

November 11, 2017

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

**Subject: Monthly Progress Report – October 2017
Orrington Remediation Site
Orrington, Maine**

Dear Mr. Jellison:

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 from **October 1 – 31, 2017**, and is submitted on behalf of Mallinckrodt US LLC.

If you have any questions regarding this report please feel free to contact me at 314-281-5947.

Sincerely,



Kathy Zeigler
Remediation Program Manager

cc: (all electronic copies)
Patricia Duft – Mallinckrodt US LLC
Susanne Miller – Maine DEP, Bangor
Orrington Town Library
Paul White – Town of Orrington
David Wright – Maine DEP

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
October 2017**

Report Date: November 11, 2017

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

- Held various conference calls with DEP to discuss site remediation activities.
- 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.
- Continued operation of the perimeter air monitoring system and meteorological station and submitted weekly PAM reports to DEP.
- Continued operation of the Maine certified on-site lab.
- Continued stockpile management of excavated materials and loading railcars for off-site shipment.
- Permitting (Upland)
 - No new activity
- Landfill Ridge Area (CMI Closure Report Feb 3, 2017; DEP Acceptance Aug 21, 2017)
 - Continued to maintain erosion and sediment control measures.
- Landfill 1 (Final CMIP Oct 13, 2017)
 - Received comments from DEP on Landfill 1 Contractor Work Plans on Oct 1, 2017.
 - Submitted the Final Landfill 1 CMIP, including the revised final Excavation and Restoration and Construction Water Management Work Plans, to DEP on Oct 13, 2017.
 - Per DEP approval on Oct 20, initiated pre-construction activities in the Landfill 1 Area.
- Landfill 2 (CMI Plan Rev1 Oct 7, 2016; Addendums 1-3, final DEP Approval Apr 26, 2017)
 - Continued preparation of Landfill 2 CMI Closure Report.
 - Established and maintained erosion and sediment control measures.
- Landfills 3, 4 and 5 (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
 - Received DEP Acceptance of CMI Closure Report Oct 3, 2017
 - Continued to maintain erosion and sediment control measures and cap inspections.
- Plant Area (Draft CMI Plan Feb 13, 2017)
 - Completed construction of new rail spur construction near former Landfill 2 area.
 - Began the Phase 1 of the in situ chloropicrin treatment system (injections) and SVE well installations.
 - Received DEP response to the Plant Area Technical Memo on Oct 23, 2017.
 - Received DEP approval of the Concrete Sampling and Processing SOGs on Oct 24, 2017.
- Scrap Metal Yard (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
 - Received DEP Acceptance of CMI Closure Report Oct 3, 2017
 - Continued to maintain erosion and sediment control measures.

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- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016; DEP Approval Nov 7, 2016)
 - Continued to maintain erosion and sediment control measures.
 - Completed restoration activities
 - Continued preparation of Southerly Stream CMI Closure Report.
- Northern Drainage Ditch (CMI Plan – Rev 1, Aug 23, 2016; DEP Approved upon submittal; Final Addendum 1 Oct 27, 2016;)
 - Continued to maintain erosion and sediment control measures.
 - Continued preparation of the Northern Drainage Ditch CMI Closure Report
- Southern Cove (Final CMI Plan May 15, 2017; USACE Permit NAE-1999-02231 Apr 17, 2017; USACE Permit Modification May 3, 2017)
 - Continued to inspect and maintain sediment controls and silt fences.
 - Continued water quality monitoring and visual inspections for turbidity plumes.
 - Continued sediment removal and backfill operations in SMA-2 and SMA-3.
 - Continued confirmation sampling in accordance with approved sampling protocol.
- 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 IES and Landfill 5.
 - Conducted ongoing monitoring of IES, Landfill 5, and Site Perimeter wells, and remediation monitoring in the vicinity of the Scrap Metal Yard, Southerly Stream, and Landfill 2 in accordance with the Short-Term CMP the week of Oct 23, 2017.
- Groundwater
 - Submitted proposal to abandon monitoring wells and piezometers in the Landfill 1 area to DEP on Oct 12, 2017.
 - Final Extraction System at Landfill 1 (Final Design GEWS Oct 16, 2017):
 - Continued operation of extractions wells and quarterly monitoring and reporting.
 - Submitted the Final Design of the Groundwater Extraction System to DEP on Oct 16, 2017.
 - Conducted drilling, soil sampling/logging, and installation of EW-5, PZ-17-1 through -3 beginning Oct 25, 2017.
 - Groundwater at Landfills 3,4,5 (WP Aug 3, 2015; DEP CAL Sept 18,2015)
 - The pump test in the area of Landfills 3, 4, and 5 has been postponed until 2018 in order to evaluate the impact of the new caps on area groundwater levels and quality.
 - Groundwater Model (submitted Feb 22, 2016, DEP comments Jan 6, RTC Apr 28, 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) for analysis by Katahdin Analytical Labs.
 - Continued expanded Outfall 001 effluent monitoring (volatiles, semivolatiles, herbicides and manganese) for “new wastestreams” (i.e. construction water from each remedial area) per the MEPDES Discharge permit. Expanded monitoring for each new wastestream is

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required for 10 months or until wastestream ends. October was month 4 for the Southern Cove dewatering operations.

- The average daily flow through the GWTP was 44,453 gallons with 101,457 gallons of construction-related water.
- Submitted the September 2017 NetDMR to DEP on Oct 5 and the Toxsheet and Effluent Mercury Test Report form to DEP on Oct 12, 2017.
- Completed routine GWTP maintenance activities.
- 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 with weekly reports submitted to DEP.
- Validated EGAD EDDs and laboratory reports are submitted to DEP via the automated database system or the ftp site (for large laboratory reports) as they are available.
- Submitted EGAD EDDs of validated remediation monitoring data to DEP on Oct 19, 2017.

