**Evergreen Recycling, LLC (08593)**

Date: 5/6/2021

# New Jersey Department of Environmental Protection
# Reason for Application

**Permit Being Modified**

**Permit Class:** **Number:** 0

**Description of Modifications:** Air permit application for use of new diesel powered Morbark wood chipper on site.

# New Jersey Department of Environmental Protection
# Facility Profile (General)

**Facility Name (AIMS):** Evergreen Recycling, LLC

**Facility ID (AIMS):** 08593

**Street Address:** 110 EVERGREEN AVE
NEWARK, NJ 07114

**Mailing Address:** 110 EVERGREEN AVE
NEWARK, NJ 07114

**State Plane Coordinates:**

| | |
|---|---|
| **X-Coordinate:** | 575 |
| **Y-Coordinate:** | 677 |
| **Units:** | New Jersey State Plane ε |
| **Datum:** | NAD83 |
| **Source Org.:** | DEP-GIS |
| **Source Type:** | DEP Program Database |

**County:** Essex

**Location Description:** site is located on the Southwestern corner of Frelinghuysen Ave. and Evergreen Ave.

**Industry:**

| | |
|---|---|
| **Primary SIC:** | |
| **Secondary SIC:** | |
| **NAICS:** | 562111 |

# New Jersey Department of Environmental Protection
# Facility Profile (General)

**Contact Type: Air Permit Information Contact**

**Organization:** Evergreen Recycling LLC
**Org. Type:** LLC
**Name:** Anthony Novello
**NJ EIN:**
**Title:** Chief Executive Officer
**Phone:** (973) 242-3030 x3297
**Fax:** ( ) - x
**Other:** ( ) - x
**Type:**
**Email:** anovello@evergreenrecyclingnj.com
**Mailing Address:** 110 Evergreen Avenue
Newark, NJ 07114

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**Contact Type: Fees/Billing Contact**

**Organization:** Evergreen Recycling LLC
**Org. Type:** LLC
**Name:** Anthony Novello
**NJ EIN:**
**Title:** Chief Executive Officer
**Phone:** (973) 242-3030 x3297
**Fax:** ( ) - x
**Other:** ( ) - x
**Type:**
**Email:** anovello@evergreenrecyclingnj.com
**Mailing Address:** 110 Evergreen Avenue
Newark, NJ 07114

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**Contact Type: Responsible Official**

**Organization:** Evergreen Recycling LLC
**Org. Type:** LLC
**Name:** Anthony Novello
**NJ EIN:**
**Title:** Chief Executive Officer
**Phone:** (973) 242-3030 x3297
**Fax:** ( ) - x
**Other:** ( ) - x
**Type:**
**Email:** anovello@evergreenrecyclingnj.com
**Mailing Address:** 110 Evergreen Avenue
Newark, NJ 07114

**Evergreen Recycling, LLC (08593)** Date: 5/6/2021

# New Jersey Department of Environmental Protection
# Facility Profile (Permitting)

| | |
|---|---|
| **1. Is this facility classified as a small business by the USEPA?** | Yes |
| **2. Is this facility subject to N.J.A.C. 7:27-22?** | No |
| **3. Are you voluntarily subjecting this facility to the requirements of Subchapter 22?** | Yes |
| **4. Has a copy of this application been sent to the USEPA?** | No |
| **5. If not, has the EPA waived the requirement?** | No |
| **6. Are you claiming any portion of this application to be confidential?** | No |
| **7. Is the facility an existing major facility?** | No |
| **8. Have you submitted a netting analysis?** | No |
| **9. Are emissions of any pollutant above the SOTA threshold?** | No |
| **10. Have you submitted a SOTA analysis?** | No |
| **11. If you answered "Yes" to Question 9 and "No" to Question 10, explain why a SOTA analysis was not required** | |
| **12. Have you provided, or are you planning to provide air contaminant modeling?** | No |

**Evergreen Recycling, LLC (08593)** Date: 5/6/2021

# New Jersey Department of Environmental Protection
# Equipment Inventory

| Equip. NJID | Facility's Designation | Equipment Description | Equipment Type | Certificate Number | Install Date | Grand-Fathered | Last Mod. (Since 1968) | Equip. Set ID |
|---|---|---|---|---|---|---|---|---|
| E1 | FG1 | Morbark 4600XL wood chipper | Manufacturing and Materials Handling Equipment | | 4/20/2021 | No | | |
| E2 | FG2 | CAT C27 Acert Deisel Engine | Stationary Reciprocating Engine | TWM00413 | 4/20/2021 | No | | |

