasonable measures to ensure fire, explosion or release do not occur or spread to other hazardous waste. NR 664.0056(5)	ATT 21J			
J.21. Emergency coordinator monitors for leaks, pressure build-up, and gas generation if operations stop. NR 664.0056(6)	ATT 21J			
J.22. Emergency coordinator arranges for treatment, storage, or disposal of materials after emergency. NR 664.0056(7)	ATT 21J			
J.23. Emergency coordinator ensures no incompatible waste is treated, stored or disposed until cleanup is completed. NR 664.0056(8)(a)	ATT 21J			
J.24. Emergency coordinator ensures all emergency equipment is clean and fit for use before operations resume. NR 664.0056(8)(b)	ATT 21J			
J.25. Owner or operator notifies department and state and local authorities before resuming operations. NR 664.0056(9)	ATT 21J			
J.26. Implementation of plan will be noted in operating log and incident report sent to WDNR in 15 days. NR 664.0056(10)	ATT 21J			
<b>Section K. Training Plan Requirements NR 670.014(2)(L)</b>				
K.1. Outline of both introductory and continuing training programs to prepare persons to operate or maintain facility in a safe manner. NR 670.014(2)(L)	CH 9: 9-1; ATT 21J			
K.2. Training program teaches personnel hazardous waste management procedures relevant to the positions in which they are employed. NR 664.0016(1)(b)	CH 9: 9-1; ATT 21J			
K.3. Training program ensures facility personnel can respond effectively to emergencies by familiarizing them with emergency procedures, equipment and systems. NR 664.0016(1)(c)	CH 9: 9-1; ATT 21J			
K.4. Personnel complete training within 6 months of being in new position and before working in unsupervised positions. NR 664.0016(2)	CH 9: 9-1; ATT 21J			
K.5. Training documentation includes job title, job description, type and amount of training to be given and training that is completed. NR 664.0016(4)	CH 9: 9-1; ATT 21H, 21J			
K.6. Brief description of how training will be designed to meet actual job tasks. NR 670.014(2)(L)	CH 9: 9-1; ATT 21J			
<b>Section L. Closure Plan Requirements NR 670.014(2)(m)</b>				
L.1. Copy of Closure Plan. NR 670.014(2)(m)	CH 19: 19-1; ATT 21V			
L.2. Description of how each unit will close during partial or final closure to minimize the need for further maintenance. NR 664.0112(2)(a)	CH 19: 19-1; ATT 21V			
L.3. Description of how each unit will close during partial or final closure to control, minimize or eliminate post-closure escape of hazardous waste constituents. NR 664.0112(2)(a)	CH 19: 19-1; ATT 21V			
L.4. Description of the maximum extent of operations during the active life of the facility. NR 664.0112(2)(b)	CH 19: 19-1; ATT 21V			
L.5. Estimate of maximum inventory during active life of facility. NR 664.0112(2)(c)	CH 19: 19-1; ATT 21V			



PART I - GENERAL REQUIREMENTS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
L.6. Description of methods used to remove, transport, treat, store, and dispose of all hazardous waste during partial and final closure. NR 664.0112(2)(c)	CH 19: 19-1; ATT 21V			
L.7. Identification of the types of off-site hazardous waste management units to be used. NR 664.0112(2)(c)	CH 19: 19-1; ATT 21V			
L.8. Detailed description of steps needed to remove or decontaminate all hazardous waste residues and contaminated equipment, structures and soils during partial and final closure. NR 664.0112(2)(d)	CH 19: 19-1; ATT 21V			
L.9 Detailed description of other activities necessary to ensure all partial and final closures satisfy the closure performance standards. NR 664.0112(2)(e)	CH 19: 19-1; ATT 21V			
L.10. During closure of container areas, all hazardous waste and residues will be removed from the containment system; remaining contaminated structures and soil will be decontaminated or removed. NR 664.0178	CH 19: 19-1; ATT 21V			
L.11. During closure of tank systems, all waste residues, contaminated containment system components, soils, structures and equipment is decontaminated or removed. NR 664.0197(1)	CH 19: 19-1; ATT 21V			
L.12. Schedule for closure of each hazardous waste management unit and final closure of the facility. NR 664.0112(2)(f)	CH 19: 19-1; ATT 21V			
L.13. The estimated year of final closure if the financial mechanism is a trust fund and the facility expects to close before the operating license expires. NR 664.0112(2)(g)	CH 19: 19-1; ATT 21V			
L.14. Alternative requirements for closure established by the department. NR 664.0112(2)(h)	CH 19: 19-1; ATT 21V			
L.15. Department will be notified at least 180 days prior to partial or final closure. NR 664.0112(4)(a)	CH 19: 19-1; ATT 21V			
L.16. Within 90 days of receiving the final volume of hazardous waste, all hazardous waste is treated, or removed from the unit or facility. NR 664.0113(1)	CH 19: 19-1; ATT 21V			
L.17. Partial and final closure activities are completed within 180 days after receiving the final volume of hazardous waste. NR 664.0113(2)	CH 19: 19-1; ATT 21V			
L.18. All contaminated equipment, structures, and soils will be properly disposed of or decontaminated. NR 664.0114	CH 19: 19-1; ATT 21V			
L.19. Within 60 days of completing final closure, a certification of closure will be sent to the department. NR 664.0115	CH 19: 19-1; ATT 21V			
<b>Section M: Closure Cost Estimate and Financial Responsibility NR 670.014(2)(o)</b>				
M.1. The most recent detailed written closure cost estimate in current dollars for closing the facility in accordance with the approved closure plan. NR 664.0142(1)	CH 19: 19-1; ATT 21V			
M.2. Cost estimate equals the cost of final closure when facility operations make closure the most expensive. NR 664.0142(1)(a)	CH 19: 19-1; ATT 21V			
M.3. Cost estimate is based on hiring a third party to close the facility. NR 664.0142(1)(b)	CH 19: 19-1; ATT 21V			
M.4. Cost estimate does not incorporate any salvage value of hazardous waste, structures, equipment, land or assets. NR 664.0142(1)(c)	CH 19: 19-1; ATT 21V			
M.5. Closure estimate does not include a zero cost for hazardous waste that might have economic value. NR 664.0142(1)(d)	CH 19: 19-1; ATT 21V			
M.6. Facility has established financial assurance that covers the closure cost estimate. NR 664.0143	CH 19: 19-1; ATT 21N, 21V			
M.7. The financial assurance mechanism meets all applicable requirements in NR 664.0143.	CH 19: 19-1; ATT 21N, 21V			
M.8. If a new facility, the financial assurance is submitted 60 days prior to initial receipt of waste. NR 670.014(2)(o)	NA			
<b>Section N: Pollution Liability Insurance NR 670.014(2)(q)</b>				
N.1. Copy of the insurance policy or other documentation demonstrating liability coverage. NR 670.014(2)(q)	ATT 21O			
N.2. Financial responsibility covers bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility. NR 664.0147(1)	ATT 21O			
N.3. Coverage for sudden accidental occurrences of at least \$1 million per occurrence with annual aggregate of at least \$2 million. NR 664.0147(1)	ATT 21O			
N.4. If a new facility, documentation showing the amount of insurance to be in place before the initial receipt of waste. NR 670.014(2)(q).	NA			

