

June 11, 2019

Mr. Chris Swain
Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
17 State House Station
Augusta ME 04333

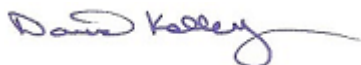
**Subject: Monthly Progress Report – May 2019
Orrington Remediation Site
Orrington, Maine**

Dear Mr. Swain:

This Monthly Progress Report is submitted to Maine Department of Environmental Protection (DEP) in compliance with reporting requirements in the Board of Environmental Protection (BEP) Order (Order) effective April 3, 2014 for the Orrington Remediation Site (Site) in Orrington, Maine, which incorporates, with modifications, the Compliance Order issued by the DEP dated November 24, 2008. This Report covers the period of **May 2019** and is submitted on behalf of Mallinckrodt US LLC.

If you have questions regarding this report, please contact me at 774-284-2207.

Sincerely,



David Kelley
Remediation Program Manager

cc: (all electronic copies)
Kelly Bay – Director, Orrington Town Library
Alan Snell– Chairman of Board of Selectman, Town of Orrington
Patricia Duft – Mallinckrodt US LLC
Susanne Miller – Maine DEP, Bangor
David Wright – Maine DEP

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
May 2019**

Report Date: June 11, 2019

This Monthly Progress Report is submitted to the Maine Department of Environmental Protection (DEP) documenting the activities completed by Mallinckrodt US LLC (Mallinckrodt) and/or its representatives at the Orrington Remediation Site (the Site) along with a description of upcoming activities.

A discussion of all tasks and actions completed during the reporting period toward achieving compliance with the Order

- The monthly Mallinckrodt – DEP call occurred on May 1, 2019 and additional other discussions took place to discuss site activities as needed.
- Continued inspection and maintenance of site erosion and stormwater controls
- The on-site DEP oversight inspector continued to participate in weekly construction meetings in which current activities as well as a two-week look ahead are discussed. The on-site inspector also continued daily emails to summarize activities to ensure all parties agree on what is planned/accomplished.
- Continued operation of the perimeter air monitoring system and meteorological station
- Continued stockpile management of excavated materials and loading railcars for off-site shipment.
- Landfill 1 (CMI Plan – Rev2 Apr 30, 2018; DEP Conditional Approval Letter May 10, 2018; CMI Plan – Rev2 May 17, 2018 (revised to incorporate all conditions in DEP CAL)
 - Charter began mobilizing equipment to site May 28, 2019
 - Charter commenced final grading and restoration of LF1 on May 30, 2019
- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.)
 - Completed excavation of PA1-13
 - Remaining PA Phase 1 backfilling of PA1-11, PA1-12, and PA1-13 DEP approval received on May 17, 2019
 - Submitted Plant area Phase II temporary sheet pile design and contractor dewatering plans to DEP on May 28, 2019.
 - Submitted monthly SVE performance data to DEP on May 10, 2019
 - Provided letter response to DEP Letter of Concern dated May 15, 2019 on May 28, 2019
 - Received DEP approval of the Concrete Sampling memo via email on May 28, 2019
 - Revised PA5 Excavation approach approved by Maine DEP on May 10, 2019
 - Continued chloropicrin groundwater performance monitoring
 - Continued operation of the SVE system
- Northern Drainage Ditch (CMI Closure Report Nov 27, 2017, DEP Approval Oct 16, 2018)
Continued to maintain erosion and sediment control measures.
- Southern Cove (CMI Closure Report Jan 14, 2018, DEP Approval Aug 3, 2018)

MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
May 2019

- Continued to maintain erosion and sediment control measures adjacent to the Cove.
- Short-Term Comprehensive Monitoring Plan (Revised ST CMP Feb 24, 2017)
 - The Short-Term CMP includes monitoring of potential remediation impacts as well as ongoing monitoring of groundwater, the GW extraction system (GWES) and Landfill 5.
 - Conducted monitoring according to the Short-Term Comprehensive Monitoring Plan (CMP) during the week of May 13. May monitoring included monthly sampling of surface water, sediment, and groundwater in the vicinity of the Plant Area and Landfill 1 remediation areas.
- Groundwater Final GW Extraction System (GWES) Plan Oct 16, 2017; DEP Approval Jan 9, 2018)
 - Following receipt of DEP comments in the Final GWES design, submitted response and two revised drawings on Nov 6, 2018 and received DEP approval on Nov 7, 2018.
 - Began Final GWES construction on December 3, 2018.
 - Updated the force-main and electrical/communication conduit alignment and provided updated site plan to DEP on January 16, 2019. DEP provided approval on January 17, 2019.
 - Continued Force Main pipe trench excavation pipe and conduit installation
 - Continued backfilling of pipe trench
 - Compiled information for DEP review for Landfill 1 area monitoring and transmitted to DEP on May 17. Finalized locations of Landfill 1 monitoring wells with DEP in the field on May 23, 2019
 - Mobilization of New England Boring Contractors occurred on May 28 for Landfill 1 area drilling. Drilled and installed MW-801-O1 and MW-802-O1, completed on May 31.
- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
 - Prepared Landfills 3-5 Bedrock Groundwater Testing Report and Extraction Design Plan (Design Plan) and transmitted to DEP on May 16.
 - Prepared for Landfills 3-5 area drilling (including subcontractor coordination), scheduled to start on June 3, 2019
- Groundwater Model (Model Feb 22, 2016, DEP Acceptance of Model Sept 15, 2017)
 - No new activity
- Groundwater Treatment Plant (GWTP) Operation
 - Continued to collect mercury compliance samples from Outfall 001 (once per month with analysis per USEPA Method 1631) and Outfall 002 (one sample per quarter with analysis per USEPA Method 245.1) for transport to Katahdin Analytical Services (Katahdin) for analysis per the MEPDES permit dated May 3, 2019
 - Provided support to CDM as necessary for ongoing remedial site activities including routine treatment of excavation/ construction water generated during remedial activities.

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
May 2019**

- The average daily flow through the GWTP was 69,174 gallons with 612,246 gallons of construction-related water.
- Submitted the April 2019 NetDMR to MEDEP on May 9th, 2019
- Submitted the April 2019 Toxsheet on May 9th, 2019
- Educted a fresh final carbon bed on May 29th. Completed routine GWTP maintenance activities.
- Generated 2 tons of filter press cake for disposal in railcars in May

- Other Site Activities
 - Completed routine site maintenance activities
 - Began summer mowing schedule.

A detailed summary of all results of sampling, tests, shipments from the Site and other data received by Mallinckrodt in the prior (previous month) reporting period pursuant to this Order

- Air monitoring and meteorological data is collected continuously by the perimeter air monitoring system and stored in the computer system. Weekly reports are sent to Mallinckrodt. Mallinckrodt will notify the DEP of exceedances in accordance with the updated notification protocol sent to DEP on Aug 28, 2018. An annual report of all data for the preceding year will be submitted to DEP by March 1 of the following year.
- Unvalidated data and laboratory reports are submitted to DEP via the automated database system as they are available. Data validation is conducted by TechLaw as outlined in the Maine DEP approved Data Validation Protocol dated Jan 29, 2018 and a summary of the validation results sent to DEP and Mallinckrodt.
 - Conducted internal quality control review of April monitoring data and submitted EGAD EDDs and laboratory analytical reports to DEP on May 6.

Completed Areas:

- Landfill Ridge Area (CMI Closure Report Feb 3, 2017; DEP Acceptance Aug 21, 2017)
- Landfill 2 (CMI Closure Report Dec 21, 2017; DEP Approval Jul 2, 2018)
- Landfills 3, 4 and 5 (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
- Scrap Metal Yard (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
- Southerly Stream (CMI Closure Report Nov 15, 2017, DEP Approval Oct 16, 2018)
 - Continue to maintain erosion and sediment control measures and cap inspections as appropriate.

MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
May 2019

A discussion of all tasks and actions scheduled for the coming reporting period including the date for initiating and completing such activities including percent completion where applicable.