**Evergreen Recycling, LLC (08593)**

Date: 5/6/2021

## New Jersey Department of Environmental Protection
## Emission Points Inventory

| PT NJID | Facility's Designation | Description | Config. | Equiv. Diam. (in.) | Height (ft.) | Dist. to Prop. Line (ft) | Exhaust Temp. (deg. F) | | | Exhaust Vol. (acfm) | | | Discharge Direction | PT Set ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Avg. | Min. | Max. | Avg. | Min. | Max. | | |
| PT2 | MRBRK2 | MORBARK WOOD CHIPPER | Round | 25 | 10 | 100 | 850.0 | 800.0 | 900.0 | 2,142.0 | 1,715.0 | 2,570.0 | Up | PS 2 |

**Evergreen Recycling, LLC (08593)**

Date: 5/6/2021

## New Jersey Department of Environmental Protection
## Emission Unit/Batch Process Inventory

**U 1 EMIT1 Morbark wood chipper utilized to chip lengthy wood sections into smaller pieces to avoid conveyor clogging issues**

| UOS NJID | Facility's Designation | UOS Description | Operation Type | Signif. Equip. | Control Device(s) | Emission Point(s) | SCC(s) | Annual Oper. Hours Min. | Annual Oper. Hours Max. | VOC Range | Flow (acfm) Min. | Flow (acfm) Max. | Temp. (deg F) Min. | Temp. (deg F) Max. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OS1 | MORBARK 1 | Morbark 4600XL wood chipper | Normal - Steady State | E1 | | PT2 | | 2,500.0 | 3,750.0 | F | | | | |
| OS2 | CAT27 | Cat C27 Acert Deisel Engine | Normal - Steady State | E2 | | PT2 | | 2,500.0 | 3,750.0 | F | 1,715.0 | 2,570.0 | 800.0 | |

**08593 Evergreen Recycling, LLC** Date: 5/6/2021

# New Jersey Department of Environmental Protection
## Potential to Emit

**Subject Item:** **FC**

**Operating Scenario:**

**Step:**

| Air Contaminant Category (HAPS) | Fugitive Emissions | Emissions Before Controls | Emissions After Controls | Total Emissions | Units | Alt. Em. Limit |
|---|---|---|---|---|---|---|
| CO | | | | | tons/yr | No |
| HAPs (Total) | | | | | tons/yr | No |
| NOx (Total) | | | | | tons/yr | No |
| Pb | | | | | tons/yr | No |
| PM-10 (Total) | | | | | tons/yr | No |
| SO2 | | | | | tons/yr | No |
| TSP | | | | | tons/yr | No |
| VOC (Total) | | | | | tons/yr | No |

**Subject Item:** **U1 EMIT1**

**Operating Scenario:** **OS0 Summary**

**Step:**

| Air Contaminant Category (HAPS) | Fugitive Emissions | Emissions Before Controls | Emissions After Controls | Total Emissions | Units | Alt. Em. Limit |
|---|---|---|---|---|---|---|
| Acrolein | | | | 0.02349750 | tons/yr | No |
| Benzene | | | | 0.01860000 | tons/yr | No |
| CO | | | | 2.60900000 | tons/yr | No |
| Formaldehyde | | | | 0.00180000 | tons/yr | No |
| HAPs (Total) | | | | 0.04554750 | tons/yr | No |
| Naphthalene | | | | 0.00165000 | tons/yr | No |
| NOx (Total) | | | | 2.60900000 | tons/yr | No |
| Pb | | | | 0.00000000 | tons/yr | No |
| PM-10 (Total) | | | | 0.14687000 | tons/yr | No |
| SO2 | | | | 0.00412500 | tons/yr | No |

## New Jersey Department of Environmental Protection
## Potential to Emit

**Subject Item:** **U1 EMIT1**

**Operating Scenario:** **OS0 Summary**

**Step:**

| Air Contaminant Category (HAPS) | Fugitive Emissions | Emissions Before Controls | Emissions After Controls | Total Emissions | Units | Alt. Em. Limit |
|---|---|---|---|---|---|---|
| TSP | | | | 0.14463870 | tons/yr | No |
| VOC (Total) | | | | 0.30100000 | tons/yr | No |

**Subject Item:** **U1 EMIT1**

**Operating Scenario:** **OS1**

**Step:**

| Air Contaminant Category (HAPS) | Fugitive Emissions | Emissions Before Controls | Emissions After Controls | Total Emissions | Units | Alt. Em. Limit |
|---|---|---|---|---|---|---|
| CO | | | | | lb/hr | No |
| HAPs (Total) | | | 0.00000000 | 0.00000000 | lb/hr | No |
| NOx (Total) | | | | | lb/hr | No |
| Pb | | 0.00000000 | 0.00000000 | 0.00000000 | lb/hr | No |
| PM-10 (Total) | | 0.00028700 | 0.00028700 | 0.00028700 | lb/hr | No |
| PM-2.5 (Total) | | 0.00005340 | 0.00005340 | 0.00005340 | lb/hr | No |
| SO2 | | | | | lb/hr | No |
| TSP | | 0.00063800 | 0.00063800 | 0.00063800 | lb/hr | No |
| VOC (Total) | | | | | lb/hr | No |