**PART II - UNIT REQUIREMENTS - CONTAINERS**

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section A: Container Standards – Inspections NR 670.014(2)(e)</b>				
A.1. Container storage areas inspected at least weekly for leaking containers and the deterioration of containers and containment system. NR 664.0174	CH 8: 8-1; ATT 21J			
A.2. Inspection frequency of container storage areas is adequate to prevent environmental or human health incident. NR 664.0015(2)(d)	CH 8: 8-1; ATT 21J			
A.3. Inspection schedule for subch. CC containers, as required by 664.1086. NR 670.014(2)(e)	NA			
A.4. Inspection schedule includes inspection and monitoring requirements in NR 664.1088 for containers. NR 670.014(2)(e)	NA			
A.5. The inspection frequencies required by subch. CC for containers are adequate to prevent environmental or human health incidents. NR 664.0015(2)(d)	NA			
<b>Section B. Container Standards – Containment NR 670.015(1)</b>				
B.1. Base of containment system is designed and operated to be free of cracks or gaps and sufficiently impervious to leaks and precipitation until material is removed. NR 664.0175(2)(a)	CH 4; CH10; ATT 21B, 21E, 21S			
B.2. Base is sloped or containment system is designed and operated to drain and remove liquids from leaks or precipitation OR containers are elevated or otherwise protected from contacting accumulated liquids. NR 664.0175(2)(b)	CH 4; CH 10; ATT 21B, 21E, 21J, 21S			
B.3. Capacity of containment system is 10% of the volume of containers or the volume of the largest container, which ever is greater. Containers without free liquids need not be considered. NR 664.0175(2)(c)	CH 4; CH 10; ATT 21B, 21E, 21S			
B.4. Run-on into the containment system is prevented unless the containment system has sufficient excess capacity to contain it. NR 664.0175(2)(d)	CH 4; CH 10; ATT 21B, 21E			
B.5. Spilled waste and precipitation are removed from sump or collection area in a timely manner to prevent overflow. NR 664.0175(2)(e)	CH 4; CH 10; ATT 21B, 21E, 21J			
B.6. The design and operation of the containment structure complies with B.1. to B.5. for containers of F020-F023 and F026- F027 wastes that do not contain free liquids. NR 664.0175(4)	NA			
B.7. Description of basic design parameters, dimensions and materials of construction of the containment system. NR 670.015(1)(a)	CH 4; CH 10; ATT 21B, 21E, 21S			
B.8. Description of how the design of the containment system promotes drainage or how containers are kept from contacting standing liquids. NR 670.015(1)(b)	CH 4; CH 10; ATT 21B, 21E, 21J			
B.9. Description of the capacity of the containment system relative to the number and volume of containers to be stored. NR 670.015(1)(c)	CH 4; CH 10; ATT 21B, 21E, 21P			
B.10. Provisions for preventing or managing run-on. NR 670.015(1)(d)	CH 4; CH 10; ATT 21B, 21E, 21J			
B.11. How accumulated liquids will be analyzed and removed to prevent overflow. NR 670.015(1)(e)	CH 4; CH 10; ATT 21J			
B.12. Other than B.6., if all containers do not contain free liquids, either the storage area is sloped or otherwise designed to drain and remove precipitation; or, the containers are elevated or otherwise protected from contact with accumulated liquid. NR 670.015(2)	CH 4; CH 10; ATT 21B, 21E, 21J			
B.13. Test procedures and results or other documentation or information showing waste in B.12. does not contain free liquids. NR 670.015(2)(a)	CH 4; ATT 21S, 21T			
B.14. Description of how the storage area for waste in B.12. is designed or operated to drain and remove liquids, or how containers with no free liquids are kept from contacting standing liquids. NR 670.015(2)(b)	CH 4; CH 10; ATT 21B, 21E, 21J			
<b>Section C: Container Standards – Incompatible, Reactive, Ignitable Waste NR 670.015(3) and NR 670.015(4)</b>				
C.1. Sketches, drawings or data demonstrating containers of ignitable or reactive waste are located at least 50 feet from the facility property line. NR 664.0176	CH 4; ATT 21U			
C.2. Sketches, drawings or data demonstrating storage containers of hazardous waste that are incompatible with other waste or materials stored nearby in other containers, piles or open tanks are separated or protected by a dike, berm, wall or other device. NR 664.0177(3)	CH4; ATT 21S, 21U			
C.3. Description of procedures to ensure incompatible wastes are not placed in the same container unless the requirements in C.4. to C.10. are met. NR 670.0015(4)	CH 10; CH 14; ATT 21J			
C.4. Precautions taken to prevent reactions generating extreme heat or pressure, fire or explosions or violent reactions. NR 664.0017(2)(a)	CH 10; CH 14; ATT 21J			