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 operation of the perimeter air monitoring system and weekly PAM reports to DEP.
- Continue operation of the on-site lab in compliance with Maine certification.
- Continue stockpile management of excavated materials and loading railcars for shipment.
- Permitting (Upland)
 - No new submittals planned
- Landfill Ridge Area (CMI Closure Report Feb 3, 2017; DEP Acceptance Aug 21, 2017)
 - Continue to maintain erosion and sediment control measures.
- Landfill 1 (Final CMIP Oct 13, 2017)
 - Complete pre-construction activities in the Landfill 1 Area.
 - Continue discussions with DEP regarding approval of the Landfill 1 CMIP.
- Landfill 2 (CMI Plan Rev1 Oct 7, 2016; Addendums 1-3, final DEP Approval Apr 26, 2017)
 - Continue preparation of Landfill 2 CMI Closure Report.
 - Continue to maintain erosion and sediment control measures.
- Landfills 3, 4 and 5 (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
 - Continue to maintain erosion and sediment control measures and complete cap inspections.
- Plant Area (Draft CMI Plan Feb 13, 2017)
 - Continue the in situ chloropicrin treatment system (injections) and SVE well installations.
 - Complete new rail spur construction and scale installation near former Landfill 2 area.
 - Continue discussions with DEP regarding the Plant Area design.

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- Scrap Metal Yard (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
 - Continue to maintain erosion and sediment control measures.
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016; DEP Approval Nov 7, 2016)
 - Continue to maintain erosion and sediment control measures.
 - Continue preparation of Southerly Stream CMI Closure Report.
- Northern Drainage Ditch (CMI Plan Rev 1, Aug 23, 2016; DEP Approved upon submittal; Final Addendum 1 Oct 27, 2016;)
 - Continue to maintain erosion and sediment control measures.
 - Continue preparation of the Northern Drainage Ditch Closure Report.
- Southern Cove (Final CMI Plan May 15, 2017; USACE Permit NAE-1999-02231 Apr 17, 2017; USACE Permit Modification May 3, 2017)
 - Continue to inspect and maintain sediment controls and silt fences.
 - Continue water quality monitoring and visual inspections for turbidity plumes.
 - Complete additional removal in SMA-2 and SMA-3 along with confirmation sampling and backfill operations in accordance with approved sampling protocol.
 - Submit data showing compliance with the MPS in both SMA-2 and SMA-3 to DEP for review and approval.
 - Complete final backfill operations in SMA-2 and SMA-3.
 - Removal of equipment and demobilization of contractor.
- 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 Extraction System at Landfill 1 (Final Design GEWS Oct 16, 2017):
 - Continue operation of extraction wells and quarterly monitoring and reporting per the Revised Short-Term CMP
 - Conduct pump testing of EW-3 and performance testing of EW-3/EW-5 according to the Final Design of the Groundwater Extraction System
 - Groundwater at Landfills 3,4,5 (WP Aug 3, 2015; DEP CAL Sept 18,2015)
 - Ongoing monitoring of groundwater levels and quality.
 - Groundwater Model (submitted Feb 22, 2016, DEP comments Jan 6, RTC Apr 28, 2017)
 - No planned activity
- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 as described above.
 - Submit October 2017 NetDMR and Toxsheet and Effluent Mercury Test Report to DEP.
 - Continue maintenance activities and routine GWTP maintenance.
- Other Site Activities
 - Complete routine site maintenance activities.

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

- A revised master schedule was submitted to DEP on Oct 17, 2017.

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The quantity of waste shipped to the various disposal locations

- As of the end of **October 2017**:
 - **Leach Field: Soil excavation and off-site disposal is complete.**
 - A total of 14 railcars, containing 1379 tons (TSDf weight) of non-hazardous Leach Field soils, have been shipped offsite to the Republic disposal 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 offsite.
 - 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 offsite
 - 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 is complete.**
 - A total of 299 railcars, containing 29,232 tons (Site weight) of non-hazardous Northern Drainage Ditch soils, have been shipped offsite.
 - 299 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 offsite.
 - 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 is complete.**
 - In October 2017, 39 railcars of Landfill 2 soils were shipped off site.
 - 39 railcars containing 3,800 tons of listed waste soils from Landfill 2 to the US Ecology Stablex disposal facility in Quebec, Canada
 - A total of 437 railcars containing Landfill 2 soils have been shipped offsite to date.
 - 118 railcars of 11,557 tons (TSDf weight) of non-hazardous Landfill 2 soils
 - 108 railcars of non-hazardous soils to the Republic disposal facility in Niagara Falls, New York
 - 10 railcars of non-hazardous soils to the US Ecology Stablex disposal facility in Quebec, Canada.
 - 319 railcars containing 31,077 tons (Site weight) of listed waste soils to the US Ecology Stablex disposal facility in Quebec, Canada
 - **General Debris**
 - One roll-off was sent to Juniper Ridge Casella in October 2017
 - 5,900 lbs; Total Mercury results: 0.01 mg/kg and 0.02 mg/kg

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Maine Hazardous Waste Tax

- The total Maine Hazardous Waste Tax paid as of October 31, 2017 is \$1,888,002.
 - These taxes are paid quarterly so the total tax paid is not directly related to the total tons of hazardous waste shipped.

Additional information regarding the progress of the work

- The next *On The Penobscot* community newsletter will be mailed to residents and key community contacts in early 2018.
- The BeyondHoltraChem.com website is periodically updated to reflect ongoing remediation activities.