**Subject Item:** **U1 EMIT1**

**Operating Scenario:** **OS2**

**Step:**

| Air Contaminant Category (HAPS) | Fugitive Emissions | Emissions Before Controls | Emissions After Controls | Total Emissions | Units | Alt. Em. Limit |
|---|---|---|---|---|---|---|
| Acrolein | | 0.06266000 | 0.06266000 | 0.06266000 | lb/hr | No |

# New Jersey Department of Environmental Protection
## Potential to Emit

**Subject Item:** **U1 EMIT1**

**Operating Scenario:** **OS2**

**Step:**

| Air Contaminant Category (HAPS) | Fugitive Emissions | Emissions Before Controls | Emissions After Controls | Total Emissions | Units | Alt. Em. Limit |
|---|---|---|---|---|---|---|
| Benzene | | 0.04960000 | 0.04960000 | 0.04960000 | lb/hr | No |
| CO | | 6.75200000 | 6.75200000 | 6.75200000 | lb/hr | No |
| Formaldehyde | | 0.00480000 | 0.00480000 | 0.00480000 | lb/hr | No |
| HAPs (Total) | | 0.12146000 | 0.12146000 | 0.12146000 | lb/hr | No |
| Naphthalene | | 0.00440000 | 0.00440000 | 0.00440000 | lb/hr | No |
| NOx (Total) | | 5.01600000 | 5.01600000 | 5.01600000 | lb/hr | No |
| Pb | | 0.00000000 | 0.00000000 | 0.00000000 | lb/hr | No |
| PM-10 (Total) | | 0.14400000 | 0.14400000 | 0.14400000 | lb/hr | No |
| SO2 | | 0.01100000 | 0.01100000 | 0.01100000 | lb/hr | No |
| TSP | | 0.14400000 | 0.14400000 | 0.14400000 | lb/hr | No |
| VOC (Total) | | 0.57900000 | 0.57900000 | 0.57900000 | lb/hr | No |

**000000 E1 (Manufacturing and Materials Handling Equipment)**
**Print Date: 5/6/2021**

| | |
|---|---|
| Make: | Morbark |
| Manufacturer: | Morbark |
| Model: | 4600XL |
| Type of Manufacturing and Materials Handling Equipment: | Wood Chipper |
| Capacity: | 1.34E+01 |
| Units: | ft^3 |
| Description (if other): | |
| Have you attached a diagram showing the location and/or the configuration of this equipment? | |
| Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application? | |
| Comments: | |

**000000 E2 (Stationary Reciprocating Engine)**
**Print Date: 5/6/2021**

| | |
|---|---|
| Make: | CAT |
| Manufacturer: | Caterpillar |
| Model: | C27 Acert Deisel Engine |
| Maximum Rated Gross Heat Input (MMBtu/hr): | 5.32 |
| Class: | Lean Burn |
| Description: | |
| Duty: | Base Loaded |
| Description: | |
| Minimum Load Range (%): | |
| Maximum Load Range (%): | |
| Stroke: | 4-stroke |
| Power Output (BHP): | 1050.00 |
| Electric Output(KW): | |
| Compression Ratio: | 16.0 |
| Ignition Type: | Compression |
| Description: | |
| Engine Speed (RPM): | 1800.0 |
| Engine Exhaust Temperature (°F): | 600.0 |
| Air to Fuel Ratio at Peak Load: | |
| Ratio Basis: | |
| Lambda Factor (scfm/scfm): | |
| Brake Specific Fuel Consumption at Peak Load (Btu/BHP-hr): | |
| Output Type: | |
| Heat to Power Ratio: | |
| Is the Engine Using a Turbocharger? | ○ Yes ● No |
| Is the Engine Using an Aftercooler? | ○ Yes ● No |

Is the Engine Using (check all that apply):

| | | | |
|---|---|---|---|
| A Prestratified Charge (PSC) | ☐ | A NOx Converter | ☐ |
| Air to Fuel Adjustment (AF) | ☐ | Ignition Timing Retard | ☐ |
| Low Emission Combustion | ☑ | Non-Selective Catalytic Retard (NSCR) | ☐ |
| Other | ☐ | | |

Description:

| | | | |
|---|---|---|---|
| Have you attached a diagram showing the location and/or the configuration of this equipment? | ○ Yes ● No | Have you attached any manuf.'s data or specifications to aid the Dept. in its review of this application? | ● Yes ○ No |

Comments:

Include Emission Rates on the Potential to Emit Screen for each contaminant in ppmvd @ 7%O2 in addition to lbs/hr and tons/yr.