**PART II - UNIT REQUIREMENTS - CONTAINERS**

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
C.5. Precautions taken to prevent reactions producing uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment. NR 664.0017(2)(b)	CH 10; CH 14; ATT 21J			
C.6. Precautions taken to prevent reactions producing uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion. NR 664.0017(2)(c)	CH 10; CH 14; ATT 21J			
C.7. Precautions taken to prevent reactions damaging the structural integrity of the device or facility. NR 664.0017(2)(d)	CH 10; CH 14; ATT 21J			
C.8. Precautions taken to prevent reactions through other means to threaten human health or the environment. NR 664.0017(2)(e)	CH 10; CH 14; ATT 21J			
C.9. Documentation of compliance with C.4. to C.8., based on references to published scientific or engineering literature, data from trial tests, waste analyses or the results of treatment of similar wastes or similar treatment processes and under similar operating conditions. NR 664.0017(3)	CH 10; CH 14; ATT 21J, 21S			
C.10. Description of procedures to ensure hazardous waste is not placed in an unwashed container that previously held an incompatible waste or material. NR 664.0177(2)	CH 14; ATT 21J			

PART II - UNIT REQUIREMENTS - TANKS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section D: Tank Standards – General NR 670.016</b>				
D.1. Dimensions and capacity of each tank. NR 670.016(2)	NA			
D.2. Description of feed systems, safety cutoff, bypass systems and pressure controls. NR 670.016(3)	NA			
D.3. Diagram of piping, instrumentation and process flow for each tank system. NR 670.016(4)	NA			
D.4. Description of spill prevention controls, such as check valves, dry disconnect couplings. NR 664.0194(2)(a)	NA			
D.5. Description of overflow prevention controls, such as level sensing devices, high level alarms, automatic feed cutoff or bypass to a standby tank. NR 664.0194(2)(b)	NA			
D.6. Description of how sufficient freeboard in uncovered tanks will be maintained to prevent overtopping by wave or wind action or precipitation. NR 664.0194(2)(c)	NA			
<b>Section E: Tank Standards – Inspections NR 670.014(2)(e)</b>				
E.1. Inspection schedule for tank overflow controls. NR 664.0195(1).	NA			
E.2. Aboveground portions of tank systems inspected at least once each operating day to detect corrosion or releases of waste. NR 664.1095(2)(a)	NA			
E.3. Construction materials and area immediately surrounding tank systems inspected at least once each operating day to detect erosion or signs of releases. NR 664.1095(2)(c)	NA			
E.4. Data gathered from monitoring and leak detection equipment inspected at least once each operating day to ensure the tank system is operated according to design. NR 664.1095(2)(b)	NA			
E.5. Proper operation of the cathodic protection system is confirmed by inspection within 6 months of initial installation and annually thereafter. NR 664.1095(3)(a)	NA			
E.6. All sources of impressed current inspected and/or tested, as appropriate, at least every other month. NR 664.1095(3)(b)	NA			
E.7. Inspection schedule for subch. CC tank requirements, as stated in 664.1084 and 664.1088. NR 670.014(2)(e)	NA			
E.8. Inspection frequencies required by subch. CC for tanks are adequate to prevent environmental or human health incidents. NR 664.0015(2)(d)	NA			
<b>Section F: Tank Standards – Existing Tanks NR 670.016(1)</b>				
F.1. For each tank system installed before March 1, 1991, a written assessment reviewed and certified by an independent, qualified, registered PE as to the structural integrity and suitability for handling hazardous waste which includes the information in F.2. to F.8. NR 670.016(1)	NA			
F.2. Design standards for construction of the tank and ancillary equipment. NR 664.0191(2)(a)	NA			
F.3. Hazardous characteristics for the wastes handled. NR 664.0191(2)(b)	NA			
F.4. Existing corrosion protection measures. NR 664.0191(2)(c)	NA			
F.5. The age of the tank system, either documented or estimated. NR 664.0191(2)(d)	NA			
F.6. Results of a leak test, internal inspection or other tank integrity examination. NR 664.0191(2)(e)	NA			
F.7. If underground tanks cannot be entered, a leak test capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets and high water table effects. NR 664.0191(2)(e)1.	NA			
F.8. If other tanks cannot be entered, a leak test or other integrity examination certified by a PE that addresses cracks, leaks, corrosion, and erosion. NR 664.0191(2)(e)2.	NA			
F.9. If, as a result of the assessment, the tank was found to be leaking or unfit for use, steps were taken to comply with F.10. to F.22. NR 664.0191(4)	NA			
F.10. Tank system or secondary containment system removed from service immediately. NR 664.0196	NA			
F.11. Flow of hazardous waste into the tank system or secondary containment system stopped immediately and the system inspected to determine the cause of the release. NR 664.0196(1)	NA			
F.12. If the release was from the tank system, as much waste as necessary was removed to prevent further releases and to allow inspection and repair of the tank system within 24 hours after detection or at the earliest practicable time. NR 664.0196(2)(a)	NA			
F.13. If the material was released to a secondary containment system, all released material was removed within 24 hours or in a timely manner to prevent harm to human health and the environment. NR 664.0196(2)(b)	NA			