- Continue technical discussions with DEP on remediation activities and pending submittals.
- Continue to include the on-site DEP oversight inspector in weekly construction meetings.
- Continue to review the on-site DEP oversight inspector emails outlining planned and completed activities to ensure no miscommunication.
- Continue operation of the perimeter air monitoring system.
- Continue stockpile management of excavated materials and loading railcars for shipment
- Continue to maintain and improve erosion and sediment control measures and cap inspections as appropriate in completed areas listed above.

- Landfill 1 (CMI Plan – Rev2 Apr 30, 2018; DEP Conditional Approval Letter May 10, 2018; CMI Plan – Rev2 May 17, 2018 (revised to incorporate all conditions in DEP CAL)
 - Maintain erosion and sediment controls
 - Charter to continue final grading, spreading of topsoil and planting

- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.)
 - Respond to DEP comments as received for various Plant Area Phase 2 CMI submittals.
 - Maintain erosion and sediment controls.
 - Complete backfilling of Phase 1 excavations
 - Implement the Phase 2 chloropicrin treatment injections and install additional SVE wells per the Phase 2 design.
 - Continue operation of the SVE system and performance monitoring.

- Northern Drainage Ditch (CMI Closure Report Nov 27, 2017, DEP Approval Oct 16, 2018)
 - Continue to maintain erosion and sediment control measures.

- Southern Cove (CMI Closure Report Jan 14, 2018, DEP Approval Aug 3, 2018)
 - Monitor vegetation growth and maintain as needed.

- Short-Term Comprehensive Monitoring Plan (Revised ST CMP Feb 24, 2017)
 - Conduct Short-Term CMP remediation monitoring in accordance with the approved plan.

- Groundwater
 - Final GW Extraction System (GWES) Plan Oct 16, 2017; DEP Approval Jan 9, 2018)
 - Continue construction of the Final GWES.
 - Continue quarterly monitoring and reporting per the approved Short-Term CMP.
 - Develop new monitoring wells installed in Landfill 1.

- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
 - Install initial monitoring wells in LF3-5 area, conduct field testing and Geophysics evaluation

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
May 2019**

- Respond to DEP comments on 2018 Landfill 5 annual monitoring report letter dated March 26,2019
- Groundwater Model (Model Feb 22, 2016, DEP Acceptance of Model Sept 15, 2017)
- No planned activity
- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 per the MEPDES permit.
 - Submit May 2019 NetDMR to MEDEP.
 - Complete and submit to MEDEP the May 2019 Toxscan Report and Effluent Mercury Test Report forms.
 - Continue maintenance activities and routine GWTP maintenance.
- Other Site Activities
 - Continue routine site maintenance activities.
 - Submit response to DEP comments to the 2018 Annual Perimeter Air monitoring report letter dated March 26, 2019.

Tasks not completed as required, original and revised completion dates, reasons for delay, actions taken to minimize the delay and any other problems or anticipated problems

None

As of the end of December 2018, the quantity of waste shipped is shown below:

- **Leach Field: Soil excavation and off-site disposal is complete.**
 - A total of 14 railcars, containing 1,379 tons (TSDF weight) of non-hazardous Leach Field soils, have been shipped off site to Republic facility in Niagara Falls, New York.
- **Landfill Ridge: Soil excavation and off-site disposal is complete.**
 - A total of 564 railcars, containing 55,158 (TSDF weight) tons of non-hazardous Landfill Ridge soils, have been shipped off site.
 - 534 railcars to the Republic disposal facility in Niagara Falls, New York
 - 30 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Scrap Metal Yard: Soil excavation and off-site disposal is complete.**
 - A total of 413 railcars, containing 40,556 tons (TSDF weight) of non-hazardous Scrap Metal Yard soils, have been shipped off site
 - 412 railcars to the Republic disposal facility in Niagara Falls, New York
 - 1 railcar to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Northern Drainage Ditch: Soil excavation and off-site disposal is complete.**
 - A total of 307 railcars, containing 29,440 tons (TSDF weight) of non-hazardous Northern Drainage Ditch soils, have been shipped off site.
 - 307 railcars to the Republic disposal facility in Niagara Falls, New York
 - 0 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Southerly Stream: Soil excavation and off-site disposal is complete.**

