

May 13, 2019

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

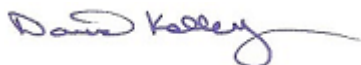
**Subject: Monthly Progress Report – April 2019
Orrington Remediation Site
Orrington, Maine**

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 **April 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
Joan Gibson—Town Manager, Town of Orrington
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
April 2019**

Report Date: May 13, 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 April 3, 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.
- Operation of the Maine certified on-site lab was suspended in April an external lab will be used going forward.
- 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)
 - Received DEP comments on the LF1 Closure report 4/19/19
- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.)
 - Started excavation of PA1-13
 - Resumed backfilling of Phase 1 excavations
 - Weekly SVE performance updates period (3/8/19 and 3/22/19.) were submitted to DEP 4/1/19
 - Change out of the carbon in the SVE system occurred 4/19/19. The system was restarted and continues to operate.
 - Received DEP comments to the Concrete Sampling memo on 4-4-19 Submitted requested concrete sampling data to DEP on 4-5-19.
 - Received DEP comments to the -PA Phase II Scope of work letter rev1 submittal dated 3-7-19 on 4/4/19
 - Received DEP response to the PA Phase 2 Scope of work letter rev-1 and revised plans submitted 3-29-19 on 4/24/19
 - Received email response/ no further comments from DEP on 4/5/19 to our response to DEP on the Chloropicrin Quarterly Report sent on 3/29/19.
 - Continued chloropicrin groundwater performance monitoring

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- 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)
 - 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 April 15. April monitoring included monthly and quarterly 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 and started pipe and conduit installation
 - Started backfilling of pipe trench
- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
 - Continued preparation of conceptual bedrock GWES in the Landfills 3-5 area and planning for investigations and testing.
- Groundwater Model (Model Feb 22, 2016, DEP Acceptance of Model Sept 15, 2017)
 - No new activity
- Groundwater Treatment Plant (GWTP) Operation
 - Collected mercury compliance samples from Outfall 001 (3x/week with analysis per USEPA Method 1631) and Outfall 002 (one sample per discharge day with analysis per USEPA Method 245.1).
 - Provided support to CDM as necessary for ongoing remedial site activities including routine treatment of excavation/ construction water generated during remedial activities.
 - The average daily flow through the GWTP was 77,972 gallons with 876,825 gallons of construction-related water.
 - Submitted the March 2019 NetDMR to MEDEP on April 9th, 2019
 - Submitted the March 2019 Toxsheet on April 9th, 2019
 - Educted a fresh final carbon bed on April 25th.

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- Completed routine GWTP maintenance activities.
- Received final MEPDES permit dated May 3, 2019
- Other Site Activities
 - Completed routine site maintenance activities

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.
- Received laboratory analytical data from April monitoring according to the Short-Term CMP. Data will be submitted to MEDEP following internal quality control review.

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.

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.

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- 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 remobilize to site and start final grading and spreading topsoil

- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.)
 - Continue development of Contractor Work Plans and submittals for Plant Area CMI Phase 2 work
 - Respond to DEP comments as received for various Plant Area Phase 2 CMI submittals.
 - Maintain erosion and sediment controls.
 - Complete excavation of PA1-13
 - Complete backfilling of Phase 1 excavations
 - Continue to implement the Phase 2 chloropicrin treatment injections 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.
 - Submit proposal for Monitoring Wells in the Landfill 1 area

- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
 - Prepare and submit report transmitting hydrogeological testing data and conceptual GWES design for the Landfills 3-5 area
 - 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

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- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 per the MEPDES permit.
 - Submit April 2019 NetDMR to MEDEP.
 - Complete and submit to MEDEP the April 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.**
 - 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.

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- **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 April 2019, 1 railcar of Plant Area non-hazardous soils was shipped off site.
 - A total of 226 railcars containing 22094.8 tons (Site weight) of non-hazardous soils have been shipped from the Site:
 - 206 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 April 2019, a total of 63 railcars of Landfill 1 soils were shipped off site:
 - 63 rail cars containing 6159.3tons of Non-Hazardous soils
 - A total of 810 railcars containing Landfill 1 soils have been shipped off site to date.
 - 600 railcars of 58,696.95 (Site weight) of non-hazardous soils
 - 600 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, None
 - Total Mercury Sample A= NA
 - Total Mercury Sample B= **NA**
- **GWTP Sludge**
 - None

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.

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- 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.