PART II - UNIT REQUIREMENTS - TANKS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
F.14. Visual inspection of the release conducted. NR 664.0196(3)	NA			
F.15. Further migration of the spill to soils or surface water was prevented. NR 664.0196(3)(a)	NA			
F.16. Visible contamination of the soil or surface water was removed and properly disposed. NR 664.0196(3)(b)	NA			
F.17. Release reported to the Department within 24 hours of its detection, unless less than one pound was released and material was contained and cleaned up immediately. NR 664.0196(4)	NA			
F.18. Written report submitted to the Department within 30 days of detecting the release. NR 664.0196(4)(c)	NA			
F.19. System was returned to service after cleanup and repairs if the integrity of the tank system was not damaged. NR 664.0196(5)(b)	NA			
F.20. If the leak was from the tank system into secondary containment, the system was repaired before the tank was returned to service. NR 664.0196(5)(c)	NA			
F.21. If the leak was from a component that did not have secondary containment, either secondary containment will be provided or repairs are made if the component can be visually inspected. NR 664.0196(5)(d)	NA			
F.22. If major repairs were made, a PE certification was submitted to the Department within 7 days of returning the tank system to use. NR 664.0196(6)	NA			
<b>Section G: Tank Standards – New Tanks NR 670.016(1) and NR 670.016(6)</b>				
G.1. For each new tank system, a written assessment reviewed and certified by an independent, qualified, registered PE as to the structural integrity and suitability for handling hazardous waste which includes the information in G.2. to G.19. NR 670.016(1)	NA			
G.2. Design standards to which the tanks and ancillary equipment are constructed. NR 664.0192(1)(a)	NA			
G.3. Hazardous characteristics of the wastes to be handled. NR 664.0192(1)(b)	NA			
G.4. If the external shell of the metal tank or any external metal component of the tank system will be in contact with soil or water, a determination by a corrosion expert of factors affecting the potential for corrosion, including G.5. to G.9, at a minimum. NR 664.0192(1)(c)	NA			
G.5. Soil moisture content, pH, sulfides level, and resistivity. NR 664.0192(1)(c)1	NA			
G.6. Structure to soil potential. NR 664.0192(1)(c)1	NA			
G.7. Influence of nearby underground metal structures, such as piping. NR 664.0192(1)(c)1	NA			
G.8. Existence of stray electric current. NR 664.0192(1)(c)1	NA			
G.9. Existing corrosion-protection measures. NR 664.0192(1)(c)1	NA			
G.10. A description of materials and equipment used to provide external corrosion protection to ensure the integrity of the tank system during its use, including one or more of those in G.11 to G.13. NR 664.0192(1)(c)2	NA			
G.11. Corrosion-resistant materials of construction such as special alloys, fiberglass, reinforced plastic, etc. NR 664.0192(1)(c)2.a.	NA			
G.12. Corrosion-resistant coating with cathodic protection. NR 664.0192(1)(c)2.b.	NA			
G.13. Electrical isolation devices such as insulating joints, flanges, etc. NR 664.0192(1)(c)2.c.	NA			
G.14. For underground tank system components that are likely to be adversely affected by vehicular traffic, the design or operational measures that will protect the tank system against potential damage. NR 664.0192(1)(d)	NA			
G.15. Design considerations to ensure tank foundations will maintain the load of a full tank. NR 664.0192(1)(e)1.	NA			
G.16. Design considerations to ensure tank systems will be anchored to prevent flotation or dislodgment when the tank system is placed in a saturated zone. NR 664.0192(1)(e)2.	NA			
G.17. Design considerations to ensure tank systems will withstand the effects of frost heave. NR 664.0192(1)(e)3.	NA			
G.18. Foundation, structural support, seams, connections and pressure controls, if needed, are adequately designed to ensure the tank system will not collapse, rupture or fail. NR 664.0192(1)	NA			
G.19. The tank system has sufficient structural strength, compatibility with the wastes to be stored or treated and corrosion protection to ensure it will not collapse, rupture or fail. NR 664.0192(1)	NA			

PART II - UNIT REQUIREMENTS - TANKS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
G.20. A detailed description of how the tank systems will be installed in compliance with G.21. to G.28. NR 670.016(6)	NA			
G.21. Before covering, enclosing or placing a new tank system or component in use, an independent qualified installation inspector or registered PE who is trained and experienced in the proper installation of tank systems or components will inspect the system for the presence of weld breaks, punctures, scrapes of protective coatings, cracks, corrosion and other structural damage or inadequate construction or installation. NR 664.0192(2)	NA			
G.22. All structural damage or inadequate construction or installation will be remedied before the tank system is covered, enclosed or placed in use. NR 664.0192(2)	NA			
G.23. For tank systems or components placed underground, the backfill material is noncorrosive, porous and homogeneous, installed so the backfill is placed completely around the tank, and compacted to ensure the tank and piping are fully and uniformly supported. NR 664.0192(3)	NA			
G.24. All tanks and ancillary equipment will be tightness tested before being covered, enclosed or placed in use. NR 664.0192(4)	NA			
G.25. If the tank system is found not to be tight, all repairs necessary to remedy the leaks in the system will be performed before the tank system is covered, enclosed or placed into use. NR 664.0192(4)	NA			
G.26. Ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction. NR 664.0192(5)	NA			
G.27. The type and degree of corrosion protection recommended by an independent corrosion expert is provided. NR 664.0192(6)	NA			
G.28. If field fabricated, a corrosion expert will supervise the installation of the corrosion protection system to ensure proper installation. NR 664.0192(6)	NA			
<b>Section H: Tank Standards – Secondary Containment NR 670.016(7) and NR 670.016(8)</b>				
H.1. Detailed plans and description of how the secondary containment system for each tank system meets the requirements stated in H.2. to H.9. NR 670.016(7)	NA			
H.2. Designed, constructed and operated to prevent the migration of wastes or accumulated liquid out of the system to the soil, groundwater or surface water at any time during use of the tank system. NR 664.0193(2)(a)	NA			
H.3. Designed, constructed and operated to detect and collect releases and accumulated liquid until the material is removed. NR 664.0193(2)(b)	NA			
H.4. Constructed of or lined with materials that are compatible with the wastes to be placed in the tank system. NR 664.0193(3)(a)	NA			
H.5. Has sufficient strength and thickness to prevent failure due to pressure gradients, physical contact with the waste, climatic conditions and stress of daily operation. NR 664.0193(3)(a)	NA			
H.6. Placed on a foundation or base capable of providing support and resistance to pressure gradients above and below the system, and preventing failure due to settlement, compression or uplift. NR 664.0193(3)(b)	NA			
H.7. Provided with a leak detection system designed and operated to detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours or at the earliest practicable time unless demonstrated that existing detection technologies or site conditions will not allow detection of a release within 24 hours. NR 664.0193(3)(c)	NA			
H.8. Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills or precipitation. NR 664.0193(3)(d)	NA			
H.9. Spilled or leaked waste and accumulated precipitation will be removed from the secondary containment system within 24 hours or in a timely manner that prevents harm to human health and the environment if demonstrated that the material cannot be removed in 24 hours. NR 664.0193(3)(d)	NA			
H.10. Detailed plans and description of how an external liner system for each tank system meets the requirements stated in H.11. to H.14. NR 670.016(7)	NA			
H.11. Designed or operated to contain 100% of the capacity of the largest tank within its boundary. NR 664.0193(5)(a)1.	NA			

