

Bajwa, Mehak

From: Dave Howes <daveh@millerenvironmental.mb.ca>
Sent: March 4, 2025 9:35 AM
To: Bajwa, Mehak
Cc: Dey, Asit; Edossa, Desalegn; Rathamano, Raj
Subject: RE: File No. 3440.20_ Miller Environmental Inc.- Solvent Recovery NoA
Attachments: Solvent Recycling System - Miller Environmental Corporation, October 1, 2024.pdf; Emergency Response Summary -2021-07-01.pdf; MEC D1 MEC Site Information for Emergency Response Plan Rev 2 .pdf; AC150 Safety Features.pdf

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Hi Mehak,

Please find the overview to the department's questions below in [blue](#) as discussed in our meeting on February 11th. If you require anything else, please let me know. Thanks.

Dave Howes

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[Miller Environmental Corporation](#)
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From: Bajwa, Mehak <Mehak.Bajwa@gov.mb.ca>
Sent: February 10, 2025 1:50 PM
To: Dave Howes <daveh@millerenvironmental.mb.ca>
Cc: Dey, Asit <Asit.Dey@gov.mb.ca>; Edossa, Desalegn <Desalegn.Edossa@gov.mb.ca>; Rathamano, Raj <Raj.Rathamano@gov.mb.ca>
Subject: RE: File No. 3440.20_ Miller Environmental Inc.- Solvent Recovery NoA

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Good afternoon Dave,

- Contents of tanks (materials/waste stored), capacity/volume, and purpose of use.
 - Tanks in Process Building 1 (PB1) are dedicated to flammable liquid materials (organic liquids) for fuel blend processing. No tanks are required for the solvent recovery unit. The volume capacity the system can manage is 200 gal/day. 205L drums will be used to stage materials in and out of the system.
- If the contaminated solvent is transferred to totes, provide the procedures and tank involved in transferring.
 - The solvent recovery system includes a diaphragm pump and piping system. The procedure is included in the submitted NoA “Solvent Recycling System – Miller Environmental Corporation, October 1, 2024” (attached).
- Identify all potential VOC emission points and processes and indicate the process by which these emissions are collected and treated.
 - PB1 is equipped with a carbon activated scrubber (adsorber). The activated carbon adsorbs any potential organic emission.
- Operating hours, solvent recovery unit capacity, volume of contaminated solvent recovered per day/month/year.
 - The solvent recovery system will only be active during Miller operational hours. Based on the system’s maximum capacity of 200 gal/day (~750 L/day), the maximum volume of recovered solvent will be 4,000 gal/month (~15,000 L/month), or 48,000 gal/year (182,000 L/year).
- What happens to the clean solvent collected in drums? Explain the process.
 - Clean solvent will be collected in UN approved drums and returned to customers as required.
- Explain the process for handling heated drums.
 - In the situation when drums become heated, procedures will be followed in section “Removing, Replacing or Emptying the Still Bottom Drums or Tote”. Any drums that are heated will be left to cool until they reach a safe temperature before continuing. Please refer to page 37 in attached NoA “Solvent Recycling System – Miller Environmental Corporation, October 1, 2024”.
- What happens to the still bottom drums? What is the anticipated quality, quantity, and location of the still bottom generated per day/month/year? How are these still bottom waste treated/disposed of? What is the destination facility?
 - Residue remaining after the solvent recovery will be treated as part of the regular fuel blend processing in PB1. Volume of residue will vary based on composition of initial waste.
- Provide a copy of the Emergency Response Plan outlining the steps in solvent recycling process related emergencies. It should include the receipt of contaminated solvents, handling, unloading and transferring, solvent recycling, clean solvent storage, still bottom handling and storage, transfer, and shipment.
 - Miller’s Emergency Response Plan includes solvents as part of organic flammable liquids being processed in PB1. Please see attached “Emergency Response Summary” and “Emergency Response Plan”.
- Provide the list of solvents to be processed based on their categories of different solvent classes such as acid, alcohol, alkene, ester, hydrocarbon, amine, and aromatics.
 - The solvent recovery system is designed to recover organic solvents. All solvent that is a potential candidate will be assessed before proceeding with the recycling process.
- Explain in detail the process feed testing protocol. How is the thermal instability of the process feed identified?
 - For the feed testing protocol, Miller will work with the supplier on selecting potential waste for solvent recovery once the system is installed. The protocol will consider waste profile, sampling QA/QC, and external laboratory analysis (if necessary) when assessing solvent composition and recovery. Once determined, only approved waste streams will be fed into the system. The protocols will include assessment of waste thermal stability under standard temperature and pressure.
- Indicate if the Nitrocellulose Package is included in the solvent recycling system.

- The Nitrocellulose package will be included.
- What are the temperature and pressure requirements of the machine and how will these conditions vary with different liquids?
 - Temperature and pressure vary based on the boiling point of each type of solvent targeted to recover.
- What are the leak detection mechanisms used - for liquid and vapour?
 - In PB1, tank level indicators are implemented for liquid leak detection. VOC and LEL detectors are implemented for vapour detection.
- What are the checks in place to confirm the solvents are cleaned?
 - Internally, analytical tests starting with colorimetric tests will be conducted on site. As needed, samples of the recycled solvent will be sent to an accredited external lab for confirmation of acceptable levels.
- What processes are entailed in the cleaning and maintenance of the system?
 - Miller will follow the cleaning protocols as per the supplier and will review and reassess as needed once that the system is in operation. The supplier will be providing remote 24-hour monitoring of the system as well as quarterly preventive maintenance.
- The safety devices will stop the unit in case one of the sensors detects a specific condition- what are these conditions? What are the safety mechanisms?
 - There are many safety device monitoring variables such as pressure, temperature, and levels indicators. Please refer to attached "AC150 Safety Features".
- What is the efficacy of the process?
 - Typical solvent recovery efficiencies are:
 - High-purity solvent recovery: 85% and higher for relatively clean waste streams with low contamination.
 - Moderate recovery: 70–85% when dealing with higher impurity levels or azeotropic mixtures.
 - Low recovery: 50–70% when solvents have high degradation rates, are highly contaminated, or form stable azeotropes.
- Verify that explosion-proof equipment, proper ventilation, and fire suppression systems are designed for hazardous solvents.
 - The unit enclosures are rated to Class 1, Div 1 explosion-proof standards. PB1, where the system will be installed, is a Class1 Div 2 fire rated building with explosion-proof equipment and systems. Fire suppression systems are installed in PB1.
- Will all the existing blending processes get converted to this recycling process? What impact will the system have on throughput or production capacity?
 - There is no requirement to convert existing fuel blending processes to accommodate the solvent recycling system. There will be no impact to PB1 throughput or production capacity other than the option to now recover solvent from viable waste streams.

I will be sending you the meeting invite shortly.

Thank you.

Thank you.

Regards,

Mehak Bajwa, P.Eng, M.Eng
 Senior Environmental Engineer
 Environmental Approvals Branch
 Department of Environment and Climate Change