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
May 2019**

- A total of 112 railcars, containing 10,583 tons (TSDF weight) of non-hazardous Southerly Stream soils, have been shipped off site.
 - 102 railcars to the Republic disposal facility in Niagara Falls, New York
 - 10 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Landfill 2: Soil excavation and off-site disposal is complete.**
 - A total of 441 railcars containing Landfill 2 soils have been shipped off site to date.
 - 118 railcars of 11,557 tons (TSDF weight) of non-hazardous Landfill 2 soils
 - 108 railcars to the Republic disposal facility in Niagara Falls, New York
 - 10 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
 - 323 railcars containing 31,497 tons (Site weight) of hazardous (listed waste) soils to the US Ecology Stablex disposal facility in Quebec, Canada
- **Southern Cove: Sediment removal and off-site disposal is complete.**
 - A total of 190 railcars containing 18,548 tons (TSDF weight) of non-hazardous Southern Cove sediments, have been shipped off site.
 - 190 railcars to the Republic disposal facility in Niagara Falls, New York
 - 0 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Plant Area: Soil excavation and shipments are ongoing.**
 - In May 2019, 25 railcars of Plant Area non-hazardous soils were shipped off site.
 - A total of 251 railcars containing 24,541.35 tons (Site weight) of non-hazardous soils have been shipped from the Site:
 - 231 railcars to the Republic disposal facility in Niagara Falls, New York
 - 20 railcars to the US Ecology Stablex disposal facility in Quebec, Canada.
- **Landfill 1: Soil excavation and shipments are ongoing.**
 - In May 2019, a total of 55 railcars of Landfill 1 soils were shipped off site:
 - 55 rail cars containing 5377.4 tons of Non-Hazardous soils
 - A total of 849 railcars containing Landfill 1 soils have been shipped off site to date.
639 railcars of 62,509.50 tons (Site weight) of non-hazardous soils
 - 639 railcars to the Republic disposal facility in Niagara Falls, New York
 - 0 railcars to the US Ecology Stablex disposal facility in Quebec, Canada
 - 210 railcars containing 20506.1 tons (Site weight) of hazardous soils to the US Ecology Stablex disposal facility in Quebec, Canada
- **General Debris**
 - General Debris, Juniper Ridge 18,700lbs 5/13/19
 - Total Mercury Sample A= NA
 - Total Mercury Sample B= **NA**
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- **GWTP Sludge**

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
May 2019**

- 2 tons of filter press cake were generated in May added to the TSSA area for shipment in railcars

Maine Hazardous Waste Fees

Under the DEP Hazardous Waste Transporter Program, EQ Northeast, Inc. pays \$60/ton to the Maine Hazardous Waste Fund for hazardous wastes transported and disposed off-site. **As of Dec 31, 2018, the total paid under this program is \$3,118,368.00**

- The 2nd Quarter 2017 report lists 13,150.65 tons of hazardous soil transported by rail and disposed off site for a total fee of \$789,039 which was paid 9/28/17.
- The 3rd Quarter 2017 report lists 14,125.95 tons of hazardous soil transported by rail and disposed off site for a total fee of \$847,557 which was paid 12/1/17.
- The 4th Quarter 2017 report lists 4,190.10 tons of hazardous soil transported by rail and disposed off site for a total fee of \$251,406 which was paid.
- On Nov 13, 2017 an additional 30 tons of hazardous waste was transported by truck and disposed off site for a total fee of \$1,800.
- The 1st Quarter 2018 report lists 0 tons of hazardous soil transported and disposed off site.
- The 2nd Quarter 2018 report lists 4,288.20 tons of hazardous soil transported by rail and disposed off site for a total fee of \$257,292 which was paid 8/22/18.
- The 3rd Quarter 2018 report lists 8,4170.10 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$ 505,026.00
- The 4th Quarter 2018 report lists 7800.08 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$ 468,048.00

Maine Statute 1319-I requires transporters of regulated hazardous materials (per 49 CFR 172.101) by rail to pay 15 cents/ton on the shipments. As of December 31, 2018, the total paid under this requirement is \$ **\$38,776.76**

Additional information regarding the progress of the work

- BeyondHoltraChem.com is periodically updated to reflect ongoing site activities.
- The *On The Penobscot* newsletter is issued periodically to update area residents on the Site.