PART II - UNIT REQUIREMENTS - TANKS				
Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
H.12. Designed or operated to prevent run-on or infiltration of precipitation into the external liner system unless the collection system has sufficient excess capacity to contain run-on or infiltration from a 25 year, 24 hour rainfall event. NR 664.0193(5)(a)2.	NA			
H.13. Free of cracks and gaps. NR 664.0193(5)(a)3.	NA			
H.14. Designed and installed to surround the tank completely and cover all surrounding earth likely to come into contact with the waste if a release from the tank (capable of preventing lateral and vertical migration of waste). NR 664.0193(5)(a)4.	NA			
H.15. Detailed plans and description of how a vault system for each tank system meets the requirements stated in H.16. to H.21. NR 670.016(7)	NA			
H.16. Designed or operated to contain 100% of the capacity of the largest tank within its boundary. NR 664.0193(5)(b)1.	NA			
H.17. Designed or operated to prevent run-on or infiltration of precipitation into the vault system unless the collection system has sufficient excess capacity to contain run-on or infiltration from a 25 year, 24 hour rainfall event. NR 664.0193(5)(b)2.	NA			
H.18. Constructed with chemical-resistant water stops in place at all joints. NR 664.0193(5)(b)3.	NA			
H.19. Provided with an impermeable interior coating or lining compatible with the stored waste to prevent migration of waste into the concrete. NR 664.0193(5)(b)4.	NA			
H.20. Provided with a means to protect against the formation and ignition of vapors within the vault, if the waste stored or treated is ignitable waste or reactive waste capable of forming ignitable or explosive vapor. NR 664.0193(5)(b)5.	NA			
H.21. Provided with an exterior moisture barrier or otherwise designed or operated to prevent migration of moisture into the vault if it is subject to hydraulic pressure. NR 664.0193(5)(b)6.	NA			
H.22. Detailed plans and description of how a double-walled tank system for each tank system meets the requirements stated in H.23. to H.25. NR 670.016(7)	NA			
H.23. Designed as an integral structure so that the outer shell contains any release from the inner tank. NR 664.0193(5)(c)1.	NA			
H.24. Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell. NR 664.0193(5)(c)2.	NA			
H.25. Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours or at the earliest practicable time if demonstrated that existing detection technology or site conditions would not allow detection of a release within 24 hours. NR 664.0193(5)(c)3.	NA			
H.26. Detailed plans and description of how ancillary equipment for each tank system will be provided with secondary containment except for aboveground piping; welded flanges, joints and connections; sealless or magnetic coupling pumps and sealless valves; and, pressurized aboveground piping systems with automatic shut-off devices that are visually inspected for leaks on a daily basis. NR 664.0193(6)	NA			
H.27. If seeking an alternative to the requirements of this section, detailed plans and engineering and hydrogeologic reports describing alternate design and operating practices; and, an evaluation of location characteristics which demonstrate the migration of hazardous waste or constituents into groundwater or surface water during the life of the facility is prevented. NR 670.016(8)(a)	NA			
H.28. If seeking an alternative to the requirements of this section, a detailed assessment of the substantial present or potential hazards posed to human health or the environment should a release enter the environment. NR 670.016(8)(b)	NA			
<b>Section I: Tank Standards – Ignitable, Reactive and Incompatible Wastes NR 670.016(10)</b>				
I.1. If ignitable or reactive waste is treated, rendered or mixed before or immediately after placement in the tank system, a description of how operating procedures and tank system and facility design will ensure the resulting waste, mixture or dissolved material no longer meets the definition of ignitable or reactive waste. NR 664.0198(1)(a)1.	NA			
I.2. If ignitable or reactive waste is treated, rendered or mixed before or immediately after placement in the tank system, a description of how operating procedures and tank system and facility design will ensure I.3. to I.7. will be met. NR 664.0198(1)(a)2.	NA			

## PART II - UNIT REQUIREMENTS - TANKS

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
I.3. Precautions taken to prevent reactions generating extreme heat or pressure, fire or explosions or violent reactions. NR 664.0017(2)(a)	NA			
I.4. Precautions taken to prevent reactions producing uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment. NR 664.0017(2)(b)	NA			
I.5. Precautions taken to prevent reactions producing uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion. NR 664.0017(2)(c)	NA			
I.6. Precautions taken to prevent reactions damaging the structural integrity of the device or facility. NR 664.0017(2)(d)	NA			
I.7. Precautions taken to prevent reactions which, through other means, threaten human health or the environment. NR 664.0017(2)(e)	NA			
I.8. Documentation demonstrating compliance with I.2. to I.7., including references to published scientific or engineering literature, data from trial tests, waste analysis or the results of treatment of similar waste by similar treatment under similar operating conditions. NR 664.0017(3)	NA			
I.9. If ignitable or reactive waste is placed in the tank system, an alternative to I.2. to I.8. is to provide a description of how operating procedures and tank system and facility design will ensure the waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react. NR 664.0198(1)(b)	NA			
I.10. If ignitable or reactive waste is placed in the tank system, an alternative to I.2 to I.8 or I.9. is to provide a description of how operating procedures, the tank system and facility design will ensure the tank system is used solely for emergencies. NR 664.0198(1)(c)	NA			
I.11. If the facility stores or treats ignitable or reactive waste in a tank, demonstrate compliance with the requirements to maintain protective distances between the waste management area and any public ways, streets, alleys or an adjoining property line that can be built upon, as required by Tables 2-1 to 2-6 of NFPA's "Flammable and Combustible Liquids Code. NR 664.0198(2)	NA			
I.12. Incompatible wastes are not placed in the same tank system unless the requirements in I.3. to I.8. are met. NR 664.0199(1)	NA			
I.13. Hazardous waste is not placed in a tank system that previously held an incompatible waste and has not been decontaminated unless the requirements of I.3. to I.8. are met. NR 664.0199(2)	NA			