**08593 Evergreen Recycling, LLC PCP000000 U1 OS1 (Gas Flow)**
**Print Date: 5/6/2021**

| | |
|---|---|
| Volume of Gas Discharged from this source (acfm): | 0.01 |

**08593 Evergreen Recycling, LLC PCP000000 U1 OS2 (Fuel Information Table)**
**Print Date: 5/6/2021**

| | |
|---|---|
| Is this fuel a blend? | ○ Yes ● No |
| Fuel Category: | Commercial |
| Fuel Type: | Diesel fuel |
| Description (if other): | |
| Amount of Sulfur in Fuel (%): | 0.0015 |
| Amount of Ash in Fuel (%): | 0.02 |
| Fuel Heating Value: | 138,000.00 |
| Units: | BTU/gal |
| Estimated Maximum Amount of Fuel Burned Annually: | 29,025.00 |
| Units: | gal/yr |
| Estimated Actual Amount of Fuel Burned Annually: | 27700.00 |
| Units: | gal/yr |
| Amount of Oxygen in Flue Gas (%): | 5.00 |
| Amount of Moisture in Flue Gas (%): | |
| Comments: | |

## Unit C1: Morbark 4600XL Grinder - Wood Hog Inside Operations

| Proposed Operating Conditions | | | | |
|---|---|---|---|---|
| Hourly Diesel Fuel Consumption Rate | | Proposed Hours of Operation (hrs/yr) [B] | Annual Fuel | |
| (gl/hr) | Engine HP [A] | | Engine HP [A] | (MMBtu/yr) [A] |
| 38.7 | 875 | 750 | 1214 | 155 |

| Pollutants | Emissions Factor | | | Proposed Allowabl |
|---|---|---|---|---|
| | Factor | Unit | Source | lb/hr |
| Criteria Pollutants | | | | |
| NOx | 5.732E-03 | lbs/hp-hr | 1 | 5.016 |
| CO | 7.716E-03 | lbs/hp-hr | 2 | 6.752 |
| NMHC | 6.614E-04 | lbs/hp-hr | 1 | 0.579 |
| SOx | 1.210E-05 | lbs/hp-hr | 3 | 0.011 |
| CO2 | 1.16 | lbs/hp-hr | 3 | 1015.000 |
| PM | 1.650E-04 | lbs/hp-hr | 1 | 0.144 |
| PM-10 | 1.650E-04 | lbs/hp-hr | 1 | 0.144 |
| CO2e | | | | 2509.622 |

**[A]** Morbark 4600XL Wood Grinder utilizes the Cat C27 ACERT Deisel Engine 1050 hp/783.6kW C27 Engine is US EPA Teir 4 Final certified**

**Diesel Fuel usage @ 15ppm sulfur content: 0.0015% Sulfur content**

**Fuel Consumption rate:** **G/hr** **38.7** **4" exhaust pipe** **2750 cfm exhaust rate**

**L/hr** **146.5**

**Hourly MMBtu input:**

**Annual Max Fuel consumption rate:** **29025** gl/yr **Annual MMBtu input:**

***Source 1*** **: EPA 40 parts 9, 69 - TABLE II.A–4.—TIER 4 STANDARDS FOR ENGINES OVER 750 HP (G/B**
**Units provided from Table 4 as g/kW-hr convert to lbs/hp-hr for unit emissions calaucl**

***Source 2*** **: EPA 420-B-16-022 EMISSION FACTORS FOR UNCONTROLLED GASOLINE AND DIESEL INDU**

**Source 3: EPA AP-42 Table 3.4-1. 3. Large Stationary Diesel And All Stationary Dual-fuel Engines**

**Carbon Dioxide Equivalents**

$$CO_2e = CO_2 + 84*CH_4 + 298*N_2O$$

| e |
| --- |
| tpy |
| |
| 1.881 |
| 2.532 |
| 0.217 |
| 0.004 |
| 380.625 |
| 0.054 |
| 0.054 |
| 941.108 |

| | | |
| --- | --- | --- |
| | 2.600 | 0.005732 |
| | 3.500 | 0.007716 |
| | 0.300 | 0.000661 |
| | | |
| | | |
| | 0.075 | 0.000165 |
| | | |
| | | |

| |
| --- |
| 5.32 |
| 39,874.84 |

**HP-HR)**
**ations**

**USTRIAL ENGINES**