## PART II - UNIT REQUIREMENTS - MISCELLANEOUS UNITS

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section J: Standards for Miscellaneous Units – Storage and Treatment NR 670.023</b>				
J.1. Detailed description of the unit being used or proposed for use. NR 670.023(1)	CH 4; CH 7; CH 10; CH 16; ATT 21B, 21C, 21D			
J.2. Detailed description of the physical characteristics, materials of construction and dimensions of the unit. NR 670.023(1)(a)	CH 4; ATT 21B			
J.3. Detailed plans and engineering reports describing how the unit will be located, designed, constructed, operated, maintained, monitored, inspected and closed to comply with J.4. to J.34. NR 670.023(1)(b)	CH 4; CH 7; CH 8; CH 10; CH 16; ATT 21B, 21C, 21D, 21J, 21S			
J.4. Prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in the groundwater or subsurface environment, considering items J.5. to J.13. NR 664.0601(1)	NA			
J.5. The volume and physical and chemical characteristics of the waste in the unit, including potential for migration through soil, liners or other containing structures. NR 664.0601(1)(a)	CH 4; CH 10; ATT 21B, 21C, 21D, 21I, 21S, 21T			
J.6. The hydrologic and geologic characteristics of the unit and surrounding area. NR 664.0601(1)(b)	CH 3; CH 10; ATT 21K, 21U			
J.7. The existing quality of groundwater, including other sources of contamination and their cumulative impact on groundwater. NR 664.0601(1)(c)	CH 3; CH 10; ATT 21K			
J.8. Quantity and direction of groundwater flow. NR 664.0601(1)(d)	CH 3; ATT 21K, 21U			
J.9. Proximity to and withdrawal rates of current and potential groundwater users. NR 664.0601(1)(e)	CH 1; CH 3; ATT 21U			
J.10. Patterns of land use in the region. NR 664.0601(1)(f)	CH 1; ATT 21U			
J.11. Potential of migration or deposition of waste constituents into subsurface physical structures and into the root zone of food-chain crops and other vegetation. NR 664.0601(1)(g)	CH 3; CH 4; CH 10; CH 16; ATT 21U			
J.12. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(1)(h)	CH 13; ATT 21J			
J.13. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(1)(i)	CH 2; CH 3; CH 4; ATT 21Q, 21R			
J.14. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, wetlands, or on soil surface, considering J.15.- J.25. NR 664.0601(2)	NA			
J.15. Volume and physical and chemical characteristics of the waste in the unit. NR 664.0601(2)a.	CH 4; ATT 21T			
J.16. Effectiveness and reliability of containing, confining and collecting systems and structures in preventing migration. NR 664.0601(2)b.	CH 4; CH 10; ATT 21B, 21J			
J.17. Hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit. NR 664.0601(2)c.	CH 3; ATT 21K, 21U			
J.18. Precipitation patterns in the region. NR 664.0601(2)d.	CH 3			
J.19. Quantity, quality and direction of groundwater flow. NR 664.0601(2)e.	CH 3; ATT 21K, 21U			
J.20. Proximity of the unit to surface waters. NR 664.0601(2)f.	CH 3; CH 10; ATT 21K, 21U			
J.21. Current and potential uses of nearby surface waters and any water quality standards established for those surface waters. NR 664.0601(2)g.	CH 1			
J.22. Existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils. NR 664.0601(2)(h)	CH 1; CH 3; CH 10; ATT 21K			
J.23. Land use patterns in the region. NR 664.0601(2)(i)	CH 1; ATT 21U			
J.24. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(2)(j)	CH 13; ATT 21J			
J.25. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(2)(k)	CH 2; CH 3; CH 4; ATT 21Q, 21R			
J.26. Prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering J.27. to J.33. NR 664.0601(3)	NA			
J.27. Volume, physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates. NR 664.0601(3)a.	CH 3; CH 4; CH 10; CH 16; ATT 21Q, 21X			
J.28. Effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air. NR 664.0601(3)b.	CH 4; CH 7; CH 10; ATT 21B, 21J, 21Q, 21X			

**PART II - UNIT REQUIREMENTS - MISCELLANEOUS UNITS**

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
J.29. Operating characteristics of the unit. NR 664.0601(3)c.	CH 4; CH 7; ATT 21B, 21C, 21D, 21J, 21S			
J.30. Atmospheric, meteorologic and topographic characteristics of the unit and the surrounding area. NR 664.0601(3)d.	CH 1; CH 10; ATT 21U			
J.31. Existing quality of the air, including other sources of contamination and their cumulative impact on the air. NR 664.0601(3)e.	CH 10			
J.32. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(3)f.	CH 10			
J.33. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(3)g.	CH 10			
J.34. Inspection procedures and frequencies minimize or prevent releases that may have adverse effects on human health or the environment. NR 664.0602	CH 8; ATT 21J			
J.35. Detailed hydrologic, geologic and meteorologic assessments and land-use maps for the region surrounding the site that address and ensure compliance of the unit with each factor in J.4. to J.33. NR 670.023(2)	CH 1; CH 3; ATT 21Q, 21R, 21U			
J.36. Only preliminary hydrologic, geologic and meteorologic assessments are submitted if the applicant demonstrates they do not violate the environmental performance standards in J.4. to J.33. NR 670.023(2)	NA			
J.37. Information on the potential pathways of exposure of humans or environmental receptors to hazardous waste constituents and the potential magnitude and nature of exposures. NR 670.023(3)	NA			
J.38. For treatment units, a report on a demonstration of the effectiveness of the treatment based on laboratory or field data. NR 670.023(4)	CH 4; ATT 21C, 21D, 21S			
J.39. Additional information necessary to evaluate if the unit complies with the environmental performance standards in J.4 to J.33., as determined by the department. NR 670.023(5)	NA			
J.40. If an existing miscellaneous unit located in a 100-year floodplain is not designed, constructed, operated and maintained to prevent washout, a demonstration that no adverse effects on human health or the environment will result if washout occurs, considering the volume and physical and chemical characteristics of the waste, and the concentrations and potential impacts of hazardous constituents on surface waters, sediments or soils. NR 664.0018(2)(a)2.	NA			
J.41. If an existing miscellaneous unit is not in compliance with J.40. and there are no procedures to move the waste to a location that is not vulnerable to flood waters, a plan and schedule to bring the facility into compliance. NR 670.014(2)(k)5.	NA			

## PART III - AA

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section K: Subch. AA – Air Emission Control Standards for Process Vents NR 670.024</b>				
K.1. Documentation of compliance with the process vent standards in NR 664.1032, including K.2. to K.6. NR 670.024(2)	NA			
K.2. A facility plot plan and information identifying the hazardous waste management units in the facility, the approximate location of each affected hazardous waste management unit in the facility and all affected process vents. NR 670.024(2)(a)	NA			
K.3. Information on annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and the overall facility. NR 670.024(2)(a)	NA			
K.4. Information and data supporting estimates of vent emissions and emission reduction achieved by add-on control devices based on engineering calculations or source tests. NR 670.024(2)(b)	NA			
K.5. Estimates of vent emissions and emission reductions are made using operating parameter values that represent the conditions that exist when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. NR 670.024(2)(b)	NA			
K.6. Information and data used to determine whether or not a process vent is subject to NR 664.1032. NR 670.024(2)(c)	NA			
K.7. Documentation of compliance with NR 664.1033, including information in K.8 to K.13. NR 670.024(4)	NA			
K.8. List of all information references and sources used in preparing the documentation. NR 670.024(4)(a)	NA			
K.9. Records, including the dates of each compliance test required by NR 664.1033(11). NR 670.024(4)(b)	NA			
K.10. Design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on APTI Course 41.5 or other acceptable references. NR 670.024(4)(c)	NA			
K.11. Design analysis addresses the vent stream characteristic and control device operation parameters specified in NR 664.1035(2)(d). NR 670.024(4)(c)	NA			
K.12. Statement signed and dated by the owner/operator certifying the operating parameters used in the design analysis reasonably represent conditions that exist when the unit operates at the highest capacity reasonably expected to occur. NR 670.024(4)(d)	NA			
K.13. Statement signed and dated by the owner/operator certifying the control device for the affected process vents is designed to operate at the required efficiency levels. NR 670.024(4)(e)	NA			
K.14. If applying to use an alternate control device, a performance test plan if using test data. NR 670.024(3)	NA			

## PART III - BB

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section L: 664 Subch. BB – Air Emission Control Standards for Equipment NR 670.025</b>				
L.1. For each piece of equipment subject to subch. BB, the information in L.2. to L.7. NR 670.025(1)	NA			
L.2. Equipment identification number and hazardous waste management unit identification. NR 670.025(1)(a)	NA			
L.3. Approximate location within the facility, as identified on a facility plot plan. NR 670.025(1)(b)	NA			
L.4. Type of equipment. NR 670.025(1)(c)	NA			
L.5. Percent by weight total organics in the hazardous waste stream at each piece of equipment. NR 670.025(1)(d)	NA			
L.6. Hazardous waste state (gas, vapor, etc.) at each piece of equipment. NR 670.025(1)(e)	NA			
L.7. Method of compliance with the applicable subch. BB standard. NR 670.025(1)(f)	NA			
L.8. Documentation demonstrating compliance with the equipment standards in NR 664.1052 to 664.1059, including records required by NR 664.1064. NR 670.025(4)	NA			
L.9. Additional documentation necessary to determine compliance with the subch. BB standards. NR 670.025(4)	NA			
L.10. Documentation demonstrating compliance with NR 664.1060 includes the information in L.11 to L.17. NR 670.025(5)	NA			
L.11. List of all information references and sources used to prepare the documentation. NR 670.025(5)(a)	NA			
L.12. Records, including the dates, of each compliance test required by NR 664.1033(10). NR 670.025(5)(b)	NA			
L.13. Design analysis, specifications, drawings, schematics and piping and instrumentation diagrams based on the appropriate sections of ATPI Course 415 or other engineering text that present basic control device design information. NR 670.025(5)(c)	NA			
L.14. Design analysis addresses the vent stream characteristics and control device operation parameters in NR 664.1035(2)(d)3. NR 670.025(5)(c)	NA			
L.15. Statement signed and dated by the owner/operator certifying the operating parameters used in the design analysis reasonably represent the conditions when the unit is operating at the highest capacity level reasonably expected to occur. NR 670.025(5)(d)	NA			
L.16. Statement signed and dated by the owner/operator certifying the control device is designed to operate at an efficiency of $\geq 95$ weight %. NR 670.025(5)(e)	NA			
L.17. If applying to use an alternate control device, a performance test plan if using test data. NR 670.025(3)	NA			

## PART III - CC

Licensing Standard and Code Citation	Location In Report (Page/Section/ NA)	Complete? (Y/N/NA)	Technically Adequate? (Y/N/NA)	Comments
<b>Section M: Subch. CC – Air Emission Control Standards for Containers and Tanks NR 670.027</b>				
M.1. Documentation for each floating roof cover installed on a tank subject to NR 664.1084(4)(a) or (b). NR 670.027(1)(a)	NA			
M.2. Identification of each container area subject to subch. CC. NR 670.027(1)(b)	NA (ATT 21S)			
M.3. Owner/operator certification that the requirements of subch. CC are met for container storage areas. NR 670.027(1)(b)	NA			
M.4. Documentation for each enclosure used to control air emissions from containers per NR 664.1086(5)(a)2 and tanks per NR 664.1084(4)(c). NR 670.027(1)(c)	NA			
M.5. Records for the most recent set of calculations and measurements verifying the enclosure meets the criteria of a permanent total enclosure as specified by Procedure T in 40 CFR 52.741, appendix B. NR 670.027(1)(c)	NA			
M.6. Documentation for each closed-vent system and control device installed according to NR 664.1087, including design and performance information. NR 670.027(1)(e)	NA			
M.7. An emission monitoring plan for Method 21 in 40 CFR part 60 Appendix A and control device monitoring methods. NR 670.027(1)(f)	NA			



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CHAPTER 21  
ATTACHMENT Z  
Application for Confidential Status

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**AFFIDAVIT OF ROB DAUTERMANN**

STATE OF WISCONSIN    )  
  )  
WASHBURN COUNTY     )


Rob Dautermann, being first duly sworn on oath, states as follows:

1. I am an adult resident of the State of Wisconsin. My business address is N8265 Medley Road, Spooner, Wisconsin 54801.
2. I am employed by R. Stresau Laboratory Inc. (“Stresau”) as the Chief Operating Officer.
3. I make this Affidavit based upon personal knowledge.
4. I make this Affidavit in support of the Application for Confidential Status under NR 2.19(3), submitted by R. Stresau Laboratory Inc to the Wisconsin Department of Natural Resources (“WDNR”) in March 2023 (the “Application”). The Application for Confidential Status is being requested in conjunction with the 2023 Feasibility and Plan of Operation Report and related materials submitted to the WDNR (“2023 FPOR”).
5. The following specific confidential information associated with and submitted in 2023 FPOR’s requirements includes but is not limited to the following: lists of products, including descriptions, types, or quantities of products or types of energetics or types of waste used in or resulting from Stresau’s operations or otherwise stored on the property; building and other structure designs and drawings, including thermal treatment design information; residual ash information that relates to quantities of potential products used in Stresau’s operations, including storage locations of the same; descriptions of processes, procedures, and/or calculations; sales information; customer information; and emissions information or other testing information to the extent such information could potentially reveal sensitive product information or allow competitors or other interested persons to potentially reverse engineer or otherwise gain valuable information regarding products used in Stresau’s operations.
6. All of the above information requested to be treated as confidential is due to such procedures being a trade secret under Wis. Stat. § 134.90(1).
7. The procedures attached herein discuss a pattern, program, method, technique or process which deprives independent economic value to Stresau that is not generally known to and not readily ascertainable by proper means to the public at large. Potential competitors in the same industry may seek to obtain and use such procedures to develop and manufacture competing products and disclosure of such procedures provides more specific insight into Stresau’s internal operations.

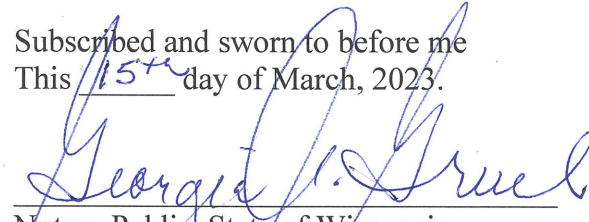


8. The procedures are subject to efforts to maintain their secrecy, wherein Stresau does not widely distribute such information to the public.
9. Stresau's operations are governed by the duty to protect information under  
All of the above information requested to be treated as confidential so as to also help maintain the safety and security of not only Stresau's property and employees, but to help ensure the general public is protected. In addition to the information contained in Paragraph 5 of this Affidavit, the following information should be considered confidential for safety reasons to Stresau's employees and the public at large: site maps; building locations; building numbers; and security measures and related procedures.
10. Stresau produces  
aeronautics, life-saving devices, and scientific research. Stresau's customers include the  
where Stresau is the sole provider of multiple components used by the
11. Due to the nature of Stresau's business, outside persons may have an interest to surveil or otherwise engage in behavior that could compromise Stresau's operations and could create a danger to the broader general public.
12. By excluding and not disclosing information that reveals the above-referenced information in Paragraphs 5 and 9 of this Affidavit, the danger to Stresau's employees and the public is minimized. Providing this confidential information could reasonably be anticipated to provide the public, and potentially nefarious actors, with information regarding the potential locations, amounts, type of wastes handled prior to such wastes reaching a non-reactive status, and other site-specific information that could be used to harm the public.
13. Disclosure of the information will increase the number of persons who have knowledge of this confidential information, which can be placed and promoted on social media, the internet, and other electronically-available and easily accessible mediums to groups that may have an interest in hampering Stresau's operations.
14. Based on the forgoing, there is no public interest in disclosing such information to the public and the benefits to disclosing the confidential information in Paragraphs 5 and 9 to the public are not readily identifiable nor is such disclosure needed to serve a legitimate public purpose.
15. Treatment of this information as confidential is therefore in the public interest.
16. If the attached documents are not subject to being withheld from disclosure in whole, then at minimum, redaction of the portions of such documents (as shown and highlighted in the attached documents) is justified under the above-referenced reasons and under

Wisconsin law, including but not redaction of personal phone numbers, employee names, employee information involving a personal work injury, and personally-identifying information contained in any of the procedures other documents.

  
\_\_\_\_\_  
Rob Dautermann

Subscribed and sworn to before me  
This 15<sup>th</sup> day of March, 2023.

  
\_\_\_\_\_  
Notary Public, State of Wisconsin  
My Commission expires: 3/28/27  
County of Washburn

